

Copyright

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Engine are registered trademarks of MAGIX AG.

This product uses MAGIX patented technology (USP 6,518,492).

VST and ASIO are registered trademarks of Steinberg Media Technologies GmbH.

Other mentioned product names may be registered trademarks of the respective manufacturer.

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Preface

Congratulations on your purchase of Samplitude Music Studio 15!

Creating your own music or video soundtracks in a home studio has become more and more popular. But the wide variety of available equipment and software often confuses both beginner and professional musicians alike. You may find yourself asking questions like "What do I really need?", or "What's the best value for my money?"

Samplitude Music Studio 15 is the perfect solution: Fast and easy-to-handle music production on your PC, from recording to mastering. Transform your PC into a complete sound studio.

All you need to produce and arrange in high-quality is a conventional sound card, but additional studio equipment can easily be added.

The following pages will introduce to you in detail the various functions and possibilities offered by Samplitude Music Studio 15.

Have fun with Samplitude Music Studio 15.

Your

MAGIX team

Support

When contacting MAGIX, please ensure that you have information about your system and a detailed description of the problem and the program. The more information you have, the quicker and more responsive support will be.

- Program version (found under "About" in the program help menu)
- Computer configuration (Windows version, processor, memory...)
- Graphics & sound card
- Other installed software, if known

Support website: <http://support.magix.net>

The MAGIX support website offers many ways to assist you with answers to general questions and technical support needs. You can use any of the following options:

Online tutorials

: These tutorials are generated to further explain a procedure within the MAGIX software.

Email support

: The email support is best used to assist users who are having technical difficulties with non-demo software. Use this tool to get detailed information on problems and solutions.

Phone support Contact our support specialists

: Phone: 1-305-722-5821

Monday - Friday between 9 am and 5 pm EST

Support forum

: The support forum is a user-to-user support and communications page. This will allow you to talk to other users and compare ideas and solutions discovered by them.

Download area

: The download area contains updates for known issues and improvements offered by MAGIX to registered users for their purchased program. If you have an issue with the software, then it's always best to ensure you have the latest version, and updating with the patch will ensure that you do. MAGIX products can also be updated directly from the program by clicking on "Check for updates" in the "Help" menu.

Customer service & upgrades

Periodically, MAGIX offers users who purchased their software an upgrade from a previous product to the current version. For details about an upgrade, please call us your request using the following numbers:

Phone: 1-305-722-5810

Monday to Friday 9am – 5pm (EST)

Before you start

In this chapter

[System requirements](#)

[Serial number](#)

System requirements

- Processor: Intel® Pentium® or AMD® Athlon® 1200 MHz, or higher
- Memory: min. 512 MB RAM (1 GB recommended)
- Hard drive space: min. 3 GB free
- Graphics card: 1024 x 768 resolution with 16-bit high-color
- Sound playback: Full duplex 16-bit sound card or ASIO-enabled sound card (recommended)
- Other: DVD-ROM drive, Microsoft®-compatible mouse
- Operating system: Microsoft® Windows® 2000 | XP | Vista™

Optional

:

- Burn CDs/DVDs with CD/DVD±R(W) recorder.
- [MP3](#) export with Windows Media Player 10, or higher
- Access to and publication on www.magix.com and in MAGIX Online World only with Internet connection and an up-to-date browser
- Emails can be sent with standard email software Microsoft® Outlook™ or Microsoft® Outlook Express™

Note

: Artist rights and ancillary publisher copyrights must be respected. Only non copy-protected audio CDs can be imported.

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Serial number

A serial number is included with each product, and although it is not required for the installation of the software, it does enable access to additional bonus services. Please store this number in a safe place.

What can a serial number do?

A serial number ensures that your copy of Samplitude Music Studio 15 is clearly assigned to you and only you, and it makes improved and more targeted customer service possible. Abuse of the software can be prevented with a serial number, since it ensures that the optimum price/performance ratio continues to be offered by MAGIX.

Where can the serial number be found?

The serial number can be found on the reverse side of your CD/DVD case. If your product, for example, is packed in a DVD box, then you'll find the serial number on the inside.

For the versions that have been especially optimized for the Internet (download versions), you'll receive your serial number for activating the software directly after purchasing the product via email.

When will you need the serial number?

The serial number is required when you start or register Samplitude Music Studio 15 for the first time.

Note: We explicitly recommend registering your product, since only then are you entitled to get program updates and contact [MAGIX Support](#)

. Entering the serial number is also required for activating codecs.

More about MAGIX

In this chapter

[myGOYA](#)

[MAGIX Premium Club](#)

myGOYA

Well connected

: Products and services online from MAGIX

Discover the possibilities of myGOYA. Every MAGIX product offers a direct and easy-to-use gateway to the world of online multimedia.

- Present your photos, videos, and music directly in your Online Album or in worldwide Internet communities.
- Find professional templates & content for enhancing your personal projects.
- Design your own personalized website using professional Flash® design with photos, videos, music & impressive animations.
- Order brilliant photo prints to be sent directly to your doorstep. It's quick, easy, and well-priced.

Experience these and many more online services at www.mygoya.com

MAGIX Premium Club

Our exclusive club for all MAGIX customers who own a registered product. MAGIX Premium Club members have access to a wide range of services:

- Free product updates & services
- Exclusive club events & surprises
- News & info about the club, and much more

Membership is free.

You can find more information about this topic on the web at www.magix.com

Hint:

You can register your product either directly from the program using the "Help" menu, or with your product registration number at www.magix.com. You can find your product registration number on your program CD. Earlier network card numbers with the example format XY-58241-45 are still valid.

Introduction

In this chapter

[What is Samplitude Music Studio 15?](#)

[What's new in Samplitude Music Studio 15?](#)

[The features](#)

What is Samplitude Music Studio 15?

Samplitude Music Studio 15 is a multitrack recording and editing application for all types of audio material featuring unlimited editing options. It's easy to use and follows three simple steps:

1. Download and record

You can download CD tracks, [MP3](#) songs, wave files, video soundtracks, or sounds & samples from the hard disk, the CD ROM drive, or the Internet. You can even make your own recordings from a stereo system or with a microphone. Everything you download or record is displayed as an object on the Arranger's tracks.

2. Arrange and edit

Basically, all tracks stacked virtually above each other will be played simultaneously, and everything that follows horizontally will be played in subsequent order. However, you can mute the objects stacked above each other.

Every object – that is, every sound, every song – can be cut up or have effects added. For example, if you want to shorten a song, move the object with your mouse to the length at which you would like the song to be – done! Want to freshen up your sound? Then open the equalizer and either select a preset that fits, or modify your sound "by hand".

Arranging and editing is essentially all about cutting, blending, adding, mixing effects, and placing audio material into the right positions and into the right tracks. But it's also about play and experimentation. If it fits, throw it in! Without experimentation there is no innovation. Samplitude Music Studio 15 allows you to experiment, and experiment wildly. There's no risk of your audio material being damaged. All editing functions are "non-destructive".

Export and use

Regardless what you're experimenting with, in the end something usable should come out of it. Samplitude Music Studio 15 has everything you need to be productive:

- Homemade audio CDs which can be played by any standard CD player
- Unique [MP3](#) collections, e.g. as a source of material for your MP3 player
- Podcasts: Simply export the project as a podcast and - if you want - publish it using [MAGIX Podcast](#) Service online (the MAGIX Podcast Service can be reached via the "Online" menu.)
- And much more. The export principle is simply "what you hear is what you get". That is, what you export sounds exactly as it sounded in the arrangement during playback in Samplitude Music Studio 15.

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What's new in Samplitude Music Studio 15?

Multitrack recorder (MR-64)

The multitrack recorder (MR-64) looks like a hardware mixer and can also be operated in the same way. It can also be launched as an alternative to the current mixer interface to make multitrack recordings just like with a real mixer. The MR-64 unites the advantages of the analog look with digital technology: realistic appearance, direct workflows, and familiar functionality.

Soundpool manager

The Soundpool manager helps control, preview, and load MAGIX Soundpool loops. Hundreds of loops are included, and many more can be found at Catooh. The loops are categorized into "styles" (e.g. ambient, dance, hip hop, rock, etc.) and "instruments" (e.g. drums, bass, guitars, etc.). The name of the loop file also informs you about the kind of sound you can expect. Every loop can be previewed by clicking it. Monitoring is adjusted to the loops in the arranger. For example, first a framework of bass and drums is constructed and then played back in a loop, and as you search for the right guitar sounds in the Soundpool manager, the monitoring will be matched with the drum loop. Every loop can be loaded into the arranger by dragging it or by double clicking. The Soundpool manager can be launched via the "[Manager](#)" button.

BeatBox 2 plus

BeatBox2 Plus is a flexible and diverse groove tool. For a quickly produced, suitable back beat, try one of the presets. For more detailed, programmed beats, place the notes yourself, add and integrate effects, and set the individual parameters. BeatBox2 Plus can be accessed via the "Synthesizer" button.

am-track SE

This familiar and high-quality vintage compressor offers a combination analog compressor and tape simulator. High-quality tape machine sound emulation makes typical aspects of the large, saturated sound characteristics of magnetic recordings a digital-quality reality.

Optimized manager section

The manager section has been redesigned in Samplitude Music Studio 15. The [managers](#) combine the most frequently used control and management functions for markers, tracks, ranges, VST instruments, objects, etc. and control the sound loops. The manager section can be positioned freely and docked to different locations in the user interface.

Improved editor with step recording

The [MIDI editor](#) now offers the option of inputting technically complicated keyboard passages step-by-step; the recording stops after every note is played and waits for the next note to be entered (step recording). The notes can then be corrected as required using the regular quantization and moving functions. The [MIDI](#) editor offers numerous extra improvements. It can be opened by double clicking a [MIDI](#) object.

The features

The best possible sound quality

This feature is especially important to every music lover: Samplitude Music Studio 15 offers unique sound quality for digital music editing.

- **100% sound neutrality:** Benefit from Samplitude, professional audio software that's been used for years in sound studios and radio & TV stations around the world. Samplitude's unique feature is that the original sound of audio files is not diminished by any specific audio discoloration, as is often the case with other programs.
- **24-bit/48 kHz recordings:** Your own recordings can be made with the correct hardware in professional, high-quality, high-resolution 24-bit/48 kHz format.
- **32-bit floating point:** Internal sound processing is executed via the 32-bit floating point process for especially differentiated and high-quality calculation. This way, the audio picture can be created with especially high dynamics. Digital distortion and clipping is virtually impossible.

Hybrid Audio Engine

The Hybrid [Audio Engine](#)® in Samplitude Music Studio 15 offers a new dimension in professional music production: The combination of the Low Latency Engine and the classic Samplitude® playback engine enables minimum latency at maximum performance. The Low Latency Engine allows for very short reaction times while calculating track effects, and also permits monitoring at low latency during Live Recording. The classic playback engine saves resources and allows for integration of high-performance effects.

Formats and interfaces

Import: [MIDI](#) standard formats (MID, GM, GS, XG), [WAV](#) (24 & 32-bit), WAV with codec, OGG Vorbis, [MP3](#), CD-A (audio CD with preview), AIFF, FLAC, MOV, [AVI](#) (audio tracks only, but with video display)

Export: MIDI standard formats (MID), WAV (24-bit), WAV with codec, OGG Vorbis, MP3 (optional, demo encoder with 20 free runs included), CD-A (audio CD), AIFF, [WMA](#), RealAudio™ (Helix), QuickTime™, FLAC, AVI (video sound)

Interfaces: VST, DirectX®, ASIO, ReWire, SMPTE, MTC, MC (master and slave)
Also: Song-to-email, multi-channel input/output, [AudioID](#) /freeDB (query music information online)

Synthesizer

Samplitude Music Studio 15 comes with the following synthesizers that you can play directly on your PC keyboard or with a [MIDI](#) keyboard.

- **MAGIX Vita + Vital Instruments:** A sampler with incredibly realistic-sounding, "classical" instrumental sounds like different guitars (Power Chords, clean electric guitar, acoustic guitar, bass guitar), different pianos, percussion, strings, brass, woodwinds (each as an individual set & as an ensemble set), and much more.
- **Drum & Bass Machine:** For bass and drum tracks in "Drum 'n' Bass" sound
- **BeatBox 2:** For computer beats and computer sounds.
- **LiVid** (Little Virtual Drummer): For "real" acoustic drum tracks.

- **Robota**: For "mean" electronic sounds
- **Revolta 2**: An analog, varied, and powerful-sounding 12-voice synthesizer with sound matrix, noise generator, and a complete effects section with nine effect types. With this synthesizer, you can create any electronic music you can imagine. The sound presets were created by the sound designer for Access Virus and Rob Papen's Albino.
- **Atmos**: For natural sounds or atmospheres like rain, thunder, or wind.

Effects and effects plug-ins

Samplitude Music Studio 15 offers the following effects and effects plug-ins:

- **Equalizer**: Graphical and parametric
- **FFT filter**: Including Sound Cloner, e.g. for transferring sound characteristics of an optimal sound to other audio files.
- **Echo** (delay)
- **Reverb** (MAGIX VariVerb)
- **Vocoder**
- **AmpSim**: Simulates classic tube amps
- **Vintage Effects Suite**, consisting of **chorus**, **flanger**, **analog delay**, **distortion**, **filters**, and the low-fi effects **BitMachine** (optionally as a free download)
- **Mastering Suite**, featuring **equalizer**, **multiband compressor**, **multiband enhancer**, and **audio meter**
- **Compressor** with many presets such as **limiter**, **Deesser**, **noise gate**, **expander**, or **leveler** and in different models, e.g. as the **Multimax** multiband compressor
- **Tape simulation**: High-quality simulation of analog tape compression
- **Stereo FX**: For editing the stereo bandwidth
- **Cleaning FX**: Dehisser for reducing hissing and other artifacts
- **Declicking**: For eliminating digital clipping
- **Timestretching/resampling/pitchshifting**: For correcting pitch and length
- **Elastic [Audio](#) easy**: Dynamic pitch correction with harmonization (creates up to 4 choir voices)
- **am-track SE**: High-quality tape machine sound emulation makes typical aspects of the large, saturated sound characteristics of magnetic recordings a digital-quality reality.

MIDI integration

Samplitude Music Studio 15 helps you arrange, load, record, edit, and play [MIDI](#) data just as easily as audio data. You can combine wave sound files with MIDI files for controlling the sound chip on your sound card or VST instrument plug-ins or external synthesizers, and then arrange everything together.

For MIDI recordings and editing you can use the extensive MIDI editor with piano roll, drum editor, velocity/controller editor, and event list.

MIDI object recording can be started directly from the arranger by setting the recording mode in the track box to [MIDI](#)

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DirectX and VST plug-ins

Samplitude Music Studio 15 enables the direct use of DirectX and VST plug-ins, a large variety of which is available in retail stores or directly online. Such plug-ins (audio effects or synthesizers from third party manufacturers) can significantly increase the functionality of Samplitude Music Studio 15.

Friendlier user interface

The entire Samplitude Music Studio 15 user interface has been designed with presets to integrate smoothly with a variety of specific applications. For example, the presets for CD mastering, wave editing, multitrack recording, and power user are included. These "beginner-friendly" presets offer clear and concise menus and toolbars in Samplitude Music Studio 15 that help implement your first projects.

MAGIX Jam Session automation

The Auto Jam [Session](#)

lets you create complete songs single-handedly. The program simulates working with hardware "looping delays", like the Gibson Echoplex. The difference is that Samplitude Music Studio 15 creates an arrangement which can later be edited and compiled into a complete song.

During an Auto Jam Session, everything you do is recorded. The most important thing about the Auto Jam Session is the fun factor – there can never be too much of it!

Track editor

The track editor to the left of the arrangement window enables access to all important parameters of the selected track. Record and monitoring status, volume, panorama, [MIDI](#) /audio in and outputs, plug-ins, AUX sends, and EQ settings are displayed in well-arranged sections and can also be edited in this view. You will instantly see all relevant settings of the corresponding track. You can open the track editor via the corresponding track button at the bottom of the [VIP](#) below the workspace selection button or via the menu "Window -> Track editor".

MAGIX Remix Agent

The Remix Agent is the ideal tool for producing DJ & Live Mixes. It automatically recognizes the beat of [MP3](#) or audio CDs and edits it as loops precisely accordingly. Simply drag songs into the arranger; remixing has never been simpler! The recognized beats can be used to quickly form a base for a comprehensive remix.

Track freezing

Entire tracks (including all track and object effects) can be frozen, meaning that tracks can be bounced and replaced by an object in the [VIP](#) to free up valuable computing power. If a track needs some extra work, "un-freezing" is a breeze.

Batch processing

Convert entire sample libraries, create pre-listening MP3s from enormous music collections, or clean up all your session recordings automatically in one go.

Task assistant

The task assistant uses short video clips to demonstrate the simple ease of use of the technically demanding effects and functions.

Catooh

In the massive Catooh you'll always find the right sounds & pictures for your projects. The clearly archived library makes it child's play to find what you're looking for. Simply preview it and download it if you like it!

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Also: Song-to-email, multi-channel input/output, [AudioID](#) /freeDB (query music information online)

Synthesizer

Samplitude Music Studio 15 comes with the following synthesizers that you can play directly on your PC keyboard or with a [MIDI](#) keyboard.

- **MAGIX Vita + Vital Instruments:** A sampler with incredibly realistic-sounding, "classical" instrumental sounds like different guitars (Power Chords, clean electric guitar, acoustic guitar, bass guitar), different pianos, percussion, strings, brass, woodwinds (each as an individual set & as an ensemble set), and much more.
- **Drum & Bass Machine:** For bass and drum tracks in "Drum 'n' Bass" sound
- **BeatBox 2:** For computer beats and computer sounds.
- **LiVid** (Little Virtual Drummer): For "real" acoustic drum tracks.
- **Robota:** For "mean" electronic sounds
- **Revolta 2:** An analog, varied, and powerful-sounding 12-voice synthesizer with sound matrix, noise generator, and a complete effects section with nine effect types. With this synthesizer, you can create any electronic music you can imagine. The sound presets were created by the sound designer for Access Virus and Rob Papen's Albino.
- **Atmos:** For natural sounds or atmospheres like rain, thunder, or wind.

Effects and effects plug-ins

Samplitude Music Studio 15 offers the following effects and effects plug-ins:

- **Equalizer:** Graphical and parametric
- **FFT filter:** Including Sound Cloner, e.g. for transferring sound characteristics of an optimal sound to other audio files.
- **Echo** (delay)
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- **AmpSim:** Simulates classic tube amps
- **Vintage Effects Suite**, consisting of **chorus**, **flanger**, **analog delay**, **distortion**, **filters**, and the low-fi effects **BitMachine** (optionally as a free download)
- **Mastering Suite**, featuring **equalizer**, **multiband compressor**, **multiband enhancer**, and **audio meter**
- **Compressor** with many presets such as **limiter**, **Deesser**, **noise gate**, **expander**, or **leveler** and in different models, e.g. as the **Multimax** multiband compressor
- **Tape simulation:** High-quality simulation of analog tape compression
- **Stereo FX:** For editing the stereo bandwidth

- **Cleaning FX:** Dehisser for reducing hissing and other artifacts
- **Declipping:** For eliminating digital clipping
- **Timestretching/resampling/pitchshifting:** For correcting pitch and length
- **Elastic [Audio](#) easy:** Dynamic pitch correction with harmonization (creates up to 4 choir voices)
- **am-track SE:** High-quality tape machine sound emulation makes typical aspects of the large, saturated sound characteristics of magnetic recordings a digital-quality reality.

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MIDI object recording can be started directly from the arranger by setting the recording mode in the track box to [MIDI](#)

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Tutorial

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In this chapter

[Create a virtual project \(VIP\)](#)

[Recording with the multitrack recorder \(MR-64\)](#)

[Arranging MAGIX Soundpool sound loops](#)

[Add synthesizers](#)

[Editing objects](#)

[MIDI recordings](#)

[Edit MIDI](#)

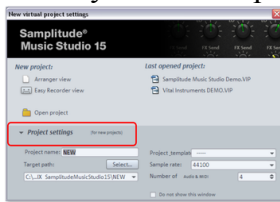
[Mixer](#)

[Effects](#)

[Burn CD](#)

Create a virtual project (VIP)

When you start Samplitude Music Studio 15, the following start dialog will open:



Choose whether you would like to create a new project or open an already existing project. If you would like to create a new project, click "Project settings" to make changes to the settings for the new project.

Name your new project and select the file path here to which you wish to save the [VIP](#)

. Apply the following settings now:

- Number of tracks: 4 tracks (you can add tracks anytime via the "Track" menu)
- Sample rate: 44,100 Hz (for recording in CD quality)

Next, click "Arranger view".

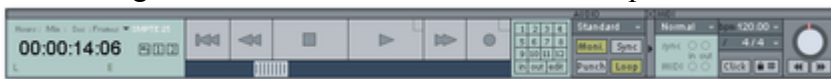
As a first test we will subsequently record two stereo tracks. Let us assume that you are using one audio source, e.g. a microphone or a musical instrument. Connect it to the input of your sound card with a suitable cable.



The first track in your virtual project (VIP) is already activated for recording. This is indicated by the red "R" in the track.

Recording the first track

- Right click the "Record" button on the transport console.

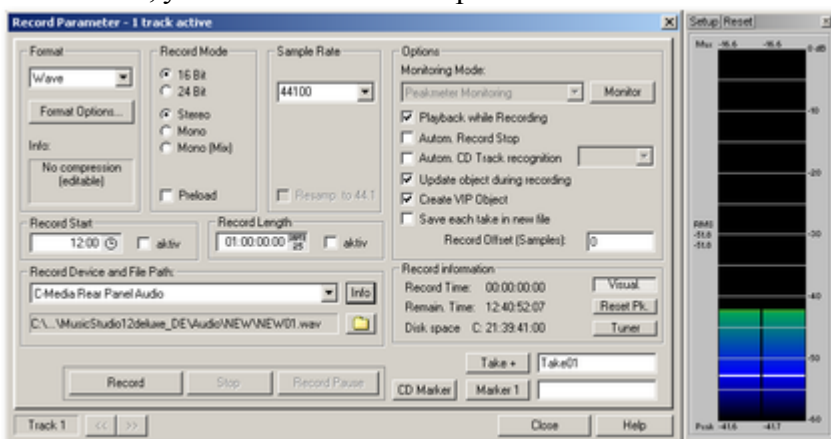


Enter all of the necessary settings for recording in the dialog which appears.

Hint

: If the transport console is hidden, show it by clicking the "Transport" button in the lower part of Samplitude Music Studio 15.

- By default, the "Monitor" button is always selected (if not, then click "Monitor" to activate it). This function lets you preview audio material and monitor it while recording. The level will display what enters the sound card inputs. If it reaches upper red range, the input level is too high. In this case, you should reduce the input volume.

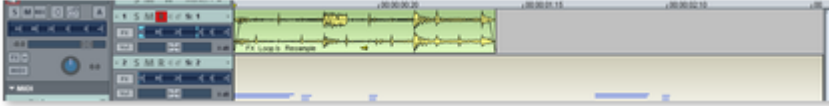


- Click on the "Record" button. Samplitude Music Studio 15 now starts recording and indicates this in the record window by displaying a counter with the passed record time.



- Now stop the recording at a suitable position by pressing the "Stop" button.

Samplitude Music Studio 15 then stops recording. You can now either use the recording or delete it. You can repeat the recording without saving the first attempt on your hard drive. If you want to use your recording, Samplitude Music Studio 15 will add the audio material to the first track as an object.



You can listen to the result anytime by clicking on the "Start" button in the transport control or by pressing the space bar.

Recording another track

Now we will record a second track. If your record is still open, please close it. Now perform the following steps:

1.

Activate the record button in the second track by clicking on the "R" button left of the second track. The track is now ready for recording.

2.

Right click on the record button in the transport console. You can now enter further record settings. As we now want to play the first track while the second is being recorded, you will have to activate "Play while recording".



3.

Click on the record button again.

4.

Now stop the recording at a suitable position by pressing the "Stop" button.

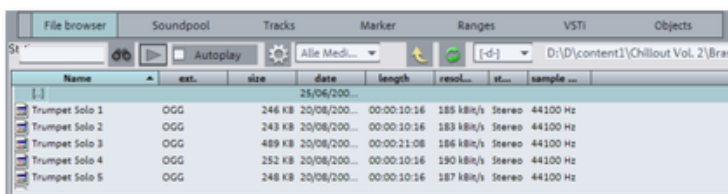
Hint:

"Playback while recording" requires that your sound card can play audio material while recording (full duplex mode). Some sound cards can either record or play, but can't do both at once. In such a case you should deactivate "Playback while recording".

Integrate audio material

Now add new, already available audio material. [Audio](#) material can be added to your virtual project from different sources and in different file formats. You can add audio CDs, [WAV](#) files, [MP3](#) files, sample CDs (such as the MAGIX Soundpool series), as well as other audio files. There are several possibilities for loading audio material:

- In the menu bar, click "File -> Load/Import -> Load audio file..." and select a file via the import dialog.
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- You can also drag audio files directly from Windows Explorer® into the Samplitude Music Studio 15 arrangement.
- Audio tracks first have to be copied onto the hard drive separately. To do this, click the top menu bar in Samplitude Music Studio 15 on "File -> Load/Import -> Load audio CD track(s)..."

VIP and wave projects

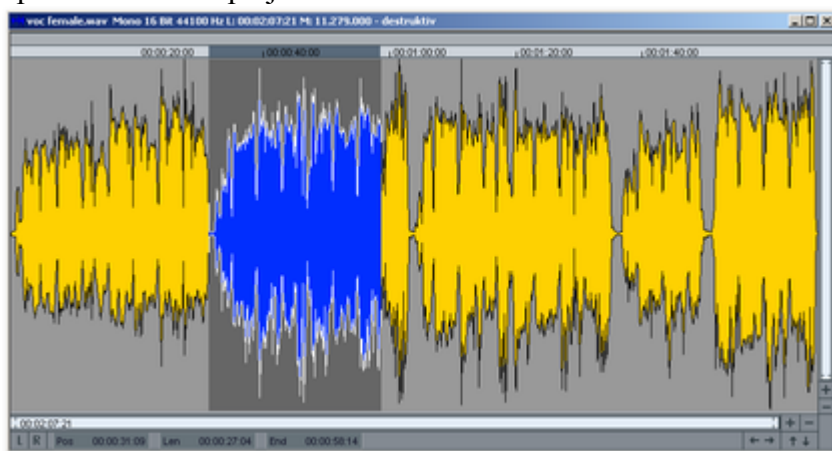
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Hint:

If you delete an object in a virtual project, the audio material and the corresponding wave project on your hard drive will be retained.

Switch to a wave project (your first recording, for instance), mark the corresponding object in the VIP by clicking on it, click into the top menu bar of Samplitude Music Studio 15 on "Object", and select the option "Edit wave project..."



If you have opened a wave project, then you will see the wave display of the audio material in enlarged view. The acoustic properties are directly visible in wave form, and where there's something to see, there's something to hear, and the higher the peak of the wave form, the higher the volume will be. Press the space bar on your keyboard to play back the wave project.

In wave projects you can directly edit your audio material. Direct editing of the material is particularly useful: Mark a range in the wave project with the mouse and then press "Del". After editing the audio material you can close the wave project. You now have to decide whether you want to accept the changes or discard them. If you want to accept the changes, then click on "Save project". The original audio file will now be overwritten.

Recording the first track

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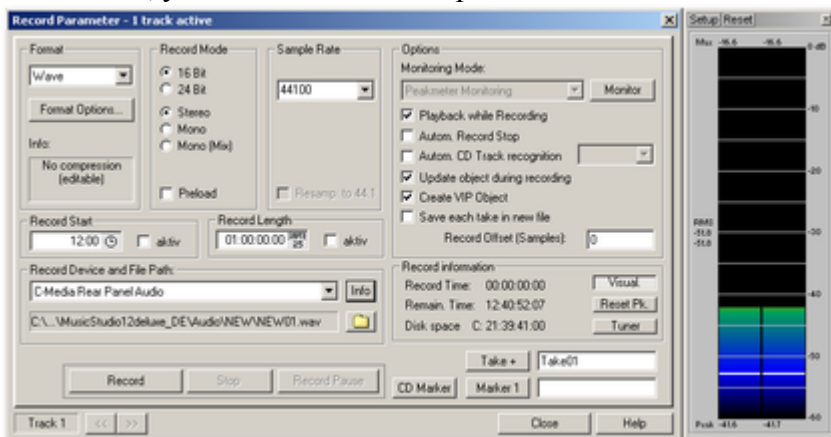


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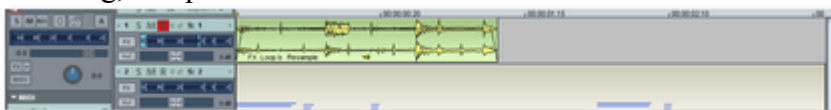


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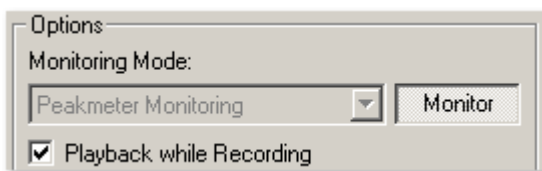
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3. Click on the record button again.

4. Now stop the recording at a suitable position by pressing the "Stop" button.

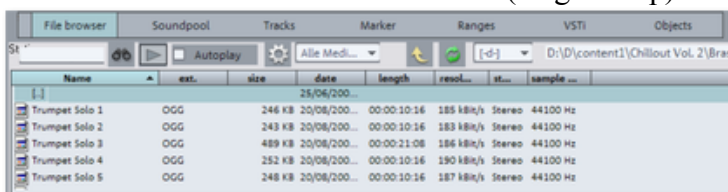
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VIP and wave projects

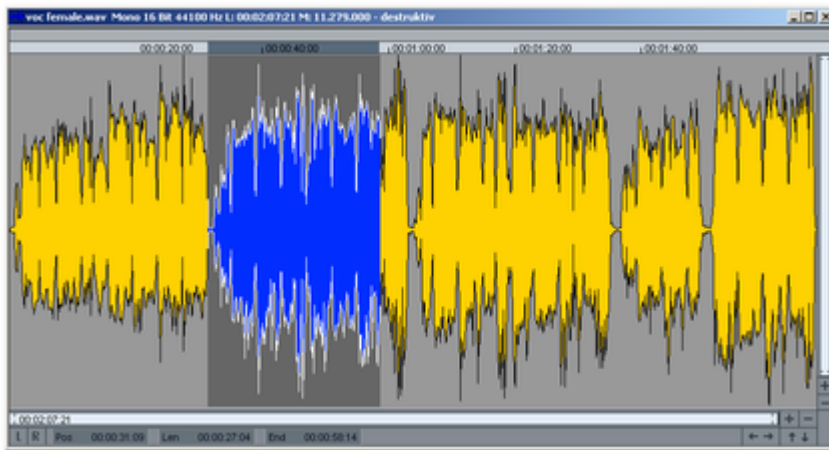
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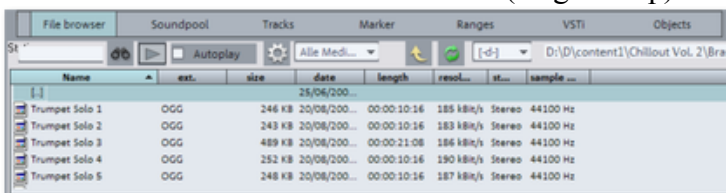
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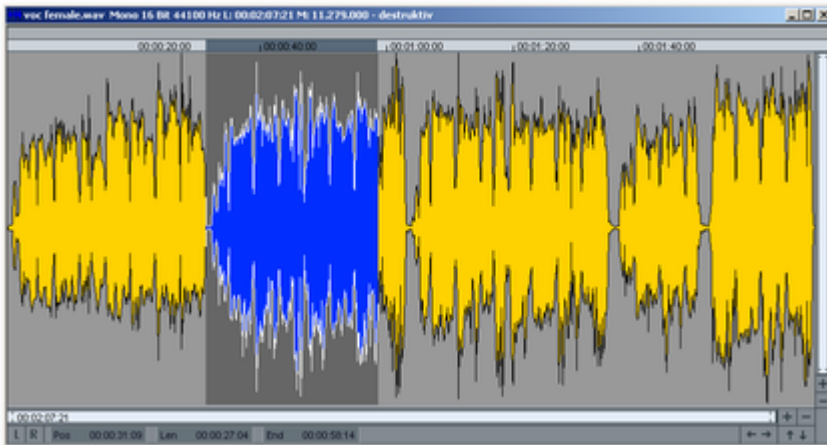
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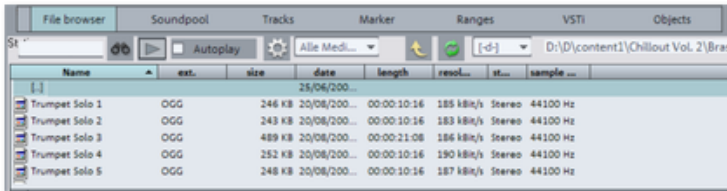
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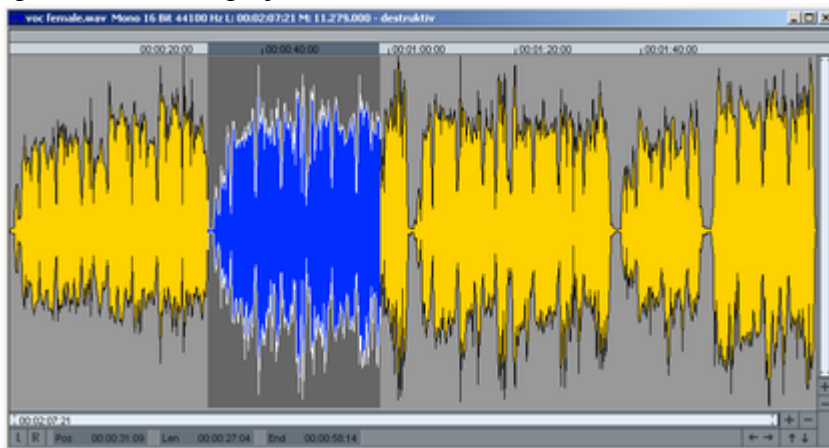
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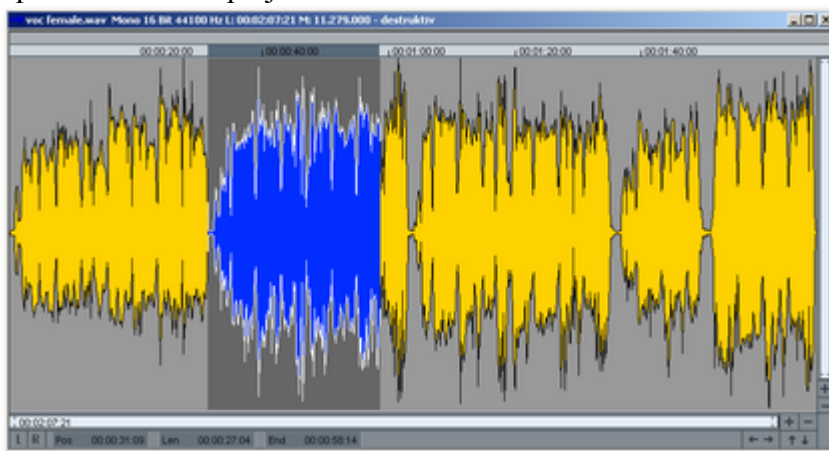
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Recording with the multitrack recorder (MR-64)

The MR-64 multitrack recorder is conceptualized for multitrack recording with a suitable hardware device. In case you prefer using such hardware devices for your recordings or are used to this, then you will have to get used to the software interface in Samplitude Music Studio 15.

Multiple tracks are recorded during a multitrack recording session. Of course, you will need multiple inputs on your sound card to do this. Multitrack recording is utilized for recording complex instruments like percussion or live band recordings. You can also record individual tracks with the MR-64 or make multitrack recordings directly in your [VIP](#). The MR-64 is an alternative, more specialized user interface for functions which are also available in the [VIP](#).

Starting the multitrack recorder

First, create a new, empty [VIP](#)

. Click on "File" and select the option "New virtual project (VIP)". You can select the MR-64 directly in the dialog.



Alternatively, you can access the multitrack recorder at any time in the VIP via the "MR-64" button.



Preparing to record

If your recording devices are correctly connected to the sound card, then you can get started recording.



The tracks which are to be recorded to can be switched on using the "Rec

" button in the MR-64. In case you are recording mono tracks, the recording mode can be adjusted accordingly.



Note

: Only so many tracks can be activated as are available to your sound card.

Multitrack recording

Tip

: A metronome is very useful when inputting an instrument. In this case, activate the "CLICK" button to hear the metronome.

After the desired tracks have been activated, click the "REC" button.

Samplitude Music Studio 15 now records the incoming signals to the tracks until the stop button is pressed.

You will then be asked if the recording should be preserved. Confirm by pressing "OK" if yes.



Rerecording certain ranges

Let's suppose a mistake was made while playing an instrument during recording, but the rest of the recording is okay and on the beat. You can use the so-called "Punch" recording feature to record only that specific section again.



Place the positioning marker shortly before the location where the error is present and then the "IN" button.



Next, place the positioning marker behind the section with the error and click "OUT".

The "PUNCH



" button activates "Punch" mode, a feature which ensures that only the range between "IN" and "OUT" is recorded again.

Now you can simply start the recording by clicking "REC".

Note

: If "Punch" mode is active, then you can click on "IN" and "OUT" during recording to record the respective range again. This is advantageous if multiple locations are to be recorded again and someone other than yourself will be singing or playing an instrument.

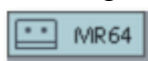
Editing recordings retroactively

Leave the MR-64 by pressing the arranger button. The arranger allows you to cut, arrange, add effects, and otherwise edit your recordings. The arranger also lets you burn audio CDs of your work. For more information, please see the section "[Editing objects](#)".

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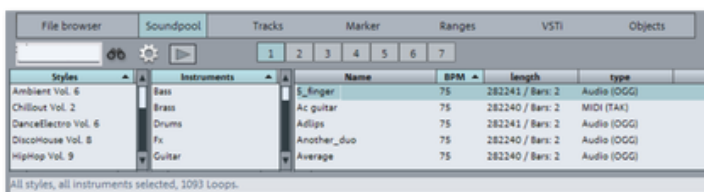
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Arranging MAGIX Soundpool sound loops

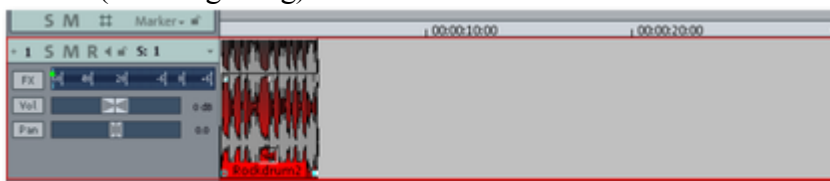
Up until now, you have only been working with your own material. Next, we would like to show you how to build your own songs using the included Soundpool loops.

MAGIX Soundpools offer professionally produced, short audio files - so-called "samples". They have been produced to be perfectly combined with each other and looped. "Looping" means creating an entire instrument track from a single audio sample. This entails replaying the sample sequentially to provide the impression of a repeating musical leitmotif. This process is used today in almost every area of modern pop music.

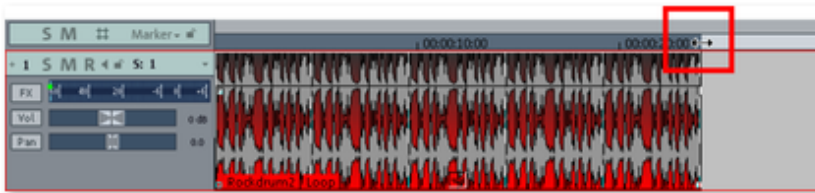
- It's best to create a new, empty arrangement first. Click "File" and select the option "New virtual project ([VIP](#))".
- Click the "Manager" button and select the tab "Soundpool" to display the Soundpool samples.



- The "styles" are displayed on the left side of the Soundpool manager. If you have inserted a MAGIX Soundpool DVD, for example, then you can select a style here to display only those samples which were created for a particular style. Samplitude Music Studio 15 shows "Rock" because this style is included.
- Next, select the instruments that you want to use. At the start, we recommend choosing a drum sample to create the initial percussive structure. Open up the "Drums" folder.
- To preview, click once on a file in the Soundpool manager file list. To load it, drag the desired file to the track. Once you let go of the mouse button, the file will appear as an audio object at that position.
- Each object can be moved in any way in the arranger with the mouse; horizontally on a track as well as vertically between tracks. Drag the drum loop to the first track and all the way to the left (at the beginning).



- Next, the sample will be looped, i.e. the short object will be played over and over. Click the audio object's handle at the lower right and drag it to the right as far as you imagine you will need for the first part of your song - probably 8 bars or so. The object will be properly placed on the first 8 bars of the first track.
- Make sure that the playback range is as long as the extended sample - 8 bars in our example. To do so, click above and to the right in the timeline and drag out the playback range to match the length of the looped object.

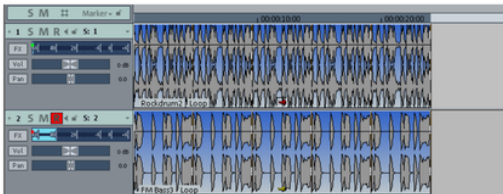


- Now press the play button (space bar is faster). The drum sample will loop for 8 bars. This means that the playback cursor starts right at the front, moves across the playback range, and then transfers to the start again once the end is reached without any interruptions. You can also move the playback marker independent of the playback range by clicking on the lower section of the timeline.

Note

: All additional loops can be previewed during playback and inserted. This lets you preview new potentially interesting samples for your arrangement to test if they work. If continuous playback gets on your nerves after a while, then you can always interrupt it by pressing the space bar again.

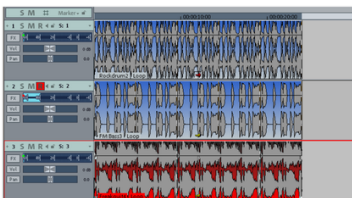
- Next, try loading a suitable bass line. Open up the bass folder, test some of the bass samples there, and then drag a bass loop you like onto the second arranger track



Note

: Melody producing instruments are arranged by pitch, i.e. every sample features multiple variations which provide different levels of pitch. By combining different variations of a pitch, you can produce chords.

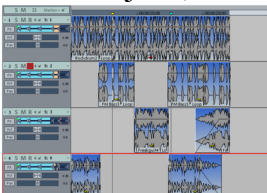
- Add new instruments to your drum and bass loops. This way, any number of files can be dragged from any folder into the arranger and positioned on top of one another, on multiple tracks, or behind one another.



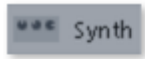
Tip

: This lets you create complete songs and also a professional framework for your recordings.

- Because not all instruments are normally looped for the entire arrangement, gaps should be built into the architecture of your song to provide musical variation. To do this, looped objects can be cut or loaded multiple times to create the required empty spaces. To learn more about editing objects, read the quickstart in "[Editing objects](#)".



Add synthesizers

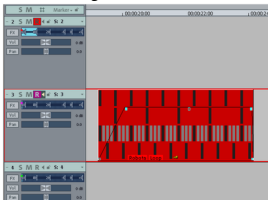


To open Samplitude Music Studio 15 software synthesizers folder, click the "Synthesizers" button.

After selecting a synthesizer, the corresponding control console will appear with the rhythms, melodies, chords, and sounds that the synth is programmed with.



Synthesizers become independent objects after they are programmed, and then they can be moved around just like other objects on the arranger.



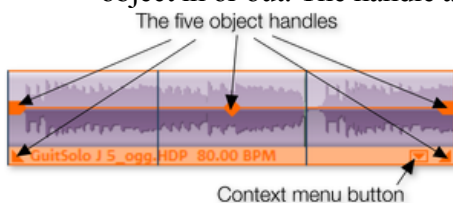
Exception: Vita (and all associated Vita instruments) and Revolta 2 remain coupled in the track where they are placed. They are controlled via [MIDI](#) objects.

Experiment with the various synthesizers in Samplitude Music Studio 15 to discover the possibilities.

Editing objects

Editing objects is the same for all object types. The following options are equally available for audio objects, synth objects, and [MIDI](#) objects

- Many object edits require the objects to be selected first. Individual objects are highlighted with a mouse-click. Multiple objects can be selected when the "Shift" key is held depressed. You can also click and drag out a rectangle to select multiple objects. All objects contained therein will be selected ("rubber band selection").
- All objects in the [VIP](#) can be shortened or looped by moving the mouse to one of the lower corners of the object until it turns into a stretch symbol. You can now reduce the size of the object. Any disturbing passages at the beginning or end of the recording can be removed simply by moving the ends inwards.
- If the option "Create looped object" is activated in the top menu bar under "Object", you can stretch the object with the right handle. Use this feature to create entire rhythm tracks from short drum samples by simply stretching the object apart.
- At the top corners of every object there are two fade handles that can be adjusted to fade an object in or out. The handle at the top center can be used to adjust the volume of the objects.



- Several objects can be combined with others to make up a group, to avoid the objects being unintentionally moved out of relation to each other. First mark the individual objects. Next, click in the toolbar on the "Group" symbol.
- All objects can be split into multiple objects. Select the option "Split objects" in the "Edit" menu (or press "T" on the keyboard). The selected object will be split at the position of the playback marker.
- Right clicking on the object also opens a context menu for you to select the object editor. Here you can make all important settings for the corresponding object. For instance, in the object editor, you can add effects to audio objects and change MIDI object quantization.



Tip

: The object editor can be opened permanently; it adjust's its settings depending on the object which is currently selected.

MIDI recordings

[MIDI](#) recordings are created for operating VST instruments or external synthesizers with the help of a MIDI keyboard. The instruments will not be recorded as audio data, but rather remote controlled via the MIDI data format. Every detail of this remote control - i.e. every button press, every note, every velocity level - can be corrected and edited retroactively via the MIDI editor. Please read more on this in the section "[Editing MIDI](#)".

What is MIDI?

[MIDI](#)

files do not contain the actual sounds like audio files, but only the note control information played by the synthesizer chip of the sound card. This has several advantages:

1. MIDI files need a lot less memory than wave files.
2. MIDI files can be adapted to any beat (BPM) without affecting the sound; only the playback tempo is changed.
3. Transposition of MIDI files to other pitches is also easy. When doing so, a section in a song does not have to be saved in several different keys. The version in C major is perfectly sufficient. It can then be transposed to any key by simply clicking the right mouse button.
4. In Samplitude Music Studio 15 you can use VST instruments which play the notes contained in the MIDI files.

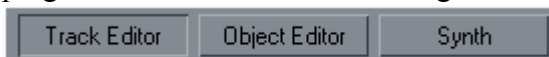
The disadvantage of MIDI files

: The actual sound is not yet set. Only during playback by the synthesizer chip of the sound card from external MIDI synthesizers/virtual instruments (VST instruments) will it be produced. High-quality sound cards or external synthesizers will sound completely different and better than standard sound cards.

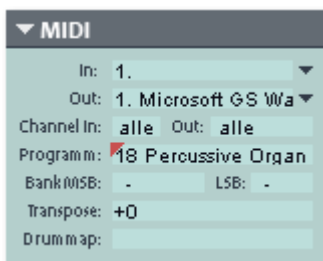
Preparing a MIDI recording

Prepare an empty track in your [VIP](#)

for recording. Click "R". Then click "Track editor" in the lower half of Samplitude Music Studio 15's program screen to make track settings.



Use the small triangle to open up the [MIDI](#) section.



Here you can now define the in- and outputs for your MIDI data on the selected track.

- **Input (In):** This could be a MIDI keyboard which you use to enter MIDI notes which are recorded by Samplitude Music Studio 15.
- **Output (Out):** This could be a virtual instrument (VST instrument) that plays back the MIDI notes entered via the MIDI keyboard as sounds. To select a VST instrument, click the small triangle next to "Out" in the track editor and select "New instrument".

Hint

: All global MIDI settings can be found in the "System" dialog ("Y" key), submenu "MIDI".

"In" and "Out" in the track editor allow you to assign a special "Receive" and "Send" channel for MIDI data. This is important if you want to control an external synthesizer via a MIDI keyboard, for example. For instance, if your MIDI keyboard is transmitting on MIDI channel 1, you should enter the value "1" in the "In" menu. During recording, Samplitude Music Studio 15 will receive all notes transmitted on channel 1 by a MIDI keyboard.

You can generally assign a specific MIDI channel to external MIDI synthesizers. For instance, if your external synthesizer is addressed via MIDI channel 4, you should also enter the value 4 under "Channel Out" in the track editor in order to be able to address the external synthesizer via this track.

MIDI record modes

There are several methods of recording [MIDI](#), and you can set the MIDI record mode in the transport control.



- Normal: This recording mode corresponds to that of audio recording, i.e. a new MIDI object is created over the existing object for each recording process. The old object remains intact. This way you can record multiple takes of a passage and then compare them in the Take Manager later on.
- Overdub: The data is recorded into an already existing object, and available and newly recorded MIDI data is mixed together.
- Multi-overdub: The data is recorded into an already existing object, available, and newly recorded MIDI data are mixed together. However, existing objects remain the same.
- Replace: The data is recorded to an existing object and any MIDI data is overwritten.

After you have selected MIDI record mode, you can prepare the corresponding track by clicking on the "R" button for recording. Now start recording by clicking on the "Record" button in the transport control.

Edit MIDI

MIDI editor

You can use the [MIDI](#) editor for editing MIDI data. To access the MIDI editor, right click on the object, open the context menu, and select the "MIDI editor." The MIDI editor displays the data of the MIDI object. MIDI data can be edited in the MIDI editor in five main areas:

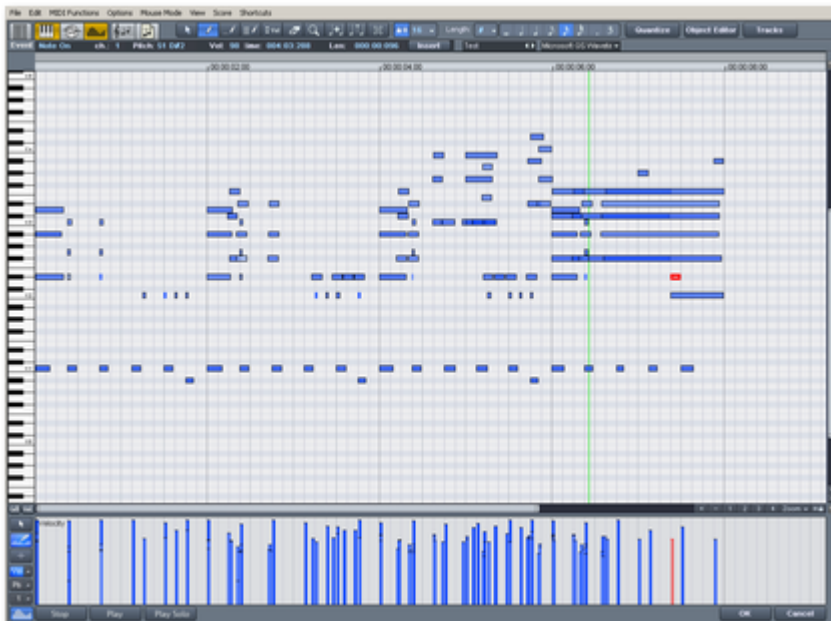
- Matrix editor (piano roll)
- Drum editor (toggling between the drum editor and piano roll is possible)
- Controller editor (velocity, MIDI volume...)
- List editor (event list)
- Score editor

Here various tools like the pencil or eraser are available.

Fundamentally, changing, moving, or deleting notes always refers to all selected MIDI events (red) with just a few exceptions, e.g. you can select a group of notes in the piano roll and then change the velocity of these note groups to modify all selected notes simultaneously.

Working with the matrix editor

The matrix editor is particularly useful for conveniently arranging [MIDI](#) notes (piano roll).



In the matrix editor, you can edit MIDI notes for controlling sound generators like synthesizers, drum machines, and virtual instruments (VST instruments). If a MIDI instrument is activated, you can play it via the keyboard at the left of the screen. Clicking on a key makes the synthesizer create the corresponding sound.



Now select the pencil tool and paint the notes into the score sheet. MIDI notes can also be sustained by holding the left mouse button or double clicking.



The "Eraser" tool deletes notes from the note field.



The "Step recording" button enables step-by-step audio recording.

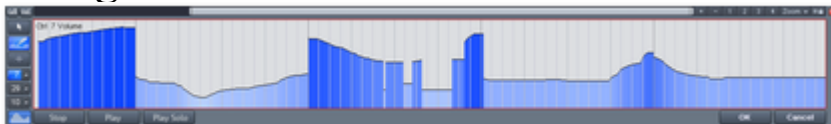
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: The tool for drawing the pattern is particularly interesting. Use the selection tool to select specific notes and press the key combination "Ctrl + P". The selected notes are played as a sound pattern. Switch to the pattern drawing tool. You can now easily sketch the sound pattern with only one click.

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: Pressing the "left" and "right" arrow keys on your keyboard moves forwards/backwards in the notation, respectively. The cursor up/down keys adjust the note pitch in stages.

Using the controller editor



In the controller editor you can adjust [MIDI](#) parameters such as velocity. A simple click in the left part of the MIDI editor opens the controller editor. Clicking on the small button above opens a context menu. Here you can select a MIDI parameter and then sketch it with the pen tool in the controller editor.

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With the new [MIDI](#)

editor you can now edit several MIDI objects together in the MIDI editor. Please select the MIDI objects in the arrangement in sequence by holding "Ctrl" and then clicking on the MIDI editor button to open it. In an already opened MIDI editor you can include additional MIDI objects by clicking on them while holding down "Shift".



You can access individual MIDI objects via the drop-down menu next to the name.

Hint:

Right clicking on this position opens the object editor so that you can quickly toggle between the object and MIDI editor.

From MIDI to audio

If you are not controlling an external [MIDI](#) synthesizer with your arrangement, you can convert its sounds into audio tracks with the Samplitude Music Studio 15 record function. This is particularly recommended if you want to enrich sounds created with your external synthesizer with audio effects, convert your project into [MP3](#), or burn it onto disc.

1. The audio output (Line OUT) of your external synthesizer should be connected to the audio input (Line IN) of your sound card.
2. Set an audio track to "active" by pressing "R".
3. Start audio recording as usual. The MIDI data will be played and recorded simultaneously via the record function. The result is an audio file that can be edited and exported together with the multimedia files. The result is an audio file that can be edited and exported together with the multimedia files.

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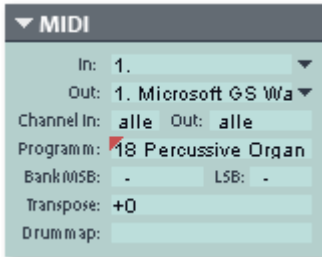
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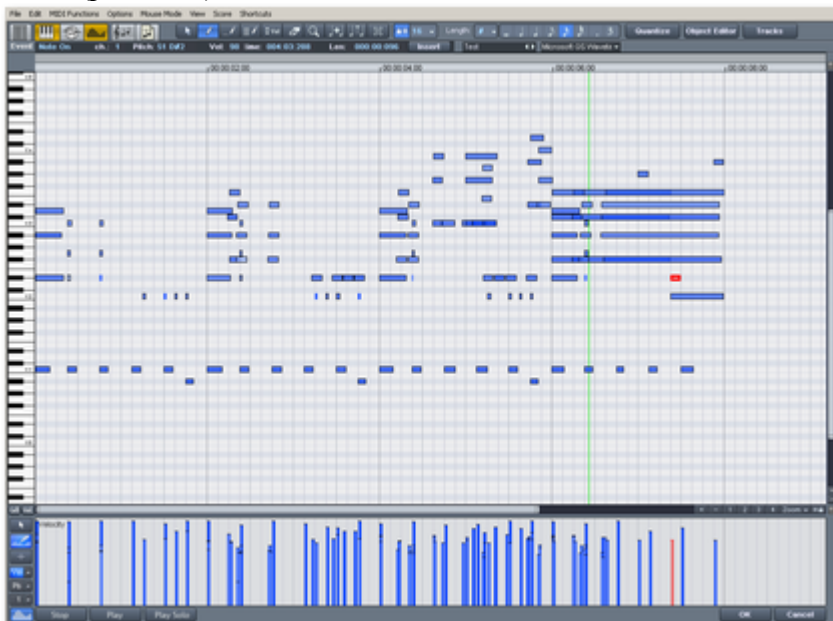
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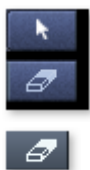
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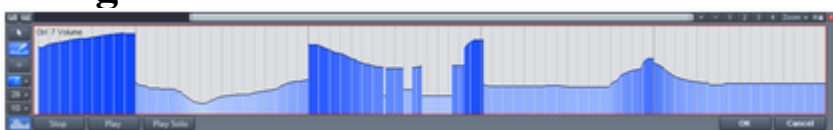
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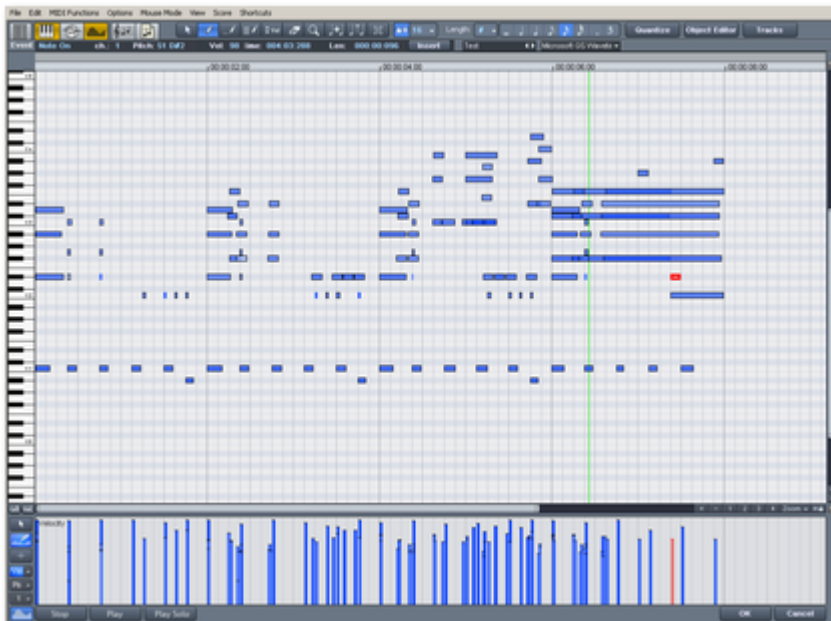
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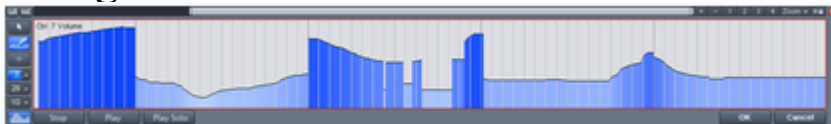
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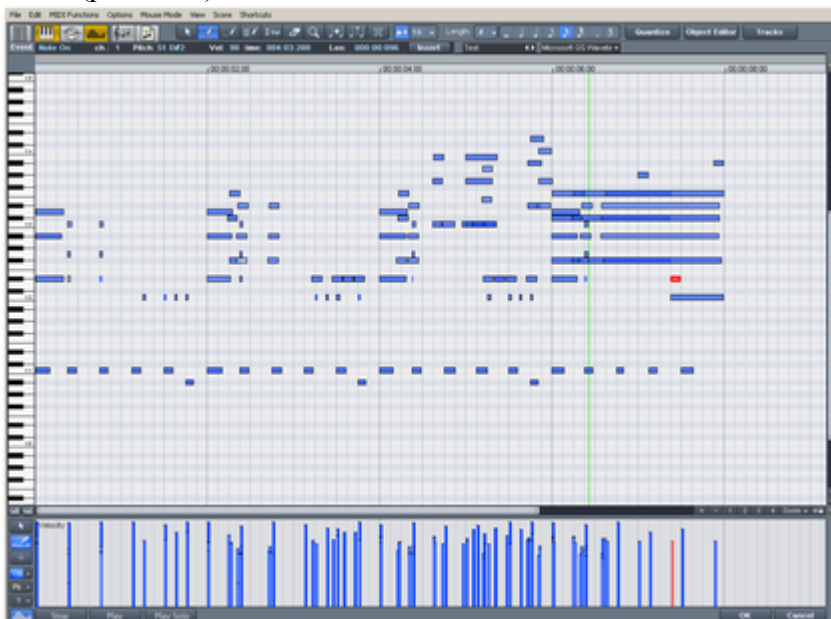
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- List editor (event list)
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Here various tools like the pencil or eraser are available.

Fundamentally, changing, moving, or deleting notes always refers to all selected MIDI events (red) with just a few exceptions, e.g. you can select a group of notes in the piano roll and then change the velocity of these note groups to modify all selected notes simultaneously.

Working with the matrix editor

The matrix editor is particularly useful for conveniently arranging [MIDI](#) notes (piano roll).



In the matrix editor, you can edit MIDI notes for controlling sound generators like synthesizers, drum machines, and virtual instruments (VST instruments). If a MIDI instrument is activated, you can play it via the keyboard at the left of the screen. Clicking on a key makes the synthesizer create the corresponding sound.



Now select the pencil tool and paint the notes into the score sheet. MIDI notes can also be sustained by holding the left mouse button or double clicking.

The "Eraser" tool deletes notes from the note field.



The "Step recording" button enables step-by-step audio recording.

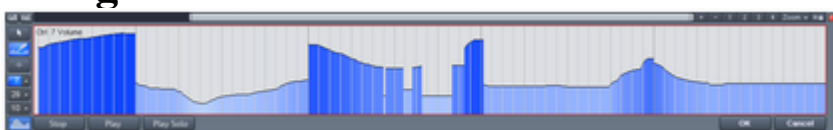
Tip

: The tool for drawing the pattern is particularly interesting. Use the selection tool to select specific notes and press the key combination "Ctrl + P". The selected notes are played as a sound pattern. Switch to the pattern drawing tool. You can now easily sketch the sound pattern with only one click.

Tip

: Pressing the "left" and "right" arrow keys on your keyboard moves forwards/backwards in the notation, respectively. The cursor up/down keys adjust the note pitch in stages.

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In the controller editor you can adjust [MIDI](#) parameters such as velocity. A simple click in the left part of the MIDI editor opens the controller editor. Clicking on the small button above opens a context menu. Here you can select a MIDI parameter and then sketch it with the pen tool in the controller editor.

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From MIDI to audio

If you are not controlling an external [MIDI](#) synthesizer with your arrangement, you can convert its sounds into audio tracks with the Samplitude Music Studio 15 record function. This is particularly recommended if you want to enrich sounds created with your external synthesizer with audio effects, convert your project into [MP3](#), or burn it onto disc.

1. The audio output (Line OUT) of your external synthesizer should be connected to the audio input (Line IN) of your sound card.
2. Set an audio track to "active" by pressing "R".
3. Start audio recording as usual. The MIDI data will be played and recorded simultaneously via the record function. The result is an audio file that can be edited and exported together with the multimedia files. The result is an audio file that can be edited and exported together with the

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Hint: If you prefer VST instruments as synthesizers, it makes more sense to use the function [Track freeze](#) from the context menu.

MIDI editor

You can use the [MIDI](#)

editor for editing MIDI data. To access the MIDI editor, right click on the object, open the context menu, and select the "MIDI editor." The MIDI editor displays the data of the MIDI object.

MIDI data can be edited in the MIDI editor in five main areas:

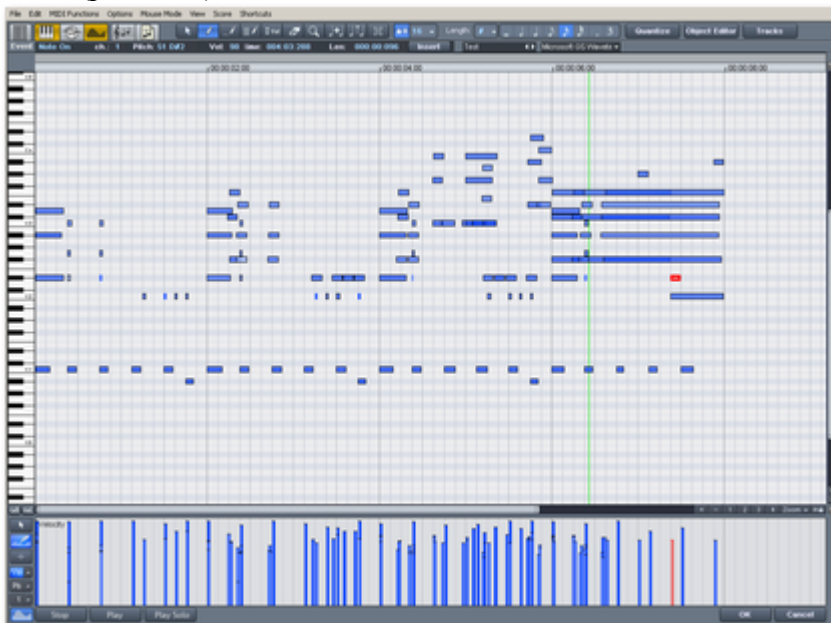
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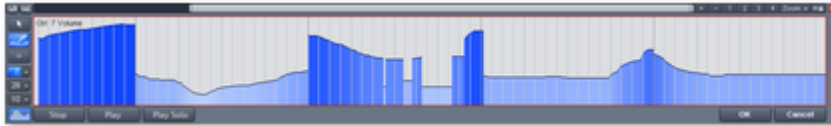
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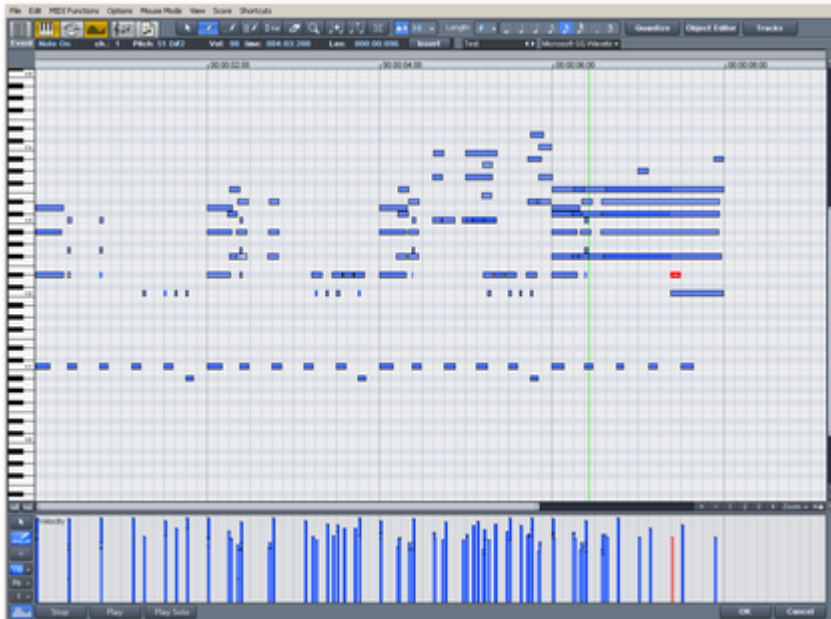
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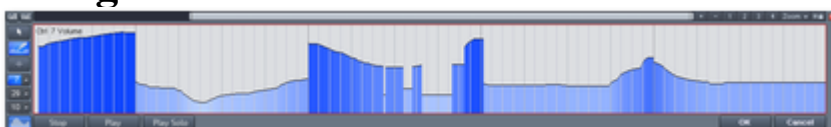
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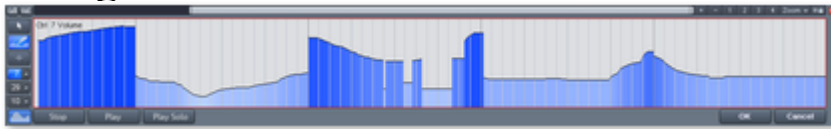
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Mixer

Using the mixer (keyboard shortcut "M") you can adjust the volume and panorama of the recorded tracks as well as automate the fader and panorama movements. Furthermore, you can add effects and much more here. Adjust the volume of the tracks with the slider in the lower part of the mixer until you have a balanced result and every instrument in the song is sufficiently accounted for. You can also experiment with the effects on the individual tracks.



Effects

You can considerably enhance your music productions with effects. Clever use of effects adds bass and simply sounds better. Experiment around with the various effects in Samplitude Music Studio 15 and learn how to use them.



Offline effects and real-time effects

In the top menu line of Samplitude Music Studio 15 you can directly access real-time effects and offline effects. Offline effects alter the audio files in the wave project resulting in imminent changes to the initial audio file.

Unlike offline (destructive) effects, virtual effects are not added in real time to the wave projects to which the objects refer. Such effects are recalculated every time they are played and can be modified and varied without altering your original audio material.

Hint:

To add an effect to an audio object you first have to select it with a mouse click.

Calculating audio effects

You can add audio effects in three different levels: audio objects, tracks, and in the master. When played, effects are first calculated in the audio objects. Track effects are then added. The master effects are added last.

First start with the object effects to distort individual objects while other objects in the same track remain the same. For instance, if you have saved a groove consisting of several audio objects on one track, you can edit the last object of the groove with a distorter.

Use track effects like reverb, etc. on any objects located on a single track. Finish off your song with powerful master effects that have an effect on the entire song.

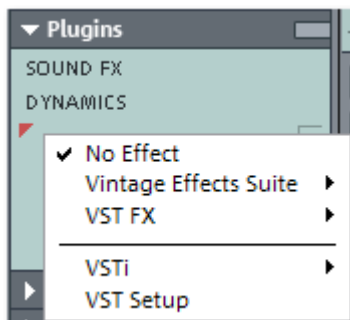
Effects in audio objects

: Right click on an object to open the context menu and add an object effect. You can access the object effects directly via the context menu. Object effects can be selected and subsequently edited via the object editor.



Effects in tracks

: To adjust track effects in the mixer, open the mixer by clicking on "Mixer" in the lower part of Samplitude Music Studio 15. In the "Ins" section, click on the arrow symbol of an effect slot in the corresponding channel.



Effects in the master

: Open the mixer to add master effects. You will find the master section at the right edge of the mixer. Here you can install the desired master effects.

Hint

: Track effects and master effects are always real-time effects.

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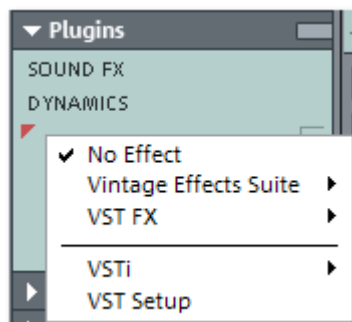
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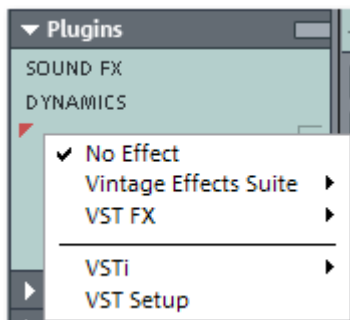
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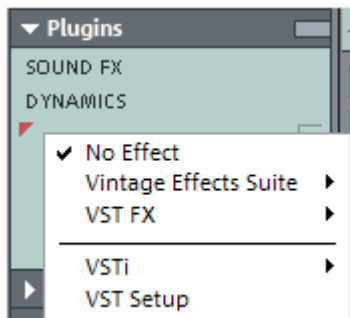
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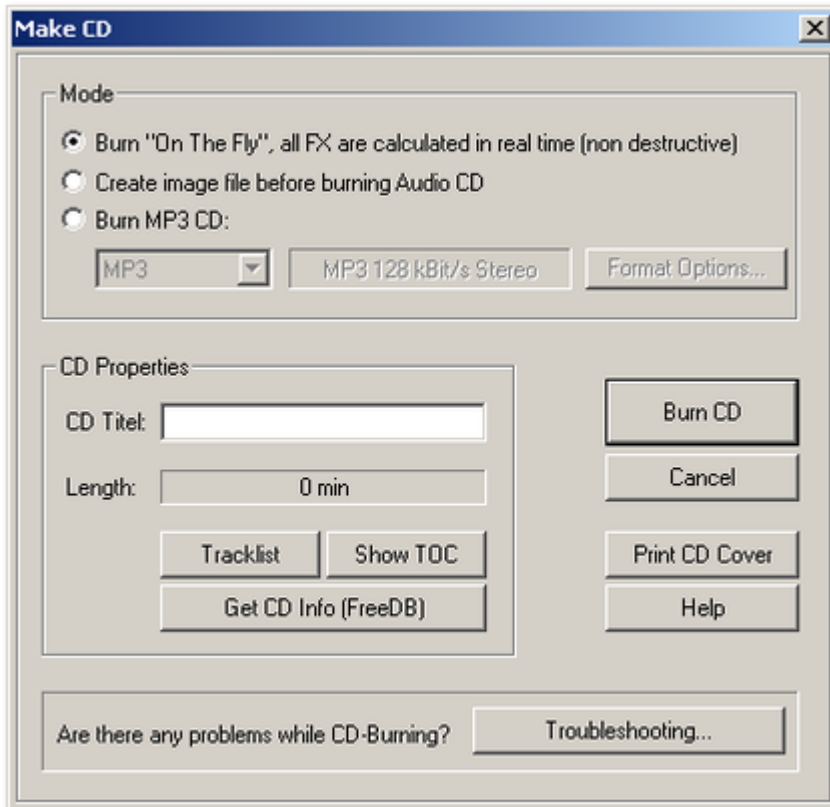
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Burn CD

Once your [VIP](#) is finished, you can burn it onto disc. Click on the button with the CD symbol. The CD burning dialog now opens.



Now click on the "Burn CD" button...

Program desktop overview

In this chapter

[VIP window](#)

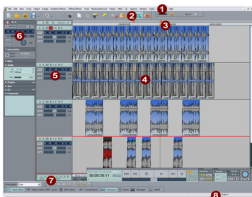
[Transport control](#)

[Track editor](#)

[Track box](#)

[Workspaces](#)

VIP window



- 1 [Menu bar](#)
: You'll find menus in the main window of Samplitude Music Studio 15 directly under the title bar. A keyboard shortcut can be allocated to every menu entry.
- 2 [Toolbar](#)
: Toolbars are made up of buttons which carry out specific commands with a mouse click. They can be found above and below the project window. More information on the individual button bars can be found in the button overview. More information on the individual toolbars can be found in the keyboard shortcut overview.
- 3 **Grid/Marker bar**: The grid/marker bar is positioned above the first track in the [VIP](#). In the upper half, you'll find the marker bar where the markers and playback cursors. The lower half displays the grid list which displays the project time depending on the selected unit of measurement. You can also open various ranges.
- 4 **Project window/clip**
: A "clip" refers to part of the project visible in the project window. Which section of the project it is depends on the position of the section and the zoom.
There are many commands for moving (scrolling) the visible clip and customizing its size (zooming). These can be opened via the menu view, the grid/marker bar, and the shortcut keys.
- 5 **Track box**: The track box is the front range of a VIP track. It contains various controls which range from mixer functions and monitoring commands to other track parameters. More information on the individual controls of the track box can be found in the [Track box overview](#).
- 6 **Track editor**: The left border of the arrangement window enables access to all important parameters of the selected track. Record and monitoring status, volume, panorama, [MIDI](#) /audio in- and outputs, plug-ins, AUX sends and EQ settings are displayed in well-arranged sections and can also be edited directly in this view.
- 7 **Setup/Zoom/Position buttons**
: This part of the work area helps manage each of the four different setup and zoom settings project clip displayed in the VIP window. Similarly, the "Pos", "Len", "End", "Mouse", and "Mixer" fields can be configured by right clicking them.

8 Status display

: The status display appears at the bottom border of the VIP window. For longer actions or calculations a bar is displayed whose width shows the current state of operation.

Furthermore, [CPU](#)

load information on the processor load, latency, buffer, etc. is updated and displayed constantly. The status display can also be opened via the "Window -> Status display" menu.

Transport control

Keyboard shortcut: Ctrl + Shift + T



The transport control window contains the most important commands for playback, recording, and positioning.

Note

: The transport control can be integrated as a toolbar. To do so, just drag it over to the desired position like the other toolbars.

Play, stop, fast forward/rewind buttons

: These control playback position just like a cassette player.

Right clicking the "Play" button

: This opens the "Stereo master" mode's playback parameters window. Specify the sample rate, playback device, scrubbing/varipitch options, etc.

Right click the "Record" button

: Opens the recording parameters window. Adjust recording settings like "Play while recording"; you can also start a mono or stereo recording straight from this window.

Record button

: Starts the recording for all activated tracks, i.e. tracks with a red "R" button in the track info to the left. The recording devices have to be set up beforehand by right clicking the "R" button.

Time display

: Displays the current playback position. The unit of measurement can be selected by clicking the small triangle.

Range buttons

: You can save ranges with buttons "1" and "2". Use the arrow symbol to open previously used ranges.

L/E time display

: Displays the length and end position of an area and can be edited by double clicking.

"Edit"

: Opens the marker manager for extensive marker editing. More information can be found in the chapter "The Managers".

Marker buttons 1-12

: Clicking will save the current playback position to one of the 12 marker buttons. If one position has been saved, the marker will appear bright. Another click on the same marker moves the play position to the corresponding marker. Right clicking deletes the saved marker again, making it available again to be assigned.

Audio dropdown menu

: Set up the desired recording mode.

Standard mode (playback during record)

: This is the typical recording mode for multitrack productions. This adds further tracks to already available audio material while playing.

Punch marker mode

: This setting starts a recording process which can be started and stopped at any time during playback by clicking.

"Moni"

: This button activates Samplitude Music Studio 15's record monitoring feature, i.e. all tracks with an active "R" button display the adjacent input signals in the peak meters. Right clicking the "Moni" button lets you select from the various monitoring modes.

Note

: Detailed information about monitoring can be found in Samplitude Music Studio 15's help chapter "System settings -> Global audio options -> Monitoring settings".

"Sync": This button opens the synchronization settings dialog. Further information can be found in the help chapter "[MIDI](#)" in Samplitude Music Studio 15 -> Synchronization".

"Punch" button

: This button switches Samplitude Music Studio 15 to "Punch" mode. This means that a recording can be started "on-the-fly" using the record button during playback at any time, also multiple times back-to-back. "Punch In" and "Out" markers are placed automatically. A punch recording is ended by pressing the "Record" button; playback is not affected.

"In" button

: This button sets the starting point for a punch recording.

"Out" button

: This button sets the end point for a punch recording. If "Punch In" and "Punch Out" markers are set, the punch recording can be started using the "Record" button. While the recording button is flashing, playback occurs until the "Punch In" marker has been reached. Once reached, the recording button turns red. Recording is active until the "Punch Out" marker is reached, and then Samplitude Music Studio 15 changes back to playback mode.

"Loop" button

: Use this to switch to "Loop" mode, and a specific range will be played back repeatedly.

MIDI record modes: The following MIDI record modes are available: normal, overdub, multi-overdub, and replace. The different modes determine how the newly recorded MIDI files will be added to the [VIP](#).

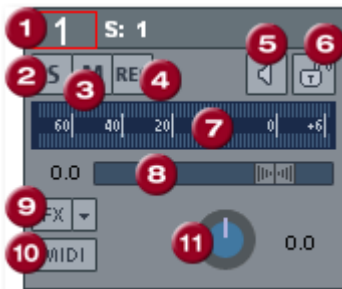
Tempo section

: You can adjust playback speed and tempo of the entire arrangement in the tempo section of the transport control. All objects in the VIP are adapted to the speed of your choice via the timestretching feature. You can also switch on the metronome by pressing "Click". Right clicking the "Click" button opens the metronome's settings dialog.

Scrub control

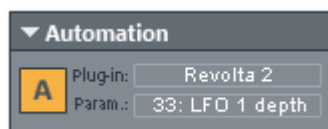
: With the "Scrub control wheel" adjusts the playback speed. This can be used to locate audio passages. The buttons beneath it can be used to start playback forwards and backwards at a slower speed. This can also be used to improve control over audio passages, for example to edit out crackles or other errors later on.

Track editor



- 1 Track number display and track name:**
Right clicking on the track name opens the "Track settings" dialog.
- 2 "S" button**
: Switches off all tracks with the exception of the one selected.
- 3 "M" button**
: Mutes the track.
- 4 "Rec" button**
: Activates the track for the recording.
- 5 The loudspeaker symbol**
: Switches on playback of the incoming signals when the "Rec" button is active, if "Manual monitoring" is selected in the system options.
- 6 Lock**
: Enables you to protect objects in the track and prevents unintended moving or deleting of an object.
- 7 Peak meter**
: Both LED displays show the input and output signal for the track.
- 8 Volume input field and volume control**
- 9 "FX"**
: Access the activated track's effects. You can copy, insert, reset, save, or load them. Save your personal track effect settings in the program directory in "FX presets -> Track FX". Of course, you can also create new subfolders.
- 10 "MIDI" button**
: Switches the track to MIDI recording and opens the MIDI section of the track editor.
- 11 Panorama button**
: Controls the position within the mix.

Automation



A:

Right clicking opens the context menu.

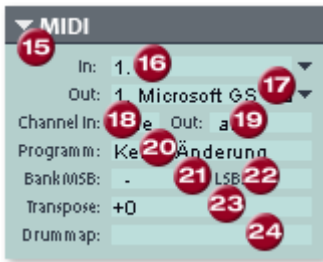
Plug-in:

Select the plug-in you would like to automate here.

Param:

Select the parameter you would like to automate here.

MIDI



- 1 **Arrow:**
Opens and closes the dialog box.
- 2 **In device:** Opens the [MIDI](#) Input device menu.
- 3 **Out device:**
Opens the MIDI Output device menu.
- 4 **Channel in:**
Set the MIDI Input channel here.
- 5 **Channel out:**
Set the MIDI Output channel here.
- 6 **Program:**
This button is used in MIDI mode for program selection of the MIDI instrument.
- 7 **Bank MSB:**
Set the device-specific control change messages for controlling your external instrument here.
- 8 **LSB:**
Sets the device-specific control change messages for fine-tuning your external instrument here.
- 9 **Transpose:**
You can transpose the notes of the respective MIDI input or output up or down here.
- 10 **Drum map:**
Here you can select a drum map for allocating MIDI notes to the device-specific sound.

Other areas



25 "In" slot

: Specifies the audio input device, i.e. a sound card.

26 The "Out" slot : Specifies the audio output device. This can, for example, be a sound card output or (in "[MIDI](#)" mode) a VST instrument.

27 Plug-ins

: Activates the sound effects rack containing various track effects, plus a compressor. In the first slot, you can also select a MAGIX synth to be controlled via the track. Clicking on the button to the right of the field beside "Plug-ins" activates and opens the "DirectX/VST plug-ins" dialog to put together a plug-in setup for this track.

28 Aux

: Specifies the AUX send feed to select the desired effects in the AUX return channel ("Mixer" view).

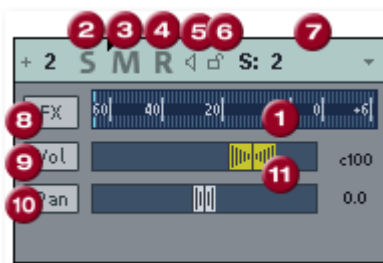
29 EQ

: Contains the track's parametric EQ. Right clicking opens a convenient input window.

30 Comments

: Track info section for quickly adding notes on tracks.

Track box



1 Peak meter:

Both LED displays show the input and output signal for the track.

2 S button:

Mutes all tracks except the selected one.

3 M button

: Mutes the track.

- 4 **R button:**
Arms the track for recording.
- 5 **Loudspeaker symbol:**
Switches on playback of the incoming signals when the "R" button is active if "manual monitoring" is set up in the system options.
- 6 **Lock:**
Lets you protect objects in the track and prevents unintended movement or deletion of an object.
- 7 **Track name:**
Right clicking on the track names opens the track settings dialog.
- 8 **FX:**
Opens the effects/routing dialog with which you can configure and edit multiple effect groups. Right clicking opens the context menu which contains all the available track effects for the object.
- 9 **Vol:**
This button switches on the volume automation curve. Level adjustments in the track can be controlled via an automation curve and drawn by moving the channel fader.
- 10 **Pan:**
With this button you can switch on the panorama automation.
- 11 **Volume and panorama controls**

Workspaces

The purpose of a workspace is to sort menu entries and toolbars in such a manner that you have a good overview of Samplitude Music Studio 15's functions. Workspaces bundle commands with regard to certain tasks such as mastering, editing, or recording.

Besides hiding menu entries (Options -> Program preferences -> Edit keyboard shortcuts and menus -> Hide menu) and redesigning toolbars (right click on the toolbar), you can also save your settings as a preset.

You will see the selection box for the workspace at the bottom left corner of the [VIP](#) window. Some workspaces are already defined. "Power user" displays all toolbars and commands, and is a good starting point for defining customized workspaces.

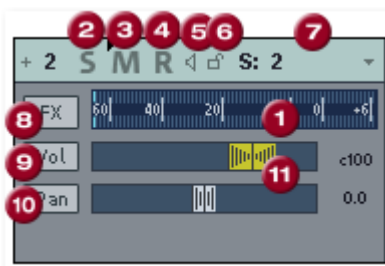
Creating a new workspace:

To create a new workspace, open the context menu by right clicking on the workspace bar and selecting "New workspace". You will now be asked to enter a name for your workspace. The new workspace contains all settings of the previously activated workspace as well as your current changes. All further adjustments are automatically saved in the workspace. Manually saving is not required.

Adjusting the workspace:

Open the context menu and click on "Edit workspace". Here you can select which toolbar you want to be displayed in your new workspace. You can activate or deactivate each bar individually, or add/remove individual symbols. You can also hide menu items in "Edit menu". Simply select the corresponding menu item from the keyboard shortcuts, and then press the "Show menu item" or "Hide menu item" button.

Track box



- 1 Peak meter:**
Both LED displays show the input and output signal for the track.
- 2 S button:**
Mutes all tracks except the selected one.
- 3 M button**
: Mutes the track.
- 4 R button:**
Arms the track for recording.
- 5 Loudspeaker symbol:**
Switches on playback of the incoming signals when the "R" button is active if "manual monitoring" is set up in the system options.
- 6 Lock:**
Lets you protect objects in the track and prevents unintended movement or deletion of an object.
- 7 Track name:**
Right clicking on the track names opens the track settings dialog.
- 8 FX:**
Opens the effects/routing dialog with which you can configure and edit multiple effect groups. Right clicking opens the context menu which contains all the available track effects for the object.
- 9 Vol:**
This button switches on the volume automation curve. Level adjustments in the track can be controlled via an automation curve and drawn by moving the channel fader.
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With this button you can switch on the panorama automation.
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Functional overview

In this chapter

[Working with objects in the VIP](#)

[Ranges](#)

[Working in wave projects](#)

[Using markers](#)

[Volume](#)

[Output mode](#)

[Record](#)

[Tips & tricks](#)

Working with objects in the VIP

Loading an audio file into a VIP object

Method 1: Loading a file into a [VIP](#)

Mark a range in the VIP and load the wave file with "File -> Open project -> [Audio](#) file". The file is inserted at the beginning of the selected range as an object. The range also denotes the track into which the wave file is inserted.

Method 2: [Drag & drop](#) from Windows Explorer

Open Windows Explorer and arrange the Explorer and Samplitude Music Studio 15 windows so that both are at hand. Access the audio file in Explorer that you would like to use, and then simply drag it over into Samplitude Music Studio 15 while holding down the mouse button.

Load ranges from wave projects into the VIP

- Open a wave project.
- Mark the range which is to be incorporated into a virtual project.
- Create a new virtual project with "File -> New multitrack project" ("E") or with the corresponding button in the toolbar.
- Tile the open windows by pressing enter.
- Drag the selected range in the wave project into the virtual project by clicking the left mouse button into the range and then dragging it into a [VIP](#) track.
- A new object is created in the VIP at the position the mouse button was released.

Accessing audio material in an object

- Select any object.
- In the object menu, select "[Destructive editing](#)". The same menu option is available from the context sensitive menu by right clicking on the object.
- This opens the corresponding wave project window. The marked range represents the audio material that is used in the [VIP](#) object.

Selecting an object with the Mouse

Clicking the left mouse button selects the desired object.

Prerequisite for this is the selection of the correct mouse mode: Object mode, object & curve mode, and universal tool mode all offer this functionality. In the universal tool mode, the object is selected by clicking on the lower half of the object.

The five handles on the outline of the objects identify any selection of objects. While the mouse button is held down the outline of the object is displayed.

Clicking the mouse button outside of the object deselects the object.

Moving and duplicating objects

Once one or several objects have been selected, they can be shifted vertically (by track number) and horizontally (in the timeline) while holding the left mouse button. As soon as you let go of the left mouse button, the object will be placed at the current position.

If several objects have been selected in different tracks, the selected group can be moved vertically only so far that all objects remain within the tracks.

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This means that the beginning of the object can not be extended beyond the beginning or end of the corresponding wave project. Conversely, the end of the object cannot be extended beyond the beginning or end of the corresponding wave project.

Fade in / Fade out and object volume

The object handle in the top center can be used to set the object volume. The exact volume level in dB during the change is visible in the pop up window at the object.

The top left and right-hand handles of the object change the fade in and fade out settings of the object. Since these changes are applied in real time during playback of the project, then the original audio material is left intact. This allows easy set up of fades and volume levels without having to fear data loss. The curve types when fading in and out can be set in the crossfade editor.

Overlapping objects

A track (channel) can only play back one object at a time.

If one object is moved over another object, then the previous object is partially or completely taken out of the playback list (much like one sheet of paper covers another partially or completely). The invisible part of a covered object will not be audible. By moving the covering object out of the way, the covered section or the complete object can be made audible again. To create a crossfade between two objects that are intersecting each other, the crossfade editor in the "Edit" menu can be used.

Fade in / Fade out and object volume

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Object editor



The object effects window

FX inserts

AudioStudio FX inserts supports the following high-end audio effects:

- Clean FX (denoiser, dehisser)
- Sound FX
- Vocoder (also contains a real-time freehand correction filter to filter out dissonant frequencies)
- FFT-EQ with SoundCloner

These effects are assigned to each audio object in real time.

In the "Volume/Pan" section you edit panorama and volume-specific settings.

The "On" buttons switch plug-ins on or off.

Plug-ins

The plug-in section offers you a very effective dialog for plug-in processing. With one click on an effect slot a menu opens in which you can select DirectX and VST plug-ins. This menu also contains an entry for the effects from the "Vintage effects suite".

The practical "On" button makes it possible to switch the plug-ins on and off in a flash for comparison purposes. The "Edit" key makes it possible to configure the selected plug-ins and their settings. More detailed information can be found in the "Plug-ins" section.

The position / fades window

The length and end values of an object are given numerically in a number of formats.

For all entry fields regarding duration, you can select a duration length from a list on the right.

Position/Length

Object start/end: Numerical entry field in the [VIP](#)

Object length

: Numerical object length.

How to move an object in increments

: Here the increments for shifting the object is numerically edited. The object is then shifted according to the selected increment when you press the arrow key behind the input field.

[Wave start](#)

: Shifts the wave content within the object.

Wave project

: Allows you to exchange wave projects and objects.

The pitchshifting / timestretching window

Pitch and duration of an object can be changed independently at the same time. In this window you can adjust pitchshifting and timestretching parameters for the selected object. For more details (in particular regarding the modes used) please read "Resampling / Timestretching / Pitchshifting" in the "effects" section.

Timestretching and pitchshifting can be employed independently of each other (except when resampling).

Pitchshifting

: Pitch realignment can be entered either as a factor relative to the initial value or absolutely in semi-tones and percentages.

Timestretching (change of speed)

: Speed realignment can be entered either as a factor relative to the initial value or absolutely as a new object length. You can also enter a completely new tempo so long as the original speed of the object is entered. This is read either directly from the wave project, from the loop length, or determine automatically by stretching a range over the object.

Note: One of most frequent applications of the object editor is the organization of your own CDs. Each song can be a separate object. This creates an extremely flexible working environment that is fast and efficient.

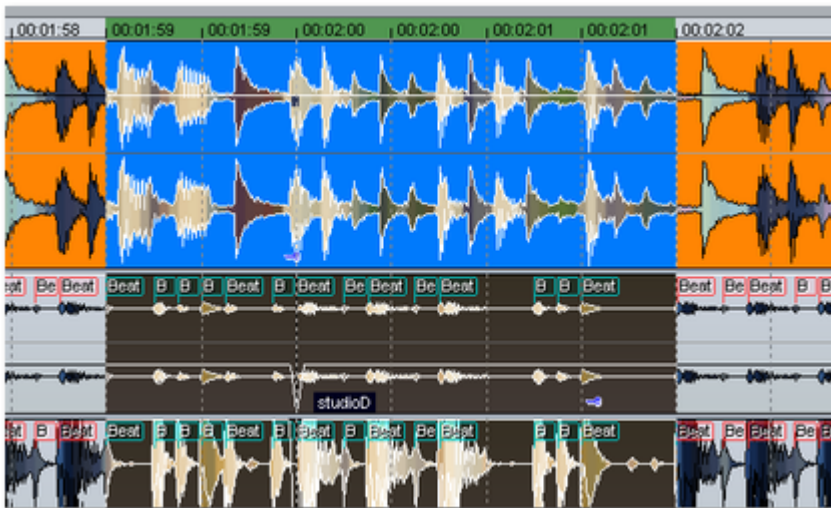
Ranges

Ranges are selected sections of the arrangement that can be set for editing or re-opening later on. When creating ranges you are not bound to object borders, individual tracks, or any other limitations like markers, etc. Ranges that you search for are displayed inverted. By switching on the "Grid" function in the "Project options" you can set the step size of the selection.

Detailed information on the project options can be found in the menu reference in "Options -> Project options".

Selecting a range

To select a range, move the mouse pointer to the top half of an object and press the left mouse button. Move the mouse pointer within the object while pressing the mouse button. Now you can see an inverted rectangle between the starting point and the current mouse position. Once you let go of the mouse button, the range is selected. The play cursor always automatically remains at the beginning of the range, even if you can't see it at this moment in time. To expand the range onto other tracks, click on the top half of the selected object again and drag the mouse down vertically while keeping the mouse button held.



You can also select a range by dragging the mouse across the timeline. It will then be displayed in green. Double clicking on this timeline area selects a range in the selected track, a further double click selects the range over all tracks, the next double click then reverts back to the simple timeline selection. In the timeline selection you can also position the play cursor outside the range. The range will remain intact.

This way you can start playback in front of or within a loop. [Range](#)

borders can also be changed during playback. The play range can be deleted by dragging to size 0.

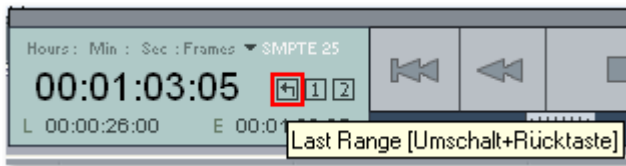
Leaving a range

If you wish to select a different range, click elsewhere in the project that does not include the current range and sketch a new range.

Reactivating a range

Enter the keyboard shortcut "**Shift + Backspace**

". By using this command repeatedly you can restore the last five ranges. You can execute the same function by clicking on the button with the left arrow in the transport control.



Change range border

In the timeline selection you can change the range edges by positioning the mouse over the range border. The mouse pointer turns into a double arrow. Now you can change the range edges by dragging horizontally.

If you wish to change the border of an already existing track range (start, end, top edge, or bottom edge), left click inside the range of the existing area and keep the mouse button pressed. Now, while keeping the mouse button pressed, leave the range in the direction of the border you wish to change. As soon as you have crossed the border of the existing range, the range border will follow the movements of the mouse pointer. Once you have newly defined the range border, you can let go of the mouse button. The start of the range of a track can be changed with the arrow keys of the keyboard, while the range end can be changed with "Shift" + the arrow keys.

Horizontal movement of a range

Left click within the existing range while holding down "Shift", keep the mouse button held, and move the range horizontally.

Saving and opening ranges / Special range commands

Selected ranges can be saved using the "[Range](#)

" menu or by pressing "Alt" and one of the function keys "F2 - F10" and opened again with "Ctrl + F2 - F10".

"Alt + F4", however, shouldn't be used, since this is a Windows command that closes the current screen. Similarly, "Alt + F9" should not be used either as it is used for 4-point cut editing in Samplitude Music Studio 15. In Samplitude Music Studio 15 you can redefine this keyboard shortcut whenever you like via "Options -> Program settings -> Shortcuts" and "Edit menu".

You can also save and rename ranges without any restrictions using "Alt + F11".

These and further special functions for defining, changing, and using ranges can be found in the "Range" menu. Beneath this you'll find a range editor dialog for the exact numerical input of ranges and the [Range manager](#)

for quick and easy viewing of and jumping to ranges.

More information on ranges can be found in the menu reference point under "Range".

Examples for working with ranges

Example 1: You want to move multiple neighboring objects to a new position. Instead of selecting each object separately while holding down "Ctrl", you can select a range that contains all objects. Select them by using the function from "**Object -> Select objects -> Select objects under the play cursor / range**"

Example 2: You want to completely remove a section of a song from the [VIP](#) window. This may be a verse of a song that should be cut out in order to reduce the overall length of the track. You can select the verse in question by dragging out a range and activating all tracks with a double click. Then select "**Edit -> More -> Delete with time/ripple**" to remove the verse.

Example 3:

You wish to play a selected range as a loop. Here you can modify the range borders. Before making

your cuts final, you can preview the possible result.

Working in wave projects

A wave project contains the audio files. [Objects](#) in [VIP](#) refer to these audio files.

Access the wave project via the respective wave window.

When a VIP is open, you can't normally see the wave window. In order to view it as an icon, activate the "wave project as icon" option in the menu window. To hide it again, select "Hide wave project".

The name of the wave project is in the title bar of the wave window along with the bit resolution, the length of the sample, and the resulting memory requirements. To activate a wave project, the appropriate window must be clicked with the mouse. Samplitude Music Studio 15 can administer many wave projects on screen simultaneously.

Virtual wave editing

Samplitude Music Studio 15 now offers real non-destructive (virtual) wave editing. Basically, wave project edits are saved in a virtual domain as long as editing is being processed. This saves an enormous amount of time when editing waves!

In order to start non-destructive wave editing, deactivate the settings in "Options -> Project properties -> Destructive wave editing mode".

When you select "wave editing", the wave project will by default be set to non-destructive editing mode. Selecting "Destructive edit" confines the wave project to destructive wave editing mode.

In the title bar of the wave window you can always see which wave editing mode (destructive or non-destructive) you are currently working in. The wave project in the image above is thus in destructive mode.

Using markers

Position marker

Position markers serve as reminders for position points. They are visible as in a special line at the top edge of a project as named orange bars. Markers can be placed during playback as well as during recording.

- Markers in wave projects are saved in the audio file (*.wave) as so-called "audio markers" and are available in this form in other applications as well.
- Markers in wave projects can also be viewed and set in the [VIP](#) object (VIP display options).
- A project can contain any number of markers. The first ten can be accessed directly using the number keys and receive the corresponding names "1" to "10". You can save these by pressing "Shift + 0 - 9". By pressing the corresponding number key you can jump back to the marker once again.
- With the menu point "[Range](#) -> Remember marker -> Other" you can define and name other markers.
- To delete a marker, click on it and press "Del". markers can be moved by grabbing them and dragging them to where you want to go, the mouse pointer changes into a double arrow.
- If you right click within a marker line, a context menu will appear for access to all important commands.
- You can manage and name markers in the marker manager ("Tools" menu or marker context menu).
- To stretch a range between any two markers, click on the first marker, and then click on the second marker while holding down "Shift". This selects a new range.
- To quickly move between the marker positions, use the shortcuts. See "Keyboard shortcuts" ("Range -> Move play cursor -> marker left/right").

CD markers

CD markers are triangular markers for various CD burn functions. There are

- CD track markers
- CD subindex markers
- CD pause markers

[MIDI](#) markers

- Beat markers for tempo changes at a specific position in the project
- Signature markers for changes of the beat type from the marker position onwards (e.g. from 4/4 beat 3/4 beat)
- Beat marker (option "Lock musical position (bar)"). Beat markers assign a certain musical position to a certain part. This way, the bar frame/grid and MIDI events can be easily synchronized with existing audio material.

Volume

The volume levels of objects and tracks/channels can be changed at various stages.

wave Project Level

The volume level changes are applied to the audio material with "Effects -> Normalize -> Normalize file", or with "Fade in/out".

The audio data is changed. The computer usage is not affected during playback.

Object level

Every object can have an independent setting for its volume level. This can be performed by changing the upper handles of the object or with "Effects -> Amplitude/Normalize -> Normalize object".

The audio data is not changed. The calculations are performed in real-time during playback.

Track level

The volume of every track can be changed dynamically with the volume automation curve and the volume fader in the mixer or the [VIP](#).

The audio data is not changed. The calculations are performed in real-time during playback.

Output mode

You can setup the output mode in the playback parameter dialog ("P").

With the "Sample rate" option you can choose a different sample rate as playback. "Device" allows you to select the desired playback device (if you have more then one active sound card).

Please note that some sound cards are not be able to playback all sample rates.

Note: Different recording and replay devices for individual tracks can be selected in the track information dialog rather than the play parameter window. Track information opens by clicking on the track number.

Record

Hard drive recording

The device used to digitize audio signals is already included on the sound card and is called an analog/digital converter (A-to-D, ATD or A/D). In order to record, the A/D Converter gathers samples of the signal to be digitized in determined time lapses and measures its frequency. The rate is called "sample rate" and normally lies in the kHz ranges. KHz means a vibrating frequency of several thousand times per second. The higher the rate, the more samples are taken by the [A/D converter](#) and the more natural the digital transformation of the sound will be.

The precision with which the A/D converter measures the analog signal is determined by the sample resolution. The finer the resolution, the better the digital transformation.

CD-quality audio recordings are recorded with a sample rate of 44.1 kHz and 16-bit resolution.

Recording source

First of all, the recording source must be connected to the sound card. There are several ways to do this, depending on your equipment.

Microphone

: Microphone signals must first be amplified before the sound card modifier can record them. Most sound cards have separate microphone inputs that pre-amplify signals, but the results are rarely professional.

Quality

: Connection to an external mixer or external microphone amplifier produces far better results.

Amplifier

: If, for example, you possess a guitar amplifier that has a line-out output, you can connect it with the line-in input on the sound card.

Stereo system

: The stereo system's amplifier usually has a separate line-out. If instead, you see "Aux. out sockets," then you should use these. Connect them with the input on the sound card (usually shown in red). Normally, a high-fidelity (hi-fi) amplifier has cinch sockets and sound card mini-stereo catch sockets. You must have the corresponding cable to connect these properly.

If the amplifier doesn't have separate outputs (other than the loud speakers), then you can use the headphones socket for recording. In this case, you need a cable with two mini-stereo headphone connectors. This process has an advantage: you can control the signal level through the phones input. The disadvantage is that phones outputs are normally not very good. With cassette recordings, always use the cassette deck line out. Record transfers often leave you no other choice... Never connect a record player's outputs directly to the sound card, because the phono signal must be pre-amplified first. If you don't have a pre-amplifier, the only way to do this is via the phones output or an external amplifier

Adjusting the signal

Digital recordings through the sound card need optimal control in order to obtain the best sound quality. Once the recording source is connected to the sound card, open the recording dialog with the "Record" button and start the recording source.

You can check the control on the LED displays in the recording dialog.

If the level is too high, reduce the incoming signal. If the recording source is connected through the amplifier or tape deck's line out connectors, then you can reduce the incoming signal only by using the sound card's mixer window. This is located in the recording dialog under the "Level control" tab.

If you reduce the input sensibility with the sliding regulator (fader), then you also reduce (with many sound cards) the precision of the resolution of the digitized analog signal. This is why these controls should be kept at the loudest possible setting!

The standard for optimal adjusting is naturally the loudest section of the material. This should be turned to the maximum setting

Digital transfer

With the recording function, digital audio data can be transferred to the hard drive through a digital interface (e.g. S/PDIF or ADAT).

ADAT or DAT recorders normally produce data with a sampling rate of 48 kHz. For a CD project with 44.1 kHz you must convert the sampling rate. This is carried out in real time by Samplitude Music Studio 15. The digital signal is read at 48 kHz, but is automatically converted and inserted into the project as an audio file at 44.1 kHz.

For this to occur correctly, you must first set the sample rate of the incoming signal in the recording dialog. Click on the "Dev." button in the recording dialog. In the following dialog (sound card characteristics), set the audio recording formats supported by the sound card.

Now, connect the digital output of your recorder to the digital input of your sound card, and now start recording!

24-bit audio support

[Audio](#)

files in Samplitude Music Studio 15 can not only be recorded in 16-bit quality, but also in far superior 24-bit resolution. Simply click the "device" button in the recording dialog, and select the "24-bit" option under "sound card properties". 24-bit recordings require a high-quality audio card with 20 or 24-bit converters, as well as a 24-bit-compatible NME drive. 24-bit audio material can also be transmitted via audio cards with SPDIF digital interfaces.

We have had positive experiences with the 24-bit audio cards produced by Marian, RME, SEKD and Terratec.

The high resolution audio files are stored and edited in the 32-bit "floating point" file format by Samplitude Music Studio 15. This ensures the full 24-bit quality independent of the gauge. The dynamics may increase to over 140 dB, while the recording's jamming transmission sinks (depending on the type of audio card) to 110 dB and more. Thanks to floating point processing, there is no need to worry about internal editing being distorted. Floating point processing only starts to distort at around 1,500 dB above zero, in contrast to a 16-bit signal which distorts immediately once the zero dB line has been crossed. Even in cases whereby audio material is intended for burning onto a 16-bit CD, it is worth selecting 24-bit recording, since all effects calculations are made in a higher quality and therefore no "rounding" mistakes can be detected in the audible 16-bit range.

24-bit recordings (via storage as 32-bit float files) take up twice as much storage space on the hard disk as 16-bit recordings. But with current hard disk storage capacities, it works out as a good compromise when one considers the increase in quality.

High resolution audio files can be imported and exported as 24-bit wave files, enabling trouble-free file exchange with other high-quality audio systems.

Further recording dialog possibilities

The recording dialog also offers:

- A string instrument tuner for creating the best sound possible before recording. Deviations from the standard pitch are graphically displayed.
- The option of laying track markers (either manually or automatically) while recording a CD.
- The option to directly incorporate a variety of audio formats, e.g. to save hard disk space.

Please read the "Recording options" section of the "Playback menu" chapter to learn about all of the recording dialog options.

Hard drive recording

The device used to digitize audio signals is already included on the sound card and is called an analog/digital converter (A-to-D, ATD or A/D). In order to record, the A/D Converter gathers samples of the signal to be digitized in determined time lapses and measures its frequency. The rate is called "sample rate" and normally lies in the kHz ranges. KHz means a vibrating frequency of several thousand times per second. The higher the rate, the more samples are taken by the [A/D converter](#) and the more natural the digital transformation of the sound will be.

The precision with which the A/D converter measures the analog signal is determined by the sample resolution. The finer the resolution, the better the digital transformation.

CD-quality audio recordings are recorded with a sample rate of 44.1 kHz and 16-bit resolution.

Recording source

First of all, the recording source must be connected to the sound card. There are several ways to do this, depending on your equipment.

Microphone

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Stereo system

: The stereo system's amplifier usually has a separate line-out. If instead, you see "Aux. out sockets," then you should use these. Connect them with the input on the sound card (usually shown in red). Normally, a high-fidelity (hi-fi) amplifier has cinch sockets and sound card mini-stereo catch sockets. You must have the corresponding cable to connect these properly.

If the amplifier doesn't have separate outputs (other than the loud speakers), then you can use the headphones socket for recording. In this case, you need a cable with two mini-stereo headphone connectors. This process has an advantage: you can control the signal level through the phones input. The disadvantage is that phones outputs are normally not very good. With cassette recordings, always use the cassette deck line out. Record transfers often leave you no other choice... Never connect a record player's outputs directly to the sound card, because the phono signal must be pre-amplified first. If you don't have a pre-amplifier, the only way to do this is via the phones output or an external amplifier

Adjusting the signal

Digital recordings through the sound card need optimal control in order to obtain the best sound quality. Once the recording source is connected to the sound card, open the recording dialog with the "Record" button and start the recording source.

You can check the control on the LED displays in the recording dialog.

If the level is too high, reduce the incoming signal. If the recording source is connected through the amplifier or tape deck's line out connectors, then you can reduce the incoming signal only by using the sound card's mixer window. This is located in the recording dialog under the "Level control" tab.

If you reduce the input sensibility with the sliding regulator (fader), then you also reduce (with many sound cards) the precision of the resolution of the digitized analog signal. This is why these controls should be kept at the loudest possible setting!

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Now, connect the digital output of your recorder to the digital input of your sound card, and now start recording!

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We have had positive experiences with the 24-bit audio cards produced by Marian, RME, SEKD and Terratec.

The high resolution audio files are stored and edited in the 32-bit "floating point" file format by Samplitude Music Studio 15. This ensures the full 24-bit quality independent of the gauge. The dynamics may increase to over 140 dB, while the recording's jamming transmission sinks (depending on the type of audio card) to 110 dB and more. Thanks to floating point processing, there is no need to worry about internal editing being distorted. Floating point processing only starts to distort at around 1,500 dB above zero, in contrast to a 16-bit signal which distorts immediately once the zero dB line has been crossed. Even in cases whereby audio material is intended for burning onto a 16-bit CD, it is worth selecting 24-bit recording, since all effects calculations are made in a higher quality and therefore no "rounding" mistakes can be detected in the audible 16-bit range.

24-bit recordings (via storage as 32-bit float files) take up twice as much storage space on the hard disk as 16-bit recordings. But with current hard disk storage capacities, it works out as a good compromise when one considers the increase in quality.

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- A string instrument tuner for creating the best sound possible before recording. Deviations from the standard pitch are graphically displayed.
- The option of laying track markers (either manually or automatically) while recording a CD.
- The option to directly incorporate a variety of audio formats, e.g. to save hard disk space.

Please read the "Recording options" section of the "Playback menu" chapter to learn about all of the recording dialog options.

Adjusting the signal

Digital recordings through the sound card need optimal control in order to obtain the best sound quality. Once the recording source is connected to the sound card, open the recording dialog with the "Record" button and start the recording source.

You can check the control on the LED displays in the recording dialog.

If the level is too high, reduce the incoming signal. If the recording source is connected through the amplifier or tape deck's line out connectors, then you can reduce the incoming signal only by using the sound card's mixer window. This is located in the recording dialog under the "Level control" tab.

If you reduce the input sensibility with the sliding regulator (fader), then you also reduce (with many sound cards) the precision of the resolution of the digitized analog signal. This is why these controls should be kept at the loudest possible setting!

The standard for optimal adjusting is naturally the loudest section of the material. This should be turned to the maximum setting

Digital transfer

With the recording function, digital audio data can be transferred to the hard drive through a digital interface (e.g. S/PDIF or ADAT).

ADAT or DAT recorders normally produce data with a sampling rate of 48 kHz. For a CD project with 44.1 kHz you must convert the sampling rate. This is carried out in real time by Samplitude Music Studio 15. The digital signal is read at 48 kHz, but is automatically converted and inserted into the project as an audio file at 44.1 kHz.

For this to occur correctly, you must first set the sample rate of the incoming signal in the recording dialog. Click on the "Dev." button in the recording dialog. In the following dialog (sound card characteristics), set the audio recording formats supported by the sound card.

Now, connect the digital output of your recorder to the digital input of your sound card, and now start recording!

24-bit audio support

Audio

files in Samplitude Music Studio 15 can not only be recorded in 16-bit quality, but also in far superior 24-bit resolution. Simply click the "device" button in the recording dialog, and select the "24-bit" option under "sound card properties". 24-bit recordings require a high-quality audio card with 20 or 24-bit converters, as well as a 24-bit-compatible NME drive. 24-bit audio material can also be transmitted via audio cards with SPDIF digital interfaces.

We have had positive experiences with the 24-bit audio cards produced by Marian, RME, SEKD and Terratec.

The high resolution audio files are stored and edited in the 32-bit "floating point" file format by Samplitude Music Studio 15. This ensures the full 24-bit quality independent of the gauge. The dynamics may increase to over 140 dB, while the recording's jamming transmission sinks (depending on the type of audio card) to 110 dB and more. Thanks to floating point processing, there is no need to worry about internal editing being distorted. Floating point processing only starts to distort at around 1,500 dB above zero, in contrast to a 16-bit signal which distorts immediately once the zero dB line has been crossed. Even in cases whereby audio material is intended for burning onto a 16-bit CD, it is worth selecting 24-bit recording, since all effects calculations are made in a higher quality and therefore no "rounding" mistakes can be detected in the audible 16-bit range.

24-bit recordings (via storage as 32-bit float files) take up twice as much storage space on the hard disk as 16-bit recordings. But with current hard disk storage capacities, it works out as a good compromise when one considers the increase in quality.

High resolution audio files can be imported and exported as 24-bit wave files, enabling trouble-free file

exchange with other high-quality audio systems.

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Tips & tricks

A few tricks that help make working with Samplitude Music Studio 15 easy:

In this chapter

[Working with projects](#)

[Mixer](#)

[Performance](#)

[Recording / Playback](#)

Working with projects

- The "A" key will select the complete sample as a range.
- "Home" and "End" set the play cursor to the beginning or end; all selected ranges will disappear.
- A range can be selected from one exact marker position to the next by clicking on the marker above the wave. Next, hold "Shift" and click on the second marker.
- Using the "Shift + mouse click" a range can be moved horizontally.
- "Shift + Ctrl + arrow keys" will flip a range to the right or left. This is a great way of testing a loop at a different position.
- [Objects](#) in Virtual projects can be displayed in two different modes. By pressing "Tab" you alternate between the modes. Pressing "Shift + Tab" will open a dialog window in which you can set the parameters of the display modes.
- Using "Ctrl + mouse click" on an object copies the object.
- Double clicking the mouse button on the volume curve creates and deletes volume handles. Activate the volume automation curve with "V" in each track of the [VIP](#)!
- Change the function of the mouse buttons in VIPs with "Preferences -> Mouse mode", or use one of the mouse mode buttons in the mouse mode toolbar!
- The function "Lock objects" allows you to lock objects to prevent accidental movement. This is especially useful for multitrack recording when the individual tracks need to stay in sync with each other.
- To determine the tempo of a selected range (BPM), open the snap definition dialog ("Shift + R") and select the number of beats the selected range represents (for example: 4) in the "Free bar snap" section. Next, click on the "Get range" button in the "Free bar snap" section to retrieve the length of the selected range. The BPM display in the "Fixed bar snap" section now displays the BPM of the audio section.
- Try the right mouse button on various components of the VIP window! A context-sensitive popup menu is displayed which features useful functions depending on the window component you clicked on. Among them are objects, "Record" and "Mute" buttons, and the scrollbars.
- "Delete" deletes markers when the play cursor (real-time cursor) is located exactly on the marker. The same key deletes any selected objects and deletes ranges that are selected.
- "T" separates a selected object at the position of the play cursor. If a range is selected within the object, the object is separated on the range borders, which results in three objects. If auto crossfade mode is active while the separation takes place, Samplitude Music Studio 15 adds smooth crossfades at the separation points. These crossfades can later be edited for further refinement. Use the crossfade editor to change the crossfade aspects.
- Multiple zoom levels can be saved to the four "Z" buttons in the lower left-hand corner of the virtual project window. Use "Shift + left mouse click" to store a zoom level to a specific preset button. When clicking on a previously assigned preset button, the zoom level is recalled. The "S" preset buttons can be used with "Shift + left mouse click" to store a complete window configuration set. This includes the scroll position of the window and the mute/solo assignments for the tracks. This offers four mute/solo groups that can be quickly recalled.

- Multiple objects can be selected by holding "Ctrl" and individually clicking on the desired object.
- Holding "Shift" and clicking the mouse button behind the last object you want to select will select objects between the two points.
- wave, HDP, and RAP projects, as well as stored objects, can be opened with Windows Explorer by dragging them from the Explorer window to the Samplitude Music Studio 15 window. A special menu option is available to open Explorer from within Samplitude Music Studio 15 with "Tools -> Explore the HDP directory". The default folder opened in Explorer is the same as the HD project settings in the system dialog ("Y").
- "Shift + Tab" can be used to display the VIP display mode dialog. This dialog allows you to change VIP display aspects like the VIP window behavior when an object or range is moved toward the currently displayed window borders (VIP border scroll).
- Press "Enter" and all open windows are tiled on the Samplitude Music Studio 15 screen. This is a good starting point when using drag & drop functionality to move ranges and objects between individual project windows.
- Use the menu option "Edit -> Edit tracks" to manipulate complete tracks. This includes adding new tracks, inserting tracks and rearranging tracks.

Mixer

- Clicking the right mouse button on a mixer effect control knob or element opens the associated effects dialog.
- A double click on the middle of a control knob or element returns it to the passive default setting. Another double click resets the element to the previous position.
- Clicking on the left or right outer limits of a control knob changes the setting in individual increments.
- In the mixer window, multiple channels can be soloed simultaneously. When holding "Shift" and clicking on "Solo", all previously soloed channels are un-soloed and the single channel is soloed.
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Effects and effect plug-ins

Samplitude Music Studio 15 contains many high-quality effects and effects plug-ins (MAGIX plug-ins) as well as interfaces for external VST plug-ins and DirectX plug-ins.

In this chapter

[What effects are there, and how are they used?](#)

[Saving effect parameters \(preset mechanism\)](#)

[Dehisser](#)

[Sound FX \(object editor, mixer channels, mixmaster\)](#)

[Parametric equalizer \(mixer channels, mix master\)](#)

[MAGIX Mastering Suite](#)

[Vintage Effects Suite](#)

[Track dynamics \(track effects, mixer channels\)](#)

[Track delay/reverb \(track effects\)](#)

[Elastic Audio](#)

[Installation of VST plug-ins](#)

[Effect calculations](#)

[Samplitude Music Studio 15 as an external effects device](#)

What effects are there, and how are they used?

There is generally a difference between the effects types. The following effects occur in Samplitude Music Studio 15:

Real-time effects:

These effects are also referred to as "non-destructive" or "virtual" effects, and they are added to the original sound while it is played. This means that the original file remains unchanged on the hard drive.

Offline effects:

These effects are also called "destructive effects", and they are added to the audio file before it is played; either the original file is changed, or a copy is created on the hard drive for working with.

These effects are independent effects modules, i.e. they are provided by third party vendors or programmers. In Samplitude Music Studio 15 we distinguish between three types of effects plug-ins: "MAGIX plug-ins", "DirectX plug-ins", and "VST plug-ins".

The area of application is a further criteria for effects. The following are integrated into Samplitude Music Studio 15:

- **Object effects** (can be accessed via the object editor or the "Real-time effects" menu)
- **wave effects** (can be accessed via the "Offline effects" menu)
- **Track effects** (can be accessed via the trackbox plug-in selection button or the trackbox plug-in)
- **Mixer channel effects** (can be accessed via the "Insert" section of the mixer): These real-time effects affect track effects the same way as complete tracks.
- **AUX effects:** (accessible via the track editor and trackbox): These effects can be installed identically for several tracks, or individually.
- **Surround effects** (accessible via the insert selection box of the corresponding Surround bus channel, track editor, and trackbox): These effects serve for editing surround material.
- **Master effects** (can be accessed via the "Master" section of the mixer): These effects are for editing the master sound.

Most of the effects modules, i.e. equalizers, compressors, reverb, echo, etc., can be used in several of the above versions. However, they are only described at one position within this documentation. All effects and effect plug-ins that are NOT offline effects and can be activated via the "Offline effects menu" are explained in the following sections of this chapter. The other effects which can also be activated via the "Offline effects" menu, are described in more detail in the "Offline effects menu" chapter.

Saving effect parameters (preset mechanism)

The effect dialogs contain preset selection boxes. These presets are saved and recalled to/from the "FX preset" directory (a subdirectory of the main Samplitude Music Studio 15 program directory).

If a preset is not located in this directory, it still can be loaded via the "Load setup" function, but it will not automatically appear in the selection box, so you'll need to browse for it.

Effects that are added/launched from within the mixer or object editor are pre-configured with the values assigned to the virtual project. If the virtual project is to adopt particular changes made to the settings in the effects dialog, then you will need to click on "OK" to transfer them to the [VIP](#).

You also have the possibility to apply the settings of the last destructive effect; a corresponding entry can be found in the "Options" box. If there is no destructive application of the effect, then the parameters selected in the list entries will be applied to the default parameters for destructive editing.

Dehisser

The Dehisser eliminates regular "white" noise typically produced by analogue tape recordings, microphones, pre-amplifiers, or converters.

Noise level:

Set the Dehisser's input threshold as precisely as possible. Low settings result in incomplete deletion of the hissing. An incomplete deletion of the hissing produces artifacts and should be avoided. High settings produce dull results. Useful signals (e.g. the blow of a wind instrument) that are similar to hissing are also filtered away. If the level of the hissing is low, the setting is no problem.

[Audio type](#)

: Lets you set the audio material that is to be edited; the algorithm is adjusted accordingly.

Noise reduction

: Set the attenuation of the hissing in decibels. It often makes sense to reduce the hissing by only 3 to 6 dB in order to keep the audio material sounding natural.

Removed hiss

: To test your results, you can listen to the filtered-away part of the music prior to downloading or burning onto a CD. Remember, this is for test purposes only.

Quality

: The processing quality can be set in two stages. You can use this to precisely adjust the values in the dialog for standard quality adjustment without skipping playback, and can then select a higher quality for final burning.

Adaptive

: The value for the noise level parameter is set automatically by determining the hiss contained in the signal. If the noise level value is changed, its effect becomes relative, i.e. the resulting value is determined from the automation as well as the noise level controller settings.

One advantage of this is that you no longer have to set the noise level value manually and that this value can also be adjusted later if the noisy portion fluctuates, e.g. if you use music tracks with differing hiss levels within one project.

If the noise level is constant, then a better result may be obtained manually (adaptive off). However, the noise level value must then be set precisely.

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If the noise level is constant, then a better result may be obtained manually (adaptive off). However, the noise level value must then be set precisely.

Sound FX (object editor, mixer channels, mixmaster)

"Sound FX" features an effects rack with the following virtual effects devices:



Equalizer

The 10-track equalizer divides the frequency spectrum into 10 areas (tracks) and supplies them with separated volume controls, which allows you to achieve many impressive effects, from the simple rising of the bass, to total sound transformation. If you raise the low frequencies too much throughout the whole level, it can cause distortions. In this case, lower the master volume using the master volume control on the main screen.

Thumb controls

: Each of the 10 frequency areas can be raised or decreased separately by the 10 volume controls.

Link bands

: Using this switch you can match the frequency areas in a flexible way to avoid overemphasizing single frequency areas that sound artificial.

A/B

: If you have selected a preset for the effect and later you change it manually, you can compare the original preset sound with the new adjustments using the A/B switch.

Reset

: Reset inserts the sound effect into the neutral starting position where no processing power is used and where no effect is calculated in the sound.

Touchscreen (right EQ section)

: This is the "sensor field" of the EQ: Use your mouse to draw a curve that will be transferred immediately into the corresponding EQ control adjustment.

Compressor

The compressor is essentially an automated dynamic volume control. Tune dynamics are limited; loud passages stay loud, and low-passages become louder. Compression is often used to make the material

more powerful. The degree of compression is adjusted by the ratio control, and "Threshold" determines the entry threshold. Rise and decrease of time can be influenced by attack and release.

The processing is realized "in advance", as often occurs in high-quality studio equipment. This means that there won't be any overdriven peaks or other artifacts, as the algorithm can never be "surprised" by the peak levels.

Sensor field

: The sensor field of the compressor can be intuitively altered with mouse movement.

Ratio

: This parameter controls compression intensity.

Threshold

: Adjusts the entry threshold of the compression.

Attack

: Adjusts the time in which the algorithm responds on the rising level. Short attack times can produce a "pumping" sound as the volume is reduced or raised.

Release

: Adjusts the time in which the algorithm responds to decreasing levels.

A/B

: If you have selected a preset for the effect and later you change it manually, you can compare the original-preset-sound with the new adjustments using the A/B-switch.

Reset

: Reset places the sound effect to the neutral starting position where no processing power is used and where no effect is calculated in the sound.

Load/Save

: Stores the current adjustments as an effect file in order to use them for other projects.

AmpSim

The amp simulator is a newly-developed, real-time effect which simulates tube amp sound properties. It is especially suitable for guitar sounds, but also for the organ or vocal recordings.

Amp model

: Select from a range of simulated amplifier sounds.

Speaker model

: Select from a range of simulated speaker sounds.

EQ section

: A 3-band equalizer for setting the bass, mid-tones, and treble.

Bright

: The "Bright" button is used for a particularly sharp sound display, and can be jarring when used with the following automatic controllers:

Distortion

: Creates distortion in typical analog amplifier fashion.

Volume

: Controls the entire volume of the amplifier module.

Echo / Reverb

Reverb

Reverb supplies a high-quality reverberation which can be defined more precisely with "room size", "time", and "color" and mixed into the original sound with "mix".

You can choose between various reverb styles in the presets.

Room size

: This control button controls a room simulator which calculates the reverb effect dependent on the room size. If the control is turned completely to the left, it sounds as if the audio object has been recorded in a

tiny room, turned completely to the right, one can listen to the object as if it had been recorded in a cathedral.

Time

: Determines length of the "reverb trail", i.e. the fading phase of the sound.

Color

: Controls the type of reverb, i.e. duller than high-pitched, or vice versa.

Mix

: This control determines the mixing ratio between the unedited original sound ("dry" signal) and the reverb portion ("wet" signal).

Echo

Echo

: The echo effect is defined more precisely with "delay" and "feedback" and calculated into the original sound with "mix".

Delay

: Determines the period of time between the individual echoes; the more you turn the control to the left, the faster will the echoes follow each other.

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: Adjusts the number of echoes. When turned completely to the left, there is no echo at all. When turned completely to the right, there are virtually endless repetitions.

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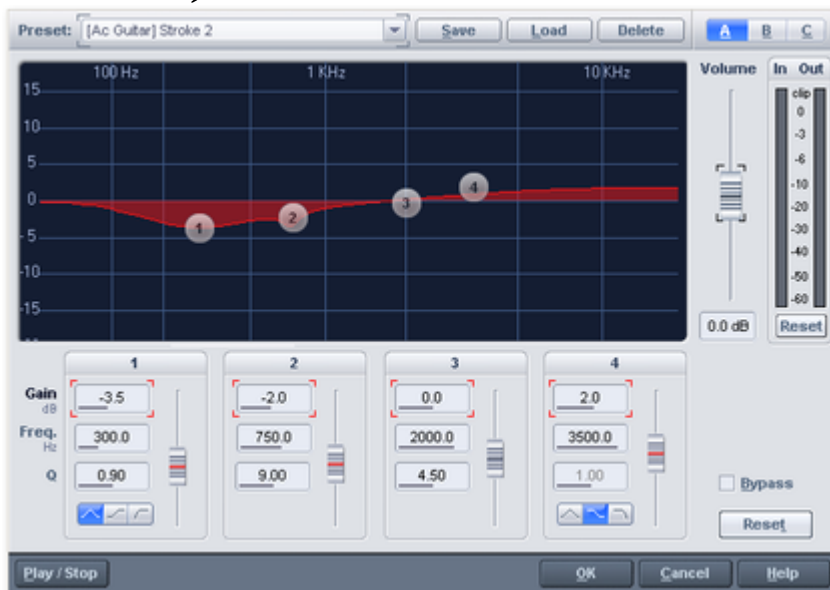
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Parametric equalizer (mixer channels, mix master)



This dialog contains a 4-band parametric equalizer. You can adjust the sound of your sample by activating filters on three independent frequency bands. This allows you to raise the bass and treble in a broad spectrum as well as make very specific corrections in the dynamic frequency spectrum.

However, you will first have to highlight an area of the current project or the entire project with "A" (wave projects).

Don't forget that the mixer ("M") also includes one equalizer per channel which works in real time and does not modify the saved audio material (non-destructive manipulation process).

Frequency

: Adjust the middle frequencies of the different filters between 10 Hz and 24 kHz using these switches.

As your choice is completely unrestricted, you can also set various filters to the same frequencies in order to obtain more pronounced effects.

Q

: Here you can set the frequency-spectrum of each filter between 10 Hz and 10 kHz.

Gain

: These switches control the activity and intensity of each filter. If the switch is set to 0, the filter will be inactivated, saving system resources.

Volume

: This button controls the general volume should the filters produce an extreme increase or decrease of the individual levels.

Setup A/B/C:

Here you can switch between three various setups so that an acoustic comparison between the various settings can be performed, for example, during the preview function (Play/Stop button).

MAGIX Mastering Suite



Parametric equalizer

The parametric equalizer consists of four filter bands to form the sound of the music track. Each band is a filter with a typical "bell shape". Within a certain frequency range around an adjustable middle frequency you can increase or reduce the signal level gain. The width of this frequency range is called bandwidth. The bandwidth is defined by the Q value. The higher the Q value, the narrower and steeper the filter curve.

You can influence the basic sound of the mix by increasing and decreasing the broadband so as to give it more "depth" (lower center 200-600 Hz) or more "air" (Highs 10 kHz). You can also decrease the narrow bandwidth (high Q value) in the frequency response to remove, for example, disruptive frequencies.

Graphic

: The resulting frequency path of the equalizer is displayed in the graphic. The frequency is spread out horizontally, the increase or decrease of the respective frequency, vertically. The blue bullets 1-4 symbolize the four wave bands. You can move them around with the mouse until you find your desired frequency response.

Peak meter

: With the peak meter you can control the output level of the equalizer. The adjacent master gain controller can be used to balance the level with the EQ.

Edit

: The "Edit" button opens the fine tuning for the four bands:

Parameter selection

: With the buttons on the right you can select the parameter that can be adjusted with four faders of each band. Furthermore, there are number keys to enter every parameter of the bands.

Gain dB: These controllers allow you to raise or lower the filter. Setting the controller to 0 deactivates the filter and doesn't use [CPU](#) power.

Freq

. Hz: The center frequency of the individual filters can be set between 10 Hz and 24 kHz with the

frequency controllers. Freely choosing the frequency enables multiple filters to be set to the same frequency in order to have a greater effect.

Q (bandwidth)

: Here you can set the bandwidth of the individual filters to between 10 Hz and 10 kHz.

There is still a peculiarity among bands 1 and 4: Their filter curve can be changed from a normal "peaking" EQ filter to "shelving" (this is the basic setting) and high (band 1) or high-pass (band 4). When using the "shelving" filter, a soft increase or decrease in all frequencies happens above or below the filter frequency, the Q parameter does not have a function here. With a low-pass or high-pass filter, all frequencies below (low-pass) or above (high-pass) the set frequency are filtered out.

Stereo FX

The stereo effects enhancer allows you to reposition your audio material in the stereo panorama.

Whenever a stereo recording sounds undifferentiated, the extension of the basic stereo width can provide a more transparent sound.



Basic stereo width controller

: Here you can adjust the width of the basic stereo panorama from mono (leftmost side), over unchanged (in the centre) to maximum width ("wide", right-most side). When setting the stereo panorama to smaller values, the sound level may rise. In an extreme case (the left and right channels contain identical audio material and the basic stereo width controller is set to "mono") the sound level can be increased as much as 3 dB.

While increasing the basic stereo width (values exceeding 100), the mono sound compatibility gets worse. This means that recordings that have been manipulated in such a manner will sound hollow during mono playback.

Volume fader

: Adjust the volume for each channel and the stereo panorama. The damping for the left and the right channel will be indicated in dB values under the controllers. This allows you to reposition an originally centred recording to the right or to the left inside the stereo panorama.

Stereo meter (correlation indicator)

: This is a graphic display of the phase position of the audio signal. Here you can check the orientation of your signal inside the stereo panorama and the effects caused by the stereo enhancer.

In order to achieve the best possible mono-compatibility, the graphic should resemble a diagonal line. If not, then some frequency areas may eliminate each other when the stereo signal is played back on a mono player.

Karaoke preset:

This preset opens a special karaoke effect that more or less eliminates vocals during playback by deleting middle-range frequencies typical for the human voice when singing, allowing someone else to take over the singing.

MultiMax

MultiMax is a compressor with three independent frequency bands. Dynamic processing takes place separately for each band.

The main advantage of a multi-band compressor over a "normal" compressor is that warping and other disturbing side effects are drastically reduced by dynamic processing. This means that a single peak level in the bass section will not drag the level of the whole signal down.

Multi-band technology also enables precise treatment of individual frequency bands.



Frequency band settings

: Adjusted directly in the graphical display. Simply click on the dividing lines to shift the levels.

Bass/Mid/High

: Regulates the degree of compression for each frequency band.

Limiter

: MultiMax contains a limiter that harmonizes levels, e.g. higher levels are automatically reduced, and quiet passages remain unaffected.

Presets

Two further special functions can be called up by using the presets in MultiMax.

Dynamic expander

: Too high compression will result in audible noise (usually defined as a pumping sound). Radio recordings in particular are recorded with very high compression rates to increase the perceived volume. Unfortunately, compression reduces the dynamics (interval between the quietest and loudest part). The expander enhances the dynamics of the recording.

Cassette NR-B decoder

: Samplitude Music Studio 15 simulates decoding of Dolby B + C noise suppression when a Dolby player is not available. Cassettes recorded with Dolby B or C sound more muffled and slurry if played back without corresponding Dolby.

Noise gate

: This cleaning function entirely suppresses noise below a certain noise level. This lets you create, for example, song transitions that are entirely noise-free.

Leveler

: This function brings the entire material up to a uniform volume automatically. The volume control handle is omitted. Larger volume differences can therefore be adapted within a song. To balance volume differences between different songs, you can also use the "Volume adjustment" function in the effects menu.

De-esser

: These special presets remove overemphasized "s" sounds in speech recordings.

Tip: The limiter can also be used independently of the MultiMax.

Digital audiometer

On the lower border of the MAGIX Mastering Suite there is a digital audiometer which provides separate control method displays for every channel for 10 wave bands. This device is used for orientation, for selective equalizer editing, etc.

Parametric equalizer

The parametric equalizer consists of four filter bands to form the sound of the music track. Each band is a filter with a typical "bell shape". Within a certain frequency range around an adjustable middle frequency you can increase or reduce the signal level gain. The width of this frequency range is called bandwidth. The bandwidth is defined by the Q value. The higher the Q value, the narrower and steeper the filter curve.

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Leveler

: This function brings the entire material up to a uniform volume automatically. The volume control handle is omitted. Larger volume differences can therefore be adapted within a song. To balance volume differences between different songs, you can also use the "Volume adjustment" function in the effects menu.

De-esser

: These special presets remove overemphasized "s" sounds in speech recordings.

Tip: The limiter can also be used independently of the MultiMax.

Digital audiometer

On the lower border of the MAGIX Mastering Suite there is a digital audiometer which provides separate control method displays for every channel for 10 wave bands. This device is used for orientation, for selective equalizer editing, etc.

Stereo FX

The stereo effects enhancer allows you to reposition your audio material in the stereo panorama. Whenever a stereo recording sounds undifferentiated, the extension of the basic stereo width can provide a more transparent sound.



Basic stereo width controller

: Here you can adjust the width of the basic stereo panorama from mono (leftmost side), over unchanged (in the centre) to maximum width ("wide", right-most side). When setting the stereo panorama to smaller values, the sound level may rise. In an extreme case (the left and right channels contain identical audio material and the basic stereo width controller is set to "mono") the sound level can be increased as much as 3 dB.

While increasing the basic stereo width (values exceeding 100), the mono sound compatibility gets worse. This means that recordings that have been manipulated in such a manner will sound hollow during mono playback.

Volume fader

: Adjust the volume for each channel and the stereo panorama. The damping for the left and the right channel will be indicated in dB values under the controllers. This allows you to reposition an originally centred recording to the right or to the left inside the stereo panorama.

Stereo meter (correlation indicator)

: This is a graphic display of the phase position of the audio signal. Here you can check the orientation of your signal inside the stereo panorama and the effects caused by the stereo enhancer.

In order to achieve the best possible mono-compatibility, the graphic should resemble a diagonal line. If not, then some frequency areas may eliminate each other when the stereo signal is played back on a mono player.

Karaoke preset:

This preset opens a special karaoke effect that more or less eliminates vocals during playback by deleting middle-range frequencies typical for the human voice when singing, allowing someone else to take over the singing.

MultiMax

MultiMax is a compressor with three independent frequency bands. Dynamic processing takes place separately for each band.

The main advantage of a multi-band compressor over a "normal" compressor is that warping and other disturbing side effects are drastically reduced by dynamic processing. This means that a single peak level in the bass section will not drag the level of the whole signal down.

Multi-band technology also enables precise treatment of individual frequency bands.



Frequency band settings

: Adjusted directly in the graphical display. Simply click on the dividing lines to shift the levels.

Bass/Mid/High

: Regulates the degree of compression for each frequency band.

Limiter

: MultiMax contains a limiter that harmonizes levels, e.g. higher levels are automatically reduced, and quiet passages remain unaffected.

Presets

Two further special functions can be called up by using the presets in MultiMax.

Dynamic expander

: Too high compression will result in audible noise (usually defined as a pumping sound). Radio recordings in particular are recorded with very high compression rates to increase the perceived volume. Unfortunately, compression reduces the dynamics (interval between the quietest and loudest part). The expander enhances the dynamics of the recording.

Cassette NR-B decoder

: Samplitude Music Studio 15 simulates decoding of Dolby B + C noise suppression when a Dolby player is not available. Cassettes recorded with Dolby B or C sound more muffled and slurry if played back without corresponding Dolby.

Noise gate

: This cleaning function entirely suppresses noise below a certain noise level. This lets you create, for example, song transitions that are entirely noise-free.

Leveler

: This function brings the entire material up to a uniform volume automatically. The volume control handle is omitted. Larger volume differences can therefore be adapted within a song. To balance volume differences between different songs, you can also use the "Volume adjustment" function in the effects menu.

De-esser

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Vintage Effects Suite

Analog delay



This delay offers creative playing along with common delay effects. "Analog" in this case means, for instance, that you can change the delay times while playing without the risk of typical scratching artifacts developing. Instead, the times are softly faded out, similar to the old tape echo machines that used the tape speed to change the delay and where the system also had a certain sluggishness.

Analog delay emulates vintage tape echo units which determined the delay time by the tape speed, and speed changes were slow and affected the pitch (feedback). The feedback has a two-band filter that can be used to create dark, high, or mid repetitions depending on the settings.

You can use these characteristics to your advantage by creating, for example, "out-there" dub/reggae-style delays which become less defined with each repetition and are slightly warbled. Here "analog" means that the delay cannot be digitally overdriven. Even in a "looped" repetition the signal cannot be distorted indefinitely, but compressed by an increasingly slight degree and distorted similar to a tape.

Analog delay parameter

Analog delay has the following parameters:

Delay type

Delay type (l + r)

: Left and right delay times can be controlled separately (see below). You can choose a note value for the control pots to snap to. Even and syncopated note values from 1/2 to 1/32 are available. Note that the delay times are always in relation to the project's current tempo.



Link button (lock symbol)

: Press this button to control the "delay type" pots for both channels simultaneously.

Mix:

Adjusts the ration between the original signal and the echo.

Modulation

Speed

: The tape warble speed. Low values result in very light fluctuations, high values result in drastic warbling.

Depth

: The warble intensity. When this control is turned all the way to the left, there is no pitch modulation. For a subtle "analog" feel, we recommend a setting between the 9 and 11 o'clock position.

Filter

"Low"  This control progressively reduces the bass frequency as it is turned to the right, making the signal sound "thinner".

"High"  Once turned all the way to the right, the control only attenuates the treble very lightly; turned completely to the left, the delay repetitions become progressively less treble.

Feedback

Width

: This controls the stereo width of the delay repetitions. When you turn "Width" to the right, an additional effect is produced: the panning of the delays increases. This is commonly referred to as a "ping-pong" delay.

Drive

: When this control is turned all the way to the left, the delayed signal is repeated only once. Turned all the way to the right, the feedback is seemingly endless and the repetitions continue for a long time. The actual strength of the effect is dependent on the material, since the feedback loop (as explained earlier) is addressed via compression and uses a "tape saturation" effect. If you send a "loud" signal to the delay, then the feedback will sound longer than at a lower level as compression "brings it up" to a certain level. If you are used to "purely digital" delays, then this might take some getting used to, but it will probably sound "livelier".

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Flanger



The "flanger" effect is similar to the chorus, but its history is different. It was developed by coincidence when someone (according to legend it was actually John Lennon!) briefly slowed down one of the reels of two tape machines that were linked together.

The result: the rather brief delay of the second signal compared to the first resulted in cancellations within the frequency spectrum, leading to a so-called comb filter effect (the sum of both signals creates "peaks" and "lows" in the spectrum that look familiar to the teeth of a comb).

Flanging is basically a chorus effect that modulates a shorter delay time (under 10 ms). Flangers are not meant to double or disembodify a sound like chorus does, but aim to manipulate its frequency range.

When the "Feedback" parameter is turned up, a familiar flanging effect is produced – the sound characteristics of a jet engine warming up.

Flanger parameters

Speed

: Modulation speed.

Depth

: The overall amount of modulation.

Feedback

: The volume of the internal feedback loop.

Mode:

Normal

: Flanging.

Dual

: Two parts, panned left and right.

Quad

: Four parts, alternately panned left and right.

Quad pan

: Like "Quad", but the "Depth" control also sets the intensity of the signal's pan movements between left and right.

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Filter



"Filter" is a modulation effect similar to the chorus and flanger effects, but it controls the frequency range and modulation source instead of the pitch. Therefore, it has different filter types and modulation times. The filter is particularly effective for synth sounds ("filter sweeps" on pads and atmospheres) and for creatively manipulating drum loops (such as for variations, fills etc.). It can also be used on guitars to produce the well-known "wah" effect with tempo modulation or a special mode.

Filter parameters

Speed

: The modulation speed is set by note values ranging from 1/1 to 1/16 (even or dotted). Similar to analog delay, the tempo information is automatically provided by the arrangement.

A peculiarity of the final position of the controller:



Tempo synchronization stops and modulation is controlled via the signal level.

Freq

: This is the base frequency for modulating the filter, and generally takes place above this frequency, i.e. the modulation increases the filter frequency.

Depth

: This control determines the modulation depth, i.e. the amount by which the speed control (or envelope mode, as described above) increases the base frequency. For extreme effects, turn "Freq" all the way to the left and "Depth" all the way to the right.

Filter modes

Low-pass



A filter with a slope of 24 dB/octave and a small amount of resonance. The treble frequencies above the base frequency (cut-off frequency) are filtered steeply. This is great for filter sweeps on synth pads and drum loops.

Band-pass



Only the frequencies around the base frequency are passed through the filter (24

dB slope with resonance). Use this mode to create wah-wah effects for guitars.

**Band
elimination
(„Notch-Filter
")**



Two parallel filters (–36 dB) with linked base frequencies create two 'notches' in the frequency spectrum. This allows you to create interesting sounds (e.g. guitar chords), and it sounds similar to a phaser.

High-pass



This mode achieves the opposite effect to the low-pass filter. Frequencies below the base frequency are filtered steeply. If you 'thin out' sections of your track (for example, a drum track) with a tempo-based modulation, this can sound very effective when contrasted with the full-range frequency spectrum (for example, if the filter is turned off for the next object).

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Chorus



Chorus creates a "floating" sound typically associated with guitars and synth pads. It can acoustically "thicken" an instrument, making it sound fuller to create the illusion that several instruments are playing. The chorus sound is created by using the so-called "Doppler" effect. You probably have noticed this phenomenon daily life: The sound of an approaching ambulance sounds higher than when it is moving away. This effect is a result of the speed of the sound which first increases and then decreases, thus also changing the sound pitch. If there were a second siren at your location, an oscillation would develop between both sounds (just like when two instruments are out of tune).

Chorus also splits the signal into at least two parts: the direct sound and effects. The Doppler effect is created by a short signal delay of the effect.

This delay is within the range of 10-30 ms (as in this one), this means that it is short enough to be perceived as an "echo". The times would also be similarly short if you were to duplicate a guitar track for instance. A short delay in the mix already sounds "duplicated", but is not authentic. This is where the above mentioned "out-of-tune" effect comes in: the pitch of the effect signal is slightly modulated by gently "drifting" forward and backward in the delay curve. The result is a floating effect where the speed is influenced by drifting.

Chorus parameters

You can enter the following parameters to control the floating effect:

Speed

: Modulation speed. Low speeds create an even, continuous development. High speeds produce vibrato-like qualities, but can also result in an "underwater" effect.

Depth

: Modulation depth. This determines how strongly the speed affects the pitch modulation.

Mix

: This sets the balance between the direct signal and the effects signal.

Mode: You can choose between **four operating modes** of the chorus effect:

"Normal"

is a combination of the direct signal and the detuned delay signal.

"Normal, low-pass"

is designed for bass-heavy signals like bass guitar. The bottom end of the signal stays clear and well-defined, the effect is only audible for the mid and treble frequencies.

"Dual"

makes the source sound more lively than a single "part". The sound is spread over the stereo panorama, which makes this mode seem "wider". The character of the sound becomes livelier than with a single voice only, and it is also distributed over the stereo panorama, making the mode sound "broader".

"Quad, low-pass"

is ideal for creating sounds such as deep synth pads with tight bass frequencies.

Tip: Similar to the stomp boxes our vintage effects are modeled on, there is a "footswitch" below the pedal's logo that can be clicked to turn the effect on or off for A/B comparisons. All the effects of the Vintage Effects Suite have been designed like this.

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Distortion



The distortion pedal is a "high-gain" distortion unit for crunch and lead guitar sounds. If you like typically "British" amp sounds and want to quickly record a guitar track with little effort, then this is the pedal for you.

An entire valve pre-amp circuit has been modeled, including the typical EQ curve. The amplification is "valve-typical", i.e. it doesn't start quickly but is harmonic and soft. Even at full power the pedal still reacts softly to a guitar and its settings (e.g. pickup choice and tone controller). For instance, you can influence the distortion even more by using the volume knob on the guitar.

There are only three parameters on this effect, but these interact with each other and can thus generate quite a variable sound. These parameters are:

- **Low:** the "bass" controller. This allows you to set the share of basses, even after the distortion. The type of prefiltering is important for guitar amps in particular, and is characteristic for the basic sound. You should set the bass controller depending on the basic sound of the guitar and the sound you are aiming for, e.g. "powerful" or "cutting".
- **High:** Mainly controls the share of highs before and after the distortion. If you are not using an external guitar speaker as a monitor, then we recommend setting the controller to the middle position or even moving it slightly to the right. This way the "sharp" highs which all guitar amps generate without a suitable loudspeaker disappear. At the same time the mids stand out more to give the sound more "kick". On the other hand, you can further emphasize the highs if you want the sound to be more neutral.
- **Drive:** The level of distortion. This controls the amplification used to operate the "virtual valve circuit" (max. 60dB). As the level increases, the valve goes into overdrive and generates typical distortions. For a slightly distorted sound ("Crunch") it is sufficient to set the controller to 10-11 hours maximum. Furthermore, the modeled circuit provides the usual "weight" for power rock chords and more. The further you turn this controller to the right, the more the mids of the signal move to the fore so that the "high-gain" lead sound can be heard better.

You can also use the distortion effect in combination with the amp simulation.

BitMachine



[Audio](#)

material can always be edited into high-quality with Samplitude Music Studio 15. Nevertheless, there are situations where a more imperfect lo-fi sound would perfectly suit a drum loop or a synthesizer sound. Remember the first hardware samplers from the 80s that usually only ran in 8 or 12-bit resolution and at low sample rates? With the BitMachine, changing the sound to suit such an "antique" device is no problem.

You can use the BitMachine to bring back to life the times when minimalist, scratchy sound chips in home computers were commonplace.

The BitMachine opens up a gateway to "acoustic time travel" where you can encounter bit and sample rate reduction and downstream filters based on analog models.

Plus, the effect has a modulation section for you to control individual parameters using an oscillator (LFO) or the input signal.

We have designed a range of "typical" presets to demonstrate the time travel abilities of the BitMachine. These can be opened at the top right of the interface.

"Filter" section

The filter in the BitMachine is a digital model of one of the most well-known filters in music electronics, i.e. the "Chamberlin 2-pole" filter used in old Oberheim synthesizers. These types of filters sound exceptionally musical. They can also be used quite creatively in the BitMachine, but should not be used exclusively to smooth out existing artifacts.

The filter works in the so-called "high-pass" mode, i.e. it lets through deep frequency (or medium) material according to setting, and dampens highs and medium areas.

Freq

:

You can specify the cut-off frequency of the filter using "Freq". Filtering starts above this frequency.

Reso

:

The signal in the area around the cut-off frequency can be strongly elevated to just below self-oscillation. Sharp, cutting sounds are possible at this level, and the effect becomes even clearer when you vary the cut-off frequency.

Drive

:

Both of the individual filters of the connections mentioned above have the ability to overmodulate themselves internally. With the "Drive" dial, you can regulate the amount of overmodulation. The more you turn this dial up, the more the signal is overmodulated. In this case, the parameters of the internal workings of the filter interact with one another. Increasing drive weakens the resonance, but, at the same time, the signal gets more volume, more bass and becomes acoustically fuller.

Note: The two smaller dials from this section are explained under "Modulation".

"Modulation" section

You can automate your effects via the settings in the modulation section.

Here, you'll find the so-called low frequency oscillator (LFO), which resonates with adjustable speed. You can influence the speed and type of resonance.

To influence the resonance, use the two small dials in both the reduction and filter areas. These four dials display modulation targets.

Example

: You've left the dial for the sample rate at its default setting. Change the small dial beneath from its middle position to either side. The modulation for the dial value is added to the sample rate: The LFO now controls these parameters proportionately and the sample rate reduction resonates at this modulation.

You can use this technique on other dials as well. You just have to make sure that the main dial isn't turned up to full, because then the modulation wouldn't have any effect. The modulation is always added to the set value.

Example

: Turn the small dial beneath the "bits" dial fully to the left (Value: -50) and the one beside it (beneath "sample rate") to the right (+50). You've now assigned a modulation to both parameters with the LFO. They are not changed uniformly, but rather opposite to one another: A negative setting is nothing more than an inversion of the modulation, so you're effectively turning down the control signal.

waveforms of the modulation section

We've already explained this example with the help of sine oscillation. The LFO can be in:

- Sine form
- Square wave (0 or 1, no intermediate level)
- Random value (an internal randomizer will be queried at the set speed)

Oscillator speed

The LFO speed is specified with the "speed" dial. If the "sync" button is active, then the LFO adapts to the song speed, and the dial locks musical values into place (e.g. $\frac{1}{4}$ note). Rhythmic paths of the sound distortion are therefore enabled. You can also switch off this synchronization and set the speed manually (in Hz).

Modulation with the "Envelope follower"

In the modulation section you'll find a fourth button, the audio input signal. If this mode is active, then the signal itself can be called upon to extract "modulation tension"; a so-called "envelope follower" continuously scans the volume of the input signal.

Note: The BitMachine doesn't recognize the type of audio signal automatically. For this reason, you should set the input sensitivity roughly with the "gain" dial. To do this, use the control LED: With accurate detection of the signal dynamics, assigning the four small dials to modulation lows is easier and you can use the full control range.

In envelope mode, the "speed" dial is used to control the response speed of the envelope (the display now switches to milliseconds). Lower times result in a faster response, higher times make the envelope rise (and fall) slower. You should experiment with the signal according to its complexity. The presets provided can only point you in a rough direction.

"Reduction" section

Bits

This dial controls the resolution of the audio material. Turning the dial to the left results in 16-bit quantization (CD quality). The further it is turned to the right, the lesser the signal dynamic becomes. In extreme cases (1-bit), there are only "on" or "off" states.

At the intermediate levels, you'll notice an increase in the background noise and a decrease in the dynamics. For example, 8-bit quantization will exhibit dynamics of only 48 dB. Quieter points in the material sound noisy and very quiet points sound "capped". This effect is amplified the more you turn the dial to the left until it starts crackling or "groaning".

Sample rate

The audio material is "down-calculated" with this dial, i.e. the internal sample rate is reduced. A new separation ratio between old and new rates is created. In relation to this ratio, a sample from the data

stream will be "dropped" at the various points.

Note: The two smaller dials from this section are explained under **Modulation**

Tape simulation

Tape simulation lets you add an "analog touch" to your recordings by reproducing the typical aspects of an analog tape recording. Many studios today still use 1" and 2" tape machines that are believed to have a "warm" and "saturated" sound, a contrast to the rather neutral and analytical digital technology.

There are numerous factors that are decisive for the sound of tape-supported recordings. Some of these are:

- Distortions that occur when the tape is forced into the saturation range
- Changes in the frequency curve as the signal is edited at the recording and playback end. In addition, all machines more or less have distinctive frequency spectrum peaks, particularly in the bass range (so-called "head bumps")
- Treble loss due to self-deletion as a result of the HF current ("bias", pre-magnetization) and intermodulation between the signal and the HF signal.

Drive

: Specifies the input signal. You can specify when the "virtual tape" is saturated and how strong the effect of the tone coloring is. You simultaneously gain more "loudness".

EQ low/hi

: Adjust the frequency curve (spectral balance controller). You can choose whether you would like to have an output signal with a heavy bass or whether it should rather include more trebles. The pre-filtering during "recording" and the equalization are adjusted.

Observe, however, that the frequency curve of the simulation will not be neutral even if the "EQ low/hi" controller is set to the neutral position: A frequency-selective amplification always occurs.

Using the distortions that occur during tape simulation can quickly lead to a state of "acoustic fatigue", particularly with material including many highs. The differences can be heard more easily in a 1:1 comparison when the tape section is deactivated. In most cases minor editing using the simulation is sufficient to create a slight "analog touch".

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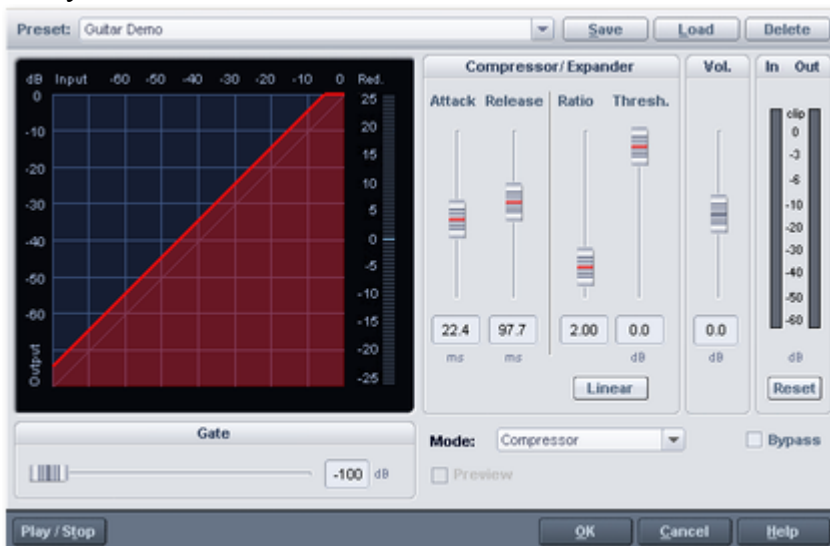
: Adjust the frequency curve (spectral balance controller). You can choose whether you would like to have an output signal with a heavy bass or whether it should rather include more trebles. The pre-filtering during "recording" and the equalization are adjusted.

Observe, however, that the frequency curve of the simulation will not be neutral even if the "EQ low/hi" controller is set to the neutral position: A frequency-selective amplification always occurs.

Using the distortions that occur during tape simulation can quickly lead to a state of "acoustic fatigue", particularly with material including many highs. The differences can be heard more easily in a 1:1 comparison when the tape section is deactivated. In most cases minor editing using the simulation is sufficient to create a slight "analog touch".

Track dynamics (track effects, mixer channels)

Samplitude Music Studio 15 provides two different dynamics modules: one that can be opened via the "Offline effects" menu (talked about in further detail in the corresponding chapter), and a second one that is only available via the track effects and in the mixer.



Use this editor to edit the dynamics of a sample. All functions can be previewed in real time. The graphics display shows the corresponding resulting dynamics curve to improve the overview. The following functions are available:

Compressor

: The dynamics of a piece are limited, loud sequences are dampened, quiet sequences are retained. Compression is often used to add power to audio material or to increase the loudness. The level of compression is adjusted by the ratio controller, the activation threshold is determined by the threshold. You can also influence the attack and release.

Limiter

: Only the loudest passages are limited (above the threshold). Quiet passages remain unedited. Limiters are used to reduce the occurrence of big level peaks without reducing the master dynamics. After the limiter process, the master level can be increased using normalization without having to worry about overmodulation. The limiter setup preset sets a threshold of -0.2 dB when using the limiter as a peak limiter in the master range of the mixer.

Limiter 100%

: Performs the same editing as the limiter, but the level is immediately raised to 0 dB. This corresponds with normalization in one single step.

Expander

: The dynamics of a piece are increased; loud sequences remain quiet, quiet sequences become even quieter. Dynamics expansion is often used for recording speech with a high noise level. The expansion causes the level of the speech to be raised as the noise is suppressed. Please note that a powerful denoising algorithm is also provided.

Gate

: Very quiet passages (below the threshold level) are dampened or set to zero. This way, hissing can be effectively suppressed during pauses between individual takes. Using the "Gate" function also makes sense at high compression levels (ratio > 5) to raise the most quiet passages and prevent background noise.

Ratio

: This parameter controls the strength of the corresponding effect; 1.0 means that there is no effect.

Threshold

: The volume threshold can be set below or above the one which applies the effect.

Attack

: Sets how quickly the algorithm takes to react to increasing sound levels.

Release

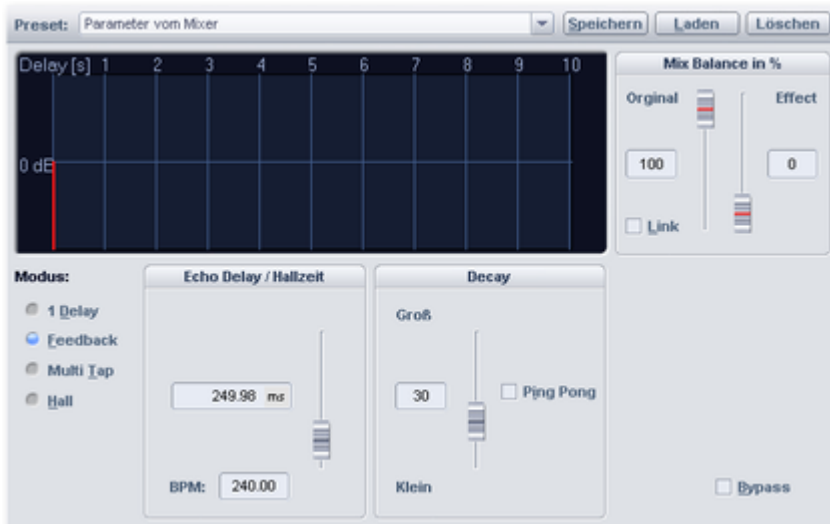
: Sets how quickly the algorithm takes to react to falling sound levels.

Gate level

: This parameter specifies which levels should be set to 0.

Track delay/reverb (track effects)

Samplitude Music Studio 15 provides two different dynamics echo/reverb modules: one that can be opened via the "Offline effects" menu and which shall be talked about in further detail in the corresponding chapter, and a second one that is only available via the track effects and in the mixer.



Use this editor to calculate an echo effect into a sample. To avoid overmodulating the sample, there should be a certain volume control reserve, i.e. the sample data should not be allowed to reach the maximum/minimum. This can be accessed using the normalization function (some 70%), if required.

Echo delay / Rev. time

: This button displays the delay between the individual echoes/original signal and the first echo in seconds. You should note that the delay is dependent on the sample rate, that is, a change in the sample rate after creating the echo leads (logically) to a change in the echo delay.

Reverb properties

: Here the values for the size of the simulated room and the reverb coloration can be specified numerically as well as by using the scroll bars.

Wet/Dry balance %

: Here the dampening between the individual echoes can be entered as a percent. A number close to 100% results in slower sounding echoes, a value under 40% has quick sounding delays.

Elastic Audio

General information on the Elastic Audio editor

Elastic [Audio](#)

is a specialized editor for changing the pitch of audio material. Resampling and pitchshifting algorithms can be automated, and a basic frequency recognition enables the user to change around considerably the pitches of monophonic audio material.

Pitch-shifting algorithms are able to change a melody in the pitch without influencing the tempo.

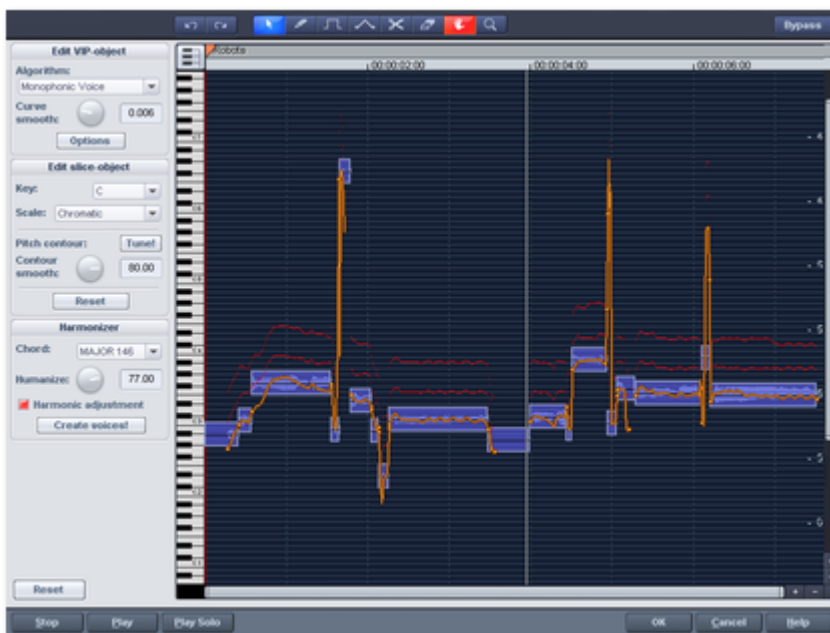
Samplitude Music Studio 15 provides various pitchshifting algorithms that can be used based on existing material.

Elastic Audio has the following capabilities

- Recognition of the basic frequency in monophonic audio material.
- Automatic and manual correction of the basic frequency process in monophonic audio material.
- Manual correction of the pitch of notes from monophonic audio material.
- Changing melodies in monophonic audio material.
- Harmonizer for creating additional voices

Note on timestretching: Timestretching cannot be automated, but can continue to be used statically when using Elastic [Audio](#)

Edit window



The pitch characteristic is shown in the editing window. To customize the pitch correspondingly, the original pitch of the audio material must, of course, be known. Fundamental to the functionality is therefore a preliminary pitch analysis of the material. This is basically only for tonal, monophonic material like solo vocals, solo instruments, and speech.

The analysis function starts automatically when the editor is opened. The analysis requires more time with longer objects. After the analysis is complete, the objects are split up into individual "slices" according to the recognized pitches. The medium pitches of a slice determine its position in the graphic, independent of the set progression of the pitch curve inside the slice. On the borders of the slice objects, two handles are created on the pitch curve. These handles can be moved in order to produce an increasing or decreasing pitch characteristic, but still keep the small changes in the basic frequency (vibrato).

The "Tune" function for automatic pitch correction can be found beside the "Draw pitch" function.

Axes labelling and legends

Y axis

: Pitches in notes. The notes can be deselected on the keyboard. They won't be used in the automatic pitch correction or in quantized drawing. The corresponding guidelines for scales can be used by selecting the basic tone and scales in the box "Edit slice object".

Orange line

: New pitch characteristic (editable)

Grey line

: Original pitch characteristic (result of the analysis)

Red line

: Harmonizer voices.

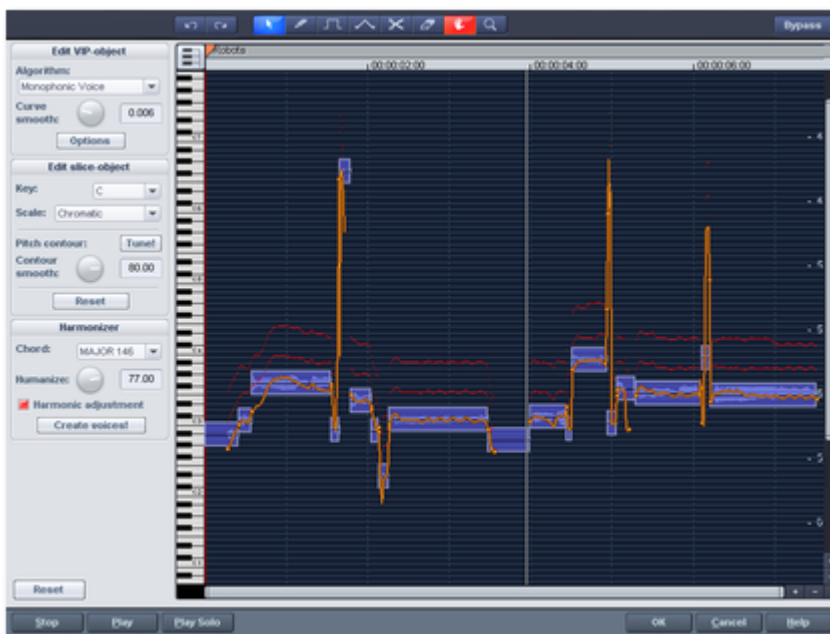
Fundamentals of the Elastic Audio editor

Opening the Elastic [Audio](#) editor

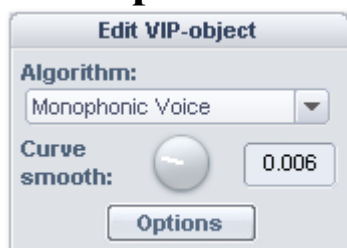
Select the object that should be edited in the editor. The Elastic Audio editor for a selected object is opened via "[Menu](#) effects -> Audio".

Interaction between Elastic Audio editor and objects

Temporal corrections to notes are not run in the editor itself, but rather by splitting and moving the objects in the [VIP](#)



Description of all control elements



Edit PROJECT OBJECT box

These options and parameters always effect the whole object loaded into the editor, and therefore all of

the slices.

Algorithm

: You can choose between the modes: monophonic voice (preset), standard, smooth, and beat marker slicing.

For more information on the algorithms, read the corresponding paragraph on the time processor!

Curve smoothing

: This parameter brings about the smoothing of the given pitch curve using a time constant (in ms). When smoothing to a large extent, jumpy pitch-shifts change from a "kick" to a glissando.

Formant control

: Selecting the "Monophonic voice" algorithm may result in so-called formants. Formants are sound components typical for the character of instruments or the human voice. With instruments they mainly result from the geometry of the resonance body. Human formants are created by the anatomy of the vocal tract.

With most algorithms the formants are also influenced by changing the pitch. Using the monophonic voice algorithm you can change the position of the formants independent of the pitch. Acoustically, this corresponds with stretching or compressing the above mentioned geometry, and this can lead to interesting effects...



HARMONIZER box

Chord

: Here you can set the chord that makes up the parallel voices of the harmonizer, and a distinction is made between major and minor. The settings of the keyboard are taken into account, unless the option "Lead voice" has been activated.

Humanize

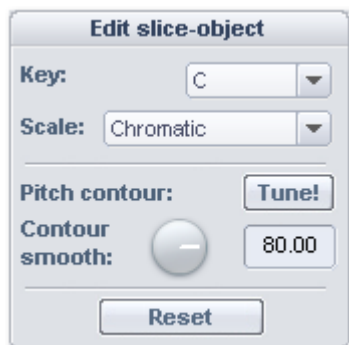
: At a low setting this causes high quantization of the parallel voices and makes the effect sound very artificial. If you select a very high humanize value, the pitches of the individual voices will vary and the cue will be shifted so that you get the impression of an amateur ensemble.

Create voices

: This button generates voices.

Harmonic adjustment

: Parallel voices are usually generated by taking the keyboard and humanize settings into account. However, if this option is deactivated, then the voices are always kept exactly parallel to the orange curve.



Edit SLICE OBJECT box

Options for automatic pitch correction

Basic tone

: Basic tone of the scale. In the chromatic scale this setting is still not taken into account.

Scale

: Type of scale. Major/minor or modes

Pitch characteristic tune!

: This button quantizes ("levels out") the pitch characteristic of selected slices.

With quantization smoothing

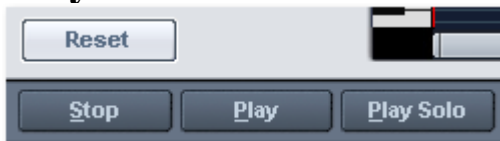
you can determine the "Strength" of quantization, and lower values are quantized the most.

Consequently, small pitch fluctuations always occur in natural sound sources, e.g. vibrato, disappear ("Cher effect").

Reset

: Resetting the selected slices. The orange curve is superimposed over the grey curve, and the slice is reset to the original medium pitch.

Playback control



Reset all

: Recalculates and resets the pitch curves of the loaded material.

Stop/Play

: Stops/Starts the playback of the arrangement.

Play solo

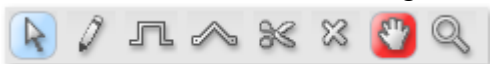
: Only the object loaded into the editor is played.

Bypass

: Switches the effect on or off.

Tools in the Elastic Audio easy editor

You can use various tools to edit slices and the pitch curve. The two tools can be freely assigned to each mouse button. The tool assigned to the left mouse button is displayed in blue and the right mouse button in red. Click with the corresponding mouse button on the desired console button. An exception is the zoom tool with which can be assigned to both mouse keys.



Selection tool (arrow)



You can now move the slice objects up and down.

This modifies the pitch of slice objects as a whole, and slice objects and curve handles can also be selected. Multiple selection is possible with "*Ctrl*" or "*Shift*"

Freehand draw function



You can freely draw the pitch curve using the draw tool.

If you press "*Shift*" as well, a straight line will be drawn between the start position on drawing and the current mouse position. When "*Ctrl*" is pressed, the slice objects are combined when drawing.

Drawing with quantization



This is the tool used for quantized drawing.

Quantized means that the line is horizontally free but the curve snaps onto the grid of the tones of the selected scale under "*Tune*".

Drawing a straight line using "Shift" and compiling slice objects with "Ctrl" is also possible in quantized draw mode.

Rubber-band tool



Use the rubber band tool to bend the pitch curves between two neighboring handles.

Here the middle of the curve is moved while the curve handles remain the same. In combination with moving the curve handles at the slice object edges, you can also move the pitch characteristic and attain micro-tone structures (vibrato).

Cut tool



This can be used to split audio material manually into slice objects (according to the notes).

If automatic recognition is not sufficient, then slice objects can be connected to one another using "Ctrl" + the drawing pens.

Eraser



Use the eraser to reset the output value of the orange curve.

The pitch characteristic then corresponds to the original again and the curve corresponds to the recognized curve.

Magnifying glass zoom tool



Zoom tool: Left mouse button "Zoom" zooms in and the right mouse button zooms out.

Left-clicking and dragging can stretch out a range which can then be zoomed entirely.

Navigation tool



With the navigation tool, the visible clip can be moved vertically and horizontally.

Applications of the Elastic Audio easy editor

Pitch correction (intonation correction) with monophonic audio material

Getting started (for all subsequent editing):

- Load objects into the Elastic [Audio](#) easy editor.
- Set the desired selection state. All slices are selected directly after the analysis.
- Select suitable algorithms – you should test here to see if "monophonic voice" (see above) is the suitable algorithm.
- Now the pitch can be edited with the mouse tools by editing the orange curve or the pitch of the slice objects.

Manual correction of the whole pitch of a pitch slice

- Select the slice with the selection tool (arrow).
- Move vertically with the mouse.

Automatic correction of the pitch characteristic

- Select the slice objects with the selection tool (arrow).
- Select the scale in the *Edit slice objects* group and, if required, deselect the tones which are not to be quantized in the keyboard by clicking on them.
- Press the "Tone pitch characteristics" button
- With the parameter "Quantization smoothing" you can reduce the "strength" of the quantization.

In principle, this editing process more or less levels off pitch characteristics inside a slice.

Correction of the increase or decrease in the pitch.

- Select the slice objects with the selection tool (arrow).
- Click and drag the pitch curve by moving the two handles at each end of the slice objects or on the orange lines.

Free redefinition of the pitch / Creation of frequency modulations like warblers and vibrato.

- Select the slices with the Selection tool (arrow).
- Select the drawing tool (quantized or not).
- Draw in the pitch modulations.

Creating "Plastic voices" (Removing vibrato by strong quantization of the micro pitch characteristic)

- Set the parameter *Quantization smoothing* to 0.
- Press the "Tone pitch characteristics" button
- If required, switch off format correction when using the "*Monophonic voice*" algorithm.

Creating "Robot voices" – quantizing to a pitch

- Select the slice(s) with the selection tool (arrow).
- Select the draw tool for quantized drawing.
- With artifacts: Increase the "*Quantization smoothing*" parameter.

Creation of parallel voices

- Set desired chord.
- If necessary, change the "Humanize" parameter and press "Create voices" to generate the voices again.

Pitch-sliced-objects and VIP objects

The basic frequency analysis reduces the pitch slices to pieces which ideally correspond to one note in the music's melody or one syllable in speech. For speech the pitches correspond to the level of the vowels.

After the analysis, all of the slices are shown selected (blue).

The subdivision into slices can be corrected manually. The slices are cut apart with the scissors tool, and then merged together with the rubber band gripper tool ("Ctrl" held down).

The blue line represents the mid-range pitch for each object and results approximately from the average value of the pitches in the slice.

In selected pitch-sliced objects the functions found in the "Editing sliced-object" group can be applied, i.e. the correction of the pitch sequence and the mid-range pitch.

The option to reset the corrections for selected slices is also available.

Selecting sliced objects

Sliced objects can be selected and deselected. "Ctrl + A" selects all slices; clicking on the "empty space" deselects them.

Fundamental frequency analysis correction

General options

The fundamental frequency analysis and the related fundamental frequency-dependent pitch-slice-analysis may fail or cause errors for the following reasons:

- Reverbed material,
- Runtime stereophonics,
- False analysis,
- Voiceless vocals (sibilants...),
- Noisy sounds.

In the last two cases, analysis cannot return a result as the fundamental frequency is not available.

MAGIX Elastic [Audio](#)

provides the user with the opportunity to achieve good results using many manual options, whereby the fundamental frequency analysis does not or cannot deliver any results.

Error in the fundamental frequency analysis

Symptoms:

Sound:

The pitch varies strongly for a short period and does not correspond to the set value or characteristic.

When using the **monophonic voice**

algorithm, additional strongly distorted noises arise. The algorithm, which depends on the fundamental frequency recognition itself, fails.

Graphics in the editor

: The curve exhibits a short strong jump and behaves in a very jerky manner.

Solutions:

- With the help of the eraser you can try superimposing the original curve at these points.
- If you set high values for the **curve smoothing** parameter, then short "hiccups" can be reduced in severity or prevented completely.

Correction of slice borders

So that the automatic or manual correction of the mid pitches of slices provides correct results, the slice borders have to match well with the note borders.

The slice borders can be manually changed

by connecting two slices to one another  *Ctrl* +  or  with the pen

and using the cutting tool to cut through at the correct position.

**Keyboard commands and mouse-wheel assignments****Navigation using the mouse wheel**

Horizontal scrolling: mouse wheel

Vertical scrolling: Alt + mouse wheel

Vertical zooming: Shift+ mouse wheel

Zoom horizontal: Ctrl + mouse wheel

Zoom hor. + vert. Ctrl + Shift + mouse wheel

Ctrl + space bar	Play solo/Stop
Space bar	Play/Stop
Ctrl + A	Select all
A	Update view
Ctrl + Z	Undo
Ctrl + 1-8	Select tool for left-hand mouse button
Ctrl + Shift + 1-8	Select tool for right-hand mouse button
Shift + Alt + P	Show/hide pitch curve
Ctrl + Cursor up	Enlarge waveform
Ctrl + Cursor	Enlarge waveform
Cursor left	Play cursor to the left
Cursor right	Play cursor to the right
Home	Jump to object start
End	Jump to object end
Ctrl + Cursor	Zoom in
Ctrl + Cursor	Zoom out
Shift + R	Alter scaling mood (Frequency for chamber note a).
Ctrl + NUMPAD 4,5,6	Saves zoom snapshots 1,2,3
Alt + NUMPAD 4,5,6	Loads zoom snapshots 1,2,3 without any vertical zoom
NUMPAD 4,5,6	Zoom snapshots 1,2,3 with vertical zoom

General information on the Elastic Audio editor

Elastic [Audio](#)

is a specialized editor for changing the pitch of audio material. Resampling and pitchshifting algorithms can be automated, and a basic frequency recognition enables the user to change around considerably the pitches of monophonic audio material.

Pitch-shifting algorithms are able to change a melody in the pitch without influencing the tempo.

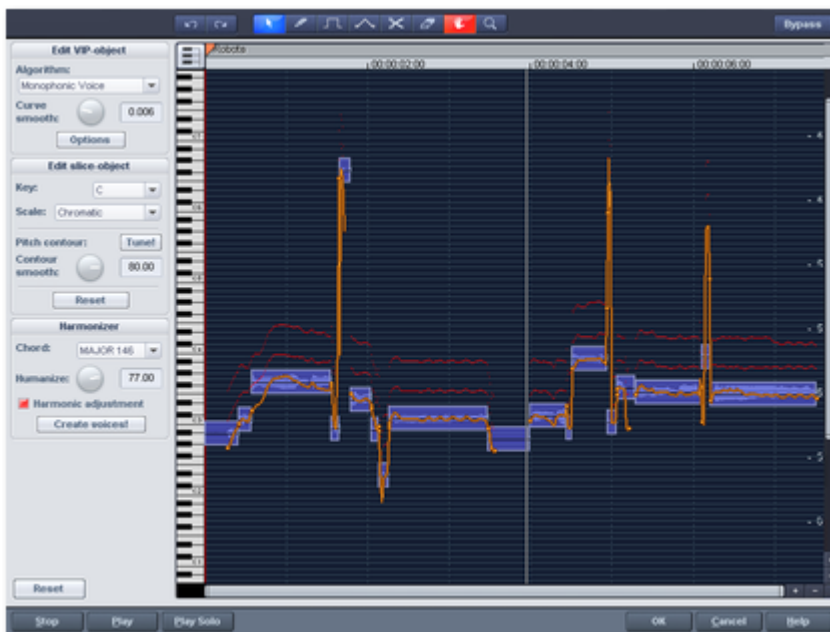
Samplitude Music Studio 15 provides various pitchshifting algorithms that can be used based on existing material.

Elastic Audio has the following capabilities

- Recognition of the basic frequency in monophonic audio material.
- Automatic and manual correction of the basic frequency process in monophonic audio material.
- Manual correction of the pitch of notes from monophonic audio material.
- Changing melodies in monophonic audio material.
- Harmonizer for creating additional voices

Note on timestretching: Timestretching cannot be automated, but can continue to be used statically when using Elastic [Audio](#)

Edit window



The pitch characteristic is shown in the editing window. To customize the pitch correspondingly, the original pitch of the audio material must, of course, be known. Fundamental to the functionality is therefore a preliminary pitch analysis of the material. This is basically only for tonal, monophonic material like solo vocals, solo instruments, and speech.

The analysis function starts automatically when the editor is opened. The analysis requires more time with longer objects. After the analysis is complete, the objects are split up into individual "slices" according to the recognized pitches. The medium pitches of a slice determine its position in the graphic, independent of the set progression of the pitch curve inside the slice. On the borders of the slice objects, two handles are created on the pitch curve. These handles can be moved in order to produce an increasing or decreasing pitch characteristic, but still keep the small changes in the basic frequency (vibrato).

The "Tune" function for automatic pitch correction can be found beside the "Draw pitch" function.

Axes labelling and legends

Y axis

: Pitches in notes. The notes can be deselected on the keyboard. They won't be used in the automatic pitch correction or in quantized drawing. The corresponding guidelines for scales can be used by selecting the basic tone and scales in the box "Edit slice object".

Orange line

: New pitch characteristic (editable)

Grey line

: Original pitch characteristic (result of the analysis)

Red line

: Harmonizer voices.

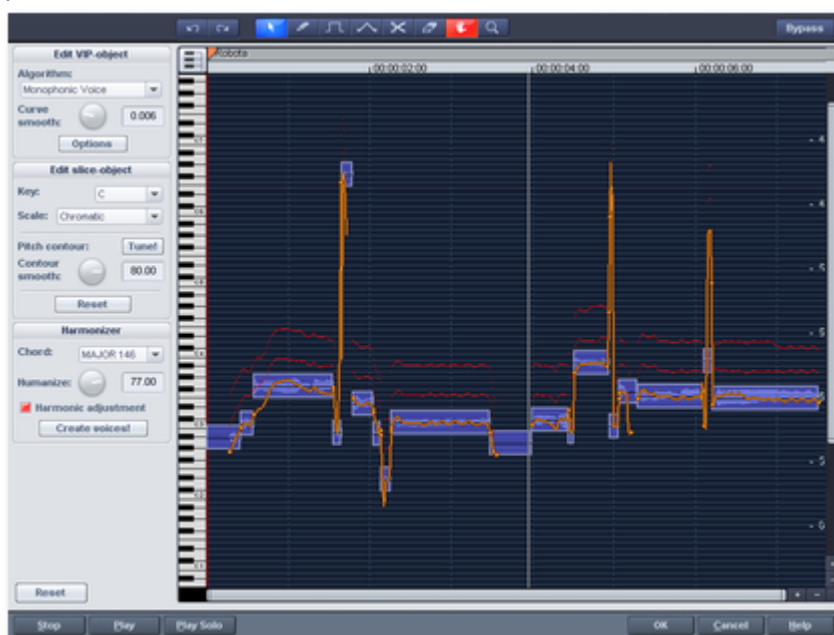
Fundamentals of the Elastic Audio editor

Opening the Elastic [Audio](#) editor

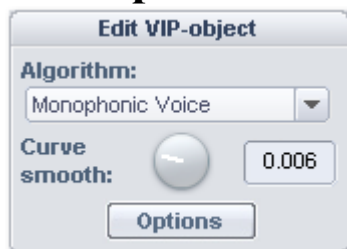
Select the object that should be edited in the editor. The Elastic Audio editor for a selected object is opened via "[Menu](#) effects -> Audio".

Interaction between Elastic Audio editor and objects

Temporal corrections to notes are not run in the editor itself, but rather by splitting and moving the objects in the [VIP](#)



Description of all control elements



Edit PROJECT OBJECT box

These options and parameters always effect the whole object loaded into the editor, and therefore all of the slices.

Algorithm

: You can choose between the modes: monophonic voice (preset), standard, smooth, and beat marker slicing.

For more information on the algorithms, read the corresponding paragraph on the time processor!

Curve smoothing

: This parameter brings about the smoothing of the given pitch curve using a time constant (in ms). When smoothing to a large extent, jumpy pitch-shifts change from a "kick" to a glissando.

Formant control

: Selecting the "Monophonic voice" algorithm may result in so-called formants. Formants are sound components typical for the character of instruments or the human voice. With instruments they mainly result from the geometry of the resonance body. Human formants are created by the anatomy of the vocal tract.

With most algorithms the formants are also influenced by changing the pitch. Using the monophonic voice algorithm you can change the position of the formants independent of the pitch. Acoustically, this corresponds with stretching or compressing the above mentioned geometry, and this can lead to interesting effects...



HARMONIZER box

Chord

: Here you can set the chord that makes up the parallel voices of the harmonizer, and a distinction is made between major and minor. The settings of the keyboard are taken into account, unless the option "Lead voice" has been activated.

Humanize

: At a low setting this causes high quantization of the parallel voices and makes the effect sound very artificial. If you select a very high humanize value, the pitches of the individual voices will vary and the cue will be shifted so that you get the impression of an amateur ensemble.

Create voices

: This button generates voices.

Harmonic adjustment

: Parallel voices are usually generated by taking the keyboard and humanize settings into account. However, if this option is deactivated, then the voices are always kept exactly parallel to the orange curve.



Edit SLICE OBJECT box

Options for automatic pitch correction

Basic tone

: Basic tone of the scale. In the chromatic scale this setting is still not taken into account.

Scale

: Type of scale. Major/minor or modes

Pitch characteristic tune!

: This button quantizes ("levels out") the pitch characteristic of selected slices.

With quantization smoothing

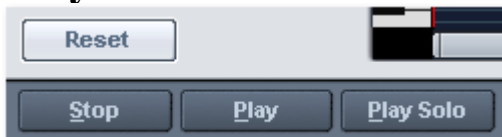
you can determine the "Strength" of quantization, and lower values are quantized the most.

Consequently, small pitch fluctuations always occur in natural sound sources, e.g. vibrato, disappear ("Cher effect").

Reset

: Resetting the selected slices. The orange curve is superimposed over the grey curve, and the slice is reset to the original medium pitch.

Playback control



Reset all

: Recalculates and resets the pitch curves of the loaded material.

Stop/Play

: Stops/Starts the playback of the arrangement.

Play solo

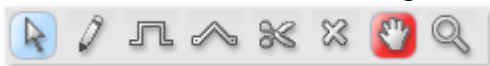
: Only the object loaded into the editor is played.

Bypass

: Switches the effect on or off.

Tools in the Elastic Audio easy editor

You can use various tools to edit slices and the pitch curve. The two tools can be freely assigned to each mouse button. The tool assigned to the left mouse button is displayed in blue and the right mouse button in red. Click with the corresponding mouse button on the desired console button. An exception is the zoom tool with which can be assigned to both mouse keys.



Selection tool (arrow)



You can now move the slice objects up and down.

This modifies the pitch of slice objects as a whole, and slice objects and curve handles can also be selected. Multiple selection is possible with "*Ctrl*" or "*Shift*"

Freehand draw function



You can freely draw the pitch curve using the draw tool.

If you press "*Shift*" as well, a straight line will be drawn between the start position on drawing and the current mouse position. When "*Ctrl*"

is pressed, the slice objects are combined when drawing.

Drawing with quantization



This is the tool used for quantized drawing.

Quantized means that the line is horizontally free but the curve snaps onto the grid of the tones of the selected scale under "*Tune*".

Drawing a straight line using "*Shift*" and compiling slice objects with "*Ctrl*" is also possible in quantized draw mode.

Rubber-band tool



Use the rubber band tool to bend the pitch curves between two neighboring handles.

Here the middle of the curve is moved while the curve handles remain the same. In combination with moving the curve handles at the slice object edges, you can also move the pitch characteristic and attain micro-tone structures (vibrato).

Cut tool



This can be used to split audio material manually into slice objects (according to the notes).

If automatic recognition is not sufficient, then slice objects can be connected to one another using "Ctrl" + the drawing pens.

Eraser



Use the eraser to reset the output value of the orange curve.

The pitch characteristic then corresponds to the original again and the curve corresponds to the recognized curve.

Magnifying glass zoom tool



Zoom tool: Left mouse button "**Zoom**" zooms in and the right mouse button zooms out.

Left-clicking and dragging can stretch out a range which can then be zoomed entirely.

Navigation tool



With the navigation tool, the visible clip can be moved vertically and horizontally.

Applications of the Elastic Audio easy editor

Pitch correction (intonation correction) with monophonic audio material

Getting started (for all subsequent editing):

- Load objects into the Elastic [Audio](#) easy editor.
- Set the desired selection state. All slices are selected directly after the analysis.
- Select suitable algorithms – you should test here to see if "monophonic voice" (see above) is the suitable algorithm.
- Now the pitch can be edited with the mouse tools by editing the orange curve or the pitch of the slice objects.

Manual correction of the whole pitch of a pitch slice

- Select the slice with the selection tool (arrow).
- Move vertically with the mouse.

Automatic correction of the pitch characteristic

- Select the slice objects with the selection tool (arrow).
- Select the scale in the *Edit slice objects* group and, if required, deselect the tones which are not to be quantized in the keyboard by clicking on them.
- Press the "Tone pitch characteristics" button
- With the parameter "Quantization smoothing" you can reduce the "strength" of the quantization.

In principle, this editing process more or less levels off pitch characteristics inside a slice.

Correction of the increase or decrease in the pitch.

- Select the slice objects with the selection tool (arrow).
- Click and drag the pitch curve by moving the two handles at each end of the slice objects or on the orange lines.

Free redefinition of the pitch / Creation of frequency modulations like warblers and vibrato.

- Select the slices with the Selection tool (arrow).

- Select the drawing tool (quantized or not).
- Draw in the pitch modulations.

Creating "Plastic voices" (Removing vibrato by strong quantization of the micro pitch characteristic)

- Set the parameter *Quantization smoothing* to 0.
- Press the "Tone pitch characteristics" button
- If required, switch off format correction when using the "*Monophonic voice*" algorithm.

Creating "Robot voices" – quantizing to a pitch

- Select the slice(s) with the selection tool (arrow).
- Select the draw tool for quantized drawing.
- With artifacts: Increase the "*Quantization smoothing*" parameter.

Creation of parallel voices

- Set desired chord.
- If necessary, change the "Humanize" parameter and press "Create voices" to generate the voices again.

Pitch-sliced-objects and VIP objects

The basic frequency analysis reduces the pitch slices to pieces which ideally correspond to one note in the music's melody or one syllable in speech. For speech the pitches correspond to the level of the vowels.

After the analysis, all of the slices are shown selected (blue).

The subdivision into slices can be corrected manually. The slices are cut apart with the scissors tool, and then merged together with the rubber band gripper tool ("Ctrl" held down).

The blue line represents the mid-range pitch for each object and results approximately from the average value of the pitches in the slice.

In selected pitch-sliced objects the functions found in the "Editing sliced-object" group can be applied, i.e. the correction of the pitch sequence and the mid-range pitch.

The option to reset the corrections for selected slices is also available.

Selecting sliced objects

Sliced objects can be selected and deselected. "Ctrl + A" selects all slices; clicking on the "empty space" deselects them.

Fundamental frequency analysis correction

General options

The fundamental frequency analysis and the related fundamental frequency-dependent pitch-slice-analysis may fail or cause errors for the following reasons:

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- Runtime stereophonics,
- False analysis,
- Voiceless vocals (sibilants...),
- Noisy sounds.

In the last two cases, analysis cannot return a result as the fundamental frequency is not available.

MAGIX Elastic [Audio](#)

provides the user with the opportunity to achieve good results using many manual options, whereby the fundamental frequency analysis does not or cannot deliver any results.

Error in the fundamental frequency analysis

Symptoms:

Sound:

The pitch varies strongly for a short period and does not correspond to the set value or characteristic.

When using the **monophonic voice**

algorithm, additional strongly distorted noises arise. The algorithm, which depends on the fundamental frequency recognition itself, fails.

Graphics in the editor

: The curve exhibits a short strong jump and behaves in a very jerky manner.

Solutions:

- With the help of the eraser you can try superimposing the original curve at these points.
- If you set high values for the **curve smoothing** parameter, then short "hiccups" can be reduced in severity or prevented completely.

Correction of slice borders

So that the automatic or manual correction of the mid pitches of slices provides correct results, the slice borders have to match well with the note borders.

The slice borders can be manually changed by connecting two slices to one another with the pen



and using the cutting tool to cut through at the correct position.



Keyboard commands and mouse-wheel assignments

Navigation using the mouse wheel

Horizontal scrolling: mouse wheel

Vertical scrolling: Alt + mouse wheel

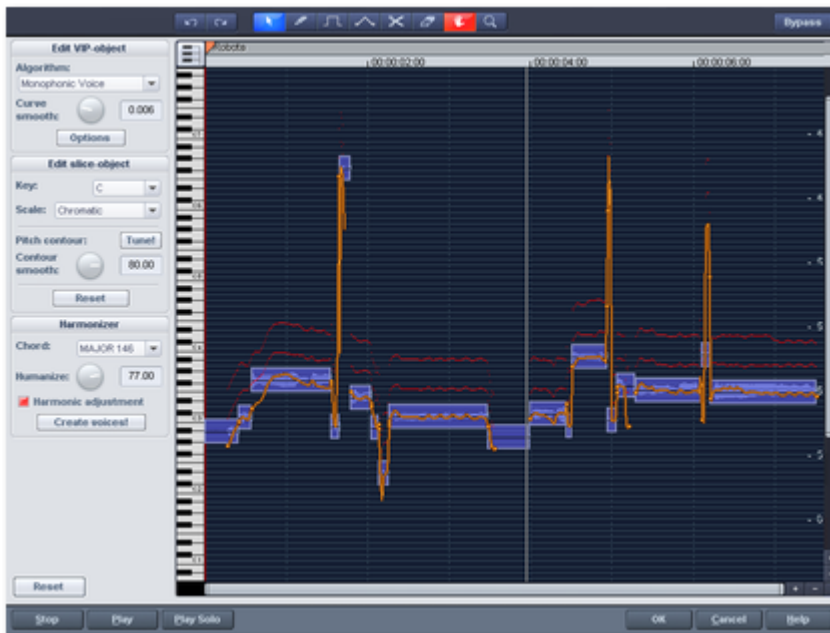
Vertical zooming: Shift + mouse wheel

Zoom horizontal: Ctrl + mouse wheel

Zoom hor. + vert. Ctrl + Shift + mouse wheel

Ctrl + space bar	Play solo/Stop
Space bar	Play/Stop
Ctrl + A	Select all
A	Update view
Ctrl + Z	Undo
Ctrl + 1-8	Select tool for left-hand mouse button
Ctrl + Shift + 1-8	Select tool for right-hand mouse button
Shift + Alt + P	Show/hide pitch curve
Ctrl + Cursor up	Enlarge waveform
Ctrl + Cursor	Enlarge waveform
Cursor left	Play cursor to the left
Cursor right	Play cursor to the right
Home	Jump to object start
End	Jump to object end
Ctrl + Cursor	Zoom in
Ctrl + Cursor	Zoom out
Shift + R	Alter scaling mood (Frequency for chamber note a).
Ctrl + NUMPAD 4,5,6	Saves zoom snapshots 1,2,3
Alt + NUMPAD 4,5,6	Loads zoom snapshots 1,2,3 without any vertical zoom
NUMPAD 4,5,6	Zoom snapshots 1,2,3 with vertical zoom

Edit window



The pitch characteristic is shown in the editing window. To customize the pitch correspondingly, the original pitch of the audio material must, of course, be known. Fundamental to the functionality is therefore a preliminary pitch analysis of the material. This is basically only for tonal, monophonic material like solo vocals, solo instruments, and speech.

The analysis function starts automatically when the editor is opened. The analysis requires more time with longer objects. After the analysis is complete, the objects are split up into individual "slices" according to the recognized pitches. The medium pitches of a slice determine its position in the graphic, independent of the set progression of the pitch curve inside the slice. On the borders of the slice objects, two handles are created on the pitch curve. These handles can be moved in order to produce an increasing or decreasing pitch characteristic, but still keep the small changes in the basic frequency (vibrato).

The "Tune" function for automatic pitch correction can be found beside the "Draw pitch" function.

Axes labelling and legends

Y axis

: Pitches in notes. The notes can be deselected on the keyboard. They won't be used in the automatic pitch correction or in quantized drawing. The corresponding guidelines for scales can be used by selecting the basic tone and scales in the box "Edit slice object".

Orange line

: New pitch characteristic (editable)

Grey line

: Original pitch characteristic (result of the analysis)

Red line

: Harmonizer voices.

Fundamentals of the Elastic Audio editor

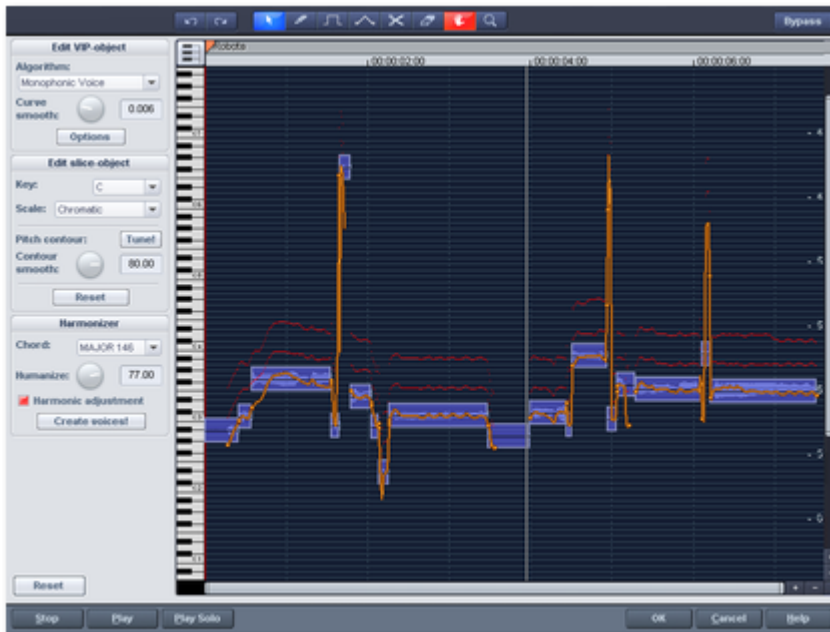
Opening the Elastic [Audio](#) editor

Select the object that should be edited in the editor. The Elastic Audio editor for a selected object is opened via "[Menu](#) effects -> Audio".

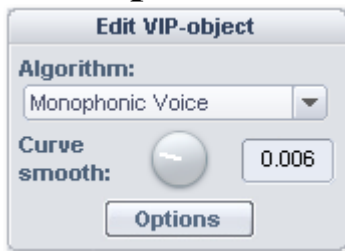
Interaction between Elastic Audio editor and objects

Temporal corrections to notes are not run in the editor itself, but rather by splitting and moving the

objects in the [VIP](#)



Description of all control elements



Edit PROJECT OBJECT box

These options and parameters always effect the whole object loaded into the editor, and therefore all of the slices.

Algorithm

: You can choose between the modes: monophonic voice (preset), standard, smooth, and beat marker slicing.

For more information on the algorithms, read the corresponding paragraph on the time processor!

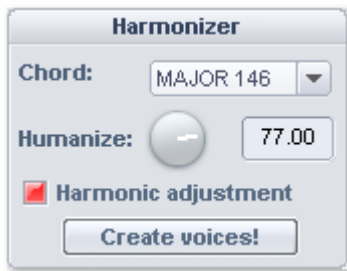
Curve smoothing

: This parameter brings about the smoothing of the given pitch curve using a time constant (in ms). When smoothing to a large extent, jumpy pitch-shifts change from a "kick" to a glissando.

Formant control

: Selecting the "Monophonic voice" algorithm may result in so-called formants. Formants are sound components typical for the character of instruments or the human voice. With instruments they mainly result from the geometry of the resonance body. Human formants are created by the anatomy of the vocal tract.

With most algorithms the formants are also influenced by changing the pitch. Using the monophonic voice algorithm you can change the position of the formants independent of the pitch. Acoustically, this corresponds with stretching or compressing the above mentioned geometry, and this can lead to interesting effects...



HARMONIZER box

Chord

: Here you can set the chord that makes up the parallel voices of the harmonizer, and a distinction is made between major and minor. The settings of the keyboard are taken into account, unless the option "Lead voice" has been activated.

Humanize

: At a low setting this causes high quantization of the parallel voices and makes the effect sound very artificial. If you select a very high humanize value, the pitches of the individual voices will vary and the cue will be shifted so that you get the impression of an amateur ensemble.

Create voices

: This button generates voices.

Harmonic adjustment

: Parallel voices are usually generated by taking the keyboard and humanize settings into account. However, if this option is deactivated, then the voices are always kept exactly parallel to the orange curve.



Edit SLICE OBJECT box

Options for automatic pitch correction

Basic tone

: Basic tone of the scale. In the chromatic scale this setting is still not taken into account.

Scale

: Type of scale. Major/minor or modes

Pitch characteristic tune!

: This button quantizes ("levels out") the pitch characteristic of selected slices.

With quantization smoothing

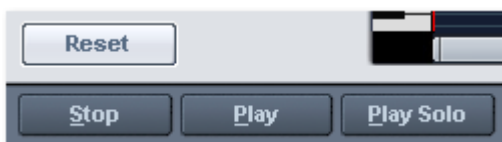
you can determine the "Strength" of quantization, and lower values are quantized the most.

Consequently, small pitch fluctuations always occur in natural sound sources, e.g. vibrato, disappear ("Cher effect").

Reset

: Resetting the selected slices. The orange curve is superimposed over the grey curve, and the slice is reset to the original medium pitch.

Playback control



Reset all

: Recalculates and resets the pitch curves of the loaded material.

Stop/Play

: Stops/Starts the playback of the arrangement.

Play solo

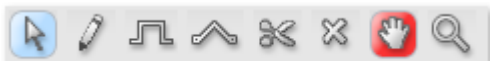
: Only the object loaded into the editor is played.

Bypass

: Switches the effect on or off.

Tools in the Elastic Audio easy editor

You can use various tools to edit slices and the pitch curve. The two tools can be freely assigned to each mouse button. The tool assigned to the left mouse button is displayed in blue and the right mouse button in red. Click with the corresponding mouse button on the desired console button. An exception is the zoom tool with which can be assigned to both mouse keys.



Selection tool (arrow)



You can now move the slice objects up and down.

This modifies the pitch of slice objects as a whole, and slice objects and curve handles can also be selected. Multiple selection is possible with "*Ctrl*" or "*Shift*"

Freehand draw function



You can freely draw the pitch curve using the draw tool.

If you press "*Shift*" as well, a straight line will be drawn between the start position on drawing and the current mouse position. When "*Ctrl*" is pressed, the slice objects are combined when drawing.

Drawing with quantization



This is the tool used for quantized drawing.

Quantized means that the line is horizontally free but the curve snaps onto the grid of the tones of the selected scale under "*Tune*".

Drawing a straight line using "*Shift*" and compiling slice objects with "*Ctrl*" is also possible in quantized draw mode.

Rubber-band tool



Use the rubber band tool to bend the pitch curves between two neighboring handles.

Here the middle of the curve is moved while the curve handles remain the same. In combination with moving the curve handles at the slice object edges, you can also move the pitch characteristic and attain micro-tone structures (vibrato).

Cut tool



This can be used to split audio material manually into slice objects (according to the notes).

If automatic recognition is not sufficient, then slice objects can be connected to one another using "*Ctrl*" + the drawing pens.

Eraser



Use the eraser to reset the output value of the orange curve.

The pitch characteristic then corresponds to the original again and the curve corresponds to the recognized curve.

Magnifying glass zoom tool



Zoom tool: Left mouse button "**Zoom**"

zooms in and the right mouse button zooms out.

Left-clicking and dragging can stretch out a range which can then be zoomed entirely.

Navigation tool



With the navigation tool, the visible clip can be moved vertically and horizontally.

Applications of the Elastic Audio easy editor

Pitch correction (intonation correction) with monophonic audio material

Getting started (for all subsequent editing):

- Load objects into the Elastic [Audio](#) easy editor.
- Set the desired selection state. All slices are selected directly after the analysis.
- Select suitable algorithms – you should test here to see if "monophonic voice" (see above) is the suitable algorithm.
- Now the pitch can be edited with the mouse tools by editing the orange curve or the pitch of the slice objects.

Manual correction of the whole pitch of a pitch slice

- Select the slice with the selection tool (arrow).
- Move vertically with the mouse.

Automatic correction of the pitch characteristic

- Select the slice objects with the selection tool (arrow).
- Select the scale in the *Edit slice objects* group and, if required, deselect the tones which are not to be quantized in the keyboard by clicking on them.
- Press the "Tone pitch characteristics" button
- With the parameter "Quantization smoothing" you can reduce the "strength" of the quantization.

In principle, this editing process more or less levels off pitch characteristics inside a slice.

Correction of the increase or decrease in the pitch.

- Select the slice objects with the selection tool (arrow).
- Click and drag the pitch curve by moving the two handles at each end of the slice objects or on the orange lines.

Free redefinition of the pitch / Creation of frequency modulations like warblers and vibrato.

- Select the slices with the Selection tool (arrow).
- Select the drawing tool (quantized or not).
- Draw in the pitch modulations.

Creating "Plastic voices" (Removing vibrato by strong quantization of the micro pitch characteristic)

- Set the parameter *Quantization smoothing* to 0.
- Press the "Tone pitch characteristics" button
- If required, switch off format correction when using the "Monophonic voice" algorithm.

Creating "Robot voices" – quantizing to a pitch

- Select the slice(s) with the selection tool (arrow).
- Select the draw tool for quantized drawing.
- With artifacts: Increase the "*Quantization smoothing*" parameter.

Creation of parallel voices

- Set desired chord.
- If necessary, change the "Humanize" parameter and press "Create voices" to generate the voices again.

Pitch-sliced-objects and VIP objects

The basic frequency analysis reduces the pitch slices to pieces which ideally correspond to one note in the music's melody or one syllable in speech. For speech the pitches correspond to the level of the vowels.

After the analysis, all of the slices are shown selected (blue).

The subdivision into slices can be corrected manually. The slices are cut apart with the scissors tool, and then merged together with the rubber band gripper tool ("Ctrl" held down).

The blue line represents the mid-range pitch for each object and results approximately from the average value of the pitches in the slice.

In selected pitch-sliced objects the functions found in the "Editing sliced-object" group can be applied, i.e. the correction of the pitch sequence and the mid-range pitch.

The option to reset the corrections for selected slices is also available.

Selecting sliced objects

Sliced objects can be selected and deselected. "Ctrl + A" selects all slices; clicking on the "empty space" deselects them.

Fundamental frequency analysis correction

General options

The fundamental frequency analysis and the related fundamental frequency-dependent pitch-slice-analysis may fail or cause errors for the following reasons:

- Reverbed material,
- Runtime stereophonics,
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: The curve exhibits a short strong jump and behaves in a very jerky manner.

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Keyboard commands and mouse-wheel assignments

Navigation using the mouse wheel

Horizontal scrolling: mouse wheel

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Zoom hor. + vert. *Ctrl* + *Shift* + mouse wheel

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Space bar	Play/Stop
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: Pitches in notes. The notes can be deselected on the keyboard. They won't be used in the automatic pitch correction or in quantized drawing. The corresponding guidelines for scales can be used by selecting the basic tone and scales in the box "Edit slice object".

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: New pitch characteristic (editable)

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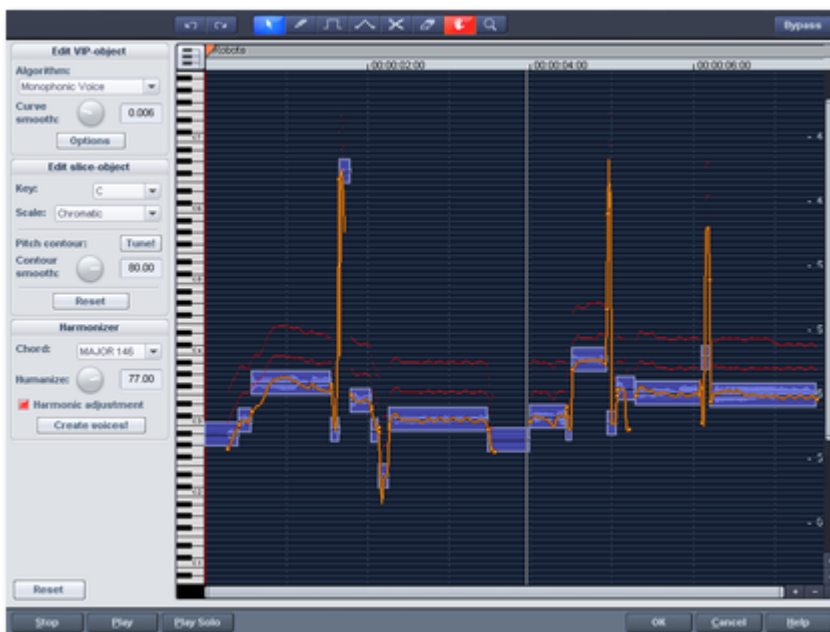
Fundamentals of the Elastic Audio editor

Opening the Elastic [Audio](#) editor

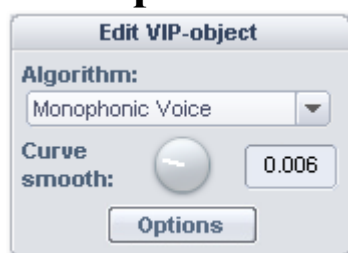
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Algorithm

: You can choose between the modes: monophonic voice (preset), standard, smooth, and beat marker slicing.

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: This parameter brings about the smoothing of the given pitch curve using a time constant (in ms). When smoothing to a large extent, jumpy pitch-shifts change from a "kick" to a glissando.

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With most algorithms the formants are also influenced by changing the pitch. Using the monophonic voice algorithm you can change the position of the formants independent of the pitch. Acoustically, this corresponds with stretching or compressing the above mentioned geometry, and this can lead to interesting effects...



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Chord

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: At a low setting this causes high quantization of the parallel voices and makes the effect sound very artificial. If you select a very high humanize value, the pitches of the individual voices will vary and the cue will be shifted so that you get the impression of an amateur ensemble.

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Pitch characteristic tune!

: This button quantizes ("levels out") the pitch characteristic of selected slices.

With quantization smoothing

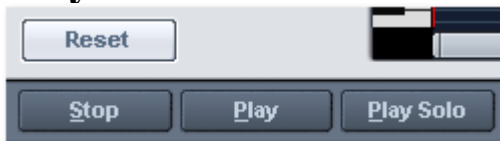
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Reset

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Playback control



Reset all

: Recalculates and resets the pitch curves of the loaded material.

Stop/Play

: Stops/Starts the playback of the arrangement.

Play solo

: Only the object loaded into the editor is played.

Bypass

: Switches the effect on or off.

Tools in the Elastic Audio easy editor

You can use various tools to edit slices and the pitch curve. The two tools can be freely assigned to each mouse button. The tool assigned to the left mouse button is displayed in blue and the right mouse button in red. Click with the corresponding mouse button on the desired console button. An exception is the zoom tool with which can be assigned to both mouse keys.



Selection tool (arrow)



You can now move the slice objects up and down.

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is also possible in quantized draw mode.

Rubber-band tool



Use the rubber band tool to bend the pitch curves between two neighboring handles.

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Cut tool



This can be used to split audio material manually into slice objects (according to the notes).

If automatic recognition is not sufficient, then slice objects can be connected to one another using "Ctrl" + the drawing pens.

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Use the eraser to reset the output value of the orange curve.

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Automatic correction of the pitch characteristic

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Correction of the increase or decrease in the pitch.

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Creating "Plastic voices" (Removing vibrato by strong quantization of the micro pitch characteristic)

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Creating "Robot voices" – quantizing to a pitch

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Symptoms:

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Keyboard commands and mouse-wheel assignments

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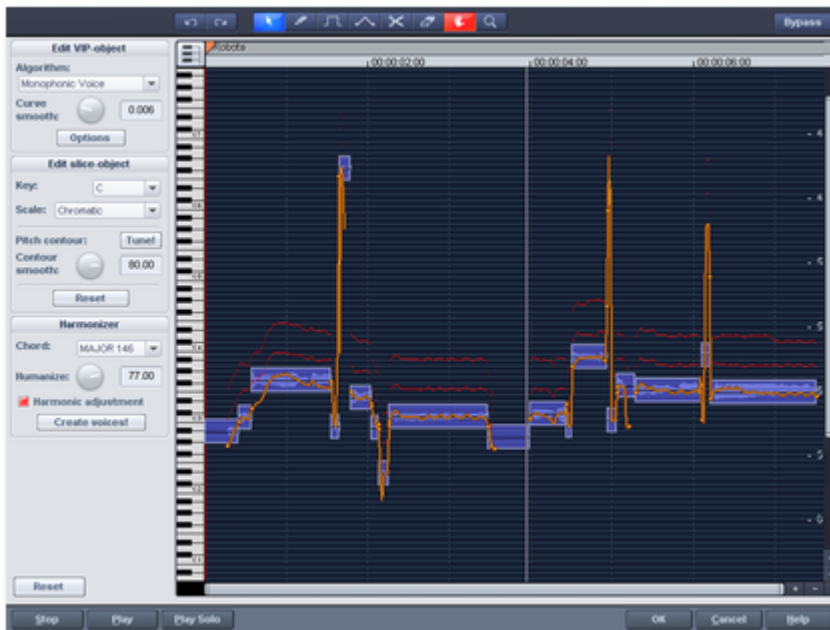
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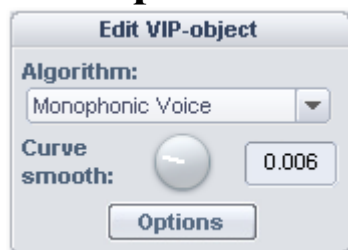
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: Here you can set the chord that makes up the parallel voices of the harmonizer, and a distinction is made between major and minor. The settings of the keyboard are taken into account, unless the option "Lead voice" has been activated.

Humanize

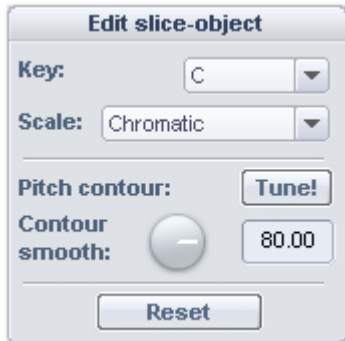
: At a low setting this causes high quantization of the parallel voices and makes the effect sound very artificial. If you select a very high humanize value, the pitches of the individual voices will vary and the cue will be shifted so that you get the impression of an amateur ensemble.

Create voices

: This button generates voices.

Harmonic adjustment

: Parallel voices are usually generated by taking the keyboard and humanize settings into account. However, if this option is deactivated, then the voices are always kept exactly parallel to the orange curve.



Edit SLICE OBJECT box

Options for automatic pitch correction

Basic tone

: Basic tone of the scale. In the chromatic scale this setting is still not taken into account.

Scale

: Type of scale. Major/minor or modes

Pitch characteristic tune!

: This button quantizes ("levels out") the pitch characteristic of selected slices.

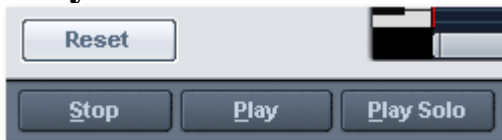
With quantization smoothing

you can determine the "Strength" of quantization, and lower values are quantized the most. Consequently, small pitch fluctuations always occur in natural sound sources, e.g. vibrato, disappear ("Cher effect").

Reset

: Resetting the selected slices. The orange curve is superimposed over the grey curve, and the slice is reset to the original medium pitch.

Playback control



Reset all

: Recalculates and resets the pitch curves of the loaded material.

Stop/Play

: Stops/Starts the playback of the arrangement.

Play solo

: Only the object loaded into the editor is played.

Bypass

: Switches the effect on or off.

Tools in the Elastic Audio easy editor

You can use various tools to edit slices and the pitch curve. The two tools can be freely assigned to each mouse button. The tool assigned to the left mouse button is displayed in blue and the right mouse button in red. Click with the corresponding mouse button on the desired console button. An exception is the zoom tool with which can be assigned to both mouse keys.



Selection tool (arrow)



You can now move the slice objects up and down.

This modifies the pitch of slice objects as a whole, and slice objects and curve handles can also be selected. Multiple selection is possible with "*Ctrl*" or "*Shift*"

Freehand draw function



You can freely draw the pitch curve using the draw tool.

If you press "*Shift*" as well, a straight line will be drawn between the start position on drawing and the current mouse position. When "*Ctrl*" is pressed, the slice objects are combined when drawing.

Drawing with quantization



This is the tool used for quantized drawing.

Quantized means that the line is horizontally free but the curve snaps onto the grid of the tones of the selected scale under "*Tune*".

Drawing a straight line using "*Shift*" and compiling slice objects with "*Ctrl*" is also possible in quantized draw mode.

Rubber-band tool



Use the rubber band tool to bend the pitch curves between two neighboring handles.

Here the middle of the curve is moved while the curve handles remain the same. In combination with moving the curve handles at the slice object edges, you can also move the pitch characteristic and attain micro-tone structures (vibrato).

Cut tool



This can be used to split audio material manually into slice objects (according to the notes).

If automatic recognition is not sufficient, then slice objects can be connected to one another using "*Ctrl*" +

the drawing pens.

Eraser



Use the eraser to reset the output value of the orange curve.

The pitch characteristic then corresponds to the original again and the curve corresponds to the recognized curve.

Magnifying glass zoom tool



Zoom tool: Left mouse button "**Zoom**"

zooms in and the right mouse button zooms out.

Left-clicking and dragging can stretch out a range which can then be zoomed entirely.

Navigation tool



With the navigation tool, the visible clip can be moved vertically and horizontally.

Applications of the Elastic Audio easy editor

Pitch correction (intonation correction) with monophonic audio material

Getting started (for all subsequent editing):

- Load objects into the Elastic [Audio](#) easy editor.
- Set the desired selection state. All slices are selected directly after the analysis.
- Select suitable algorithms – you should test here to see if "monophonic voice" (see above) is the suitable algorithm.
- Now the pitch can be edited with the mouse tools by editing the orange curve or the pitch of the slice objects.

Manual correction of the whole pitch of a pitch slice

- Select the slice with the selection tool (arrow).
- Move vertically with the mouse.

Automatic correction of the pitch characteristic

- Select the slice objects with the selection tool (arrow).
- Select the scale in the *Edit slice objects* group and, if required, deselect the tones which are not to be quantized in the keyboard by clicking on them.
- Press the "Tone pitch characteristics" button
- With the parameter "Quantization smoothing" you can reduce the "strength" of the quantization.

In principle, this editing process more or less levels off pitch characteristics inside a slice.

Correction of the increase or decrease in the pitch.

- Select the slice objects with the selection tool (arrow).
- Click and drag the pitch curve by moving the two handles at each end of the slice objects or on the orange lines.

Free redefinition of the pitch / Creation of frequency modulations like warblers and vibrato.

- Select the slices with the Selection tool (arrow).
- Select the drawing tool (quantized or not).
- Draw in the pitch modulations.

Creating "Plastic voices" (Removing vibrato by strong quantization of the micro pitch characteristic)

- Set the parameter *Quantization smoothing* to 0.
- Press the "Tone pitch characteristics" button
- If required, switch off format correction when using the "Monophonic voice" algorithm.

Creating "Robot voices" – quantizing to a pitch

- Select the slice(s) with the selection tool (arrow).
- Select the draw tool for quantized drawing.

- With artifacts: Increase the "*Quantization smoothing*" parameter.

Creation of parallel voices

- Set desired chord.
- If necessary, change the "Humanize" parameter and press "Create voices" to generate the voices again.

Pitch-sliced-objects and VIP objects

The basic frequency analysis reduces the pitch slices to pieces which ideally correspond to one note in the music's melody or one syllable in speech. For speech the pitches correspond to the level of the vowels.

After the analysis, all of the slices are shown selected (blue).

The subdivision into slices can be corrected manually. The slices are cut apart with the scissors tool, and then merged together with the rubber band gripper tool ("Ctrl" held down).

The blue line represents the mid-range pitch for each object and results approximately from the average value of the pitches in the slice.

In selected pitch-sliced objects the functions found in the "Editing sliced-object" group can be applied, i.e. the correction of the pitch sequence and the mid-range pitch.

The option to reset the corrections for selected slices is also available.

Selecting sliced objects

Sliced objects can be selected and deselected. "Ctrl + A" selects all slices; clicking on the "empty space" deselects them.

Fundamental frequency analysis correction

General options

The fundamental frequency analysis and the related fundamental frequency-dependent pitch-slice-analysis may fail or cause errors for the following reasons:

- Reverbed material,
- Runtime stereophonics,
- False analysis,
- Voiceless vocals (sibilants...),
- Noisy sounds.

In the last two cases, analysis cannot return a result as the fundamental frequency is not available.

MAGIX Elastic [Audio](#)

provides the user with the opportunity to achieve good results using many manual options, whereby the fundamental frequency analysis does not or cannot deliver any results.

Error in the fundamental frequency analysis

Symptoms:

Sound:

The pitch varies strongly for a short period and does not correspond to the set value or characteristic.

When using the **monophonic voice**

algorithm, additional strongly distorted noises arise. The algorithm, which depends on the fundamental frequency recognition itself, fails.

Graphics in the editor

: The curve exhibits a short strong jump and behaves in a very jerky manner.

Solutions:

- With the help of the eraser you can try superimposing the original curve at these points.
- If you set high values for the **curve smoothing** parameter, then short "hiccups" can be reduced in severity or prevented completely.

Correction of slice borders

So that the automatic or manual correction of the mid pitches of slices provides correct results, the slice borders have to match well with the note borders.

The slice borders can be manually changed by connecting two slices to one another with the pen

Ctrl +  or 

and using the cutting tool to cut through at the correct position.



Keyboard commands and mouse-wheel assignments

Navigation using the mouse wheel

Horizontal scrolling: mouse wheel

Vertical scrolling: Alt + mouse wheel

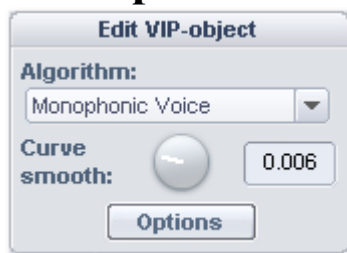
Vertical zooming: Shift+ mouse wheel

Zoom horizontal: Ctrl + mouse wheel

Zoom hor. + vert. Ctrl + Shift + mouse wheel

Ctrl + space bar	Play solo/Stop
Space bar	Play/Stop
Ctrl + A	Select all
A	Update view
Ctrl + Z	Undo
Ctrl + 1-8	Select tool for left-hand mouse button
Ctrl + Shift + 1-8	Select tool for right-hand mouse button
Shift + Alt + P	Show/hide pitch curve
Ctrl + Cursor up	Enlarge waveform
Ctrl + Cursor	Enlarge waveform
Cursor left	Play cursor to the left
Cursor right	Play cursor to the right
Home	Jump to object start
End	Jump to object end
Ctrl + Cursor	Zoom in
Ctrl + Cursor	Zoom out
Shift + R	Alter scaling mood (Frequency for chamber note a).
Ctrl + NUMPAD 4,5,6	Saves zoom snapshots 1,2,3
Alt + NUMPAD 4,5,6	Loads zoom snapshots 1,2,3 without any vertical zoom
NUMPAD 4,5,6	Zoom snapshots 1,2,3 with vertical zoom

Description of all control elements



Edit PROJECT OBJECT box

These options and parameters always effect the whole object loaded into the editor, and therefore all of the slices.

Algorithm

: You can choose between the modes: monophonic voice (preset), standard, smooth, and beat marker slicing.

For more information on the algorithms, read the corresponding paragraph on the time processor!

Curve smoothing

: This parameter brings about the smoothing of the given pitch curve using a time constant (in ms). When smoothing to a large extent, jumpy pitch-shifts change from a "kick" to a glissando.

Formant control

: Selecting the "Monophonic voice" algorithm may result in so-called formants. Formants are sound components typical for the character of instruments or the human voice. With instruments they mainly result from the geometry of the resonance body. Human formants are created by the anatomy of the vocal tract.

With most algorithms the formants are also influenced by changing the pitch. Using the monophonic voice algorithm you can change the position of the formants independent of the pitch. Acoustically, this corresponds with stretching or compressing the above mentioned geometry, and this can lead to interesting effects...



HARMONIZER box

Chord

: Here you can set the chord that makes up the parallel voices of the harmonizer, and a distinction is made between major and minor. The settings of the keyboard are taken into account, unless the option "Lead voice" has been activated.

Humanize

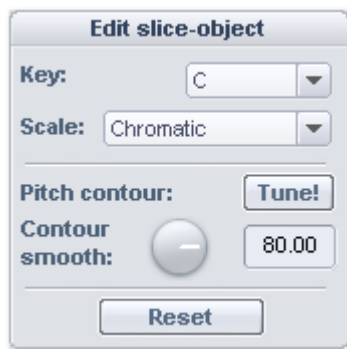
: At a low setting this causes high quantization of the parallel voices and makes the effect sound very artificial. If you select a very high humanize value, the pitches of the individual voices will vary and the cue will be shifted so that you get the impression of an amateur ensemble.

Create voices

: This button generates voices.

Harmonic adjustment

: Parallel voices are usually generated by taking the keyboard and humanize settings into account. However, if this option is deactivated, then the voices are always kept exactly parallel to the orange curve.



Edit SLICE OBJECT box

Options for automatic pitch correction

Basic tone

: Basic tone of the scale. In the chromatic scale this setting is still not taken into account.

Scale

: Type of scale. Major/minor or modes

Pitch characteristic tune!

: This button quantizes ("levels out") the pitch characteristic of selected slices.

With quantization smoothing

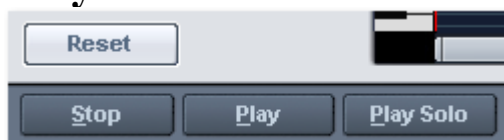
you can determine the "Strength" of quantization, and lower values are quantized the most.

Consequently, small pitch fluctuations always occur in natural sound sources, e.g. vibrato, disappear ("Cher effect").

Reset

: Resetting the selected slices. The orange curve is superimposed over the grey curve, and the slice is reset to the original medium pitch.

Playback control



Reset all

: Recalculates and resets the pitch curves of the loaded material.

Stop/Play

: Stops/Starts the playback of the arrangement.

Play solo

: Only the object loaded into the editor is played.

Bypass

: Switches the effect on or off.

Tools in the Elastic Audio easy editor

You can use various tools to edit slices and the pitch curve. The two tools can be freely assigned to each mouse button. The tool assigned to the left mouse button is displayed in blue and the right mouse button in red. Click with the corresponding mouse button on the desired console button. An exception is the zoom tool with which can be assigned to both mouse keys.



Selection tool (arrow)



You can now move the slice objects up and down.

This modifies the pitch of slice objects as a whole, and slice objects and curve handles can also be selected. Multiple selection is possible with "Ctrl" or "Shift"

Freehand draw function



You can freely draw the pitch curve using the draw tool.

If you press "Shift" as well, a straight line will be drawn between the start position on drawing and the current mouse position. When "*Ctrl*" is pressed, the slice objects are combined when drawing.

Drawing with quantization



This is the tool used for quantized drawing.

Quantized means that the line is horizontally free but the curve snaps onto the grid of the tones of the selected scale under "Tune".

Drawing a straight line using "Shift" and compiling slice objects with "*Ctrl*" is also possible in quantized draw mode.

Rubber-band tool



Use the rubber band tool to bend the pitch curves between two neighboring handles.

Here the middle of the curve is moved while the curve handles remain the same. In combination with moving the curve handles at the slice object edges, you can also move the pitch characteristic and attain micro-tone structures (vibrato).

Cut tool



This can be used to split audio material manually into slice objects (according to the notes).

If automatic recognition is not sufficient, then slice objects can be connected to one another using "*Ctrl*" + the drawing pens.

Eraser



Use the eraser to reset the output value of the orange curve.

The pitch characteristic then corresponds to the original again and the curve corresponds to the recognized curve.

Magnifying glass zoom tool



Zoom tool: Left mouse button "**Zoom**" zooms in and the right mouse button zooms out.

Left-clicking and dragging can stretch out a range which can then be zoomed entirely.

Navigation tool



With the navigation tool, the visible clip can be moved vertically and horizontally.

Applications of the Elastic Audio easy editor

Pitch correction (intonation correction) with monophonic audio material

Getting started (for all subsequent editing):

- Load objects into the Elastic [Audio](#) easy editor.
- Set the desired selection state. All slices are selected directly after the analysis.
- Select suitable algorithms – you should test here to see if "monophonic voice" (see above) is the suitable algorithm.
- Now the pitch can be edited with the mouse tools by editing the orange curve or the pitch of the slice objects.

Manual correction of the whole pitch of a pitch slice

- Select the slice with the selection tool (arrow).

- Move vertically with the mouse.

Automatic correction of the pitch characteristic

- Select the slice objects with the selection tool (arrow).
- Select the scale in the *Edit slice objects* group and, if required, deselect the tones which are not to be quantized in the keyboard by clicking on them.
- Press the "Tone pitch characteristics" button
- With the parameter "Quantization smoothing" you can reduce the "strength" of the quantization.

In principle, this editing process more or less levels off pitch characteristics inside a slice.

Correction of the increase or decrease in the pitch.

- Select the slice objects with the selection tool (arrow).
- Click and drag the pitch curve by moving the two handles at each end of the slice objects or on the orange lines.

Free redefinition of the pitch / Creation of frequency modulations like warblers and vibrato.

- Select the slices with the Selection tool (arrow).
- Select the drawing tool (quantized or not).
- Draw in the pitch modulations.

Creating "Plastic voices" (Removing vibrato by strong quantization of the micro pitch characteristic)

- Set the parameter *Quantization smoothing* to 0.
- Press the "Tone pitch characteristics" button
- If required, switch off format correction when using the "*Monophonic voice*" algorithm.

Creating "Robot voices" – quantizing to a pitch

- Select the slice(s) with the selection tool (arrow).
- Select the draw tool for quantized drawing.
- With artifacts: Increase the "*Quantization smoothing*" parameter.

Creation of parallel voices

- Set desired chord.
- If necessary, change the "Humanize" parameter and press "Create voices" to generate the voices again.

Pitch-sliced-objects and VIP objects

The basic frequency analysis reduces the pitch slices to pieces which ideally correspond to one note in the music's melody or one syllable in speech. For speech the pitches correspond to the level of the vowels.

After the analysis, all of the slices are shown selected (blue).

The subdivision into slices can be corrected manually. The slices are cut apart with the scissors tool, and then merged together with the rubber band gripper tool ("Ctrl" held down).

The blue line represents the mid-range pitch for each object and results approximately from the average value of the pitches in the slice.

In selected pitch-sliced objects the functions found in the "Editing sliced-object" group can be applied, i.e. the correction of the pitch sequence and the mid-range pitch.

The option to reset the corrections for selected slices is also available.

Selecting sliced objects

Sliced objects can be selected and deselected. "Ctrl + A" selects all slices; clicking on the "empty space" deselects them.

Fundamental frequency analysis correction

General options

The fundamental frequency analysis and the related fundamental frequency-dependent

pitch-slice-analysis may fail or cause errors for the following reasons:

- Reverbed material,
- Runtime stereophonics,
- False analysis,
- Voiceless vocals (sibilants...),
- Noisy sounds.

In the last two cases, analysis cannot return a result as the fundamental frequency is not available.

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provides the user with the opportunity to achieve good results using many manual options, whereby the fundamental frequency analysis does not or cannot deliver any results.

Error in the fundamental frequency analysis

Symptoms:

Sound:

The pitch varies strongly for a short period and does not correspond to the set value or characteristic.

When using the **monophonic voice**

algorithm, additional strongly distorted noises arise. The algorithm, which depends on the fundamental frequency recognition itself, fails.

Graphics in the editor

: The curve exhibits a short strong jump and behaves in a very jerky manner.

Solutions:

- With the help of the eraser you can try superimposing the original curve at these points.
- If you set high values for the **curve smoothing** parameter, then short "hiccups" can be reduced in severity or prevented completely.

Correction of slice borders

So that the automatic or manual correction of the mid pitches of slices provides correct results, the slice borders have to match well with the note borders.

The slice borders can be manually changed

by connecting two slices to one another *Ctrl* +  or 

with the pen

and using the cutting tool to cut through at the correct position.



Keyboard commands and mouse-wheel assignments

Navigation using the mouse wheel

Horizontal scrolling: mouse wheel

Vertical scrolling: Alt + mouse wheel

Vertical zooming: Shift+ mouse wheel

Zoom horizontal: Ctrl + mouse wheel

Zoom hor. + vert. Ctrl + Shift + mouse wheel

Ctrl + space bar Play solo/Stop

Space bar Play/Stop

Ctrl + A Select all

A Update view

Ctrl + Z Undo

Ctrl + 1-8 Select tool for left-hand mouse button

Ctrl + Shift + 1-8 Select tool for right-hand mouse button

Shift + Alt + P Show/hide pitch curve

Ctrl + Cursor up Enlarge waveform

Ctrl + Cursor Enlarge waveform

Cursor left	Play cursor to the left
Cursor right	Play cursor to the right
Home	Jump to object start
End	Jump to object end
Ctrl + Cursor	Zoom in
Ctrl + Cursor	Zoom out
Shift + R	Alter scaling mood (Frequency for chamber note a).
Ctrl + NUMPAD 4,5,6	Saves zoom snapshots 1,2,3
Alt + NUMPAD 4,5,6	Loads zoom snapshots 1,2,3 without any vertical zoom
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Tools in the Elastic Audio easy editor

You can use various tools to edit slices and the pitch curve. The two tools can be freely assigned to each mouse button. The tool assigned to the left mouse button is displayed in blue and the right mouse button in red. Click with the corresponding mouse button on the desired console button. An exception is the zoom tool with which can be assigned to both mouse keys.



Selection tool (arrow)



You can now move the slice objects up and down.

This modifies the pitch of slice objects as a whole, and slice objects and curve handles can also be selected. Multiple selection is possible with "*Ctrl*" or "*Shift*"

Freehand draw function



You can freely draw the pitch curve using the draw tool.

If you press "*Shift*" as well, a straight line will be drawn between the start position on drawing and the current mouse position. When "*Ctrl*" is pressed, the slice objects are combined when drawing.

Drawing with quantization



This is the tool used for quantized drawing.

Quantized means that the line is horizontally free but the curve snaps onto the grid of the tones of the selected scale under "*Tune*".

Drawing a straight line using "*Shift*" and compiling slice objects with "*Ctrl*" is also possible in quantized draw mode.

Rubber-band tool



Use the rubber band tool to bend the pitch curves between two neighboring handles.

Here the middle of the curve is moved while the curve handles remain the same. In combination with moving the curve handles at the slice object edges, you can also move the pitch characteristic and attain micro-tone structures (vibrato).

Cut tool



This can be used to split audio material manually into slice objects (according to the notes).

If automatic recognition is not sufficient, then slice objects can be connected to one another using "*Ctrl*" + the drawing pens.

Eraser



Use the eraser to reset the output value of the orange curve.

The pitch characteristic then corresponds to the original again and the curve corresponds to the recognized curve.

Magnifying glass zoom tool



Zoom tool: Left mouse button "**Zoom**" zooms in and the right mouse button zooms out.

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Navigation tool



With the navigation tool, the visible clip can be moved vertically and horizontally.

Applications of the Elastic Audio easy editor

Pitch correction (intonation correction) with monophonic audio material

Getting started (for all subsequent editing):

- Load objects into the Elastic [Audio](#) easy editor.
- Set the desired selection state. All slices are selected directly after the analysis.
- Select suitable algorithms – you should test here to see if "monophonic voice" (see above) is the suitable algorithm.
- Now the pitch can be edited with the mouse tools by editing the orange curve or the pitch of the slice objects.

Manual correction of the whole pitch of a pitch slice

- Select the slice with the selection tool (arrow).
- Move vertically with the mouse.

Automatic correction of the pitch characteristic

- Select the slice objects with the selection tool (arrow).
- Select the scale in the *Edit slice objects* group and, if required, deselect the tones which are not to be quantized in the keyboard by clicking on them.
- Press the "Tone pitch characteristics" button
- With the parameter "Quantization smoothing" you can reduce the "strength" of the quantization.

In principle, this editing process more or less levels off pitch characteristics inside a slice.

Correction of the increase or decrease in the pitch.

- Select the slice objects with the selection tool (arrow).
- Click and drag the pitch curve by moving the two handles at each end of the slice objects or on the orange lines.

Free redefinition of the pitch / Creation of frequency modulations like warblers and vibrato.

- Select the slices with the Selection tool (arrow).
- Select the drawing tool (quantized or not).
- Draw in the pitch modulations.

Creating "Plastic voices" (Removing vibrato by strong quantization of the micro pitch characteristic)

- Set the parameter *Quantization smoothing* to 0.
- Press the "Tone pitch characteristics" button
- If required, switch off format correction when using the "*Monophonic voice*" algorithm.

Creating "Robot voices" – quantizing to a pitch

- Select the slice(s) with the selection tool (arrow).
- Select the draw tool for quantized drawing.
- With artifacts: Increase the "*Quantization smoothing*" parameter.

Creation of parallel voices

- Set desired chord.
- If necessary, change the "Humanize" parameter and press "Create voices" to generate the voices again.

Pitch-sliced-objects and VIP objects

The basic frequency analysis reduces the pitch slices to pieces which ideally correspond to one note in the music's melody or one syllable in speech. For speech the pitches correspond to the level of the vowels.

After the analysis, all of the slices are shown selected (blue).

The subdivision into slices can be corrected manually. The slices are cut apart with the scissors tool, and then merged together with the rubber band gripper tool ("Ctrl" held down).

The blue line represents the mid-range pitch for each object and results approximately from the average value of the pitches in the slice.

In selected pitch-sliced objects the functions found in the "Editing sliced-object" group can be applied, i.e. the correction of the pitch sequence and the mid-range pitch.

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Selecting sliced objects

Sliced objects can be selected and deselected. "Ctrl + A" selects all slices; clicking on the "empty space" deselects them.

Fundamental frequency analysis correction

General options

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Error in the fundamental frequency analysis

Symptoms:

Sound:

The pitch varies strongly for a short period and does not correspond to the set value or characteristic.

When using the **monophonic voice**

algorithm, additional strongly distorted noises arise. The algorithm, which depends on the fundamental frequency recognition itself, fails.

Graphics in the editor

: The curve exhibits a short strong jump and behaves in a very jerky manner.

Solutions:

- With the help of the eraser you can try superimposing the original curve at these points.
- If you set high values for the **curve smoothing** parameter, then short "hiccups" can be reduced in severity or prevented completely.

Correction of slice borders

So that the automatic or manual correction of the mid pitches of slices provides correct results, the slice borders have to match well with the note borders.

The slice borders can be manually changed by connecting two slices to one another with the pen

Ctrl +  or 

and using the cutting tool to cut through at the correct position.



Keyboard commands and mouse-wheel assignments

Navigation using the mouse wheel

Horizontal scrolling: mouse wheel

Vertical scrolling: Alt + mouse wheel

Vertical zooming: Shift+ mouse wheel

Zoom horizontal:	Ctrl + mouse wheel
Zoom hor. + vert.	Ctrl + Shift + mouse wheel
Ctrl + space bar	Play solo/Stop
Space bar	Play/Stop
Ctrl + A	Select all
A	Update view
Ctrl + Z	Undo
Ctrl + 1-8	Select tool for left-hand mouse button
Ctrl + Shift + 1-8	Select tool for right-hand mouse button
Shift + Alt + P	Show/hide pitch curve
Ctrl + Cursor up	Enlarge waveform
Ctrl + Cursor	Enlarge waveform
Cursor left	Play cursor to the left
Cursor right	Play cursor to the right
Home	Jump to object start
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Ctrl + Cursor	Zoom in
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4,5,6	Saves zoom snapshots 1,2,3
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- Now the pitch can be edited with the mouse tools by editing the orange curve or the pitch of the slice objects.

Manual correction of the whole pitch of a pitch slice

- Select the slice with the selection tool (arrow).
- Move vertically with the mouse.

Automatic correction of the pitch characteristic

- Select the slice objects with the selection tool (arrow).
- Select the scale in the *Edit slice objects* group and, if required, deselect the tones which are not to be quantized in the keyboard by clicking on them.
- Press the "Tone pitch characteristics" button
- With the parameter "Quantization smoothing" you can reduce the "strength" of the quantization.

In principle, this editing process more or less levels off pitch characteristics inside a slice.

Correction of the increase or decrease in the pitch.

- Select the slice objects with the selection tool (arrow).
- Click and drag the pitch curve by moving the two handles at each end of the slice objects or on the orange lines.

Free redefinition of the pitch / Creation of frequency modulations like warblers and vibrato.

- Select the slices with the Selection tool (arrow).
- Select the drawing tool (quantized or not).
- Draw in the pitch modulations.

Creating "Plastic voices" (Removing vibrato by strong quantization of the micro pitch characteristic)

- Set the parameter *Quantization smoothing* to 0.
- Press the "Tone pitch characteristics" button
- If required, switch off format correction when using the "Monophonic voice" algorithm.

Creating "Robot voices" – quantizing to a pitch

- Select the slice(s) with the selection tool (arrow).
- Select the draw tool for quantized drawing.
- With artifacts: Increase the "*Quantization smoothing*" parameter.

Creation of parallel voices

- Set desired chord.
- If necessary, change the "Humanize" parameter and press "Create voices" to generate the voices again.

Pitch-sliced-objects and VIP objects

The basic frequency analysis reduces the pitch slices to pieces which ideally correspond to one note in the music's melody or one syllable in speech. For speech the pitches correspond to the level of the vowels.

After the analysis, all of the slices are shown selected (blue).

The subdivision into slices can be corrected manually. The slices are cut apart with the scissors tool, and then merged together with the rubber band gripper tool ("Ctrl" held down).

The blue line represents the mid-range pitch for each object and results approximately from the average value of the pitches in the slice.

In selected pitch-sliced objects the functions found in the "Editing sliced-object" group can be applied, i.e. the correction of the pitch sequence and the mid-range pitch.

The option to reset the corrections for selected slices is also available.

Selecting sliced objects

Sliced objects can be selected and deselected. "Ctrl + A" selects all slices; clicking on the "empty space" deselects them.

Fundamental frequency analysis correction

General options

The fundamental frequency analysis and the related fundamental frequency-dependent pitch-slice-analysis may fail or cause errors for the following reasons:

- Reverbed material,
- Runtime stereophonics,
- False analysis,
- Voiceless vocals (sibilants...),
- Noisy sounds.

In the last two cases, analysis cannot return a result as the fundamental frequency is not available.

MAGIX Elastic [Audio](#)

provides the user with the opportunity to achieve good results using many manual options, whereby the fundamental frequency analysis does not or cannot deliver any results.

Error in the fundamental frequency analysis

Symptoms:

Sound:

The pitch varies strongly for a short period and does not correspond to the set value or characteristic.

When using the **monophonic voice**

algorithm, additional strongly distorted noises arise. The algorithm, which depends on the fundamental frequency recognition itself, fails.

Graphics in the editor

: The curve exhibits a short strong jump and behaves in a very jerky manner.

Solutions:

- With the help of the eraser you can try superimposing the original curve at these points.
- If you set high values for the **curve smoothing** parameter, then short "hiccups" can be reduced in severity or prevented completely.

Correction of slice borders

So that the automatic or manual correction of the mid pitches of slices provides correct results, the slice borders have to match well with the note borders.

The slice borders can be manually changed by connecting two slices to one another with the pen

Ctrl +  or 

and using the cutting tool to cut through at the correct position.



Keyboard commands and mouse-wheel assignments

Navigation using the mouse wheel

Horizontal scrolling: mouse wheel

Vertical scrolling: Alt + mouse wheel

Vertical zooming: Shift+ mouse wheel

Zoom horizontal: Ctrl + mouse wheel	
Zoom hor. + vert. Ctrl + Shift + mouse wheel	
Ctrl + space bar	Play solo/Stop
Space bar	Play/Stop
Ctrl + A	Select all
A	Update view
Ctrl + Z	Undo
Ctrl + 1-8	Select tool for left-hand mouse button
Ctrl + Shift + 1-8	Select tool for right-hand mouse button
Shift + Alt + P	Show/hide pitch curve
Ctrl + Cursor up	Enlarge waveform
Ctrl + Cursor	Enlarge waveform
Cursor left	Play cursor to the left
Cursor right	Play cursor to the right
Home	Jump to object start
End	Jump to object end
Ctrl + Cursor	Zoom in
Ctrl + Cursor	Zoom out
Shift + R	Alter scaling mood (Frequency for chamber
Ctrl + NUMPAD	note a).
4,5,6	Saves zoom snapshots 1,2,3
Alt + NUMPAD	Loads zoom snapshots 1,2,3
4,5,6	without any vertical zoom
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Pitch-sliced-objects and VIP objects

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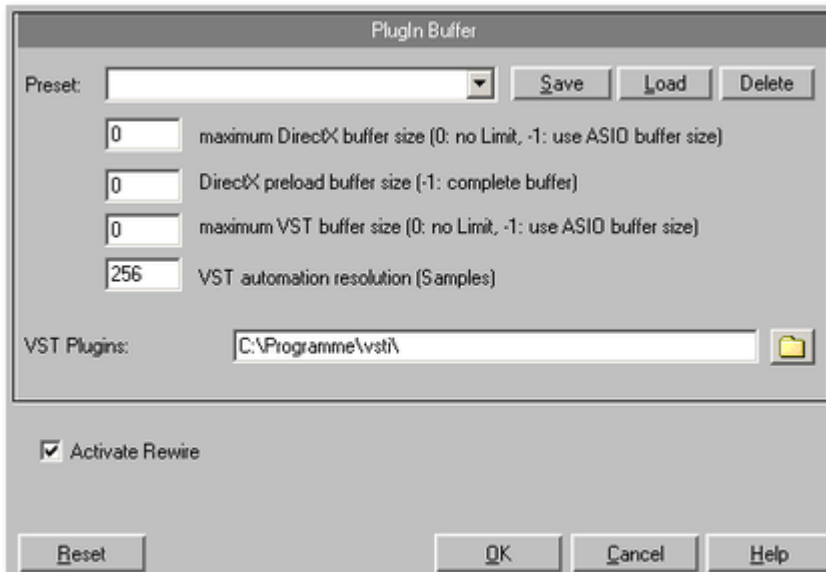
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Installation of VST plug-ins

Install every VST instrument according to the manufacturer's instructions. VST instruments and VST effects are not entered into the Windows registry, but must be saved in a certain directory.

Samplitude Music Studio 15 searches for installed VST instruments in the "VST plug-ins" program subfolder. You can install your VST instruments either in this folder, or use any other path. If you already have VST plug-ins installed on your system, then use the existing folder. You will, however, have to enter this path in the system settings ("Y") in the **"Effects > VST/DirectX/ReWire"** subdialog (entering multiple paths is also possible). Simply enter one path after the other; all paths will be taken into consideration. Samplitude Music Studio 15 will automatically find newly installed plug-ins contained within the selected folders.



The first time the program is opened, a search for existing instruments and plug-ins is executed when the track settings are opened. Not only are all the plug-ins imported, but they are also checked for compatibility within the program. This search is only necessary once; the next time it is opened, the track settings will be loaded immediately.

Tip

: For problems with your current configuration, you can reset all paths and installed instruments or plug-ins.

Effect calculations

When working with Samplitude Music Studio 15, audio material manipulation can be performed on five levels. The signal flows through these five levels in sequence:

1. wave editing (destructive editing),
2. Manipulations on the object level in virtual projects (real-time processing),
3. Volume and panorama automation, including track volume fader in the mixer or [VIP](#) (real-time processing),
4. Real-time effects in the mixer tracks (real-time processing),
5. Real-time effects in the "mix master" section (real-time processing).

When working with volume, panorama, and filter manipulations, the sequence is not important. For example, it isn't important whether you apply a filter function first and then change the volume, or vice versa. Even when working with multiple effects, the input signal level is unimportant. This includes reverb, delay (echo), resampling and timestretching, or pitchshifting.

However, all dynamics functions and those that remove or reduce noise (dehissers and noise reduction) are dependent on the input signal level and in some cases on the frequency response of the input signal. If you have found an optimal setting for the parameters, then you should not apply other changes to effects blocks that precede these types of effects.

Samplitude Music Studio 15 as an external effects device

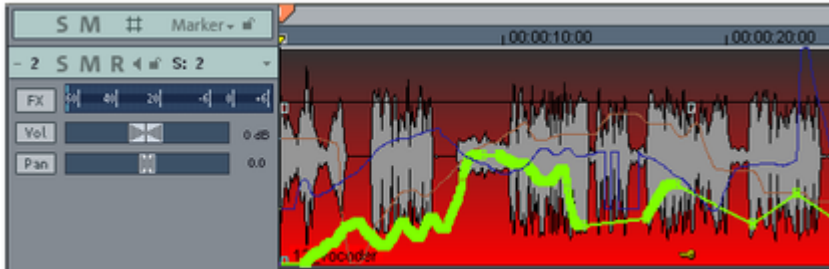
With the help of ASIO driver support, you can also use Samplitude Music Studio 15 as an external effects device. The signal is pushed through the real-time effects section by Samplitude Music Studio 15 and then sent again. All real-time effects from the mixer can be used directly: MAGIX AmpSimulation, MAGIX Multimax, reverb, echo, compressor, 4-band equalizer, and vocoder. You need an ASIO driver for your sound card (required).

Here's how it works:

- In the system dialog ("Y"), select the "ASIO software monitoring with track effects" option from the "Record options" tab.
- Connect your instrument (e.g a guitar amp) to the sound card.
- Select one or more real-time effects for the track activated for recording.
- Play it. The sound now has the selected effects added to it.

Automation

Samplitude Music Studio 15 provides lots of comprehensive automation possibilities at track level. You can enter automation movements in real time or draw them manually. The created automation data are visible as controller movements in the corresponding plug-in or as a curve in the automation track. For each track you have an infinite number of automation curves at your disposal. The volume automation curve is set to 0 dB at the middle of the track and +6dB at the top of the track.



Dynamic automation of volume, panorama, and plug-in control elements is available in every track. In this chapter

[Automation – Context menu](#)

[Automation modes](#)

[VST plug-in / VST parameter dialog](#)

[Plug-in / Instrument screen](#)

[Draw panorama mode](#)

[Edit automation curves](#)

[Move automation curve with audio / MIDI data](#)

Automation – Context menu

To open automation, right click on the "Vol" button in the track box or on button "A" in the "Automation" category.



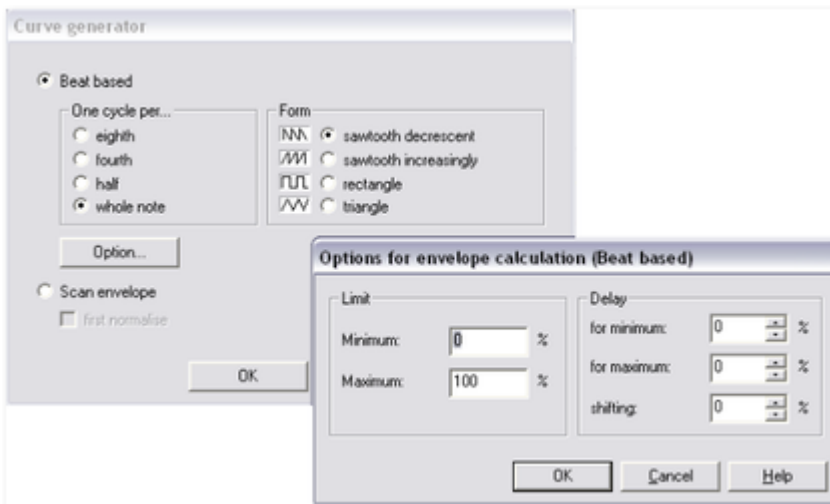
First entries in the automation context menu

The first entry indicates which parameter you have automated, e.g. **Effect 0 volume** or **Effect 1 pan**. By checking the corresponding entry you can activate the corresponding automation curve. If you haven't activated an element, **No effect (track)** will be displayed.

Editing curves

Create

The curve generator will create a beat-based volume curve for you which pulses according to eighth, quarter, half, or full notes. As an option for the beat-based envelope curve calculation you can enter a minimum and maximum value, or define the delay values.



Alternatively, you can also let the curve generator write an envelope curve scan.

Invert

This command inverts the active automation curves.

Thin out

This function thins out the active automation curve by reducing the number of automation events. While recording, the automation events are placed in very short intervals. The command "Thin out" reduces the number of curve points. The course of the automation is then displayed and reproduced even more accurately.

Copy / Paste / Delete

The activated automation curve can be copied/pasted into other tracks and deleted.

Inactive

Use this command to deactivate the selected automation curve. It remains intact, but it no longer affects the corresponding parameter.

Delete all curves

This command deletes all automation curves of the corresponding track.

Automation mode

Specify the [Automation mode](#) here.

Do not display automation.

Deactivate the display of the automation curves for all tracks with this option.

Display track automation (default setting)

If you select this display option, then only the track automation will be displayed.

Display selected curves only

With this option you can only view the selected curves of the corresponding track. This helps keep an overview if several automation curves have been created.

Display unselected curves (cannot be activated) – Default setting

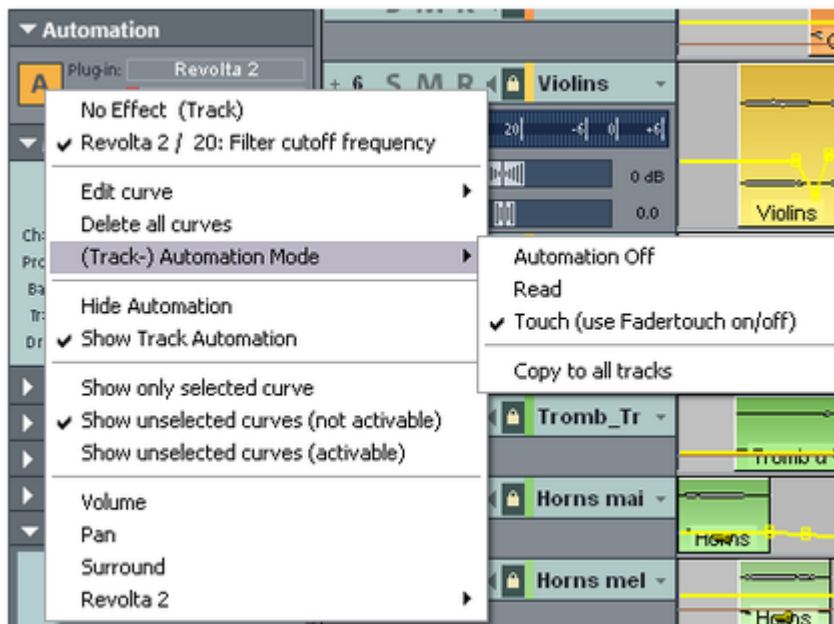
The unselected curves are shaded and can no longer be activated with the mouse.

Display unselected curves (can be activated)

The unselected curves are also shaded, but can now be activated with the mouse.

The last section of the context menu lists the ranges that are available in event of automation of the corresponding track of an object automation parameter.

Automation modes



You can define how automation data should be saved or displayed with the automation modes. You can set the automation mode for each track, and you can select the different automation modes by right clicking on the automation button in the mixer channel. Clicking only once will toggle between the last activated mode and read mode. Using the option **"Transfer to all tracks"** you can apply the currently selected automation mode to all tracks/channels.

Off mode

All automation functions are deactivated while in "Off" mode, and all previously written automation sequences are ignored.

Read mode

All recorded automation parameters are played in "Read" mode.

Touch mode

In "Touch" mode automation data is only recorded as long as you touch the selected control element with the mouse or touch it from your external controller. Automation recording is stopped when you release the corresponding key. Once released, the control element will move back to the position previously recorded at this position. You can set the fader return time in the [MIDI](#) controller/FX automation dialog in **"Settings -> Time constant for user entry"**

VST plug-in / VST parameter dialog

All of the parameters you want to automate can also be selected and activated in the VST plug-in's parameters dialog.

This allows you to record automations directly with the controllers of the parameter during playback. You can open the parameters dialog from the plug-in panel via the "[Plug-in](#)" menu.

Plug-in / Instrument screen

The easiest way to write automation in "Read" mode is by using the shortcut "Ctrl + Alt + Switch/[Fader](#)" in the instrument's interface. You can easily record an automation at any point in time. As long as you hold these key combinations, you can also automate the selected parameters while in read mode.

Draw panorama mode

To sketch an automation parameter curve or a [MIDI](#) controller, select "**Panorama draw**" mode in the toolbar.



Now draw the automation curve straight into the chosen track using the pen tool for the selected parameters.

Edit automation curves

Alongside the normal mouse (create or delete curve point), a special



Curve edit mode



or Object/Curve mode

is available.

In "**Curve edit**" mode you can delete curve points after having selected them by pressing "**Del**". If you move individual points using "Alt", the bordering can be lifted using the neighboring points to the right.

Detailed information on the curve modes can be found in the chapter "Screen elements -> Toolbars -> Mouse mode list".

Move automation curve with audio / MIDI data

You will most likely have to change the position of your audio material on the time axis every so often. If your automation curve should also be moved to the new position, the automation curves have to be connected to the objects. This can be done using the "**Connect curves with objects**" mouse mode. Click on the button of the same name in the mouse modes toolbar.



You can now move or copy objects together with your curve points.

Note:

If you only wish to move or copy the curve points, then follow the instructions above and simply delete the objects once they have been moved/copied. The curves remain intact.

To copy the curve points simply use "Curve edit" mode and drag out a rectangle by moving the mouse

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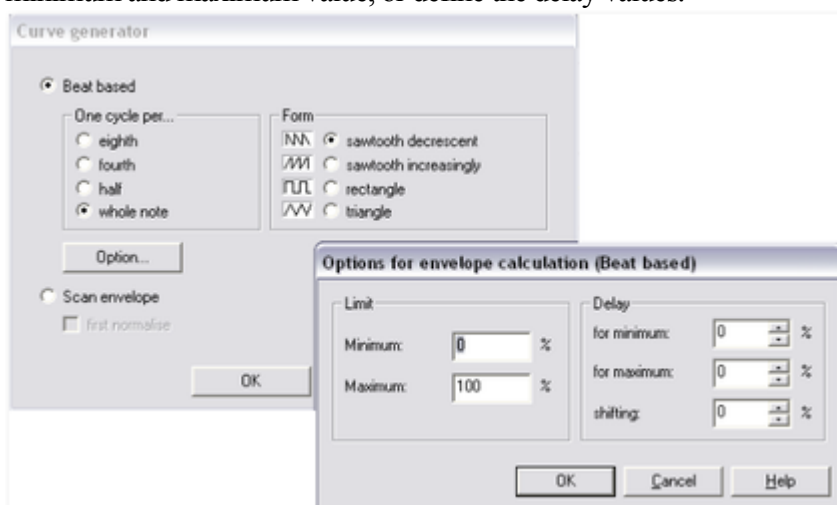
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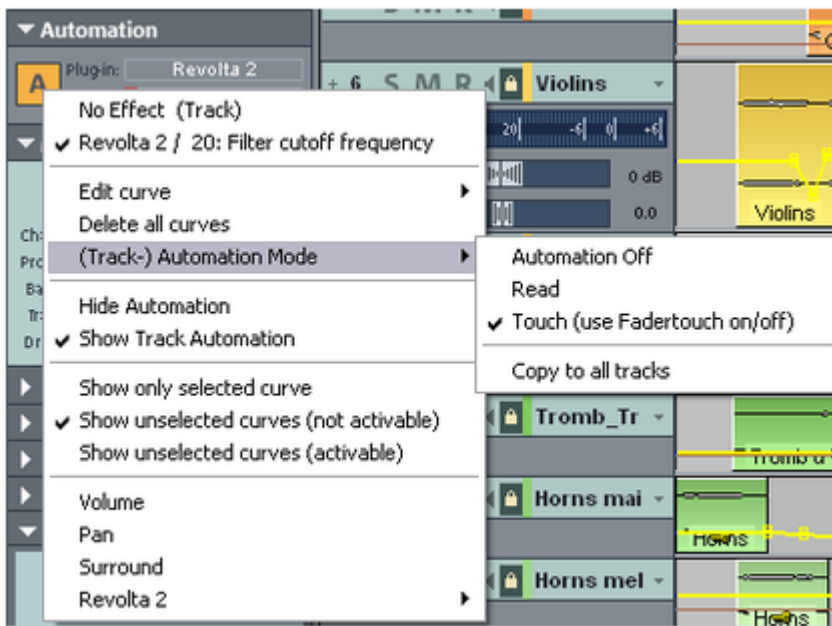
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Read mode

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Touch mode

In "Touch" mode automation data is only recorded as long as you touch the selected control element with the mouse or touch it from your external controller. Automation recording is stopped when you release the corresponding key. Once released, the control element will move back to the position previously recorded at this position. You can set the fader return time in the [MIDI](#) controller/FX automation dialog in **"Settings -> Time constant for user entry"**

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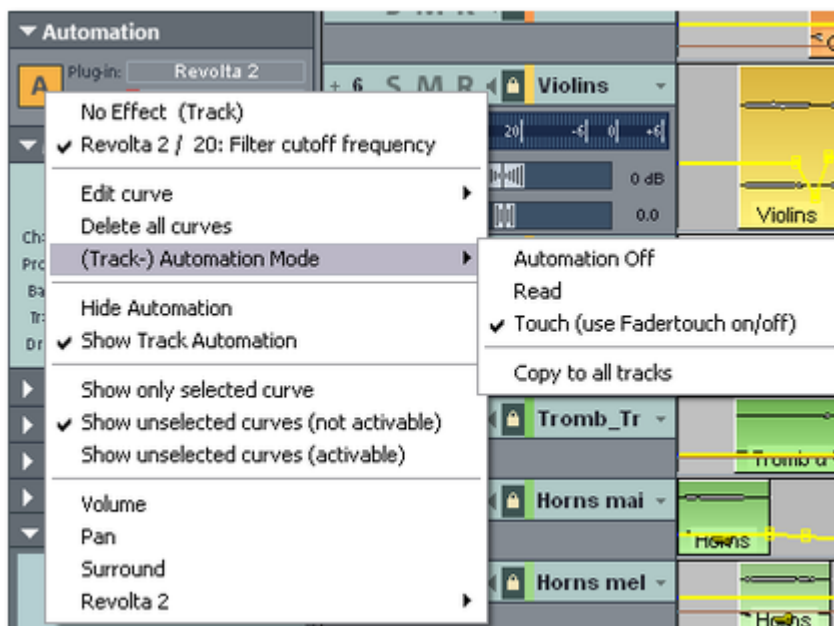
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The easiest way to write automation in "Read" mode is by using the shortcut "Ctrl + Alt + Switch/[Fader](#)" in the instrument's interface. You can easily record an automation at any point in time. As long as you hold these key combinations, you can also automate the selected parameters while in read mode.

Draw panorama mode

To sketch an automation parameter curve or a [MIDI](#) controller, select **"Panorama draw" mode** in the toolbar.



Now draw the automation curve straight into the chosen track using the pen tool for the selected parameters.

Edit automation curves

Alongside the normal mouse (create or delete curve point), a special



Curve edit mode



or Object/Curve mode

is available.

In **"Curve edit" mode** you can delete curve points after having selected them by pressing **"Del"**

. If you move individual points using "Alt", the bordering can be lifted using the neighboring points to the right.

Detailed information on the curve modes can be found in the chapter "Screen elements -> Toolbars ->

Mouse mode list".

Move automation curve with audio / MIDI data

You will most likely have to change the position of your audio material on the time axis every so often. If your automation curve should also be moved to the new position, the automation curves have to be connected to the objects. This can be done using the **"Connect curves with objects"** mouse mode. Click on the button of the same name in the mouse modes toolbar.



You can now move or copy objects together with your curve points.

Note:

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Read mode

All recorded automation parameters are played in "Read" mode.

Touch mode

In "Touch" mode automation data is only recorded as long as you touch the selected control element with the mouse or touch it from your external controller. Automation recording is stopped when you release the corresponding key. Once released, the control element will move back to the position previously recorded at this position. You can set the fader return time in the [MIDI](#) controller/FX automation dialog in "**Settings -> Time constant for user entry**"

VST plug-in / VST parameter dialog

All of the parameters you want to automate can also be selected and activated in the VST plug-in's parameters dialog.

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Mixer

In this chapter

[Overview](#)

[Operating the mixer](#)

[Channel strips](#)

[Master section](#)

[Global settings](#)

[Buses and routing](#)

[Embedding external effects devices](#)

[Tips and tricks](#)

Overview

You can open the Samplitude Music Studio 15 mixer via "Window -> Mixer". It strongly resembles a hardware mixer. As a result of the digital environment, however, it is by far more flexible than an analog mixer.

All settings made in the mixer are processed and edited in real time. This includes track and master effects, panorama and level settings, device allocations for individual tracks/buses as well as device allocations for the master section.



Operating the mixer

Every [VIP](#)

track has its corresponding mixer track. However, you can hide any VIP or mixer track in the track manager.

Alternative mixer skins

In "System audio ("Y") -> Design -> Skins" you can select an alternative mixer skin. Another option for changing the mixer skins is to click on the system menu in the mixer window (the symbol at the top left corner of the mixer window).

Using the keyboard

- Cursor keys: Select the active mixer element (fader, button, or switch)
- Page up/Page down: Changes the value of the active mixer element
- Home: Resets the mixer element to its preset (passive) initial value. Press "Home" again, and the element is reset to the last value, allowing a simpler comparison between the altered and initial preset states.
- End: Opens the assigned subwindow of an element, e.g. the EQ window for one of the EQ buttons. This corresponds with right clicking on a button.
- Return: Enables the numeric entry for a marked window box.

Operating the mixer with the mouse and keyboard

Left click: A control element is selected.

Ctrl & left click: Several control elements can be selected (multi-selection).

Shift & left click on buttons: Allows special functions to be changed, e.g. mute single track or solo single track (although they are members of an active group).

Shift & left click on buttons or faders: Reverses the link selection (negative selection).

Ctrl & left click: A single control element can be temporarily positioned within a group by pressing "Alt" and operating the element.

Double click on numbers: Opens the entry box to allow manual entry of numeric values.

Double clicking on buttons: Resets the control element to its preset (initial) value. Double clicking again sets the value back to the changed value.

Left clicking on value displays, below the faders, or on the left button corners decreases the values. If the key is kept depressed, the value is automatically reduced until the key is released, or until the end of the scale has been reached. ("Page down").

Right clicking on value displays, below faders, or on the right button corners increases the values. If the key is kept depressed, the value is automatically increased until the key is released, or until the end of the scale has been reached. ("Page up").

Right clicking on buttons (e.g. compressor) opens the corresponding window ("End").

The level faders can be adjusted very precisely. Click on a fader, keep the mouse button pressed, move the mouse pointer away from the fader to the left or right. You can then adjust the settings by moving the mouse in a vertical direction. The steps of the settings become smaller as the mouse button is moved further away from the selected fader.

The step size of the fader movement also becomes smaller if you keep "Shift" depressed while moving a fader.

There are two ways to change knob settings. After clicking on a knob you can either move the mouse around the knob this is the standard method, or move it up and down similar to moving the faders. You can reduce the step size of the value settings by keeping the "Shift" key depressed.

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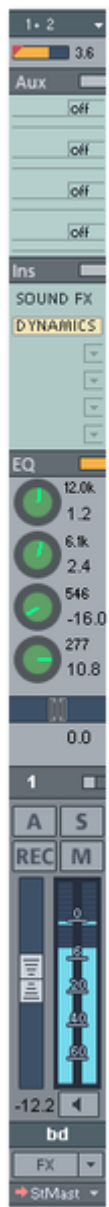
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Channel strips

Each track in the [VIP](#)

is sent through a specific mixer channel, i.e. the sound settings of the respective mixer channel are applied to the objects on the track.

Each channel strip provides the following setting options. Each individual section can be opened and closed by clicking on the corresponding arrow symbol.



Input

: Specifies the audio input for the recording.

Gain

: Controls the ratio of signal input to signal output of each channel.

Aux sends

: AUX parts for various AUX buses can be set using these buttons. A right mouse click opens the AUX routing dialog.

Inserts

: "Insert" lets you loop through additional mixer using freely selectable effects in the channel strip. Clicking on the arrow to the right of the corresponding insert slot opens the selection menu. You can choose from: FX inserts (these are real-time effects in Samplitude Music Studio 15 (e.g. FFT filter, dehisser, multiband dynamics, advanced dynamics, multiband enhancer, room simulator, amp simulator, and vocoder) as well as MAGIX plug-ins, VST, and DirectX plug-ins).

Dynamics/Distortion/Delay (Echo/Reverb):

Right clicking opens the dynamics/distortion/delay/echo/reverb dialog for the track (only in the recording mixer, Samplitude Music Studio 15, and single track mixer views).

Equalizer:

This chapter enables changing the sound picture of the track signal using a 4-band parametric equalizer. The dials change the volume of the frequency range.

You can numerically edit the volume and frequency width of each band in the number fields.

Right click on one of the dials for fine tuning. Samplitude Music Studio 15 shows the EQ dialog in which you can specify exact settings.

Panorama:

Here you can set the direction of the signal in the stereo panorama. The setting of the dial has a different effect on mono and stereo tracks. In the mid position, the setting holds the track's signal in the middle of the stereo picture, regardless whether the track is a mono or stereo track. If the dial leaves the mid position, a mono signal within the stereo picture is shifted (to the left or to the right). For a stereo track, the alignment between the left and right channels within the track signal changes.

Beside the panorama dial, you'll also find a switch to reverse the phase.

Link:

This button connects the corresponding channel with the one to the right of it. All settings and adjustments affect both channel strips.

Automation:

Use this function to record fade movements of the volume/panorama/AUX faders as vol/pan/Surround, or AUX curves during playback. Curves that already exist are shown in the mixer by movements of the AUX bars, panorama faders, and volume faders.

Solo:

The solo button switches off all tracks with the exception of the selected one. Right clicking enables the selection of the output device for the track.

REC:

Arms the track and starts recording.

Mute:

The mute button mutes the track. Right clicking enables the selection of the output device for the track.

Volume fader:

Controls the level of the tracks.

Monitoring:

Click on the loudspeaker button to activate the monitoring function. This means that audio material is always passed through the sound card inputs and forwarded to the outputs.

If the "Hybrid Engine" is set up for monitoring, then all mixer channel effects for the feeds can be used.

This requires functional ASIO drivers for the sound card. This way, Samplitude Music Studio 15 can be used as a live effect device.

Further information on monitoring can be found in the chapter "System settings -> Global audio options -> Monitoring settings".

Track name:

You can enter the name of the VIP track here. A mouse click opens the track settings dialog where you can change the track name, etc.

FX:

This key activates each track's VST or DirectX extra effects from which you can configure and edit any number of effect sequences. This lets you specify the sequence in which the effects are used.

Find out more about this in the chapter "Effects and effects plug-ins -> Order of effects calculations".

Right clicking on the button opens the control dialog to add or delete effects and makes the individual track effect settings dialogs accessible. You can copy, insert, reset, save, or load your personal track effects settings. Specify your custom track effects settings in the program directory in "FX Presets -> Track FX". Of course, you can also create new subfolders as well as "instruments" or "mid-side processing".

Out:

Sets the audio output for the channel. This can either be a submix bus in the mixer or a wave out device.

Master section

The master section can be found to the right beside the channel strips.



Master plug-ins:

This function lets you set VST or DirectX plug-ins for the master out signal. Right click on the control button to show the plug-in dialog. If you wish to quickly switch the plug-in effects on or off, then click the control button.

Dehisser:

The "Dehissing" effect helps you reduce existing distortions which are often exhibited as high-frequency hisses. You can open the Dehissing dialog with a right click.

FFT EQ:

A right mouse click opens the FFT filter dialog.

Vocoder:

Here you'll find the vocoder for the entire signal. A right mouse click opens the dialog.

RoomSim:

Here you'll find the room simulator for the entire signal. A right mouse click opens the dialog.

Multi-band dyn:

A right mouse click opens the entire multi-band dynamics section.

Dyn./Limiter:

The limiter for the master signal opens with a right click.

Master equalizer:

This Equalizer affects the sum signal.

Stereo enhancer (StE):

This stereo enhancer lets you modify the stereo picture of the entire signal.

Mono:

This button plays the entire signal in mono. It serves to temporarily check mono compatibility.

Normalize (N):

This is the master normalization. If you click on this button, the output faders are customized in such a way that the loudest sections reach 0 dB.

This function requires that the loudest sections in the [VIP](#)

be found and played. After clicking on the "Normalize" button, the program sets the peak value of the entire signal to 0 dB. To display the maximum values after having made changes, please use the "Peak reset" button. This deletes the peak display. Clicking on the numerical display of the peak value when stopped sets the play cursor to the VIP position of this value.

Link:

This key connects both faders. Please use this function if you wish to change the left and right faders simultaneously.

Faders:

Both of these faders adjust the left or right master signal. Double clicking on a fader resets the fader to 0 dB.

FX:

Opens the effects/routing dialog to configure and edit multiple effect groups. This lets you specify the sequence in which the effects are used. Find out more about this in the "Effects and effects plug-ins" chapter, "Order of effects calculations".

Mix to File:

The entire VIP is calculated into a file with all the settings. You can find out more about this in "Tools -> Track bouncing".

On

: This function allows you to mix the entire signal every time a stereo wave file is played. It comes in handy when you want to see the processed output signal of the mixer, e.g. while monitoring.

Make sure that the "On" button is deactivated if you don't wish to mix the master signal into a new file.

Otherwise, the system creates a wave file every time the file is played.

Hint:

You don't have to use the "Mix-in-file" function to record dynamic mixer movements during playback. It is usually better to control effects movements via the AUX buses, to record volume and panorama curves, and to then use the mixdown function.

Device/Master out: Here the playback device for the entire signal can be entered, which can then be set in the system/audio dialog under "[Audio devices](#)".

Global settings

Some additional buttons for adjusting the global settings of the mixer window and mixer handling can be found at the right side of the mixer window.

This includes (clockwise from bottom left):

Start track: If the [VIP](#)

has many tracks, then only a section of the corresponding mixer channels is generally displayed in the mixer window. The visible section can be moved using the scroll bar at the bottom of the mixer.

Hold "Shift" down and click on one of the "Start track" buttons to save the current view (a left click is sufficient the first time).

You can recall the previously saved section by clicking again on the "Start track" button.

Preset

: By clicking on the preset menu you can select various mixer setups.

In the "Options" menu reference, please read the section "Project properties -> Mixer setup"

Setup

: A click on the setup button opens the mixer setup dialog.

Show functions

: Right of the master volume fader, individual sections of the mixer window can be switched on and off. Particularly the single tracks, master section, input pad, AUX section, inserts, EQ, and visualization display.

+ buttons

: The "Aux" category also contains a function for increasing and decreasing the amount of aux routes and insert slots.

Solo/Mute

: All solo and mute functions can be globally activated and deactivated using this button.

Bypass FX:

Bypasses all mixer effects to compare the settings.

Auto rec:

This display indicates automation data recording such as volume and panorama. Automation has to be enabled on at least one track.

Play/Stop:

VIP playback can be started and stopped using this button. A right click opens the transport controller.

Group selected controls:

These two buttons are used to group mixer elements and ungroup them when they are no longer needed.

If you want to create a group, select the desired elements by holding down "Ctrl" and then clicking "Group controls". To ungroup, choose one of the elements in the group and press "Ungroup controls".

Snapshots

:The "snapshot" function is particularly useful to compare various setups. You can easily switch between the setups. Naming snapshots is possible by double clicking the name field. The two buttons at the bottom of the last name field enable you to save and load snapshots.

A right click on a snapshot opens a context menu from which snapshots can be saved, loaded, and deleted or switched between the banks of snapshots. This allows up to 32 mixer snapshots to be saved. In this menu, mixer settings can also be stored to a separate file.

When loading a snapshot, the current mixer settings are temporarily saved and can be restored by clicking on "Load last mixer". This also allows an A-B comparison between the snapshot and the current settings.

Reset (mono)

: Resets all mixer settings to the default settings for mono tracks (when using mono or LR wave projects).

Reset (stereo)

: Resets all mixer settings to the default settings for stereo tracks (when working with stereo wave projects).

Reset aux

: Resets all aux shares of the channel strips to their default values (= no aux share).

Reset EQ

: Resets all equalizer settings.

Reset peaks

: Resets the LED peak meters (peak hold display).

Reset FX

: Resets all effect parameters to the default settings so that effects can no longer be processed.

Buses and routing

AUX buses

An AUX bus is a collecting bus combining all signals of the corresponding "AUX sends" of the individual channels. AUX buses are usually used for controlling real-time effects via the volume curve. For this purpose, part of the signal of the desired mixer channel is sent to the AUX bus ("AUX send") and effects are added. The AUX bus fader represents the "AUX return". This means that the higher the volume of the AUX bus, the more effects in the mix will be audible.

Hint: The AUX tracks contained in the [VIP](#) tracks are usually not objects. They only provide dynamic effects to other tracks.

Working method

- An AUX/a submix bus can be created in the mixer at any time. To insert a submix bus after all channels, right click on the number of the last channel shown in the mixer. In the appearing context menu, select "Insert Tracks -> New submix bus". If the output of several previous channels is now routed through this bus, the volume of all of these can be controlled centrally through the new bus. If you have created an AUX bus with "Insert Tracks -> New AUX bus", you can channel the signals of the previously created AUX sections into the the newly created AUX bus. AUX buses are also the target for AUX sends with a lower channel number.
- Right clicking the number of a channel allows the option to select between the properties "AUX bus", "Submix bus", or even both for the according channel strip.
- Submix or AUX buses are always stereo buses.
- Submix buses can be fed from tracks with a lower channel number just as a physical output device.
- Submix and AUX buses can be used for all channel effects, including volume, panorama automation, and AUX send. You can align your output to output devices or submix buses with a higher channel number the same way as any other channel.
- Automation of volume and panning for AUX and submix buses are the same as for all other channels.

Submix buses

A submix bus combines several tracks. It controls the volume, panorama, and effects settings of all tracks that are "routed" to the submix bus. For example, all drum tracks (hi-hat track, bass drum track, etc.) can be combined to one submix bus so that the entire drum kit can be controlled via the volume controller of the submix bus.

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Embedding external effects devices

In order to include external effects devices you require an audio interface with several in- and outputs, whereas one input/output pair is reserved for the external effects device.

Routing the signal:

- You can loop in the signal either as an effect or insert.
- Insert send: Route the channel output directly to the physical output of the card to feed your external device.
- Insert return: Select a mixer channel to act as an insert return channel. In the input section of the channel select the sound card input connected to the output of the device you want to loop in.
- External send effect: Creates an AUX bus to be fed from different channels of the corresponding AUX send. The output of the AUX bus has to be routed to a physical output of the sound card. Connect the output of the effects machine to the desired input of the sound card. The sound card input is connected to the mixer channel by selecting the corresponding input section of the sound card of the AUX return channel.

Tips and tricks

- Master normalization is a mixer feature which allows you to quickly set the output level to 0 dB. If the limiter in the master section is active, then the output level is also monitored, thus preventing level clipping.
- Clicking on the displayed top peak level numbers of the master sets the cursor to the [VIP](#) peak position. This can be controlled with the function "Play over cut".
- The mixer function "Mix in file" (to the right below the mixer) writes the master output of the mixer to a wave file (or HD wave project). If parameters are changed during playback, the sound that was changed live can be recorded. If you use the live input of Samplitude Music Studio 15, then all mixer effects can be used in the mix file while recording. Warning: the mix file is overwritten at every play start. Therefore, if you want to keep the result, you have to rename this file or save it under a different name.

MIDI in Samplitude Music Studio 15

In this chapter

[What is MIDI?](#)

[Connect external equipment](#)

[Convert MIDI objects into audio files](#)

[MIDI settings](#)

[MIDI: Import, record, edit](#)

[MIDI object editor](#)

What is MIDI?

MIDI

files do not contain the actual sounds like audio files, but only the note control information played by the synthesizer chip of the sound card. This has several advantages:

1. MIDI files need a lot less memory than wave files.
2. MIDI files can be adapted to any beat (BPM) without affecting the sound; only the playback tempo is changed.
3. Transposition of MIDI files to other pitches is also easy. When doing so, a section in a song does not have to be saved in several different keys. The version in C major is perfectly sufficient. It can then be transposed to any key by simply clicking the right mouse button.
4. In Samplitude Music Studio 15 you can use VST instruments which play the notes contained in the MIDI files.

The disadvantage of MIDI files

: The actual sound is not yet set. Only during playback by the synthesizer chip of the sound card from external MIDI synthesizers/virtual instruments (VST instruments) will it be produced. High-quality sound cards or external synthesizers will sound completely different and better than standard sound cards.

Connect external equipment

Interface connection

Please consult your sound card or [MIDI](#) interface manual for information about the correct connection. The most common ways to add MIDI functionality to computers are:

- Multi-port MIDI interfaces, including separate devices.
- Sound card with built-in MIDI interface.
- General MIDI module or keyboard-integrated interface, usually labeled "To host".

MIDI cabling

[MIDI](#) inputs/outputs

: If your computer has an internal or external MIDI port, or has a MIDI-capable sound card installed, connect your MIDI keyboard's "MIDI out" to the computer's "MIDI in" (on the interface, sound card, and so on).

If your MIDI keyboard can generate its own sounds, connect the computer's "MIDI out" to the keyboard's "MIDI in". If your computer (or the MIDI device) offers more than one MIDI output, connect any other sound synthesizers to these. If the computer only has one MIDI output, you need to connect the second sound synthesizer's "MIDI in" to the keyboard's "MIDI thru" port. A third device can be connected to the second's "MIDI thru", and so on. The "MIDI thru" port always delivers a copy of the signals coming into the device's "MIDI in". It is preferable, however, to use a direct connection from a computer's "MIDI out" to a device, rather than chaining too many devices one after the other. Timing problems may occur in the chain if a lot of MIDI commands are sent in a short space of time. This is due to the slight delays introduced by each "MIDI in" to "MIDI thru" transaction. If your computer also features several MIDI inputs, they can be used for the connection of MIDI expanders.

MIDI local off

: If your keyboard features an internal sound source, it is important that you stop the keyboard from generating sounds directly from its own keyboard. If you buy a new keyboard that is to be used without a sequencer and connect it straight to an amplifier, you would expect the device to make a sound when you press its keys. In other words, the keyboard is internally connected to the sound synthesizer. This behavior, however, is not what you want to happen when using your keyboard with Samplitude Music Studio 15. In this scenario, the keyboard is used as the computer's input device, and Samplitude Music Studio 15 is sending (i.e. playing) MIDI information to any connected sound synthesizer, be they the keyboard's own sound generator, a sound card, or any other connected sound module.

If you wanted to control and record another sound module using your keyboard as the input device, its own sounds would play alongside those of the other sound synthesizer, which is why the keyboard must be separated from its own internal synthesizer. This function is known as "Local OFF", and is set directly on your keyboard. Refer to your keyboard's manual for information on how to do this. Don't worry about "breaking" the link between the keyboard and its internal sound generator – Samplitude Music Studio 15 will act as the "missing link" in this scenario.

Convert MIDI objects into audio files

If you use VST instruments, then you won't have to convert these [MIDI](#) objects into audio data before exporting your entire arrangement, since the sound is created on your computer and can be processed there.

If you still wish to do so (to free up processing power on your PC, for example), then switch the desired MIDI track to "Solo" and export the arrangement. Then add the exported file back into your

arrangement and delete the MIDI objects in the exported track.

All MIDI objects which open external synthesizers via a MIDI interface will have to be converted into audio objects if you want them to be exported as well. They only contain control information for sound reproduction.

For this to happen, the output of the MIDI synthesizer (e.g. the sound card) must be connected to the input of the sound card. The MIDI data can then be played and recorded simultaneously via the record function. The result is an audio file that can be edited and exported together with the multimedia files.

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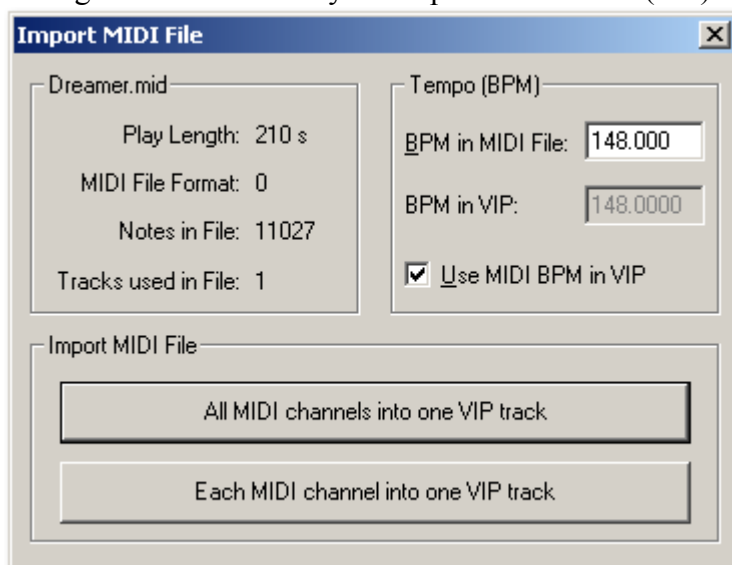
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MIDI settings

All global [MIDI](#) settings can be found in "System/Options" -> MIDI ("Y").



Please read the chapter "System settings -> MIDI settings".

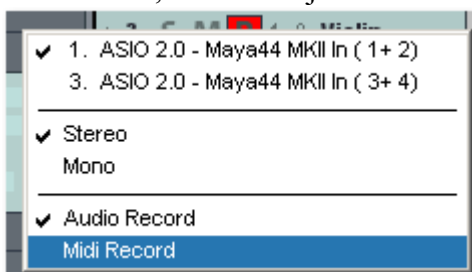
MIDI: Import, record, edit

Recording MIDI tracks

Just as with the routing settings of audio tracks, you can also tell the program which [MIDI](#) input to use.

Open the track settings dialog by right clicking on the field that contains the track name (track info box). In the "MIDI" section of the track settings, select the "MIDI recording device" which your keyboard or external sequencer is connected to. Select the MIDI playback device you use as the "Playback device" or MIDI output device, e.g. "MIDI out" of your sound card or a VST instrument. In the same dialog, activate the "MIDI" button in the "Recording" section.

Note: You can activate the MIDI section of the track editor ("[Menu](#) window -> Track editor") by clicking the "MIDI" button in the track box. Now right click "Rec" to select the MIDI input device as well as the instrument outputs of each selected playback device. You should also check the instrument outputs if the MIDI signal in the level display can be seen but no sound can be heard, and then adjust this to the MIDI output device (VST instrument).



The following MIDI record modes are available: "Normal", "Overdub", "Multi-overdub", and "Replace". These decide which of the newly recorded MIDI files will be added to the [VIP](#).

You can specify the settings for MIDI record modes in the transport control. Click on the arrow on the left beside the "Close" button in the transport control to display this section.

You can also select the MIDI recording modes from "MIDI record mode" in the "MIDI" menu.

Normal:

This recording mode corresponds to that of the audio recording, i.e. for each recording process a new MIDI object is created over the existing object. The old object remains intact. This way you can record multiple takes of a passage and then compare them in the take manager later on.

Overdub:

The data is recorded into an already existing object; available and newly recorded MIDI data is mixed together. If you record over several objects, then these are combined into a single new object.

Multi-overdub:

The data is recorded into an already existing object; available and newly recorded MIDI data are mixed together, but existing objects remain the same. This mode makes sense for recording MIDI controller changes over several objects sequentially.

Replace:

The data is recorded to an existing object, and any MIDI data is overwritten. Several existing objects are combined into a single object.

After selecting the mode, make sure that the recording is activated for the track. The record button, which is set to standby, changes to violet to signal that this MIDI track should record MIDI data.

Now you can start the MIDI recording by pressing "R". After recording, you will be asked whether you want to keep or delete the recording. You also have the chance to change the record mode for the recorded MIDI data. After confirming this with "OK", your newly recorded material will appear as a "MIDI take" in the [VIP](#).

Importing MIDI data

Existing [MIDI](#)

files can be imported into a Samplitude Music Studio 15 project as objects. However, you can also load a MIDI file as a separate object the same way as a wave, HDP, or RAP project.

Menu:

File/Open/MIDI (*.MID) ...

Shortcut:

Shift + M

Mouse: [Drag & drop](#)

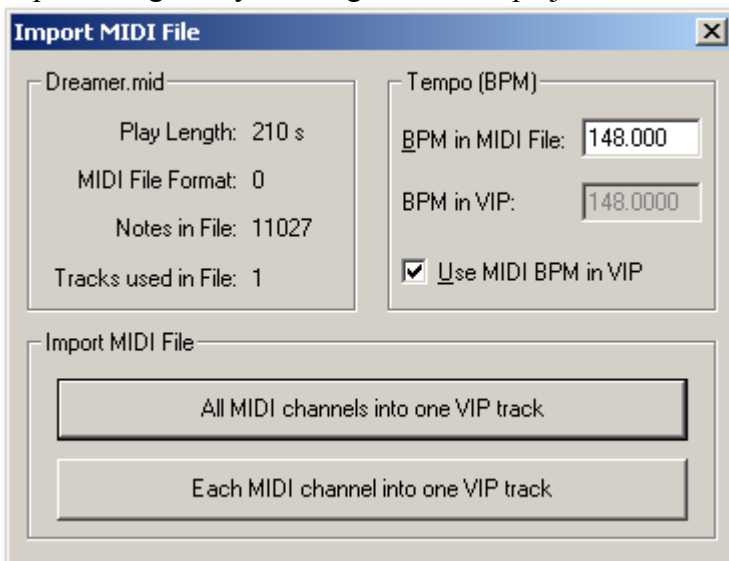
from file browser or Windows Explorer.

If you import MIDI files, please note that only type 0 or 1 MIDI data is compatible with the import function. Each file should end with *.MID so that it can be recognized as a valid format.

MIDI files are generally imported like a wave file, irrespective of whether they are imported in a [VIP](#) window or a MIDI project window. For a VIP you can specify at which position you want to insert the new MIDI object. Set the play cursor at this position, select a range in the desired track or drag the file from the internal explorer or Windows Explorer directly into the track position via drag & drop.

Hint:

The following dialog is automatically displayed if a VIP is already open as an active window. If you want to open the MIDI file in a separate MIDI project window without inserting the content into a VIP, please ensure that no VIP project window is active. Samplitude Music Studio 15 will also display the MIDI import dialog if only one range of a MIDI project window is dragged into a VIP track.



The import dialog contains status information on the MIDI file you want to load:

Each standard MIDI file also contains tempo information. Samplitude Music Studio 15 displays this information in a separate section of the dialog. At this position of the import you can decide whether you want to adjust the VIP tempo to the tempo of the imported MIDI file. If necessary, a tempo marker is displayed in the VIP.

If you select the option "All MIDI channels into one track", Samplitude Music Studio 15 inserts the MIDI object into the currently selected VIP track. The created [MIDI](#) object then contains all [MIDI](#) channels of the [MIDI](#) file.

Editing MIDI objects

Editing [MIDI](#)

objects in Samplitude Music Studio 15 follows the same principle as editing audio objects: MIDI objects can be copied, split, and trimmed, have fade handles for fading in or out, and a volume handle that scales the MIDI velocity. MIDI objects refer to the MIDI data you have recorded while playing or importing, but are not saved on the hard drive as a MIDI file but are saved as a project file instead.

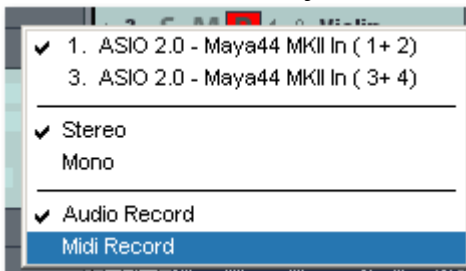
You can edit MIDI object in the MIDI object editor as well as in the different MIDI editors, i.e. piano roll, drum editor, controller editor, listen editor and score editor.

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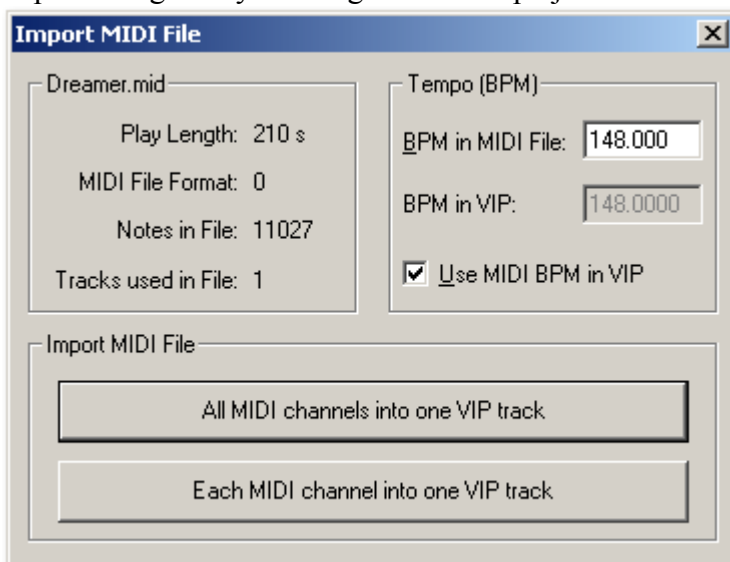
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The following dialog is automatically displayed if a VIP is already open as an active window. If you want to open the MIDI file in a separate MIDI project window without inserting the content into a VIP, please ensure that no VIP project window is active. Samplitude Music Studio 15 will also display the MIDI import dialog if only one range of a MIDI project window is dragged into a VIP track.



The import dialog contains status information on the MIDI file you want to load:

Each standard MIDI file also contains tempo information. Samplitude Music Studio 15 displays this information in a separate section of the dialog. At this position of the import you can decide whether you want to adjust the VIP tempo to the tempo of the imported MIDI file. If necessary, a tempo marker is displayed in the VIP.

If you select the option "All MIDI channels into one track", Samplitude Music Studio 15 inserts the MIDI object into the currently selected VIP track. The created [MIDI](#) object then contains all [MIDI](#) channels of the [MIDI](#) file.

Editing MIDI objects

Editing [MIDI](#)

objects in Samplitude Music Studio 15 follows the same principle as editing audio objects: MIDI objects can be copied, split, and trimmed, have fade handles for fading in or out, and a volume handle that scales the MIDI velocity. MIDI objects refer to the MIDI data you have recorded while playing or importing,

but are not saved on the hard drive as a MIDI file but are saved as a project file instead. You can edit MIDI object in the MIDI object editor as well as in the different MIDI editors, i.e. piano roll, drum editor, controller editor, listen editor and score editor.

Importing MIDI data

Existing [MIDI](#)

files can be imported into a Samplitude Music Studio 15 project as objects. However, you can also load a MIDI file as a separate object the same way as a wave, HDP, or RAP project.

Menu:

File/Open/MIDI (*.MID) ...

Shortcut:

Shift + M

Mouse: [Drag & drop](#)

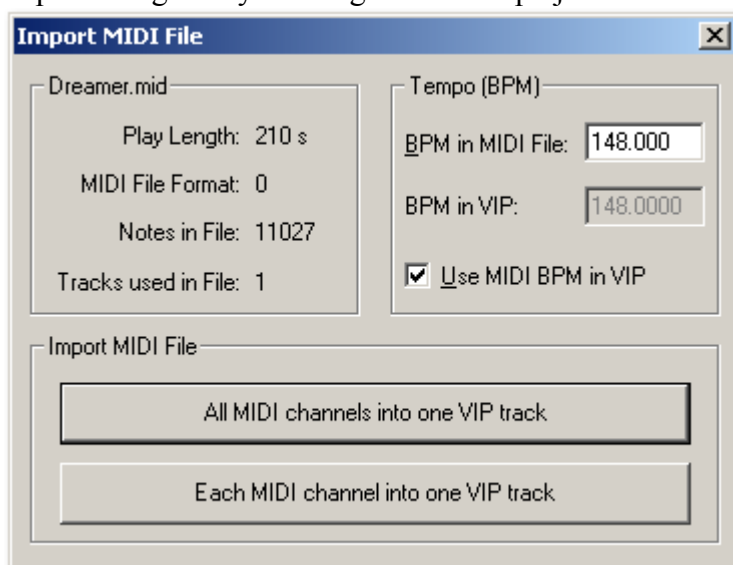
from file browser or Windows Explorer.

If you import MIDI files, please note that only type 0 or 1 MIDI data is compatible with the import function. Each file should end with *.MID so that it can be recognized as a valid format.

MIDI files are generally imported like a wave file, irrespective of whether they are imported in a [VIP](#) window or a MIDI project window. For a VIP you can specify at which position you want to insert the new MIDI object. Set the play cursor at this position, select a range in the desired track or drag the file from the internal explorer or Windows Explorer directly into the track position via drag & drop.

Hint:

The following dialog is automatically displayed if a VIP is already open as an active window. If you want to open the MIDI file in a separate MIDI project window without inserting the content into a VIP, please ensure that no VIP project window is active. Samplitude Music Studio 15 will also display the MIDI import dialog if only one range of a MIDI project window is dragged into a VIP track.



The import dialog contains status information on the MIDI file you want to load:

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If you select the option "All MIDI channels into one track", Samplitude Music Studio 15 inserts the MIDI object into the currently selected VIP track. The created [MIDI](#) object then contains all [MIDI](#) channels of the [MIDI](#) file.

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can be copied, split, and trimmed, have fade handles for fading in or out, and a volume handle that scales the MIDI velocity. MIDI objects refer to the MIDI data you have recorded while playing or importing, but are not saved on the hard drive as a MIDI file but are saved as a project file instead. You can edit MIDI object in the MIDI object editor as well as in the different MIDI editors, i.e. piano roll, drum editor, controller editor, listen editor and score editor.

Editing MIDI objects

Editing [MIDI](#)

objects in Samplitude Music Studio 15 follows the same principle as editing audio objects: MIDI objects can be copied, split, and trimmed, have fade handles for fading in or out, and a volume handle that scales the MIDI velocity. MIDI objects refer to the MIDI data you have recorded while playing or importing, but are not saved on the hard drive as a MIDI file but are saved as a project file instead.

You can edit MIDI object in the MIDI object editor as well as in the different MIDI editors, i.e. piano roll, drum editor, controller editor, listen editor and score editor.

MIDI object editor

Object: [Menu](#)

/ Object editor

Shortcut:

"Ctrl + O"

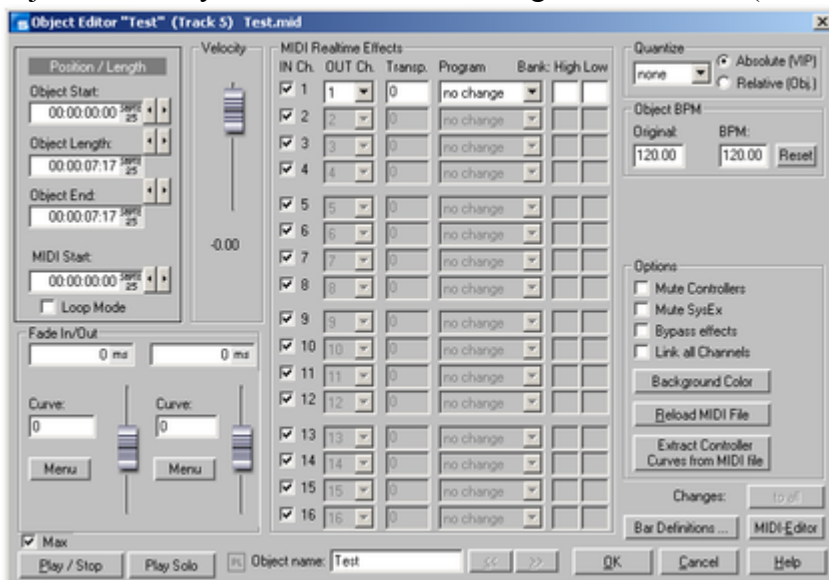
Mouse:

"Shift + double click"

The [MIDI](#)

object editors (designed similar to the audio object editor) allow you to easily edit the MIDI object parameters. You can adjust sound, length, volume, and program changes individually for each MIDI object.

A Samplitude Music Studio 15 MIDI object may contain up to 16 channels and up to 16 MIDI SMF tracks (initial track number in imported standard MIDI file). For instance, you can use a single object to control a multi-output VST instrument via several MIDI channels. Within this object you can edit the notes in the corresponding MIDI editor in all channels or only in a selected channel. You can use the max mode of the object editor to get an overview of which MIDI tracks or channels are within one MIDI object which may have been created from a general MIDI file ("Max" checkbox).



If there is only a single track in the MIDI object, then the settings are only available for this MIDI track. You can use the MIDI object editor to quantize MIDI data in the MIDI object. Please note that these settings affect the MIDI object non-destructively in real time so that you don't see the changes in the MIDI key or drum editor.

Important functions and settings in the MIDI object editor:

Velocity

The velocity fader is comparable to the volume fader in the wave object editor. Normally, each MIDI note has a velocity value which determines how "hard" the note is played. Changing the velocity value in the object editor scales the volume of the notes in the MIDI object from its physical maximum or minimum values (0 to 127), and is therefore included in the actual velocity note values. Changing the fader is identical to changing the middle handle of the MIDI object in the [VIP](#) track.

Position/Length

This sets the starting position of the MIDI object as well as the length of the object. The settings correspond to moving the object in the VIP track or changing the length using the length handle at the bottom left and right of the object.

Crossfades (max mode)

You can set the global fade settings in the menus "Fade in/Fade range".

The crossfade editor allows you to make global settings for MIDI crossfades. However, this corresponds with the basic setting for all crossfades of the project. Crossfades between MIDI and audio objects are possible. Create a crossfade between two objects and press "Set" to save the crossfade. If the crossfade is set, you can use it for other objects anytime by clicking on "Get".

Fade in/out (max mode)

These settings determine the fade in and fade out effects of an object. If you add a fade effect to a MIDI object, the changes are interpreted as a change to the velocity values of the affected notes. The fade lengths can be changed directly in the object by using the upper left and right object handles. In max mode the object editor provides a selection of different curves.

Object name

Enter the name of the object.

MIDI real-time effects

All 16 possible MIDI channels are displayed in max mode. If the MIDI object does not contain data for a channel, this is displayed in grey. Only settings for one MIDI channel can be found in the preset, reduced mode.

MIDI IN channel (max mode only)

: Mutes the channel of the MIDI object.

MIDI OUT channel

: Routes the MIDI data of a channel to a different channel.

Transp

.. Transposes all MIDI notes of this channel.

Program and bank change

: The values entered here are always transmitted if the object is played back. Use these settings if different objects of a MIDI track are to use different programs of a synthesizer.

Quantization

This is a virtual quick quantization without further options, while the quantization settings changed in the MIDI editor immediately affect the notes and adjust their starting positions.

Track selection

Use this if you want to split a multitrack MIDI file into separate VIP tracks but still would like to change all MIDI objects as a group. Bear in mind that this function is only activated if several MIDI objects are active in the VIP. Selecting several objects with the object lasso or using "Shift + mouse click" can also achieve this.

Mute controllers

Deactivates MIDI controller

Mute SysEx

Prevents control via SysEx data

Bypass effects

Deactivates all real-time effects for this MIDI object.

Link all channels

The settings are changed for all channels simultaneously.

Background color

Changes the background color of the MIDI object.

Reload object

It may be necessary to reload the MIDI data from the file used to create the object at some point. Note: All previous changes are overwritten.

Bar definitions

This allows you to make your own bar settings for the MIDI object. The settings can differ from the rest of the project or other MIDI objects. The four values in the settings window (numerator, denominator, tempo, and PPQ) can help you if you would like to increase the quality of the MIDI notes and data. For

example, you can specify a different resolution (PPQ) to enable a finer quantization.

MIDI editor

Opens the MIDI editor (piano roll), where you can easily set, edit, and quantize MIDI events.

Play/Stop

Starts and stops playback at the current position.

MIDI editor

In this chapter

[Notation display, movement, zoom](#)

[Synchronized MIDI editor and VIP screen view](#)

[MIDI editor multi-object editing \(MO editing\)](#)

[Using the MIDI editor: Selecting events](#)

[Editing events: Piano roll](#)

[Controller editor](#)

[List editor \(midi event list\)](#)

[Drum editor](#)

[Score editor](#)

[Quantize to grid](#)

[MIDI editor shortcuts](#)

Notation display, movement, zoom

The [MIDI](#)

editor features five main areas for editing:

- Matrix editor (piano roll)
- Drum editor (toggle between the drum editor and piano roll optional)
- Controller editor (for example, velocity, MIDI volume...)
- List editor (event list)
- Score editor

Various tools are available, e.g. the pencil or eraser. Exact values for each MIDI event can also be set in the edit fields via the piano roll.

Fundamentally, changes like moving or deleting notes always refer to all selected MIDI events (red) with only a few exceptions. Changes to the selection in a range always apply to every other range as well. For example, you can select a group of notes in the piano roll and then change the velocity of these note groups which modifies all selected notes simultaneously.

Notation display in piano roll and controller editor (with velocity curves)

Notes which are not selected within the editor are displayed in blue. The intensity of the color symbolizes the velocity, and the velocity increases as the color gets darker/stronger.

Selected notes:

Multiple selected notes are displayed in red, and a more intense color symbolizes increased velocity.

Current event:

Appears in bright red with a red border. The properties of the currently selected events are displayed in the edit fields above the piano roll. If an event is selected with the mouse, it turns into the current event.

Display of filtered events: You can filter specific events for the display to get a better overview of the events of a [MIDI](#) object.

Example:

The MIDI object as notes in the MIDI channels 1, 2, and 5. You can now make all notes in channels 2 and 5 accessible for the selection and editing tools via the selection of the MIDI channels in the channel filter by selecting the two channels from the menu. All unselected filtered notes in channel 1 are displayed in gray in the piano roll and the list editor.

Events in the filtered channels can be completely hidden using "Hide filtered MIDI data" option in the menu.

The list editor provides additional display filters that only function within the list. The display filters are initiated with the settings of the playback filters (mute settings), but the filters can be set independently of one another.

Display of muted events:

MIDI object settings (in the MIDI object editor, "Ctrl + O") can be used to mute notes and filter other MIDI events. This type of "muted" event is displayed lighter or paler in the piano roll and list editor. Events in front of or behind the beginning/end of the object (recognizable by the blue lines in the editor or when the display is active and transparent as grayed-out ranges) appear similarly pale as non-muted events within the object borders.

Events above and below the current picture section:

Two small red displays above and below the vertical scroll bar to the right-hand side of the MIDI editor screen show in red if there are notes outside the screen's display.

Moving and zooming

The vertical and horizontal view or zoom are adjusted with the scroll bars just like in the project window.

Mouse wheel:

Scroll horizontally

Shift + mouse wheel:

Zoom vertically

Shift + Ctrl + mouse wheel:

Scroll vertically

Ctrl + mouse wheel:

Zoom horizontally

Synchronized MIDI editor and VIP screen view

If you change the horizontal display or zoom using the scroll bars, holding "Shift" changes the corresponding [VIP](#) window.

Play/Play solo

"Play solo" only plays the [MIDI](#) object that is currently opened in the MIDI editor (corresponding with the filter settings in the "Options" menu). "Play" plays the entire arrangement.

MIDI editor multi-object editing (MO editing)

You can also load several [MIDI](#) objects simultaneously in the MIDI editor. All MIDI objects selected in the arranger are added to the MIDI editor by clicking on the MIDI editor button in the arranger.

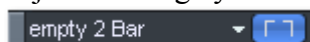
In an opened MIDI editor you can include additional MIDI objects by clicking on them while holding down "Shift".

In MO editing there is always an active object (and with it, an active track). New MIDI events will always be inserted into the active track, and in "Score" mode the current note line will also be taken in consideration. When selecting notes or MIDI events or when clicking using the pen tool the active object and the current note line automatically reset.

The active object as well as the active track can be displayed and altered at the top right. In the selection fields all objects contained in the MIDI editor will be listed.

The **Current object area**

can be highlighted using the button behind the object selection field. Areas lying outside the current object will be grayed-out and the notes of other objects will be paler, but still selectable.



In MO editing you can activate a display filter for the current track. Data from other tracks are then grayed out or made invisible.



In Score mode of the velocity editor only the velocity values for the current note line will be displayed. In representing notes, the note system of the active track will be highlighted using blue note lines.

MIDI editor multi-object editing (MO editing)

You can also load several [MIDI](#)

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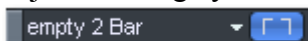
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In representing notes, the note system of the active track will be highlighted using blue note lines.

Using the MIDI editor: Selecting events

- Select event: Left click on event
- Add/Remove event (selection): Ctrl + left click on event
- Change/Set current event within multiple selection: Left click on selected event
- Set current event, deselect all other events: Double click on event
- Selection of events within a line or range: Click while holding down "Shift"
- Selection of all notes of a pitch: Double click on the assigned key on the left keyboard
- Selection of all notes: Ctrl + A (functions for pitches selected with a key on notes with this pitch)
- Select next or preceding note: Cursor left, right

Selection of MIDI events (piano roll, drum editor, controller editor, list editor, score editor)

Special selection options in the piano roll

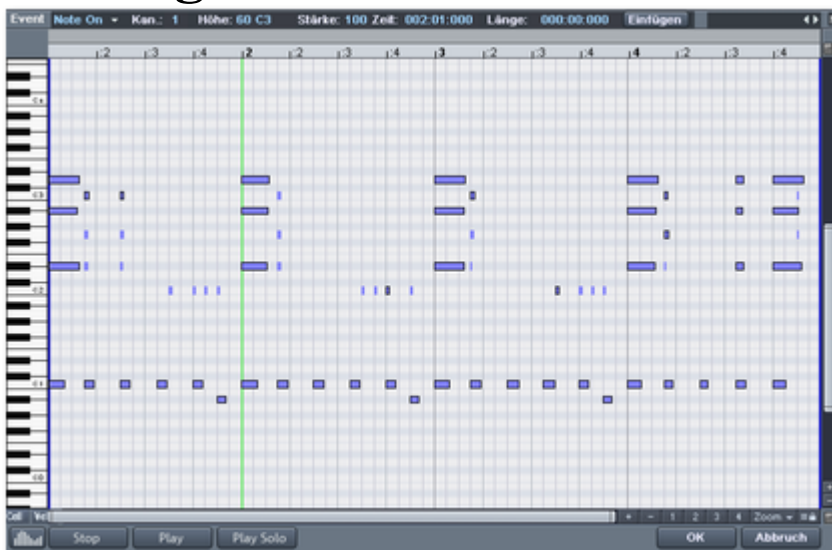
In order to directly select all notes of a certain pitch, double click on a free section with this pitch in the piano roll editor or in the keyboard. Hold down the "Alt" key to select notes with this pitch only from this click position.

Holding "Shift" and double clicking on a free area selects all notes (all pitches) from the click position onwards.

Note:

If you press "Ctrl" as well during any of these selection methods, the new selection is added to the current one (i. e. the previous selection is not canceled).

Editing events: Piano roll



Editing tools

There are several editing possibilities for notes within the piano roll, i.e. the so-called "Mouse" modes. The same functions for editing notes (except delete) apply in all modes, so that these modes only differ by their reaction to clicking in empty spaces.

Selection (1)

Lasso: You can draw a selection frame by holding down the mouse button.

A click in an empty space removes a selection.

Draw pencil (2)

Left clicking draws a note. The beginning and the length are determined according to the current quantization settings ([Toolbar editor](#)).

Drum pencil (3)

A sequence of notes is drawn. The length of the notes and the note intervals are determined by the current quantization settings.

When holding Alt: The pitch of the first note is also maintained for all notes drawn subsequently. Moving the mouse backwards (to the left) while depressing the mouse button removes drawn notes.

Pattern pencil (4)

Draws a freely definable note pattern (Ctrl + P).

When holding Alt: The pitch of the first note is also maintained for all notes drawn subsequently. Moving the mouse backward (to the left) deletes just added notes again.

Velocity change (5)

If you hold the mouse key and drag the mouse vertically, the velocity values of the selected events are increased or decreased relatively to each other: The velocity values are changed absolutely, i.e. all changed events have the same velocity values after editing. In the graphic velocity display mode you can change several velocity values at once by clicking + dragging the mouse over the notes.

Delete (6)

Clicking on a selected note deletes all selected notes. Dragging the mouse deletes all notes underneath the eraser.

Magnifying glass (7)

Left mouse button: Zoom in

Right mouse button: Zoom out

Left mouse button + drag: The sketched area is always zoomed. The zoom mode can be temporarily accessed by holding "Z". After releasing the key the mouse mode is active again.

Glue notes (8)

Glues the note with the next note of the same pitch.

Split notes (9)

A notation bar is split in the matrix at the next grid position by clicking.

Mute (M)

Individual notes or selected note groups can be deactivated or activated by clicking on them. Also available as a command in the "[MIDI functions](#)" menu.

Hints:

- You can freely define the shortcut for switching the mouse mode (tool). "Delete" mode can be activated anytime by clicking/dragging with the right mouse button. For instance, you can use the pen to insert new notes when left clicking and remove already inserted notes with a right click without having to change tools.
- Notes created in "Draw" mode contain the MIDI channel and velocity of the edit boxes of the "New" section above the piano roll.
- You can select the previous/next note with the cursor left/cursor right keys. With the cursor up/down keys you can adjust the note pitch step by step.

Editing notes with the mouse

If you move the mouse over a note, then the mouse cursor will change and, depending on the part of the note, the following options will be available:

- Change note start time (Grab note bar at the beginning, note end remains)
- Change note length (Grab note length at end)
- Shift + set fixed note length (for multi-selection hold "Shift" and drag current reference note longer/shorter – all notes will have the same length)
- Ctrl + scale note length (for multi-selection hold "Ctrl" and drag current reference note longer/shorter – changes the note length relatively, i.e. the reference note will become twice as long and thus all other notes will be double length)
- Move note freely (pitch and start time is changed)
- Move note horizontally only, retain pitch (in free move mode, hold "Alt")
- Move notes vertically, keep position (hold "Shift" in move mode)

MIDI functions

The commands in the [MIDI](#)

functions menu always refer to all selected notes. If no notes have been selected, then all functions are applied to all notes.

Legato:

Notes may be prolonged to be played in legato:

Remove overlaps (polyphonic):

Notes may be shortened so that there are no longer any overlaps. Chords are recognized and not corrected, i. e. chords are not split up.

Remove overlaps (monophonic):

Notes may be shortened so that there no longer are any overlaps. Forces monophonic voice.

Mute notes (mute):

Mutes and unmutes notes or selected note groups with a click.

Quantize:

Small irregularities when playing to record can be smoothened with the quantization function. In contrast, the "swing" function makes mechanically sounding sequences "groovier".

Clicking on "Quantize" shifts all selected notes to a customizable quantization grid. All notes are quantized

without previous selection.

1/4, 1/8, 1/16 and 1/32 notes can be selected as starting time (grid). Uneven quantization values such as triplets can be created with "n-tole" (see table).

Quantization options (menu options in the MIDI editor):

"Strength" in percent. "100" moves the event precisely to the quantization grid point "50" at the center between the current position and the quantization grid point, and "0" indicates zero movement, i.e. quantization off.

Swing: Activates "triplet" play mode. Specifies the division for uneven grid points before 50.

50-50 division: The uneven 1/8 note is exactly half way between the even eighths ("even play" mode) 67..." triplet play, 3-2 division

Window: Events in the window are quantized, those outside remain at their position.

100: Window covers the total range from the grid points of the quantization grid.

50: The window covers half of the quantization interval. Events with gaps of 1/4 of the grid width left and right of the grid point are quantized; no window = quantization off.

Offset: The entire quantization grid is moved. -100 is a half grid shift to the left (earlier), +100 is a corresponding shift to the right (later).

N-toles: The grid is divided by the number of sections set as n-toles. You can enter any number you like, as well as the previously defined numbers.

Reset: Restores the default values. If snap is activated, the notes "snap" to the quantization values when created or edited. In this case the quantization values are also taken into account. For instance, the notes snap to the corresponding positions within the quantization window.

Editing selected events (edit fields):

The properties of each event in the piano roll, controller, and list editor can be edited by clicking on the edit tools below the edit buttons. The following buttons are available for each note:

- Channel
- Byte 1 (or pitch)
- Byte 2 (or velocity, attack)
- Start time in bars:beats:ticks
- Length in bars:beats:ticks

The display of the ticks has a resolution of 384 PPQ (i.e. 384 ticks correspond with a quarter note).

To edit, click and drag the displayed value. Hold the left key and drag the mouse up or down to increase or decrease the value.

Hint:

The value steps are greater if you press the Ctrl key.

You can also edit the value numerically via the keyboard. Simply mouse click on figure.

A few special characteristics have to be observed when multi-selecting events:

You can relatively change the values by dragging the mouse, using the mouse wheel or entering numeric values and then confirming by pressing enter (for pitch and attack rate).

You can make permanent changes by simultaneously holding the shift key when dragging & dropping or confirming entry with Shift + Enter.

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Hint: [MIDI](#)

channel changes are always permanent.

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Hint: [MIDI](#)

channel changes are always permanent.

Controller editor

Open: The controller editor is located below the piano roll and can be hidden. It can display and edit up to 4 [MIDI](#) controller types or velocity values simultaneously.

Open it by clicking either the  - [Button](#) below the keyboard or with the shortcut "ALT + V".

The values of existing events are displayed as colored bars in the controller editor, whereby darker and higher bars symbolize higher values. The bars are located vertically directly below the notes.

Selection

Combo tool, also used for value changes as well as freehand and line drawing. Select the controller bar by clicking and dragging or single clicking in the range within a bar.

Click on the bar end:

The controller value can be adjusted by dragging vertically.

Shift+drag:

Set all bars to the same value.

Ctrl+drag:

Scale (relative value change)

Shift:

Draw curve (envelope)

Alt:

Draw freehand (envelope)

Freehand drawing:

Click and drag to draw a controller curve, click and drag backwards to correct the curve while drawing.

Just one click:

Creates a single controller event.

Shift + click:

Draw line

Hint:

If you edit velocity, no new notes are generated; only existing velocity values are modified.

Draw lines:

Click and drag to draw a controller ramp.

Just one click:

Creates a single controller event.

Hint:

If you edit velocity, no new notes are generated; only existing velocity values are modified.

Tools

The controller editor has its own tools for editing curves and values.



Controller selection: A click on the menu area of the button opens a selection menu in which the [MIDI](#) controller for editing can be selected.



Selection
: Combi tool also used for value changes as well as freehand and line drawing.

Click in the upper range of a controller bar to modify the controller value immediately using the draw

function. Clicking in the lower two thirds of the bar selects the corresponding note which is then highlighted in red in the editors.

Select multiple controller bar by clicking and dragging or single clicking a range in the controller editor; individual values can be selected by clicking within the bar. Selected controller events will be highlighted red.

Combi-tool editing options:

- **Click on the bar end + drag:** The controller value can now be adjusted by dragging vertically. If you hold the "Shift" key down while dragging, all of the selected events will be set to the same value. If you also hold down "Ctrl", then the values of multiple selected controllers will be changed relative to one another.
- **Alt + Drag:** This activates freehand drawing; the mouse pointer becomes a pencil. By dragging in the corresponding controller area, you can draw in any number of controller curves.
- **Shift + Drag:** This activates line drawing and the mouse pointer becomes a cross hairs. By dragging horizontally, you can draw in linear value curves (ramps).



Freehand drawing

: Draws new controller value curves or individual values by single clicking without dragging.

By dragging backwards, you can correct your curve during drawing. Shift + Drag with the cross hairs to draw a line.



Draw lines

: Uses the line function to insert a transition between two different controller values.

Hint: If you edit velocity with the draw tools, no new notes are generated; only existing velocity values are modified.

Quantize controller events

[MIDI](#)

controller events can be quantized and thinned out; select the "MIDI functions" menu and the "Quantize/Thin out controller" command to do this. Quantization occurs according to the quantization settings.

Multi-view

The four multi-buttons are used to display or hide the view of all possible controller curves. Clicking on the menu area of the buttons opens a menu which allows you to choose a [MIDI](#) controller for this controller slot.

Selecting and processing notes

: By clicking in the upper range of a controller column, the controller value can be changed immediately by dragging the mouse. Clicking in the lower two thirds of the column selects the corresponding note (displayed in the editor in red).

Tips:

The size of the controller editor can be determined by the dragging the mouse to the top edge (directly below the horizontal scroll bar).

Several controller events can be shifted simultaneously. First select all values you want to move (if necessary, hold "Ctrl" to select different controller types together). You can now move the selection in the time box by entering a value and confirming with "Enter", or by dragging the mouse.

Use the display filter function for velocity values.

In polyphonic events especially the columns are located above each other, making it difficult to select the respective note. To edit only notes of a certain pitch, e.g. all C1 notes in the controller editor, click on the respective key on the keyboard. The key and the background of the selected pitch are highlighted. Only

notes of this pitch are displayed in the controller editor.

Notes of different pitches, e.g. all C1, D1, and A1 notes can be displayed with "Ctrl + Click" (or "Shift + Click" for the area between the clicks, respectively). These are simply display options of the controller editor. Multiple note selection by double clicking is not possible.

A further possibility is to selectively edit controller bars located on top of each other, which is based on the fact that the bar of the currently selected note is selected/edited using the mouse. Therefore, first click on the note within the piano roll, or click on the columns located on top of each other and then select the required note using the cursor keys. Then change the controller value by clicking in the upper third of the red (current) area of the column.

Besides directly changing the velocity values of a selected note you can change several velocity values at once by clicking in a free space and dragging the mouse over several velocity values while holding down the key. You can then also create sequences by moving the mouse in a curve. A previous (multi)selection is ignored. For example, you can easily create a crescendo or decrescendo effect.

Tools

The controller editor has its own tools for editing curves and values.



Controller selection: A click on the menu area of the button opens a selection menu in which the [MIDI](#) controller for editing can be selected.



Selection
: Combi tool also used for value changes as well as freehand and line drawing.

Click in the upper range of a controller bar to modify the controller value immediately using the draw function. Clicking in the lower two thirds of the bar selects the corresponding note which is then highlighted in red in the editors.

Select multiple controller bar by clicking and dragging or single clicking a range in the controller editor; individual values can be selected by clicking within the bar. Selected controller events will be highlighted red.

Combi-tool editing options:

- **Click on the bar end + drag:** The controller value can now be adjusted by dragging vertically. If you hold the "Shift" key down while dragging, all of the selected events will be set to the same value. If you also hold down "Ctrl", then the values of multiple selected controllers will be changed relative to one another.
- **Alt + Drag:** This activates freehand drawing; the mouse pointer becomes a pencil. By dragging in the corresponding controller area, you can draw in any number of controller curves.
- **Shift + Drag:** This activates line drawing and the mouse pointer becomes a cross hairs. By dragging horizontally, you can draw in linear value curves (ramps).



Freehand drawing
: Draws new controller value curves or individual values by single clicking without dragging.

By dragging backwards, you can correct your curve during drawing. Shift + Drag with the cross hairs to draw a line.



Draw lines
: Uses the line function to insert a transition between two different controller values.

Hint: If you edit velocity with the draw tools, no new notes are generated; only existing velocity values are modified.

Quantize controller events

[MIDI](#)

controller events can be quantized and thinned out; select the "MIDI functions" menu and the "Quantize/Thin out controller" command to do this. Quantization occurs according to the quantization settings.

Multi-view

The four multi-buttons are used to display or hide the view of all possible controller curves. Clicking on the menu area of the buttons opens a menu which allows you to choose a [MIDI](#) controller for this controller slot.

Selecting and processing notes

: By clicking in the upper range of a controller column, the controller value can be changed immediately by dragging the mouse. Clicking in the lower two thirds of the column selects the corresponding note (displayed in the editor in red).

Tips:

The size of the controller editor can be determined by the dragging the mouse to the top edge (directly below the horizontal scroll bar).

Several controller events can be shifted simultaneously. First select all values you want to move (if necessary, hold "Ctrl" to select different controller types together). You can now move the selection in the time box by entering a value and confirming with "Enter", or by dragging the mouse.

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List editor (midi event list)

Open list editor

The [MIDI](#)

editor has an integrated display of all events in list format. This list editor can be opened with the button above the keyboard or by using the "Alt + L" keyboard shortcut.

When the list editor is opened and activated for editing it has a narrow red border. This is to make clear that certain functions, e.g. select next/previous event (cursor keys) or the "Select all" command, refer only to the list.

Working with the list editor

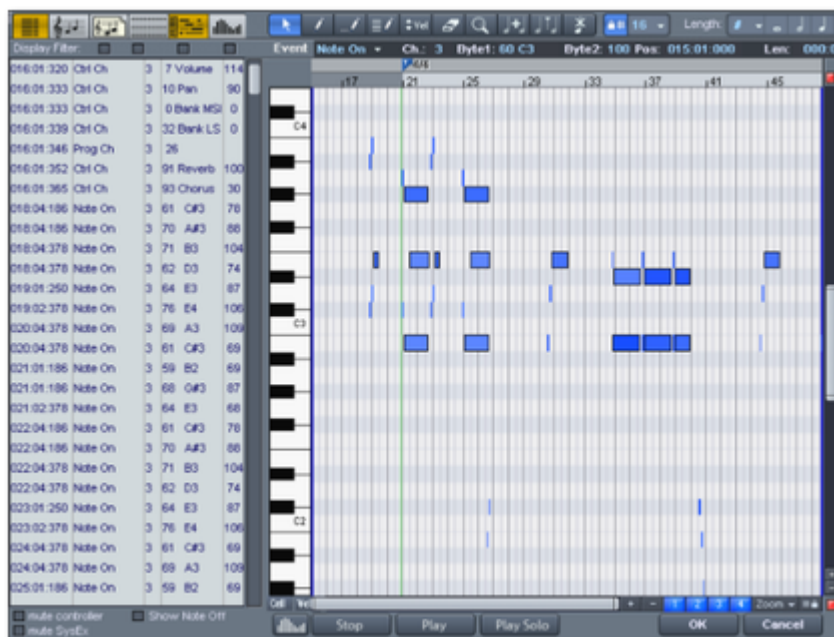
The list editor does not only display note events, but also MIDI controller and SysEx data. This controller and the data can be hidden and can even be filtered during playback ("mute").

Double clicking on a SysEx entry in the list opens a simple editor for viewing and editing the SysEx information.

A note always has a "Note on" and "Note off" event. These are always selected and edited in pairs (note off events are not displayed by default, but can be displayed by checking the box below the editor).

New events can be created directly in the list editor by using the "Insert" button. The current values of the edit fields in the upper frame of the piano roll always apply. Therefore, before editing these fields please ensure that no event in the piano roll is selected.

Tip: If no current event has been selected, you can determine the insert position by setting the play cursor.



For editing certain events only, the list editor has a view filter for each column. These are small check boxes above the list editor columns.

Select a representative format, e.g. a note of a certain pitch. Then click on the display filter of a specific column to display only events of this type, e.g. of the selected pitch. All other events are now hidden.

View filters can be combined. For example, you can use the "Select all" command ("Ctrl + A") to select and edit all type 10 control change events (volume) of MIDI channel 6.

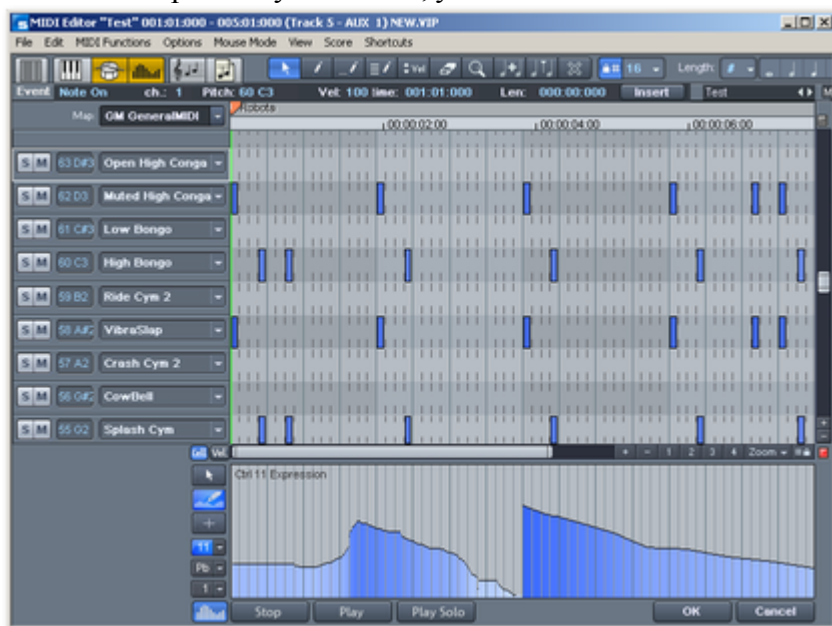
MIDI editor tips & tricks

You can copy & paste MIDI data within the editor and between different MIDI objects. MIDI data is always inserted at the current position of the play cursor.

Duplicating: If the grid is activated ("Options -> Quantization grid active"), the selected notes are copied and inserted from the next grid point following the selection. They are otherwise inserted immediately after the selection.

Drum editor

After opening the [MIDI](#) editor (double click on the MIDI object), open its "Options" menu and select the "Drum editor" entry. Instead of the piano keys to the left, you now see a list of drum instruments.



Note:

If a drum map is active in a track (recognizable by the cross beneath "Drum" in the trackbox), the Drum editor is loaded automatically when the MIDI editor is loaded.

Drum editor:

In the trackboxes of the drum editor you can individually adjust MIDI channel, grid, quantization length, display width in cell mode, and velocity scaling for each drum instrument.

Velocity scaling:

The velocity value of each note is multiplied by the V value/100 entered here and adjusted to the MIDI velocity between 1 and 127. Scaling is audible but is not visualized further.

- Cell mode: When the drum editor opens, "Cell" mode activates by default. This is solely a view mode which permits an alternative view of the MIDI events.
- Notes are displayed as cells, i.e. the note length is not displayed, but rather a specific display width can be set. In the drum editor's cell mode the display width for each instrument can be set individually in each trackbox. (In the piano roll's cell mode the length value sets the width).
- Cell mode serves to improve the overview especially when editing MIDI drums and permits a structured and efficient workflow. This is because the display can be limited to the most important information, starting note positions, and velocity.

Mouse modes

The following modes are available for editing events, just like in the piano roll:

Selection mode (1):

You can use this mode to select drum events, move, or change the length of one or several events simultaneously.

Draw pencil (2):

In this mode you can draw drum events. If quantization is also activated, they snap to the grid immediately when you enter them.

Drum pencil (3):

This mode also entails a draw function. However, the quantization length is also taken into account when the events are drawn.

Pattern pencil (4): This mode allows you to draw entire drum patterns (or melody patterns). If you want to create a new pattern, you have to select it first in "Selection" mode and press "Ctrl + P"

simultaneously (or go to "Edit" in the [MIDI](#)

/Drum editor, then "Create pattern from selection"). If you have created a preset pattern, then you can start drawing at any position. The lowest note in the pattern is the pitch you will draw.

Velocity tool (5):

This mode allows you to mark events and change the velocity values of all selected events in relation to each other. Absolute values are entered when you hold "Shift", i.e. all changed events receive the same velocity value.

Eraser (6):

This tool lets you delete events with a single mouse click.

Zoom mode/magnifying glass (7):

Sketch a rectangle to zoom in. The left mouse button is used to zoom in, the right one is used to zoom out.

Velocity

If this button is active, the bar height is used when displaying the velocity value of the note. In all mouse modes (except for "Delete") the velocity can be changed by directly clicking on a note without have to switch to the controller editor.

Quantization

The global quantization settings can be found in the menu "Options -> Quantization options". Press "Q" to trigger global quantization. Each drum instrument can have its own quantization. To make the necessary settings, select the arrow next to the track name of the instrument you want to edit and open the quantization options.

Drum maps

Drum maps specify individual instruments, e.g. bass, drum, hi-hat, snare, etc. Individual output notes, [MIDI](#)

channel, and velocity scaling can be set for each of these instruments. To split the drum names a "general" MIDI map is used by default.

The drum map can be set in the track info (should the track be set to MIDI recording), via the "Drum" field and via the drum editor itself by clicking on the "Map" field.

It may be the case that your synthesizer (regardless if real or virtual) uses a different mapping setup.

This means that when you play the drum event, the sound you wish to hear may not be heard (for example, instead of a bass drum, you might get a high tom). In this case you will have to sort out your mapping setup.

Drum map editor

This editor lets you route each played note to a different one and give them their own individual names. It's also possible to assign each individual instrument its own quantization and a new ([MIDI](#)) output channel.

Pitch:

This is the incoming MIDI note.

Instrument:

Here is where you can find the name of the drum instrument, e.g. "Bassdrum 1".

Grid:

If you wish, you can set up a grid for the starting point of the drum event.

Length:

In this field you can set the grid for the note length.

Output note:

This is the note value to which the drum instrument (the incoming MIDI note in the "Pitch" field) should be routed or mapped.

Channel:

You can set up an individual channel for each instrument here. Furthermore, you can select swing, window, and near quantization for each instrument in the drum editor.

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Score editor

The score editor displays the [MIDI](#) data of a MIDI object as a score sheet. It "interprets" the available MIDI data into real time. If you move or change the MIDI data, such changes are immediately reflected in the score image. If you insert a new note in the score editor, a corresponding MIDI "Note on" event is created immediately. Therefore, do not view the score editor as a score painting program, but more as an interpreter for MIDI data. For instance, it is not possible to insert or delete rest symbols directly. Samplitude Music Studio 15 automatically "registers" rests in the gaps between the MIDI notes. You will therefore always have a valid score sheet and "complete" bars, even if the MIDI object should only contain a single MIDI note: the necessary rests are automatically inserted into the bars.

The common controllers of the MIDI editor in the score editor operate as usual, e.g. the eraser is used for deleting notes or the pen for creating, copying, and inserting new notes. In this chapter you will learn how you can edit your MIDI objects within the regular score. While the event editor contains specific editing options for certain details (dynamics, note length), it is better to make MIDI changes directly in the score sheet as it guarantees a better overview.

Opening the score editor

The score editor is integrated into the [MIDI](#) editor window. If the MIDI editor is opened, then you can activate the linear score view by pressing the "Score editor (linear)" button.



Score editor (linear) button

Navigation

: You can adjust the play cursor directly in the score by holding shift and clicking the desired position. You can set the playback range by holding the "Shift" key and left clicking the left border and right clicking the right border of the range.

Score editor modes

Samplitude Music Studio 15 offers two alternatives for viewing the score: linear display and page mode. The linear note display can be combined with the matrix display to offer ideal [MIDI](#) editing conditions, since the detail in depth of the matrix editor and overview can be supplemented by several score systems. You can select the score in the score sheet and perform fine adjustments in the piano roll. Selection and zooms in all editor views (linear score, piano roll, event list, velocity editor) are always synchronized.

Linear view

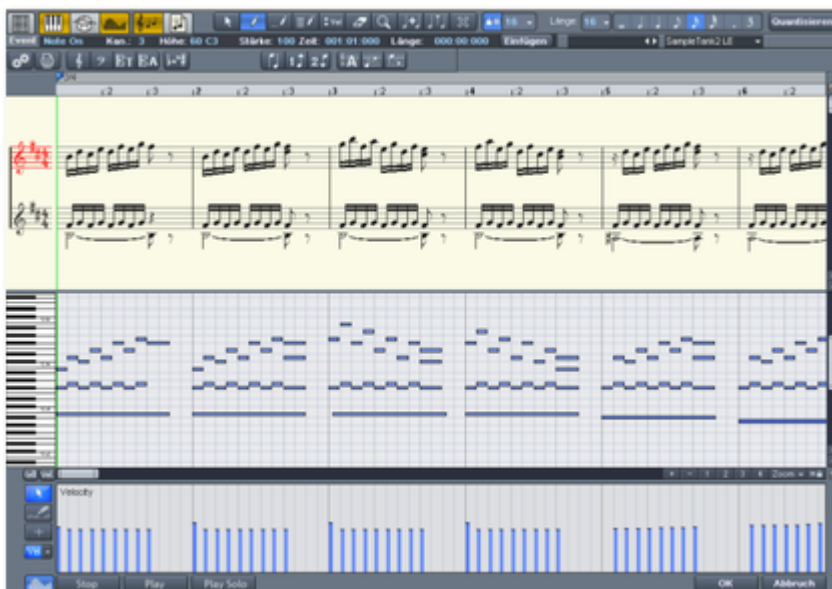


Score editor (linear) button

For detailed editing of the [MIDI](#)

data in the score you should preferably select linear view mode as both matrix and velocity display are available. All parameters such as pitch, note length, and velocity are displayed.

Please note: Only the notes of the currently active system are displayed in the velocity editor if notes and velocity are parallel. The red bar mark indicates the currently active system.



Notation view in "Linear" mode (move bar between score and matrix)

The horizontal zoom above the scroll bar zooms parallel to the matrix view.

In linear mode details can no longer be displayed correctly if you zoom out horizontally, since the note symbols overlap. It may then be necessary to reduce the size of the notation symbols (+ & - buttons on the right). Despite the no longer correctly displayed details, zooming out can still provide you with a good overview, particularly in large scores. Samplitude Music Studio 15 can adjust the notation symbols automatically. To do this, please select "Automatic zoom" in the score menu.

Page view

This page mode displays the notes just like on a musical score sheet, which also serves as a print preview. Here you can select notes and allocate them to voices/staves and delete them, although you cannot move them with the mouse or pen.

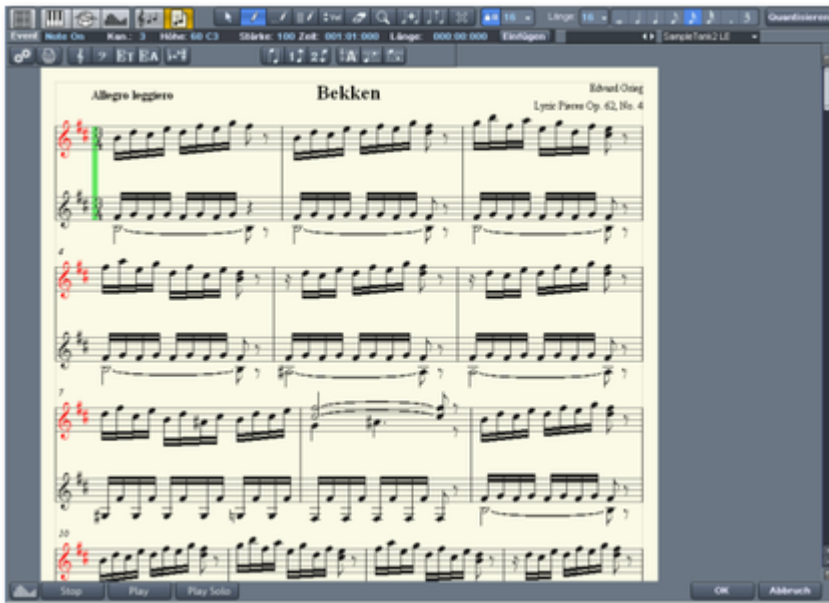


Score editor page mode

Page view is not only useful for preparing a score sheet (e.g. for titles, borders), but also for editing longer sequences. The stave break allows you to display considerably more bars than with the linear display.

Scrolling in full view mode:

Use the vertical scroll bar to scroll from page to page.



Page mode as print preview:

You should first change the page format (in the score properties dialog) to the paper format of your printer before setting up the page for printing as the display depends on the page format. You will then see your score exactly as it will be printed.

The score

The automatic conversion of [MIDI](#)

data into score is usually sufficient for editing MIDI data as efficiency is required here instead of a perfect, ready-to-print display. However, it may still be necessary to adjust some of the display options while editing. The display options can be found in the MIDI score properties dialog, which you can open by clicking on the "Print" button.



Opens the score sheet settings dialog for notation and page properties.

This is also where the presets are stored. These are pre-programmed standard settings for certain instruments or instrumentation such as strings or orchestra. Selecting a preset improves the score display and its readability.



Treble clef view (preset)



Switch notation display by selecting the piano clef preset.
Further explanations of the notation system can be found below.

Editing MIDI data in the score sheet

Selection

As usual you can select notes by clicking them. You can select a group of notes (e.g. a chord) by sketching a frame over them while holding down the mouse button. Select multiple single notes by pressing "Ctrl".

Note parameters

The parameters pitch, velocity, and length can be changed for one or several selected notes. If you have selected one or several notes the data of the current note will appear in the info bar above the score view. Changing a parameter may have a comparable effect on all selected notes, just like in the matrix editor.

Move and transpose

To move notes, first select and then drag them to the desired position. Here the info box can help you keep track of the pitch or position. The step size when moving is determined by the selected quantization raster in the [MIDI](#) editor.

Copy

Select the desired notes and copy them by holding down "Ctrl" and dragging the mouse. Alternatively, you can also use the copy function of the edit menu.

Insert new notes

You can also insert new notes in the score editor by using the pen. Click on the desired position with the pen, hold down the mouse button and, if necessary, correct the position and pitch. If you let go of the mouse key, Samplitude Music Studio 15 will add a new note of the same length as the selected length quantization value. You can only insert new notes into the active stave. For instance, to insert a note in the lower part of a piano system, first click on the lower staff in the system on the left.

Only notes are inserted that correspond with the current pitch. Non-scale notes or chromatic intermediate steps are skipped. When you enter conventional music material with the mouse, diatonic insert mode increases the chances of hitting the correct note. If a new prefix is to be added to the note, you can move the note chromatically with the arrow key. This way an inserted F in C major can be transformed into an F# by pressing "Page up".

Delete notes

You can delete notes by:

- selecting them and pressing "Del" or
- by clicking on them with the eraser (or the right mouse button)

Insert notation symbols

Clef symbols can be inserted at the current cursor position by pressing the corresponding clef symbol in the active system.

Delete notation symbol

Notation symbols such as clef and pitch cannot be selected, since they are meta information for the notation display and no [MIDI](#) events have been allocated to them. They can also be deleted by clicking them with the eraser (or the right mouse button).

Adjusting and optimizing the score

Samplitude Music Studio 15 automatically generates a notation display from the [MIDI](#)

events contained in the MIDI object. This is always correct with regard to pitch and position. However, this does not mean that the notation can be read optimally, since displaying note lengths also plays an important role in this context. In this case, the notation permits more interpretation flexibility so that the user usually has to intervene. The illustration shows a typical example of how poor a readable transformation of a sixteenth note piano sequence would look in notation.

This representation may be correct, but it is not readable. Why is that? The MIDI events contain very precise information on the start of a note, i.e. its length and pitch, which has to be taken into account during playback. It may influence the groove of a song if the notes are always slightly shorter than sixteenth notes. If this were to be displayed correctly in the notation, then the score would be unreadable as in the example above. The MIDI events also do not contain information on whether the gap between two notes is a real rest, its harmonic correlations (pitch), and the characteristics of the dynamic sequences. This is why automatic processing of notation always differs from what would be ideal. Samplitude Music Studio 15 includes a number of automatically and manually controllable functions for making it easier to read the notation. The reworked version of the the above score illustration shows how big the difference can be.

Note allocation in multiple staves

The term "Stave" refers to an individual line within a stave as well as all staves of a score. In cases where it is important to be able to differentiate a score and a staff from one another, we use the term "Stave" for the score and "staff" for a single system.

What is meant by a "Stave" can often be interpreted from this relation, for example, in a two-handed piano piece, "upper" or "lower" systems are referenced.

Samplitude Music Studio 15 provides multiple systems, e.g. for piano notation, or entire scores which can possibly be comprised of up to 16 individual systems.

To manually assign notes to a system, click



to move the selected notes one line on a stave higher. Click



to move them one line lower. This results in the note being connected to the line (independent of the

[MIDI](#)

channel or pitch). This manually set allocation can be undone by clicking on



"Automatic staff allocation"

When transcribing a MIDI piano recording, splitting the notes into a two-line piano system using the split point is recommended. The points where individual notes are placed incorrectly in a line can be corrected easily by assigning the notes manually with a click to the desired stave.

The automatic allocation of the score to a specific line is flexible. Either the MIDI channel of the note event, the pitch, or even a combination of the two can make up the criteria. This permits simpler and faster distribution of MIDI notes in the score line.

For example, it's often the case with some standard MIDI files that a particular piano piece's lower system notes have a different MIDI channel than that of the notes of the upper stave. Let's assume the notes for the right hand are on channel 1 and the notes for the left hand are on channel 2. In this case you should set up two staves for the stave in the note stave settings. The easiest way to do this is with the "Piano" preset. For the first staff, set the MIDI channel allocation to "Ch. 1" in the "Channel" selection box and "Ch. 2" for the second staff. Deactivate allocation according to pitch by setting the split point to 0 (see MIDI score settings dialog).

The rules for allocation are as follows:

If the (preset) option "Automatic stave allocation" is set for the note, then the staves will be played through until the MIDI channel corresponds with it and the pitch is over or equal to the split point.

Note:

It may happen that some notes are not shown at all as they are not yet allocated to a stave.

Multi-voice notation

Up to two independent voices can be annotated for each staff. The voices differ in the direction of the note stems: the first voice is always with the stem pointing upwards, the second with the stem pointing downwards. Rests are displayed individually for each voice.

Multi-voice notation can simplify the score considerably and enable multiple instruments or parts to be displayed in one staff together.



You can set the voice by selecting the notes and clicking on the button or menu command "Assign first voice" or "Assign second voice".



This sets the stem direction of the notes, and therefore the voice itself.

This assignment can be undone by clicking on

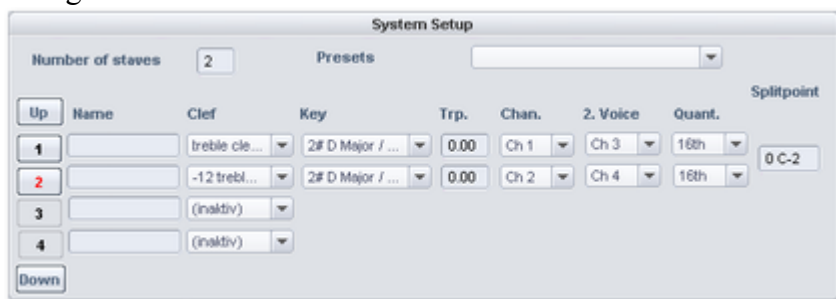


"Automatic staff assignment for notes".

For automatic voice assignment, the note's [MIDI](#) channel has to be analyzed.

To do this, set up a MIDI channel for the second voice in the stave properties dialog. This can be set individually for each staff. All notes of a stave whose MIDI channel has not yet been assigned to a second voice, are added to the first voice.

Voice assignment via the MIDI channel can be practical when displaying standard MIDI files with multi-voice piano pieces if the voices of the right hand are set to the first and second MIDI channels and the voices of the left hand are set to MIDI channels three and four. In this case, apply the following settings:



Note:

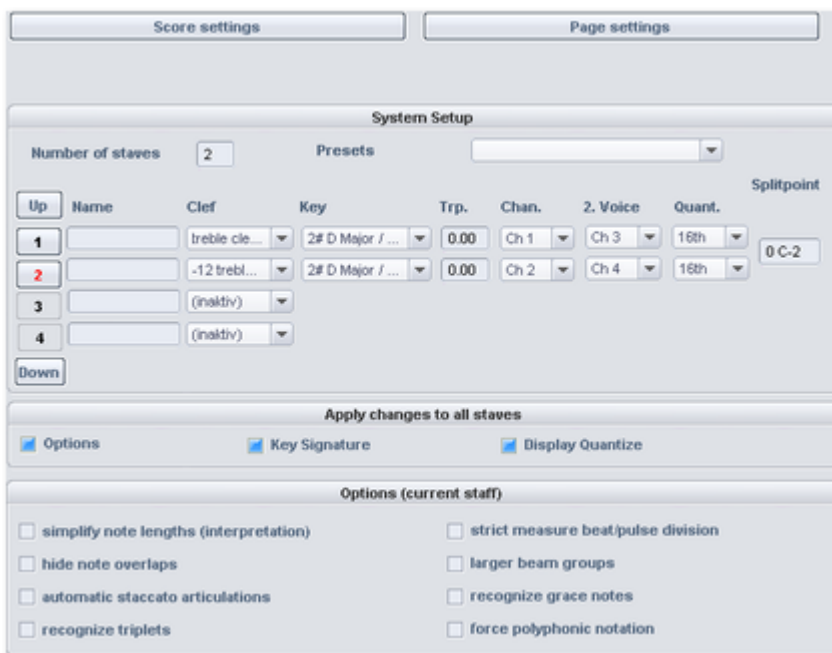
If there is no MIDI channel selected for voice assignment, only one voice will be annotated (if manual voice assignment does not occur).

MIDI score settings dialog



Open score settings dialog for stave and page properties

Note stave and page format settings can be set here. None of the settings have any influence on the [MIDI](#) data itself, but rather only on the display of the score.



Note: The affected staff settings are always applied to all MIDI objects situated on the current track. The page format settings are global and valid for every [VIP](#).

Staff settings

All settings for the staff and display parameters/options can be accessed via this dialog page. Here you can enter the clef.

Samplitude Music Studio 15 provides [MIDI](#)

files with up to 16 staves on one track. For each staff, the clef, display transposition (for instruments that transpose, for example, a saxophone), and display quantization can be specified individually.

Furthermore, an instrument's prefix ("Name") can be set as well as the MIDI channel for automatic staff/voice assignment.

Similarly, the split point serves automatic staff assignment: Notes above the split point are added to the upper staff, while those under the split point are added to the staff beneath it (as long as the MIDI channel matches).

The active staff is recognizable via the index marked in red. The list of 16 staves can be scrolled vertically using the arrow buttons (up/down). In the lower range the display options of the active staff are shown. Optionally, all changes to settings, display options, clef, and display quantization are always transferred equally to all staves.

Note display: Interpretation options

None of the options have any influence on the [MIDI](#) files or playback.

Simplify note lengths (interpretation)

Displays rests and slurred notes in such a way that the score is as legible as possible without influencing playback.

Automatic staccato articulations

A staccato symbol is added to a note whose value is considerably longer than the "real MIDI note". This is practical when working with simplified length display.



Option: "Simplify note lengths (interpretation)" selected.

Additional option: "Automatic staccato articulations".

Hide note overlaps

Prevents the overlapping of sequential notes which, for example, arises as a result of playing legato:

Recognize triplets

Activate this option if triplets are present in the MIDI object.

Please note:

The display quantization value always has to be one step finer than the smallest discernible triplet value.

To recognize one eighth triplets, display quantization has to be set to at least one sixteenth (or to 1/64 for 1/32 triplets).

Strict measure/pulse division

There are no note or rest values longer than a beat subgroup (pulse). Longer notes are displayed as multiple slurred notes. This can simplify the legibility of the score.

Larger beam groups

Beam groups are partially compiled across beat subgroups. This can simplify the legibility of the score.

Recognize grace notes

Note values which are much shorter than the display quantization value are annotated as flam notes as long as a base note is present.

Notation symbols

Clef



There are four clefs available in Samplitude Music Studio 15: violin, bass, tenor, and alto clef.

Samplitude Music Studio 15 differentiates between base clef and clef change. The base clef can be set up for every staff in "Score settings" (and applies to all [MIDI](#)

objects on the current track). A clef inserted from the tool bar, will be interpreted as a clef change. Clef changes are possible any number of times in a song and also within beats.

Insert: Activate the staff into which the clef should be inserted (by clicking on the staff signature to the left).

Position the play cursor at the desired insert point and click on the desired clef in the toolbar. Move the playback cursor to the desired insert position and click on the desired clef in the toolbar. The clef will be inserted musically, not graphically, with a clef change at position 10:01:000 (the beginning of the tenth beat) the clef symbol at the end of the ninth beat will be displayed according to note set rules.

Clef changes can also be deleted by clicking on clef symbol with the eraser (or the right mouse button).

Beat signature

The metric and beat signature symbols are created automatically from the tempo markers of the [VIP](#) project.

Beat changes are possible at every full beat border. In addition, you might want to create a beat count measure marker with the new signature (for example, 6/8) at the desired position. If there are no beat count measure changes, then it's enough to set the bar type of the piece (for example, 3/4) in the transport control.

Accidental

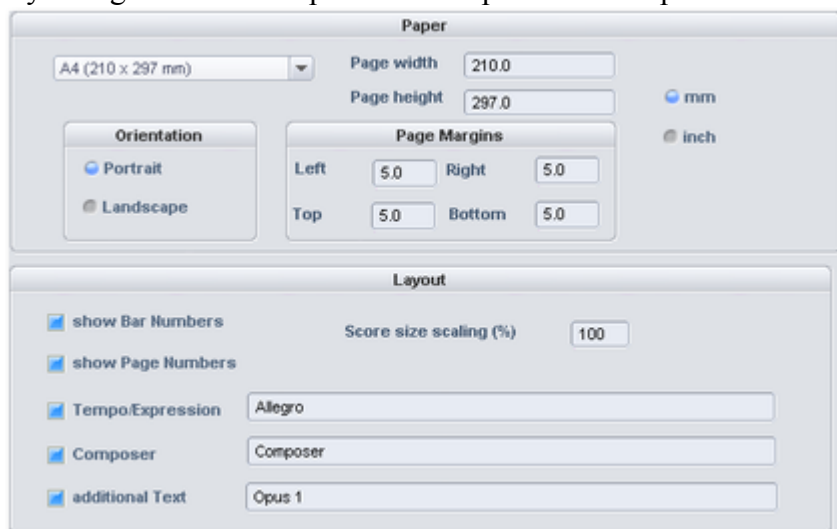


Enharmonic change

Samplitude Music Studio 15 sets the sharps and flats according to the clef description you selected. It is often the case, however, that enharmonic change can considerably optimize the legibility of certain passages. In this case you can work manually. To change one or more selected notes enharmonically, click on the corresponding button. The function transforms flats into sharps and vice versa.

Page format settings

You can select the page format independent of the printer settings so that it always has the same note layout regardless of workplace and independent of the printers installed in Windows.



In the score/page format setting, texts for tempo description, composer, and an additional text can be entered. Similarly, you can choose which layout elements should appear on the page (check boxes for beat numbers, page numbers, and texts).

Printing score

Samplitude Music Studio 15 automatically creates the layout of the score and allows optimal division of staves and staves on the page. You only need to specify the page size, orientation, and page borders.

- **Note size:** Here you can scale the size of the note symbols and the printout. This is actually irrelevant when working using the monitor's display, since you can zoom whenever you want anyway. However, the size of the notes does influence at which position a line or page break occurs.
- **Set a value smaller than 100%** to get more beats/staves onto one piece of paper.
- **Set higher values than 100%** in order to keep larger note symbols on the printout.

Print notes

Activate the print process in the "Score -> Print notes" menu or via the print button. Furthermore, a printer dialog window appears which appears differently for each printer or printer driver. Depending on the printer there are various options, e.g. the selection of pages you wish to print and the number of copies. Make sure that you have set up the same paper format for the printer as for the page mode, otherwise the printout may be scaled and the page ratio changed.

The following won't be printed, it's only visible on the monitor.

- The lines which highlight the page borders on the monitor
- Mouse pointers
- The color display of the currently selected notes and playback areas.

When printing a file (e.g. as a PDF file with a special printer driver) please note that you have to activate the option "Save fonts in document" in the printer driver so that the notation symbols will be displayed correctly in the document.

Opening the score editor

The score editor is integrated into the [MIDI](#) editor window. If the MIDI editor is opened, then you can activate the linear score view by pressing the "Score editor (linear)" button.



Score editor (linear) button

Navigation

: You can adjust the play cursor directly in the score by holding shift and clicking the desired position. You can set the playback range by holding the "Shift" key and left clicking the left border and right clicking the right border of the range.

Score editor modes

Samplitude Music Studio 15 offers two alternatives for viewing the score: linear display and page mode. The linear note display can be combined with the matrix display to offer ideal [MIDI](#) editing conditions, since the detail in depth of the matrix editor and overview can be supplemented by several score systems. You can select the score in the score sheet and perform fine adjustments in the piano roll. Selection and zooms in all editor views (linear score, piano roll, event list, velocity editor) are always synchronized.

Linear view

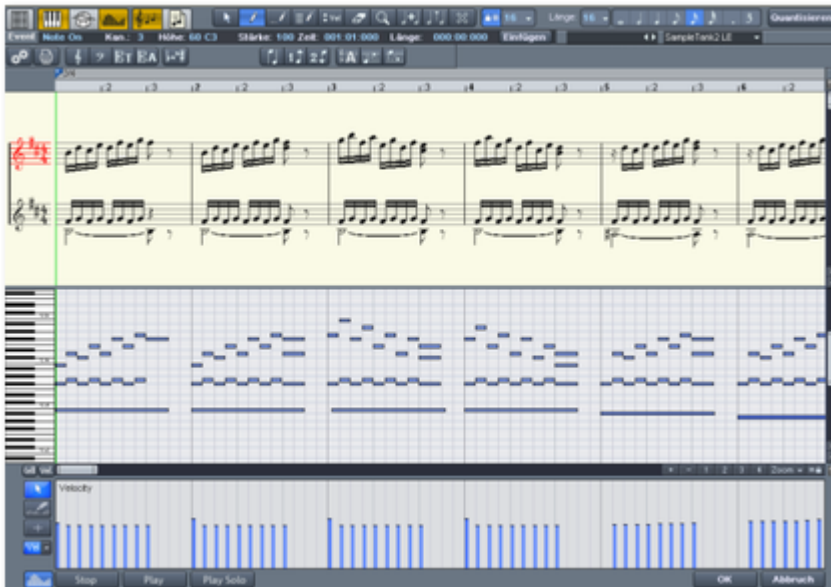


Score editor (linear) button

For detailed editing of the [MIDI](#)

data in the score you should preferably select linear view mode as both matrix and velocity display are available. All parameters such as pitch, note length, and velocity are displayed.

Please note: Only the notes of the currently active system are displayed in the velocity editor if notes and velocity are parallel. The red bar mark indicates the currently active system.



Notation view in "Linear" mode (move bar between score and matrix)

The horizontal zoom above the scroll bar zooms parallel to the matrix view.

In linear mode details can no longer be displayed correctly if you zoom out horizontally, since the note symbols overlap. It may then be necessary to reduce the size of the notation symbols (+ & - buttons on the right). Despite the no longer correctly displayed details, zooming out can still provide you with a good overview, particularly in large scores. Samplitude Music Studio 15 can adjust the notation symbols

automatically. To do this, please select "Automatic zoom" in the score menu.

Page view

This page mode displays the notes just like on a musical score sheet, which also serves as a print preview. Here you can select notes and allocate them to voices/staves and delete them, although you cannot move them with the mouse or pen.

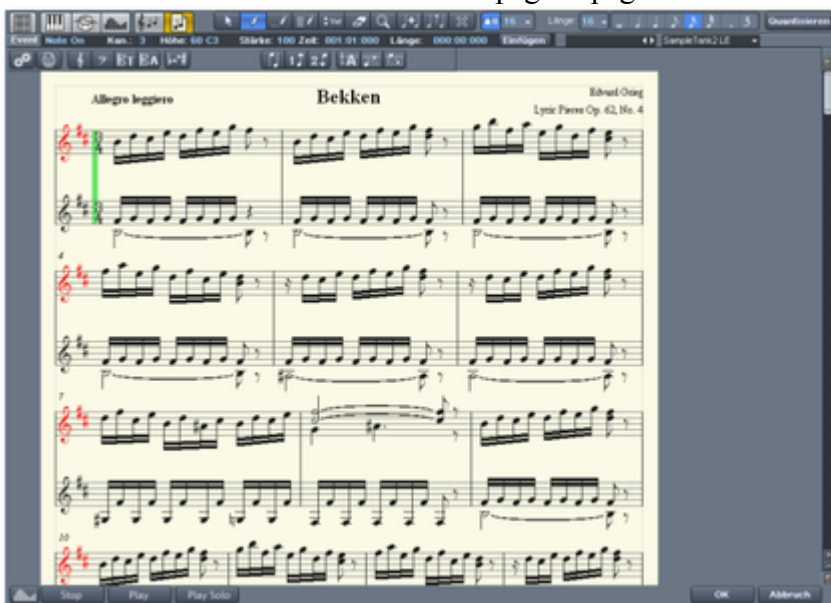


Score editor page mode

Page view is not only useful for preparing a score sheet (e.g. for titles, borders), but also for editing longer sequences. The stave break allows you to display considerably more bars than with the linear display.

Scrolling in full view mode:

Use the vertical scroll bar to scroll from page to page.



Page mode as print preview:

You should first change the page format (in the score properties dialog) to the paper format of your printer before setting up the page for printing as the display depends on the page format. You will then see your score exactly as it will be printed.

The score

The automatic conversion of [MIDI](#) data into score is usually sufficient for editing MIDI data as efficiency is required here instead of a perfect, ready-to-print display. However, it may still be necessary to adjust some of the display options while editing. The display options can be found in the MIDI score properties dialog, which you can open by clicking on the "Print" button.



Opens the score sheet settings dialog for notation and page properties.

This is also where the presets are stored. These are pre-programmed standard settings for certain instruments or instrumentation such as strings or orchestra. Selecting a preset improves the score display and its readability.



Treble clef view (preset)



Switch notation display by selecting the piano clef preset.

Further explanations of the notation system can be found below.

Editing MIDI data in the score sheet

Selection

As usual you can select notes by clicking them. You can select a group of notes (e.g. a chord) by sketching a frame over them while holding down the mouse button. Select multiple single notes by pressing "Ctrl".

Note parameters

The parameters pitch, velocity, and length can be changed for one or several selected notes. If you have selected one or several notes the data of the current note will appear in the info bar above the score view. Changing a parameter may have a comparable effect on all selected notes, just like in the matrix editor.

Move and transpose

To move notes, first select and then drag them to the desired position. Here the info box can help you keep track of the pitch or position. The step size when moving is determined by the selected quantization raster in the [MIDI](#) editor.

Copy

Select the desired notes and copy them by holding down "Ctrl" and dragging the mouse. Alternatively, you can also use the copy function of the edit menu.

Insert new notes

You can also insert new notes in the score editor by using the pen. Click on the desired position with the pen, hold down the mouse button and, if necessary, correct the position and pitch. If you let go of the mouse key, Samplitude Music Studio 15 will add a new note of the same length as the selected length quantization value. You can only insert new notes into the active staff. For instance, to insert a note in the lower part of a piano system, first click on the lower staff in the system on the left.

Only notes are inserted that correspond with the current pitch. Non-scale notes or chromatic intermediate steps are skipped. When you enter conventional music material with the mouse, diatonic insert mode increases the chances of hitting the correct note. If a new prefix is to be added to the note, you can move the note chromatically with the arrow key. This way an inserted F in C major can be transformed into an F# by pressing "Page up".

Delete notes

You can delete notes by:

- selecting them and pressing "Del" or
- by clicking on them with the eraser (or the right mouse button)

Insert notation symbols

Clef symbols can be inserted at the current cursor position by pressing the corresponding clef symbol in the active system.

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Notation symbols such as clef and pitch cannot be selected, since they are meta information for the notation display and no [MIDI](#) events have been allocated to them. They can also be deleted by clicking them with the eraser (or the right mouse button).

Adjusting and optimizing the score

Samplitude Music Studio 15 automatically generates a notation display from the [MIDI](#) events contained in the MIDI object. This is always correct with regard to pitch and position. However, this does not mean that the notation can be read optimally, since displaying note lengths also plays an important role in this context. In this case, the notation permits more interpretation flexibility so that the user usually has to intervene. The illustration shows a typical example of how poor a readable transformation of a sixteenth note piano sequence would look in notation.

This representation may be correct, but it is not readable. Why is that? The MIDI events contain very precise information on the start of a note, i.e. its length and pitch, which has to be taken into account during playback. It may influence the groove of a song if the notes are always slightly shorter than sixteenth notes. If this were to be displayed correctly in the notation, then the score would be unreadable as in the example above. The MIDI events also do not contain information on whether the gap between two notes is a real rest, its harmonic correlations (pitch), and the characteristics of the dynamic sequences. This is why automatic processing of notation always differs from what would be ideal. Samplitude Music Studio 15 includes a number of automatically and manually controllable functions for making it easier to read the notation. The reworked version of the the above score illustration shows how big the difference can be.

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What is meant by a "Stave" can often be interpreted from this relation, for example, in a two-handed piano piece, "upper" or "lower" systems are referenced.

Samplitude Music Studio 15 provides multiple systems, e.g. for piano notation, or entire scores which can possibly be comprised of up to 16 individual systems.

To manually assign notes to a system, click



to move the selected notes one line on a stave higher. Click



to move them one line lower. This results in the note being connected to the line (independent of the [MIDI](#)

channel or pitch). This manually set allocation can be undone by clicking on



"Automatic staff allocation"

When transcribing a MIDI piano recording, splitting the notes into a two-line piano system using the split point is recommended. The points where individual notes are placed incorrectly in a line can be corrected easily by assigning the notes manually with a click to the desired stave.

The automatic allocation of the score to a specific line is flexible. Either the MIDI channel of the note

event, the pitch, or even a combination of the two can make up the criteria. This permits simpler and faster distribution of MIDI notes in the score line.

For example, it's often the case with some standard MIDI files that a particular piano piece's lower system notes have a different MIDI channel than that of the notes of the upper staff. Let's assume the notes for the right hand are on channel 1 and the notes for the left hand are on channel 2. In this case you should set up two staves for the staff in the note stave settings. The easiest way to do this is with the "Piano" preset. For the first staff, set the MIDI channel allocation to "Ch. 1" in the "Channel" selection box and "Ch. 2" for the second staff. Deactivate allocation according to pitch by setting the split point to 0 (see MIDI score settings dialog).

The rules for allocation are as follows:

If the (preset) option "Automatic staff allocation" is set for the note, then the staves will be played through until the MIDI channel corresponds with it and the pitch is over or equal to the split point.

Note:

It may happen that some notes are not shown at all as they are not yet allocated to a staff.

Multi-voice notation

Up to two independent voices can be annotated for each staff. The voices differ in the direction of the note stems: the first voice is always with the stem pointing upwards, the second with the stem pointing downwards. Rests are displayed individually for each voice.

Multi-voice notation can simplify the score considerably and enable multiple instruments or parts to be displayed in one staff together.



You can set the voice by selecting the notes and clicking on the button or menu command "Assign first voice" or "Assign second voice".



This sets the stem direction of the notes, and therefore the voice itself.

This assignment can be undone by clicking on

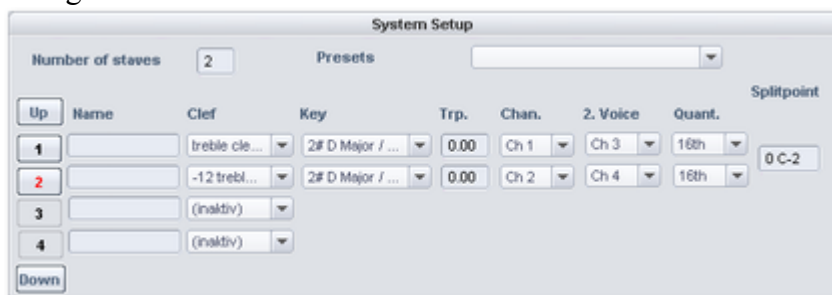


"Automatic staff assignment for notes".

For automatic voice assignment, the note's [MIDI](#) channel has to be analyzed.

To do this, set up a MIDI channel for the second voice in the stave properties dialog. This can be set individually for each staff. All notes of a staff whose MIDI channel has not yet been assigned to a second voice, are added to the first voice.

Voice assignment via the MIDI channel can be practical when displaying standard MIDI files with multi-voice piano pieces if the voices of the right hand are set to the first and second MIDI channels and the voices of the left hand are set to MIDI channels three and four. In this case, apply the following settings:



Note:

If there is no MIDI channel selected for voice assignment, only one voice will be annotated (if manual voice assignment does not occur).

MIDI score settings dialog



Open score settings dialog for stave and page properties

Note stave and page format settings can be set here. None of the settings have any influence on the [MIDI](#)

data itself, but rather only on the display of the score.

Note: The affected stave settings are always applied to all MIDI objects situated on the current track. The page format settings are global and valid for every [VIP](#)

Stave settings

All settings for the stave and display parameters/options can be accessed via this dialog page. Here you can enter the clef.

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files with up to 16 staves on one track. For each staff, the clef, display transposition (for instruments that transpose, for example, a saxophone), and display quantization can be specified individually.

Furthermore, an instrument's prefix ("Name") can be set as well as the MIDI channel for automatic stave/voice assignment.

Similarly, the split point serves automatic stave assignment: Notes above the split point are added to the upper stave, while those under the split point are added to the stave beneath it (as long as the MIDI channel matches).

The active staff is recognizable via the index marked in red. The list of 16 staves can be scrolled vertically using the arrow buttons (up/down). In the lower range the display options of the active staff are shown.

Optionally, all changes to settings, display options, clef, and display quantization are always transferred equally to all staves.

Note display: Interpretation options

None of the options have any influence on the [MIDI](#) files or playback.

Simplify note lengths (interpretation)

Displays rests and slurred notes in such a way that the score is as legible as possible without influencing playback.

Automatic staccato articulations

A staccato symbol is added to a note whose value is considerably longer than the "real MIDI note". This is practical when working with simplified length display.



Option: "Simplify note lengths (interpretation)" selected.

Additional option: "Automatic staccato articulations".

Hide note overlaps

Prevents the overlapping of sequential notes which, for example, arises as a result of playing legato:

Recognize triplets

Activate this option if triplets are present in the MIDI object.

Please note:

The display quantization value always has to be one step finer than the smallest discernible triplet value. To recognize one eighth triplets, display quantization has to be set to at least one sixteenth (or to 1/64 for 1/32 triplets).

Strict measure/pulse division

There are no note or rest values longer than a beat subgroup (pulse). Longer notes are displayed as multiple slurred notes. This can simplify the legibility of the score.

Larger beam groups

Beam groups are partially compiled across beat subgroups. This can simplify the legibility of the score.

Recognize grace notes

Note values which are much shorter than the display quantization value are annotated as flam notes as long as a base note is present.

Notation symbols

Clef



There are four clefs available in Samplitude Music Studio 15: violin, bass, tenor, and alto clef.

Samplitude Music Studio 15 differentiates between base clef and clef change. The base clef can be set up for every staff in "Score settings" (and applies to all [MIDI](#)

objects on the current track). A clef inserted from the tool bar, will be interpreted as a clef change. Clef changes are possible any number of times in a song and also within beats.

Insert: Activate the staff into which the clef should be inserted (by clicking on the staff signature to the left).

Position the play cursor at the desired insert point and click on the desired clef in the toolbar. Move the playback cursor to the desired insert position and click on the desired clef in the toolbar. The clef will be inserted musically, not graphically, with a clef change at position 10:01:000 (the beginning of the tenth beat) the clef symbol at the end of the ninth beat will be displayed according to note set rules.

Clef changes can also be deleted by clicking on clef symbol with the eraser (or the right mouse button).

Beat signature

The metric and beat signature symbols are created automatically from the tempo markers of the [VIP](#) project.

Beat changes are possible at every full beat border. In addition, you might want to create a beat count measure marker with the new signature (for example, 6/8) at the desired position. If there are no beat

count measure changes, then it's enough to set the bar type of the piece (for example, 3/4) in the transport control.

Accidental

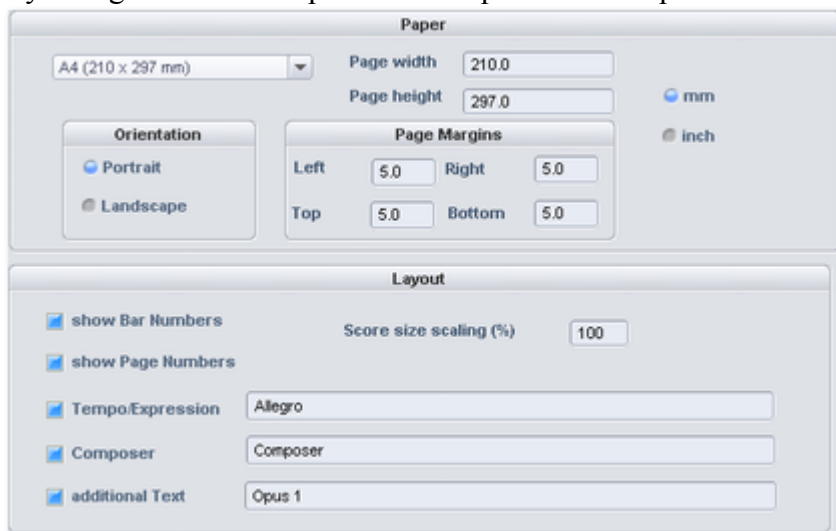


Enharmonic change

Samplitude Music Studio 15 sets the sharps and flats according to the clef description you selected. It is often the case, however, that enharmonic change can considerably optimize the legibility of certain passages. In this case you can work manually. To change one or more selected notes enharmonically, click on the corresponding button. The function transforms flats into sharps and vice versa.

Page format settings

You can select the page format independent of the printer settings so that it always has the same note layout regardless of workplace and independent of the printers installed in Windows.



In the score/page format setting, texts for tempo description, composer, and an additional text can be entered. Similarly, you can choose which layout elements should appear on the page (check boxes for beat numbers, page numbers, and texts).

Printing score

Samplitude Music Studio 15 automatically creates the layout of the score and allows optimal division of staves and staves on the page. You only need to specify the page size, orientation, and page borders.

- **Note size:** Here you can scale the size of the note symbols and the printout. This is actually irrelevant when working using the monitor's display, since you can zoom whenever you want anyway. However, the size of the notes does influence at which position a line or page break occurs.
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Activate the print process in the "Score -> Print notes" menu or via the print button. Furthermore, a printer dialog window appears which appears differently for each printer or printer driver. Depending on the printer there are various options, e.g. the selection of pages you wish to print and the number of copies. Make sure that you have set up the same paper format for the printer as for the page mode, otherwise the printout may be scaled and the page ratio changed.

The following won't be printed, it's only visible on the monitor.

- The lines which highlight the page borders on the monitor
- Mouse pointers
- The color display of the currently selected notes and playback areas.

When printing a file (e.g. as a PDF file with a special printer driver) please note that you have to activate the option "Save fonts in document" in the printer driver so that the notation symbols will be displayed correctly in the document.

Score editor modes

Samplitude Music Studio 15 offers two alternatives for viewing the score: linear display and page mode. The linear note display can be combined with the matrix display to offer ideal [MIDI](#) editing conditions, since the detail in depth of the matrix editor and overview can be supplemented by several score systems. You can select the score in the score sheet and perform fine adjustments in the piano roll. Selection and zooms in all editor views (linear score, piano roll, event list, velocity editor) are always synchronized.

Linear view

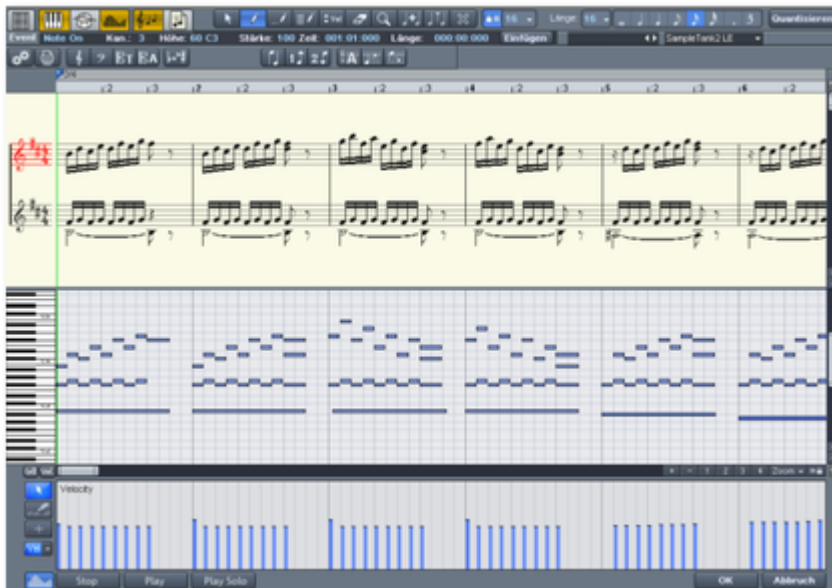


Score editor (linear) button

For detailed editing of the [MIDI](#)

data in the score you should preferably select linear view mode as both matrix and velocity display are available. All parameters such as pitch, note length, and velocity are displayed.

Please note: Only the notes of the currently active system are displayed in the velocity editor if notes and velocity are parallel. The red bar mark indicates the currently active system.



Notation view in "Linear" mode (move bar between score and matrix)

The horizontal zoom above the scroll bar zooms parallel to the matrix view.

In linear mode details can no longer be displayed correctly if you zoom out horizontally, since the note symbols overlap. It may then be necessary to reduce the size of the notation symbols (+ & - buttons on the right). Despite the no longer correctly displayed details, zooming out can still provide you with a good overview, particularly in large scores. Samplitude Music Studio 15 can adjust the notation symbols automatically. To do this, please select "Automatic zoom" in the score menu.

Page view

This page mode displays the notes just like on a musical score sheet, which also serves as a print preview. Here you can select notes and allocate them to voices/staves and delete them, although you cannot move them with the mouse or pen.

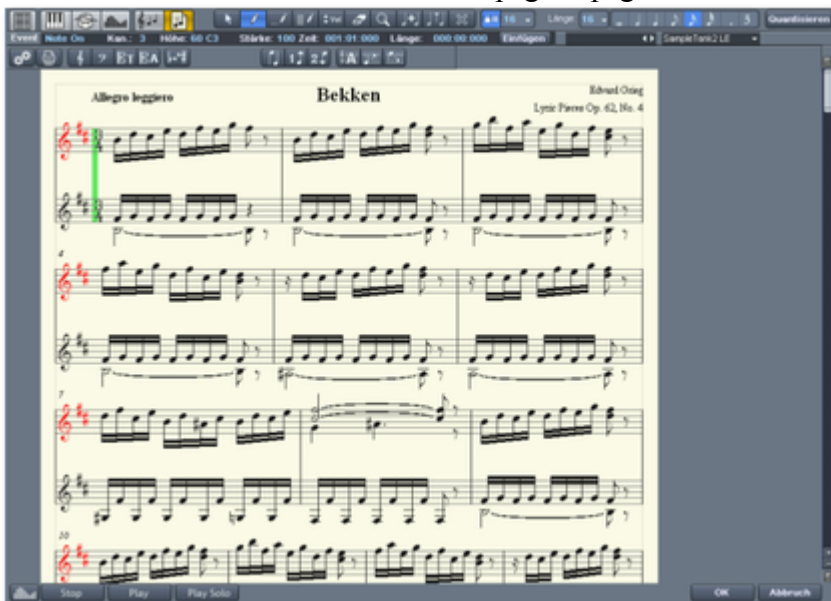


Score editor page mode

Page view is not only useful for preparing a score sheet (e.g. for titles, borders), but also for editing longer sequences. The stave break allows you to display considerably more bars than with the linear display.

Scrolling in full view mode:

Use the vertical scroll bar to scroll from page to page.



Page mode as print preview:

You should first change the page format (in the score properties dialog) to the paper format of your printer before setting up the page for printing as the display depends on the page format. You will then see your score exactly as it will be printed.

The score

The automatic conversion of [MIDI](#)

data into score is usually sufficient for editing MIDI data as efficiency is required here instead of a perfect, ready-to-print display. However, it may still be necessary to adjust some of the display options while editing. The display options can be found in the MIDI score properties dialog, which you can open by clicking on the "Print" button.



Opens the score sheet settings dialog for notation and page properties.

This is also where the presets are stored. These are pre-programmed standard settings for certain instruments or instrumentation such as strings or orchestra. Selecting a preset improves the score display and its readability.



Treble clef view (preset)



Switch notation display by selecting the piano clef preset.

Further explanations of the notation system can be found below.

Editing MIDI data in the score sheet

Selection

As usual you can select notes by clicking them. You can select a group of notes (e.g. a chord) by sketching a frame over them while holding down the mouse button. Select multiple single notes by pressing "Ctrl".

Note parameters

The parameters pitch, velocity, and length can be changed for one or several selected notes. If you have selected one or several notes the data of the current note will appear in the info bar above the score view. Changing a parameter may have a comparable effect on all selected notes, just like in the matrix editor.

Move and transpose

To move notes, first select and then drag them to the desired position. Here the info box can help you keep track of the pitch or position. The step size when moving is determined by the selected quantization raster in the [MIDI](#) editor.

Copy

Select the desired notes and copy them by holding down "Ctrl" and dragging the mouse. Alternatively, you can also use the copy function of the edit menu.

Insert new notes

You can also insert new notes in the score editor by using the pen. Click on the desired position with the pen, hold down the mouse button and, if necessary, correct the position and pitch. If you let go of the mouse key, Samplitude Music Studio 15 will add a new note of the same length as the selected length quantization value. You can only insert new notes into the active stave. For instance, to insert a note in the lower part of a piano system, first click on the lower staff in the system on the left.

Only notes are inserted that correspond with the current pitch. Non-scale notes or chromatic intermediate steps are skipped. When you enter conventional music material with the mouse, diatonic insert mode increases the chances of hitting the correct note. If a new prefix is to be added to the note, you can move the note chromatically with the arrow key. This way an inserted F in C major can be transformed into an F# by pressing "Page up".

Delete notes

You can delete notes by:

- selecting them and pressing "Del" or
- by clicking on them with the eraser (or the right mouse button)

Insert notation symbols

Clef symbols can be inserted at the current cursor position by pressing the corresponding clef symbol in the active system.

Delete notation symbol

Notation symbols such as clef and pitch cannot be selected, since they are meta information for the notation display and no [MIDI](#) events have been allocated to them. They can also be deleted by clicking them with the eraser (or the right mouse button).

Adjusting and optimizing the score

Samplitude Music Studio 15 automatically generates a notation display from the [MIDI](#) events contained in the MIDI object. This is always correct with regard to pitch and position. However, this does not mean that the notation can be read optimally, since displaying note lengths also plays an important role in this context. In this case, the notation permits more interpretation flexibility so that the user usually has to intervene. The illustration shows a typical example of how poor a readable transformation of a sixteenth note piano sequence would look in notation.

This representation may be correct, but it is not readable. Why is that? The MIDI events contain very precise information on the start of a note, i.e. its length and pitch, which has to be taken into account during playback. It may influence the groove of a song if the notes are always slightly shorter than sixteenth notes. If this were to be displayed correctly in the notation, then the score would be unreadable as in the example above. The MIDI events also do not contain information on whether the gap between two notes is a real rest, its harmonic correlations (pitch), and the characteristics of the dynamic sequences. This is why automatic processing of notation always differs from what would be ideal. Samplitude Music Studio 15 includes a number of automatically and manually controllable functions for making it easier to read the notation. The reworked version of the the above score illustration shows how big the difference can be.

Note allocation in multiple staves

The term "Stave" refers to an individual line within a stave as well as all staves of a score. In cases where it is important to be able to differentiate a score and a staff from one another, we use the term "Stave" for the score and "staff" for a single system.

What is meant by a "Stave" can often be interpreted from this relation, for example, in a two-handed piano piece, "upper" or "lower" systems are referenced.

Samplitude Music Studio 15 provides multiple systems, e.g. for piano notation, or entire scores which can possibly be comprised of up to 16 individual systems.

To manually assign notes to a system, click



to move the selected notes one line on a stave higher. Click



to move them one line lower. This results in the note being connected to the line (independent of the [MIDI](#)

channel or pitch). This manually set allocation can be undone by clicking on



"Automatic staff allocation"

When transcribing a MIDI piano recording, splitting the notes into a two-line piano system using the split point is recommended. The points where individual notes are placed incorrectly in a line can be corrected easily by assigning the notes manually with a click to the desired stave.

The automatic allocation of the score to a specific line is flexible. Either the MIDI channel of the note event, the pitch, or even a combination of the two can make up the criteria. This permits simpler and faster distribution of MIDI notes in the score line.

For example, it's often the case with some standard MIDI files that a particular piano piece's lower system notes have a different MIDI channel than that of the notes of the upper stave. Let's assume the notes for the right hand are on channel 1 and the notes for the left hand are on channel 2. In this case you should set up two staves for the stave in the note stave settings. The easiest way to do this is with the "Piano" preset. For the first staff, set the MIDI channel allocation to "Ch. 1" in the "Channel" selection box and "Ch. 2" for the second staff. Deactivate allocation according to pitch by setting the split point to 0 (see MIDI score settings dialog).

The rules for allocation are as follows:

If the (preset) option "Automatic stave allocation" is set for the note, then the staves will be played through until the MIDI channel corresponds with it and the pitch is over or equal to the split point.

Note:

It may happen that some notes are not shown at all as they are not yet allocated to a stave.

Multi-voice notation

Up to two independent voices can be annotated for each staff. The voices differ in the direction of the note stems: the first voice is always with the stem pointing upwards, the second with the stem pointing downwards. Rests are displayed individually for each voice.

Multi-voice notation can simplify the score considerably and enable multiple instruments or parts to be displayed in one staff together.



You can set the voice by selecting the notes and clicking on the button or menu command "Assign first voice" or "Assign second voice".



This sets the stem direction of the notes, and therefore the voice itself.

This assignment can be undone by clicking on

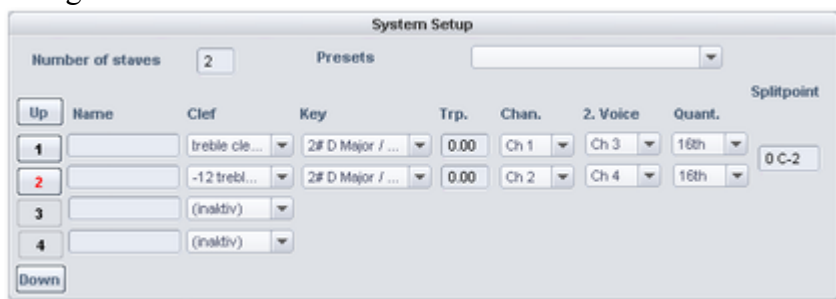


"Automatic staff assignment for notes".

For automatic voice assignment, the note's [MIDI](#) channel has to be analyzed.

To do this, set up a MIDI channel for the second voice in the stave properties dialog. This can be set individually for each staff. All notes of a stave whose MIDI channel has not yet been assigned to a second voice, are added to the first voice.

Voice assignment via the MIDI channel can be practical when displaying standard MIDI files with multi-voice piano pieces if the voices of the right hand are set to the first and second MIDI channels and the voices of the left hand are set to MIDI channels three and four. In this case, apply the following settings:

**Note:**

If there is no MIDI channel selected for voice assignment, only one voice will be annotated (if manual voice assignment does not occur).

MIDI score settings dialog



Open score settings dialog for stave and page properties

Note stave and page format settings can be set here. None of the settings have any influence on the [MIDI](#) data itself, but rather only on the display of the score.

Note: The affected staff settings are always applied to all MIDI objects situated on the current track. The page format settings are global and valid for every [VIP](#).

Staff settings

All settings for the staff and display parameters/options can be accessed via this dialog page. Here you can enter the clef.

Samplitude Music Studio 15 provides [MIDI](#)

files with up to 16 staves on one track. For each staff, the clef, display transposition (for instruments that transpose, for example, a saxophone), and display quantization can be specified individually.

Furthermore, an instrument's prefix ("Name") can be set as well as the MIDI channel for automatic staff/voice assignment.

Similarly, the split point serves automatic staff assignment: Notes above the split point are added to the upper staff, while those under the split point are added to the staff beneath it (as long as the MIDI channel matches).

The active staff is recognizable via the index marked in red. The list of 16 staves can be scrolled vertically using the arrow buttons (up/down). In the lower range the display options of the active staff are shown. Optionally, all changes to settings, display options, clef, and display quantization are always transferred equally to all staves.

Note display: Interpretation options

None of the options have any influence on the [MIDI](#) files or playback.

Simplify note lengths (interpretation)

Displays rests and slurred notes in such a way that the score is as legible as possible without influencing playback.

Automatic staccato articulations

A staccato symbol is added to a note whose value is considerably longer than the "real MIDI note". This is practical when working with simplified length display.



Option: "Simplify note lengths (interpretation)" selected.

Additional option: "Automatic staccato articulations".

Hide note overlaps

Prevents the overlapping of sequential notes which, for example, arises as a result of playing legato:

Recognize triplets

Activate this option if triplets are present in the MIDI object.

Please note:

The display quantization value always has to be one step finer than the smallest discernible triplet value.

To recognize one eighth triplets, display quantization has to be set to at least one sixteenth (or to 1/64 for 1/32 triplets).

Strict measure/pulse division

There are no note or rest values longer than a beat subgroup (pulse). Longer notes are displayed as multiple slurred notes. This can simplify the legibility of the score.

Larger beam groups

Beam groups are partially compiled across beat subgroups. This can simplify the legibility of the score.

Recognize grace notes

Note values which are much shorter than the display quantization value are annotated as flam notes as long as a base note is present.

Notation symbols

Clef



There are four clefs available in Samplitude Music Studio 15: violin, bass, tenor, and alto clef.

Samplitude Music Studio 15 differentiates between base clef and clef change. The base clef can be set up for every stave in "Score settings" (and applies to all [MIDI](#)

objects on the current track). A clef inserted from the tool bar, will be interpreted as a clef change. Clef changes are possible any number of times in a song and also within beats.

Insert: Activate the staff into which the clef should be inserted (by clicking on the staff signature to the left).

Position the play cursor at the desired insert point and click on the desired clef in the toolbar. Move the playback cursor to the desired insert position and click on the desired clef in the toolbar. The clef will be inserted musically, not graphically, with a clef change at position 10:01:000 (the beginning of the tenth beat) the clef symbol at the end of the ninth beat will be displayed according to note set rules.

Clef changes can also be deleted by clicking on clef symbol with the eraser (or the right mouse button).

Beat signature

The metric and beat signature symbols are created automatically from the tempo markers of the [VIP](#) project.

Beat changes are possible at every full beat border. In addition, you might want to create a beat count measure marker with the new signature (for example, 6/8) at the desired position. If there are no beat count measure changes, then it's enough to set the bar type of the piece (for example, 3/4) in the transport control.

Accidental

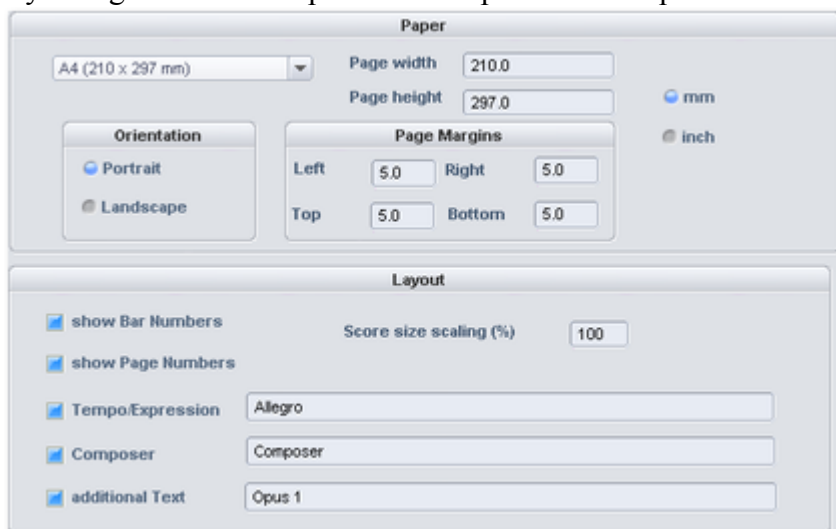


Enharmonic change

Samplitude Music Studio 15 sets the sharps and flats according to the clef description you selected. It is often the case, however, that enharmonic change can considerably optimize the legibility of certain passages. In this case you can work manually. To change one or more selected notes enharmonically, click on the corresponding button. The function transforms flats into sharps and vice versa.

Page format settings

You can select the page format independent of the printer settings so that it always has the same note layout regardless of workplace and independent of the printers installed in Windows.



In the score/page format setting, texts for tempo description, composer, and an additional text can be entered. Similarly, you can choose which layout elements should appear on the page (check boxes for beat numbers, page numbers, and texts).

Printing score

Samplitude Music Studio 15 automatically creates the layout of the score and allows optimal division of staves and staves on the page. You only need to specify the page size, orientation, and page borders.

- **Note size:** Here you can scale the size of the note symbols and the printout. This is actually irrelevant when working using the monitor's display, since you can zoom whenever you want anyway. However, the size of the notes does influence at which position a line or page break occurs.
- **Set a value smaller than 100%** to get more beats/staves onto one piece of paper.
- **Set higher values than 100%** in order to keep larger note symbols on the printout.

Print notes

Activate the print process in the "Score -> Print notes" menu or via the print button. Furthermore, a printer dialog window appears which appears differently for each printer or printer driver. Depending on the printer there are various options, e.g. the selection of pages you wish to print and the number of copies. Make sure that you have set up the same paper format for the printer as for the page mode, otherwise the printout may be scaled and the page ratio changed.

The following won't be printed, it's only visible on the monitor.

- The lines which highlight the page borders on the monitor
- Mouse pointers
- The color display of the currently selected notes and playback areas.

When printing a file (e.g. as a PDF file with a special printer driver) please note that you have to activate the option "Save fonts in document" in the printer driver so that the notation symbols will be displayed correctly in the document.

Linear view

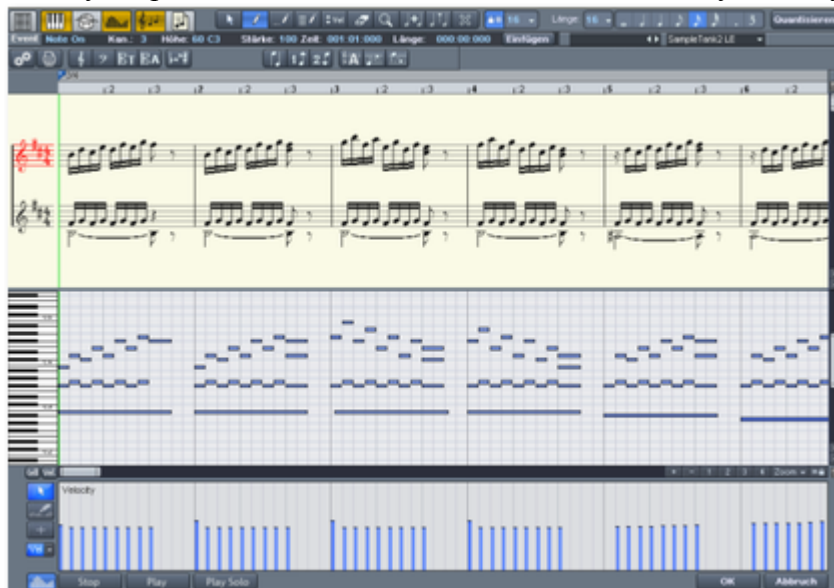


Score editor (linear) button

For detailed editing of the [MIDI](#)

data in the score you should preferably select linear view mode as both matrix and velocity display are available. All parameters such as pitch, note length, and velocity are displayed.

Please note: Only the notes of the currently active system are displayed in the velocity editor if notes and velocity are parallel. The red bar mark indicates the currently active system.



Notation view in "Linear" mode (move bar between score and matrix)

The horizontal zoom above the scroll bar zooms parallel to the matrix view.

In linear mode details can no longer be displayed correctly if you zoom out horizontally, since the note symbols overlap. It may then be necessary to reduce the size of the notation symbols (+ & - buttons on the right). Despite the no longer correctly displayed details, zooming out can still provide you with a good overview, particularly in large scores. Samplitude Music Studio 15 can adjust the notation symbols automatically. To do this, please select "Automatic zoom" in the score menu.

Page view

This page mode displays the notes just like on a musical score sheet, which also serves as a print preview. Here you can select notes and allocate them to voices/staves and delete them, although you cannot move them with the mouse or pen.

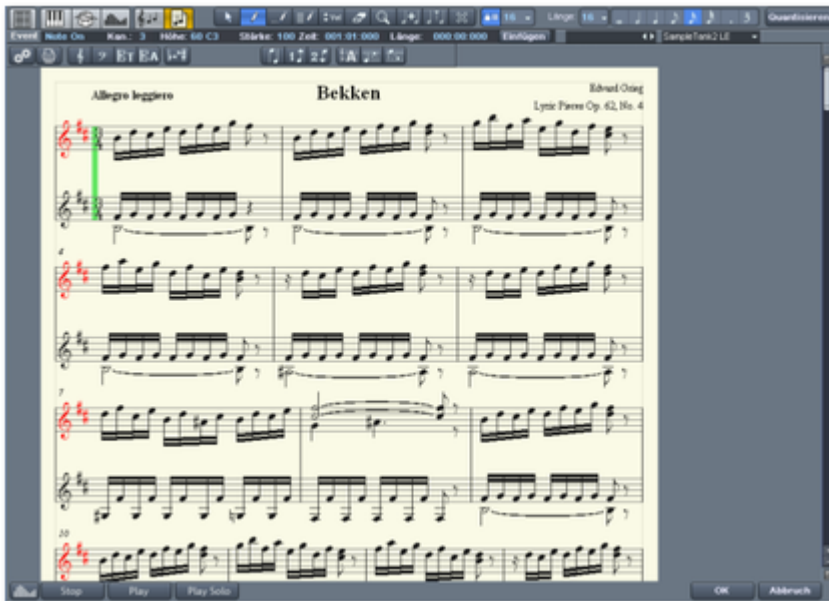


Score editor page mode

Page view is not only useful for preparing a score sheet (e.g. for titles, borders), but also for editing longer sequences. The stave break allows you to display considerably more bars than with the linear display.

Scrolling in full view mode:

Use the vertical scroll bar to scroll from page to page.



Page mode as print preview:

You should first change the page format (in the score properties dialog) to the paper format of your printer before setting up the page for printing as the display depends on the page format. You will then see your score exactly as it will be printed.

The score

The automatic conversion of [MIDI](#)

data into score is usually sufficient for editing MIDI data as efficiency is required here instead of a perfect, ready-to-print display. However, it may still be necessary to adjust some of the display options while editing. The display options can be found in the MIDI score properties dialog, which you can open by clicking on the "Print" button.



Opens the score sheet settings dialog for notation and page properties.

This is also where the presets are stored. These are pre-programmed standard settings for certain instruments or instrumentation such as strings or orchestra. Selecting a preset improves the score display and its readability.



Treble clef view (preset)



Switch notation display by selecting the piano clef preset.

Further explanations of the notation system can be found below.

Editing MIDI data in the score sheet

Selection

As usual you can select notes by clicking them. You can select a group of notes (e.g. a chord) by sketching a frame over them while holding down the mouse button. Select multiple single notes by pressing "Ctrl".

Note parameters

The parameters pitch, velocity, and length can be changed for one or several selected notes. If you have selected one or several notes the data of the current note will appear in the info bar above the score view. Changing a parameter may have a comparable effect on all selected notes, just like in the matrix editor.

Move and transpose

To move notes, first select and then drag them to the desired position. Here the info box can help you keep track of the pitch or position. The step size when moving is determined by the selected quantization raster in the [MIDI](#) editor.

Copy

Select the desired notes and copy them by holding down "Ctrl" and dragging the mouse. Alternatively, you can also use the copy function of the edit menu.

Insert new notes

You can also insert new notes in the score editor by using the pen. Click on the desired position with the pen, hold down the mouse button and, if necessary, correct the position and pitch. If you let go of the mouse key, Samplitude Music Studio 15 will add a new note of the same length as the selected length quantization value. You can only insert new notes into the active stave. For instance, to insert a note in the lower part of a piano system, first click on the lower staff in the system on the left.

Only notes are inserted that correspond with the current pitch. Non-scale notes or chromatic intermediate steps are skipped. When you enter conventional music material with the mouse, diatonic insert mode increases the chances of hitting the correct note. If a new prefix is to be added to the note, you can move the note chromatically with the arrow key. This way an inserted F in C major can be transformed into an F# by pressing "Page up".

Delete notes

You can delete notes by:

- selecting them and pressing "Del" or
- by clicking on them with the eraser (or the right mouse button)

Insert notation symbols

Clef symbols can be inserted at the current cursor position by pressing the corresponding clef symbol in the active system.

Delete notation symbol

Notation symbols such as clef and pitch cannot be selected, since they are meta information for the notation display and no [MIDI](#) events have been allocated to them. They can also be deleted by clicking them with the eraser (or the right mouse button).

Adjusting and optimizing the score

Samplitude Music Studio 15 automatically generates a notation display from the [MIDI](#)

events contained in the MIDI object. This is always correct with regard to pitch and position. However, this does not mean that the notation can be read optimally, since displaying note lengths also plays an important role in this context. In this case, the notation permits more interpretation flexibility so that the user usually has to intervene. The illustration shows a typical example of how poor a readable transformation of a sixteenth note piano sequence would look in notation.

This representation may be correct, but it is not readable. Why is that? The MIDI events contain very precise information on the start of a note, i.e. its length and pitch, which has to be taken into account during playback. It may influence the groove of a song if the notes are always slightly shorter than sixteenth notes. If this were to be displayed correctly in the notation, then the score would be unreadable as in the example above. The MIDI events also do not contain information on whether the gap between two notes is a real rest, its harmonic correlations (pitch), and the characteristics of the dynamic sequences. This is why automatic processing of notation always differs from what would be ideal. Samplitude Music Studio 15 includes a number of automatically and manually controllable functions for making it easier to read the notation. The reworked version of the the above score illustration shows how big the difference can be.

Note allocation in multiple staves

The term "Stave" refers to an individual line within a stave as well as all staves of a score. In cases where it is important to be able to differentiate a score and a staff from one another, we use the term "Stave" for the score and "staff" for a single system.

What is meant by a "Stave" can often be interpreted from this relation, for example, in a two-handed piano piece, "upper" or "lower" systems are referenced.

Samplitude Music Studio 15 provides multiple systems, e.g. for piano notation, or entire scores which can possibly be comprised of up to 16 individual systems.

To manually assign notes to a system, click



to move the selected notes one line on a stave higher. Click



to move them one line lower. This results in the note being connected to the line (independent of the

[MIDI](#)

channel or pitch). This manually set allocation can be undone by clicking on



"Automatic staff allocation"

When transcribing a MIDI piano recording, splitting the notes into a two-line piano system using the split point is recommended. The points where individual notes are placed incorrectly in a line can be corrected easily by assigning the notes manually with a click to the desired stave.

The automatic allocation of the score to a specific line is flexible. Either the MIDI channel of the note event, the pitch, or even a combination of the two can make up the criteria. This permits simpler and faster distribution of MIDI notes in the score line.

For example, it's often the case with some standard MIDI files that a particular piano piece's lower system notes have a different MIDI channel than that of the notes of the upper stave. Let's assume the notes for the right hand are on channel 1 and the notes for the left hand are on channel 2. In this case you should set up two staves for the stave in the note stave settings. The easiest way to do this is with the "Piano" preset. For the first staff, set the MIDI channel allocation to "Ch. 1" in the "Channel" selection box and "Ch. 2" for the second staff. Deactivate allocation according to pitch by setting the split point to 0 (see MIDI score settings dialog).

The rules for allocation are as follows:

If the (preset) option "Automatic stave allocation" is set for the note, then the staves will be played through until the MIDI channel corresponds with it and the pitch is over or equal to the split point.

Note:

It may happen that some notes are not shown at all as they are not yet allocated to a stave.

Multi-voice notation

Up to two independent voices can be annotated for each staff. The voices differ in the direction of the note stems: the first voice is always with the stem pointing upwards, the second with the stem pointing downwards. Rests are displayed individually for each voice.

Multi-voice notation can simplify the score considerably and enable multiple instruments or parts to be displayed in one staff together.



You can set the voice by selecting the notes and clicking on the button or menu command "Assign first voice" or "Assign second voice".



This sets the stem direction of the notes, and therefore the voice itself.

This assignment can be undone by clicking on

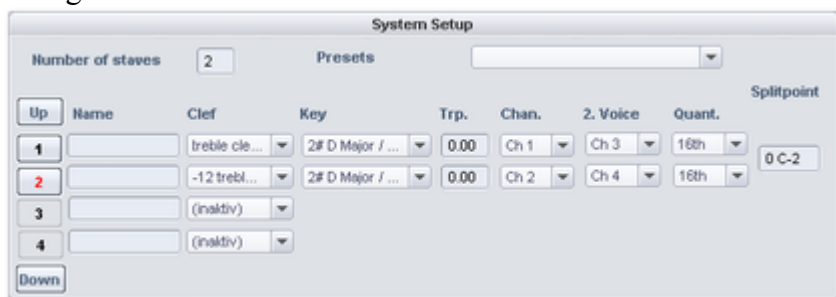


"Automatic staff assignment for notes".

For automatic voice assignment, the note's [MIDI](#) channel has to be analyzed.

To do this, set up a MIDI channel for the second voice in the stave properties dialog. This can be set individually for each staff. All notes of a stave whose MIDI channel has not yet been assigned to a second voice, are added to the first voice.

Voice assignment via the MIDI channel can be practical when displaying standard MIDI files with multi-voice piano pieces if the voices of the right hand are set to the first and second MIDI channels and the voices of the left hand are set to MIDI channels three and four. In this case, apply the following settings:



Note:

If there is no MIDI channel selected for voice assignment, only one voice will be annotated (if manual voice assignment does not occur).

MIDI score settings dialog



Open score settings dialog for stave and page properties

Note stave and page format settings can be set here. None of the settings have any influence on the [MIDI](#) data itself, but rather only on the display of the score.

Note: The affected staff settings are always applied to all MIDI objects situated on the current track. The page format settings are global and valid for every [VIP](#).

Staff settings

All settings for the staff and display parameters/options can be accessed via this dialog page. Here you can enter the clef.

Samplitude Music Studio 15 provides [MIDI](#)

files with up to 16 staves on one track. For each staff, the clef, display transposition (for instruments that transpose, for example, a saxophone), and display quantization can be specified individually.

Furthermore, an instrument's prefix ("Name") can be set as well as the MIDI channel for automatic staff/voice assignment.

Similarly, the split point serves automatic staff assignment: Notes above the split point are added to the upper staff, while those under the split point are added to the staff beneath it (as long as the MIDI channel matches).

The active staff is recognizable via the index marked in red. The list of 16 staves can be scrolled vertically using the arrow buttons (up/down). In the lower range the display options of the active staff are shown. Optionally, all changes to settings, display options, clef, and display quantization are always transferred equally to all staves.

Note display: Interpretation options

None of the options have any influence on the [MIDI](#) files or playback.

Simplify note lengths (interpretation)

Displays rests and slurred notes in such a way that the score is as legible as possible without influencing playback.

Automatic staccato articulations

A staccato symbol is added to a note whose value is considerably longer than the "real MIDI note". This is practical when working with simplified length display.



Option: "Simplify note lengths (interpretation)" selected.

Additional option: "Automatic staccato articulations".

Hide note overlaps

Prevents the overlapping of sequential notes which, for example, arises as a result of playing legato:

Recognize triplets

Activate this option if triplets are present in the MIDI object.

Please note:

The display quantization value always has to be one step finer than the smallest discernible triplet value.

To recognize one eighth triplets, display quantization has to be set to at least one sixteenth (or to 1/64 for 1/32 triplets).

Strict measure/pulse division

There are no note or rest values longer than a beat subgroup (pulse). Longer notes are displayed as multiple slurred notes. This can simplify the legibility of the score.

Larger beam groups

Beam groups are partially compiled across beat subgroups. This can simplify the legibility of the score.

Recognize grace notes

Note values which are much shorter than the display quantization value are annotated as flam notes as long as a base note is present.

Notation symbols

Clef



There are four clefs available in Samplitude Music Studio 15: violin, bass, tenor, and alto clef.

Samplitude Music Studio 15 differentiates between base clef and clef change. The base clef can be set up for every stave in "Score settings" (and applies to all [MIDI](#)

objects on the current track). A clef inserted from the tool bar, will be interpreted as a clef change. Clef changes are possible any number of times in a song and also within beats.

Insert: Activate the staff into which the clef should be inserted (by clicking on the staff signature to the left).

Position the play cursor at the desired insert point and click on the desired clef in the toolbar. Move the playback cursor to the desired insert position and click on the desired clef in the toolbar. The clef will be inserted musically, not graphically, with a clef change at position 10:01:000 (the beginning of the tenth beat) the clef symbol at the end of the ninth beat will be displayed according to note set rules.

Clef changes can also be deleted by clicking on clef symbol with the eraser (or the right mouse button).

Beat signature

The metric and beat signature symbols are created automatically from the tempo markers of the [VIP](#) project.

Beat changes are possible at every full beat border. In addition, you might want to create a beat count measure marker with the new signature (for example, 6/8) at the desired position. If there are no beat count measure changes, then it's enough to set the bar type of the piece (for example, 3/4) in the transport control.

Accidental

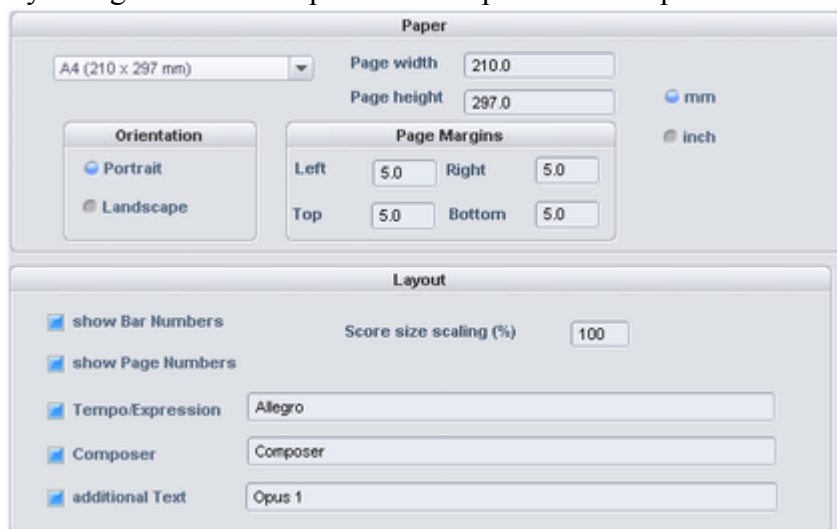


Enharmonic change

Samplitude Music Studio 15 sets the sharps and flats according to the clef description you selected. It is often the case, however, that enharmonic change can considerably optimize the legibility of certain passages. In this case you can work manually. To change one or more selected notes enharmonically, click on the corresponding button. The function transforms flats into sharps and vice versa.

Page format settings

You can select the page format independent of the printer settings so that it always has the same note layout regardless of workplace and independent of the printers installed in Windows.



In the score/page format setting, texts for tempo description, composer, and an additional text can be entered. Similarly, you can choose which layout elements should appear on the page (check boxes for beat numbers, page numbers, and texts).

Printing score

Samplitude Music Studio 15 automatically creates the layout of the score and allows optimal division of staves and staves on the page. You only need to specify the page size, orientation, and page borders.

- **Note size:** Here you can scale the size of the note symbols and the printout. This is actually irrelevant when working using the monitor's display, since you can zoom whenever you want anyway. However, the size of the notes does influence at which position a line or page break occurs.
- **Set a value smaller than 100%** to get more beats/staves onto one piece of paper.
- **Set higher values than 100%** in order to keep larger note symbols on the printout.

Print notes

Activate the print process in the "Score -> Print notes" menu or via the print button. Furthermore, a printer dialog window appears which appears differently for each printer or printer driver. Depending on the printer there are various options, e.g. the selection of pages you wish to print and the number of copies. Make sure that you have set up the same paper format for the printer as for the page mode, otherwise the printout may be scaled and the page ratio changed.

The following won't be printed, it's only visible on the monitor.

- The lines which highlight the page borders on the monitor
- Mouse pointers
- The color display of the currently selected notes and playback areas.

When printing a file (e.g. as a PDF file with a special printer driver) please note that you have to activate the option "Save fonts in document" in the printer driver so that the notation symbols will be displayed correctly in the document.

Page view

This page mode displays the notes just like on a musical score sheet, which also serves as a print preview. Here you can select notes and allocate them to voices/staves and delete them, although you cannot move them with the mouse or pen.

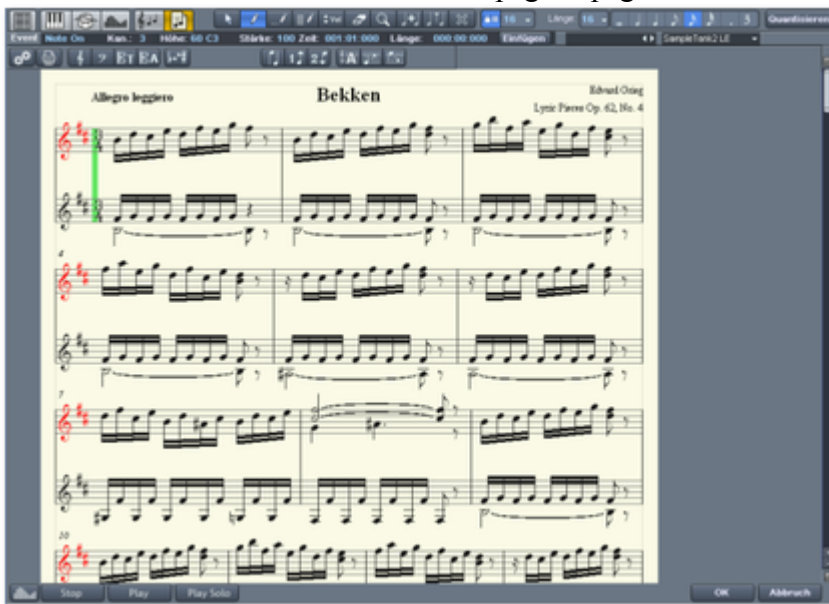


Score editor page mode

Page view is not only useful for preparing a score sheet (e.g. for titles, borders), but also for editing longer sequences. The stave break allows you to display considerably more bars than with the linear display.

Scrolling in full view mode:

Use the vertical scroll bar to scroll from page to page.



Page mode as print preview:

You should first change the page format (in the score properties dialog) to the paper format of your printer before setting up the page for printing as the display depends on the page format. You will then see your score exactly as it will be printed.

The score

The automatic conversion of [MIDI](#)

data into score is usually sufficient for editing MIDI data as efficiency is required here instead of a perfect, ready-to-print display. However, it may still be necessary to adjust some of the display options while editing. The display options can be found in the MIDI score properties dialog, which you can open by clicking on the "Print" button.



Opens the score sheet settings dialog for notation and page properties.

This is also where the presets are stored. These are pre-programmed standard settings for certain instruments or instrumentation such as strings or orchestra. Selecting a preset improves the score display and its readability.



Treble clef view (preset)



Switch notation display by selecting the piano clef preset.
Further explanations of the notation system can be found below.

Editing MIDI data in the score sheet

Selection

As usual you can select notes by clicking them. You can select a group of notes (e.g. a chord) by sketching a frame over them while holding down the mouse button. Select multiple single notes by pressing "Ctrl".

Note parameters

The parameters pitch, velocity, and length can be changed for one or several selected notes. If you have selected one or several notes the data of the current note will appear in the info bar above the score view. Changing a parameter may have a comparable effect on all selected notes, just like in the matrix editor.

Move and transpose

To move notes, first select and then drag them to the desired position. Here the info box can help you keep track of the pitch or position. The step size when moving is determined by the selected quantization raster in the [MIDI](#) editor.

Copy

Select the desired notes and copy them by holding down "Ctrl" and dragging the mouse. Alternatively, you can also use the copy function of the edit menu.

Insert new notes

You can also insert new notes in the score editor by using the pen. Click on the desired position with the pen, hold down the mouse button and, if necessary, correct the position and pitch. If you let go of the mouse key, Samplitude Music Studio 15 will add a new note of the same length as the selected length quantization value. You can only insert new notes into the active staff. For instance, to insert a note in the lower part of a piano system, first click on the lower staff in the system on the left.

Only notes are inserted that correspond with the current pitch. Non-scale notes or chromatic intermediate steps are skipped. When you enter conventional music material with the mouse, diatonic insert mode increases the chances of hitting the correct note. If a new prefix is to be added to the note, you can move the note chromatically with the arrow key. This way an inserted F in C major can be transformed into an F# by pressing "Page up".

Delete notes

You can delete notes by:

- selecting them and pressing "Del" or
- by clicking on them with the eraser (or the right mouse button)

Insert notation symbols

Clef symbols can be inserted at the current cursor position by pressing the corresponding clef symbol in the active system.

Delete notation symbol

Notation symbols such as clef and pitch cannot be selected, since they are meta information for the notation display and no [MIDI](#) events have been allocated to them. They can also be deleted by clicking them with the eraser (or the right mouse button).

Adjusting and optimizing the score

Samplitude Music Studio 15 automatically generates a notation display from the [MIDI](#) events contained in the MIDI object. This is always correct with regard to pitch and position. However, this does not mean that the notation can be read optimally, since displaying note lengths also plays an important role in this context. In this case, the notation permits more interpretation flexibility so that the user usually has to intervene. The illustration shows a typical example of how poor a readable transformation of a sixteenth note piano sequence would look in notation.

This representation may be correct, but it is not readable. Why is that? The MIDI events contain very precise information on the start of a note, i.e. its length and pitch, which has to be taken into account during playback. It may influence the groove of a song if the notes are always slightly shorter than sixteenth notes. If this were to be displayed correctly in the notation, then the score would be unreadable as in the example above. The MIDI events also do not contain information on whether the gap between two notes is a real rest, its harmonic correlations (pitch), and the characteristics of the dynamic sequences. This is why automatic processing of notation always differs from what would be ideal. Samplitude Music Studio 15 includes a number of automatically and manually controllable functions for making it easier to read the notation. The reworked version of the the above score illustration shows how big the difference can be.

Note allocation in multiple staves

The term "Stave" refers to an individual line within a stave as well as all staves of a score. In cases where it is important to be able to differentiate a score and a staff from one another, we use the term "Stave" for the score and "staff" for a single system.

What is meant by a "Stave" can often be interpreted from this relation, for example, in a two-handed piano piece, "upper" or "lower" systems are referenced.

Samplitude Music Studio 15 provides multiple systems, e.g. for piano notation, or entire scores which can possibly be comprised of up to 16 individual systems.

To manually assign notes to a system, click



to move the selected notes one line on a stave higher. Click



to move them one line lower. This results in the note being connected to the line (independent of the [MIDI](#)

channel or pitch). This manually set allocation can be undone by clicking on



"Automatic staff allocation"

When transcribing a MIDI piano recording, splitting the notes into a two-line piano system using the split point is recommended. The points where individual notes are placed incorrectly in a line can be corrected easily by assigning the notes manually with a click to the desired stave.

The automatic allocation of the score to a specific line is flexible. Either the MIDI channel of the note event, the pitch, or even a combination of the two can make up the criteria. This permits simpler and

faster distribution of MIDI notes in the score line.

For example, it's often the case with some standard MIDI files that a particular piano piece's lower system notes have a different MIDI channel than that of the notes of the upper staff. Let's assume the notes for the right hand are on channel 1 and the notes for the left hand are on channel 2. In this case you should set up two staves for the staff in the note staff settings. The easiest way to do this is with the "Piano" preset. For the first staff, set the MIDI channel allocation to "Ch. 1" in the "Channel" selection box and "Ch. 2" for the second staff. Deactivate allocation according to pitch by setting the split point to 0 (see MIDI score settings dialog).

The rules for allocation are as follows:

If the (preset) option "Automatic staff allocation" is set for the note, then the staves will be played through until the MIDI channel corresponds with it and the pitch is over or equal to the split point.

Note:

It may happen that some notes are not shown at all as they are not yet allocated to a staff.

Multi-voice notation

Up to two independent voices can be annotated for each staff. The voices differ in the direction of the note stems: the first voice is always with the stem pointing upwards, the second with the stem pointing downwards. Rests are displayed individually for each voice.

Multi-voice notation can simplify the score considerably and enable multiple instruments or parts to be displayed in one staff together.



You can set the voice by selecting the notes and clicking on the button or menu command "Assign first voice" or "Assign second voice".



This sets the stem direction of the notes, and therefore the voice itself.

This assignment can be undone by clicking on

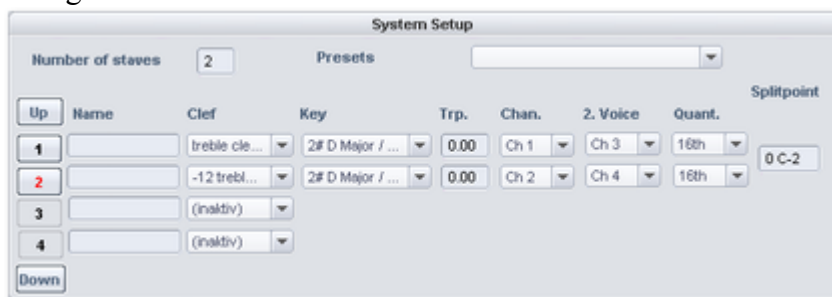


"Automatic staff assignment for notes".

For automatic voice assignment, the note's [MIDI](#) channel has to be analyzed.

To do this, set up a MIDI channel for the second voice in the staff properties dialog. This can be set individually for each staff. All notes of a staff whose MIDI channel has not yet been assigned to a second voice, are added to the first voice.

Voice assignment via the MIDI channel can be practical when displaying standard MIDI files with multi-voice piano pieces if the voices of the right hand are set to the first and second MIDI channels and the voices of the left hand are set to MIDI channels three and four. In this case, apply the following settings:



Note:

If there is no MIDI channel selected for voice assignment, only one voice will be annotated (if manual voice assignment does not occur).

MIDI score settings dialog



Open score settings dialog for stave and page properties

Note stave and page format settings can be set here. None of the settings have any influence on the [MIDI](#)

data itself, but rather only on the display of the score.

Note: The affected stave settings are always applied to all MIDI objects situated on the current track. The page format settings are global and valid for every [VIP](#)

Stave settings

All settings for the stave and display parameters/options can be accessed via this dialog page. Here you can enter the clef.

Samplitude Music Studio 15 provides [MIDI](#)

files with up to 16 staves on one track. For each staff, the clef, display transposition (for instruments that transpose, for example, a saxophone), and display quantization can be specified individually.

Furthermore, an instrument's prefix ("Name") can be set as well as the MIDI channel for automatic stave/voice assignment.

Similarly, the split point serves automatic stave assignment: Notes above the split point are added to the upper stave, while those under the split point are added to the stave beneath it (as long as the MIDI channel matches).

The active staff is recognizable via the index marked in red. The list of 16 staves can be scrolled vertically using the arrow buttons (up/down). In the lower range the display options of the active staff are shown.

Optionally, all changes to settings, display options, clef, and display quantization are always transferred equally to all staves.

Note display: Interpretation options

None of the options have any influence on the [MIDI](#) files or playback.

Simplify note lengths (interpretation)

Displays rests and slurred notes in such a way that the score is as legible as possible without influencing playback.

Automatic staccato articulations

A staccato symbol is added to a note whose value is considerably longer than the "real MIDI note". This is practical when working with simplified length display.



Option: "Simplify note lengths (interpretation)" selected.

Additional option: "Automatic staccato articulations".

Hide note overlaps

Prevents the overlapping of sequential notes which, for example, arises as a result of playing legato:

Recognize triplets

Activate this option if triplets are present in the MIDI object.

Please note:

The display quantization value always has to be one step finer than the smallest discernible triplet value. To recognize one eighth triplets, display quantization has to be set to at least one sixteenth (or to 1/64 for 1/32 triplets).

Strict measure/pulse division

There are no note or rest values longer than a beat subgroup (pulse). Longer notes are displayed as multiple slurred notes. This can simplify the legibility of the score.

Larger beam groups

Beam groups are partially compiled across beat subgroups. This can simplify the legibility of the score.

Recognize grace notes

Note values which are much shorter than the display quantization value are annotated as flam notes as long as a base note is present.

Notation symbols

Clef



There are four clefs available in Samplitude Music Studio 15: violin, bass, tenor, and alto clef.

Samplitude Music Studio 15 differentiates between base clef and clef change. The base clef can be set up for every staff in "Score settings" (and applies to all [MIDI](#)

objects on the current track). A clef inserted from the tool bar, will be interpreted as a clef change. Clef changes are possible any number of times in a song and also within beats.

Insert: Activate the staff into which the clef should be inserted (by clicking on the staff signature to the left).

Position the play cursor at the desired insert point and click on the desired clef in the toolbar. Move the playback cursor to the desired insert position and click on the desired clef in the toolbar. The clef will be inserted musically, not graphically, with a clef change at position 10:01:000 (the beginning of the tenth beat) the clef symbol at the end of the ninth beat will be displayed according to note set rules.

Clef changes can also be deleted by clicking on clef symbol with the eraser (or the right mouse button).

Beat signature

The metric and beat signature symbols are created automatically from the tempo markers of the [VIP](#) project.

Beat changes are possible at every full beat border. In addition, you might want to create a beat count measure marker with the new signature (for example, 6/8) at the desired position. If there are no beat

count measure changes, then it's enough to set the bar type of the piece (for example, 3/4) in the transport control.

Accidental

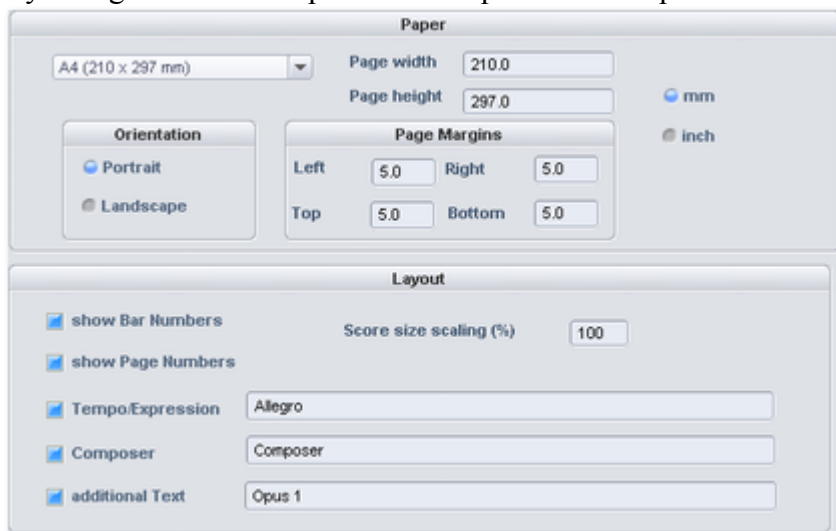


Enharmonic change

Samplitude Music Studio 15 sets the sharps and flats according to the clef description you selected. It is often the case, however, that enharmonic change can considerably optimize the legibility of certain passages. In this case you can work manually. To change one or more selected notes enharmonically, click on the corresponding button. The function transforms flats into sharps and vice versa.

Page format settings

You can select the page format independent of the printer settings so that it always has the same note layout regardless of workplace and independent of the printers installed in Windows.



In the score/page format setting, texts for tempo description, composer, and an additional text can be entered. Similarly, you can choose which layout elements should appear on the page (check boxes for beat numbers, page numbers, and texts).

Printing score

Samplitude Music Studio 15 automatically creates the layout of the score and allows optimal division of staves and staves on the page. You only need to specify the page size, orientation, and page borders.

- **Note size:** Here you can scale the size of the note symbols and the printout. This is actually irrelevant when working using the monitor's display, since you can zoom whenever you want anyway. However, the size of the notes does influence at which position a line or page break occurs.
- **Set a value smaller than 100%** to get more beats/staves onto one piece of paper.
- **Set higher values than 100%** in order to keep larger note symbols on the printout.

Print notes

Activate the print process in the "Score -> Print notes" menu or via the print button. Furthermore, a printer dialog window appears which appears differently for each printer or printer driver. Depending on the printer there are various options, e.g. the selection of pages you wish to print and the number of copies. Make sure that you have set up the same paper format for the printer as for the page mode, otherwise the printout may be scaled and the page ratio changed.

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The score

The automatic conversion of [MIDI](#)

data into score is usually sufficient for editing MIDI data as efficiency is required here instead of a perfect, ready-to-print display. However, it may still be necessary to adjust some of the display options while editing. The display options can be found in the MIDI score properties dialog, which you can open by clicking on the "Print" button.



Opens the score sheet settings dialog for notation and page properties.

This is also where the presets are stored. These are pre-programmed standard settings for certain instruments or instrumentation such as strings or orchestra. Selecting a preset improves the score display and its readability.



Treble clef view (preset)



Switch notation display by selecting the piano clef preset.

Further explanations of the notation system can be found below.

Editing MIDI data in the score sheet

Selection

As usual you can select notes by clicking them. You can select a group of notes (e.g. a chord) by sketching a frame over them while holding down the mouse button. Select multiple single notes by pressing "Ctrl".

Note parameters

The parameters pitch, velocity, and length can be changed for one or several selected notes. If you have selected one or several notes the data of the current note will appear in the info bar above the score view. Changing a parameter may have a comparable effect on all selected notes, just like in the matrix editor.

Move and transpose

To move notes, first select and then drag them to the desired position. Here the info box can help you keep track of the pitch or position. The step size when moving is determined by the selected quantization raster in the [MIDI](#) editor.

Copy

Select the desired notes and copy them by holding down "Ctrl" and dragging the mouse. Alternatively, you can also use the copy function of the edit menu.

Insert new notes

You can also insert new notes in the score editor by using the pen. Click on the desired position with the pen, hold down the mouse button and, if necessary, correct the position and pitch. If you let go of the mouse key, Samplitude Music Studio 15 will add a new note of the same length as the selected length quantization value. You can only insert new notes into the active staff. For instance, to insert a note in the lower part of a piano system, first click on the lower staff in the system on the left.

Only notes are inserted that correspond with the current pitch. Non-scale notes or chromatic intermediate steps are skipped. When you enter conventional music material with the mouse, diatonic insert mode increases the chances of hitting the correct note. If a new prefix is to be added to the note, you can move the note chromatically with the arrow key. This way an inserted F in C major can be transformed into an F# by pressing "Page up".

Delete notes

You can delete notes by:

- selecting them and pressing "Del" or
- by clicking on them with the eraser (or the right mouse button)

Insert notation symbols

Clef symbols can be inserted at the current cursor position by pressing the corresponding clef symbol in the active system.

Delete notation symbol

Notation symbols such as clef and pitch cannot be selected, since they are meta information for the notation display and no [MIDI](#) events have been allocated to them. They can also be deleted by clicking them with the eraser (or the right mouse button).

Adjusting and optimizing the score

Samplitude Music Studio 15 automatically generates a notation display from the [MIDI](#) events contained in the MIDI object. This is always correct with regard to pitch and position. However, this does not mean that the notation can be read optimally, since displaying note lengths also plays an important role in this context. In this case, the notation permits more interpretation flexibility so that the user usually has to intervene. The illustration shows a typical example of how poor a readable transformation of a sixteenth note piano sequence would look in notation.

This representation may be correct, but it is not readable. Why is that? The MIDI events contain very precise information on the start of a note, i.e. its length and pitch, which has to be taken into account during playback. It may influence the groove of a song if the notes are always slightly shorter than sixteenth notes. If this were to be displayed correctly in the notation, then the score would be unreadable as in the example above. The MIDI events also do not contain information on whether the gap between two notes is a real rest, its harmonic correlations (pitch), and the characteristics of the dynamic sequences. This is why automatic processing of notation always differs from what would be ideal. Samplitude Music Studio 15 includes a number of automatically and manually controllable functions for making it easier to read the notation. The reworked version of the the above score illustration shows how big the difference can be.

Note allocation in multiple staves

The term "Stave" refers to an individual line within a staff as well as all staves of a score. In cases where it is important to be able to differentiate a score and a staff from one another, we use the term "Stave" for the score and "staff" for a single system.

What is meant by a "Stave" can often be interpreted from this relation, for example, in a two-handed piano piece, "upper" or "lower" systems are referenced.

Samplitude Music Studio 15 provides multiple systems, e.g. for piano notation, or entire scores which can possibly be comprised of up to 16 individual systems.

To manually assign notes to a system, click



to move the selected notes one line on a stave higher. Click



to move them one line lower. This results in the note being connected to the line (independent of the

[MIDI](#)

channel or pitch). This manually set allocation can be undone by clicking on



"Automatic staff allocation"

When transcribing a MIDI piano recording, splitting the notes into a two-line piano system using the split point is recommended. The points where individual notes are placed incorrectly in a line can be corrected easily by assigning the notes manually with a click to the desired stave.

The automatic allocation of the score to a specific line is flexible. Either the MIDI channel of the note event, the pitch, or even a combination of the two can make up the criteria. This permits simpler and faster distribution of MIDI notes in the score line.

For example, it's often the case with some standard MIDI files that a particular piano piece's lower system notes have a different MIDI channel than that of the notes of the upper stave. Let's assume the notes for the right hand are on channel 1 and the notes for the left hand are on channel 2. In this case you should set up two staves for the stave in the note stave settings. The easiest way to do this is with the "Piano" preset. For the first staff, set the MIDI channel allocation to "Ch. 1" in the "Channel" selection box and "Ch. 2" for the second staff. Deactivate allocation according to pitch by setting the split point to 0 (see MIDI score settings dialog).

The rules for allocation are as follows:

If the (preset) option "Automatic stave allocation" is set for the note, then the staves will be played through until the MIDI channel corresponds with it and the pitch is over or equal to the split point.

Note:

It may happen that some notes are not shown at all as they are not yet allocated to a stave.

Multi-voice notation

Up to two independent voices can be annotated for each staff. The voices differ in the direction of the note stems: the first voice is always with the stem pointing upwards, the second with the stem pointing downwards. Rests are displayed individually for each voice.

Multi-voice notation can simplify the score considerably and enable multiple instruments or parts to be displayed in one staff together.



You can set the voice by selecting the notes and clicking on the button or menu command "Assign first voice" or "Assign second voice".



This sets the stem direction of the notes, and therefore the voice itself.

This assignment can be undone by clicking on



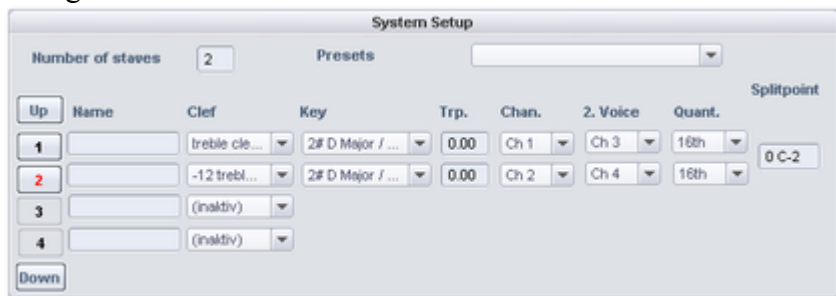
"Automatic staff assignment for notes".

For automatic voice assignment, the note's [MIDI](#) channel has to be analyzed.

To do this, set up a MIDI channel for the second voice in the stave properties dialog. This can be set

individually for each staff. All notes of a staff whose MIDI channel has not yet been assigned to a second voice, are added to the first voice.

Voice assignment via the MIDI channel can be practical when displaying standard MIDI files with multi-voice piano pieces if the voices of the right hand are set to the first and second MIDI channels and the voices of the left hand are set to MIDI channels three and four. In this case, apply the following settings:



Note:

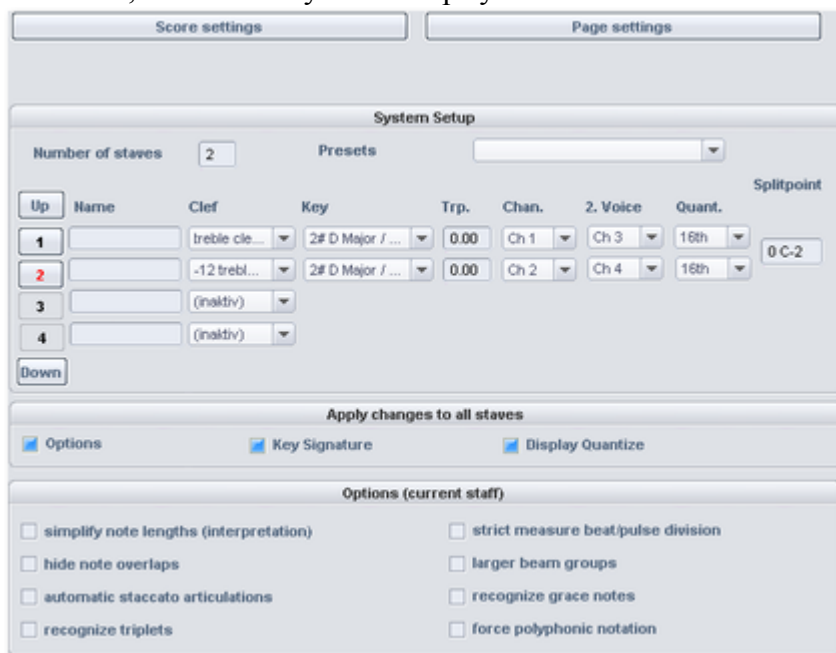
If there is no MIDI channel selected for voice assignment, only one voice will be annotated (if manual voice assignment does not occur).

MIDI score settings dialog



Open score settings dialog for stave and page properties

Note stave and page format settings can be set here. None of the settings have any influence on the [MIDI](#) data itself, but rather only on the display of the score.



Note: The affected stave settings are always applied to all MIDI objects situated on the current track. The page format settings are global and valid for every [VIP](#).

Stave settings

All settings for the stave and display parameters/options can be accessed via this dialog page. Here you can enter the clef.

Samplitude Music Studio 15 provides [MIDI](#)

files with up to 16 staves on one track. For each staff, the clef, display transposition (for instruments that

transpose, for example, a saxophone), and display quantization can be specified individually. Furthermore, an instrument's prefix ("Name") can be set as well as the MIDI channel for automatic stave/voice assignment.

Similarly, the split point serves automatic stave assignment: Notes above the split point are added to the upper stave, while those under the split point are added to the stave beneath it (as long as the MIDI channel matches).

The active staff is recognizable via the index marked in red. The list of 16 staves can be scrolled vertically using the arrow buttons (up/down). In the lower range the display options of the active staff are shown. Optionally, all changes to settings, display options, clef, and display quantization are always transferred equally to all staves.

Note display: Interpretation options

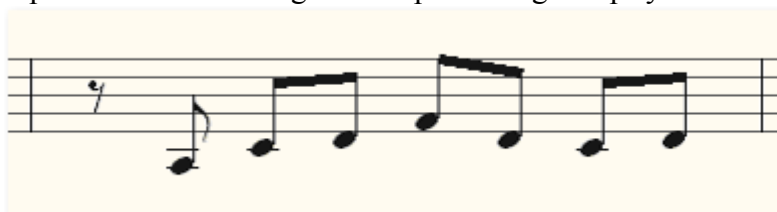
None of the options have any influence on the [MIDI](#) files or playback.

Simplify note lengths (interpretation)

Displays rests and slurred notes in such a way that the score is as legible as possible without influencing playback.

Automatic staccato articulations

A staccato symbol is added to a note whose value is considerably longer than the "real MIDI note". This is practical when working with simplified length display.



Option: "Simplify note lengths (interpretation)" selected.

Additional option: "Automatic staccato articulations".

Hide note overlaps

Prevents the overlapping of sequential notes which, for example, arises as a result of playing legato:

Recognize triplets

Activate this option if triplets are present in the MIDI object.

Please note:

The display quantization value always has to be one step finer than the smallest discernible triplet value. To recognize one eighth triplets, display quantization has to be set to at least one sixteenth (or to 1/64 for 1/32 triplets).

Strict measure/pulse division

There are no note or rest values longer than a beat subgroup (pulse). Longer notes are displayed as multiple slurred notes. This can simplify the legibility of the score.

Larger beam groups

Beam groups are partially compiled across beat subgroups. This can simplify the legibility of the score.

Recognize grace notes

Note values which are much shorter than the display quantization value are annotated as flam notes as long as a base note is present.

Notation symbols

Clef



There are four clefs available in Samplitude Music Studio 15: violin, bass, tenor, and alto clef.

Samplitude Music Studio 15 differentiates between base clef and clef change. The base clef can be set up for every staff in "Score settings" (and applies to all [MIDI](#) objects on the current track). A clef inserted from the tool bar, will be interpreted as a clef change. Clef changes are possible any number of times in a song and also within beats.

Insert: Activate the staff into which the clef should be inserted (by clicking on the staff signature to the left).

Position the play cursor at the desired insert point and click on the desired clef in the toolbar. Move the playback cursor to the desired insert position and click on the desired clef in the toolbar. The clef will be inserted musically, not graphically, with a clef change at position 10:01:000 (the beginning of the tenth beat) the clef symbol at the end of the ninth beat will be displayed according to note set rules.

Clef changes can also be deleted by clicking on clef symbol with the eraser (or the right mouse button).

Beat signature

The metric and beat signature symbols are created automatically from the tempo markers of the [VIP](#) project.

Beat changes are possible at every full beat border. In addition, you might want to create a beat count measure marker with the new signature (for example, 6/8) at the desired position. If there are no beat count measure changes, then it's enough to set the bar type of the piece (for example, 3/4) in the transport control.

Accidental

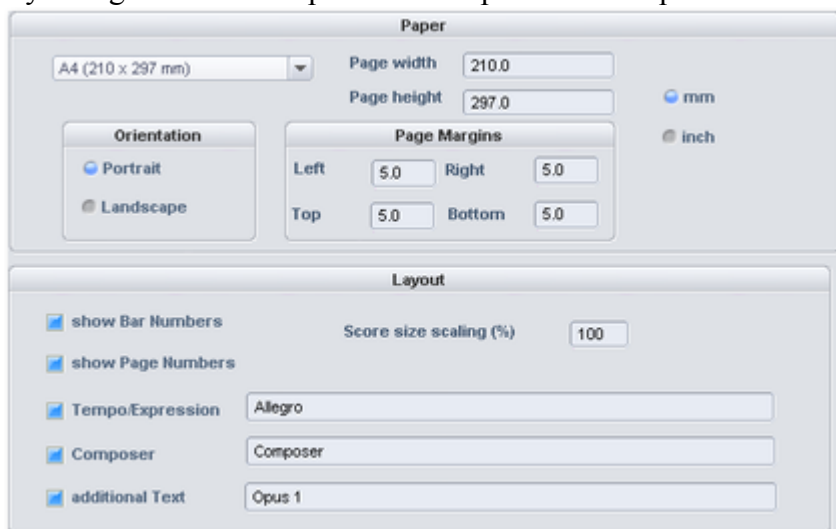


Enharmonic change

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Page format settings

You can select the page format independent of the printer settings so that it always has the same note layout regardless of workplace and independent of the printers installed in Windows.



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Printing score

Samplitude Music Studio 15 automatically creates the layout of the score and allows optimal division of staves and staves on the page. You only need to specify the page size, orientation, and page borders.

- **Note size:** Here you can scale the size of the note symbols and the printout. This is actually irrelevant when working using the monitor's display, since you can zoom whenever you want anyway. However, the size of the notes does influence at which position a line or page break occurs.
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Print notes

Activate the print process in the "Score -> Print notes" menu or via the print button. Furthermore, a printer dialog window appears which appears differently for each printer or printer driver. Depending on the printer there are various options, e.g. the selection of pages you wish to print and the number of copies. Make sure that you have set up the same paper format for the printer as for the page mode, otherwise the printout may be scaled and the page ratio changed.

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- The lines which highlight the page borders on the monitor
- Mouse pointers
- The color display of the currently selected notes and playback areas.

When printing a file (e.g. as a PDF file with a special printer driver) please note that you have to activate the option "Save fonts in document" in the printer driver so that the notation symbols will be displayed correctly in the document.

Editing MIDI data in the score sheet

Selection

As usual you can select notes by clicking them. You can select a group of notes (e.g. a chord) by sketching a frame over them while holding down the mouse button. Select multiple single notes by pressing "Ctrl".

Note parameters

The parameters pitch, velocity, and length can be changed for one or several selected notes. If you have selected one or several notes the data of the current note will appear in the info bar above the score view. Changing a parameter may have a comparable effect on all selected notes, just like in the matrix editor.

Move and transpose

To move notes, first select and then drag them to the desired position. Here the info box can help you keep track of the pitch or position. The step size when moving is determined by the selected quantization raster in the [MIDI](#) editor.

Copy

Select the desired notes and copy them by holding down "Ctrl" and dragging the mouse. Alternatively, you can also use the copy function of the edit menu.

Insert new notes

You can also insert new notes in the score editor by using the pen. Click on the desired position with the pen, hold down the mouse button and, if necessary, correct the position and pitch. If you let go of the mouse key, Samplitude Music Studio 15 will add a new note of the same length as the selected length quantization value. You can only insert new notes into the active stave. For instance, to insert a note in the lower part of a piano system, first click on the lower staff in the system on the left.

Only notes are inserted that correspond with the current pitch. Non-scale notes or chromatic intermediate steps are skipped. When you enter conventional music material with the mouse, diatonic insert mode increases the chances of hitting the correct note. If a new prefix is to be added to the note, you can move the note chromatically with the arrow key. This way an inserted F in C major can be transformed into an F# by pressing "Page up".

Delete notes

You can delete notes by:

- selecting them and pressing "Del" or
- by clicking on them with the eraser (or the right mouse button)

Insert notation symbols

Clef symbols can be inserted at the current cursor position by pressing the corresponding clef symbol in the active system.

Delete notation symbol

Notation symbols such as clef and pitch cannot be selected, since they are meta information for the notation display and no [MIDI](#) events have been allocated to them. They can also be deleted by clicking them with the eraser (or the

right mouse button).

Adjusting and optimizing the score

Samplitude Music Studio 15 automatically generates a notation display from the [MIDI](#) events contained in the MIDI object. This is always correct with regard to pitch and position. However, this does not mean that the notation can be read optimally, since displaying note lengths also plays an important role in this context. In this case, the notation permits more interpretation flexibility so that the user usually has to intervene. The illustration shows a typical example of how poor a readable transformation of a sixteenth note piano sequence would look in notation.

This representation may be correct, but it is not readable. Why is that? The MIDI events contain very precise information on the start of a note, i.e. its length and pitch, which has to be taken into account during playback. It may influence the groove of a song if the notes are always slightly shorter than sixteenth notes. If this were to be displayed correctly in the notation, then the score would be unreadable as in the example above. The MIDI events also do not contain information on whether the gap between two notes is a real rest, its harmonic correlations (pitch), and the characteristics of the dynamic sequences. This is why automatic processing of notation always differs from what would be ideal. Samplitude Music Studio 15 includes a number of automatically and manually controllable functions for making it easier to read the notation. The reworked version of the the above score illustration shows how big the difference can be.

Note allocation in multiple staves

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What is meant by a "Stave" can often be interpreted from this relation, for example, in a two-handed piano piece, "upper" or "lower" systems are referenced.

Samplitude Music Studio 15 provides multiple systems, e.g. for piano notation, or entire scores which can possibly be comprised of up to 16 individual systems.

To manually assign notes to a system, click



to move the selected notes one line on a stave higher. Click



to move them one line lower. This results in the note being connected to the line (independent of the [MIDI](#)

channel or pitch). This manually set allocation can be undone by clicking on



"Automatic staff allocation"

When transcribing a MIDI piano recording, splitting the notes into a two-line piano system using the split point is recommended. The points where individual notes are placed incorrectly in a line can be corrected easily by assigning the notes manually with a click to the desired stave.

The automatic allocation of the score to a specific line is flexible. Either the MIDI channel of the note event, the pitch, or even a combination of the two can make up the criteria. This permits simpler and faster distribution of MIDI notes in the score line.

For example, it's often the case with some standard MIDI files that a particular piano piece's lower system notes have a different MIDI channel than that of the notes of the upper stave. Let's assume the notes for the right hand are on channel 1 and the notes for the left hand are on channel 2. In this case you should set up two staves for the stave in the note stave settings. The easiest way to do this is with the "Piano" preset. For the first staff, set the MIDI channel allocation to "Ch. 1" in the "Channel" selection box and "Ch. 2" for the second staff. Deactivate allocation according to pitch by setting the split point to

0 (see MIDI score settings dialog).

The rules for allocation are as follows:

If the (preset) option "Automatic stave allocation" is set for the note, then the staves will be played through until the MIDI channel corresponds with it and the pitch is over or equal to the split point.

Note:

It may happen that some notes are not shown at all as they are not yet allocated to a stave.

Multi-voice notation

Up to two independent voices can be annotated for each staff. The voices differ in the direction of the note stems: the first voice is always with the stem pointing upwards, the second with the stem pointing downwards. Rests are displayed individually for each voice.

Multi-voice notation can simplify the score considerably and enable multiple instruments or parts to be displayed in one staff together.



You can set the voice by selecting the notes and clicking on the button or menu command "Assign first voice" or "Assign second voice".



This sets the stem direction of the notes, and therefore the voice itself.

This assignment can be undone by clicking on

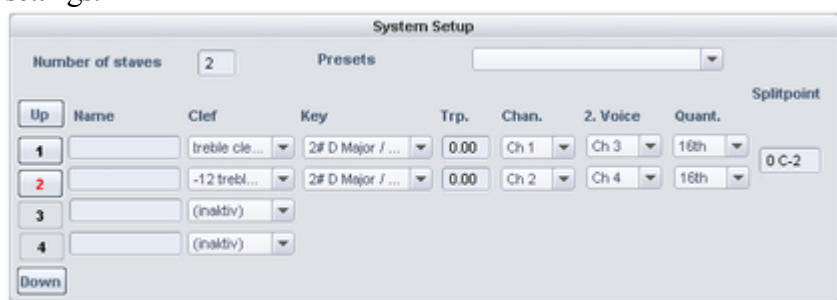


"Automatic staff assignment for notes".

For automatic voice assignment, the note's [MIDI](#) channel has to be analyzed.

To do this, set up a MIDI channel for the second voice in the stave properties dialog. This can be set individually for each staff. All notes of a stave whose MIDI channel has not yet been assigned to a second voice, are added to the first voice.

Voice assignment via the MIDI channel can be practical when displaying standard MIDI files with multi-voice piano pieces if the voices of the right hand are set to the first and second MIDI channels and the voices of the left hand are set to MIDI channels three and four. In this case, apply the following settings:



Note:

If there is no MIDI channel selected for voice assignment, only one voice will be annotated (if manual voice assignment does not occur).

MIDI score settings dialog



Open score settings dialog for stave and page properties

Note stave and page format settings can be set here. None of the settings have any influence on the [MIDI](#) data itself, but rather only on the display of the score.

Note: The affected staff settings are always applied to all MIDI objects situated on the current track. The page format settings are global and valid for every [VIP](#).

Staff settings

All settings for the staff and display parameters/options can be accessed via this dialog page. Here you can enter the clef.

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files with up to 16 staves on one track. For each staff, the clef, display transposition (for instruments that transpose, for example, a saxophone), and display quantization can be specified individually.

Furthermore, an instrument's prefix ("Name") can be set as well as the MIDI channel for automatic staff/voice assignment.

Similarly, the split point serves automatic staff assignment: Notes above the split point are added to the upper staff, while those under the split point are added to the staff beneath it (as long as the MIDI channel matches).

The active staff is recognizable via the index marked in red. The list of 16 staves can be scrolled vertically using the arrow buttons (up/down). In the lower range the display options of the active staff are shown. Optionally, all changes to settings, display options, clef, and display quantization are always transferred equally to all staves.

Note display: Interpretation options

None of the options have any influence on the [MIDI](#) files or playback.

Simplify note lengths (interpretation)

Displays rests and slurred notes in such a way that the score is as legible as possible without influencing playback.

Automatic staccato articulations

A staccato symbol is added to a note whose value is considerably longer than the "real MIDI note". This is practical when working with simplified length display.



Option: "Simplify note lengths (interpretation)" selected.

Additional option: "Automatic staccato articulations".

Hide note overlaps

Prevents the overlapping of sequential notes which, for example, arises as a result of playing legato:

Recognize triplets

Activate this option if triplets are present in the MIDI object.

Please note:

The display quantization value always has to be one step finer than the smallest discernible triplet value.

To recognize one eighth triplets, display quantization has to be set to at least one sixteenth (or to 1/64 for 1/32 triplets).

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There are no note or rest values longer than a beat subgroup (pulse). Longer notes are displayed as multiple slurred notes. This can simplify the legibility of the score.

Larger beam groups

Beam groups are partially compiled across beat subgroups. This can simplify the legibility of the score.

Recognize grace notes

Note values which are much shorter than the display quantization value are annotated as flam notes as long as a base note is present.

Notation symbols

Clef



There are four clefs available in Samplitude Music Studio 15: violin, bass, tenor, and alto clef.

Samplitude Music Studio 15 differentiates between base clef and clef change. The base clef can be set up for every stave in "Score settings" (and applies to all [MIDI](#)

objects on the current track). A clef inserted from the tool bar, will be interpreted as a clef change. Clef changes are possible any number of times in a song and also within beats.

Insert: Activate the staff into which the clef should be inserted (by clicking on the staff signature to the left).

Position the play cursor at the desired insert point and click on the desired clef in the toolbar. Move the playback cursor to the desired insert position and click on the desired clef in the toolbar. The clef will be inserted musically, not graphically, with a clef change at position 10:01:000 (the beginning of the tenth beat) the clef symbol at the end of the ninth beat will be displayed according to note set rules.

Clef changes can also be deleted by clicking on clef symbol with the eraser (or the right mouse button).

Beat signature

The metric and beat signature symbols are created automatically from the tempo markers of the [VIP](#) project.

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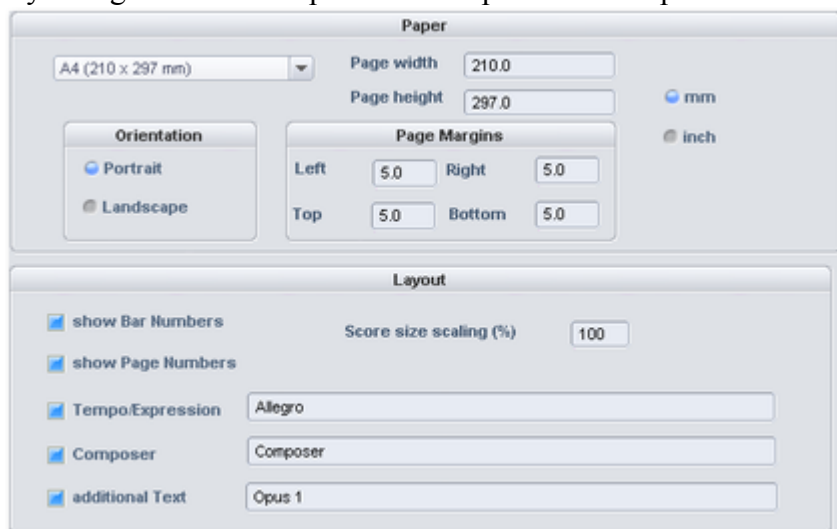


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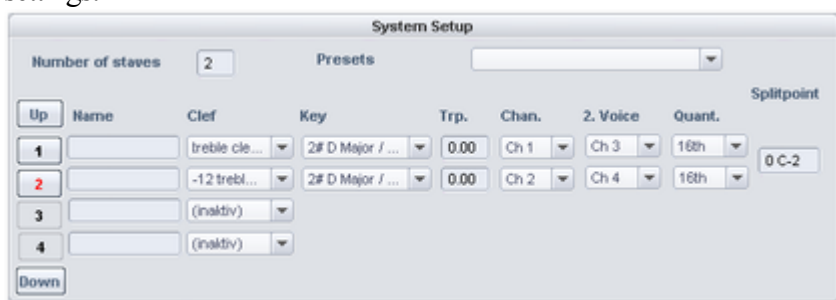


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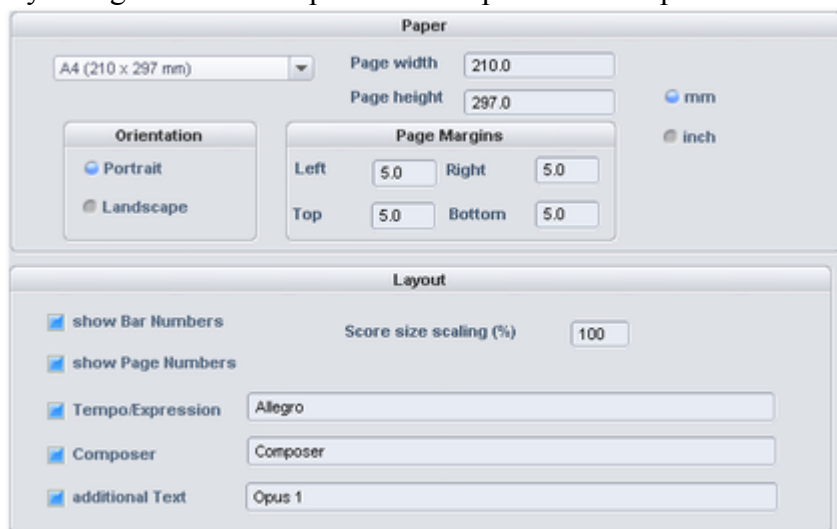


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For automatic voice assignment, the note's [MIDI](#) channel has to be analyzed.

To do this, set up a MIDI channel for the second voice in the stave properties dialog. This can be set individually for each staff. All notes of a stave whose MIDI channel has not yet been assigned to a second voice, are added to the first voice.

Voice assignment via the MIDI channel can be practical when displaying standard MIDI files with multi-voice piano pieces if the voices of the right hand are set to the first and second MIDI channels and the voices of the left hand are set to MIDI channels three and four. In this case, apply the following settings:

The screenshot shows the 'System Setup' dialog box. At the top, 'Number of staves' is set to 2. Below is a table with columns: Up, Name, Clef, Key, Trp., Chan., 2. Voice, Quant., and Splitpoint. There are four rows for staves 1 through 4. Staff 1 has 'treble cle...', '2# D Major / ...', '0.00', 'Ch 1', 'Ch 3', '16th', and '0 C-2'. Staff 2 has '-12 trebl...', '2# D Major / ...', '0.00', 'Ch 2', 'Ch 4', '16th', and is empty. Staves 3 and 4 are marked '(inaktiv)'. There are 'Up' and 'Down' buttons on the left and a 'Presets' dropdown at the top right.

Up	Name	Clef	Key	Trp.	Chan.	2. Voice	Quant.	Splitpoint
1		treble cle...	2# D Major / ...	0.00	Ch 1	Ch 3	16th	0 C-2
2		-12 trebl...	2# D Major / ...	0.00	Ch 2	Ch 4	16th	
3		(inaktiv)						
4		(inaktiv)						

Note:

If there is no MIDI channel selected for voice assignment, only one voice will be annotated (if manual voice assignment does not occur).

MIDI score settings dialog



Open score settings dialog for stave and page properties

Note stave and page format settings can be set here. None of the settings have any influence on the [MIDI](#) data itself, but rather only on the display of the score.

The screenshot shows the 'MIDI score settings dialog' with two tabs: 'Score settings' and 'Page settings'. The 'Score settings' tab is active, showing a 'System Setup' section identical to the one in the previous image. Below this is an 'Apply changes to all staves' section with checkboxes for 'Options', 'Key Signature', and 'Display Quantize'. At the bottom is an 'Options (current staff)' section with several checkboxes: 'simplify note lengths (interpretation)', 'hide note overlaps', 'automatic staccato articulations', 'recognize triplets', 'strict measure beat/pulse division', 'larger beam groups', 'recognize grace notes', and 'force polyphonic notation'.

Note: The affected stave settings are always applied to all MIDI objects situated on the current track. The page format settings are global and valid for every [VIP](#).

Stave settings

All settings for the stave and display parameters/options can be accessed via this dialog page. Here you can enter the clef.

Samplitude Music Studio 15 provides [MIDI](#)

files with up to 16 staves on one track. For each staff, the clef, display transposition (for instruments that transpose, for example, a saxophone), and display quantization can be specified individually.

Furthermore, an instrument's prefix ("Name") can be set as well as the MIDI channel for automatic stave/voice assignment.

Similarly, the split point serves automatic stave assignment: Notes above the split point are added to the upper stave, while those under the split point are added to the stave beneath it (as long as the MIDI channel matches).

The active staff is recognizable via the index marked in red. The list of 16 staves can be scrolled vertically using the arrow buttons (up/down). In the lower range the display options of the active staff are shown.

Optionally, all changes to settings, display options, clef, and display quantization are always transferred equally to all staves.

Note display: Interpretation options

None of the options have any influence on the [MIDI](#) files or playback.

Simplify note lengths (interpretation)

Displays rests and slurred notes in such a way that the score is as legible as possible without influencing playback.

Automatic staccato articulations

A staccato symbol is added to a note whose value is considerably longer than the "real MIDI note". This is practical when working with simplified length display.



Option: "Simplify note lengths (interpretation)" selected.

Additional option: "Automatic staccato articulations".

Hide note overlaps

Prevents the overlapping of sequential notes which, for example, arises as a result of playing legato:

Recognize triplets

Activate this option if triplets are present in the MIDI object.

Please note:

The display quantization value always has to be one step finer than the smallest discernible triplet value. To recognize one eighth triplets, display quantization has to be set to at least one sixteenth (or to 1/64 for 1/32 triplets).

Strict measure/pulse division

There are no note or rest values longer than a beat subgroup (pulse). Longer notes are displayed as multiple slurred notes. This can simplify the legibility of the score.

Larger beam groups

Beam groups are partially compiled across beat subgroups. This can simplify the legibility of the score.

Recognize grace notes

Note values which are much shorter than the display quantization value are annotated as flam notes as long as a base note is present.

Notation symbols

Clef



There are four clefs available in Samplitude Music Studio 15: violin, bass, tenor, and alto clef. Samplitude Music Studio 15 differentiates between base clef and clef change. The base clef can be set up for every staff in "Score settings" (and applies to all [MIDI](#) objects on the current track). A clef inserted from the tool bar, will be interpreted as a clef change. Clef changes are possible any number of times in a song and also within beats.

Insert: Activate the staff into which the clef should be inserted (by clicking on the staff signature to the left).

Position the play cursor at the desired insert point and click on the desired clef in the toolbar. Move the playback cursor to the desired insert position and click on the desired clef in the toolbar. The clef will be inserted musically, not graphically, with a clef change at position 10:01:000 (the beginning of the tenth beat) the clef symbol at the end of the ninth beat will be displayed according to note set rules.

Clef changes can also be deleted by clicking on clef symbol with the eraser (or the right mouse button).

Beat signature

The metric and beat signature symbols are created automatically from the tempo markers of the [VIP](#) project.

Beat changes are possible at every full beat border. In addition, you might want to create a beat count measure marker with the new signature (for example, 6/8) at the desired position. If there are no beat count measure changes, then it's enough to set the bar type of the piece (for example, 3/4) in the transport control.

Accidental



Enharmonic change

Samplitude Music Studio 15 sets the sharps and flats according to the clef description you selected. It is often the case, however, that enharmonic change can considerably optimize the legibility of certain passages. In this case you can work manually. To change one or more selected notes enharmonically, click on the corresponding button. The function transforms flats into sharps and vice versa.

Page format settings

You can select the page format independent of the printer settings so that it always has the same note layout regardless of workplace and independent of the printers installed in Windows.

In the score/page format setting, texts for tempo description, composer, and an additional text can be entered. Similarly, you can choose which layout elements should appear on the page (check boxes for beat numbers, page numbers, and texts).

Printing score

Samplitude Music Studio 15 automatically creates the layout of the score and allows optimal division of staves and staves on the page. You only need to specify the page size, orientation, and page borders.

- **Note size:** Here you can scale the size of the note symbols and the printout. This is actually irrelevant when working using the monitor's display, since you can zoom whenever you want anyway. However, the size of the notes does influence at which position a line or page break occurs.
- **Set a value smaller than 100%** to get more beats/staves onto one piece of paper.
- **Set higher values than 100%** in order to keep larger note symbols on the printout.

Print notes

Activate the print process in the "Score -> Print notes" menu or via the print button. Furthermore, a printer dialog window appears which appears differently for each printer or printer driver. Depending on the printer there are various options, e.g. the selection of pages you wish to print and the number of copies. Make sure that you have set up the same paper format for the printer as for the page mode, otherwise the printout may be scaled and the page ratio changed.

The following won't be printed, it's only visible on the monitor.

- The lines which highlight the page borders on the monitor
- Mouse pointers
- The color display of the currently selected notes and playback areas.

When printing a file (e.g. as a PDF file with a special printer driver) please note that you have to activate the option "Save fonts in document" in the printer driver so that the notation symbols will be displayed correctly in the document.

Multi-voice notation

Up to two independent voices can be annotated for each staff. The voices differ in the direction of the note stems: the first voice is always with the stem pointing upwards, the second with the stem pointing downwards. Rests are displayed individually for each voice.

Multi-voice notation can simplify the score considerably and enable multiple instruments or parts to be displayed in one staff together.



You can set the voice by selecting the notes and clicking on the button or menu command "Assign first voice" or "Assign second voice".



This sets the stem direction of the notes, and therefore the voice itself.

This assignment can be undone by clicking on

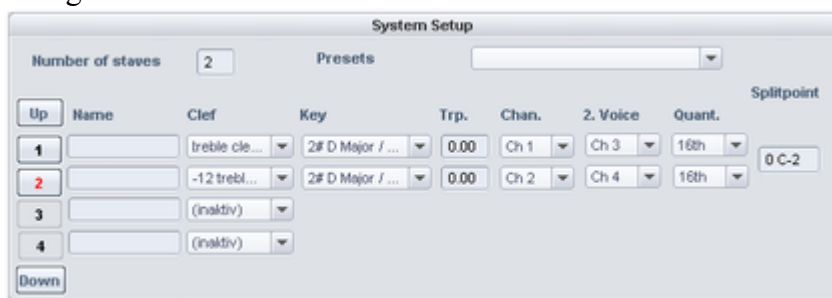


"Automatic staff assignment for notes".

For automatic voice assignment, the note's [MIDI](#) channel has to be analyzed.

To do this, set up a MIDI channel for the second voice in the stave properties dialog. This can be set individually for each staff. All notes of a stave whose MIDI channel has not yet been assigned to a second voice, are added to the first voice.

Voice assignment via the MIDI channel can be practical when displaying standard MIDI files with multi-voice piano pieces if the voices of the right hand are set to the first and second MIDI channels and the voices of the left hand are set to MIDI channels three and four. In this case, apply the following settings:



Note:

If there is no MIDI channel selected for voice assignment, only one voice will be annotated (if manual voice assignment does not occur).

MIDI score settings dialog



Open score settings dialog for stave and page properties

Note stave and page format settings can be set here. None of the settings have any influence on the [MIDI](#) data itself, but rather only on the display of the score.

Note: The affected staff settings are always applied to all MIDI objects situated on the current track. The page format settings are global and valid for every [VIP](#).

Staff settings

All settings for the staff and display parameters/options can be accessed via this dialog page. Here you can enter the clef.

Samplitude Music Studio 15 provides [MIDI](#)

files with up to 16 staves on one track. For each staff, the clef, display transposition (for instruments that transpose, for example, a saxophone), and display quantization can be specified individually.

Furthermore, an instrument's prefix ("Name") can be set as well as the MIDI channel for automatic staff/voice assignment.

Similarly, the split point serves automatic staff assignment: Notes above the split point are added to the upper staff, while those under the split point are added to the staff beneath it (as long as the MIDI channel matches).

The active staff is recognizable via the index marked in red. The list of 16 staves can be scrolled vertically using the arrow buttons (up/down). In the lower range the display options of the active staff are shown. Optionally, all changes to settings, display options, clef, and display quantization are always transferred equally to all staves.

Note display: Interpretation options

None of the options have any influence on the [MIDI](#) files or playback.

Simplify note lengths (interpretation)

Displays rests and slurred notes in such a way that the score is as legible as possible without influencing playback.

Automatic staccato articulations

A staccato symbol is added to a note whose value is considerably longer than the "real MIDI note". This is practical when working with simplified length display.



Option: "Simplify note lengths (interpretation)" selected.

Additional option: "Automatic staccato articulations".

Hide note overlaps

Prevents the overlapping of sequential notes which, for example, arises as a result of playing legato:

Recognize triplets

Activate this option if triplets are present in the MIDI object.

Please note:

The display quantization value always has to be one step finer than the smallest discernible triplet value.

To recognize one eighth triplets, display quantization has to be set to at least one sixteenth (or to 1/64 for 1/32 triplets).

Strict measure/pulse division

There are no note or rest values longer than a beat subgroup (pulse). Longer notes are displayed as multiple slurred notes. This can simplify the legibility of the score.

Larger beam groups

Beam groups are partially compiled across beat subgroups. This can simplify the legibility of the score.

Recognize grace notes

Note values which are much shorter than the display quantization value are annotated as flam notes as long as a base note is present.

Notation symbols

Clef



There are four clefs available in Samplitude Music Studio 15: violin, bass, tenor, and alto clef.

Samplitude Music Studio 15 differentiates between base clef and clef change. The base clef can be set up for every stave in "Score settings" (and applies to all [MIDI](#)

objects on the current track). A clef inserted from the tool bar, will be interpreted as a clef change. Clef changes are possible any number of times in a song and also within beats.

Insert: Activate the staff into which the clef should be inserted (by clicking on the staff signature to the left).

Position the play cursor at the desired insert point and click on the desired clef in the toolbar. Move the playback cursor to the desired insert position and click on the desired clef in the toolbar. The clef will be inserted musically, not graphically, with a clef change at position 10:01:000 (the beginning of the tenth beat) the clef symbol at the end of the ninth beat will be displayed according to note set rules.

Clef changes can also be deleted by clicking on clef symbol with the eraser (or the right mouse button).

Beat signature

The metric and beat signature symbols are created automatically from the tempo markers of the [VIP](#) project.

Beat changes are possible at every full beat border. In addition, you might want to create a beat count measure marker with the new signature (for example, 6/8) at the desired position. If there are no beat count measure changes, then it's enough to set the bar type of the piece (for example, 3/4) in the transport control.

Accidental

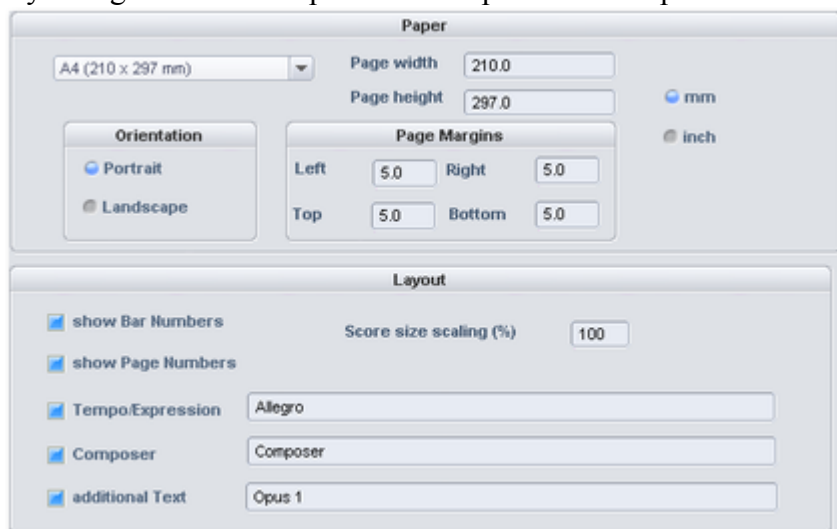


Enharmonic change

Samplitude Music Studio 15 sets the sharps and flats according to the clef description you selected. It is often the case, however, that enharmonic change can considerably optimize the legibility of certain passages. In this case you can work manually. To change one or more selected notes enharmonically, click on the corresponding button. The function transforms flats into sharps and vice versa.

Page format settings

You can select the page format independent of the printer settings so that it always has the same note layout regardless of workplace and independent of the printers installed in Windows.



In the score/page format setting, texts for tempo description, composer, and an additional text can be entered. Similarly, you can choose which layout elements should appear on the page (check boxes for beat numbers, page numbers, and texts).

Printing score

Samplitude Music Studio 15 automatically creates the layout of the score and allows optimal division of staves and staves on the page. You only need to specify the page size, orientation, and page borders.

- **Note size:** Here you can scale the size of the note symbols and the printout. This is actually irrelevant when working using the monitor's display, since you can zoom whenever you want anyway. However, the size of the notes does influence at which position a line or page break occurs.
- **Set a value smaller than 100%** to get more beats/staves onto one piece of paper.
- **Set higher values than 100%** in order to keep larger note symbols on the printout.

Print notes

Activate the print process in the "Score -> Print notes" menu or via the print button. Furthermore, a printer dialog window appears which appears differently for each printer or printer driver. Depending on the printer there are various options, e.g. the selection of pages you wish to print and the number of copies. Make sure that you have set up the same paper format for the printer as for the page mode, otherwise the printout may be scaled and the page ratio changed.

The following won't be printed, it's only visible on the monitor.

- The lines which highlight the page borders on the monitor
- Mouse pointers
- The color display of the currently selected notes and playback areas.

When printing a file (e.g. as a PDF file with a special printer driver) please note that you have to activate the option "Save fonts in document" in the printer driver so that the notation symbols will be displayed correctly in the document.

MIDI score settings dialog



Open score settings dialog for stave and page properties

Note stave and page format settings can be set here. None of the settings have any influence on the [MIDI](#) data itself, but rather only on the display of the score.

Note: The affected stave settings are always applied to all MIDI objects situated on the current track. The page format settings are global and valid for every [VIP](#).

Stave settings

All settings for the stave and display parameters/options can be accessed via this dialog page. Here you can enter the clef.

Samplitude Music Studio 15 provides [MIDI](#)

files with up to 16 staves on one track. For each staff, the clef, display transposition (for instruments that transpose, for example, a saxophone), and display quantization can be specified individually.

Furthermore, an instrument's prefix ("Name") can be set as well as the MIDI channel for automatic stave/voice assignment.

Similarly, the split point serves automatic stave assignment: Notes above the split point are added to the upper stave, while those under the split point are added to the stave beneath it (as long as the MIDI channel matches).

The active staff is recognizable via the index marked in red. The list of 16 staves can be scrolled vertically using the arrow buttons (up/down). In the lower range the display options of the active staff are shown. Optionally, all changes to settings, display options, clef, and display quantization are always transferred equally to all staves.

Note display: Interpretation options

None of the options have any influence on the [MIDI](#) files or playback.

Simplify note lengths (interpretation)

Displays rests and slurred notes in such a way that the score is as legible as possible without influencing

playback.

Automatic staccato articulations

A staccato symbol is added to a note whose value is considerably longer than the "real MIDI note". This is practical when working with simplified length display.



Option: "Simplify note lengths (interpretation)" selected.

Additional option: "Automatic staccato articulations".

Hide note overlaps

Prevents the overlapping of sequential notes which, for example, arises as a result of playing legato:

Recognize triplets

Activate this option if triplets are present in the MIDI object.

Please note:

The display quantization value always has to be one step finer than the smallest discernible triplet value. To recognize one eighth triplets, display quantization has to be set to at least one sixteenth (or to 1/64 for 1/32 triplets).

Strict measure/pulse division

There are no note or rest values longer than a beat subgroup (pulse). Longer notes are displayed as multiple slurred notes. This can simplify the legibility of the score.

Larger beam groups

Beam groups are partially compiled across beat subgroups. This can simplify the legibility of the score.

Recognize grace notes

Note values which are much shorter than the display quantization value are annotated as flam notes as long as a base note is present.

Notation symbols

Clef



There are four clefs available in Samplitude Music Studio 15: violin, bass, tenor, and alto clef.

Samplitude Music Studio 15 differentiates between base clef and clef change. The base clef can be set up for every staff in "Score settings" (and applies to all [MIDI](#)

objects on the current track). A clef inserted from the tool bar, will be interpreted as a clef change. Clef changes are possible any number of times in a song and also within beats.

Insert: Activate the staff into which the clef should be inserted (by clicking on the staff signature to the left).

Position the play cursor at the desired insert point and click on the desired clef in the toolbar. Move the playback cursor to the desired insert position and click on the desired clef in the toolbar. The clef will be inserted musically, not graphically, with a clef change at position 10:01:000 (the beginning of the tenth beat) the clef symbol at the end of the ninth beat will be displayed according to note set rules.

Clef changes can also be deleted by clicking on clef symbol with the eraser (or the right mouse button).

Beat signature

The metric and beat signature symbols are created automatically from the tempo markers of the [VIP](#) project.

Beat changes are possible at every full beat border. In addition, you might want to create a beat count

measure marker with the new signature (for example, 6/8) at the desired position. If there are no beat count measure changes, then it's enough to set the bar type of the piece (for example, 3/4) in the transport control.

Accidental

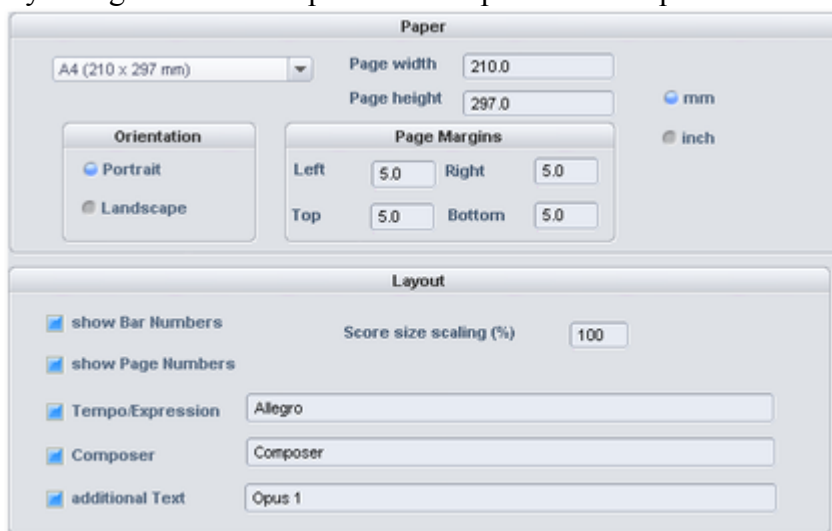


Enharmonic change

Samplitude Music Studio 15 sets the sharps and flats according to the clef description you selected. It is often the case, however, that enharmonic change can considerably optimize the legibility of certain passages. In this case you can work manually. To change one or more selected notes enharmonically, click on the corresponding button. The function transforms flats into sharps and vice versa.

Page format settings

You can select the page format independent of the printer settings so that it always has the same note layout regardless of workplace and independent of the printers installed in Windows.



In the score/page format setting, texts for tempo description, composer, and an additional text can be entered. Similarly, you can choose which layout elements should appear on the page (check boxes for beat numbers, page numbers, and texts).

Printing score

Samplitude Music Studio 15 automatically creates the layout of the score and allows optimal division of staves and staves on the page. You only need to specify the page size, orientation, and page borders.

- **Note size:** Here you can scale the size of the note symbols and the printout. This is actually irrelevant when working using the monitor's display, since you can zoom whenever you want anyway. However, the size of the notes does influence at which position a line or page break occurs.
- **Set a value smaller than 100%** to get more beats/staves onto one piece of paper.
- **Set higher values than 100%** in order to keep larger note symbols on the printout.

Print notes

Activate the print process in the "Score -> Print notes" menu or via the print button. Furthermore, a printer dialog window appears which appears differently for each printer or printer driver. Depending on the printer there are various options, e.g. the selection of pages you wish to print and the number of copies. Make sure that you have set up the same paper format for the printer as for the page mode, otherwise the printout may be scaled and the page ratio changed.

The following won't be printed, it's only visible on the monitor.

- The lines which highlight the page borders on the monitor
- Mouse pointers
- The color display of the currently selected notes and playback areas.

When printing a file (e.g. as a PDF file with a special printer driver) please note that you have to activate the option "Save fonts in document" in the printer driver so that the notation symbols will be displayed correctly in the document.

Stave settings

All settings for the stave and display parameters/options can be accessed via this dialog page. Here you can enter the clef.

Samplitude Music Studio 15 provides [MIDI](#)

files with up to 16 staves on one track. For each staff, the clef, display transposition (for instruments that transpose, for example, a saxophone), and display quantization can be specified individually.

Furthermore, an instrument's prefix ("Name") can be set as well as the MIDI channel for automatic stave/voice assignment.

Similarly, the split point serves automatic stave assignment: Notes above the split point are added to the upper stave, while those under the split point are added to the stave beneath it (as long as the MIDI channel matches).

The active staff is recognizable via the index marked in red. The list of 16 staves can be scrolled vertically using the arrow buttons (up/down). In the lower range the display options of the active staff are shown. Optionally, all changes to settings, display options, clef, and display quantization are always transferred equally to all staves.

Note display: Interpretation options

None of the options have any influence on the [MIDI](#) files or playback.

Simplify note lengths (interpretation)

Displays rests and slurred notes in such a way that the score is as legible as possible without influencing playback.

Automatic staccato articulations

A staccato symbol is added to a note whose value is considerably longer than the "real MIDI note". This is practical when working with simplified length display.



Option: "Simplify note lengths (interpretation)" selected.

Additional option: "Automatic staccato articulations".

Hide note overlaps

Prevents the overlapping of sequential notes which, for example, arises as a result of playing legato:

Recognize triplets

Activate this option if triplets are present in the MIDI object.

Please note:

The display quantization value always has to be one step finer than the smallest discernible triplet value.

To recognize one eighth triplets, display quantization has to be set to at least one sixteenth (or to 1/64 for 1/32 triplets).

Strict measure/pulse division

There are no note or rest values longer than a beat subgroup (pulse). Longer notes are displayed as multiple slurred notes. This can simplify the legibility of the score.

Larger beam groups

Beam groups are partially compiled across beat subgroups. This can simplify the legibility of the score.

Recognize grace notes

Note values which are much shorter than the display quantization value are annotated as flam notes as long as a base note is present.

Notation symbols

Clef



There are four clefs available in Samplitude Music Studio 15: violin, bass, tenor, and alto clef. Samplitude Music Studio 15 differentiates between base clef and clef change. The base clef can be set up for every stave in "Score settings" (and applies to all [MIDI](#) objects on the current track). A clef inserted from the tool bar, will be interpreted as a clef change. Clef changes are possible any number of times in a song and also within beats.

Insert: Activate the staff into which the clef should be inserted (by clicking on the staff signature to the left).

Position the play cursor at the desired insert point and click on the desired clef in the toolbar. Move the playback cursor to the desired insert position and click on the desired clef in the toolbar. The clef will be inserted musically, not graphically, with a clef change at position 10:01:000 (the beginning of the tenth beat) the clef symbol at the end of the ninth beat will be displayed according to note set rules.

Clef changes can also be deleted by clicking on clef symbol with the eraser (or the right mouse button).

Beat signature

The metric and beat signature symbols are created automatically from the tempo markers of the [VIP](#) project.

Beat changes are possible at every full beat border. In addition, you might want to create a beat count measure marker with the new signature (for example, 6/8) at the desired position. If there are no beat count measure changes, then it's enough to set the bar type of the piece (for example, 3/4) in the transport control.

Accidental



Enharmonic change

Samplitude Music Studio 15 sets the sharps and flats according to the clef description you selected. It is often the case, however, that enharmonic change can considerably optimize the legibility of certain passages. In this case you can work manually. To change one or more selected notes enharmonically, click on the corresponding button. The function transforms flats into sharps and vice versa.

Page format settings

You can select the page format independent of the printer settings so that it always has the same note layout regardless of workplace and independent of the printers installed in Windows.

In the score/page format setting, texts for tempo description, composer, and an additional text can be entered. Similarly, you can choose which layout elements should appear on the page (check boxes for beat numbers, page numbers, and texts).

Printing score

Samplitude Music Studio 15 automatically creates the layout of the score and allows optimal division of staves and staves on the page. You only need to specify the page size, orientation, and page borders.

- **Note size:** Here you can scale the size of the note symbols and the printout. This is actually irrelevant when working using the monitor's display, since you can zoom whenever you want anyway. However, the size of the notes does influence at which position a line or page break occurs.
- **Set a value smaller than 100%** to get more beats/staves onto one piece of paper.
- **Set higher values than 100%** in order to keep larger note symbols on the printout.

Print notes

Activate the print process in the "Score -> Print notes" menu or via the print button. Furthermore, a printer dialog window appears which appears differently for each printer or printer driver. Depending on the printer there are various options, e.g. the selection of pages you wish to print and the number of copies. Make sure that you have set up the same paper format for the printer as for the page mode, otherwise the printout may be scaled and the page ratio changed.

The following won't be printed, it's only visible on the monitor.

- The lines which highlight the page borders on the monitor
- Mouse pointers
- The color display of the currently selected notes and playback areas.

When printing a file (e.g. as a PDF file with a special printer driver) please note that you have to activate the option "Save fonts in document" in the printer driver so that the notation symbols will be displayed correctly in the document.

Note display: Interpretation options

None of the options have any influence on the [MIDI](#) files or playback.

Simplify note lengths (interpretation)

Displays rests and slurred notes in such a way that the score is as legible as possible without influencing playback.

Automatic staccato articulations

A staccato symbol is added to a note whose value is considerably longer than the "real MIDI note". This is practical when working with simplified length display.



Option: "Simplify note lengths (interpretation)" selected.

Additional option: "Automatic staccato articulations".

Hide note overlaps

Prevents the overlapping of sequential notes which, for example, arises as a result of playing legato:

Recognize triplets

Activate this option if triplets are present in the MIDI object.

Please note:

The display quantization value always has to be one step finer than the smallest discernible triplet value. To recognize one eighth triplets, display quantization has to be set to at least one sixteenth (or to 1/64 for 1/32 triplets).

Strict measure/pulse division

There are no note or rest values longer than a beat subgroup (pulse). Longer notes are displayed as multiple slurred notes. This can simplify the legibility of the score.

Larger beam groups

Beam groups are partially compiled across beat subgroups. This can simplify the legibility of the score.

Recognize grace notes

Note values which are much shorter than the display quantization value are annotated as flam notes as long as a base note is present.

Notation symbols

Clef



There are four clefs available in Samplitude Music Studio 15: violin, bass, tenor, and alto clef.

Samplitude Music Studio 15 differentiates between base clef and clef change. The base clef can be set up for every stave in "Score settings" (and applies to all [MIDI](#)

objects on the current track). A clef inserted from the tool bar, will be interpreted as a clef change. Clef changes are possible any number of times in a song and also within beats.

Insert: Activate the staff into which the clef should be inserted (by clicking on the staff signature to the left).

Position the play cursor at the desired insert point and click on the desired clef in the toolbar. Move the playback cursor to the desired insert position and click on the desired clef in the toolbar. The clef will be inserted musically, not graphically, with a clef change at position 10:01:000 (the beginning of the tenth beat) the clef symbol at the end of the ninth beat will be displayed according to note set rules.

Clef changes can also be deleted by clicking on clef symbol with the eraser (or the right mouse button).

Beat signature

The metric and beat signature symbols are created automatically from the tempo markers of the [VIP](#) project.

Beat changes are possible at every full beat border. In addition, you might want to create a beat count measure marker with the new signature (for example, 6/8) at the desired position. If there are no beat count measure changes, then it's enough to set the bar type of the piece (for example, 3/4) in the transport control.

Accidental

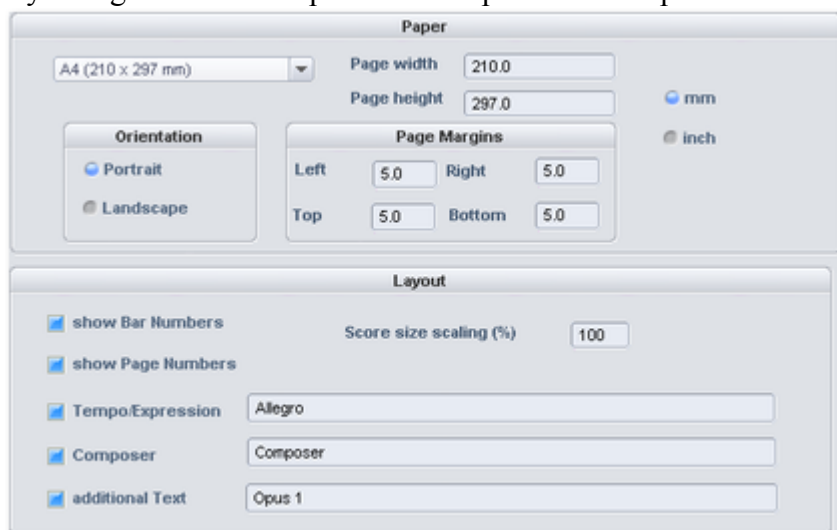


Enharmonic change

Samplitude Music Studio 15 sets the sharps and flats according to the clef description you selected. It is often the case, however, that enharmonic change can considerably optimize the legibility of certain passages. In this case you can work manually. To change one or more selected notes enharmonically, click on the corresponding button. The function transforms flats into sharps and vice versa.

Page format settings

You can select the page format independent of the printer settings so that it always has the same note layout regardless of workplace and independent of the printers installed in Windows.



In the score/page format setting, texts for tempo description, composer, and an additional text can be entered. Similarly, you can choose which layout elements should appear on the page (check boxes for beat numbers, page numbers, and texts).

Printing score

Samplitude Music Studio 15 automatically creates the layout of the score and allows optimal division of staves and staves on the page. You only need to specify the page size, orientation, and page borders.

- **Note size:** Here you can scale the size of the note symbols and the printout. This is actually irrelevant when working using the monitor's display, since you can zoom whenever you want anyway. However, the size of the notes does influence at which position a line or page break occurs.
- **Set a value smaller than 100%** to get more beats/staves onto one piece of paper.
- **Set higher values than 100%** in order to keep larger note symbols on the printout.

Print notes

Activate the print process in the "Score -> Print notes" menu or via the print button. Furthermore, a printer dialog window appears which appears differently for each printer or printer driver. Depending on the printer there are various options, e.g. the selection of pages you wish to print and the number of copies. Make sure that you have set up the same paper format for the printer as for the page mode, otherwise the printout may be scaled and the page ratio changed.

The following won't be printed, it's only visible on the monitor.

- The lines which highlight the page borders on the monitor
- Mouse pointers
- The color display of the currently selected notes and playback areas.

When printing a file (e.g. as a PDF file with a special printer driver) please note that you have to activate the option "Save fonts in document" in the printer driver so that the notation symbols will be displayed correctly in the document.

Notation symbols

Clef



There are four clefs available in Samplitude Music Studio 15: violin, bass, tenor, and alto clef. Samplitude Music Studio 15 differentiates between base clef and clef change. The base clef can be set up for every stave in "Score settings" (and applies to all [MIDI](#) objects on the current track). A clef inserted from the tool bar, will be interpreted as a clef change. Clef changes are possible any number of times in a song and also within beats.

Insert: Activate the staff into which the clef should be inserted (by clicking on the staff signature to the left).

Position the play cursor at the desired insert point and click on the desired clef in the toolbar. Move the playback cursor to the desired insert position and click on the desired clef in the toolbar. The clef will be inserted musically, not graphically, with a clef change at position 10:01:000 (the beginning of the tenth beat) the clef symbol at the end of the ninth beat will be displayed according to note set rules.

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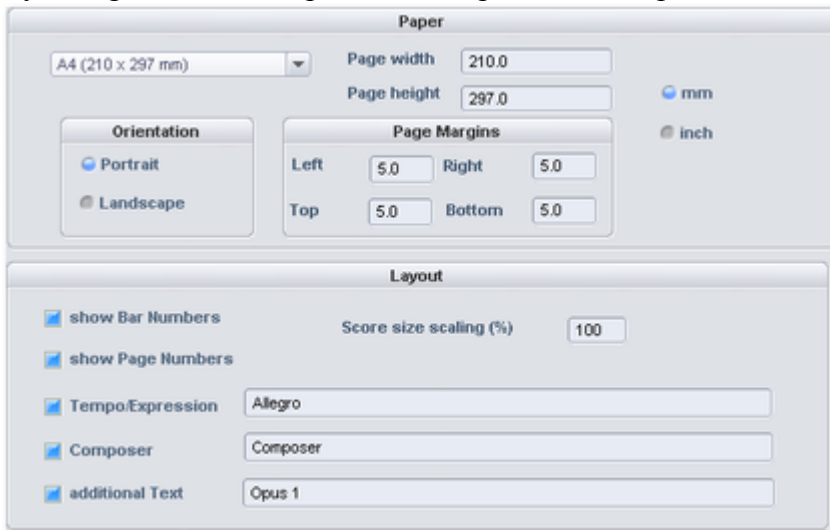
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Quantize to grid

Small irregularities when playing to record can be smoothened with the quantization function. In contrast, the "swing

" function makes mechanical-sounding sequences sound groovier.



Clicking on "**Quantize**

" button shifts all selected notes to a customizable quantization grid.

All notes are quantized without previous selection.



1/4, 1/8, 1/16, and 1/32 notes can be selected as starting points (grid) and lengths.

Uneven quantization values such as triplets can be created with "n-tole" (see quantization options). # at note lengths uses the value for the start time.

The "**Quantize**

" button always quantizes the note start time and the length. The menu MIDI functions provides other quantization modes (e.g. length only).

The quantization options enable all types of quantization to be set more precisely.

Quantization grid ("Snap")



If snap is activated, the notes "snap" to the quantization values when they are created or edited.

The quantization values are also considered. For instance, the notes snap to the corresponding positions within the quantization window.

The snap positions are displayed within the piano roll as a matrix. A swing quantization is displayed by the different intervals of the vertical partitions in the piano roll. The grid can be hidden with the "Show quantization grid" command in the options menu ("Alt + G").

You can deactivate the snap function while creating or editing notes by holding down "Alt" as you draw them.

Move relatively on grid ("Options" menu)

: If this option is active, then notes keep their original intervals relative to the grid and not to the note start when they are moved; the distance moved snaps to the quantization value. Use this option if you want to move unquantized notes a certain distance without disturbing the timing.

Keyboard shortcut: Shift + G

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Keyboard shortcut: Shift + G

Quantization settings

The quantization settings can be found in the menu "[MIDI functions](#)" in the MIDI editor. The dialog with the settings is not "modal", i.e. you can open it as required and test certain passages with different settings.

Level

: This value sets the strength or "Soft Q" value of the quantization.

- "100" moves the event precisely to the quantize grid point,
- "50" shifts the event to the middle between the current position and the quantization grid point,
- "0" means no movement -> Quantization off

The command "Quantization approximation (soft)" considers the current level value in the quantization options. The simple quantization command always occurs at 100%. In this manner, you can always select between approximation (soft) and harder quantization without having to adjust the quantization options every time.

Swing

: Starts swinging, groovy playback (for example, triplet). Specifies the division for uneven grid points.

- 50 ... "50-50 division": The uneven 1/8 note is exactly half way between the even eighths ("even play" mode)
- 67... triplet play, 3-2 division

Window

: Quantization window: Events in the window are quantized, and those outside remain at their position.

- 100: Window covers the total range from the grid points of the quantization grid.
- 50: The window covers half of the quantization interval. Events with gaps of $\frac{1}{4}$ of the grid width left and right of the grid point are quantized.
- 0: No window, i.e. quantization is off

N-Tuplet

: The grid is split into n-tuplet quantization values (for example, 8T, 16T). You can enter any number you like, as well as the previously defined numbers. Please note that you can only work either with the swing setting or n-tuplets.

Standard settings

: Restores the default values.

MIDI editor shortcuts

Apart from a few exceptions, like using the space bar for stop/playback, the keyboard shortcuts can be defined freely with the keyboard shortcut, menu, and mouse editor. For some basic functions such as scrolling and zooming, all keyboard shortcuts from the [VIP](#) are applied. You can explicitly define shortcuts for all commands that are available in the [MIDI](#) editor menu.

Hint:

The mouse wheel settings are also applied from the VIP, as is the switch for the temporary zoom mode (special) which is defined with "Z"

Playback/Stop	Space bar
Close MIDI editor (apply changes)	Return
Close MIDI editor (discard changes)	Esc
File	
Import MIDI	Ctrl + I
Export MIDI	Ctrl + E
Edit	
Undo	Ctrl + Z
Redo	Ctrl + Y
Cut	Ctrl + X
Copy tracks	Ctrl + C
Insert	Ctrl + V
Duplicate	Ctrl + D
Select all	Ctrl + A
Create pattern from selection	Ctrl + P
Delete selected MIDI data	Back, Del
Delete all MIDI data	Ctrl + back, Ctrl + Del
Select next event	Arrow right
Select previous event	Arrow left
MIDI functions	
Legato	Ctrl + L
Quantize notes	Ctrl + Q
Options	
Scroll mode	F
Show event list	Alt + L
Show velocity/Controller editor	Alt + V
Play clicked notes	Alt + P
Quantization grid active	Ctrl + G
Show quantization grid	Alt + G
Quantization options	Alt + Q
MIDI object editor editor	Ctrl + O
Audition Panic-End played edit notes	Ctrl + F
Mouse mode	

Selection	1
Draw	2
Drum (draw)	3
Pattern (draw)	4
Change velocity	5
Delete	6
Magnifying glass	7
Glue note mode	8
Split note mode	9
Mute notes (Mute) mode	M
Select next event	Arrow right
Select previous event	Arrow left
Event pitch higher	Arrow up
Event pitch lower	Arrow down
Select next grid quantization value	Alt + Arrow down
Select previous grid quantization value	Alt + Arrow up
Select next length quantization value	Alt + Arrow right
Select previous length quantization value	Alt + Arrow left
Move play cursor forward	Page down
Move play cursor forward (fast)	Ctrl + Page down
Move play cursor backward	Page up
Move play cursor backward (fast)	Ctrl + Page up
Velocity/controller selection	Ctrl+1
Velocity/controller draw freehand	Ctrl+2
Velocity/controller draw freehand	Ctrl+3

Software / VST instruments

Samplitude Music Studio 15 provides the option of integrating software instruments as well as MAGIX synths (e.g. Robota Pro) into a virtual project according to VSTi standards (e.g. Sample Tank) and can be controlled via the internal [MIDI](#)

functions and editors. All instruments as well as their multiple outputs are seamlessly integrated into the audio engine with all of their effects and routing options. The maximum number of instruments is limited by the performance power of your processor. You can increase this number by using the integrated freeze function.



[Software](#)

instrument "Robota Pro"

In this chapter

[Installation of instruments and path settings](#)

[Load instruments](#)

[Routing settings during software instrument loading](#)

[Load effects plug-ins](#)

[Route MIDI instrument inputs](#)

[Instruments with multi-channel outputs](#)

[Adjust instrument parameters](#)

[Play and monitor instruments live](#)

[Routing of VST instruments using the VSTi manager.](#)

[Preset management](#)

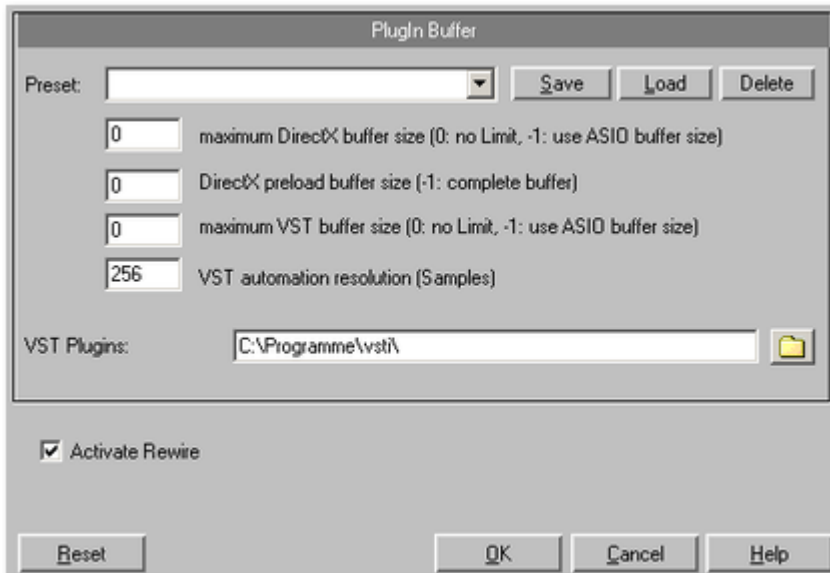
[Freezing instruments \(freeze\)](#)

[Tips on handling virtual instruments](#)

[ReWire](#)

Installation of instruments and path settings

Install every VST instrument according to the instructions of the manufacturer. Samplitude Music Studio 15 searches for installed VST instruments in the "VST plug-ins" program subfolder. You can either install your VST instruments in this folder or use any other path to an already existing folder, e.g. to another host application. You will, however, have to enter this foreign path in the stave settings ("Y") in the "Effects -> VST / DirectX / ReWire" submenu (entering multiple paths is also possible). Simply enter one path after the other, all paths will be taken into consideration. Samplitude Music Studio 15 will automatically detect newly installed plug-ins contained within the selected folders.



The first time the program is opened, a search for existing instruments and plug-ins is executed when the track settings are opened. Not only are all the plug-ins imported, but they are also checked for their usability within the program. This search is only necessary once, the next time it is opened, the track settings will be opened immediately.

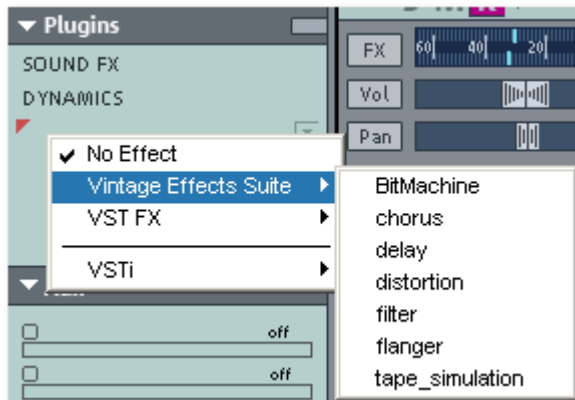
Tip:

In case there are problems with your current configuration, you can reset all paths and installed instruments or plug-ins. To do this, delete the "VST Plug-ins.ini" file in the Samplitude Music Studio 15 folder. All paths will have to be entered again. Plug-ins which were removed from the program prior to this will still be shown.

Load instruments

These are managed in Samplitude Music Studio 15 under "Track menu -> VST instrument editor". You can also assign an instrument to each track; the instrument is selected as a [MIDI](#) playback device.

Selected instruments or their individual outputs are shown directly in the first VSTi plug-in/insert slot of the track box and mixer track and can also be muted (left click) and opened (right click) from there.

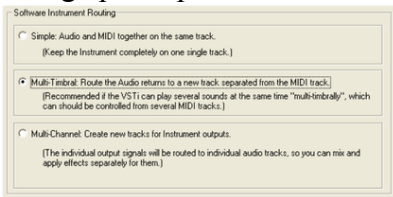


- Load an instrument by selecting a "New instrument" in the project window as a track output. This can happen at various points:
- Playback device menu (right click the "Mute" button -> MIDI -> New instrument)
- Plug-ins slot -> VSTi in the track editor
- "Insert effect slot of the mixer -> VSTi": You will only find this option in the top insert slot of the individual mixer channels.
- "Out" slot -> New instrument in the MIDI section of the track editor.
- "Out" slot -> MIDI -> New instrument in the audio section of the track editor.

Routing settings during software instrument loading

You can also assign an instrument as a [MIDI](#) output device to each track.

Additionally, you can route audio output channels from software instruments to any tracks of the [VIP](#). MIDI (send) and audio (return) of a software instrument can, but don't have to be present together on one track. Samplitude Music Studio 15 offers full freedom for individual routing configurations. When loading a software instrument, the **"Routing for multi-channel instruments"** dialog opens up.



Simple mono or stereo software instruments can be completely installed in the current track. Thus, the track sends MIDI to the instrument and receives the audio signal from the instrument. Select the **"Simple: [Audio](#) and MIDI together in one track"**

configuration. Now all audio signals will be routed to the current track where the instrument has been opened. In this case multiple outputs are mixed together before the output.

Multi-timbral: Route audio on separate track separate from MIDI

Select this setting if you would like to control the VSTi from several MIDI tracks.

Multi-channel: Create multiple new tracks for single instrument outputs

Choose this option if you would like to automatically create new tracks for all VSTi audio outputs. The newly created tracks are configured and named automatically. The mono/stereo configuration is taken over from Samplitude Music Studio 15 (Standard).

Individual outputs can also be routed subsequently to separate tracks. To display hidden tracks in the Arranger window again, please use the [Track manager](#)

Advanced options

Stereo/Mono (standard)

: Information delivered from the plug-in is used for routing.

All as stereo/mono

: Several plug-ins deliver incorrect information about whether the outputs are in mono or stereo. These options force individual outputs to be treated as stereo or mono outputs.

Combine audio/[MIDI](#)

: Activate this check box to automatically route the MIDI output of each individual track to this instrument.

Hide instrument output tracks in arrangement

: All newly created output tracks of this instrument are hidden in the arranger but still appear in the mixer window. This setting should be used if an instrument's individual outputs are controlled by a single MIDI file, and therefore do not contain objects or information in the arranger window.

Hint

: Please note that a virtual synthesizer's audio output can usually be created, edited, and mixed in the same track as the MIDI data the instrument is receiving. Among other things, this results in a double use of the volume fader which, on the one hand, controls velocity or MIDI volume (CC7), and on the other the audio level. These are not identical parameters. For instance, you can include a MIDI instrument

played with high velocity quietly in the mix and vice versa. You can, therefore, optionally assign the volume fader differently. To do this, right click on the track's volume fader.

Load effects plug-ins

Effects plug-ins can be used at track, object, and master level.

Apply plug-ins at wave level

The menu "[Offline effects -> DirectX/VST plug-ins](#)" lets you calculate the plug-in effects directly into the audio material. During virtual wave editing, the [plug-ins will be loaded into the mixer's master area](#)

Note! [Destructive editing](#)

of audio material can not be undone! It's better to use the real-time effects via the object editor or the mixer.

Load plug-ins at object level

You can apply effects plug-ins at object level via "Real-time effects -> Object DirectX/VST plug-ins" menu or via the object editor.

Object editor

- Double click an audio object and select the "Object effects" view.
- Under "Plug-ins", click on a plug-in slot's little arrow.
- The plug-ins in the menu are now available to you.

"Real-time effects" menu

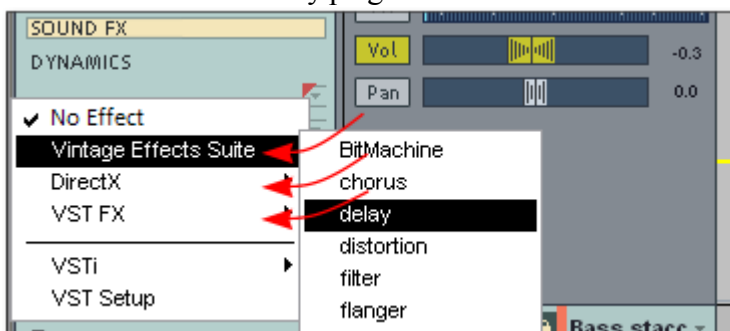
- Select an audio object in the arrangement by clicking it
- Next, open the "Real-time effects" menu and select the entry "Object DirectX/VST plug-ins"
- In the dialog, you can load the desired plug-ins for the selected object one after the other
- Right clicking on the loaded plug-in opens its interface

Load plug-ins at track level

At track level you can load plug-ins in the mixer as well as in the track editor.

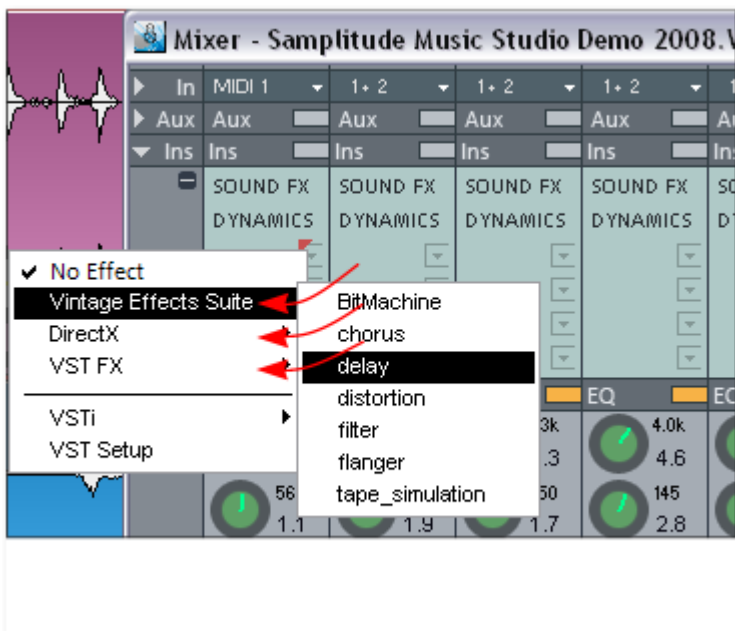
Track editor

- Select the track for which you wish to load the effect.
- Open up "Plug-ins" if it is not yet visible.
- Now click on the little arrow next to the plug-in slot.
- You can select any plug-in from the menu.



Mixer

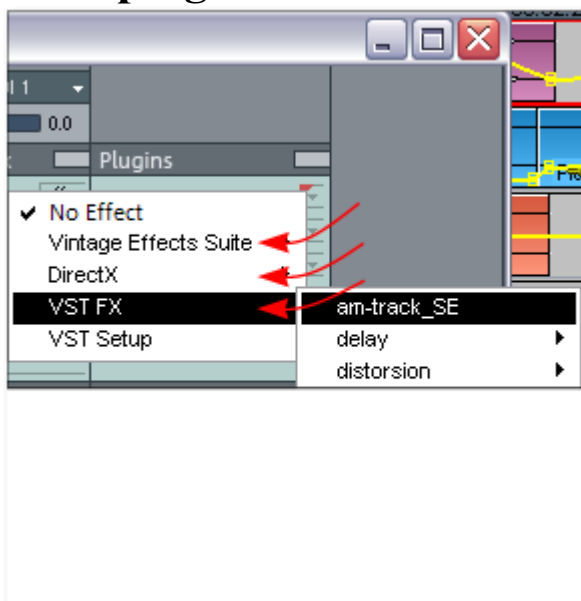
- Open the mixer by pressing "M" or via the mixer button.
- Click on the small arrow next to the insertion slot of the desired track.
- Now select a plug-in from the corresponding submenu.



Note

: Send effects will also be embedded. Add an AUX track and apply the effects to it. Bear in mind that the effects will be mixed, i.e. the effect in the AUX track should not contain the original signal anymore.

Load plug-ins at master level



In the mixer's master section, you can load plug-ins just like in the mixer tracks. Click on the arrow to the right beside one of the plug-in slots and select the desired plug-in from the menu.

Apply plug-ins at wave level

The menu "[Offline effects -> DirectX/VST plug-ins](#)" lets you calculate the plug-in effects directly into the audio material. During virtual wave editing, the [plug-ins will be loaded into the mixer's master area](#).

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Load plug-ins at object level

You can apply effects plug-ins at object level via "Real-time effects -> Object DirectX/VST plug-ins" menu or via the object editor.

Object editor

- Double click an audio object and select the "Object effects" view.
- Under "Plug-ins", click on a plug-in slot's little arrow.
- The plug-ins in the menu are now available to you.

"Real-time effects" menu

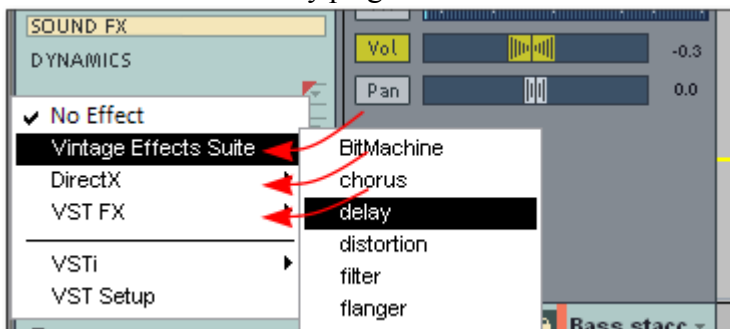
- Select an audio object in the arrangement by clicking it
- Next, open the "Real-time effects" menu and select the entry "Object DirectX/VST plug-ins"
- In the dialog, you can load the desired plug-ins for the selected object one after the other
- Right clicking on the loaded plug-in opens its interface

Load plug-ins at track level

At track level you can load plug-ins in the mixer as well as in the track editor.

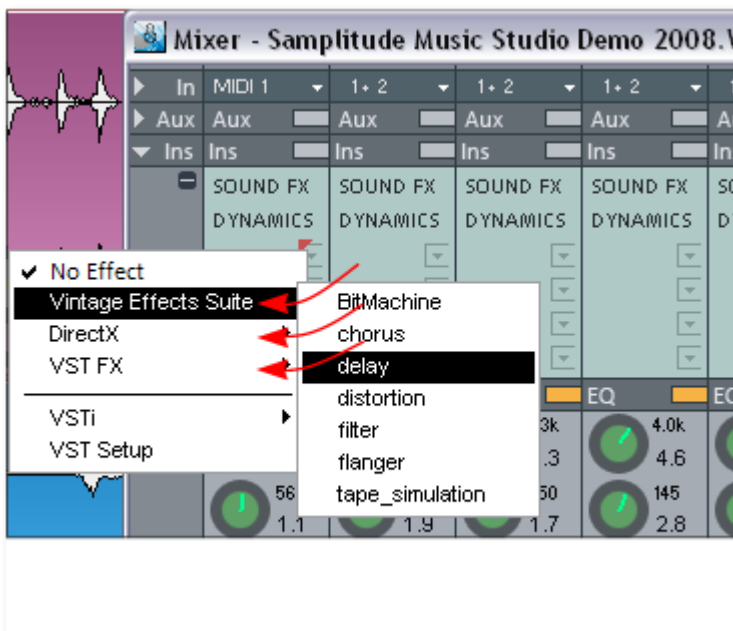
Track editor

- Select the track for which you wish to load the effect.
- Open up "Plug-ins" if it is not yet visible.
- Now click on the little arrow next to the plug-in slot.
- You can select any plug-in from the menu.



Mixer

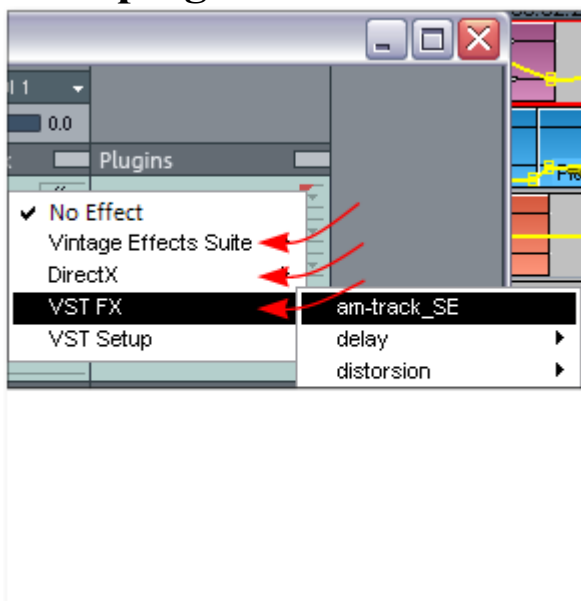
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Load plug-ins at master level



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Load plug-ins at object level

You can apply effects plug-ins at object level via "Real-time effects -> Object DirectX/VST plug-ins" menu or via the object editor.

Object editor

- Double click an audio object and select the "Object effects" view.
- Under "Plug-ins", click on a plug-in slot's little arrow.
- The plug-ins in the menu are now available to you.

"Real-time effects" menu

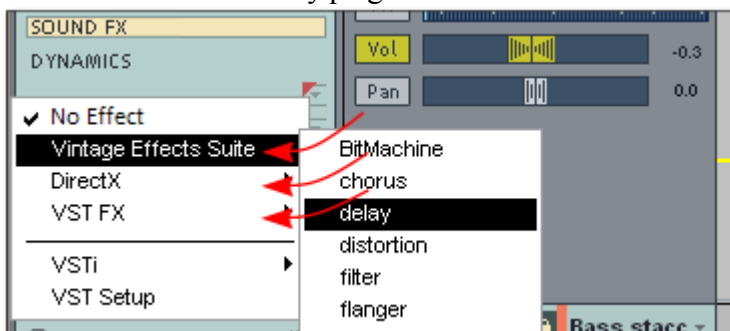
- Select an audio object in the arrangement by clicking it
- Next, open the "Real-time effects" menu and select the entry "Object DirectX/VST plug-ins"
- In the dialog, you can load the desired plug-ins for the selected object one after the other
- Right clicking on the loaded plug-in opens its interface

Load plug-ins at track level

At track level you can load plug-ins in the mixer as well as in the track editor.

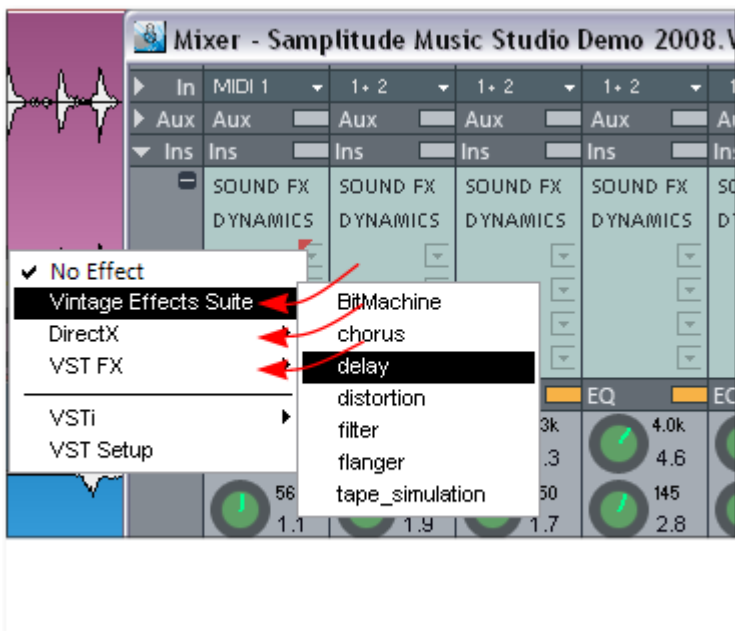
Track editor

- Select the track for which you wish to load the effect.
- Open up "Plug-ins" if it is not yet visible.
- Now click on the little arrow next to the plug-in slot.
- You can select any plug-in from the menu.



Mixer

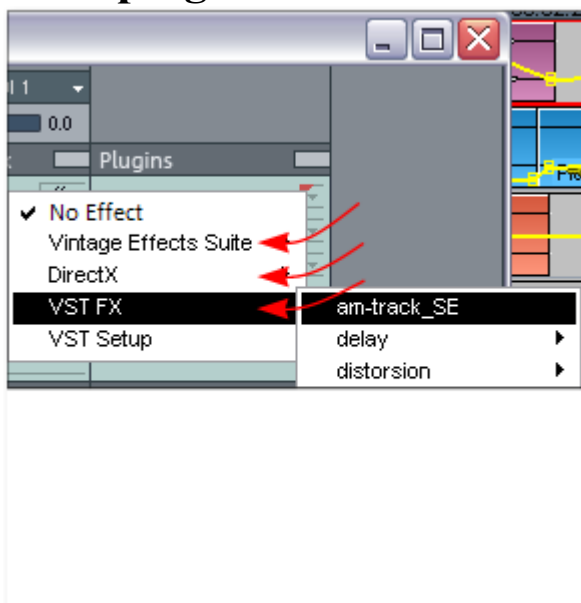
- Open the mixer by pressing "M" or via the mixer button.
- Click on the small arrow next to the insertion slot of the desired track.
- Now select a plug-in from the corresponding submenu.



Note

: Send effects will also be embedded. Add an AUX track and apply the effects to it. Bear in mind that the effects will be mixed, i.e. the effect in the AUX track should not contain the original signal anymore.

Load plug-ins at master level



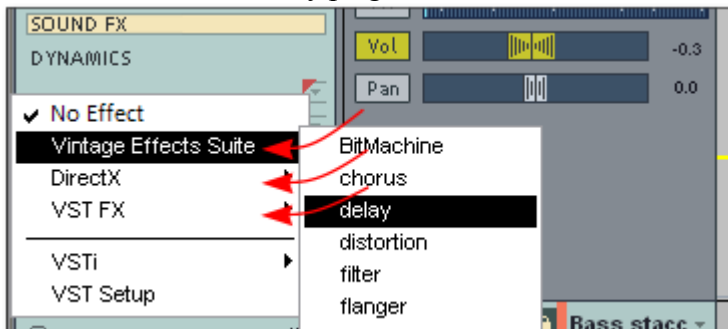
In the mixer's master section, you can load plug-ins just like in the mixer tracks. Click on the arrow to the right beside one of the plug-in slots and select the desired plug-in from the menu.

Load plug-ins at track level

At track level you can load plug-ins in the mixer as well as in the track editor.

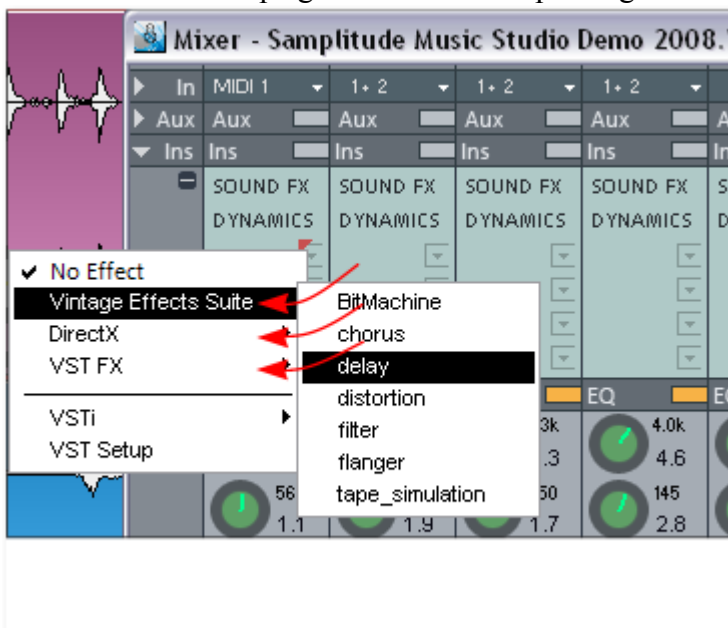
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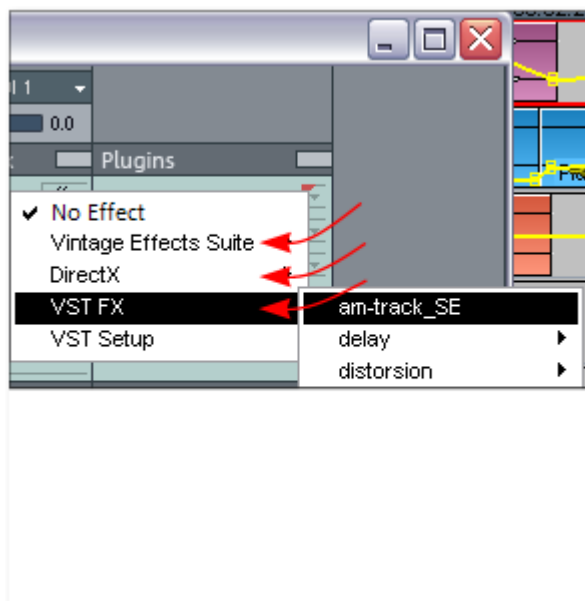
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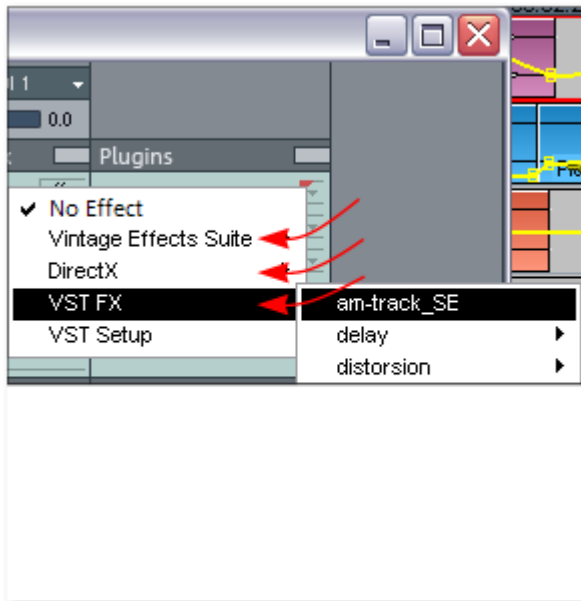
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Route MIDI instrument inputs

Nearly all software instruments require [MIDI](#) data in order to be heard. To route the MIDI input onto a specific track which contains the MIDI data, click on the VSTi button in the track editor of the corresponding track and select the instrument from the "Out" slot which you wish to activate. Already loaded instruments are mentioned in this list. To open a completely new instance of an instrument which works independently of already existing instruments within the project, select its name from the "New instrument" submenu.

Instruments with multi-channel outputs

The number of available individual outputs generally depends on the instrument where it also can be adjusted. Outputs can be available in stereo and mono versions.

Two examples of typical handling of individual outputs:

Addressing an instrument on a [MIDI](#) channel and distributing sounds over several tracks

This approach is ideal for all drum samplers if you want to address an entire drum set, but prefer to mix and edit the drum sounds individually.

Addressing an instrument on several MIDI channels

Several MIDI tracks are typically used for so-called multi-timbral synthesizers which can play several sounds on different MIDI channels simultaneously, whereby each addresses a specific sound program (part) on a specified MIDI channel. This also has the advantage that such instruments only require one instance of the plug-in for several sounds. Multi-timbral software instruments often have separate audio outputs. Please remember to route the individual parts to the desired outputs within the VST instrument (panel).

Distributing sounds on multiple single tracks

This approach, for example, is ideal for all drum samplers if you want to address an entire drum set, but prefer to mix and edit the drum sounds individually.

Addressing an instrument on several MIDI channels

Several [MIDI](#) tracks are typically used for so-called "multi-timbral" synthesizers which can play several sounds on different MIDI channels simultaneously, whereby each addresses a specific sound program (part) on a specified MIDI channel. This also has the advantage that such instruments only require one instance of the plug-in for several sounds. Multi-timbral software instruments often have separate audio outputs. Please remember to route the individual parts to the desired outputs within the VST instrument (panel).

Adjust instrument parameters

The instruments editor (panel) is then opened when an instrument is loaded and can be opened again at any later date by right clicking on the VSTi slot in which the instrument name is displayed. Alternately, the VSTi editor can also be opened by right clicking on the record button on the track -> Instrument output -> VSTi editor.

The graphical interface opens by default. If the selected instrument (or plug-in) does not have its own interface, the parameters dialog will open. This display mode is limited to just a few control elements and can only be opened via the menu of the instrument window. Use this mode if you find the panel of the plug-in too unclear or if it takes up too much space on the screen. In this dialog eight freely selectable parameters of the instrument are clearly and numerically displayed. Bar controls can be used to adjust the parameter values.

Alongside the combi-boxes for the selection of all instrument parameters, the "Auto" checkbox is also of importance. Once activated, the automatic processes of the selected parameters are started. The automation curve is shown in the project track and can be edited. The parameter can be automated using the fader.

Activate automation parameters by checking the "Auto" control box.

The parameter selection is saved for each plug-in so that the next time you use the same plug-in in a different project, the same parameters are used. This way you have the advantage that every frequently used parameter of the corresponding instrument is available immediately after it has been opened.

Instrument panel and parameter dialog

The instruments editor (panel) is opened when an instrument is loaded and can be opened again at any later time by right clicking the VSTi slot displaying the instrument name. Alternatively, the VSTi editor can also be opened by right clicking the record button on the track -> Instrument output -> VSTi editor.

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Dialog menu

Further options can be found in the menu of the instrument window:

Bypass:

Deactivates the instrument and mutes it. Note that some instruments use up processing power if bypass is switched on but are still located in the insert slot. In such cases, the instrument should be removed completely from the insert if it is no longer required.

Monitoring: This option must be switched on if you wish to be able to hear the instrument when it is being played or recorded. If you wish to always have monitoring active when the track's record button is pressed, then please select the "Tape monitoring" option in the system/global audio options ("Y", [Audio setup](#) tab) dialog.

Loading/Save patches/banks:

Here you can save an instrument's settings and sounds. The standard formats for this are: *.fxp for patches or *.fxb for whole banks. Some instruments have their own patch/bank format, settings are then loaded and saved directly via the instrument's interface.

Set parameters randomly:

Use this function to set all parameters of an instrument to a random value. This option can lead to surprising results and provides interesting ideas for sound design, thanks to the random generation of a new sound. However, you should note that parameters can only be set when they are accessible via the interface. For some very complex virtual synthesizers (e.g. modular systems), some parameters may not be modifiable using this option. Please note that thanks to the random placement of various parameters, very extreme sounds can be generated. This may lead to no sound being produced at all or extremely loud volumes and frequency ranges being reached. For this reason you should keep an eye on the preview volume when experimenting with this function.

Play and monitor instruments live

Requirements for playing live

In order to play virtual software instruments, you will require a [MIDI](#) device to enter the data. This is typically a MIDI keyboard. Of course, you can also use any other PC that transmits MIDI data or a hardware synthesizer.

For direct monitoring while playing you will in any case require an audio interface with ASIO drivers. Simply playing instruments, however, is also possible with MME or WDM drivers.

Monitoring

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- For live monitoring you also have to make the following settings:
- ASIO drivers (System/Options -> System/Devices -> Global audio options -> Playback devices -> Driver system)
- Activate global record monitoring in the transport control ("Rec M" button)
- Activate the track monitoring button (loudspeaker symbol)
- [Software](#) monitoring or Hybrid Engine (Options -> System/Global audio options -> [Audio](#) setup)

Tip:

You can also select monitoring mode by right clicking on the "Record monitoring" button on the transport control.

Latency: Please note that a system-dependent delay between pressing the key and the instrument sound occurs when you play virtual software instruments. This so-called latency time is mainly determined by the buffer size set for the ASIO drivers. For playing in an acceptable manner we recommend a buffer size of 1024 samples max. This corresponds with 23ms at 44.1 kHz. For many users, however, a latency of 3ms, i.e. 128 samples, is optimum. Please note that the [CPU](#)

load also increases at a lower buffer size. The "live" delay only occurs when an instrument is played, playback latency of an already recorded MIDI track over a virtual instrument is compensated later. As software instruments are fully integrated into the audio engine of the program, the signals can be routed, mixed and equipped with plug-ins any way you like. There may be some restrictions when playing, but all functions are fully available during playback.

Hint:

Please note that "Track FX monitoring" mode or "Mixer FX monitoring/Hybrid Engine" have to be activated.

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Recording and playback of an instrument

An instrument is recorded much in the same way as a normal [MIDI](#) track. Make sure that the MIDI recording is active in the desired track and then press the record button in the transport control. The recording begins immediately.

When playing already recorded MIDI tracks, track monitoring should be switched off.

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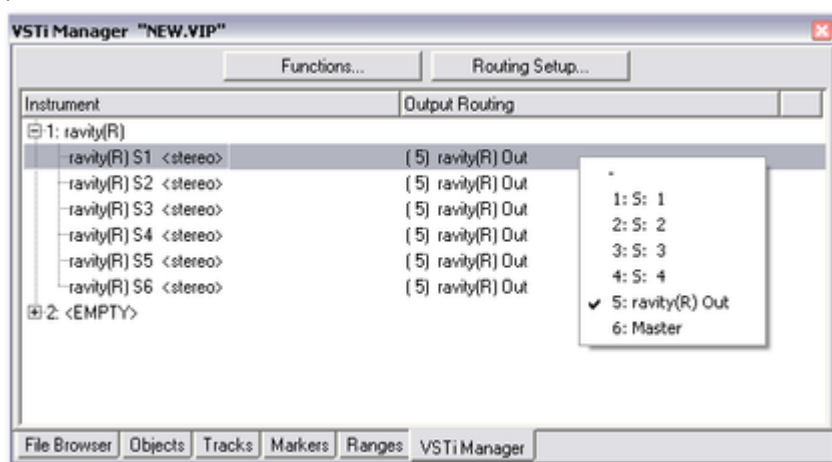
When playing already recorded MIDI tracks, track monitoring should be switched off.

Routing of VST instruments using the VSTi manager.

There are many flexible methods for routing instrument signals. As described in the previous paragraph, an instrument can be fed from several [MIDI](#) tracks, and the outputs of an instrument can also be sent to several tracks.

Routing instrument outputs

Instrument outputs can be easily routed in the VSTi manager. Open the VST instrument to view the individual outputs and **right click on "Output to track"**



Now search for the track which should be fed the corresponding individual output. The assigned output then appears in the plug-in slot of the target track.

Alternatively, you can also **route directly to the track box of the arranger:**

To play the output of an already loaded (or installed) instrument on a specific track, **right click on the record button**

of the track, go to "Instrument outputs" and select the output of an instrument available in the project you want to sound on this track by adding a check. Several outputs of an instrument can also be used simultaneously in one track. You can even combine the outputs of several different instruments into one track.

Deactivating the instrument outputs works the same way. Remove the instrument output by removing the check in front of the corresponding output in the "Instrument output" submenu.

Please note that you can also use the entire routing options of the mix engine. You can route any track containing the return of any instrument to any bus, AUX bus, or master.

Route MIDI instrument inputs

Nearly all software instruments require [MIDI](#) data in order to be heard. To route the MIDI input onto a specific track which contains the MIDI data, click the VSTi button in the track editor of the corresponding track and select the instrument from the "Out" slot which you wish to activate. Already loaded instruments are mentioned in this list.

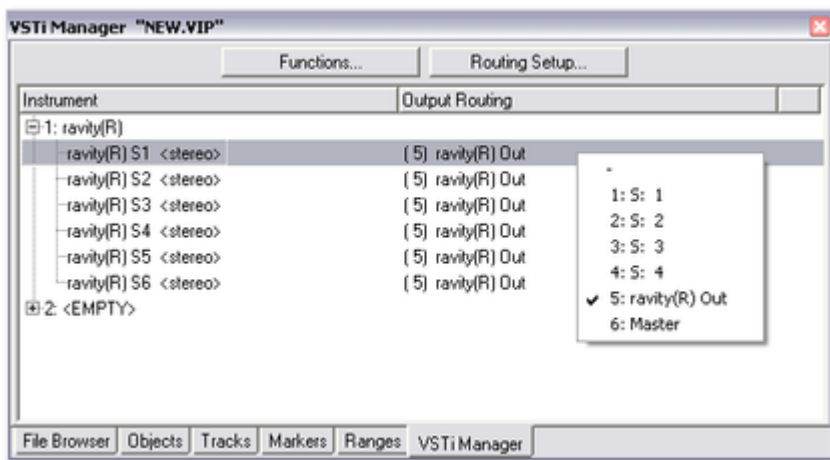
To open a completely new instance of an instrument which works independently of already existing instruments within the project, select its name from the "New instrument" submenu. Multiple instances of the same VST plug-in can be noted from the count (index) in front of the name of software instruments.

Solo playback of VSTi instrument outputs

To preview solo instrument outputs, switch the track to which signals are added by the corresponding instrument to solo. Even if the [MIDI](#) objects (in effect responsible for the sound) are not present in the track, you will still hear the selected track solo. The program automatically recognizes from which MIDI track the output is fed and lets the instrument continue to receive [MIDI](#) data to all allocated tracks.

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Preset management

If an instrument has presets, these are displayed in the "Program Slot" ("Prg") with their internal name (if [MIDI](#) mode is activated).

This drop-down menu can be used to easily "step through" the presets of your instrument. These presets can also be selected using the "Program" menu of the instrument window.

If your MIDI input device can send "Program change" commands, then you can also directly select programs of this instrument. The program slot is automatically updated in the track, so you have an overview of the program all the time.

Freezing instruments (freeze)

[Software](#) instruments require [CPU](#) power for playback, which at some point can be quite considerable and is required during every playback. Therefore, please use the "Freeze" function to release the CPU power for VSTi tracks temporarily. You retain full control over the [MIDI](#) objects of this track, which can be restored ("de-frozen") at any time.

To "freeze" an instrument, select the "Track freeze" option in the track menu (Ctrl + Shift + F). After a short processing time, all MIDI and audio objects are replaced by a single, resource-friendly, 32-bit stereo audio object, which is now played back instead of the original object and the instrument. The existing automation data and track effects are already included in this freeze object.

The actual instrument of this track is no longer addressed by MIDI files of this track and can even be deactivated, provided that it is not used by other MIDI tracks.

Select "Track unfreeze" (Ctrl + Shift + U) to change the original MIDI data at a later point in time that was "frozen". The track is now returned to the state in which it was "frozen", but again requires the initial CPU power for processing the instrument.

Alternatively, you can use the feature "Edit track freeze". In this case, a new single-track [VIP](#) is opened with the original track. This track cannot be played together with your arrangement. As soon as you save this project, a new freeze object is processed and included in the original project.

Freeze also works with single outputs in different tracks than the main output track (instrument outputs 1+2). You can also freeze these tracks if they do not contain MIDI information and do not hold objects. The MIDI data that has been routed to the track or to the individual output of the instrument automatically creates an audio file that is now played instead of the original instrument. In order to prevent double playback of the data, deactivate the single output of the instrument manually in the frozen track.

To edit freeze data you cannot only use the "Track freeze edit" function, since there is no MIDI data available on this track that could be edited. Therefore, "unfreeze" the track and edit the MIDI data of the send track. You can then refreeze the track.

Note:

As long as the instrument is not entirely unloaded from the track it remains loaded into the RAM memory of the system. Samplers or instruments that require considerable amounts of memory also require this when their insert tracks have been frozen.

Tips on handling virtual instruments

- You can realize so-called stack sounds (i.e. sounds that use several synthesizers and play these in unison) by opening several instruments and activating monitoring for all channels.
- To program beats, you can create and save individual drum maps in the [MIDI](#) editor that match the respective instruments.
- If an instrument can limit the amount of voices, then you can use this option to save [CPU](#) power if you do not require the full number of voices.
- Some instruments use sound sets according to the "General MIDI" standard. You can use these instruments for playing back MIDI files according to the GM standard. Please import the entire MIDI file to a single track including all channels. Make sure that virtual instruments can also receive program change commands that are also saved in such a file, so that the correct sounds are played back.

ReWire

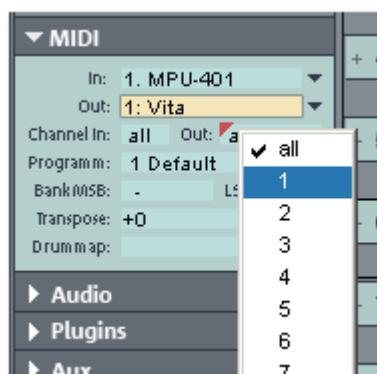
If this option is activated, ReWire-compatible client applications (e.g. Propellerheads Reason) can be integrated into Samplitude Music Studio 15 as synthesizers.

Activate ReWire functionality in the program settings ("Y"). Afterwards, installed ReWire applications can be loaded as instruments into a [MIDI](#)

slot. All ReWire client applications appear as individual sections in the selection menu of the plug-in slot of the track and are loaded as software instruments (VSTi). The client application should always be launched after Samplitude and should be closed before exiting Samplitude. Some client applications can be opened automatically by right clicking on their name in the MIDI slot (red) – just as you can open the plug-in window for VST instruments by right clicking.

The ReWire application can then be accessed like a software instrument via MIDI, the audio output signal of the ReWire client can be routed to the Samplitude Music Studio 15 tracks. The client application runs, starts, and stops synchronous to the time position of Samplitude.

ReWire supports up to 4096 MIDI buses. A ReWire client only registers the MIDI buses that are actually available with the host (Samplitude Music Studio 15). You can therefore select the bus within the track in the MIDI channel menu (e.g. the receiving instrument for Reason):



The "classic" MIDI channel of MIDI notes and events is not important, it is replaced by the ReWire MIDI bus system. For each track a MIDI object is able to control a ReWire MIDI BUS. This means that all events of a MIDI object apply to the track for this ReWire bus, independent of the channel number the events originally had. Multi-timbral MIDI objects, like those created in the MIDI file import, cannot be played correctly with ReWire. You can, however, access the ReWire client across multiple tracks on various ReWire MIDI buses.

Only a few ReWire clients support direct opening of the client application via the host application (Samplitude Music Studio 15). In this case, you will have to start the client application manually. You can do this by starting your client application as you would normally. It then automatically recognizes the host and starts in a special client mode.

Synth objects

Samplitude Music Studio 15 supplies several synthesizer plug-ins to create your own drum pattern, bass, or melody lines. The synthesizers produce "synth objects" which are arranged on the tracks together with the other objects.

In this chapter

[Working method](#)

[Note for users of older versions of MAGIX Music Studio](#)

[Atmos](#)

[BeatBox 2 plus](#)

[Drum & Bass machine 2.0](#)

[LiViD - Little Virtual Drummer](#)

[Robota](#)

[Vita](#)

[Revolta 2](#)

Working method

Opening the synthesizers

The software synthesizers can be found in a special folder which is copied to your hard disk on installation. To open it, click on the synth button.

You can find all available synthesizer plug-ins in the selection box.

Object synths and track synths

In Samplitude Music Studio 15 there are two different types of software synthesizers:

Object synths

: These synths build individual synth objects in Samplitude Music Studio 15. A corresponding synth object can be moved onto any track without anything changing on the synthesizer settings. Object synths are the Drum & Bass machine, BeatBox, Atmos, Vita, LiViD, Robota, SilverSynth, and CopperSynth.

Track synths: These synths do not build any individual synth objects in Samplitude Music Studio 15, rather "normal" [MIDI](#)

objects. They correspond to functional external hardware synthesizers or VSTi plug-ins, which are similarly controlled by MIDI. Like all MIDI objects, they are dependent on the track, that is, the corresponding track synth is specified in the MIDI track settings. Correspondingly, the track synths can also be selected in the track editor and modified. Vita, SampleTank, and Revolta belong to this type of software.

Programming the synth object

Depending on the plug-in, various functions to create and control sound can be applied via the operating console. Please read the following chapters pertaining to the individual synthesizers in this regard.

To monitor programming, playback can be started and stopped at any time with the space bar while the operating console is open. If the synth plug-in has its own play button (e.g. the beat box), then it will start the plug-in solo without playing the other tracks of the arrangement as well.

Arranging the synth object

Once you have finished programming the melodies or rhythms of the synth object, you can close the operating console and arrange the synth objects on the tracks. They can be stretched or compressed, faded in and out, turned down or up, etc. with the help of handles: These steps are the same for all objects.

The operating console of every synth object can be reopened at a later stage by double clicking or via the synth button if you would like to reprogram the object. In addition, you can drag as many other synth objects of the same software synthesizer as you like onto the tracks and program them separately.

Note for users of older versions of MAGIX Music Studio

This version of MAGIX Music Studio has replaced older technically outmoded synthesizers with newer, significantly improved solutions. Other synths were replaced by newer, non downward-compatible versions.

Arrangements created using older versions of MAGIX Music Studio may not function properly Samplitude Music Studio 15 for this reason. MAGIX provides the removed synthesizers as an extra download.

[To download...](#)

Note: Downloads require registration.

Atmos

Atmos is a synthesizer which can be used to easily create realistic nature sounds in no time. From thunder and lightning to animal sounds and traffic noise, Atmos helps you design natural-sounding atmospheric noises for your projects.



- In the upper border window, select the top category "Scenario". You can select a desired nature sounds category (for example, "Thunder and Lightning").
- In the middle of the window, a collection of control elements appears for designing the desired "Ambience". Each element has its own description (e.g. "Thunder") and two faders, i.e. "Volume" and "Intensity". The "volume" control adjusts the loudness portion of the element. The "Intensity" fader controls the behavior of the sound, depending on controller element. For example, with "Thunder", you can set how often thunder and lightning should sound; with "Rain", the strength of the rain can be regulated (if moved to the far left, light rain can be heard, while if moved to the far right, a downpour with loud splashing noises is audible).
- At the bottom right border you will find a master volume fader with which the master volume of the synthesizer can be set. Furthermore, the "Randomize" setting is also located here. This way you can change the settings of the control elements by yourself.

BeatBox 2 plus

Note: BeatBox 2 replaces the older BeatBox from previous versions and is not compatible with them. Please read the notes for users of older Samplitude Music Studio 15 versions.

BeatBox 2 is a 16-voice drum computer with hybrid sound synthesis and a step sequencer. The proven handling concepts of the "old" BeatBox like matrix programming with auto copy have been expanded with comfortable editing of velocities and significantly improved sound synthesis, including a multi-effects section (one effect per drum instrument).

A drum sound is created in BeatBox 2 using a sample (analogously to the old BeatBox) which is combined with a synthetic sound that can be created using up to three different synthesis models (hybrid sound synthesis). BeatBox 2 plus enables detailed editing and automation of all sound parameters.

There are two styles of interface in BeatBox 2. While closed, you can listen to included sounds or those you've made in BeatBox 2 without using too much window space.



Only the most important control elements are displayed when the program window is minimized.

1

Volume controller

: Controls the volume.

2

Peakmeter and preset name

: The peakmeter lets you visually control BeatBox
2. Click on the triangle beside the preset name to open the preset list.

3

Next/Previous preset

4

Save preset: The preset includes the [drum kit](#) in use, the [pattern](#), and any possible [automations](#).

5

Play/Stop: The playback controller in BeatBox 2 starts BeatBox without playing the arrangement, too.

6

Edit button

: The edit button opens BeatBox 2 for you to program your own beats and sounds.



Maximized BeatBox 2 plus window

1

Drum kit

: This section loads drum kits (collections of different drum instruments) and the individual drum instruments.

2

Selected drum instrument

: The settings in the synthesis section (6) and velocity/automation (5) always affect the selected drum instrument.

3

Pattern editor

: Programs the beat sequence. In the top part, different patterns (sequences) can be loaded and saved as well as different settings for the view and function of the pattern editor. The matrix is where the beat is programmed: One line corresponds to a drum instrument, and a column matches a specific time position within 1-4 beats. If a cell is clicked on, then the respective drum instrument will be triggered at this position.

4

Velocity/Control: This section has two modes: **Velocity** and **Automation**. The setting **Velocity** displays the velocity levels for the selected instrument's beats as a column. The **Automation** set up allows automation to be set for sound parameters in the synthesis section (6).

5

Synthesis

: The selected sound parameters and effects settings for the selected drum instrument can be edited here.

In the following, the sections of BeatBox 2 will be discussed individually:
BeatBox Elements

[Drum kit](#)

[Context menu](#)

[Pattern editor buttons](#)

[Pattern editor - matrix](#)

[Keyboard shortcuts](#)

[Velocity](#)

[Automation](#)

[Editing velocities and automation values](#)

[Synthesizer](#)

[Effects section](#)

[Synthesis models](#)

Drum kit



This section loads drum kits (collections of different drum instruments) and the individual drum instruments. You can also try out an already programmed pattern with different kits or exchange individual drum instruments.

1

Select drum kit

: Use the <> buttons to switch through the different drum kits. A drum kit is a collection of percussion instruments with matching sounds, e.g. rock kit or electronic drums à la TR 808. By changing the drum kit, you can add an entirely different sound to the rhythm you have already created.

2

Save drum kit

: Use this button to save the current collection of drum instruments as a kit.

3

Drum kit list

: Click on the arrow right of the name to open a complete list of available drum kits.

4

Select drum kit

: The arrow buttons function analogously to those of the drum kit. The sequence of drum instruments in the kit can be resorted via drag & drop.

5

Mute/Solo

: The "solo" button switches a drum instrument solo, i.e. all other instruments which are not "solo" will be muted. The "mute" button mutes a drum instrument.

New drum or effect sounds can be added to the current drum kit by **drag & drop** from Windows Explorer. Drag a wave file to a drum instrument to create a new drum sound based on this sample. BeatBox 2 copies the sample into the sample folder to make sure that the instrument or kit created can be used again later. You can drag a complete folder with wave files to the drum kit to create a kit based on those samples.

Context menu

Right clicking a drum instrument always opens a context menu:

- **Copy/Paste:** Copy an instrument from a track and paste it to another one.
- **Empty instrument:** An empty instrument is added. No sound is played, it has no name, and is used to clean up an unused track.
- **Default instrument:** The standard instrument is added. It has the standard parameter for all synthesis shapes and serves as the starting point for your own sounds.
- **Reset automation:** BeatBox 2's own presets contain automations. These are dynamic sound parameters like filter curves or pitch changes. This command allows you to completely remove these for the selected instruments.

Pattern editor buttons



1

Pattern

: Use the $\diamond$ buttons to switch through the different patterns. The arrow to the right opens a list of all available patterns, and the save button stores the current pattern.

2

Clear track/all: All events for the selected instrument (**track**) or all events for the pattern (**all**) are removed by clicking this button.

3

Bar selection: The bar you wish to edit can be selected via the corresponding number button. Use the "**Follow**" button to select follow mode, i.e. the step display follows the steps of the currently played beat. **All** shows all bars of the pattern.

4

"1>2-4" Auto copy

: If more than one bar is set as the pattern length, "Auto copy" mode makes sure that the drum notes set in the first bar are automatically placed into the next bars. This also makes it easy to create a continuous beat, even with a loop length of four bars. Notes set in the bars further back are not affected by the "Auto draw" function, which, for example, makes faint variations detectable only in the fourth bar.

5

Bars

: The maximum length of a drum pattern is four beats. The length can be selected via the small scroll bar.

6

Shuffle

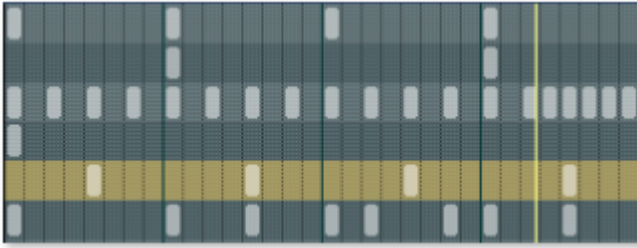
: This controller changes BeatBox 2's timing. If the fader is turned to the right, the eighth of a rhythm is played more and more like a triplet. If that sounds a bit too abstract – simply try it out, ideally with a pure 1/16 hi hat figure; you'll soon see what the shuffle fader is capable of.

7

Grid

: Here you can set the time resolution of the BeatBox. You can choose from 1/8 notes (only for very simple rhythms), 1/16 (default), 1/32 (for more refined constructions).

Pattern editor - matrix



This is the heart of BeatBox. A click on any position in the drum matrix creates or deletes drum notes (events). Clicking and dragging draws in a series of notes. Together with the [velocity editing options](#) (velocity), you can easily create drum rolls.

If "Shift" is held when you click on notes in the range, a rectangle can be drawn out which selects the notes contained within this rectangle (lasso selection). Selected notes can be copied by dragging them to a new position. If "Ctrl" is also held down, then existing notes will remain at the target position. Delete all selected notes by right clicking.

Two special commands are available for selection:

Shift + double click Select everything in the bar clicked on.

Shift + Ctrl + double click Select all

A simple mouse click cancels the selection. The selection is automatically canceled after copying. If you want to keep your selection, hold down "Ctrl" while copying.

Keyboard shortcuts

Many functions in BeatBox 2 can be controlled with the keyboard, for example a beat can be triggered with the "Enter" key live in a running pattern. Here's a complete list of the keyboard commands:

General	Key command
Open/Close editor	e
Pattern editor - options	
"1>2-4" Auto copy	a
Follow	f
Display bar 1... 4	1... 4
Show all bars	0
Grid finer/rougher	+/-
Selected drum instrument	
Previous/Next	Cursor up/down
Preview	p
Live input	Enter
Mute on/off	m
Solo on/off	sec

Keyboard shortcuts

Many functions in BeatBox 2 can be controlled with the keyboard, for example a beat can be triggered with the "Enter" key live in a running pattern. Here's a complete list of the keyboard commands:

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Grid finer/rougher	+/-
Selected drum instrument	
Previous/Next	Cursor up/down
Preview	p
Live input	Enter
Mute on/off	m
Solo on/off	sec

Velocity

The velocity mode serves for editing the velocity/automation of the individual drum notes for the selected drum instrument.



1

Reset

: Sets all velocity levels to 100%

2

Mode switcher: Switches the section between velocity control and [Automation](#).

3

Random

: The random parameter adds random variations to the set velocities. This helps make your beats sound more natural.

4

Amount

: No function in velocity mode.

5

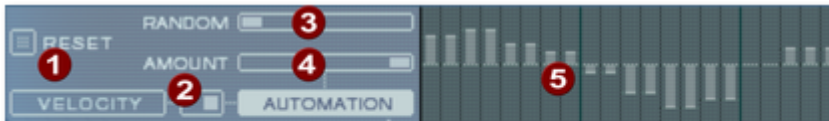
Velocity level: Every set note for the selected instrument is displayed as a column and can be edited. Multiple columns can be edited at once; see [Editing velocity values and automations](#).

Automation

Every parameter for a drum sound, including effects, can be automated, i.e. can change during a pattern. For example, you can make your snare drums more lively by adding higher voices to loud hits or by setting accents on individual hits with reverb effects.



The synthesizer section below enables the selection of a parameter for automation via the small blue LEDs above a parameter controller. More about the parameter controllers in the [Synthesizer](#) section.



1

Reset

: Sets all automation values for the selected parameter. 0.

2

Mode switcher: Switches the section between [velocity control](#) and automation switched. This happens automatically during selection of parameters.

3

Random

: The random parameter adds random variations to the set automation. This helps make your beats sound more natural because each programmed hit will sound slightly different. The level of the random parameter is also influenced by the amount controller (see below), i.e. if the amount is at "0", then the randomness will have no effect.

4

Amount

: The amount parameter regulates the complete influence of the automation values and of the random factor on the selected parameter. An amount of "0" does not have any effect at all on the automation; maximum level has the greatest effect. The effects of the amount controller on the automation values is made visible by a slightly lighter line in the value columns.

5

Automation values

: The selected parameters can be drawn in as a column with the mouse. Automation values can also be drawn between the set notes; the sound of the drum instrument changes during playback. Automation values are added to the original value

of the parameters.

Editing velocities and automation values

Hold down "Shift" and select any number of columns for velocity or automation with the mouse. Two special commands are available for selection:

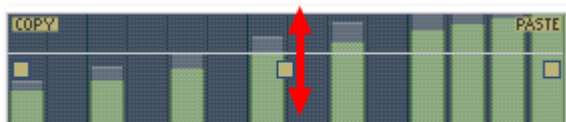
Shift + double click Select everything in the bar clicked on.

Shift + Ctrl + double click Select all

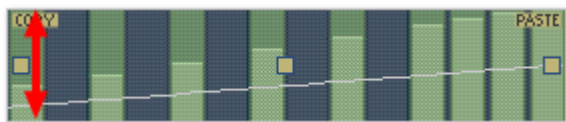


The "Copy" button copies the selection to the clipboard. If you select this or that track in another editor, then you can paste the notes there now from the clipboard. If the target selection is larger than the contents of the clipboard, then it will be inserted again. This lets you quickly add a short section throughout the complete length of the pattern.

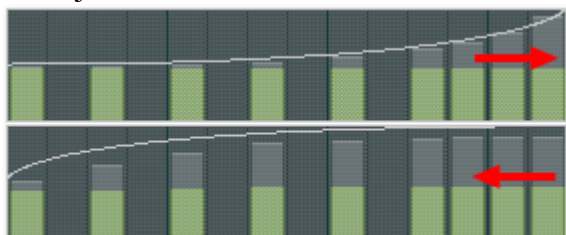
The three handles allow the velocity or automation values to be edited together.



The middle handle increases or lowers the values together.



An object can be faded in or out with the handles to the left and right upper corners of the object.



If you move the handles horizontally you can change the curve shape of the transition.

A single click in the automation section cancels the selection again.

Note: A selection of velocity values matches the selection of corresponding notes in the matrix editor.

Synthesizer

In the lower section of BeatBox, you can set the sound for the selected drum instrument.

The synthesis in BeatBox 2 consists of a combination of a simple drum sampler and a synthesizer. There are three different synthesis models possible for the synthesizer: "Phase Distortion Synth" (FM synthesis), "Filtered Noise", and "Physical Modeling". The mixed signal of both components is then processed by a multi-mode filter. An envelope curve ("envelope generator") time-dependently controls modulations of in all components. The details of the synthesis models can be read in the section [Synthesis models](#)



1 Preview drum instrument

2 Save drum instrument

3 **Select sample**
: A click on the arrow selects samples from the categories like kick, snare, etc.

4 **Select synthesis mode**
: Switches between the three synthesis models.

5 **Mix**
: Mix relationship between drum sampler and synthesizer.

6 **Parameter controllers**
: All six sound parameters for a drum sound can be directly set and automated via the parameter controller. The parameters in question depend on the drum sound currently loaded. By clicking the name of a sound parameter, a menu opens for you to add parameter controllers to each drum sound's synthesis parameters.

7

Automation: This selects the controller's parameter for the [automation](#)

.

Effects section

Each of BeatBox 2's drum instruments includes an effects unit which is fed in after the actual sound synthesis and editing. Each of these effects units includes a series of high-quality algorithms to add "audio polish" or to place the sound in a production-typical context.



1 FX on/off

2 **Parameter controller**
: An effects module includes four adjustable parameters. The fourth, "Mix", is always available and the remainder possess a function dependent upon the selected algorithm.

3 **Automation:** This selects the controller's parameter for the [automation](#).

4 **Effects algorithm**
: Click the arrow to select an effects algorithm.

The available effects algorithms per unit are described in the following.

Mono delay (tempo sync / millisec.)

Simple, monophonic delay effect

Parameters

- **Time:** Delay time controlled by musical measure (sync) or free running
- **Feedback:** Repetition
- **Damping:** High damping of the repetition

Stereo delay (tempo sync / millisec.)

Stereophonic repetition, adjustable separately per side

Parameters

- **Left / Right:** Delay times, synced or free running
- **Feedback:** In contrast to mono delay, no repetition takes place in the middle position of the **feedback** controller. When turned to the left the type of delay is that of the so-called "ping-pong" variety, i.e. the signal is alternately sent so that it jumps from one channel to the other. When turned to the right the delay effect is "dual mono", in which case left and right sides act as two independent time-delay units.

Chorus

Produces a typical "floating/shimmering sound" by modulated detuning of a signal to "thicken up" its sound or spread it across the stereo field. Detuning is achieved by a short delay, the length of which can be varied by the modulation. This produces the so-called "Doppler" effect.

Parameters

- **Time:** Delay time in milliseconds. This can be understood as the "base" modulation which is stretched or compressed by the modulator.
- **Rate:** Modulation speed
- **Depth:** Modulation amplitude. Low values modulate only a little, higher values lead to a clear vibrato.

Flanger

Algorithmically similar to chorus, but different in that the delay time is significantly lower and delay works with repetitions (feedback). A flanger sounds more "cutting" and up-front than a chorus.

Parameters

- **Rate:** Modulation speed
- **Feedback:** Delay feedback
- **Depth:** Modulation amplitude

Phaser

A modulation effect just like chorus & flanger, but in this case no detuning takes place. Filter components periodically alter the signal's "phase response" (principle of the "phase shifter"). Characteristic notches are produced in the frequency spectrum response to create so-called "comb filter effects". The phaser effect is suitable for pads and "psychedelic" sounds.

Parameters

- **Rate:** Modulation speed
- **Feedback:** Feedback of filter steps
- **Depth:** Modulation amplitude

Room reverb / Hall reverb

In the case of reverb there are two realistic simulations of natural reverberation. Sounds receive "atmosphere" and thereby appear lively and "authentic". Room reverb simulates a small space with high echo density. Hall reverb mimics the typical reverb of large concert halls.

Since natural spaces never sound "static" because air molecules are constantly moving and due to the complexity of reflection processes, both algorithms include a modulation parameter which varies the delay time of individual echoes and thereby affects the liveliness of the reverb impression depending on strength.

Parameters

- **Decay:** Reverberation length
- **Damp:** Damping of highs, simulates absorption via air, wall materials, and objects
- **Mod:** Modulation strength.

Lo-fi

This algorithm gives the sound a little bit of "grit", or a certain measure of signal destruction depending on its setting. An ideal partner for creative sound design. The simulation of early digital synthesizers or samplers is equally possible since their AD/DA converters were anything but "true" in the character of their sound. The sample rate from the output of the lo-fi effect can be continuously reduced and a generous measure of "aliasing" distortion can be produced alongside the unavoidable loss of highs which

results from "down sampling". Bit resolution is clearly changeable, too.

Parameters

- **Rate:** Sample rate
- **Crush:** Number of bits
- **Low-pass:** Low-pass filter at the output to smooth out induced noise

Distortion

This overdrive effect works similarly to common guitarist effect pedals. Everything is possible, from light, bluesy signal saturation to hard "metal shred boards". Here a dual-band EQ works on the in and output signals and therefore provides a rich palette of sounds.

Parameters

- **Drive:** Controls the internal level and thereby the overdrive
- **Low:** Bass portion.
- **High:** High portion.

Analog filter 12/24db

Vintage compressor

Synthesis models

The sound synthesis in BeatBox 2 consists of a simple sampler and a synthesizer which includes three different synthesis modules.

Sampler

The sampler plays short sound recordings ("samples") in different pitches. The sampler is intended for creating all kinds of drum sounds; the sounds are static and unnatural if the pitch is not altered. This is why the sampler is combined with one of the three synthesis models.

Filtered noise

White noise is filtered by two band-pass filters with separately setup frequencies and resonance. This algorithm is suitable for creating synthetic snares and high hat sounds.

Phase distortion synth

Two oscillators with regulated phase distortion and thoroughly variable frequency modulate each other (FM/cross-modulation/ring-modulation). Depending on the setting, this algorithm can be used to create kick, tom, or metallic percussion sounds; higher values for frequency and modulation level produce noisier sounds for high hats or shaker sounds. Since the oscillator frequency can be set exactly according to the musical pitch, this model can be used to produce mass lines or melodies.

Physical modeling

This is a simple physical model of an "abstract" percussion instrument. A fed-back network of delays is caused to oscillate by an impulse of filtered white noise (exciter). Depending on the setting of the exciter, the size of the model (surface), and the damping, a wide spectrum of natural sounding percussion instruments like cymbals, claves, gongs, or triangles can be created.

Multimode filter/Envelope generator

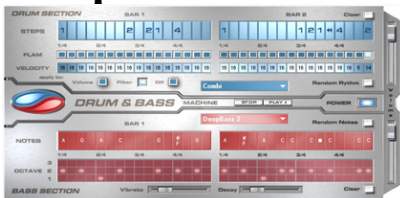
Following the samplers and synthesizers, an inverse filter (multi-mode filter) is added to add the last bit of polish to the drum sound. The envelope generator controls all time-dependent processes in the synthesizer and sampler.

Drum & Bass machine 2.0

The Drum & Bass machine is a dual synthesizer, uniting both distinct styles of drum'n'bass in one piece of equipment to produce fast beat crashes and rumbling bass lines. With the Drum & Bass machine you need no special skills to create authentic sounds for your drum'n'bass songs.

A tip: The typical speed for Drum'n'Bass is usually around 160-180 BPM. The Drum & Bass machine also fits in perfectly with other music styles, e.g. bigbeat (120 BPM) or trip hop (80-90 BPM).

Setup



The top half of the synthesizer controls the rhythm section, the bottom half controls the bass section. Between the two, on the left side you will see a symbol where both sections can be turned on and off individually. You can turn off the bass section, for example, so that you take only the drum section break beat into the arrangement. The Samplitude Music Studio 15 arrangement mix will then only include the drum section in the mix file.

The volume control is on the right border, controlling the volume for both sections. The play and stop buttons allow you to listen to your drum'n'bass creations up front in Samplitude Music Studio 15.

The "Drum'n'Bass" label covers a menu containing functions to load and save drum'n'bass patterns (Load machine state/Save machine state), and functions to delete or generate patterns (Clear all/Random all).

The submenu "Velocity presets" contains some help functions for programming of the velocity row.

The rhythm section (top half)

You can easily create complex and authentic jungle break beat sounds. In a professional recording studio, jungle break beats are created by dividing any given drum loop into several small "bits" and putting them back together in a different order. This lengthy process is significantly simplified by the Drum & Bass machine. You just have to design your own new play sequence.

You set up the new sequence in the top ("steps") row. The blue cells indicate the individual sections ("notes") for the subdivision of the loop.

A left mouse click on one of the blue cells allows you to select one of six possible symbols. Each symbol represents a different note or other way of playing the note. Every time you click on one of the blue cells, the next symbol is chosen.

Rely on your own intuition and creativity when programming your beats. It is not absolutely necessary to know the exact meaning of each individual symbol in order to create cool and authentic beats.

Summary symbol description:

1:

Play drum loop from beginning

2:

Play drum loop from the second note

3:

Play drum loop from the third note

4:

Play drum loop from the fourth note

Backward symbol:

Play backwards from this point

Stop symbol:

Stops play

The right mouse button allows you to delete the step cells individually. The "Clear" button on the right deletes all step cells; the drum loop is played in its original sequence. The "Random rhythm" button generates a random sequence. You can then alter the rhythm as you wish.

By clicking on the blue field in the bottom part of the rhythm section you open a pop-up menu where you can select the drum loop sound. If you select a different drum loop, it will be loaded and played as programmed by you.

In the "Flame" row you can set the note to be played twice quickly in succession instead of only once, allowing you to program rolls and fill-ins.

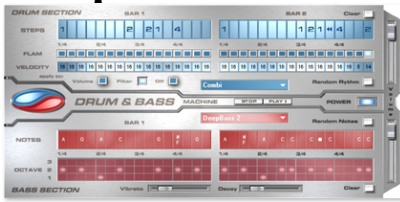
The "Velocity" row allows you to set intensity values between 0 and 16 with the mouse (left mouse click increases value, right mouse click decreases value). Use the three buttons under the "Velocity" row to determine how these values will affect the sound of your loop. If you select "Volume", the velocity value alters the volume for this cell (16 = loud, 0 = quiet). If you select "Filter", the velocity value alters the filter strength for this cell (16 = sharp, 0 = muffled). The "None" button blocks use of the velocity values.

The bass section (bottom half)

The bass section allows you to create the right bass lines for your rhythm quickly. As in the rhythm row, there are two-step rows.

- With the first "Notes" row, you determine the sequence of the notes, i.e. the sound sequence.
- By clicking on a cell with the left mouse button, you open a pop-up window, where you can select the notes.
- By clicking with the right mouse button, you delete a cell.
- If you click on an empty cell with the right mouse button, you will see a "Stop" symbol. This function is similar to that in the rhythm section, i.e. it stops the bass sound at this point.
- In the "Octave" row you can determine the bass octave sound. Octave 1 creates a deep tone, Octave 3 a high tone. You can only set the octave values if there is a note in the row above.
- As in the rhythm section, there are also buttons for "Clear", "Random notes", and a red selection field at the top border of the bass section. The red selection field allows you to set the bass sound.
- Underneath the step rows, you will also find two sliding controls for sound adjustment. You can use the "Vibrato" control to make the bass tone "swing" at its pitch. If the control is pushed all the way to the right, the swing will be stronger; all the way to the left will have no effect on the pitch.
- With the "Delay" controller you can set a time for the sound to completely fade out. All the way to the right makes the sound fade out quickly (after approx. 1/4 second); all the way to the left means ongoing sound.

Setup



The top half of the synthesizer controls the rhythm section, the bottom half controls the bass section. Between the two, on the left side you will see a symbol where both sections can be turned on and off individually. You can turn off the bass section, for example, so that you take only the drum section break beat into the arrangement. The Samplitude Music Studio 15 arrangement mix will then only include the drum section in the mix file.

The volume control is on the right border, controlling the volume for both sections. The play and stop buttons allow you to listen to your drum'n'bass creations up front in Samplitude Music Studio 15.

The "Drum'n'Bass" label covers a menu containing functions to load and save drum'n'bass patterns (Load machine state/Save machine state), and functions to delete or generate patterns (Clear all/Random all). The submenu "Velocity presets" contains some help functions for programming of the velocity row.

The rhythm section (top half)

You can easily create complex and authentic jungle break beat sounds. In a professional recording studio, jungle break beats are created by dividing any given drum loop into several small "bits" and putting them back together in a different order. This lengthy process is significantly simplified by the Drum & Bass machine. You just have to design your own new play sequence.

You set up the new sequence in the top ("steps") row. The blue cells indicate the individual sections ("notes") for the subdivision of the loop.

A left mouse click on one of the blue cells allows you to select one of six possible symbols. Each symbol represents a different note or other way of playing the note. Every time you click on one of the blue cells, the next symbol is chosen.

Rely on your own intuition and creativity when programming your beats. It is not absolutely necessary to know the exact meaning of each individual symbol in order to create cool and authentic beats.

Summary symbol description:

1:

Play drum loop from beginning

2:

Play drum loop from the second note

3:

Play drum loop from the third note

4:

Play drum loop from the fourth note

Backward symbol:

Play backwards from this point

Stop symbol:

Stops play

The right mouse button allows you to delete the step cells individually. The "Clear" button on the right deletes all step cells; the drum loop is played in its original sequence. The "Random rhythm" button generates a random sequence. You can then alter the rhythm as you wish.

By clicking on the blue field in the bottom part of the rhythm section you open a pop-up menu where you can select the drum loop sound. If you select a different drum loop, it will be loaded and played as programmed by you.

In the "Flame" row you can set the note to be played twice quickly in succession instead of only once,

allowing you to program rolls and fill-ins.

The "Velocity" row allows you to set intensity values between 0 and 16 with the mouse (left mouse click increases value, right mouse click decreases value). Use the three buttons under the "Velocity" row to determine how these values will affect the sound of your loop. If you select "Volume", the velocity value alters the volume for this cell (16 = loud, 0 = quiet). If you select "Filter", the velocity value alters the filter strength for this cell (16 = sharp, 0 = muffled). The "None" button blocks use of the velocity values.

The bass section (bottom half)

The bass section allows you to create the right bass lines for your rhythm quickly. As in the rhythm row, there are two-step rows.

- With the first "Notes" row, you determine the sequence of the notes, i.e. the sound sequence.
- By clicking on a cell with the left mouse button, you open a pop-up window, where you can select the notes.
- By clicking with the right mouse button, you delete a cell.
- If you click on an empty cell with the right mouse button, you will see a "Stop" symbol. This function is similar to that in the rhythm section, i.e. it stops the bass sound at this point.
- In the "Octave" row you can determine the bass octave sound. Octave 1 creates a deep tone, Octave 3 a high tone. You can only set the octave values if there is a note in the row above.
- As in the rhythm section, there are also buttons for "Clear", "Random notes", and a red selection field at the top border of the bass section. The red selection field allows you to set the bass sound.
- Underneath the step rows, you will also find two sliding controls for sound adjustment. You can use the "Vibrato" control to make the bass tone "swing" at its pitch. If the control is pushed all the way to the right, the swing will be stronger; all the way to the left will have no effect on the pitch.
- With the "Delay" controller you can set a time for the sound to completely fade out. All the way to the right makes the sound fade out quickly (after approx. $\frac{1}{4}$ second); all the way to the left means ongoing sound.

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- With the "Delay" controller you can set a time for the sound to completely fade out. All the way to the right makes the sound fade out quickly (after approx. $\frac{1}{4}$ second); all the way to the left means ongoing sound.

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- With the "Delay" controller you can set a time for the sound to completely fade out. All the way to the right makes the sound fade out quickly (after approx. ¼ second); all the way to the left means ongoing sound.

LiViD - Little Virtual Drummer

MAGIX LiViD helps you to turn your ideas into songs. Enter a few basic details and LiViD will play a full drum track, complete with intro, verses, choruses, fills, bridges etc.; the entire song structure is laid out for your convenience. Brilliant stereo drum samples recorded by professional studio musicians and a freely adjustable "Humanize" function will create an authentic drum feel with perfect sound quality.

LiViD features four styles (pop, rock, funk, latin), each of which is subdivided into four further substyles, as well as six song sections for each substyle (intro, verse, bridge, chorus, outro, fill-in).

Scramble

: A random sequence of four one-bar patterns is generated internally for each style/substyle/song section. "Scramble" generates a new pattern order.

Shuffle

: Shifts the second and fourth 16th note of a beat back by a freely definable amount (100% = triplet rhythm).

Humanize

: Randomly shifts all events backwards or forwards, or leaves them unaffected. Note: these shifts are very subtle and not always immediately perceptible!

Snare

: Sets the snare stick style to "normal", "side stick" (stick hits the rim while resting on the skin) or "rim shot" (sticks hits the rim and skin simultaneously). Exception: the snare's quietest velocity level (the "ghost notes") is always "normal".

Hi-hat

: Sets the hi-hat sound to "soft" (fully closed) or to "hard" (half-open). Exception: completely opened hi-hat (pop, type1, verse).

Ride

: Sets the ride cymbal sound to "ride" (cymbal is hit on the rim) or "ride bell" (cymbal is hit on the bell at the center).

Robota

The Robota is a four-part drum computer with virtual analog and sample-based sound production. Virtual analog sound production means that the sounds are synthesized in real-time, i.e. produced with a synthesizer to recreate the typical analog sounds of classical drum computers, such as the Roland Tr-808 and Tr-909, or more recent devices such as the Korg Electribe or the Jomox x-cousin. Sample sound production uses drum sound recordings (or even other recordings) as the basis for sound production. After selecting the elementary sound production technique, the sounds of each of the 4 parts (or instruments) can be edited using modulators.

The step sequencer programmed with incident lighting helps Robota to play. 4 beats in sixteenths (or 2 beats in thirty-seconds) are processed as a loop. At each beat position, the playing positions can be set by clicking a button. In "Event" mode, the instruments are distributed within the beat pattern. In "Snapshot" mode you can adjust additional instrument sound settings.

Sound synthesis

The four instruments of the Robota are built identically. Each instrument can create all kinds of drum sounds – from hissing hi-hats to phat bass drums.

During elementary sound production, you can choose between an oscillator with selectable wave shapes (sine, triangle or saw tooth) or a sample. In addition, you can add a noise generator can be added. The oscillator has a pitch envelope (pitch env.) and a volume envelope (attack/decay). It can also be frequency and ring-modulated. The depth of the modulation can be controlled via an envelope parameter (Fm/rng dcy). There's also a "Lo-fi" section consisting of distortion (Rectify), bit rate reduction (Crush) and sampling rate reduction (down sample).

Temporal control via an envelope (lofi dcy) will get the best out of the lo-fi effects. A multi-mode filter (low-pass/band-pass filter/high-pass) with 12/24 dB steep-side. A comb filter can be inserted. The filter frequency can be likewise modulated via an envelope. For extra pressure, an adjustable compressor (compressor, comp resp) is included, as well as tube amplifier simulation (tube).



Parameter (1)

To simplify matters, not all parameters can be changed on a sound - only those that are meaningful for the selected drum sound may be changed (snare, kick, high etc.). There are four selected variable parameters coordinated exactly with the selected preset sound.

Oscillator waveform (2):

The fundamental waveform of the Oscillators is selected here. You can choose from sinus/triangle/sawtooth/sample. If you have selected "Smpl" you can use the rotary knob to select a sample, i.e. a previously recorded drum sound. These samples are saved in the folder /synth/robota/samples/. If select custom samples, they will appear in the selection list.

(3):For each part you can regulate: [Filter](#)

[Cutoff, Resonance, Tube, Volume and Panorama](#)



With **select**
choose the instrument for editing in the step
sequencer.



"**M**" mutes the instrument, "**S**
" makes it solo

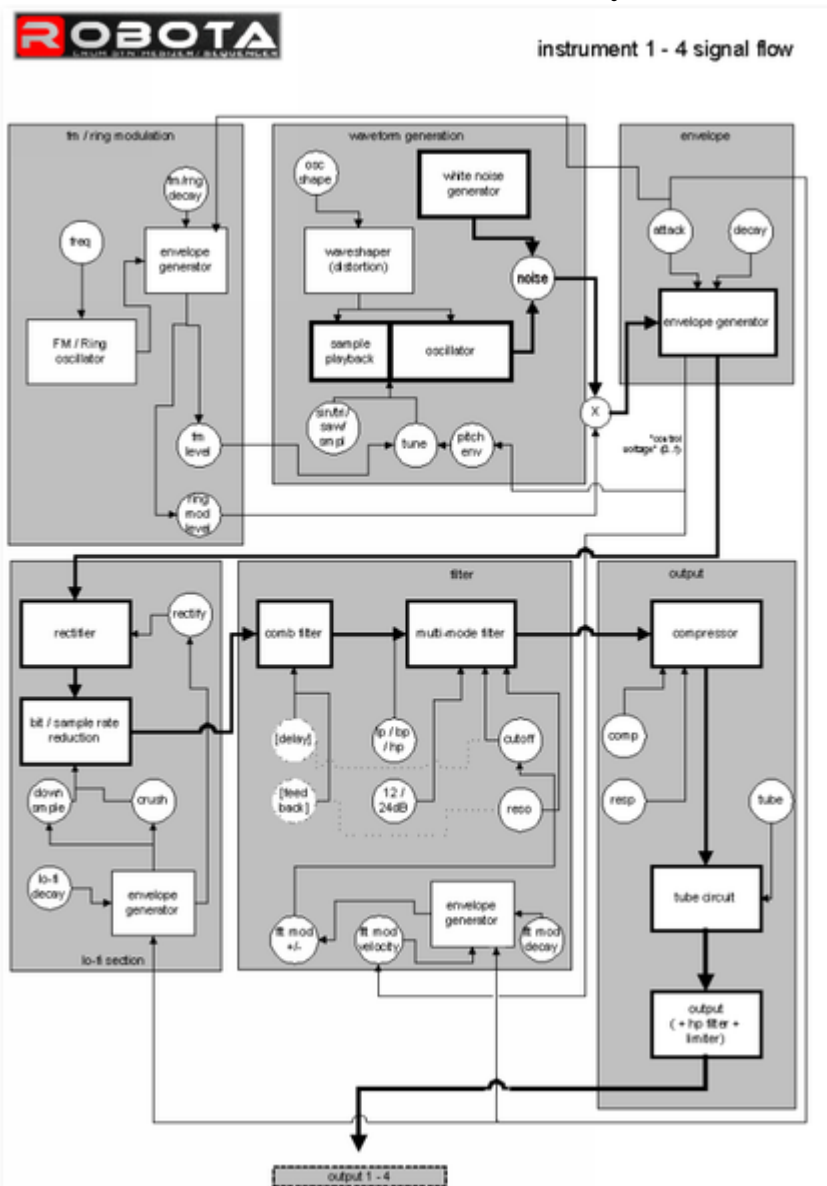


The **loudspeaker**
button allows you to hear a preview.

Master Section

Volume regulates the total volume of the Robota. **Distortion**
adds an adjustable tube distortion to make the sound "dirtier" and more powerful. The peak meter helps
control the output level – when it enters the red area, reduce the total volume.

Schematic illustration of the Robota synthesis



Here is a detailed circuit diagram of a Robota voice with a description of all control parameters.
Pitch envelope (pitch env)

Controls the pitch envelope level.

Tune

Tunes the instrument.

Oscillator shape (osc shape)

The shaper adds additional frequency shares to the basic sound of the oscillator by artificially reshaping the wave shape. A sine wave (shape = 0) can be reshaped up to a square curve (shape = max).

Oscillator waveform

The fundamental waveform of the oscillators is selected here. You can choose from sine/triangle/sawtooth/sample. If "Sample" is selected, you can use the controller to select a sample, i.e. a previously recorded drum sound. These samples are saved in the folder /Synth/robota/samples/. If you select custom samples, they will appear in the selection list. If you are playing your own samples, they will appear in the selection list.

Noise

Adjust the ratio between the oscillator sound and the noise generator.

Attack

Adjusts the attack time. The greater the set value, the softer the attack of the sound. The attack rate is also applied to the lo-fi and filter envelope curves.

Decay

Adjusts the decay curve. The greater the value, the slower the instrument will decay.

FM/Ring modulation frequency (Fm/rng frq)

The fundamental frequency of the frequency or ring modulation.

FM level (fm lvl)

At a low frequency FM first adds vibration to the sound, at high frequencies and low levels it creates bell-like sounds, as the level increases metal sounds, and finally noise.

Ring modulation level (rng lvl)

Ring modulation creates typical auxiliary frequencies.

FM/Ring modulation decay (Fm/rng dcy)

Time constant of FM/ring modulation by-product. Only the beginning of the drum sound is affected by the modulation.

Rectify

Distorts the audio signal.

Crush

Bit rate reduction. Digital artifacts become audible with higher settings.

Down sample (dwnsmple)

Sample rate reduction. Ideal for creating the "old school sound" of older digital drum machines. As it is increased, the result becomes darker.

Lo-fi decay (lofi dcy)

Time constant of the by-product of the three lo-fi effects which makes the sound "dirty". Only the beginning of the drum sound of the lo-fi effects is affected if the decay is low. For instance, this makes the kick of a kick drum sound more interesting.

Filter modes (flt mode)

Filter mode: High cut – sound portions above the cut-off frequency are filtered out. Band pass (BP) – Sound portions above and below the cut-off frequency are filtered out. Low cut - All sound portions below the cut-off frequency are filtered out. This mode is set as a preset and can not be changed.

Filter frequency (flt freq)

The cut-off frequency of the filter.

Filter resonance (flt reso)

Filter resonance which increases the sound portions at the cut-off frequency of the filter. If the resonance is high, the filter itself can also be used as an oscillator.

Filter modulation +/- (flt mod +/-)

Regulates how much and in which direction the filter envelope curve moves the filter frequency in which

direction.

Filter-Modulation decay (flt mod dcy)

Decay time of the filter curve. Smaller values with high resonance create a "zapping" sound of the filter, greater values create the typical sweep sound.

Filter modulation velocity (flt mod vel)

Specifies how much the filter modulation depth depends on the velocity. If this value is increased, louder beats will generate higher filter curves than quieter ones.

24 dB

The filter can operate with a slope of 12 dB or 24 dB. This mode is set as a preset and cannot be changed.

Comb filter (comb filt on)

You can activate a comb filter, a feedback delay that creates resonance-like sounds comparable to a plucked string. The delay time and feedback levels are permanently linked to the filter parameters (frequency and resonance). This comb filter is set as a preset and can not be changed.

Compressor

Controls the compressor strength. This lets you increase the "power" of the drum sound.

Compressor response (comp resp)

Controls the compressor time. The lower the value, the faster the compressor follows the volume.

Tube

Controls the level of the tube amp simulation. It "saturates" the output signal of the voice and adds warmth to the sound if the settings are moderate. Increasing the settings makes the sound "dirtier".

Volume/Pan

Controls the volume and panorama position of the drum instruments.

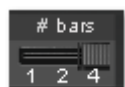
Sequencer



Incident lighting is used to control the drum patterns just like in all classical drum computers and groove boxes. The step sequencer consists of 16 individual step buttons with LEDs corresponding to the appropriate partitioning of a beat:

16ths or 32nds (a half beat is in each case displayed). A button lights up to indicate the releasing of the instrument at this point in the beat (= step).

A left click turns on the step, a further left click deletes the step again.



A pattern can be a maximum of 4 beats long. The length can be modified using the fader on the button bar.



The beat to be edited can be selected with the applicable "edit" button. The "Follow" button specifies whether the step of a beat is in time.

"1 > 2-4" auto draw:

If more than 1 beat is activated as the loop length, the "Auto draw" mode ensures that the drum note set in the first beat is set automatically for the following beats. This makes it very simple to produce a continuous beat from a loop length of 4 beats. Notes set in the rear beats are not affected by auto draw.

How to program a drum pattern:

- Select the pattern length with the fader.

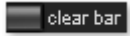


- Select "Event" mode.

- If you edit during playback, turn off "**Follow**". Select the beat with the "**Edit**" buttons.



- Use "**Select**" to choose an instrument to edit.



- Use the "**Clear bar**" button to delete all steps in the selected instrument.



- Turn on the appropriate **step** buttons, and use the "**Velocity**" controller to adjust the beat velocity.

- Repeat the procedure with the other instruments

Snapshots

In addition, you can automate programming of the editable sound parameter of a drum sound via so-called "snapshots". You can thereby save the sound parameters of a drum instrument on the step buttons of the sequencers.

Automating the drum instrument with snapshots.:



- Set the edit mode to "Snap".
- If you edit during playback, turn off "Follow". Select the beat with the "Edit" buttons.
- Select an instrument and edit the sound. You can control the sound of an instrument even when playback has stopped by using the loudspeaker button.
- Save the sound as a snapshot to one of the step buttons.
- Change the sound of an instrument and save the settings to other step button

Warning:

The parameters are not changed abruptly but are faded internally instead, in order to avoid crackling. If two snapshots with extreme parameter differences are too close together, the drum sounds will sound differently when the pattern is played.



- Using the arrow keys, you can jump between the individual snapshots during stopped playback.
- Press "**on**" to activate snapshot automation.

Groove Control

The secret behind "groove" beats lies in delay. That is, individual beats are either anticipated or delayed according to patterns. For example house beats use the "shuffle" whereby straight 1/16s are delayed at certain times.



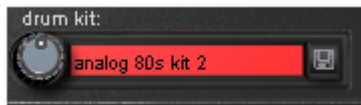
In the Robota there are **groove velocity** and **groove swing**

presets. Groove velocity presets contain for each step of a beat a certain offset to increase or reduce the original beat velocity. Groove swing presets contain for each step a time alignment that is either anticipated or delayed. The result is a livelier-sounding sequence. The strength of the effect can be adjusted with the % regulator.

Setups, drum kits, presets, and patterns



A single instrument sound is saved as a preset.



Presets containing all four instruments are saved as drum kits.



All note information plus the snapshots are saved as a pattern.



Together (drum kit + pattern) they are known as a setup.

Load/Save

Presets, drum kits, patterns and setups can be selected with the continuous rotary regulators next to the display area. For storing, click on the 

"Save" button. Then specify a new name in the input field. To store, press "Enter".

Note: A drum kit stores only the names of the presets, not the actual parameters. If you want to store your own drum sounds that were created by changing existing presets, you must first store them as new presets and then as a new drum kit! The same applies to the setups, which contain only the pattern and drum kit names.

If necessary, always store in this order

: preset -> drum kit -> pattern -> setup. This applies only when creating your own "templates". If you store your arrangement normally, the complete current status (synthesizer + sequencer) of the Robota is always stored and correctly loaded later with the arrangement.

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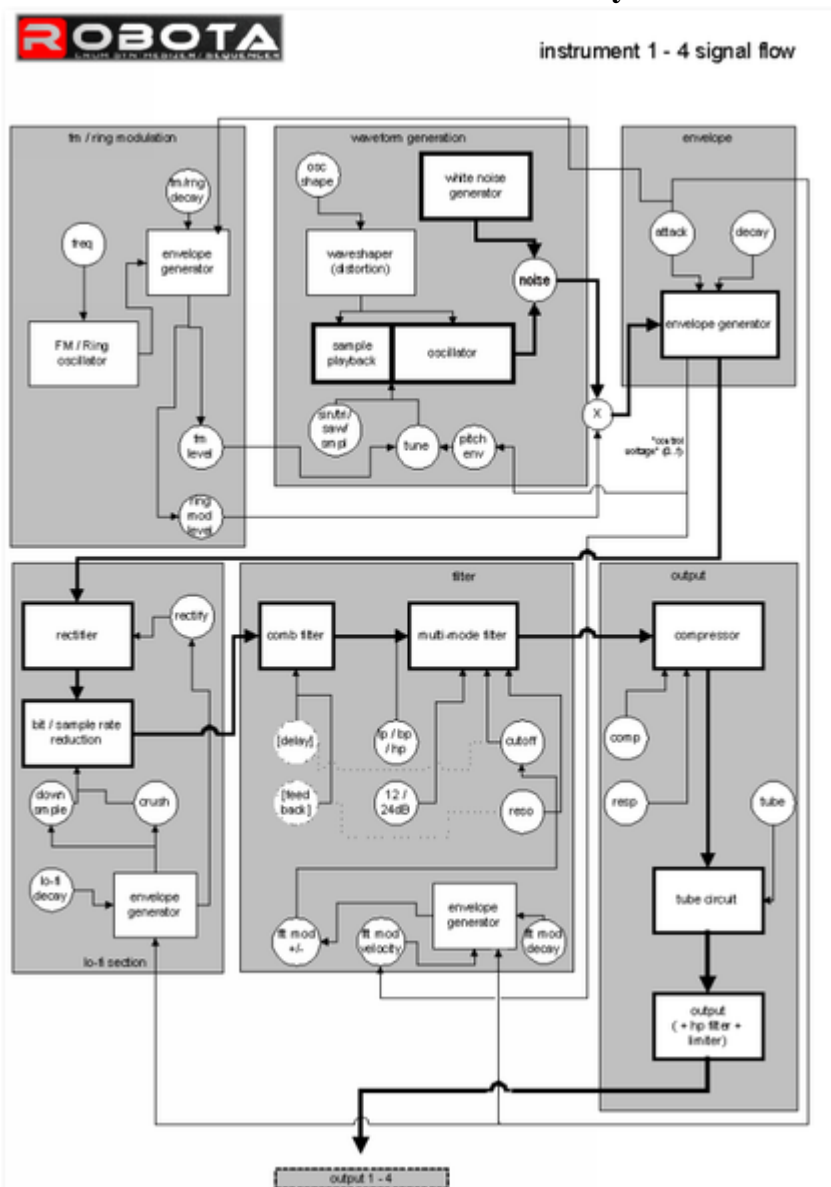
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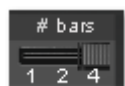
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A pattern can be a maximum of 4 beats long. The length can be modified using the fader on the button bar.



The beat to be edited can be selected with the applicable "edit" button. The "Follow" button specifies whether the step of a beat is in time.

"1 > 2-4" auto draw:

If more than 1 beat is activated as the loop length, the "Auto draw" mode ensures that the drum note set in the first beat is set automatically for the following beats. This makes it very simple to produce a continuous beat from a loop length of 4 beats. Notes set in the rear beats are not affected by auto draw.

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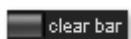
- Select the pattern length with the fader.
- Select "Event" mode.



- If you edit during playback, turn off "Follow". Select the beat with the "Edit" buttons.



- Use "Select" to choose an instrument to edit.



- Use the "Clear bar" button to delete all steps in the selected instrument.



- Turn on the appropriate **step** buttons, and use the "Velocity" controller to adjust the beat velocity.

- Repeat the procedure with the other instruments

Snapshots

In addition, you can automate programming of the editable sound parameter of a drum sound via

so-called "snapshots". You can thereby save the sound parameters of a drum instrument on the step buttons of the sequencers.

Automating the drum instrument with snapshots.:



- Set the edit mode to "Snap".
- If you edit during playback, turn off "Follow". Select the beat with the "Edit" buttons.
- Select an instrument and edit the sound. You can control the sound of an instrument even when playback has stopped by using the loudspeaker button.
- Save the sound as a snapshot to one of the step buttons.
- Change the sound of an instrument and save the settings to other step button

Warning:

The parameters are not changed abruptly but are faded internally instead, in order to avoid crackling. If two snapshots with extreme parameter differences are too close together, the drum sounds will sound differently when the pattern is played.



- Using the arrow keys, you can jump between the individual snapshots during stopped playback.
- Press "on" to activate snapshot automation.

Groove Control

The secret behind "groove" beats lies in delay. That is, individual beats are either anticipated or delayed according to patterns. For example house beats use the "shuffle" whereby straight 1/16s are delayed at certain times.



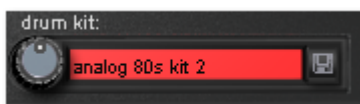
In the Robota there are **groove velocity** and **groove swing**

presets. Groove velocity presets contain for each step of a beat a certain offset to increase or reduce the original beat velocity. Groove swing presets contain for each step a time alignment that is either anticipated or delayed. The result is a livelier-sounding sequence. The strength of the effect can be adjusted with the % regulator.

Setups, drum kits, presets, and patterns



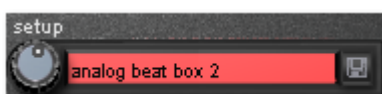
A single instrument sound is saved as a preset.



Presets containing all four instruments are saved as drum kits.



All note information plus the snapshots are saved as a pattern.



Together (drum kit + pattern) they are known as a setup.

Load/Save

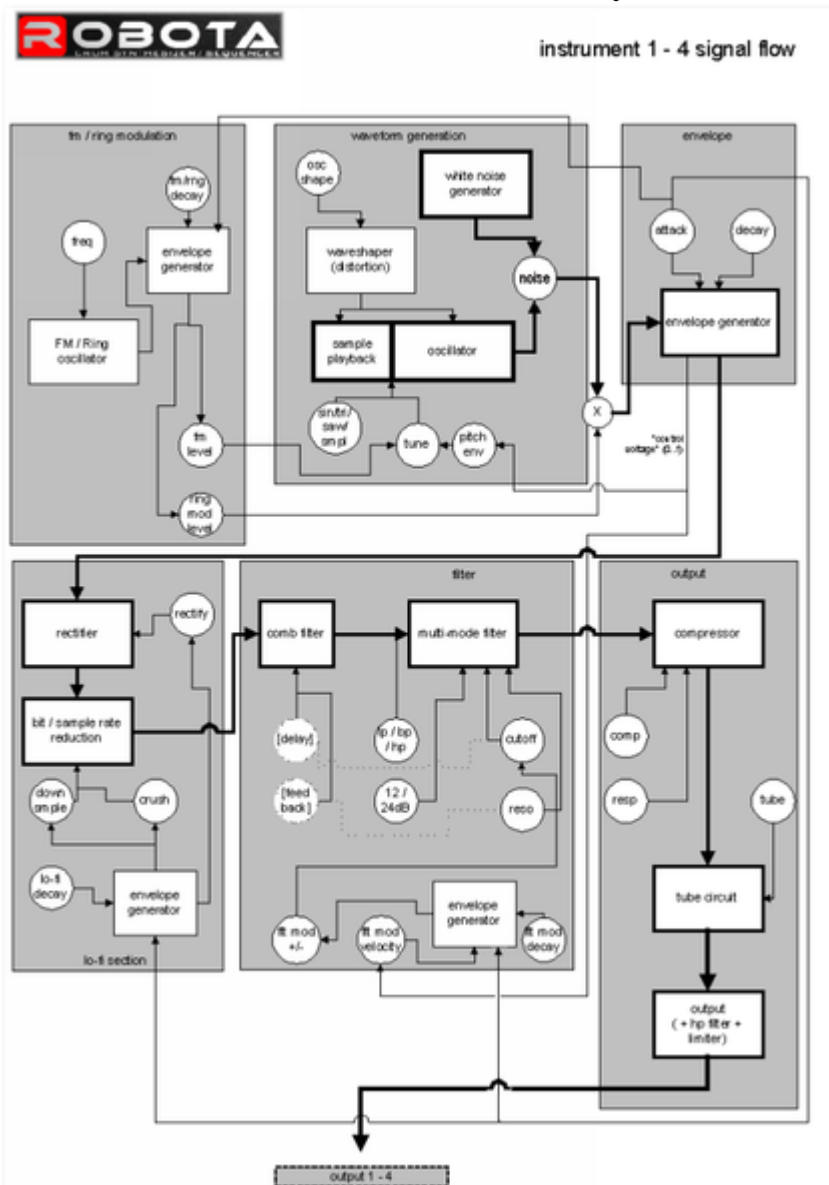
Presets, drum kits, patterns and setups can be selected with the continuous rotary regulators next to the display area. For storing, click on the  "Save" button. Then specify a new name in the input field. To store, press "Enter".

Note: A drum kit stores only the names of the presets, not the actual parameters. If you want to store your own drum sounds that were created by changing existing presets, you must first store them as new presets and then as a new drum kit! The same applies to the setups, which contain only the pattern and drum kit names.

If necessary, always store in this order

: preset -> drum kit -> pattern -> setup. This applies only when creating your own "templates". If you store your arrangement normally, the complete current status (synthesizer + sequencer) of the Robota is always stored and correctly loaded later with the arrangement.

Schematic illustration of the Robota synthesis



Here is a detailed circuit diagram of a Robota voice with a description of all control parameters.

Pitch envelope (pitch env)

Controls the pitch envelope level.

Tune

Tunes the instrument.

Oscillator shape (osc shape)

The shaper adds additional frequency shares to the basic sound of the oscillator by artificially reshaping the wave shape. A sine wave (shape = 0) can be reshaped up to a square curve (shape = max).

Oscillator waveform

The fundamental waveform of the oscillators is selected here. You can choose from sine/triangle/sawtooth/sample. If "Sample" is selected, you can use the controller to select a sample, i.e. a previously recorded drum sound. These samples are saved in the folder /Synth/robota/samples/. If you select custom samples, they will appear in the selection list. If you are playing your own samples, they will appear in the selection list.

Noise

Adjust the ratio between the oscillator sound and the noise generator.

Attack

Adjusts the attack time. The greater the set value, the softer the attack of the sound. The attack rate is also applied to the lo-fi and filter envelope curves.

Decay

Adjusts the decay curve. The greater the value, the slower the instrument will decay.

FM/Ring modulation frequency (Fm/rng frq)

The fundamental frequency of the frequency or ring modulation.

FM level (fm lvl)

At a low frequency FM first adds vibration to the sound, at high frequencies and low levels it creates bell-like sounds, as the level increases metal sounds, and finally noise.

Ring modulation level (rng lvl)

Ring modulation creates typical auxiliary frequencies.

FM/Ring modulation decay (Fm/rng dcy)

Time constant of FM/ring modulation by-product. Only the beginning of the drum sound is affected by the modulation.

Rectify

Distorts the audio signal.

Crush

Bit rate reduction. Digital artifacts become audible with higher settings.

Down sample (dwnsmple)

Sample rate reduction. Ideal for creating the "old school sound" of older digital drum machines. As it is increased, the result becomes darker.

Lo-fi decay (lofi dcy)

Time constant of the by-product of the three lo-fi effects which makes the sound "dirty". Only the beginning of the drum sound of the lo-fi effects is affected if the decay is low. For instance, this makes the kick of a kick drum sound more interesting.

Filter modes (flt mode)

Filter mode: High cut – sound portions above the cut-off frequency are filtered out. Band pass (BP) – Sound portions above and below the cut-off frequency are filtered out. Low cut - All sound portions below the cut-off frequency are filtered out. This mode is set as a preset and can not be changed.

Filter frequency (flt freq)

The cut-off frequency of the filter.

Filter resonance (flt reso)

Filter resonance which increases the sound portions at the cut-off frequency of the filter. If the resonance is high, the filter itself can also be used as an oscillator.

Filter modulation +/- (flt mod +/-)

Regulates how much and in which direction the filter envelope curve moves the filter frequency in which direction.

Filter-Modulation decay (flt mod dcy)

Decay time of the filter curve. Smaller values with high resonance create a "zapping" sound of the filter, greater values create the typical sweep sound.

Filter modulation velocity (flt mod vel)

Specifies how much the filter modulation depth depends on the velocity. If this value is increased, louder beats will generate higher filter curves than quieter ones.

24 dB

The filter can operate with a slope of 12 dB or 24 dB. This mode is set as a preset and cannot be changed.

Comb filter (comb filt on)

You can activate a comb filter, a feedback delay that creates resonance-like sounds comparable to a plucked string. The delay time and feedback levels are permanently linked to the filter parameters (frequency and resonance). This comb filter is set as a preset and can not be changed.

Compressor

Controls the compressor strength. This lets you increase the "power" of the drum sound.

Compressor response (comp resp)

Controls the compressor time. The lower the value, the faster the compressor follows the volume.

Tube

Controls the level of the tube amp simulation. It "saturates" the output signal of the voice and adds warmth to the sound if the settings are moderate. Increasing the settings makes the sound "dirtier".

Volume/Pan

Controls the volume and panorama position of the drum instruments.

Sequencer



Incident lighting is used to control the drum patterns just like in all classical drum computers and groove boxes. The step sequencer consists of 16 individual step buttons with LEDs corresponding to the appropriate partitioning of a beat:

16ths or 32nds (a half beat is in each case displayed). A button lights up to indicate the releasing of the instrument at this point in the beat (= step).

A left click turns on the step, a further left click deletes the step again.



A pattern can be a maximum of 4 beats long. The length can be modified using the fader on the button bar.



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"1 > 2-4" auto draw:

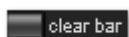
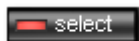
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How to program a drum pattern:

- Select the pattern length with the fader.
- Select "Event" mode.



- If you edit during playback, turn off "Follow". Select the beat with the "Edit" buttons.



- Use "Select" to choose an instrument to edit.
- Use the "Clear bar" button to delete all steps in the selected instrument.
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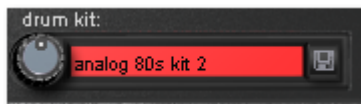
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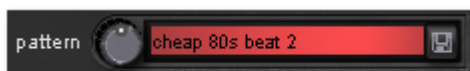
Setups, drum kits, presets, and patterns



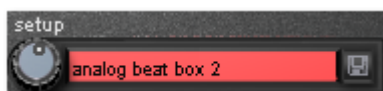
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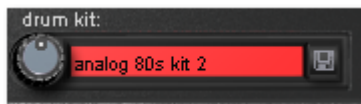
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Setups, drum kits, presets, and patterns



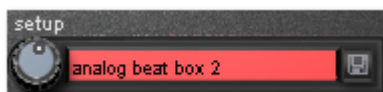
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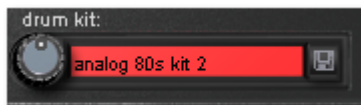
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Setups, drum kits, presets, and patterns



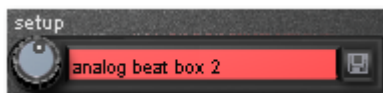
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Vita

The MAGIX Vita synthesizer specializes in playback of "real" instruments using sampling technology. This means that short samples of real instruments in different pitches, playing techniques and volumes are used, combined, and played again at the correct pitch.

The VITA synthesizer is controlled via the [MIDI](#)

objects. If you load Vita via the Media Pool, a preset MIDI object will appear first. You can then load different Vita sounds via the "Output" menu at the top of the MIDI editor.

You can adjust Vita's sounds via the instrument menu of the trackbox.



The Vita interface



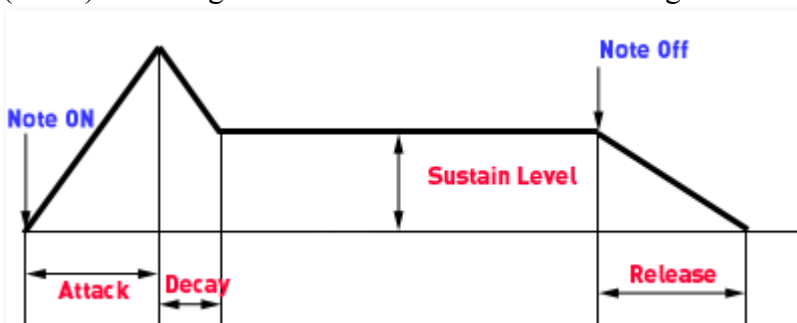
1. Layer selection/Peak meter:

The Vita sounds, also known as layers, can be selected here using the arrows. Right clicking on the display opens the layer menu.

2. Main parameter:

Sets the volume, panorama position, pitch characteristics ("transpose") and the fundamental frequency ("master tune").

3. Amp: This is the volume envelope. Here you can influence the temporal progression of a track's volume. **A**(ttack) stands for the volume increase at the start, **D**(ecay) for the length of time the decrease in volume takes on a section set with **S**(ustain) at the maximum volume. **R**(elease) is the length of time it takes for the sound to ring out.



4. Filter:

Switches on a filter which influences the sound. "Filter type" allows you to select a filter type. "Cut-off" regulates the filter frequency, "Resonance" controls the strength of the amplification of the filter frequency.

"Velocity" specifies how strongly beat should influence the filter frequency, and the volume can be balanced using the "Gain" controller. The filter envelope (ADSR slider) influences the filter frequency depending on the time.

5. Delay:

Switches on an echo effect, "Time" controls the delay time, "Level" controls the strength of the echo sound.

6. Reverb:

Switches on a reverb effect, "Time" controls the delay time, "Level" controls the strength of the echo sound.

7. Value display:

The value display shows the exact value of the parameter which was just modified.

8. Dynamic range: Usually, the relationship between the created volume and [MIDI](#) velocity is proportional. Since some MIDI keyboards produce a velocity which is too hard for loud sounds or the other way around, this behavior can be balanced out with the "MIDI input curve". The dynamics of the sound can be influenced with "dynamic" and "dynamic curve", i.e. the relationship between the quietest and loudest sounds.

9. Voices:

Here you can control the amount of voices played simultaneously. If notes are no longer played during fast passages, you can increase the amount of voices here (performance will not be as good).

10. Keyboard:

Here you can preview the Vita sounds. This only works during playback or recording.

Revolta 2

Revolta 2 is a further development of Revolta. It is polyphonic and playable with up to 12 tones, including an additional noise generator, a step sequencer, and an extra-flexible modulations matrix. An effects section with 9 different effects and presets (created by a professional designer) make it a full-fledged synthesizer for all kinds of lead, sequence, and pad sounds.

REVOLTA 2 has a whole array of presets. The sounds have been created by professional sound engineers and demonstrate the huge potential of this instrument from the word start. First off, however, we would like to encourage you to try out the various control functions and to experiment as much as you like. The sky's the limit to your creativity.

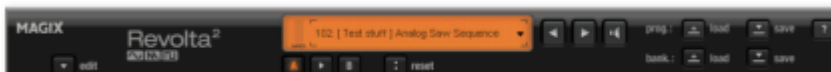
Revolta 2 interface

Note: The following is only a short description of the Revolta 2 interface.



For a comprehensive documentation of this complex synthesizer please click the help button on the Revolta 2 interface!

The Revolta 2 interface can be displayed in two sizes. In "Rack" mode only the elements necessary for preset loading are visible:



By clicking the edit button you can open the complete interface.



1. Main parameter:

Sets the volume, panorama position, pitch characteristics ("Transpose"), and play modes ("Poly", "Mono", "Legato"). "Glide" regulates the portamento time.

2. Oscillator section:

Two oscillators are available with smoothly adjustable curve forms and a noise generator. Both oscillators can be tuned to each other and used to modulate frequencies.

3. Amp: This is the volume envelope. Here you can influence the temporal progression of a track's volume. **A**(ttack) stands for the volume increase at the start, **D**(ecay) for the length of time the decrease in volume takes on a section set with **S**(ustain) at the maximum volume. **R**(elease) is the length of time it takes for the sound to ring out. **"Vel"**

specifies how much the envelope curve depends on the velocity.

4. Filter:

Here you can switch on different filters to influence the sound. "Filter type" selects a filter type. "Cut-off" regulates the filter frequency, "Resonance" controls the strength of the amplification of the filter frequency. "VEL" indicates how much the velocity influences filter frequency, and "Key" changes the filter frequency depending on the note pitch ("Key tracking"). The filter envelope (ADSR slider) influences the filter frequency depending on the time. "Env mod" controls the strength of the filter envelope curve, and with "drive" the filter can be overmodulated.

5. FX1/FX2

: Here you can mix in 2 different effects out of a total of 9 available effects.

6. LFO1/LFO2/Step sequencer

: Two LFOS and the step sequencer can be used to modulate single parameters of Revolta 2.

7. Options and modulations matrix: The two buttons open the Revolta options page for general and preset-specific settings and modulation matrix. In the modulation matrix modulation sources are connected with modulation targets. Simple modulations like the oscillator (the pitch will be modulated via an LFO) can be set quicker directly on the interface. Much more complex modulations are possible in the matrix because the matrix offers more modulation sources (e.g. [MIDI](#) controller, oscillators) and the modulation source can influence more targets.

8. Value display:

The value display shows the exact value of the parameter which was just modified. In addition, you can find out the load of the twelve voices.

9. Preset section:

Here you can select Revolta presets. Every sound can be listened to, and an A-B comparison between two sounds is also possible (for example, an edited and an unedited sound).

Auto Jam Session

Auto Jam [Session](#)

lets you create complete songs single-handedly. Begin with a simple idea, a small riff, or a chord progression. This is then recorded and put straight into an endless loop after the recording. Now, record a melody on a different track. The program simulates working with hardware which loops delays, e.g. the Gibson Echoplex. The difference is that Samplitude Music Studio 15 creates an arrangement which can later be edited and compiled into a complete song.

During an Auto Jam Session, everything you do is recorded.

In this chapter

[Open](#)

[Handling](#)

[Auto Jam Session modes](#)

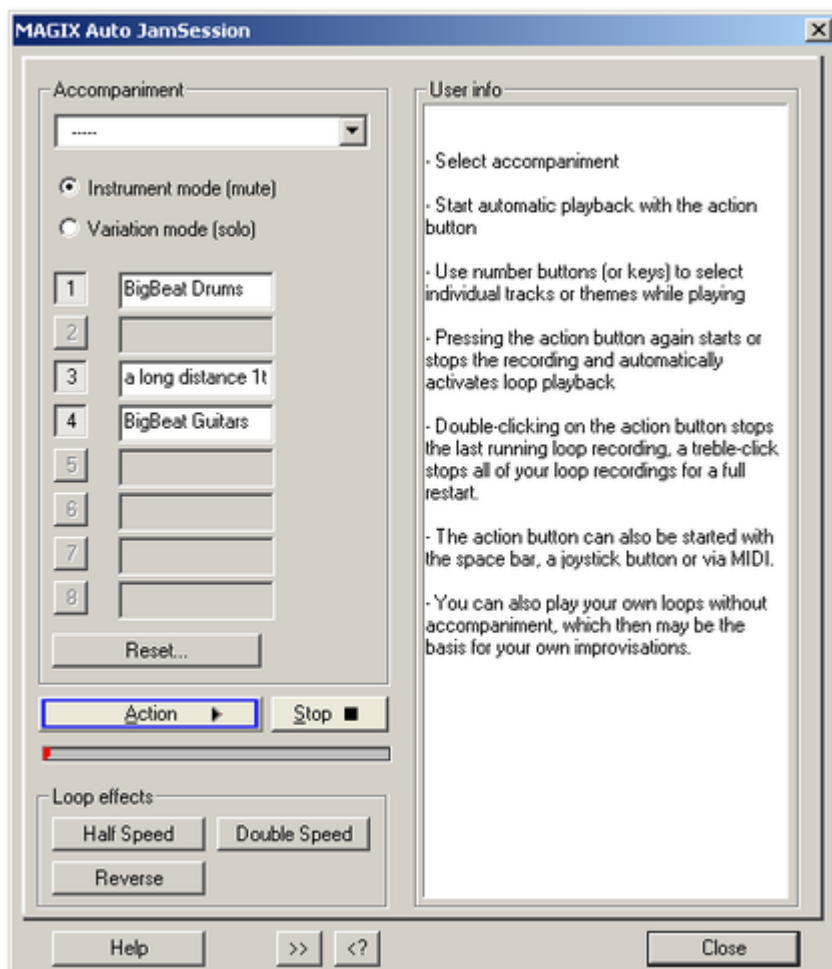
[Loop effects](#)

[Enhanced Auto Jam Session dialog](#)

Open

1. Start Samplitude Music Studio 15 and choose "New Auto Jam [Session](#)" from the start selection or
2. Create a new arrangement.

The Auto Jam Session can be started via the "Playback/Record" menu or via the button in the upper toolbar.



Handling

After startup you'll see the simple view of Auto Jam [Session](#)

. In the right half you'll be given useful hints on how to use the program without having to resort to the help file (press "F1" or "Help").

Action: The most important handling element is displayed as the "Action" button (bottom left), which can also be controlled using the space bar or via [MIDI](#) /joystick.

1st click:

Playback begins. Nothing is recorded yet.

2nd click:

The first recording starts. Record your first beat(s). As a sign that it's recording, the action button turns red.

3rd click:

Ends the recording. The recorded part is inserted into the arrangement as a loop and then played repeatedly. It serves as a speed measure for the next loop.

4th click:

In the next track, the recording starts. You'll start off hearing the previously recorded loop, and now you can add an additional voice to it.

5th click:

The recording ends, playback of the first and the newly recorded loop continues.

The next clicks start and end other recordings (clicks 4 and 5 repeat). Every restart of the recording starts in a new track. All loops recorded up until now are played continuously.

Double clicking on the action button stops the last loop recorded. Clicking three times ends all running loops. You can use it to separate various song parts from one another.

By clicking on stop, the playback/recording is stopped immediately

Auto Jam Session modes

There are many ways to record a song:

- Record everything by yourself. The loop that was recorded first is set as a measure for the speed of the song in BPM (beats per minute). The buttons 1-8 function as mute or solo buttons depending on the modes set (see below).
- You can choose from one of the accompaniments provided. The speed of the song is taken from the template. There are two modes:
- Instrument mode (mute): The accompaniments consist of multiple individual instruments that can be muted using the buttons 1-8 (or the corresponding keys on the keyboard).
- Variations mode (solo): These accompaniments contain multiple variations of the same instrument which you can switch between during playback.

Reset

: Reverts every button to its original state and selectively stops the last loop recorded, every self-recorded loop, all loops, or deletes the entire project.

Loop effects

You can change your arrangement with these real-time effects. The loop effects affect either every track or just the last track recorded (see below).

Technically, these effects are object effects. Switching the effects on and off creates separate objects from the loops.

Half speed

: The speed factor is halved when this button is pressed. (If you press the button twice, then it will be played at a quarter of its speed, etc.)

Double speed

: The speed factor is doubled when this button is pressed.

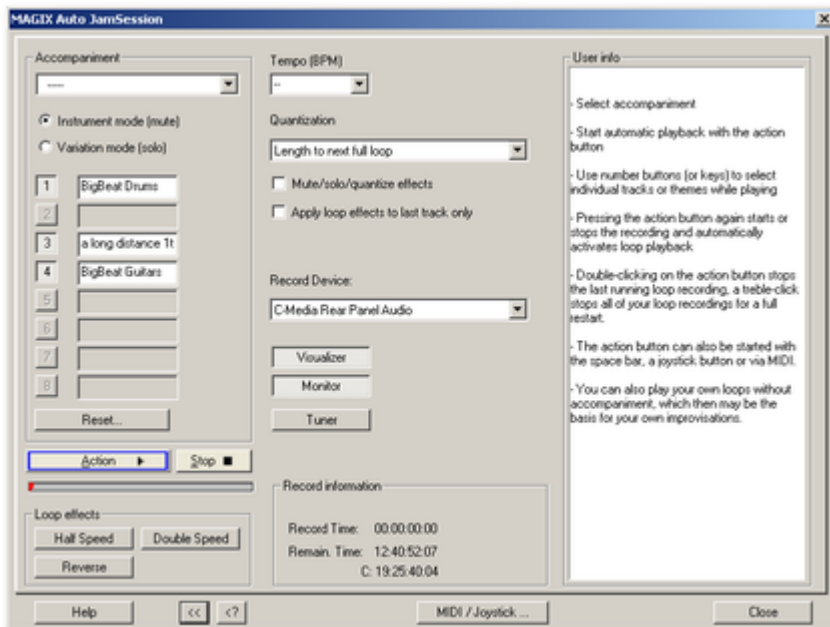
This effect is applied to play "impossible" guitar solos. Switch your existing arrangement to half speed, record your guitar solo, and then click "double speed". Your accompaniment plays in original speed again and your solo now sounds twice as fast and an octave higher.

Reverse

: This effect plays the whole arrangement backwards. Opening it again resets it.

Enhanced Auto Jam Session dialog

Clicking the ">>" button opens the enhanced Auto Jam [Session](#) dialog.



Tempo

Select the tempo from the list or enter one of your choice.

"—" indicates that the speed adapts to that of the first recorded loop or of the accompaniment (if chosen).

Quantisierung

Quantization guarantees that newly recorded loops fit into the existing arrangement by recording loops whose lengths are exactly four times that of the first recorded loop, or the loops begin or end on the bar or loop borders.

There are multiple options for optimizing:

Length of the next whole loop

: The new loop is recorded with the same length or a whole-numbered multiple (2x, 3x, 4x...) of the original loop length. The loops always remain synchronous, but cannot have the same starting point. This is the preset quantization mode.

Start + length of the next whole loop

: It's only after the next loop border that recording starts. The length is quantized similarly to "Length of the next whole loop". The starting points of the loops are all at the same positions.

Length to previous whole loop

: The loop end is shortened to the last exceeded loop border. This is useful when, while recording, you always only get around to clicking on the action button (space bar) after the next loop.

Start + length to next bar

: The starting point of the recording and the loop length are adapted to the bar. This is useful if you have recorded the first loop over multiple bars.

Start + length to the next beat

: The starting point of the recording and the loop length adapt to quarter beats. This is useful if you want to record very short or uneven loops (for example, only $\frac{3}{4}$ bar).

Both of these options are useful if the speed has been set (specified in tempo or by the accompaniment)

Freestyle

: Quantization is deactivated. No more loop starts or loop lengths are adapted when recording. This is only recommended if you want to create chaos, or are very precise in your work.

Quantize mute/solo/effects

: This option also quantizes the control of solo, mute, and other effects (double speed, half speed, reverse).

Only use loop effects on the last track

: The loop effects are always used on the last track.

Record device

You can select the desired sound card or sound card input in the drop down menu.

Visualizer

: This button switches the visualization on or off.

Monitor

: This button activates or deactivates monitoring. This means that the incoming signal is displayed in the visualizer and played by the sound card output.

Tuner

: This button opens an additional visualization in the „tuner" mode with which you can tune your instrument (for example, your guitar).

Recording information

Recording time

: Shows how long you've been recording.

Remaining time

: Here, you can see for how long your hard disk can record. If you have multiple hard disks or hard disk partitions, the recording capacity of these are also shown.

MIDI / Joystick ...

This button opens the Auto Jam [Session](#)'s shortcut editor. More information can be found under "Shortcut editor -> Auto Jam Session". You can also "learn" [MIDI](#) commands.

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Managers

The managers combine frequently needed administrative and control functions together inside one window, including those of markers, grooves, and tracks. This also includes a file browser to find, sample, and load media data.

The managers can be opened inside or outside of the main window and do not block it. The managers window has a multi-monitor capability and remembers its last position when it is closed. A number of managers can be opened simultaneously in various different views and independently of one another.

The managers integrate the following sub-windows, including keyboard shortcuts:

- [File browser](#)
- [Objects](#)
- [Tracks](#)
- [markers](#)
- [Ranges](#)
- [VSTi](#)

To open the managers, click on the "Manager" entry in the toolbar or select the entry "Open new manager" in the "Tool" menu. With this menu entry you can also open further manager windows in addition to the one already open.

Click on the window tab at the bottom edge of the managers window in order to open the corresponding sub-window.

In this chapter

[File browser](#)

[Soundpool](#)

[Track manager](#)

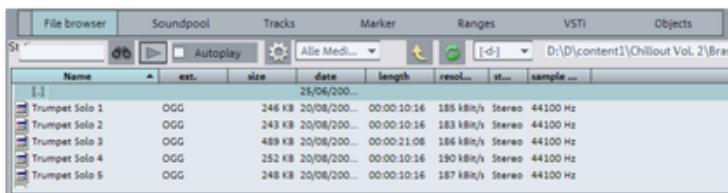
[Marker manager](#)

[Range manager](#)

[VSTi manager](#)

[Object manager](#)

File browser



Samplitude Music Studio 15 contains a file browser integrated into the manager to sample and directly load files into projects. The browser allows favorite folders to be defined and provides access to the folders that were last opened.

In order to display the file browser, click on the "Manager" button in the toolbar and then select the "File browser" tab on the bottom edge of the manager window.

Menu

: "Tools -> Manager -> File browser"

Navigation / Favorites

The file manager works in a similar way to Windows Explorer; directories and files are displayed with directory and file symbols in list form.

Navigation is achieved with the mouse or keyboard. A drive selection menu found in the toolbar lets you quickly switch between all data storage devices connected to the workstation.

A display filter located in the toolbar lets you limit the display to certain media types, e.g. .wave, [MIDI](#), or project files, only. "All media files" is the default display.

The "Search" option lets you search the current window for directories or files. Enter a search item into the input box and click "Enter". Found directories or files are highlighted. You can find and highlight several entries that meet your search criterion by entering one or several first letters.

The file browser opens as a tiled window by default. The right box hosts the favorites list, which you can fade out using the "Options" toolbar. Use "Add" or "Remove" to add and remove directories from the list of favorites.

There is a combo box below the favorite list displaying the last used paths and which lets you change the current project directory.

Preview audio files

You can use the "Play" icon in the toolbar to preview a marked audio file, and every highlighted audio file is played immediately if the "Autoplay" box is checked. This way you can listen to a complete list using the cursor keys only. Clicking on the play button again stops continuous playback again.

Hint:

During playback the transport console controls are allocated to the media file. Playback and positioning functions are fully available.

Playback is not routed through the mixer or internal effects. In contrast to the playback features of the "Load" window, which uses routines of the operating system, playback uses the audio device selected in the "Play" parameters ("P"), usually an MME, WDM, or ASIO device. If no playback occurs, first check that the settings and routing of this device is correct.

Note: To preview certain media data, e.g. in [WMA](#)

format, you have to convert these files to wave format. Conversion is done automatically in the background.

Load files from the browser into projects

Some media files can be inserted from the browser into an opened project at the desired time position

via drag & drop. If the file browser list is in the foreground, pressing "Enter" has the same result.

If an audio file is dragged from the clip list and dropped into an empty space or into the title bar of the program window, it is opened in wave editing mode.

If several files are selected in the list, all files will be inserted at the current cursor position as new objects, and loading options ("Options") will be applied. This way you can specify whether all files should be inserted into the current project one after the other, one underneath the other, alphabetically, or according to their time stamp positions. The load option settings are valid also for files loaded via the load dialog of the program.

There are further options in the context menu of a media file (right click):

- Load file
- Delete file: Physically removes file from storage device. This process cannot be reversed!
- Highlight all files
- Open via standard link: The file is opened in the Windows application that is linked to this file type. This can be an [MP3](#) player or some other wave editor.
- Open in Windows™ Explorer: Opens the current directory as a new Windows Explorer™ window.

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Soundpool

Diese Einstellung dient zum Ansteuern von Sound Pools. Access to the supplied Soundpools is via a new, more clearly laid out database overview that enables the display of loops, multiple styles and instrument categories, e.g. all bass loops of every installed style or every loop of a style.

Sollten Sie bei der Installation die Soundpools nicht mit auf die Festplatte installiert haben, legen Sie die Samplitude Music Studio 15-Installations-DVD ins DVD-Laufwerk. Der Inhalt des Soundpools wird nun in die Datenbank importiert. Auch andere Soundpool-Medien werden automatisch erkannt und in die Datenbank aufgenommen.



Es wird empfohlen, die Medien auf Festplatte zu kopieren und dann mit „Style hinzufügen“ zu importieren.

In diesem Menü finden Sie noch einige weitere Optionen zur Wartung und Anzeige der Soundpool-Datenbank:

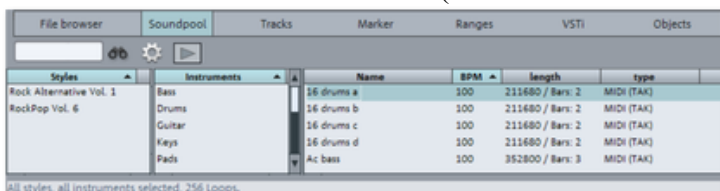
Normalerweise können Sie die Loops durch einfaches Anklicken vorhören, auch bei laufender Projekt-Wiedergabe. Ist „Automatisches Abspielen“ deaktiviert, benutzen Sie dazu die Abspielen-Schaltfläche im Manager.

Mit der Option „Instrumente ohne verfügbare Loops verstecken“ werden Instrumentengattungen, für die es in einem bestimmten Style keine Loops gibt, im Soundpool-Manager ganz ausgeblendet (anstatt ausgegraut).

Jeder einmal erkannte Soundpool, von CD/DVD oder auf der Festplatte, wird in die Datenbank aufgenommen und mit angezeigt, auch wenn das entsprechende Medium nicht im Laufwerk liegt oder der Soundpool gelöscht oder verschoben wurde. Mit der Option „Soundpool bereinigen“ lassen sich diese Datenbankeinträge entfernen. Mit „Soundpool zurücksetzen“ wird die Soundpool-Datenbank zurückgesetzt, Sie können danach die Soundpools neu importieren.

Ein Soundpool besteht aus einem oder mehreren **Styles**. Styles sind zusammengehörige Sound-Bibliotheken, die eine bestimmte musikalische Stilrichtung bedienen. Die Sounds (Sample- oder [MIDI](#)

-Loops) eines Styles haben alle ein bestimmtes Tempo. Sie können die Loops der verschiedenen Styles natürlich auch mischen, dabei werden die Tempi automatisch angepasst. Innerhalb eines Styles sind die Loops nach Instrumenten geordnet, ein Instrumentenordner enthält verschiedene Sounds. Jeder Sound kann verschiedene Tonstufen haben (außer Drums und Effektsounds).

A screenshot of the Soundpool Manager interface showing a table of styles and instruments. The table has columns for Name, BPM, length, and type. The data is as follows:

Style	Instrument	Name	BPM	length	type
Rock Alternative Vol. 1	Bass	16 drums a	100	211680 / Bars: 2	MIDI (TAK)
	Drums	16 drums b	100	211680 / Bars: 2	MIDI (TAK)
	Guitar	16 drums c	100	211680 / Bars: 2	MIDI (TAK)
	Keys	16 drums d	100	211680 / Bars: 2	MIDI (TAK)
	Pads	Ac bass	100	352800 / Bars: 3	MIDI (TAK)

Die Soundpool-Ansicht besteht aus mehreren Spalten: Zuerst werden alle Styles aufgeführt, die in der Datenbank vorhanden sind. In der zweiten Spalte werden die Instrumente aufgelistet. Die dritte Spalte „Name“ enthält die Liste(n) der gefundenen Sounds. Für diese werden der jeweilige Name, das Tempo, die Länge in Takten (1, 2 oder 4 Takte) und der Typ aufgelistet. Darüber werden die verschiedenen Tonstufen angezeigt (falls vorhanden).

Die Liste der gefundenen Samples ergibt sich aus der Auswahl der Einträge in den ersten beiden Spalten. Mit Strg+Mausklick können Sie die Auswahl erweitern oder reduzieren. Keine Auswahl (Strg+Klick auf ein einzelnes ausgewähltes Element) zeigt alle Einträge dieser Kategorie.

Wenn Sie z.B. das Instrument „Drums“ und „Percussion“ auswählen und keinen Style, werden alle Drum- und Percussion-Samples der gesamten Datenbank angezeigt.



Im Suchfeld können Sie in der Liste der gefundenen Sounds nach einem bestimmten Sound-Dateinamen suchen.

Bei den Typen der Loops gibt es einen prinzipiellen Unterschied: Während [Audio](#)

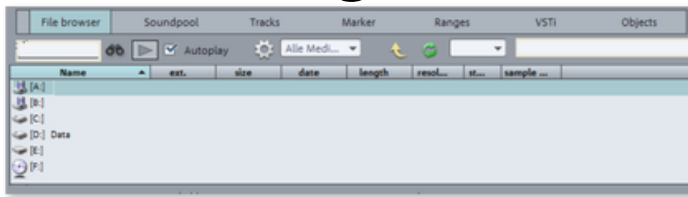
-Loops (.wav oder .ogg) normale (geloopte) Audio-Objekte sind, die sich überall im Arranger einsetzen lassen, bestehen MIDI-Loops (MIDI-Takes) aus MIDI-Daten + dem angesteuerten Synthesizer (Vita oder Revolta). Dieser wird automatisch auf der Spur geladen, auf der Sie die MIDI-Loop einsetzen. Das bedeutet, dass Sie für jede weitere MIDI-Loop, die einen anderen Sound ansteuert, eine neue Spur benutzen müssen. Die gleichen Loop in einer anderen Tonstufe ist jedoch möglich.

Die Loops lassen sich durch Doppelklick, Drag & Drop oder Doppelklick auf die entsprechende Tonstufe laden. Dabei werden die Objekte direkt hintereinander angelegt, so dass sich schnell komplette Begleitspuren zusammenstellen lassen.

Tipp:

Wenn Sie in mehreren Listen parallel suchen wollen, öffnen Sie einfach einen neuen Manager über das Menü „Werkzeuge > Neuen Manager öffnen...“ und wechseln im neuen Fenster auf „Soundpool“. Für jede Liste lässt sich nun eine eigene Suchanfrage einstellen.

Track manager



The track manager represents all of the tracks contained in the current project and not only provides direct access to solo, mute, and record, but also hides tracks in the project window and mixer. To display the track manager, click on the "Manager" button in the toolbar and then select the "Tracks" tab on the bottom edge of the manager window.

[Menu](#)

: "Tools -> Manager -> Track manager"

Track view and selection

The track manager contains all of the current project's tracks. You can double click on the track number to select a track. The track will be displayed in the project window. If the track is outside of the visible display, the project window will scroll to this vertical position.

Search for tracks

: As in other manager windows the track manager also provides a search option that allows you to search for tracks in the current window. Enter a search item into the box and press "Return". Found tracks are highlighted.

Rename, delete, and insert tracks

You can delete tracks via the manager by selecting one or several of these tracks and pressing "Del". Alternatively, you can also use the context menu to delete a track.

You can rename tracks by double clicking on the track names and entering a new name. The procedure of changing a marker position directly in the list is the same. "Tab" moves on to the next editable value. "Cursor up/down" navigates you vertically within a column if this is a text column.

To edit an object directly from the object manager, right click on the object you want to edit and start the object manager. All functions are present in the same way as they would be if you opened the object manager from the project window.

You can also insert new tracks directly in the track manager. Right click on a track entry and select "Insert track" from the context menu. A new track is added after the final track of the project.

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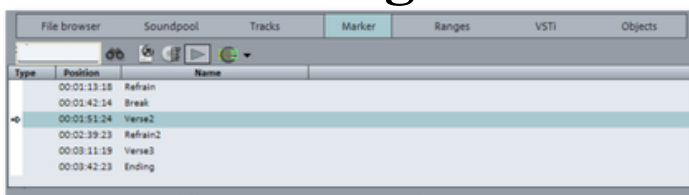
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"Cursor up/down" navigates you vertically within a column if this is a text column.

To edit an object directly from the object manager, right click on the object you want to edit and start the object manager. All functions are present in the same way as they would be if you opened the object manager from the project window.

You can also insert new tracks directly in the track manager. Right click on a track entry and select "Insert track" from the context menu. A new track is added after the final track of the project.

Marker manager



The marker manager represents all of the markers contained in the current project (regardless of type) and makes it possible to jump to or start playing them directly from the list.

To display the marker manager, click on the "Manager" button in the toolbar and then select the "marker" tab at the bottom edge of the manager window.

Menu

: "Tools -> Managers -> Marker manager"

You can export information from the marker manager as a text file. Click on the "Export text" button in the toolbar. The Windows text editor opens with an extract from the marker manager list. The following information is saved:

- Project name
- Marker type
- Marker name
- Marker position in the project

You will then find the file in your project folder (e.g. project_name.txt).

Marker view and selection

In the marker manager you can display all of the current project's markers.

Searching for markers

: As in other manager windows, the marker manager also provides a search option which allows you to search for markers in the current window. Enter a search item into the box and "Enter". Found markers are highlighted.

Jump to and play from marker position

Double click on a marker in the type column to position a playback marker on a different marker position.

Playing markers: Select a marker and click on the "[Play marker](#)

" button in the toolbar. A range surrounding the selected marker is created and playback is started.

Deleting markers, changing marker name, position, and type

You can delete objects directly in the object manager by selecting one or several objects simultaneously and pressing "Del", or you can also use the context menu to delete a track.

You can rename markers by double clicking on the marker names and entering a new name, or you can use the context menu. The procedure for changing a marker position directly in the list is the same. Please use the same method to change a marker position directly from the list. "Tab" moves on to the next editable value. "Cursor up/down" navigates vertically within columns if these are name columns.

Tip:

You can change the type in the context menu of the respective marker anytime, e.g. if you want to change a position marker into a CD track marker.

Marker view and selection

In the marker manager you can display all of the current project's markers.

Searching for markers

: As in other manager windows, the marker manager also provides a search option which allows you to search for markers in the current window. Enter a search item into the box and "Enter". Found markers are highlighted.

Jump to and play from marker position

Double click on a marker in the type column to position a playback marker on a different marker position.

Playing markers: Select a marker and click on the "[Play marker](#)" button in the toolbar. A range surrounding the selected marker is created and playback is started.

Deleting markers, changing marker name, position, and type

You can delete objects directly in the object manager by selecting one or several objects simultaneously and pressing "Del", or you can also use the context menu to delete a track.

You can rename markers by double clicking on the marker names and entering a new name, or you can use the context menu. The procedure for changing a marker position directly in the list is the same. Please use the same method to change a marker position directly from the list. "Tab" moves on to the next editable value. "Cursor up/down" navigates vertically within columns if these are name columns.

Tip:

You can change the type in the context menu of the respective marker anytime, e.g. if you want to change a position marker into a CD track marker.

Jump to and play from marker position

Double click on a marker in the type column to position a playback marker on a different marker position.

Playing markers: Select a marker and click on the "[Play marker](#)" button in the toolbar. A range surrounding the selected marker is created and playback is started.

Deleting markers, changing marker name, position, and type

You can delete objects directly in the object manager by selecting one or several objects simultaneously and pressing "Del", or you can also use the context menu to delete a track.

You can rename markers by double clicking on the marker names and entering a new name, or you can use the context menu. The procedure for changing a marker position directly in the list is the same. Please use the same method to change a marker position directly from the list. "Tab" moves on to the next editable value. "Cursor up/down" navigates vertically within columns if these are name columns.

Tip:

You can change the type in the context menu of the respective marker anytime, e.g. if you want to change a position marker into a CD track marker.

Deleting markers, changing marker name, position, and type

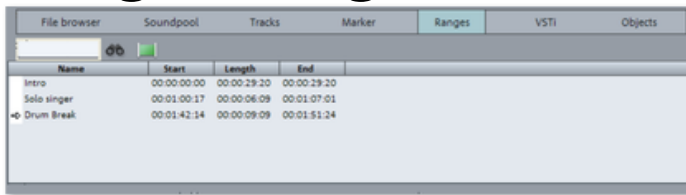
You can delete objects directly in the object manager by selecting one or several objects simultaneously and pressing "Del", or you can also use the context menu to delete a track.

You can rename markers by double clicking on the marker names and entering a new name, or you can use the context menu. The procedure for changing a marker position directly in the list is the same. Please use the same method to change a marker position directly from the list. "Tab" moves on to the next editable value. "Cursor up/down" navigates vertically within columns if these are name columns.

Tip:

You can change the type in the context menu of the respective marker anytime, e.g. if you want to change a position marker into a CD track marker.

Range manager



The range manager represents all ranges contained in the current project and makes it possible to select them directly from the list.

In order to display the range manager click on the "Manager" button in the toolbar and then select the "Ranges" tab on the bottom row of the manager window.

Menu: "Tools -> Managers -> [Range manager](#)"

Defining and search for ranges

Defining ranges:

To save a range in the manager, you first have to define a range in the project window. Next, click on the "Define new range" button in the toolbar of the range manager.

Ranges that are saved using the program's "Save range" feature ("Alt + F2", "Alt + F3", etc.) appear in the list with "F2", "F3", etc., as indicators.

Searching for ranges:

As in other manager windows, the range manager also features a search option that lets you search for ranges in the current window. Enter a search item into the box and press "Enter". Found ranges are highlighted.

Edit range parameters

You can edit the following parameters in the range manager:

- Name
- Start
- Length
- End

To edit a parameter, double click on the respective entry and enter a different value. Numeric values can be changed by drag & drop, and "Ctrl + Shift" allows for larger or smaller value changes. "Tab" moves on to the next editable value. "Cursor up/down" navigates vertically within a column if these are name text boxes.

Defining and search for ranges

Defining ranges:

To save a range in the manager, you first have to define a range in the project window. Next, click on the "Define new range" button in the toolbar of the range manager.

Ranges that are saved using the program's "Save range" feature ("Alt + F2", "Alt + F3", etc.) appear in the list with "F2", "F3", etc., as indicators.

Searching for ranges:

As in other manager windows, the range manager also features a search option that lets you search for ranges in the current window. Enter a search item into the box and press "Enter". Found ranges are highlighted.

Edit range parameters

You can edit the following parameters in the range manager:

- Name
- Start
- Length
- End

To edit a parameter, double click on the respective entry and enter a different value. Numeric values can be changed by drag & drop, and "Ctrl + Shift" allows for larger or smaller value changes. "Tab" moves on to the next editable value. "Cursor up/down" navigates vertically within a column if these are name text boxes.

Edit range parameters

You can edit the following parameters in the range manager:

- Name
- Start
- Length
- End

To edit a parameter, double click on the respective entry and enter a different value. Numeric values can be changed by drag & drop, and "Ctrl + Shift" allows for larger or smaller value changes. "Tab" moves on to the next editable value. "Cursor up/down" navigates vertically within a column if these are name text boxes.

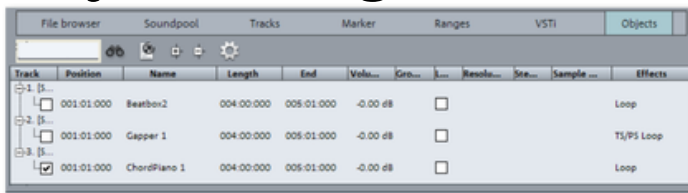
VSTi manager

The VSTi manager facilitates the easy display, insertion, and deletion of MAGIX, VST, and Rewire instruments in the current project. If the instruments are opened, the outputs to the assigned tracks are displayed. Right clicking on the selected instrument opens the selected VSTi's plug-in dialog. Instrument outputs are routed in the VSTi manager in "Routing setup". In the dialog which appears you can specify how many outputs you want to route. You can either route all outputs to the current track or, if you like, create new mono or stereo tracks. Pressing "Del" removes a selected instrument completely from the project. If only individual output signals were selected, then routing to a track is cancelled by pressing "Del".

Name	Start	Length	End
Intro	00:00:00:00	00:00:29:20	00:00:29:20
Solo singer	00:01:00:17	00:00:06:09	00:01:07:01
Drum Break	00:01:42:14	00:00:09:09	00:01:51:24

Detailed information on the [routing settings of instruments](#) and managing outputs can be found in the chapter "[Software/VST instruments](#) -> [Routing instruments](#)".

Object manager



The object manager integrated into the manager lists all the objects contained in the current project and enables the selected object parameters to be edited.

To display the object manager, click on the "Manager" button in the toolbar, and then select the "[Objects](#)" tab on the bottom edge of the manager window.

Menu

: "Tools -> Manager -> Object manager"

You can export information from the object manager as a text file. Click on the "Export text" button in the toolbar. The Windows text editor opens with an extract from the object manager list. The following information is saved:

- Project name and path
- Track and object name(s)
- Start position in the project
- Path of source file

You will find this file afterwards in your project folder (e.g., project_name.txt).

Object view and selection

[Objects](#) are displayed in a tree structure and sorted according to tracks, whereby only tracks are listed that actually contain objects. As an option you can choose to display objects of the current tracks only ([Toolbar](#)

: "Options").

You can use the +/- keys of the toolbar to open and close the track object display in the entire window. Click on the "+" symbol left of the track number to explode the view of a single track.

Selecting objects:

A square check box next to the object name lets you select single or multiple objects. These will then appear in the project window as "selected". If an object is selected that is part of an object group, then the other objects of the selection are also selected in the project window and object manager. You can recognize grouped objects by the number of the object groups in the object manager group bar.

Search for objects:

As in other manager windows, the object manager also provides a search option that allows you to search for objects in the current window. Enter a search item into the box and press "Return". Found objects are highlighted, but are not selected in the project window.

Deleting, renaming and editing objects

You can delete objects directly in the object manager by selecting one or several objects simultaneously and pressing "Del". Alternatively, you can delete an object via its context menu.

You can rename objects by double clicking on the object name and entering a new name. The procedure of changing a marker position directly in the list is the same.

To edit an object directly from the object manager, right click on the object you want to edit and start the object editor.

Edit object parameters

You can edit the following object parameters in the object manager:

- Start position
- Length
- End
- Volume
- Lock

To edit a parameter, double click on the relevant value and enter a different value. Numerical values can be changed by drag & drop with the mouse, and "Ctrl + Shift" allows larger or smaller value changes. "Tab" switches to the next editable value. The up and down cursor arrows permit vertical navigation within a column from one text box to another.

Object view and selection

[Objects](#) are displayed in a tree structure and sorted according to tracks, whereby only tracks are listed that actually contain objects. As an option you can choose to display objects of the current tracks only ([Toolbar](#) : "Options").

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As in other manager windows, the object manager also provides a search option that allows you to search for objects in the current window. Enter a search item into the box and press "Return". Found objects are highlighted, but are not selected in the project window.

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You can rename objects by double clicking on the object name and entering a new name. The procedure of changing a marker position directly in the list is the same.

To edit an object directly from the object manager, right click on the object you want to edit and start the object editor.

Edit object parameters

You can edit the following object parameters in the object manager:

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- Length
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To edit an object directly from the object manager, right click on the object you want to edit and start the object editor.

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- Start position
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To edit a parameter, double click on the relevant value and enter a different value. Numerical values can be changed by drag & drop with the mouse, and "Ctrl + Shift" allows larger or smaller value changes.

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Surround sound

In this chapter

[Surround panorama module](#)

[Stereo and mono signal processing with twin-channel Surround](#)

[Automation of twin-channel Surround](#)

Surround panorama module

In the "Surround Panorama" module the panning of a track or an object is set and edited on the Surround bus.

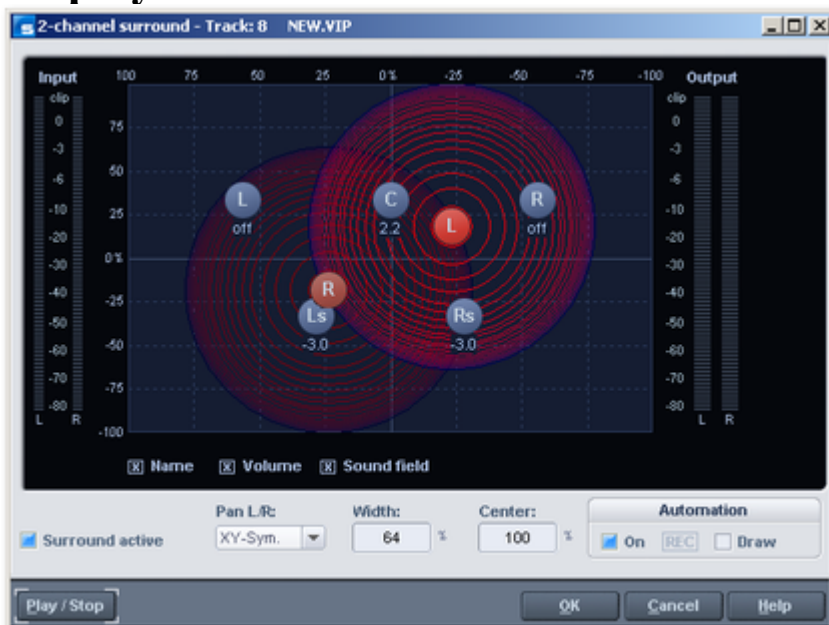
Open the dialog

- Right click on the Surround pan display of the relevant channel line in the mixer (this is only possible if the twin-channel Surround mode is already active), or
- Right click on the button or regulator in the relevant track in the [VIP](#), or
- Open the track menu of the VIP in the track information with a mouse right click and select "Pan / Surround editor", or
- Select the required track in the VIP and select "Track -> Surround panorama module"

In the title line of the Surround panorama module the track is stated that it is currently being edited.

Example: "Surround panorama module: Track 4"

Display elements



In the panorama display the loudspeaker channels of the Surround setup are shown as blue dots. Activating the options underneath the panorama display allows the following information to be displayed in addition:

Name

The loudspeakers are designated with defined abbreviations: "L" (left), "C" (center), "R" (right), "Ls" (left Surround), and "Rs" (right Surround).

Volume

A level indicator appears next to each loudspeaker and shows the value of the level share that the sound source is transmitting on this Surround bus. For the stereo modes the total of the level of both sources is always shown. If "Shift" is held down and the mouse is clicked on a source, only the value for this source will be shown briefly.

Sound field

The input signal is presented as a field made of concentric circles. Each red line corresponds to a level-gradient of 3 dB in the sound field. The loudspeakers are arranged in such a way that the distance between each loudspeaker and its neighbor is constant. This arrangement makes a uniform distribution of the sound source possible to all channels. Level relationships are created between the channels that cannot be achieved in other modes.

Settings

Surround active

Activates the twin-channel Surround mode.

In the deactivated state the stereo position can only be determined via the control elements in the track box or the mixer.

Pan L/R

This determines the way in which the left-hand or the right-hand channel is placed in the Surround field. For the individual cases, please read the section on "Stereo and mono signal processing with twin-channel Surround".

Width

Affects the extension range of the loudspeakers.

Center

The parameter controls the share of the center in the distribution of the sound source to the front channels. In certain working ranges (e.g. film sound) it is customary to reserve the center channel for dialog and to mix music and noises without share in the center. A signal positioned exactly in the middle is reproduced in the 5.1 format with Center = 100% exclusively through the center channel, or with 0% exclusively as a phantom sound source through the channels L and R. This parameter is often also described as divergence.

Automating Surround

This section of the dialog is described in the section on "Automation of twin-channel Surround".

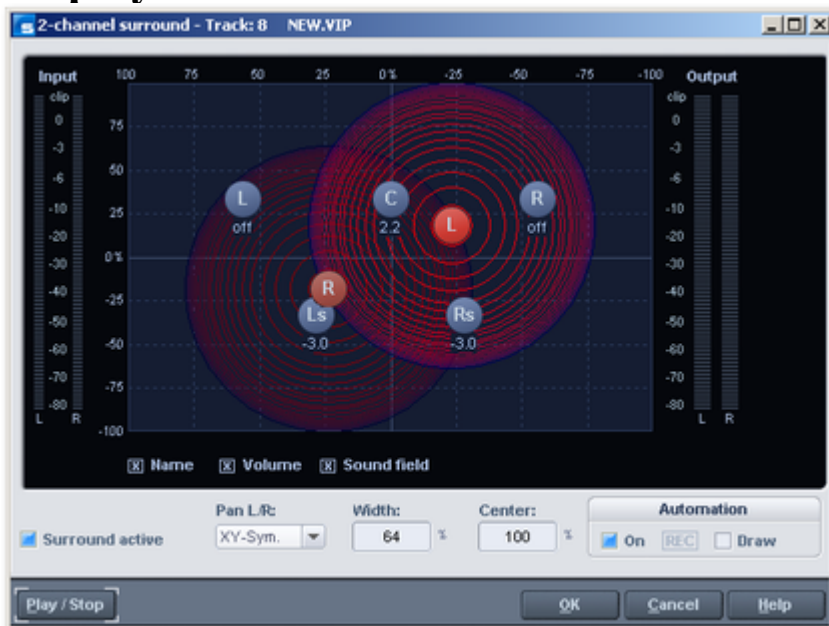
Open the dialog

- Right click on the Surround pan display of the relevant channel line in the mixer (this is only possible if the twin-channel Surround mode is already active), or
- Right click on the button or regulator in the relevant track in the [VIP](#), or
- Open the track menu of the VIP in the track information with a mouse right click and select "Pan / Surround editor", or
- Select the required track in the VIP and select "Track -> Surround panorama module"

In the title line of the Surround panorama module the track is stated that it is currently being edited.

Example: "Surround panorama module: Track 4"

Display elements



In the panorama display the loudspeaker channels of the Surround setup are shown as blue dots.

Activating the options underneath the panorama display allows the following information to be displayed in addition:

Name

The loudspeakers are designated with defined abbreviations: "L" (left), "C" (center), "R" (right), "Ls" (left Surround), and "Rs" (right Surround).

Volume

A level indicator appears next to each loudspeaker and shows the value of the level share that the sound source is transmitting on this Surround bus. For the stereo modes the total of the level of both sources is always shown. If "Shift" is held down and the mouse is clicked on a source, only the value for this source will be shown briefly.

Sound field

The input signal is presented as a field made of concentric circles. Each red line corresponds to a level-gradient of 3 dB in the sound field. The loudspeakers are arranged in such a way that the distance between each loudspeaker and its neighbor is constant. This arrangement makes a uniform distribution of the sound source possible to all channels. Level relationships are created between the channels that cannot be achieved in other modes.

Settings

Surround active

Activates the twin-channel Surround mode.

In the deactivated state the stereo position can only be determined via the control elements in the track box or the mixer.

Pan L/R

This determines the way in which the left-hand or the right-hand channel is placed in the Surround field. For the individual cases, please read the section on "Stereo and mono signal processing with twin-channel Surround".

Width

Affects the extension range of the loudspeakers.

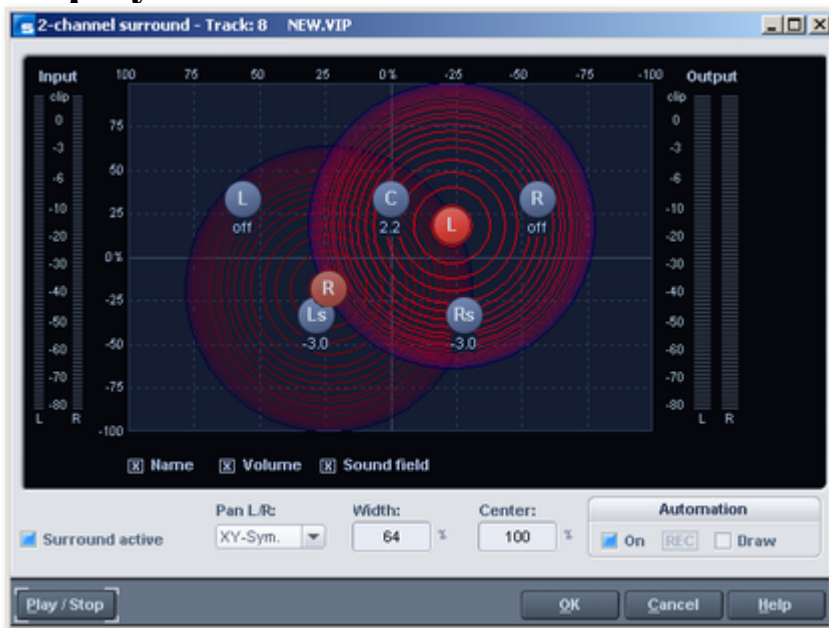
Center

The parameter controls the share of the center in the distribution of the sound source to the front channels. In certain working ranges (e.g. film sound) it is customary to reserve the center channel for dialog and to mix music and noises without share in the center. A signal positioned exactly in the middle is reproduced in the 5.1 format with Center = 100% exclusively through the center channel, or with 0% exclusively as a phantom sound source through the channels L and R. This parameter is often also described as divergence.

Automating Surround

This section of the dialog is described in the section on "Automation of twin-channel Surround".

Display elements



In the panorama display the loudspeaker channels of the Surround setup are shown as blue dots. Activating the options underneath the panorama display allows the following information to be displayed in addition:

Name

The loudspeakers are designated with defined abbreviations: "L" (left), "C" (center), "R" (right), "Ls" (left Surround), and "Rs" (right Surround).

Volume

A level indicator appears next to each loudspeaker and shows the value of the level share that the sound source is transmitting on this Surround bus. For the stereo modes the total of the level of both sources is always shown. If "Shift" is held down and the mouse is clicked on a source, only the value for this source will be shown briefly.

Sound field

The input signal is presented as a field made of concentric circles. Each red line corresponds to a level-gradient of 3 dB in the sound field. The loudspeakers are arranged in such a way that the distance between each loudspeaker and its neighbor is constant. This arrangement makes a uniform distribution of the sound source possible to all channels. Level relationships are created between the channels that cannot be achieved in other modes.

Settings

Surround active

Activates the twin-channel Surround mode.

In the deactivated state the stereo position can only be determined via the control elements in the track box or the mixer.

Pan L/R

This determines the way in which the left-hand or the right-hand channel is placed in the Surround field. For the individual cases, please read the section on "Stereo and mono signal processing with twin-channel Surround".

Width

Affects the extension range of the loudspeakers.

Center

The parameter controls the share of the center in the distribution of the sound source to the front channels. In certain working ranges (e.g. film sound) it is customary to reserve the center channel for dialog and to mix music and noises without share in the center. A signal positioned exactly in the middle is reproduced in the 5.1 format with Center = 100% exclusively through the center channel, or with 0% exclusively as a phantom sound source through the channels L and R. This parameter is often also described as divergence.

Automating Surround

This section of the dialog is described in the section on "Automation of twin-channel Surround".

Name

The loudspeakers are designated with defined abbreviations: "L" (left), "C" (center), "R" (right), "Ls" (left Surround), and "Rs" (right Surround).

Volume

A level indicator appears next to each loudspeaker and shows the value of the level share that the sound source is transmitting on this Surround bus. For the stereo modes the total of the level of both sources is always shown. If "Shift" is held down and the mouse is clicked on a source, only the value for this source will be shown briefly.

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Activates the twin-channel Surround mode.

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This determines the way in which the left-hand or the right-hand channel is placed in the Surround field. For the individual cases, please read the section on "Stereo and mono signal processing with twin-channel Surround".

Width

Affects the extension range of the loudspeakers.

Center

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Settings

Surround active

Activates the twin-channel Surround mode.

In the deactivated state the stereo position can only be determined via the control elements in the track box or the mixer.

Pan L/R

This determines the way in which the left-hand or the right-hand channel is placed in the Surround field. For the individual cases, please read the section on "Stereo and mono signal processing with twin-channel Surround".

Width

Affects the extension range of the loudspeakers.

Center

The parameter controls the share of the center in the distribution of the sound source to the front channels. In certain working ranges (e.g. film sound) it is customary to reserve the center channel for dialog and to mix music and noises without share in the center. A signal positioned exactly in the middle is reproduced in the 5.1 format with Center = 100% exclusively through the center channel, or with 0% exclusively as a phantom sound source through the channels L and R. This parameter is often also described as divergence.

Automating Surround

This section of the dialog is described in the section on "Automation of twin-channel Surround".

Sound field

The input signal is presented as a field made of concentric circles. Each red line corresponds to a level-gradient of 3 dB in the sound field. The loudspeakers are arranged in such a way that the distance between each loudspeaker and its neighbor is constant. This arrangement makes a uniform distribution of the sound source possible to all channels. Level relationships are created between the channels that cannot be achieved in other modes.

Settings

Surround active

Activates the twin-channel Surround mode.

In the deactivated state the stereo position can only be determined via the control elements in the track box or the mixer.

Pan L/R

This determines the way in which the left-hand or the right-hand channel is placed in the Surround field. For the individual cases, please read the section on "Stereo and mono signal processing with twin-channel Surround".

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Center

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Automating Surround

This section of the dialog is described in the section on "Automation of twin-channel Surround".

Settings

Surround active

Activates the twin-channel Surround mode.

In the deactivated state the stereo position can only be determined via the control elements in the track box or the mixer.

Pan L/R

This determines the way in which the left-hand or the right-hand channel is placed in the Surround field. For the individual cases, please read the section on "Stereo and mono signal processing with twin-channel Surround".

Width

Affects the extension range of the loudspeakers.

Center

The parameter controls the share of the center in the distribution of the sound source to the front channels. In certain working ranges (e.g. film sound) it is customary to reserve the center channel for dialog and to mix music and noises without share in the center. A signal positioned exactly in the middle is reproduced in the 5.1 format with Center = 100% exclusively through the center channel, or with 0% exclusively as a phantom sound source through the channels L and R. This parameter is often also described as divergence.

Automating Surround

This section of the dialog is described in the section on "Automation of twin-channel Surround".

Stereo and mono signal processing with twin-channel Surround

Mono

The following applies to stereo signals

: A mono total is formed from the signal that is positioned as a single mono sound source in the panorama.

The following applies to mono signals

: The signal is positioned as a single mono sound source in the panorama.

X-Sym.

The following applies to stereo signals

: The left-hand and right-hand channels are aligned symmetrically on the x-axis. This enables a stereo signal to be panned very easily from front L to Surround L.

The following applies to mono signals

: In addition to the original mono source a second (mono) mirror sound of this signal is positioned. The mirror axis is the x-axis.

Y-Sym

The following applies to stereo signals

: The left-hand and right-hand channels are directed symmetrically on the y-axis. This enables a stereo signal to be panned very easily from front L to R.

The following applies to mono signals

: In addition to the original mono source a second (mono) mirror sound source of this signal is positioned. The mirror axis is the y-axis.

XY-Sym.

The following applies to stereo signals

: The left-hand and right-hand channels are aligned symmetrically to the x and the y-axes. This enables a stereo signal to be panned very easily from front L / Surround R.

The following applies to mono signals

: In addition to the original mono source a second (mono) mirror sound source of this signal is positioned. This is mirror-symmetrical to the original course with regard to the x and y-axes.

Parallel

The following applies to stereo signals

: The left-hand and right-hand channels are kept at a constant distance to one another and shifted parallel to one another during movements. If "Ctrl" is held down the distance between the two sound sources can be altered.

The following applies to mono signals

: The original and the mirror sound sources are kept at a constant distance to one another and shifted parallel to one another during movements. If "Ctrl" is held down the distance between the two sound sources can be altered.

Stereo thru

The following applies to stereo signals

: The same level shares as with a mono source are sent to the various channels, depending on the position of the sound source. However, for all left-hand channels only the left-hand signal is used, for the right-hand channels only the right-hand signal, and for the center and LFE channels the mono proportion.

The following applies to mono signals

: No special function, identical with mono mode.

Mono

The following applies to stereo signals

: A mono total is formed from the signal that is positioned as a single mono sound source in the panorama.

The following applies to mono signals

: The signal is positioned as a single mono sound source in the panorama.

X-Sym.

The following applies to stereo signals

: The left-hand and right-hand channels are aligned symmetrically on the x-axis. This enables a stereo signal to be panned very easily from front L to Surround L.

The following applies to mono signals

: In addition to the original mono source a second (mono) mirror sound of this signal is positioned. The mirror axis is the x-axis.

Y-Sym

The following applies to stereo signals

: The left-hand and right-hand channels are directed symmetrically on the y-axis. This enables a stereo signal to be panned very easily from front L to R.

The following applies to mono signals

: In addition to the original mono source a second (mono) mirror sound source of this signal is positioned. The mirror axis is the y-axis.

XY-Sym.

The following applies to stereo signals

: The left-hand and right-hand channels are aligned symmetrically to the x and the y-axes. This enables a stereo signal to be panned very easily from front L / Surround R.

The following applies to mono signals

: In addition to the original mono source a second (mono) mirror sound source of this signal is positioned. This is mirror-symmetrical to the original course with regard to the x and y-axes.

Parallel

The following applies to stereo signals

: The left-hand and right-hand channels are kept at a constant distance to one another and shifted parallel to one another during movements. If "Ctrl" is held down the distance between the two sound sources can be altered.

The following applies to mono signals

: The original and the mirror sound sources are kept at a constant distance to one another and shifted parallel to one another during movements. If "Ctrl" is held down the distance between the two sound sources can be altered.

Stereo thru

The following applies to stereo signals

: The same level shares as with a mono source are sent to the various channels, depending on the position of the sound source. However, for all left-hand channels only the left-hand signal is used, for the right-hand channels only the right-hand signal, and for the center and LFE channels the mono proportion.

The following applies to mono signals

: No special function, identical with mono mode.

X-Sym.

The following applies to stereo signals

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The following applies to mono signals

: In addition to the original mono source a second (mono) mirror sound of this signal is positioned. The mirror axis is the x-axis.

Y-Sym

The following applies to stereo signals

: The left-hand and right-hand channels are directed symmetrically on the y-axis. This enables a stereo signal to be panned very easily from front L to R.

The following applies to mono signals

: In addition to the original mono source a second (mono) mirror sound source of this signal is positioned. The mirror axis is the y-axis.

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Automation of twin-channel Surround

Surround panorama module

Panning movements in track-related Surround panning can be automated. For this purpose, first the automation is switched on in the Surround panorama module. This can also be done by pressing the button of the relevant track in the [VIP](#) window. If the sound source is moved during the playing process, this movement is recorded and shown in the VIP as a curve. Later editing of this curve is possible with the Panorama drawing mode of the mouse in the [VIP](#)

.

Drawing

For this automation mode a range first has to be marked in the [VIP](#) within which the change is to take place. The drawing mode is now switched on in the Surround panorama module. Now, any required series of movements of the sound source can be drawn in the Surround panorama. This series of movements is carried out in the previously marked time range the next time the VIP is played. Later editing of the curve is possible with the curve editing mode in the [VIP](#)

.

Processing the Surround Sound automation

Possibility 2: Drawing mode in the Surround panning dialog

In order to prepare the drawing and movement for a Surround sound placement of the source signal, a range first has to be selected in the [VIP](#)

track in which the automation is to take place. Then the "Drawing mode" function likewise has to be switched on in the Surround panning dialog. After that you can simply put the source signal in the panning dialog into a new position. Samplitude Music Studio 15 generates the automation events automatically in order to generate this movement for the automation curves.

Possibility 3: Drawing automation curves in the VIP track

Samplitude Music Studio 15 allows you to draw new Surround sound automation curves in a [VIP](#) track or to change existing curves. Make sure that the button for the corresponding VIP track is activated. In the Surround panning dialog the "Automation on" function can also be switched on. As the next step the panorama drawing mode has to be selected from the toolbar. You can draw new curve events with it in the VIP track. Place the mouse pointer close to an existing curve and click the left-hand mouse button. While this button is held down you can create new events for this curve.

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Possibility 2: Drawing mode in the Surround panning dialog

In order to prepare the drawing and movement for a Surround sound placement of the source signal, a range first has to be selected in the [VIP](#) track in which the automation is to take place. Then the "Drawing mode" function likewise has to be switched on in the Surround panning dialog. After that you can simply put the source signal in the panning dialog into a new position. Samplitude Music Studio 15 generates the automation events automatically in order to generate this movement for the automation curves.

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Possibility 2: Drawing mode in the Surround panning dialog

In order to prepare the drawing and movement for a Surround sound placement of the source signal, a range first has to be selected in the [VIP](#) track in which the automation is to take place. Then the "Drawing mode" function likewise has to be switched on in the Surround panning dialog. After that you can simply put the source signal in the panning dialog into a new position. Samplitude Music Studio 15 generates the automation events automatically in order to generate this movement for the automation curves.

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Burning CDs

Burning [Red Book](#)

-compatible audio CDs is a vital feature of Samplitude Music Studio 15. You won't require any other software for writing a CD. You can also write CDs "on the fly", and all processing is performed in real time during the write process. Since trackbouncing was not performed first and no image is created, no extra space is required on the hard disk.

However, sufficient system resources must be available for processing while writing. If your PC is too slow and writing is interrupted, then you can of course revert to the conventional trackbouncing method. In this chapter

[Red Book](#)

[Writing](#)

[Burning CDs in Samplitude Music Studio 15](#)

[DSP display](#)

Red Book

To standardize the data structure of CDs and to make them compatible with the CD drives, Sony and Philips laid down individual standards for the various types of CDs. The names simply arose from the color of the books in which these standards were recorded. The term "[Red Book](#)" is common language for the Compact Disc [Audio](#)

Standard. The requirements listed here have to be observed for industrial CD production. Audio CD players only read CDs created according to the Red Book format. It is therefore necessary to first convert PC files into this format before writing them onto an audio disc compatible with any audio CD player.

Writing

Some years ago, there was only a small number of select studios which were able to do CD mastering. Today, writing audio CDs is nothing exceptional and continuously dropping prices for CD-R burners and media make them available to nearly everyone.

The audio material is stored digitally on the CD, this data is read by the CD player, and then it is transformed back to the analog plane. While in action, track indexes indicate to the CD player which songs start at which position.

Samplitude Music Studio 15 can also write an audio CD from the program directly. Before the write process starts, the track indexes are directly set in the [VIP](#) window, and then Samplitude Music Studio 15 converts stereo sum and indexes into a data stream which is fed to the CD burner.

The CD-R drive modifies an assigned layer of the medium by means of a laser so that an audio CD player can read this information as digital audio data later on.

Burning CDs in Samplitude Music Studio 15

1. In order to write an audio CD, the [VIP](#) window must first contain audio material. You may either record it new or import existing wave files into the virtual project.
2. Mix your recordings by means of the VIP window's real-time functions and the mixer window. The CD will later sound exactly like the playback via a stereo sound card. All settings for the playback will be audible on the CD, too.

3. Set the track indexes to mark the starting position of each song. If the VIP window contains only one stereo track (each song is created as separate object), then you may create indexes in Samplitude Music Studio 15 with the "automatic indexes" button. This will cause an index to be positioned at the beginning of each object. Tracks and indexes may be arranged in Samplitude Music Studio 15 as you wish. Pause intervals may be continuously adjusted, and indexes may be set without any pause. Samplitude Music Studio 15 is one of the few audio programs which features this.

4. When you have made all settings you can write the CD in real time, or you can use the offline function if your PC is not powerful enough. Now click "create CD" in the toolbar or select "CD -> Create CD" in the menu. This dialog offers two options:

Write using "on the fly" mode: all effects are calculated in real time.

Create complete, new files. Samplitude Music Studio 15 creates a new stereo file that contains all information on the multiple-track project.

5. One click on "OK" to start the writing process, and Samplitude Music Studio 15 starts searching for available CD-R drives. If several drives are connected to the system, then you will be prompted to select the correct drive. Before burning, the process can be simulated. You can check using the simulation whether the computer's capacity is sufficient for the writing process.

Once started, the burn process cannot be stopped.

DSP display

System capacity is essential to the real time CD writing process. Once the writing process started, it cannot be stopped. The CD will be unusable if the the process is interrupted. When "on the fly" is selected, the computer must calculate the playback with all real-time functions and simultaneously write the data onto the CD.

The DSP display is a useful tool to assess possible problems when writing to the CD. The table below gives you a clue to the maximum possible writing speed. Individual deviations may result due to the configuration of your system and the speed of its components.

DSP display and writing speed

Nearly 100 percent single speed

Up to 50 percent double speed

Up to 25 percent fourfold speed

In particular, when first using a new and unknown computer system it is recommended to simulate the writing process first to check the system's performance limits. If the system becomes overloaded, reducing the number of tracks or real-time effects will help by combining parts of the [VIP](#) window (trackbouncing).

The offline writing process variation offers another possibility. It creates a new stereo file first as the basis for the writing process.

Red Book

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4. When you have made all settings you can write the CD in real time, or you can use the offline function if your PC is not powerful enough. Now click "create CD" in the toolbar or select "CD -> Create CD" in the menu. This dialog offers two options:
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Create complete, new files. Samplitude Music Studio 15 creates a new stereo file that contains all information on the multiple-track project.
5. One click on "OK" to start the writing process, and Samplitude Music Studio 15 starts searching for available CD-R drives. If several drives are connected to the system, then you will be prompted to select the correct drive. Before burning, the process can be simulated. You can check using the simulation whether the computer's capacity is sufficient for the writing process.

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Up to 50 percent double speed

Up to 25 percent fourfold speed

In particular, when first using a new and unknown computer system it is recommended to simulate the writing process first to check the system's performance limits. If the system becomes overloaded, reducing the number of tracks or real-time effects will help by combining parts of the [VIP](#) window (trackbouncing).

The offline writing process variation offers another possibility. It creates a new stereo file first as the basis for the writing process.

File menu

The File menu contains broad functions for generating, managing, loading, and saving projects.

In this chapter

[New Virtual Project \(VIP\)](#)

[Open](#)

[Loading / Importing](#)

[Save project](#)

[Save project as](#)

[Save complete VIP in](#)

[Save project as template](#)

[Burn project backup on CD](#)

[Save object](#)

[Save session](#)

[Rename project](#)

[Delete HD wave project](#)

[Delete virtual projects](#)

[Export audio](#)

[Make podcast](#)

[Batch processing](#)

[Connect to the Internet](#)

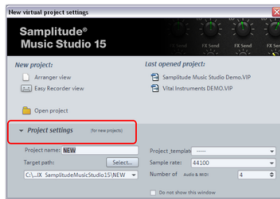
[FTP download](#)

[Send project via email](#)

[Close project](#)

[Exit](#)

New Virtual Project (VIP)



A new virtual project is created and immediately presented in a new window in Samplitude Music Studio 15's workspace.

Name: The name of the new [VIP](#) should be included here.

File path

: Here you can select the folder in which you want to save your project.

Create new project subdirectory

: A subdirectory bearing the name of the project is automatically created in the virtual projects directory.

Project template

: In this list field you can select previously stored project templates. It includes all project settings such as track number, device assignment, etc. You can create project templates with "File -> Save project as template".

Mixer setup

: Here you can select a preset mixer setup. Mixer setups specify the number and kind of tracks/buses as well as the routing of inputs/outputs and effects.

If you would like to create a Surround project, you should define the format here.

Project options

: The project options dialog is opened. All settings (e.g. snap points, BPM, CD arrange mode, autosave, etc.) made here apply to every new VIP you create! They will be saved in a separate VIP(Templates/Template.VIP). This file, template.vip, can also be edited directly, and you can also use the following additional settings as a default for each project:

- Record arming setting of the first track
- some mixer setup settings
- Playback mode
- Track and master effects settings (e.g. compressor mode, effects sequence)
- Grid offsets. These can be very important for linking to the timecode. Samplitude Music Studio 15 projects can include a timecode range of 12h.

Track number

: Defines the starting track count of the virtual project. The command "Track -> Insert new track..." can also be used to add tracks retroactively.

Sample rate

: Defines the sample rate of the virtual project.

Note

: Regardless of the project sample rate, you can load objects with different sample rates, audio formats, and encodings.

Preset project length

: The VIP is created with this length (1, 10, 60 min, or a predefined value).

Keyboard shortcut: E

Open

You can open various file types and load them into Samplitude Music Studio 15.

Key: "L" (RAM wave projects)

Key: "Shift + L" (HD wave projects)

Key: "O" (Virtual projects)

Key: "W" (wave files)

Key: "ALT + S" (Sessions)

Virtual project

Virtual projects are multitrack projects in Samplitude Music Studio 15 which make use of wave projects. When loading a virtual project, all associated wave projects (RAM and HD wave projects) are opened if they were not open prior to loading the [VIP](#)

. The windows of the individual wave projects remain minimized to prevent cluttering of the screen. They are initially only visible as icons.

Once the wave projects are loaded, the VIP project window is displayed.

RAM wave project

RAM wave projects contain audio data in Samplitude Music Studio 15's proprietary format. These files are loaded into the RAM memory of your computer, including their associated graphic files, marker position information, etc.

HD wave project

HD wave projects contain audio data which is directly loaded from the hard disk together with the graphical information, marker position information, etc. The audio format used for these files is the wave format.

Object

Contains playback instructions (link to a wave project, track, time position, parameters, etc.) for audio data. [Objects](#) are used in virtual projects.

Session

A previously saved Samplitude Music Studio 15 session can be loaded with this command. All projects and their related windows are arranged on the screen the way they were saved to the session.

Loading / Importing

Difference between "Open -> Wave" and "Import sample -> Wave":

The "Open -> wave" command opens an existing wave file and edits it as a HD wave project.

Samplitude Music Studio 15 automatically creates an HDP file and the corresponding graphic file in the source folder.

When importing a wave file, the complete file is copied. Additional hard disk space is needed and the process takes much more time, since the audio file has to be copied using "Open project -> wave".

"Import sample -> wave" has to be used when intending to use the wave file as a RAM wave project.

Import audio

Samplitude Music Studio 15 gives you the option to import wave, AIFF, MPEG, [MP3](#), [MS audio](#) (.wma), audio from .avi files, or sample dump files into a Samplitude Music Studio 15 project. You will need to specify which type the project is going to be, a RAM wave project, or an HD wave project.

Load audio CD track(s)

This option is also located in the "CD" menu.

This function allows you to import audio data from most CD-ROM drives and CD burners without any quality loss. Please contact our technical support for the latest list of supported drives if you require it.

The HD wave projects are recorded as wave files and can therefore be edited with other audio editing programs without having to convert them first.

To do this, please follow these steps:

1. Open the drive list dialog and select the CD-ROM drive you desire if you have more than one drive
2. Click on the "Track list" button
3. Select one or more tracks in the CD track list dialog list box
4. Click on "Copy selected track(s)..."
5. Select a file name for the new wave file or HD wave project and click "OK".
6. Now the audio data is copied from the CD-ROM to your hard disk as a new wave file.
7. Close the track list and drive list dialogs; one or more new objects appear in your [VIP](#) which contain the audio data from your CD.

In this section

[Features of the track list dialog](#)

[Features of the drive list dialog](#)

[Features of the CD-ROM drive configuration dialog](#)

Features of the track list dialog

Copy selected track(s)

: This button starts the audio data copy process; all selected tracks from the list are copied into one wave file.

Play

: Starts audio playback of the first selected track in the list.

Stop

: Stops audio playback.

Pause

: Stops audio playback (to be resumed later).

Resume

: Resumes playback (if previously paused).

Select all tracks

: Selects all tracks of the CD for copying the complete volume. You can select multiple tracks with "Ctrl + mouse click" or with "Shift/Alt + cursor".

Unselect tracks

: Closes the drive door of the CD-ROM drive

Features of the drive list dialog

Track list

: This button opens the track list dialog for selecting several audio tracks on a CD.

Configuration

: This button opens the drive configuration dialog to select special copy modes and SCSI IDs.

Reset

: Restores the standard drive settings.

Add drive

: Creates a new drive entry in the list for editing configuration data.

Delete

: Deletes the selected drive entry from the drive list.

Save setup

: Saves the drive list and all configuration data in a *.cfg file.

Load setup

: Loads the drive list and all configuration data from a *.cfg file.

Features of the CD-ROM drive configuration dialog

Drive name

: Edits the name of the drive in the list. This is useful if you create more than one entry which access the same physical drive.

Host adapter number

: Specifies the number of your SCSI adapter (normally 0).

SCSI-ID

: Sets your CD-ROM drive's ID. Make sure you set the correct ID, there is no error checking!

SCSI-LUN

: Selects the SCSI LUN parameter (normally 0).

Alias

: Selects your CD ROM drive's manufacturer.

Normal copy mode

: Copies the audio data without any software correction.

Sector synchronization copy mode

: Copies the audio data using a software correction algorithm. Some CD-ROM drives cannot seek exactly to the same position between two read accesses, but Samplitude Music Studio 15 can correct these differences using this algorithm.

Burst copy mode

: Optimizes the copy process speed (no software correction).

Sectors per read

: Defines the number of audio sectors per read cycle; the higher the number, the faster the copy process will be. Not all SCSI adapters support more than 27 sectors.

Sync sectors

: Defines the number of audio sectors used for sector synchronization. A higher number results in a better synchronization, but also in a slower copy process.

Save project

The current project is saved with the name displayed in the project window. If you previously have not specified a name for your project, Samplitude Music Studio 15 will ask you to do so.

Keys: S

Save project as

You can define the path and name of the new project you want to save your work as. RAM projects and virtual projects will be saved with the new names (the source file remains untouched). HD wave projects are renamed on the hard disk. Samplitude Music Studio 15 will not generate a copy of it for reasons of conserving space on your hard drive.

Keys: Shift + S

Save complete VIP in

This function in menu "Project" allows saving a [VIP](#) with all needed wave projects (*.RAP., *.HDP) into a specified directory. This makes it easy to copy all files of a [VIP](#) to a backup disk, etc.

Save project as template

This option allows you to create project patterns where all project settings (number of tracks, etc.) are maintained and saved without the objects and HDPs. These patterns can be loaded when you are creating a new multitrack project ("File -> New multitrack project").

Burn project backup on CD

This option lets you easily create data CD backups of the whole project. For this purpose, the external CD burning software is started.

Save object

Save your project. This file only contains real-time data (wave files, fades, names, etc.), and not the actual audio data. The wave project referenced by the object also has to be available if you want to reload the object.

Save session

Saves a complete Samplitude Music Studio 15 session. if a session is saved with the name „startup.sam“, then it will automatically be loaded by Samplitude Music Studio 15 the next time the program is started.

Rename project

The "Rename project" command allows you to rename a project file rather than save it to a different file. For RAM wave projects, only the internal names are changed (without being saved), but all corresponding files are renamed immediately in the case of HD wave projects. RAM wave projects need to be saved after the project is renamed.

Delete HD wave project

HD wave projects are deleted from the hard disk. Use this command cautiously, since all corresponding files are lost.

If you wanted to delete a HD wave project (HDP) from a file manager (e.g. Windows Explorer), then it would also be necessary to delete the graphic files related to the project files.

Delete virtual projects

With the "Delete virtual projects" command you can comfortably delete VIPs and all wave projects used in the [VIP](#)

. All files which belong to a multitrack project (the wave file containing the audio files, files with the graphics data, and the HDP file with the project information) will be lost.

Warning: There will be no further security query. The data will be deleted immediately after pressing "OK".

Export audio

Here you can export VIPs, HD wave, or RAM wave projects in the formats wave MPEG (1:10), dump, [MS audio](#), AIFF with Quicktime, 16-bit AIFF, RealAudio, or [MP3](#)

Note on exporting audio:

The audio data from HD wave projects can be further processed or imported directly as wave files from HD wave projects. The use of the "Export sample" function is only necessary when the data is going to be copied. The storage space required on the hard drive is not increased, and copying requires considerably more time.

Convert audio

Stereo wave -> Mono

A stereo wave project is copied and converted into a left mono wave project and a right mono wave project .

2 mono -> Stereo / LR wave

Two mono projects are linked to one L&R wave project. This is a convenient way of editing joined mono samples with the same operations.

Here you can connect two mono wave projects to one L&R wave project. You can then perform common operations and apply them to all samples.

After applying the command you will be prompted to activate the second mono wave project that you want to connect to the active mono wave project. To do this, click on the title bar of the corresponding window. Please note that only mono projects can be linked to mono wave projects of the same bit and sample rate. The lengths of both projects are adapted to each other.

L&R wave > 2 mono

L&R wave projects can be split into two independent mono projects using this function. This way you can break the fixed connection of the samples to one another and edit them individually. If you wish to edit them together again, then select the "2 mono -> L&R wave" function.

LR wave > 1 mono

The current L&R wave project is converted into a mono mode. If it was a stereo project before, then both channels will be mixed. The previous samples are first added with 100% of their image and then divided by two to prevent overmodulation (distortion). This is equivalent to reducing the volume by 6 dB.

1 mono > LR wave

The original mono wave project is duplicated and converted into a single L&R wave project with the same sample in both channels.

Convert audio

Stereo wave -> Mono

A stereo wave project is copied and converted into a left mono wave project and a right mono wave project .

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Save in format

Use this function to convert wave projects between the various Samplitude Music Studio 15 formats for wave projects.

This can be useful if you want to convert RAM wave projects to HD wave projects, or L&R wave projects (2 connected mono samples) into stereo wave projects.

Export video sound...

After successfully editing the video sound in Sequoia, you can write the sound back into the video file. Here you can either replace the original sound of the video or create a new video file. Set the source file first under "Video source".

Replace audio in the original [AVI](#) file: This option carries out trackbouncing on the current [VIP](#). This creates a temporary [WAV](#)

file which can then be integrated into the selected AVI file. It's necessary that the AVI contains an audio track of the same format (sample rate and bit resolution).

Save AVI file as

: This option carries out trackbouncing on the current VIP. This creates a temporary WAV file which can be copied with the selected AVI file into a new AVI file. This process contains the original AVI file.

Note

: If the lengths of the audio and video files are different from one another, a warning dialog opens. After the export, the longer component is cut off – an attempt to automatically synchronize the data is not carried out. If you should receive such a warning, try to resample the soundtrack to the correct length.

Make podcast

[Podcast](#) is the name for a relatively new Internet transfer form. It is made up of "**pod**" from "*iPod*", the name of a popular portable [MP3](#) player, and the term "*casting*" for broadcasting content to a wide group of listeners/viewers.

A podcast is therefore something like an online radio station. "Broadcasting" web radio stations means you can only listen to and record the currently broadcast radio station. [Podcasting](#) is different. You as the listener can *subscribe*

to the podcast and the files will be downloaded at a specific time and you can listen to them whenever you like, for example, on the move with your portable player. The shows are pre-produced and placed on an Internet server for download.

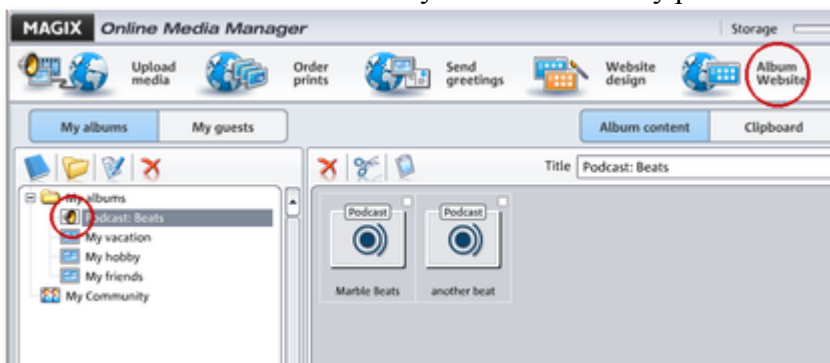
Select the "Upload arrangement as podcast show (audio)" in the Online > MAGIX Podcast Service menu and the exciting journey of your podcast to the pages of the largest podcast providers begins.

The first stop is your personal MAGIX Online Album, the place your podcast will call its online home.

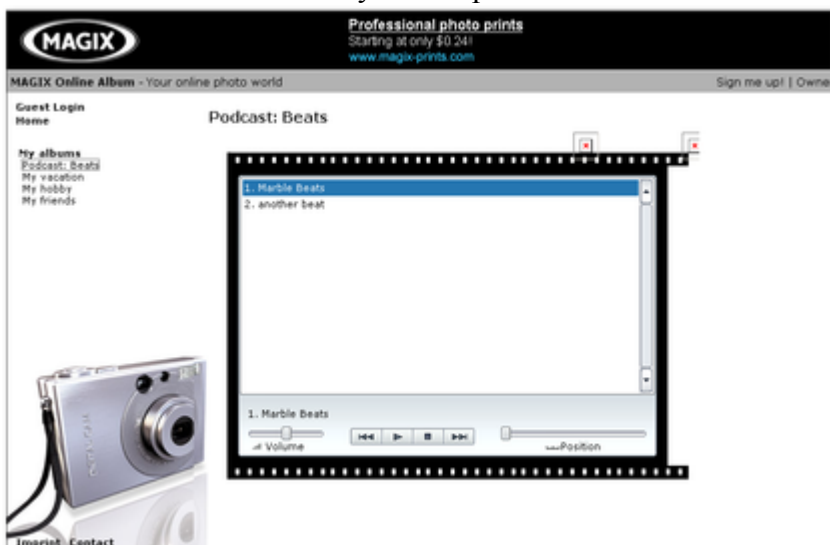
From here it can be accessed from anywhere in the world. Login with your password or register.

Your free MAGIX Online Album with 128 MB webspace can be set up at any time. It will then be available to you from anywhere in the world.

When uploaded via the "Make podcast" button the podcast will be sent to your personal MAGIX Online Album. In the MAGIX Online Media Manager of your MAGIX Online Album the cast can now be found in its new format in the newly created folder "My podcasts".



Now take a look at your album website: Here you can listen to the cast on your own website. You will immediately notice the small button "Subscribe to RSS feed" which allows any user of your MAGIX Online Album to automatically receive podcasts now and in future.



How is your podcast distributed?

Your RSS feed - the technology behind a podcast - will automatically guarantee that your podcast will

be sent from your MAGIX Online Album to many large podcatchers, including MAGIX Podcast Service. Here your podcast can now be subscribed to by a worldwide audience. Currently, a podcast created with Samplitude Music Studio 15 and uploaded to MAGIX Online Album is sent to 10-20 international podcatchers. The distribution depends on the topic of the podcast.

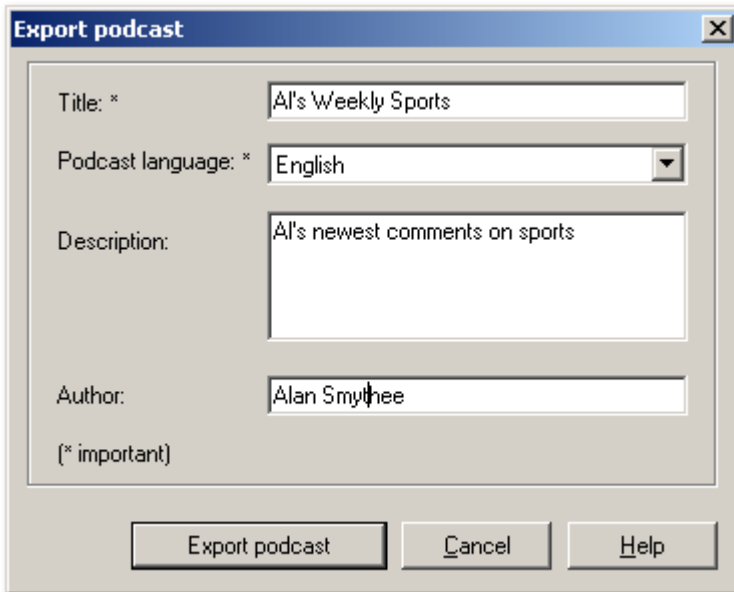
You may even find your podcast via a search engine without knowing how long the journey of a cast over the web may be.

Make podcast

can be used to publish your project as a title in one of your podcasts.

The export podcast

dialog opens and you will be required to enter important information about your podcast title.



Title: The title of your contribution. A podcast typically contains multiple tracks and new ones are regularly added. This is **not** the name of the podcast. You add this once you upload the entire podcast to MAGIX Online Album. A podcast corresponds with an album, in this case.

Export podcast:

The project is encoded as an MP3 file and uploaded to the MAGIX Online Album. You can only ever upload one contribution at once (one file).

Description:

A logical name for the title and a good description are important for ensuring that your podcast programs can be found by other listeners.

Author:

Enter your name or email address for inquiries, etc.

Batch processing

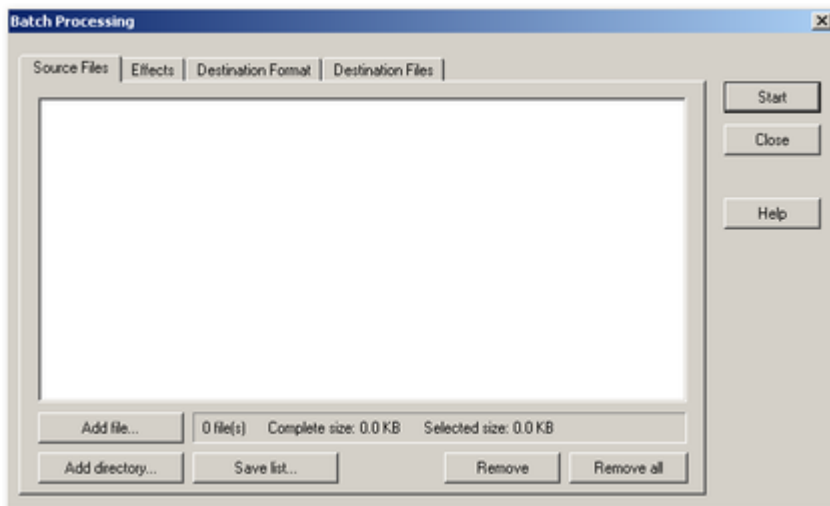
Batch-processing lets you automate work processes. You can stretch out a specific editing function of a wave project in the same way onto a file list of any size (the "batch"). The files can then be executed automatically over night, for instance.

Possible editing processes include:

- Normalization
- Linear fade in and out
- All real-time effects available in the mixer master
- Format conversions: Word width (16/24/32 float), sample rate, stereo/mono/left/right
- Save in all available export formats.

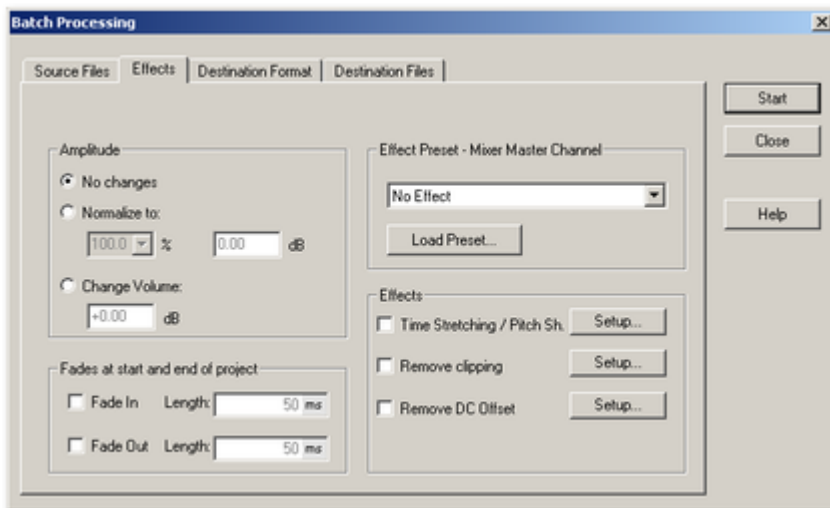
For example, you can normalize an entire folder of 24-bit wave files to 96%, add 5ms fade to the beginning and end of each, compress with the multi-band compressor, convert to 16-bit, resample at 22kHz, and save as [MP3](#)

Source files



Create a list of the files to be edited by selecting "Add file". Multiple selection is also possible. "Load folder" adds all audio files in a folder as well as all subfolders to the list. All importable audio formats can be loaded in Samplitude Music Studio 15. "Save list" creates a [Playlist](#) (in the common *.m3u format) for using your selection of files later. "Remove" deletes all selected list entries. "Remove all" deletes the complete list.

Effects



Amplitude

: You can normalize to a specific maximum value in %/dB or sink/raise the level by a certain value. Read more on this in the chapter "Effects menu -> Amplitude/Normalize".

Effects presets – Mixer master channel

: So that you don't have to list out innumerable effects settings in the batch processing dialog again, the effects can be integrated using mixer preset files.

In the mixer it's possible to export all settings of the mixer in a mixer preset (*.mix). This happens via the "Save mixer preset" button in the mixer.

When you load the *.mix file into the batch-processing function ("Load preset"), all effect settings of the master channel will be calculated into the file batch (all other data from the mixer preset, e.g. channel strips, groups, etc. will be ignored). With "Edit preset", you can open a special FX routing dialog from which you have access to all effect parameters.

Mixer presets which were saved in the "/fxpresets/batch" folder can be selected directly from the preset selection box.

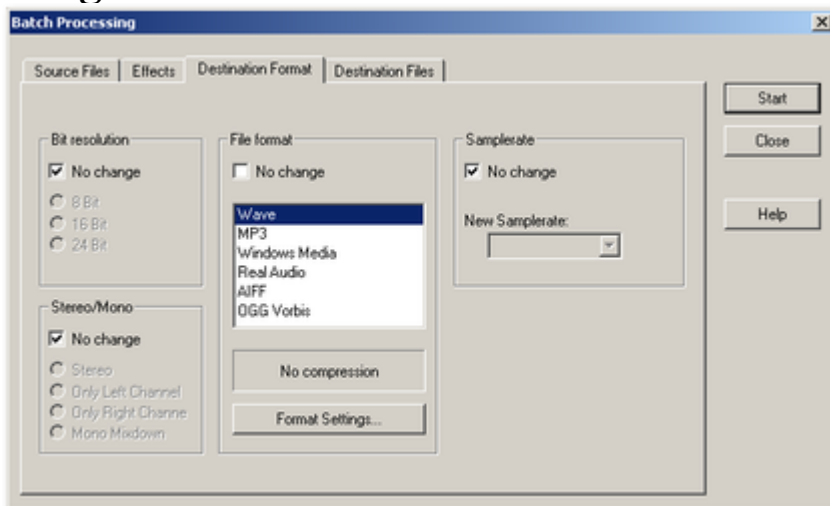
Effects

: Beside the master effects of the mixer preset, the non real-time effects "Resampling/Timestretching", "Remove DC offset", and "Remove modulation" (DeClipping) can also be used. "Settings" opens the corresponding effects dialog.

Fades at the beginning and end of projects

: Linear fades of any length can be added to the beginning and/or end of files.

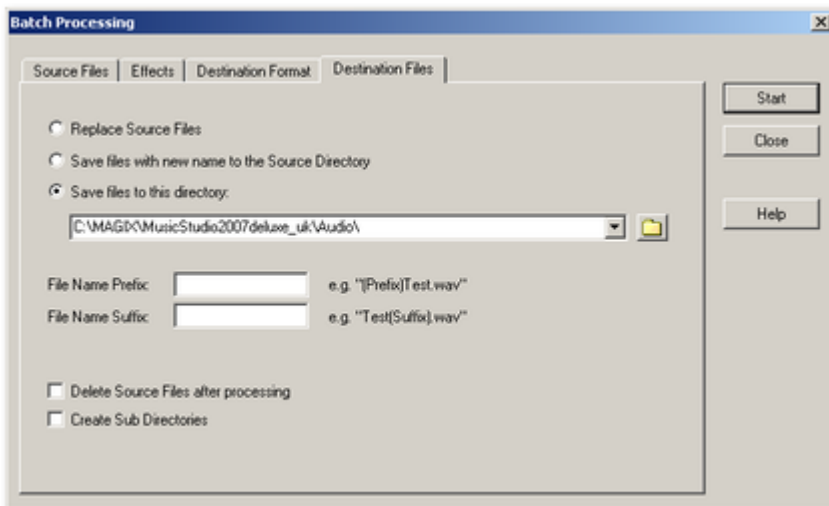
Target format



All settings on this page can be saved as presets. You can freely choose the bit resolution (16/24/32-bit), the sample rate, stereo/mono/left/right as well as the save format with the corresponding format options. You can find out more about the sample rate in the "Offline effects menu -> Adjust sample rate".

Read more about export formats under "File menu -> Export".

Destination files



There are several ways to save edited files:

- Replace files: The original file is replaced with the edited one. If the file is used in a [VIP](#), the VIP is closed first.
- Save files in source directory with changed name " / " Save files in following directory": The edited file is saved in the source directory or in any chosen directory. The specified suffix/prefix is added to the file name. Optionally, you can "Delete source files after editing".
- Keep source directory structure: This option saves all files including the source path. This allows you to keep folder structures of CDs.

Connect to the Internet

This menu item allows you to terminate an existing Internet connection directly from within Samplitude Music Studio 15. You will have to enter the necessary connection details and a modem should be installed correctly. To restore the Internet connection, click the "Dial" button.

Warning:

the Internet connection only works if you have registered with an Internet provider or have the necessary access data.

FTP download

This option allows you to build up a direct connection to any FTP server on the Internet in order to download sound material directly into Samplitude Music Studio 15 for editing. The pre-set server is the MAGIX Server, where you will always find new sound material. The only thing you need is a functional Internet connection.

Send project via email

This option compresses your [VIP](#) into a [WMA](#) format audio file. Then your mail program is opened and the project is added to a new, empty message as an attachment. All you have to do is enter the address and click "Send".

Close project

Closes the arrangement.

Exit

Closes Samplitude Music Studio 15.

Edit menu

This menu contains all editing functions (similar to cutting on a tape machine).

In virtual projects, you can select track sensitive ranges, so only the selected tracks are manipulated.

Activate cutting and copy also activates a project clip. The window for this project will appear if the icon is double clicked.

Some of the functions are only available for wave projects, some only for virtual projects ([VIP](#)), and others will work in all types of projects.

When working with a virtual project (VIP) a selected range is always required for the cut functions. The beginning and end of the selected range determine the start and end of a cut. The vertical position indicates which tracks are affected by the edit.

It is recommended to use the "auto crossfade" function to make smooth transitions between the edit points. This will automatically create fades at the object edges.

Please note that these functions are processed for both channels when working with stereo and L&R wave projects (if only one channel edited, then you will need to convert the wave project into two mono wave projects).

In this chapter

[Undo](#)

[Redo](#)

[Undo history](#)

[Cut](#)

[Delete](#)

[Copy](#)

[Paste from clip](#)

[Extract](#)

[Insert silence](#)

[Append projects](#)

[More](#)

[Crossfade editor](#)

[Auto crossfade active](#)

[Delete curve handles](#)

[Delete undo levels](#)

Undo

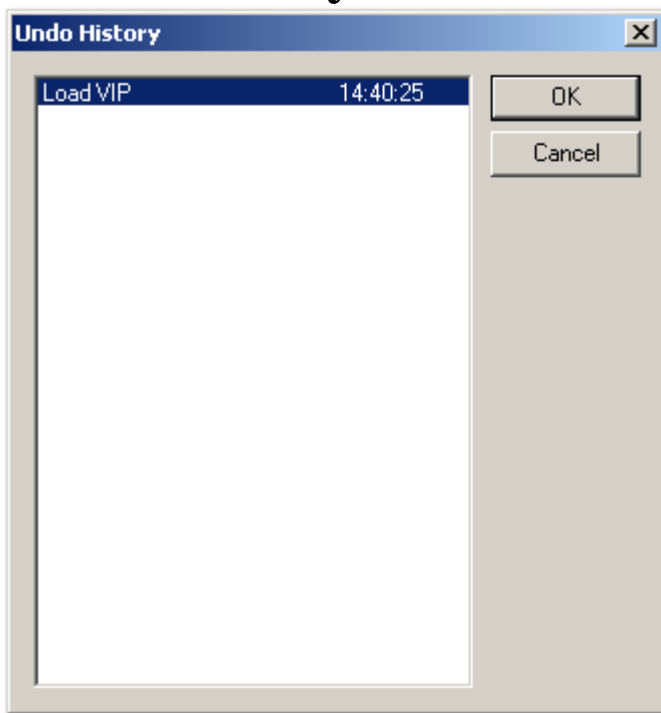
Samplitude Music Studio 15 offers you a comfortable way of tracking changes in virtual projects. Up to 100 changes can be kept in memory and traced backwards. That means virtual processes can be reversed (undone). [Range](#) and marker manipulations can also be undone using the "Undo" feature. Thanks to this extremely efficient feature, critical operations can simply be tried and then reversed to the original status if the results are not satisfactory. Samplitude Music Studio 15 offers a convenient undo option for [VIP](#) objects. A maximum of 100 undo steps can be retraced. This number can be configured in "File -> Preferences -> Undo definition".
Keys: Ctrl + Z

Redo

Redo revokes the latest undo command.

Keys: Ctrl + A

Undo history



Displays the undo history dialog.

Cut

Wave projects

The audio data in the selected range are copied from the current wave project into the clip. The material behind the removed range is merged with the material in front of the removed range to close the gap. The complete wave project becomes shorter.

Please keep in mind that the clip always contains the same attributes as the wave project the material was copied or removed from.

If you cut material from a mono wave project, the clip becomes a mono wave project. If material from a stereo wave project is cut or copied to the clip, the clip becomes a stereo wave project. Another attribute adopted is the bit resolution and the sample rate of the originating wave project.

The previous contents of the clip are deleted.

After a successful removal of the selected material, Samplitude Music Studio 15 drops a marker at the position the removed range previously started. This allows you to insert the contents of the clip into the wave project at the exact same spot if you accidentally removed the material. Use the function "Edit > Paste/Insert clip" to insert the clip contents.

Virtual projects (VIP)

In virtual projects the selected range is copied to the VirtClip and is removed from the current [VIP](#). The VirtClip does not contain actual audio information, only the links to the audio files. The VirtClip also contains as many tracks as the removed range.

The material behind the removed range is appended to the material in front of the removed range. The VIP project becomes shorter if the selected range did cover all tracks. This way you can shorten VIPs which contain empty space behind the last object.

As with the wave projects, a successful removal of the selected range drops a marker at the position the removed range previously started. This allows you to insert the removed material with "Edit > Paste/Insert clip".

Keys: Ctrl + X, or X

Delete

The data in the current range is deleted. The sample data after the deleted range is added at the position the deleted range started. The sample length becomes shorter.

Please note that this command will not save the deleted data to the clip. If you want to preserve the deleted sample data, use the "Cut" command. Using this the "Delete" command will delete the data from the current sample and preserve the contents of the clip.

Key: Del

Copy

The current range is copied into the clip but not deleted in the project. The sample length is not varied. Please note that the former clip contents are deleted. The clip again has the same attributes as the project.

Keys: Ctrl + C, or C

Paste from clip

The contents of the clip are inserted into the current project behind the position of the play cursor or the beginning of the currently selected range. The data or objects that are located behind the insert position are moved out of the way to make room for the clip contents. The samples or audio tracks become longer. The clip remains unchanged during the procedure. If the clip was empty, an error message is displayed.

After inserting the contents, the program selects a range over the inserted area. If you select "Edit -> Delete", the inserted contents are removed and the project is returned to the original state.

In virtual projects using selected ranges, the program utilizes the beginning position and relative track position as the insert point for the VirtClip or clip contents.

Clip	Project	Clip Channel	Project Channel
Mono	Mono	Channel 1	Channel 1
Stereo	Stereo	Channel 1	Channel 1
Mono	Stereo	Channel 2	Channel 2
Stereo	Mono	Channel 1	Channel 1
		Channel 1	Channel 2
		Channel 1	Channel 1

Keys: Ctrl + V, or V

Extract

This function is the counter part of the "Cut" function.

wave projects:

The current range is retained, the data before and after the range is deleted and cannot be recovered.

The length of the sample is reduced and the content of the clip remains.

Virtual projects ([VIP](#)):

All tracks of the VIP keep the length of the selected range, irrespective of the position of the range.

This function does not work track-specifically. The objects before and after the range are deleted. This function does not influence the VirtClip.

Insert silence

The "Insert silence" option will insert blank data at the current play cursor position or the starting position of the currently selected range.

Append projects

With this function a project can be appended to another project, i.e. the material of one project is copied directly behind the material of the first.

First you need to select the object you want to append. Then you activate the menu and click on the project you want to add to the first.

The particular use of this option is to "clean up" VIPs that contain numerous physical samples.

More

Set silence

Copies the selected [VIP](#)

range into the clip and clears it in the VIP project. The project length is not changed. Please note that the previous clip contents are deleted.

This is a good way to remove a section of a VIP for use elsewhere without affecting the length of the track(s) from which the material was removed.

Keys: Alt + Del

Copy and silence

Replaces the selected range with silence ([VIP](#)

). This command is useful when you want to remove material without changing the length of the VIP track(s).

This command will not save the deleted data to the clip. If you want to preserve the deleted data in the clipboard, use the "Edit -> Copy/Clear" command.

Shortcut: Alt + C

Copy as

The current range of a wave project (HDP or RAP) is copied into a new file. A file requester appears to select the name of the new project.

Keys: Shift + C

Overwrite with clip

The current range is replaced with the clip contents. The overall sample length remains unchanged. The data that occupied this position before cannot be recalled. The clip contents are not changed. The assignment of the clip channels follows the table mentioned above.

In virtual projects, the selected range determines the position and track in which the clip is inserted.

Keys: Alt + V, or Insert

Mix with clip

The range contents and the clip contents are mixed. Similarly to the "Insert" function, the rules for channel assignment between project and clip also apply; the clip itself remains unaffected. Please note that with this function both components (i.e. the sum of both) are entered into the mix at 100%. On the one hand, the volume of the project sample is guaranteed not to drop suddenly, but on the other hand, overmodulation may occur. You may have to adjust the project's amplitude prior to this ("Edit" menu).

Crossfade with clip

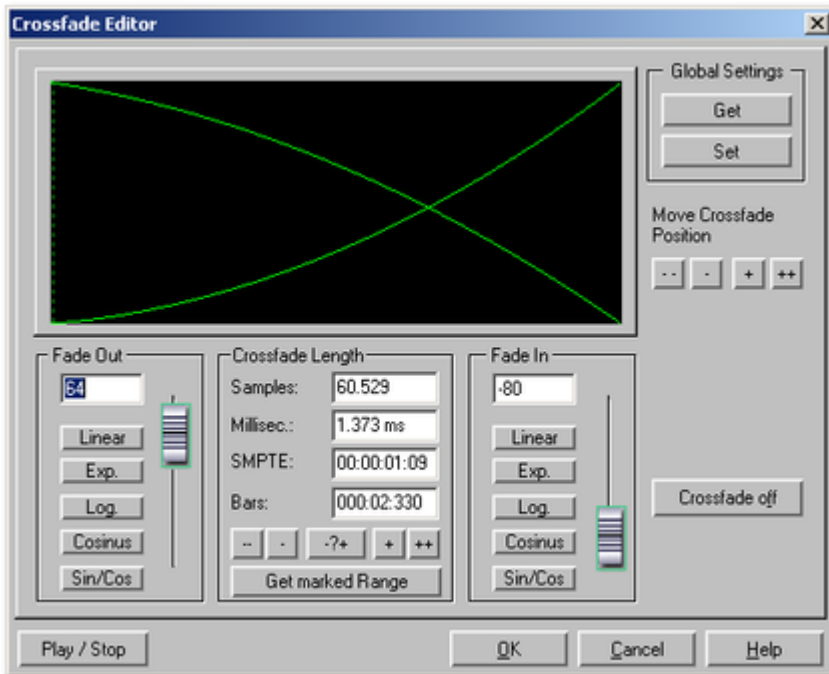
The content of the range is crossfaded with the content of the clip.

Crossfade editor

Crossfading with the crossfade editor

Select the objects in the [VIP](#)

you wish to fade into and open the crossfade editor.



The following editing options are available:

Crossfade length: The length of the crossfade can be set in varying steps. Click on the "+" and "-" buttons to increase/decrease the length in small steps, the "++" and "--" buttons create larger steps. Use the "-/+" button to customize these step effects to your needs. The crossfade length can also be defined by a selected range in the VIP by clicking on the "Get range length" button in the "[Range](#)" menu. This range has to be selected before opening the crossfade editor.

Fade in / Fade out

: There are many different curve types available for selection for the crossfade:

Linear (0)

Exponential

Logarithmic

Cosine

Sine/Cosine

The faders can still be used to change the curves in the corresponding available range. Linear curves require less computer power than non-linear.

Note: The settings for fade in/out in the crossfade editor are applied to the selected object if it does not overlap any other object.

Global settings: Place

The current settings are defined as preset. This is useful if an object is split with "T" and you wish to create a crossfade between the two objects. When opening the crossfade editor, the specified settings are set as default.

Global settings: Get

Use this button to get the crossfade editor presets.

Get range length

: The range length of the range selected in the VIP is set as the crossfade length.

Fade offset

: Specifies how much of the fade should be outside of the object border. Usually, the entire fade can be

found within the borders of the object, i.e. the fade's starting point is at the start of the object (0%). If the fade becomes part of a crossfade, then it may be necessary to modify it. If the second object starts with a drum beat, it would be better to execute the crossfade beforehand in order to keep the "attack" of the drum beat.

The value can be changed from 0% (fade within the object borders) to 50% (fades symmetrical to the object borders) to 100% (fade outside the object borders) – the object is then stretched by the percentage of the fade length. The "actual" beginning of the object is displayed as a dashed line.

With a fade offset of over 0% make sure that the corresponding audio material is available in the wave project, otherwise it may be the case that an object with a modified fade offset cannot be faded in or out. If, for example, the object starts at the exact beginning of the wave project, you will no longer be able to crossfade if the fade offset rises above 0%.

Crossfade off

: The "Crossfade off" button deactivates the selected object's crossfade. The fade out time of the first object is set to 0.

Play / Stop

: This button starts playback in the selected range or at the cursor position.

Move crossfade position

: The end of the first object and the end of the second object are moved equally. The ++/--/+/- buttons are used to set the crossfade length.

Permit asymmetrical crossfades

: The fade offset settings of both objects are no longer connected to one another and can therefore be set independently of one another.

Auto crossfade active

If this option is turned on, then all newly recorded or cut material in a [VIP](#) or material copied from a wave project into a VIP track has an automatic crossfade applied to it. Global settings for fade-in and fade-out parameters are assigned to the object. These settings can be changed with the crossfade editor via "Edit > [Crossfade](#) editor".

If two objects which had an automatic crossfade applied to them are overlapped, a real-time crossfade is the result.

Auto crossfade mode is an excellent tool to easily perform a linear cut of a spoken voice track, jingle, etc. requiring a soft passage without unwanted sounds. If needed, each crossfade can be edited using the editor or by manually manipulating the handles.

Delete curve handles

Delete volume handle

This function deletes volume curve events which were selected previously. Individual volume events can be deleted by selecting the object and curve mouse mode and then double clicking on a volume curve event. However, when deleting several curve events, the "Delete volume handle" function is often the best tool.

Delete panorama handle

This function deletes panorama curve events which were previously selected. Individual events can be deleted by selecting the object and curve mouse mode and then double clicking on a volume curve event. However, when deleting several curve events, the "Delete panorama handle" function is often the best tool.

Volume / Pan curve active

This option has the same functionality as the corresponding buttons in the track info box, i.e. the corresponding curve is activated for editing.

Delete undo levels

This feature deletes a virtual project's undo levels. This is useful if certain wave projects are left in the undo chain, but they do not exist in the [VIP](#) anymore. You won't be able to process or delete the wave project if the undo chain still contains a reference. After deleting the undo levels, these projects are available again.

Menu view

This menu contains tools for manipulating Samplitude Music Studio 15's display.

In this chapter

[Rebuild graphic data](#)

[Sections](#)

[Fix vertically](#)

[Hide submix / AUX buses](#)

[Overview mode](#)

[Show grid](#)

[Grid lines](#)

[Units of measurement](#)

[Snap to grid](#)

[Snap and grid setup](#)

[VIP display](#)

[Store position and zoom level](#)

[Get position and zoom level](#)

[Horizontal](#)

[Vertical](#)

Rebuild graphic data

Display inaccuracies after complicated sample processing can be fixed by using this menu option. The screen (window) will be cleared and redrawn to display the project properly.

Sections

Samplitude Music Studio 15 allows the optional display of one, two, or three sections of the samples belonging to one wave project or the [VIP](#)

itself. Other audio editing applications usually show only one window of a sample.

If you select "2", Samplitude Music Studio 15 will display the same sample in two window sections. Each section can be handled separately, and it is possible to represent the complete sample in one section and a zoomed-in version of a certain range in the other.

"3 sections" mode is especially useful for searching for loop points in wave projects.

The whole sample can be shown in the upper section, while the section on the lower left displays the beginning of the loop range and the section on the lower right the end of the range. Use the split range function for this purpose ("B").

Return to "1 view" (Shift + B)

This is only an example of the "3 view" mode. All sections can be handled independently.

You can also drag ranges over the section borders. Establish the starting point of a range by holding the mouse button pressed and changing over to another section. Samplitude Music Studio 15 will show you the size of the range; release the left mouse button at the desired location to determine the end of the range.

Fix vertically

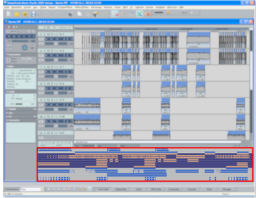
Ranges can be dragged (pulled) in Samplitude Music Studio 15 horizontally and vertically as well. If this option seems strange to you, then you can set the upper edge of a range to the maximum value and the lower end to the minimum value to get the usual range dragging representation. However, the trade-off is that you will not be able to define the vertical extension of a section by choosing the vertical range button.

Hide submix / AUX buses

This function lets you hide or minimize the tracks of the mixer buses. Please read the corresponding notes in the mixer chapter.

Overview mode

This mode provides navigation and overview in the arrangement. The actual arrangement window displays an overview of the arrangement. Selection matches the section which can be seen there. Select a specific range in the overview and the corresponding section length in the arrangement will be zoomed into. Use the right mouse button to zoom in vertically. A single mouse click moves the visible section to the selected position.



Show grid

Defines the type of grid used for the "Show grid" option. Choose from several line styles.

Key: #

Grid lines

Defines the type of grid used for the "Show grid" option. Choose from several line styles.

Units of measurement

In this submenu, you can adjust the various measurement settings. They will affect the start and length details of the current range in the project window, the grid measurement, and the position details of the play cursor (position line). Measurement units like samples, milliseconds, SMPTE (with different frame rates), bars, and CD-MSF are commonly used.

Snap to grid

This function switches the grid on and off.

When working with virtual objects the "virtual grid" becomes available. [Objects](#)

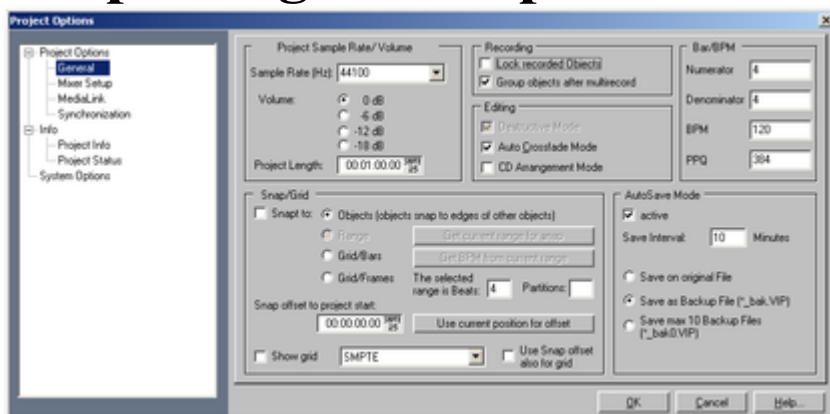
can only be shifted to the beginning, to the end, or to the hot spot of another object. The reference point is usually the beginning of the object to be shifted to. A hot spot will be used as a reference point as well once defined.

If several objects have been selected, the move is performed by lining up the beginning of the last selected object in the sequence with the reference object or grid point. All selected objects maintain their relative position to each other.

This option can be used to easily rearrange objects with their audio patterns and gain sample-exact connections.

Key: R

Snap and grid setup



Object

: Activates the object grid.

Range

: Activates the range grid and enables the use of the current selected range as grid base (click the "Get range" button). This option is very useful if you have found the perfect location defining a particular music bar in the sample. To transfer the range into the grid, use "Get range".

Bar snap

: Activates a grid based on bars and beats. You can specify the speed of the measure by entering the BPM (beats per measure) value in the dialog box. Clicking the "Bar definitions" button gives you more options for specifying the option's parameters (e.g. time signature).

If a complete 4/4 measure is selected, the number of beats in the measure would be 4. The length of the range would determine the speed in BPM needed to play the sample in the selected time frame.

Bar definitions

: This dialog lets you specify the bar settings, e.g. numerator/denominator, the speed in beats per minute, and the timer resolution in peaks per quarter note.

Keys: Shift + R

Key for switching the two modes: Tab

VIP display

Definition

Opens the general settings dialog in [Design -> Display options](#)

Mode 1

Mode 1 has been selected for displaying virtual projects

Mode 2

Mode 2 has been selected for displaying virtual projects

This mode also includes an enlarged display of volume and panorama points, and you can quickly switch between normal and enlarged display modes with "Tab".

Change mode

Switches the display of virtual projects between both modes.

Key: Tab

Mode 1

Mode 1 has been selected for displaying virtual projects

Mode 2

Mode 2 has been selected for displaying virtual projects

This mode also includes an enlarged display of volume and panorama points, and you can quickly switch between normal and enlarged display modes with "Tab".

Change mode

Switches the display of virtual projects between both modes.

Key: Tab

Mode 2

Mode 2 has been selected for displaying virtual projects

This mode also includes an enlarged display of volume and panorama points, and you can quickly switch between normal and enlarged display modes with "Tab".

Change mode

Switches the display of virtual projects between both modes.

Key: Tab

Change mode

Switches the display of virtual projects between both modes.

Key: Tab

Store position and zoom level

This feature functions the same as the snapshot buttons at the bottom left of the [VIP](#). The four buttons in the lower left-hand section of the [Virtual project](#) window allow you to save four setups.

Get position and zoom level

Opens the saved screen section including the zoom level.

Horizontal

This menu contains all the functions of the horizontal (red) position bar.

Vertical

This menu contains all the functions of the vertical (blue) position bar.

Track menu

In this chapter

[Insert new tracks](#)

[Cut track\(s\)](#)

[Copy track\(s\)](#)

[Insert track\(s\)](#)

[Delete track\(s\)](#)

[Track properties](#)

[Track settings](#)

[Track effects](#)

[Surround editor](#)

[DirectX plug-Ins](#)

[Maximize track](#)

[Minimize none](#)

[Track freeze](#)

[Track unfreeze](#)

[Activate next / Previous track](#)

Insert new tracks

Add one track

The virtual project is expanded by one empty track.

Add several tracks

The virtual project is expanded by one empty track (inserted below the selected track).

Insert empty track

The virtual project is expanded by one empty track (inserted below the selected track).

New MIDI track

A track is added to the project which is already set for [MIDI](#) recording.

New track folder

Inserts a new folder track in front of the marked track. If a range across several tracks was highlighted before creating the folder track, then each of these tracks will be added to the folder.

Tracks can be moved into the folder with drag & drop by clicking on a free area in the track box. The mouse pointer turns into a hand. Similarly, tracks can be removed from the folder via drag & drop and out of the track box.

Certain actions can also be grouped. This means an action performed on a folder track affects all contained tracks. Tracks in a folder can be:

- Faded out with the "Reduce track" button. All tracks included in the folder track are displayed in reduced size.
- Switched to mute, lock, monitoring, and solo.
- Volume controlled. The individual volume faders of the tracks are scaled relative to another, independent of the current function of the track volume fader ([MIDI](#), CC, or audio level)
- Activated (the displayed condition corresponds to the first track of the folder, joint switching is only possible with different/multi-track recording devices)

If the folder track display is enlarged (opened up), all included tracks are displayed as well with a frame in the color of the folder track. The track color can be selected in the track settings. If the folder track is minimized, the tracks included in the [VIP](#)

are hidden. They continue to be available in the mixer. They are also available in the mixer.

Normally, all the tracks can be seen with the objects they contain in the folder in a smaller display.

Section marking in the folder track is carried out across all tracks. Use this view mode for section-based cut operations across all tracks of the folder track.

By right clicking on the track box of the folder track, the contained track can be used as a reference track. The objects of this track are displayed in the folder and can be used for simultaneous object-based cutting operations for all objects of the other tracks in the folder track that are grouped with these objects. Object groups like these typically originate from multi-track recordings.

The usual method of working with folder tracks would be as follows:

1. Initiate a multi-track recording. This creates several grouped objects, one below the other.
2. Select an area over all the objects that you wish to edit together. You can now create a folder track.
3. Minimize the folder track and choose one of the contained tracks as a reference.
4. The object of the reference track now appears in the folder track instead of the symbolic display of all contained tracks. All object editing, cuts, fades, and object editor effects of this object are now applied to all objects of the folder tracks (changes in the object editor take effect only after "Apply/OK" is clicked).

Folder tracks are not visible in the mixer.

New submix / AUX bus

In the "New submix bus" menu item you can add a new submix bus as a new track. The "New AUX bus" option is identical. The new bus is always inserted after the active track.

Cut track(s)

Cuts out the complete tracks that have been selected by the range.

Copy track(s)

All selected tracks in the [VIP](#)
are copied into the VirtClip.

Insert track(s)

The clip is inserted from the track with the current range setting. New tracks are created in the [VIP](#)

Delete track(s)

All selected tracks are deleted from the actual [VIP](#)

Track properties

Here you can edit the properties of the active track. These are:

Mute:

The mute button mutes the active track.

Solo

: Switches the active track to solo mode.

Solo exclusively:

This setting switches the active track to solo exclusive mode, i. e. you will only hear the activated track. All other tracks are muted, unlike solo mode.

Record:

Activates record mode.

Lock

: Locks the activated track.

Volume/Pan-curve active:

Displays the volume or pan curve of the activated track.

Submix/AUX bus:

If the activate track is a bus, it can be defined as a submix and/or AUX bus.

Track settings

In this section

[Audio](#)

[MIDI](#)

Audio

Output: Specifies the audio output device. This can either be a bus (submix bus) in the audio studio mixer or a wave out device. This parameter can be adjusted in the [VIP](#) window, in the mixer, as well as in the track settings.

Surround mode

: Activates Surround mode.

All tracks

: Sets the current settings for all other tracks in the VIP.

Track type

: Displays whether the track is set to AUX send and/or a submix-bus.

Color

: The track color set here is displayed in the track editor as well as in the track box in front of the track name. If the track is a track folder, then the color will be used for the border and all tracks in this track folder.

[Audio](#) recording options

Audio device

: Defines the audio recording device. This setting can be made in the VIP window, in the mixer, or in the track settings.

Recording file

: Specifies the name for the recorded wave file. As a default, the following mask is applied: [VIP][tracknumber].wav. If you move tracks, then the track number in the file name will no longer match.

Track name

: Change the track names here as they are shown in the track box.

Track recording options

Stereo

: Records a stereo wave file.

Mono

: Mono recording uses an input device for recording.

Mono (Mix):

Mono recording records a signal which mixes both input devices.

Record in RAM only

: This creates a RAM wave project. The difference from a HD wave project is that it opens a VIP in the computer's RAM. This enables a significantly better playback performance, but is only suitable for short recordings.

MIDI

Recording device: Set up the [MIDI](#) interface to be recorded.

Playback device

: Set up the MIDI interface on which the track's MIDI information will be output.

All tracks

: Applies the settings to every track.

Play/Thru parameters

In Channel

: If a MIDI channel is set here, then ONLY this will be used for recording.

Out channel

: If the MIDI object includes multiple MIDI channels, then you can use this option to filter out other MIDI channels than the one set. Only events for the MIDI channel set here will be output via the MIDI interface.

Transp.

: Transposes the played pitch in semitones up or down. Set the value here to 2 and play C2, for example: D2 will be played or recorded. The value 12 transposes an entire octave up; -12 correspondingly transposes down.

Program

: Sets the MIDI program for the current track.

Bank Hi (MSB)

: According to MIDI specification, "Bank Hi" is required if a bank number should be addressed which exceeds the 7-bit MIDI range (0-127 or 1-128).

Bank Lo (LSB)

: Enter a bank number. If it exceeds 127/128, remove 128 and enter 1 in the "Bank Hi"-field; if higher than 255/256 enter a 2, and so on.

Note: If you need to switch banks and programs within a track, it's recommended that you set this in the [MIDI object editor](#), and that you [separate](#) the objects at the corresponding positions.

MIDI Thru active

: The incoming signal is immediately forwarded to the set output device.

Track effects

Please read the chapter "[Menu effects](#)".

Copy / Paste track effects settings

With this command you can copy the complete effects settings of the active track into the clipboard.

Copy / Paste track effects settings

With this command you can copy the complete effects settings of the active track into the clipboard (to paste it on another track).

Reset track effects settings

Reset all track effects settings to its defaults, i.e. no effects are applied at all.

Surround editor

Please read the chapter "Surround".

DirectX plug-Ins

Please read the corresponding explanations in the "Effects" chapter.

Maximize track

This option minimizes all tracks except the selected track.

Minimize none

This option maximizes all tracks.

Track freeze

The selected track is rendered into a wave file which replaces all objects on the active track. Object and track effects are added to reduce the PC's processor strain of having to process effects and plug-ins.

The advantage of track freeze is that the frozen track is saved in a separate [VIP](#) and can be edited/recalled at any time. This way it's also possible to work flexibly and to keep resource usage at a minimum even when working with less powerful computers.

Track freeze for AUX buses/submix buses

Bus/Aux bus tracks can be frozen just like regular tracks. This enables a complete group of tracks to release the required [CPU](#)

load including all effects, fades, crossfades, and automation settings in one step.

Submix bus

- Tracks routed onto the submix bus are not changed but remain instead.
- The submix bus is muted ("Track -> Track options -> Mute bus input").
- The file created while freezing is inserted into the AUX track as an audio object.
- Changes made to the tracks after freezing which are routed to the submix bus have no effect on the signal output while playing.

AUX bus

- Only AUX send settings in tracks are taken into account (not in objects).
- Tracks routed onto the frozen AUX bus are not changed but remain unchanged instead.
- The AUX bus input is muted ("Track -> Track properties -> Mute bus input").
- The color of the AUX send fader (mixer) in the affected tracks is blue.
- An asterisk is added before the name above the AUX send faders (mixer).
- The file created while freezing is inserted into the submix track as an audio object.
- Changes made after freezing to the tracks transmitting to the AUX bus are not updated in the file created while freezing. Therefore, if objects are moved into tracks transmitting to an AUX bus, the audio signal on the corresponding AUX will remain the same.

Track unfreeze

This menu item removes the wave file created during "Track freeze" and brings back the track that was saved in the temporary trackbouncing [VIP](#)

Changes made in this project are applied to the track as well.

Note

: If tracks were added in the reference project (the project created while freezing), "Track unfreeze" is not possible.

Activate next / Previous track

The next (lower) or previous (upper) track in the [VIP](#) from the view of the currently activated track is activated. With the cursor keys you can conveniently scroll up or down.

Key:

Activate next track Cursor down

Activate previous track Cursor up

Object menu

In contrast to the "Edit" menu, all functions in this menu exclusively manipulate selected objects in virtual projects. Selected ranges have no effect with these functions.

Ranges are used to determine insertion points or cut positions of objects. When inserting material into a virtual project, the range beginning has the same function as the play cursor.

In this chapter

[New object](#)

[New synth object](#)

[Cut objects](#)

[Split objects](#)

[Trim objects](#)

[Group objects](#)

[Lock objects](#)

[Move object](#)

[Mute objects](#)

[Build loop object](#)

[Hotspot](#)

[Delete hotspot](#)

[Select objects](#)

[Group objects](#)

[Ungroup objects](#)

[Object color / name](#)

[Object editor](#)

[Object manager](#)

[Take manager](#)

[Wave editing](#)

New object

Use this function to create a virtual object. The current range in the wave project will be inserted into the virtual project at the play cursor position.

It will also be the currently selected object. This is the same procedure as the drag & drop method explained earlier in this chapter.

New synth object

Please read the "Synth objects" chapter!

Cut objects

Cut objects

The currently selected object is replaced with empty space and copied to the VirtClip. The length of the current project remains and all other non-selected objects remain in their positions. The previous contents of the VirtClip are replaced with the cut object.

Copy objects

To place a copy of the currently selected object into the VirtClip select this option. The contents of the VirtClip can then be inserted into the project using the "Insert objects" option (see below). The previous contents of the VirtClip are replaced.

Insert objects

[Objects](#)

in the VirtClip can be inserted in the project at the current play cursor position. The other objects in the project maintain their positions. Please note that the newly inserted object might cover portions of existing objects.

Delete objects

The selected objects are deleted from the current project. The length of the current project however remains the same. Previously unselected objects keep their positions. The contents of the VirtClip remain unchanged.

Keys: Ctrl + Del

Extract objects

Deletes all objects that are not currently selected.

Please note that the "Edit > Extract" function works similarly. However, the "Edit menu" function requires a previously selected range!

Duplicate objects

All selected objects are duplicated and pasted to the same position as the original objects. The original object is overlaid with the copied object. The duplicate object can easily be shifted to a desired position by using the mouse. If several objects have been selected before the duplication, press "Shift" before shifting to ensure that all objects remain in selected status and are shifted together.

This option does not make use of the VirtClip, so all contents of the VirtClip remain unchanged.

This function is also available using your mouse. Press and hold "Ctrl", click on the object you want to duplicate and drag the copy to a new position in the project.

Another option is to use the drag & drop functionality for the object or universal mouse mode:

If multiple objects are selected, press "Ctrl" and drag the selected objects to the new position. This allows you to duplicate the selected objects easily and without using the VirtClip.

Duplicate objects multiple

This function duplicates multiple objects and places them in a sequence. Another dialog is displayed which allows you to determine how many copies of the selected objects are to be duplicated, the separating distance, and the overall length of the duplication.

This is also another way to build loop objects.

The following parameters are available:

Number of objects

: Determines the number of objects created.

Group created objects

: All created objects are grouped together when checked.

Delta time

: This determines the relative position of each created object to the next (from the beginning of one object to the beginning of the next). The default setting is the length of the selected object. The default setting lines up the duplicated objects without any gaps between them to create a seamless loop.

Duration

: Alternatively, the duration can be specified, i.e. the combination of the time difference and the number of duplicated objects.

Split objects on marker position

This function splits or separates selected objects so that individual object sections can be manipulated further. All selected objects are separated at the current marker position, resulting in two independent objects.

Split objects on marker position

This function splits or separates selected objects so that individual object sections can be manipulated further. All selected objects are separated at the current marker position, resulting in two independent objects.

Split objects

This function splits or separates selected objects so that individual object sections can be manipulated further. All selected objects are separated at the current play cursor position, resulting in two independent objects.

If a range is selected, the cut occurs on both range boundaries. It is not necessary to select objects prior to choosing the range and using the "Split objects" function. If an underlying object is separated, then the newly created object covers the original underlying object.

Keys: T

Trim objects

This function trims the object borders to the currently selected range borders. The selected range needs to be located within the confinements of the object you want to trim.

Keys: Ctrl + T

Group objects

Builds a new object from those selected using trackbouncing.

Lock objects

Lock objects

Use this option to protect objects from accidental shifting. First, select the objects you want to "lock" in place and activate the lock function. A diagonal line is placed across the locked object.

In the "Options" menu you can specify the functions you want to lock.

Unlock objects

An object can be unlocked so that it can be moved again. All of the objects selected will be unlocked.

Locking options

The dialog opens displaying the [Locking options](#)

Move object

This menu contains functions for moving the objects themselves and also for moving the wave project within the object. There are also other functions for moving a crosswire between two objects and for changing the loudness of the object.

This menu mainly exists for issuing keyboard commands (visible next to the entries themselves in the menu) and can be changed using the "Keyboard shortcuts and menu editing" function.

In the picture shown here the menu contains the standard settings for the keyboard commands.

Commands for moving objects can also be found in the lower toolbar (range bar).

Object to play cursor position

This moves the selected object to the actual play cursor position.

Object to original time position

This moves the selected object to the original position where the material was originally recorded. This is often helpful if an object was accidentally moved.

Set new original time position

The current object position is used to reset the original position attribute for the object. This is also used in the take manager.

Mute objects

The selected objects will be muted.

Build loop object

A loop can be defined within an object with this function. An area which indicates the loop length must be selected in the object first.

The object becomes the loop object, and the number of loops can simply be "raised" using the "length handles" at the bottom of the object.

Loop objects generated like this are ideal for generating long drum sequences from only one drum loop!

Loop objects also help to save memory, since in the [VIP](#)

only one object is handled rather than multiple objects or copies of the same material or very long samples!

Hotspot

The current play cursor position is turned into a reference point for the snap function. Instead of the object's beginning, the hot spot is now used when the object is snapped to the grid. Stroked vertical lines illustrate hot spots, and hot spots may stand outside an object (in front of or behind the object). This function is very useful for a case where the portion of an object to be synchronized does not line up with its beginning.

Delete hotspot

The set hotspot is removed, the object snaps again to the object start when the object grid is switched on.

Select objects

Selects all objects located partially or entirely in the selected range, or at the current play cursor position.

Select objects > Switch selection

Selects all objects located partially or entirely in the selected range, or at the current play cursor position.

Object lasso

The normal way to select several objects at once is to click on the free space to the right of the object in the lower area of the track and drag a window out around the selected objects.

Sometimes, however, there is not enough space between the objects. The object lasso solves this problem.

Once activated, you can click on an object and pull up a selection frame without moving the object you clicked on.

Once you selected the objects you want, the mouse returns to the standard mode, and that you will have to reactivate the object lasso each time you want to use it.

Group objects

All selected objects are grouped together. All operations are applied to the whole group.

Ungroup objects

Selected objects are ungrouped. Individual objects are available for processing after that.

Object color / name

Object foreground color

After selecting the desired color, all selected objects in the project will have the same foreground color.

Object background color

The background color selected in the color grid is applied to all objects.

Object name

The selected new name is applied to all selected objects.

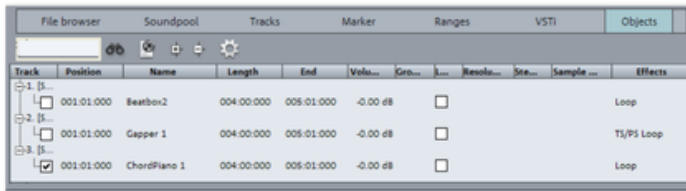
Object editor

Use the object editor for object-oriented editing. This way you can quickly and easily edit each selected object independent of your general settings.

Shortcut: Ctrl + O

Object manager

In the object manager all objects used in a [VIP](#) are indicated in temporal sequence. With this option the object manager features a function which is often offered in other programs as playlists.



The screenshot shows the 'Objects' tab in a software interface. It contains a table with columns: Track, Position, Name, Length, End, Volu..., Grp..., S..., Reverb..., Sre..., Sample..., and Effects. There are four rows of data, each with a checkbox in the 'Track' column. The first row is selected.

Track	Position	Name	Length	End	Volu...	Grp...	S...	Reverb...	Sre...	Sample...	Effects
☒ 1	001:01:000	Beatbox2	004:00:000	005:01:000	-0.00 dB						Loop
☐ 2	001:01:000	Gapper 1	004:00:000	005:01:000	-0.00 dB						TS/PS Loop
☐ 3	001:01:000	ChordPiano 1	004:00:000	005:01:000	-0.00 dB						Loop
☐ 4	001:01:000										

In the object manager objects can be selected and activated in the VIP. If you press play, a range over the selected object is applied. Small objects can be identified and manipulated easily.

"Ctrl + mouse click" selects several objects; "Shift + mouse click" selects all objects between two selections (like in the Windows Explorer).

Particularly productive in the object manager is the search function: You can look for certain objects with it in full text mode rather than just the graphical representation of the objects. For example you could look for all HD wave projects with the name "XYZ.HDP" or all objects that contain the name "Intro".

You simply enter the search criteria in the text field and click on "Search". All found objects will be selected and are available for further processing.

Take manager

The description can be found in the "Tools" menu.

Wave editing

Opens the wave project (contains audio files) belonging to an object and displays it in the wave window.

The range corresponds precisely to the part of the audio data which the object accesses.

You can carry out destructive (offline) editing in the wave window.

Cut and copy functions are available for destructive editing ("Edit" menu) as well as complex effects ("Effects" menu).

[Destructive editing](#)

is not necessarily recommended.

If you have duplicated objects, i.e. several objects are using the same audio data, then all of these objects will have changed when you change the wave project.

Please note that the cut and copy processes, fades, crossfades, etc. can be performed much more elegantly and more quickly as non-destructive virtual projects.

Almost every effect can be used on objects directly in the virtual project.

Please also note that it is better to work in single-track virtual projects even if you only want to edit wave files in Samplitude Music Studio 15. You can quickly and conveniently perform all editing operations here. If you have to use longer wave files, you have to wait after each editing sequence until the audio data has been copied to the hard drive. However, you can work considerably faster if you use virtual projects.

With the "Trackbouncing" function ("Tools" menu), you can create a new wave file from the virtual project.

Range menu

This menu contains many functions for managing selected ranges. You can easily save, burn, and reopen ranges and marker positions via the function and number keys.

In this chapter

[Range all](#)

[Move play cursor](#)

[Edit range](#)

[Range length](#)

[Split range](#)

[Split range for video](#)

[Store range](#)

[Get range](#)

[Get range length](#)

[Save markers](#)

[Get marker](#)

[Markers on range borders](#)

[Set markers on silence](#)

[Delete marker](#)

[Delete all markers](#)

[Recall last range](#)

[Range editor](#)

[Range manager](#)

[Edit time display](#)

Range all

The range will cover the complete sample. This command comes in handy if you want to apply changes to the entire sample with functions that normally only address certain ranges.

Keys: A

Move play cursor

This submenu command sets the start position of the play cursor (position line) to the following position of the project:

To start	Home
To end	End
To start of section	Ctrl + Home
To end of section	Ctrl + End
Move left in side mode	Cursor left
Move left in scroll mode	Alt + Cursor left
Move right in page mode	Cursor right
Move right in scroll mode	Alt + Cursor right
Object edge left	Ctrl + Q
Object edge right	Ctrl + W
Track marker left	F2
Track marker right	F3

Edit range

In this submenu you will find options and keyboard shortcuts for adjusting the play and edit range in the [VIP](#)

.

Range start to left/right

Moves the start of the range to the left/right

Shortcut: Alt + Arrow left/right

Move range end to left/right

Moves the end of the range.

Keyboard shortcut:

Left: Alt + "-", or Shift + Arrow left

Right: Alt + "+", or Shift + Arrow right

Range to beginning

The beginning of the range will be extended toward to the beginning of the project.

Keys: Shift + Home

Range to end

The end of the range will be extended toward the end of the project.

Keys: Shift + End

Flip range left

The current range is shifted left by the length of the range and the end will be the former beginning position. If there is not enough room to place the range, the command will not be executed.

Keys: Ctrl + Shift + Arrow left

Flip range right

The current range is shifted right by the length of the range, and the beginning will be the former end position. Keep in mind that if there is not enough room to place the range, the command will not be executed.

Keys: Ctrl + Shift + Arrow right

Beginning of range > 0

This function shifts the beginning of range to the right of the next zero position.

Keys: Page up

Beginning of range < 0

This function shifts the beginning of the range to the left of the next zero position.

Keys: Shift + Page up

End of range > 0

This function shifts the end of the range to the right of the next zero position (change in polarity). "Zero position" is the next sample value with zero value or the boundary between a positive and a negative sample value (or vice versa). This is particular useful for searching for loop points.

Keys: Ctrl + Page down

End of range < 0

This function shifts the end of the range to the left of the next zero position.

Taste: Shift + Page down

0 > Range < 0

This function shifts the beginning of the range to the left and the end of the range to the right of the next zero position.

Taste: Shift + Page down

Set range start to left marker

Moves the range start to the next marker on the left, i.e. the range will be expanded.

Keyboard shortcut: Shift + F2

Start of range to left object edge

Moves the range start to the next marker on the left, i.e. the range will be extended up to the end of the next object on the left.

Set range start to right marker

Moves the range start to the next marker on the left, i.e. the range will be extended.

Shortcut: Shift + F3

Set the end of the range to the right object edge

Moves the end of the range to the next marker on the left, i.e. the range will be extended up to next object on the right.

Area above all selected items

A range is opened above all previously selected objects. Read the topics "[Selecting objects with the mouse](#)" and "[Ranges](#)"

".

Range length

This command lets you set the range length to 1, 2, 4, 8, and 16 bars. You can set the tempo in BPM with "View > Snap setup".

Split range

This function is particularly useful for working with loops. If not already displaying in split range mode, the project is switched to this mode first to display three sections on the screen.

The upper section displays the whole sample, the section located at the bottom left displays the data near the beginning of the range, and the section at the bottom right displays the data near the end of the range.

The boundaries of the range can be positioned exactly in the lower sections, while the upper section will display the location of the entire range. You can also define ranges across several sections.

In order to revert splitting, the display setting has to be changed to a section again using "View -> Sections -> 1", or "Shift + B".

Key: B

Deactivate: Shift+B

Split range for video

This function is in particular useful for working with [AVI](#) videos.

The upper section displays the whole sample. The section located at the bottom left displays the data near the beginning of the range. The section at the bottom right displays the data near the end of the range.

Both lower sections are zoomed down to single frame accuracy.

The boundaries of the range can be exactly positioned in the lower sections, while the upper section will display the location of the entire range. You can also define ranges across several sections.

To undo the split, the display has to be returned to a 1 section display with "Shift + B", or "View > Sections > 1".

Store range

Another powerful feature of Samplitude Music Studio 15 is the option to define and save different ranges for future retrieval. An unlimited number of ranges can be defined. You can, for example, specify different loops and compare them while you recall their ranges.

All ranges of a project can be accessed via "Tools > [Range manager](#)". All ranges can be renamed or played.

When selecting this menu option, the selected range needs to be stored by entering a numerical value the range is associated with.

Keys: Shift + F2 ... F10

Get range

Select this option to select one of the defined ranges as the current range.

Samplitude Music Studio 15 even lets you choose a range while playing, and the specified range becomes the current one and is audible. Using this method, you can change between two ranges to compare them with each other. Ranges can also be named and recalled with the range manager ("Tools" menu).

Keys: F2 ... F10

Get range length

By selecting this option you can select the length of one of the defined ranges to be the current range.

Keys: Ctrl + Shift + F2 ... F10

Save markers

You can store an unlimited number of markers wherever the play cursor is placed at. This lets you set markers.

Keys: Shift + 1 ... 0

Get marker

The new start position of the play cursor (position line) is set to the saved position of the corresponding marker number. Playback starts at the new jumped-to start position. You should keep in mind that whenever a marker has been defined, the range between the marker and the end of the sample is played.
Keys: 1 ...9, 0

Markers on range borders

This function sets two markers to the beginning (S) and the end (E) of a selected range.

Set markers on silence

This function sets markers on silent regions in the sample (only in wave projects, i.e. HDP or RAP). You can choose the minimal length of the pause, a threshold level, the start number, and a prefix for the marker name.

This is very useful to select the regions of sample CDs, etc.

Min. time (ms)

: This is the minimum length in ms of a "silent" area.

Threshold (dB)

: This is the maximum volume of a "silent" area. The level of the area in the project will be set on the level of the threshold in the graphic display!

Starting number

: The markers will start to count from the number you type in this dialog box.

Prefix

: This allows you to insert additional symbols (letters would be appropriate), which will be placed in front of the marker-numbers. By doing this, you will be able to distinguish between new and older markers.

Delete marker

The selected marker will be deleted.

Delete all markers

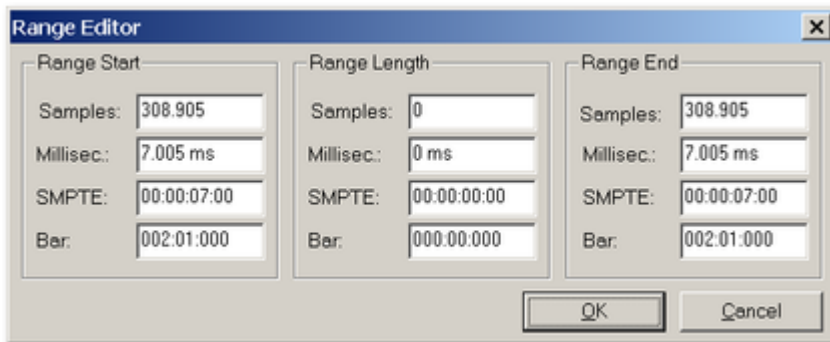
All markers of the project will be deleted.

Recall last range

Restores the last selected range (useful if the adjacent marker was accidentally deleted).

Range editor

Here you can change the start and end position of the selected range numerically in different measurements.

The image shows a 'Range Editor' dialog box with three main sections: 'Range Start', 'Range Length', and 'Range End'. Each section contains four input fields: 'Samples', 'Millisec.', 'SMPTE', and 'Bar'. The 'Range Start' section has values: Samples: 308.905, Millisec.: 7.005 ms, SMPTE: 00:00:07:00, Bar: 002:01:000. The 'Range Length' section has values: Samples: 0, Millisec.: 0 ms, SMPTE: 00:00:00:00, Bar: 000:00:000. The 'Range End' section has values: Samples: 308.905, Millisec.: 7.005 ms, SMPTE: 00:00:07:00, Bar: 002:01:000. At the bottom right are 'OK' and 'Cancel' buttons.

Change values in the range start section:

The end will be maintained.

Change values in the range end section:

The start will be maintained.

Change values in the range length section:

The start will be maintained.

Please note the format of the bar dialog box. The format is displayed as a 4/4 beat with 96 clicks per quarter. Bars, beats, and clicks are displayed.

The number of beats per minute (BPM) can be set in the BPM dialog box in "View > Snap setup".

Range manager

All saved ranges of the current project are displayed in the range manager.

A colored bar highlights the current range.

By selecting a range name, the corresponding range in the project is selected/activated.

In the lower line you can enter/modify the range name. You can also delete ranges and save new ranges in the range manager.

With the "Play once" button you can play the selected range once, "Play loop" activates looped playback. This makes the range manager particularly useful as a jingle player.

Edit time display

Here you can numerically enter various parameters of the range, e.g. range start, range length, etc. in the currently set measurement unit.

Real-time effects menu

This menu entry permits fast access to the relevant real-time effects at the object level. Correspondingly, menu entries are provided here which can be controlled via the object editor. For more details on these effects, please read the relevant articles in ["Offline effects menu"](#)

Offline effects menu

Here you'll find many high-quality audio effects to help you add professional modern music production studio sound to your recordings.

Important tips regarding the effects functions

- The following effects can be directly applied to [VIP](#) objects:
- Please note that in wave projects most functions are only available for selected ranges. If the complete audio file is to be processed with the DSP function, the whole file needs to be selected as a range in the wave project ("[Range](#) -> Range all").
- Selected objects in VIP projects are processed with their complete content, no matter which range is selected in the wave project (an exception is the "Get noise sample" function.)
- If you don't want to alter the whole object, then you would first need to cut the object apart (select a range over the desired length and press the "T"). We suggest turning on the auto crossfade mode ("Edit -> Auto crossfade active") to prevent pops during the object transitions.
- It's even possible to apply an effect to multiple selected objects. If several objects are selected in the VIP, the effect is applied to each individual object and its corresponding audio material in the physical audio file.
- A suggestion regarding the differences between RAM and HD wave projects: With RAM wave projects you can decide after an applied edit whether you want to keep the current version. Since the audio material is only processed in the computer memory, it is possible to simply close the wave project and not save the changes to the hard disk.
- To keep the changes, the project would need to be saved to the hard disk ("S").
- In HD wave projects, the changed audio material is immediately saved to the file on the hard disk.
- You can also work with a copy of the audio material for test purposes. To do so, copy the selected range in the wave project to the clipboard ("C"). Next, open the clip window (this window is displayed as an icon) and select the complete contents of the clip window ("A"). The effect can now be experimented with using the temporary copy of the audio material.
- Clicking the right mouse button on the respective effects knob of a channel can also access the real-time effects dialogs in the mixer window. The corresponding effects dialog will appear for you to make detailed adjustments to the settings.

In this chapter

[Amplitude / Normalize](#)

[Switch channels](#)

[Stereo FX](#)

[Invert phase](#)

[Equalizer](#)

[FFT equalizer](#)

[Dynamics](#)

[MultiMax](#)

[Declicking](#)

[Remove DC offset](#)

[Dehisser](#)

[Amp simulation](#)

[Vocoder](#)

[Room simulation](#)

[Echo / Reverb](#)

[Resample / Timestretching](#)

[Change sample rate](#)

[Reverse](#)

[Build physical loop](#)

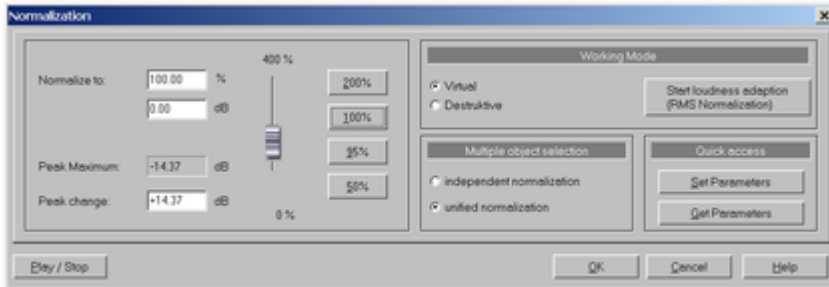
[DirectX plug-ins](#)

[Process only left \(right\) stereo channel](#)

Amplitude / Normalize

Amplitude / Normalize > Normalize

This function modifies the sample's overall amplitude. The data is altered so that the maximum amplitude occurring in a specified range is set to 100% (or any other value between 1-400%). Samplitude Music Studio 15 attempts to detect the maximum and relate it to the selected percentage, and then all other values are weighted with the new factor.



The "Normalize" function is designed to fully modulate or overmodulate samples. This can be useful for processing done before conversion from a higher sample resolution to a lower resolution. Since the dynamic range of the low resolution is smaller, it still can be fully utilized by applying the "Normalize" function.

When you are working with sounds from a single instrument, you should set the factor to 100%.

If, however, your audio material has background percussion, then you will be able to overmodulate the sample up to 120-200%. This will only cut off the new percussion peaks. The same method allows you to alter the sound of natural instruments by overmodulating them (clipping).

As preparation for further physical processing, e.g. filters, reverb, dynamic compression, etc., a level reduction of 50-70% is suggested. This should avoid clipping during post processing.

Important

: If the volume level during the recording is relatively low and the material is normalized later, the result will not be of the same quality if the recording level is maximized to its fullest range. If, for example, the volume level was only set to 50% of the possible range, the audio material will be in 15-bit quality. Even normalizing the material to 100% will not change this aspect.

Editing mode

: In virtual projects, a virtual normalization function is available. Sample data remain unchanged — the object volume is adapted in such a way that the loudest passage in the object equals 0 dB (corresponding to 100%). This virtual normalization is non-destructive and extremely fast!

Selecting several objects

: If you have selected several objects, then you can decide whether you want to normalize them individually or as a whole.

Quick access

: This section allows you to set the parameters for quick access. Instead of having to open the dialog each time you want to normalize, simply press "N".

Keys: Shift + N

Amplitude / Normalize > Loudness adaption

This function raises the sound volume of all objects to the maximum level without the clipping the material. Unlike the master normalization function, each object is normalized separately. It serves the purpose of reconciling finished songs (each as one object) in volume. This makes the volume of the songs uniform.

Titles with full volume control can still sound different, since a crucial factor in the perception of volume is also the relationship between the soft and the loud parts of a piece of music. The average loudness (RMS) of the song therefore has to be identified in addition to the absolute level (which is the loudest part of the song) and the object level has to be adjusted accordingly.

Therefore, it may happen that songs with high peak values but a lower level of loudness are normalized to a value above 0dB (full volume). In order to avoid clipping, the limiter (see MultiMax) is activated automatically.

Tip: Volume fluctuations within a song can be removed with the "Leveler" presets in MultiMAX.

Amplitude/Normalize > Fade in/out

This function allows sample ranges to be faded in or out. The amplitude is varied according to time characteristic from the beginning start value to the range's final end value. When the function is activated, a window appears to specify the operations's parameters.

A simple fade-in operation would be performed with the parameters from 0% to 100%, whereas normal fade-out requires specification from 100% to 0%. Of course, you can also try other values to achieve interesting results. The transitions can be created with different curve types, from logarithmic to exponential.

Please note that high-performance real-time fade and crossfade options exist in virtual projects, which normally eliminate the requirement of using destructive fade routines.

Key: F

Amplitude/Normalize > Set zero

Sample data values in a selected range are set to zero to eliminate noise and imperfections in a sample (reversible).

Switch channels

This function switches the left and right stereo channels.

This is useful for correcting recordings with switched channels. This function can be reversed if you don't re-select the range; opening it again will bring back the original material.

Stereo FX

The stereo effects enhancer allows you to reposition your audio material in the stereo panorama.

Whenever a stereo recording sounds undifferentiated, the extension of the basic stereo width can provide a more transparent sound.



Basic stereo width controller

: Here you can adjust the width of the basic stereo panorama from mono (leftmost side), over unchanged (in the centre) to maximum width ("wide", right-most side). When setting the stereo panorama to smaller values, the sound level may rise. In an extreme case (the left and right channels contain identical audio material and the basic stereo width controller is set to "mono") the sound level can be increased as much as 3 dB.

While increasing the basic stereo width (values exceeding 100), the mono sound compatibility gets worse. This means that recordings that have been manipulated in such a manner will sound hollow during mono playback.

Volume fader

: Adjust the volume for each channel and the stereo panorama. The damping for the left and the right channel will be indicated in dB values under the controllers. This allows you to reposition an originally centred recording to the right or to the left inside the stereo panorama.

Stereo meter (correlation indicator)

: This is a graphic display of the phase position of the audio signal. Here you can check the orientation of your signal inside the stereo panorama and the effects caused by the stereo enhancer.

In order to achieve the best possible mono-compatibility, the graphic should resemble a diagonal line. If not, then some frequency areas may eliminate each other when the stereo signal is played back on a mono player.

Karaoke preset:

This preset opens a special karaoke effect that more or less eliminates vocals during playback by deleting middle-range frequencies typical for the human voice when singing, allowing someone else to take over the singing.

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Karaoke preset:

This preset opens a special karaoke effect that more or less eliminates vocals during playback by deleting middle-range frequencies typical for the human voice when singing, allowing someone else to take over the singing.

Invert phase

The sample data within the selected range is inverted along the amplitude axis. This phase inversion means that negative values become positive and vice versa. This function, too, is reversible. The "Invert" function permits samples with different phases to be matched. Along with the available mixing functions (from a mathematical viewpoint these are adding functions) you can actually subtract samples by applying this function to the selected sample.

Equalizer

The 10-band equalizer splits the frequency spectrum into 10 areas ("bands") and provides them with separate volume faders. This offers a whole spectrum of impressive effects, from a simple bass boost to complete alienation of your sound. However, raising the levels too much, especially in the case of the lower frequencies, will also increase the general sound level, and distortions may appear. In this case you should lower the main sound level using the "Master volume" controllers in the main menu.



[Slider](#)

: Each of the 10 frequency areas can be raised or lowered separately using the corresponding 10 volume sliders.

Link bands

: This switch links the different frequency areas in a flexible way, avoiding override of isolated frequency areas that would result in artificial sound.

A/B

: If you chose a preset value for an effect and want to change that value manually, you can compare the original preset sound with the new settings by pressing the A/B button.

Reset

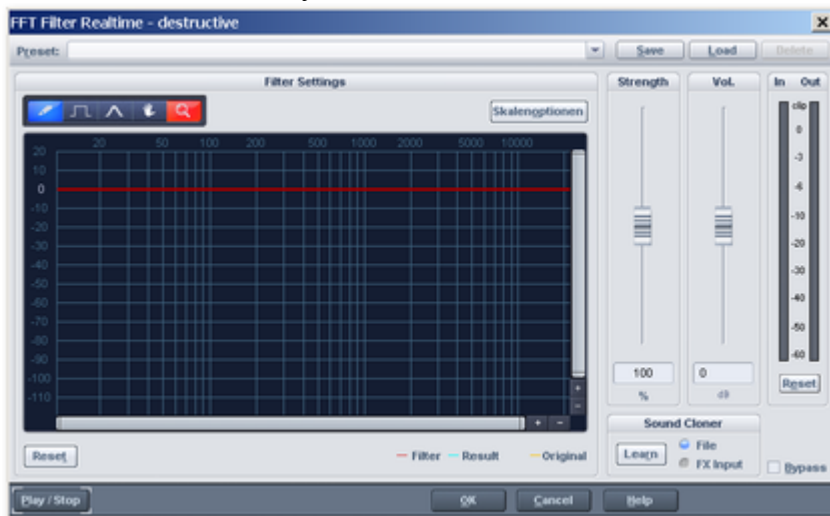
: Resets the equalizer to its original (neutral) settings, i.e. no system resources will be used and no effect will be added to the sound.

Touchscreen (right EQ section)

: This is the "sensor field" of the EQ: draw a frequency curve using your mouse and it will be immediately translated into the corresponding slider positions on the left side of the EQ.

FFT equalizer

This audio effect allows you to draw the wildest filter effects with the mouse.



A red line is drawn in the graphic area with the mouse. The left side of the graphic represents the low tones, the right the high tones.

Real-time replay can be switched on with the "Test" button. Now you will be able to hear all changes in the red line. A "hill" in the left part of the graphic results in a strong increase in the bass, a "hill" on the right side considerably increases the treble. Great effects are frequently achieved if a filter curve is initially deleted over the entire area (if everything in the display is set to low values). This removes almost all the sound. Now only individual frequency ranges can be made audible in the upper section of the display with a few mouse clicks. This rapidly turns a normal drum loop into science fiction noises! The filter curve can quickly be reset to its original condition with the "Reset" button. The "Prevent clipping" option attempts to automatically prevent over-sampling of the audio material. The "volume" control controls the volume of the material.

Scaling options (FFT filter)

Freq

: This switch lets you choose between a logarithmic ("log") or a linear ("lin") frequency scale. The logarithmic display corresponds to the human perception of pitch. Like on the keyboard of a key instrument, the (graphic) spacing of the intervals, i.e. halftones, is uniform across the entire range.

Freq.log

: The upper labeling of the graphic can be switched between output in "Hz" or "Notes". Note output is only possible via logarithmic frequency display ("log").

Value display

: Here you can set a logarithmic or linear display as well as an enlargement of the filter curve.

Value range

: Here you can set the displayed value range in dB.

Curve display

: Here you can switch between a bar and a curved display.

Dynamics

The compressor is basically an automatic, dynamic volume controller. The volume dynamics of a track will be limited by the settings; loud passages will stay loud, and the volume of silent passages will be raised. Compression is normally useful if you want to make your material sound more powerful and penetrating. The grade of compression can be adjusted using the ratio controller. The threshold is controlled by the threshold button and attack and release can also be controlled by the corresponding buttons.



The processing of the track is as "prospective" as with high-end professional studio equipment. This means that there are no peak overrides (blasting, clipping) or other disturbances, since the algorithm cannot be "surprised" by sudden peaks.

Sensor field

: The sensor field of the compressors can be manipulated intuitively by mouse movement, and this will change the colour of the graphic and the effect settings for your reference.

Ratio

: This parameter controls the compression ratio.

Threshold

: Adjusts the threshold above or below the active compression.

Attack

: Adjusts the algorithm's response delay to increasing levels. Short attack times can result in a "pumping" sound, since the volume will be raised or lowered very quickly.

Release

: This value controls the algorithm's reaction delay to falling levels.

A/B

: If you chose a preset value for the effect and then changed it manually, you can compare the original sound settings with the new ones pressing the A/B buttons.

Reset

: Resets the compressor to the default values. In this state no system resources are used and no effects are added to the original sound.

Load/Save

: This option allows you to save the actual settings as an effects file to use them for other projects.

MultiMax

MultiMax is a compressor with three independent frequency bands. Dynamic processing takes place separately for each band.

The main advantage of a multi-band compressor over a "normal" compressor is that warping and other disturbing side effects are drastically reduced by dynamic processing. This means that a single peak level in the bass section will not drag the level of the whole signal down.

Multi-band technology also enables precise treatment of individual frequency bands.



Frequency band settings

: Adjusted directly in the graphical display. Simply click on the dividing lines to shift the levels.

Bass/Mid/High

: Regulates the degree of compression for each frequency band.

Limiter

: MultiMax contains a limiter that harmonizes levels, e.g. higher levels are automatically reduced, and quiet passages remain unaffected.

Presets

Two further special functions can be called up by using the presets in MultiMax.

Dynamic expander

: Too high compression will result in audible noise (usually defined as a pumping sound). Radio recordings in particular are recorded with very high compression rates to increase the perceived volume. Unfortunately, compression reduces the dynamics (interval between the quietest and loudest part). The expander enhances the dynamics of the recording.

Cassette NR-B decoder

: Samplitude Music Studio 15 simulates decoding of Dolby B + C noise suppression when a Dolby player is not available. Cassettes recorded with Dolby B or C sound more muffled and slurry if played back without corresponding Dolby.

Noise gate

: This cleaning function entirely suppresses noise below a certain noise level. This lets you create, for example, song transitions that are entirely noise-free.

Leveler

: This function brings the entire material up to a uniform volume automatically. The volume control handle is omitted. Larger volume differences can therefore be adapted within a song. To balance volume differences between different songs, you can also use the "Volume adjustment" function in the effects menu.

De-esser

: These special presets remove overemphasized "s" sounds in speech recordings.

Tip: The limiter can also be used independently of the MultiMax.

MultiMax

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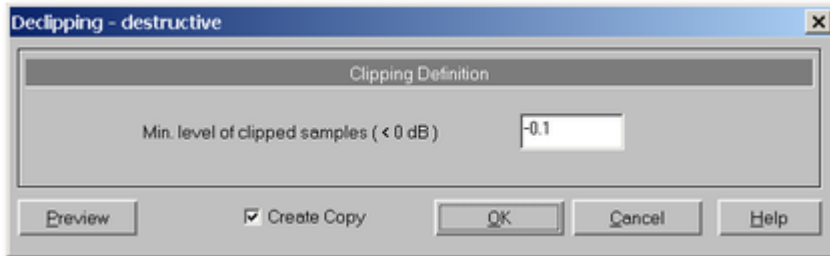
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Declicking

Samplitude Music Studio 15 features a function for removing digital or analog clipping. Anybody who records audio has encountered this phenomenon before. The perfect live recording contains clipping at the most important moment. This alone may render the recording unusable!



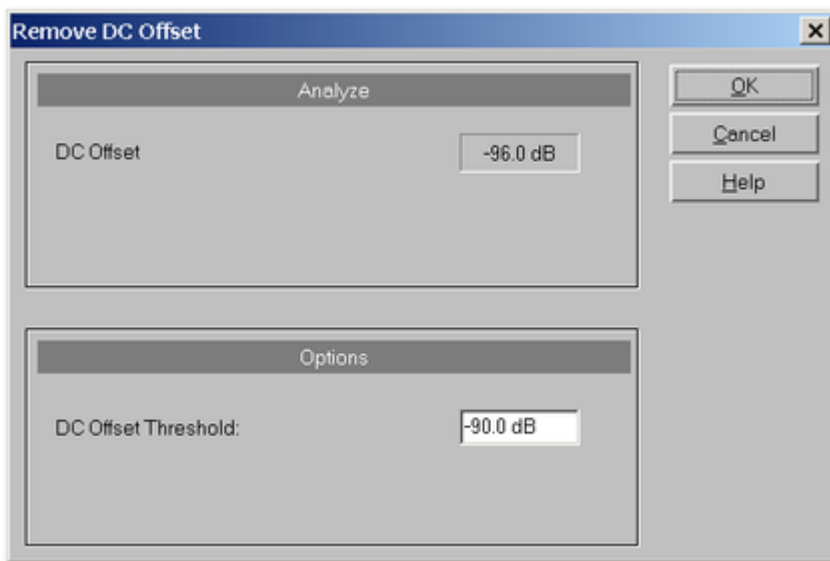
Samplitude Music Studio 15 uses high-grade algorithms to interpolate the passages containing the clipping. The algorithm uses the material before and behind the clipping as a reference point. Once processed, the total volume level for the material can be reduced to prevent further clipping. The declipping algorithm is especially useful for material that contains obvious clipping, such as a piano or voice recording. Distorted drumbeats are normally not salvageable.

Minimal level of clipped samples

This setting determines the volume level which the algorithm considers to be offending material. There are sound cards which exhibit different clipping behavior, and this setting becomes important. Some DAT recorders have an analog protection mechanism so that the level never reaches the maximum digital signal. In these cases a setting of -0.5 dB or lower make most sense.

By entering a value of -6 dB, all samples above half of the digital maximum are considered "distorted". Even analog distorted material can be improved with the algorithm.

Remove DC offset



This function in the "Effects" menu removes a DC offset in the selected range of a wave project (RAP or HDP). Some sound cards produce such a DC offset while recording, and this feature will help you remove it.

Dehisser

The Dehisser was especially designed to eliminate band noise typical of analog tape recordings, micro-preamps, and AD transducers.



Noise level

: Determines the noise level as precisely as possible at which the Dehisser activates. If you choose a level that is not high enough, the band noise will not be completely eliminated. In such a case you will notice tweeting sounds (so-called "melodic band noise"). An excessive value will result in a "dull" sound, since part of the band noise and part of the original audio signal recording will be eliminated by the Dehisser as well (e.g. air intake sounds of brass instruments). See "Artifacts" for more information.

If the noise level on your recording is low, then you should experience no problems while adjusting it.

Noise reduction

: This option allows you to adjust the damping of the band noise in decibel units. In most cases the best solution is not to eliminate the noise completely, but to damp it only -3/-6 dB, thereby maintaining the natural sound of the original material.

Removed hiss

: This option allows you to listen to the music that would be filtered away by the Dehisser.

Amp simulation

The amp simulator is a newly-developed real-time effect that simulates the sound properties of a tube amplifier. It is especially suitable for guitar sounds, but also for the organ or recordings of vocals.



Amp model

: Select from a range of amplifiers for different sound simulations.

Speaker model

: Select from a range of speakers for different sound simulations.

EQ section

: A 3-band equalizer for setting the bass, mid-range, and treble.

Bright

: "Bright" provides particularly sharp sounds that can be jarring when used with the following automatic controllers:

Distortion

: Creates distortion in typical analog amplifier fashion.

Volume

: Controls the entire volume of the amplifier module.

Vocoder

The vocoder principle: Carrier material (e.g. a surface sound or a synth chord) is affected by a modulator (e.g. language or singing) so that one gets the impression that it is speaking or singing. Rhythmic surface sounds can also be developed if modulated with a drum loop.

This is done via the transmission of the frequency characteristics of the modulator (speech) on the carrier (chord).



Carrier input

Here you have to select the desired carrier sample. Some special carrier samples that have been loaded automatically from the "Vocoder" directory are listed.



Use the "Carrier sample" check box to load any number of samples of the current project or predefined carrier sample.



Here you can play the carrier on its own for test purposes.

Noise:

This controller lets you add noise to the carrier sample. This makes sense if the carrier material can not be modulated sufficiently or is irregular. It's good for "filling" drum loops which have too many pauses between the beats.

Material containing all frequencies in equal amounts are particularly suitable, such as strings, orchestra chords, broad synthesizer pads, hissing, or wind noise.

Filter

Dynam:

Influences the dynamics of the modulator signal to reduce the modulation depth of the vocoder. This prevents two often undesired side effects of modulation. On the one hand, the volume change of the modulator signal is added to the output signal in a slightly more moderate form which may improve the power of the vocoder voice. On the other, the low-level share of the modulator signal is ignored in order to prevent modulation of the carrier by breathing or noise.

Smooth:

Affects the speed at which the vocoder adjusts to the modulator spectrum. The greater the value, the "lazier" the vocoder follows the modulator and the "smoother" the sound changes in the carrier sound.

Filter graphic

Any frequency characteristic can be drawn in to optimize the results of the vocoder. For example, simple disturbing bass frequencies can be eliminated as the curve is corrected downwards to the left. Similarly, weak highs can be strengthened as the curve is raised to the right.

Mixer

In the mixer you can also mix parts of the carrier and modulator signal to the vocoder output signal ("Out").

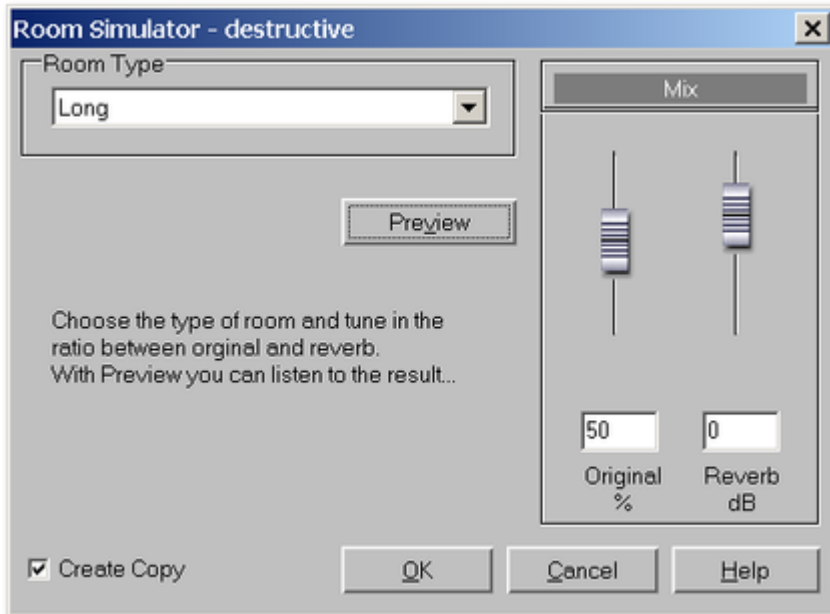
If the output signal of a track is used as a carrier in the vocoder, this track will be muted first, and then you can make it audible again in the vocoder mixer.

Presets

You can select predefined vocoder settings in the "Preset" list window. The presets all contain vocoder settings, except the selected carrier signal. "Reset" restores the vocoder default settings.

Room simulation

This function lets you add a high-quality room simulator to the audio material.



Reverb type:

Choose between a short, medium, and long sustain.

Reverb share:

Sets the balance between the original signal (without reverb) and the actual reverb.

Volume

: Adjusts the master volume.

Test:

Activates the preview function. A short reverb section is calculated and then played for you to get an impression of the settings.

Echo / Reverb



The reverb effects device offers newly developed and very realistic reverb algorithms to add more spatial depth to your recording.

Reverb

Reverb supplies a high-quality reverberation which can be defined more closely with "room size", "time", and "color", and mixed into the original sound with "mix".

Room size

: This control button controls a room simulator which calculates the reverb effect dependent on the room size. If the control is turned completely to the left, it sounds as if the audio object has been recorded in a tiny room; turned completely to the right, one can listen to the object as if it had been recorded in a cathedral.

Time

: Determines the length of the "reverb trail", i.e. the fade phase of the sound.

Color

: Controls the type of reverb, i.e. more dull than high-pitched, or vice versa.

Mix

: Determines the mixing ratio between the unedited original sound ("dry" signal) and the reverb portion ("wet" signal).

Echo

The echo effect is defined more precisely with "delay" and "feedback" and calculated into the original sound by means of "mix".

Delay

: Determines the period of time between the individual echoes; the more you turn the control to the left, the faster the echoes will follow each other.

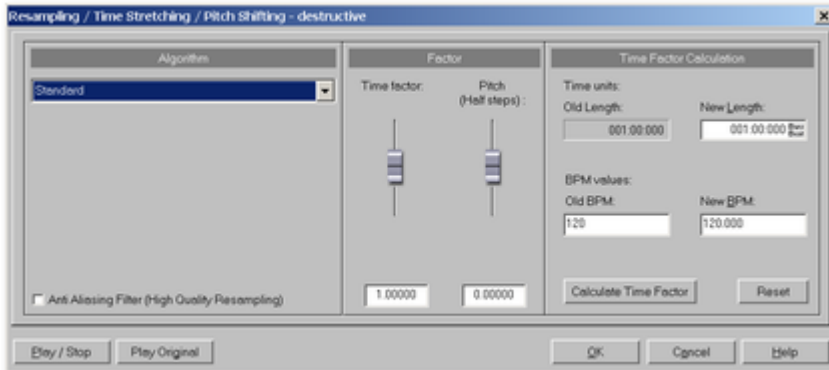
Feedback

: Adjusts the number of echoes. Turned completely to the left, there is no echo at all; turned completely to the right, there are virtually endless repetitions

Resample / Timestretching

Opens the timestretching/resampling/pitchshifting editor.

Note: If you only want to change the sample rate of an audio file, then use the "Adjust sample rate" option from the "Effects" menu.



All algorithms in this dialog use the time factor parameter and pitch as input parameter.

The time factor calculation (from the original length/original speed and the length required/speed required) can be comfortably activated on the right side of the dialog.

Resampling

Samplers and PCM synthesizers transpose samples during this procedure. Time factor and pitch are dependent upon each other; the shorter the audio material, the higher the pitch. This effect is comparable with changing the play back speed of record players or tape recorders.

The effect is relatively loss-free, and the sound loss is less than all timestretching/pitchshifting procedures. If pitch change is justified by changing the speed (and vice versa), use this algorithm.

When lengthening the audio material by resampling, very small aliasing effects may occur. The anti-aliasing filter helps correct this. Alternatively, since this filter creates additional [CPU](#)

load, it can be activated for computation and real-time previewing. The filter is also available for the other algorithms that use internal resampling during pitchshifting.

Default

"Standard" applies an algorithm which usually delivers very good results, including factors from 0.9 to 1.1, and operates in phase-locked mode to maintain the room effect of stereo signals. For drum loops or other "beat heavy" material, this algorithm is only partially suitable, since it can change the groove and even fade out or double beats in rare cases.

Time compression (sample length is reduced) is more successful with this algorithm than timestretching, i.e. it is better to reduce the longer sample than vice versa when adjusting two samples to another.

Smoothed

A considerably more complex algorithm is used which requires more processing time. The material can now also be used on very large factors (0.2 - 50) without bringing about strong artifacts. The material is "smoothed", making the sound softer and emitting it at an adjusted phase level. This smoothing is hardly audible with speech, singing, or solo instrumentation. Problems may arise with more complex spectra (sound mixes from various instruments or finished mixes). This algorithm is not very well suited to drum loops and other material with strong transients. The groove remains intact, but the attacks are slurred because of phase shifting. With small corrections (factor ca. 0.9 - 1.1) the setting of the smallest possible smoothing value should be used.

Recommended for:

- Orchestra instruments: String instruments, wind instruments, etc.
- Speech, single voice, and multi-voice sections
- Speech with background noise like video sound, etc.
- Synthesizer areas, guitars, etc.

Not suited for:

- Stereo mix
- Drum loops, percussion

[CPU](#)

strain: very high

Beat marker slicing

This mode focuses on customizing drum loops, but can also be used on other material like monophonic bass runs or sequencer lines. The algorithm splits the material into individual components, individual notes, or beats, which are then selected via the beat marker.

These "snippets" are then compiled into the new temporal measure. If the tempo is increased, then individual beats begin overlapping; if it is slowed down, then short pauses between the beats become audible.

If this algorithm can be used, then it should be, since the time change occurs without any loss of quality at low [CPU](#) strain.

Recommended for:

- Samples which can be split into individual notes or beats.
- Drum loops, if the beats do not overlap and there is not much reverb.

Definitely not suited for:

- Everything else where beat markers do not exist; the algorithm fails completely and silence is the result.

[CPU](#)

strain: minimal

Beat marker stretching

This algorithm functions similarly to the standard algorithm. Unlike the previous algorithm, this one synchronizes the stretched material with the beat markers. The groove remains perfectly intact, and duplicated or faded-out beats do not occur. Unlike the "Beat marker based slicing" algorithm, this algorithm doesn't fail fully when there are no markers, or when the markers are placed incorrectly, but the synchronization quality may be reduced or contain errors. In practice, automatic marker generation is usually enough for good results. You should avoid having beat markers which follow one another very closely (<1000 samples).

Monophone voice

This is a special timestretching and pitchshifting function for vocal solos, speech, or solo instruments. The material cannot contain background noise, and excessive reverb may also be detrimental to its effects.

With suitable material the audio quality is very high.

With the "Use formant correction" option the formants remain the same when pitchshifting, i.e. the "Mickey Mouse effect" does not occur. This way, realistic background choirs can be "composed" from just one solo voice. However, the formants can be shifted by +/- 12 half tones, and vocal distortions can result.

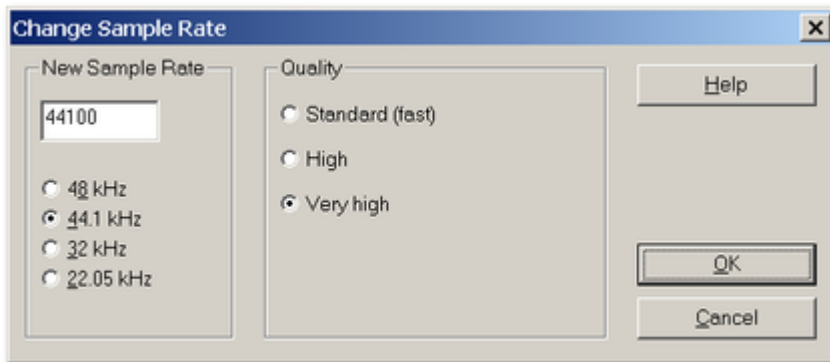
Typical usage of this algorithm:

- Intonation correction: The note with the imprecise pitch should be cut out as an object, so that it can be manipulated independently of the other notes.
- Harmonizer effects: An object with vocals can be copied and moved down. If the pitch is changed, then the second voice will be changed, etc.
- Generating background vocals from existing vocal samples
- Timestretch/Distortion of a speech sample, to make a "grandfather" voice.

Recommended for speech, single voice vocals, single voice instruments without overlapping, with low reverb and low background noise.

Change sample rate

Use this function to change the sample rate of a whole audio file. This may be needed to convert a DAT recording at 48 kHz to 44.1 kHz for use on an audio CD.



After choosing the new sample rate you can select a file name for the new project.

If the resolution is increased the sample rate change will take place without any quality loss, and the sample material will not experience fidelity reductions, but the required hard disk space will increase.

If the resolution is reduced, then the overtones or high frequencies may be lost during the sample rate change. For example, if the resolution of a 44.1 kHz sample is reduced to 22.05 kHz, the frequency response of the resulting sample is reduced to 11.025 kHz. The frequency response is always half of the resolution specified. For a conversion from a 48 kHz sample to 44.1 kHz, this loss in quality is not significant, since the human ear only recognizes frequencies up to 20 kHz. (A resolution of 48 kHz is often only used because the digital to analog conversion can take place with much higher precision without a lot of effort.)

Please note that resampling to 44.1 kHz can also be done while recording in real-time.

The "Playback parameter" window ("P") contains a "Vari-speed" option for real-time resampling during playback. The "Record" window ("R") lets you resample to 44.1 kHz in real-time from any of the selected sampling rates.

Reverse

The sample data in the selected range is reversed along the time axis, i.e. the file will now play backwards with the end placed at the beginning. This can create very interesting effects, not to mention hidden messages frequently rumoured to be in various songs....

This function is reversible: if you do not select a new range, activating this function again resets the original material.

The option is only available when working in destructive editing mode, i.e. on an HD wave file directly.

Build physical loop

This function utilizes a complex algorithm for optimizing loops in wave projects. It is useful when samples are to be used for instrumental sounds as well as the wave table synthesizer.

Before you can process a sample you need to select a range in your sample that already defines the rough edges of the sample loop. Remember that you can shift and vary a range during playback to find the best loop position. A comfortable way to look at the loop positions is by activating the split range mode ("B"). The sample will be displayed in 3 sections.

To gain an interruption-free loop, the outer limits of the range will be set to zero. By applying a crossfade to the material at the loop end containing the sample data in front of the loop beginning, Samplitude Music Studio 15 will create a "smooth" transition between loop's end and beginning.

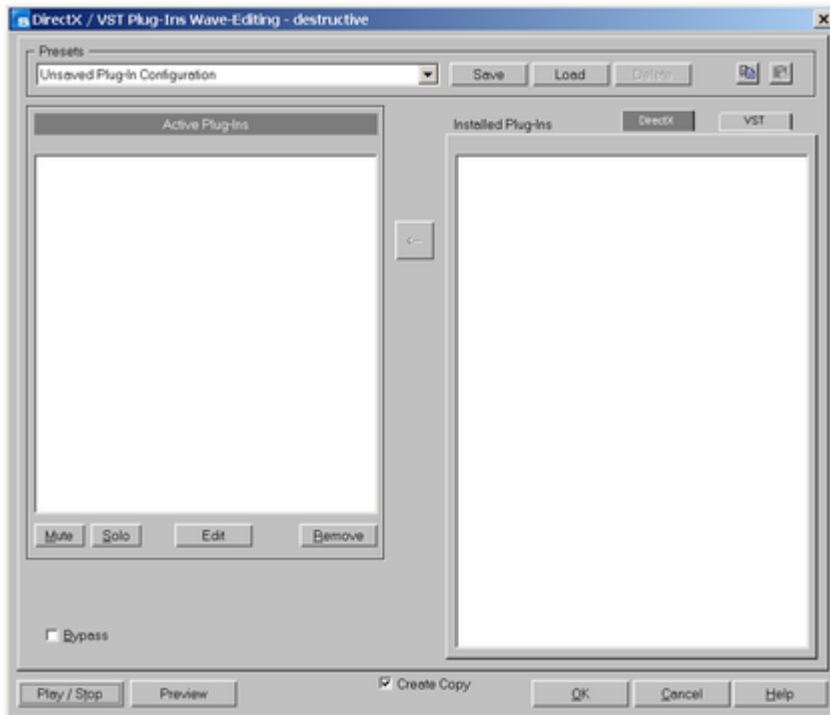
When a marker is set in front of the selected range, the range between the marker and the beginning of the loop will be used for the crossfade. This offers you a feature found in professional hardware samplers. To achieve a short crossfade set the marker close to the loop beginning. To receive a long crossfade position the marker further away from the loop beginning.

Notice that the distance between marker and beginning of the loop range needs to be smaller than the loop range itself to make a crossfade possible.

DirectX plug-ins

With the aid of this dialog it is possible for Microsoft DirectX and VST compatible plug-ins to be used for effect calculation in Samplitude Music Studio 15. This opens up the possibility to use almost any effect algorithms from third-party suppliers in addition to the integrated effects in Samplitude Music Studio 15.

Samplitude Music Studio 15's mixer includes plug-ins as real-time effects. However, the plug-ins have to be capable of processing audio data blocks immediately and completely, and without any change in length. This is the case with most plug-ins (e.g. hall, echo, dynamic compressors). Other algorithms, such as timestretching plug-ins, fail at this point because of the associated length change.



Working method and use

When you open the plug-ins dialog you will see a list of the DirectX and VST compatible plug-ins that are installed on your computer on the right-hand side. Activate one of them and press the arrow in the middle; the activated plug-in is transferred into the list of active plug-ins to the left. The surface of the plug-in is also opened to make specific changes to the effect settings. You can set up a chain of effects in this way, but it is important to ensure that the plug-ins are all compatible with one another. For instance, stereo and mono plug-ins must not be coupled together. The plug-in selected in each case in the list on the left can be deleted again with the "Remove" button.

Pre and post in the plug-in dialog

The plug-in dialog in the [VIP](#) tracks and in the mixer enable you to loop in the effects "pre" or "post". Mark them on the left in the plug-in list as "pre" or "post" before you load them. The plug-in will then be looped in "pre" or "post" accordingly.

Drag & drop VST plug-ins

If you have installed various VST plug-ins in folders other than those in Samplitude Music Studio 15, you can simply drag the relevant dll-files out of Explorer and drop them directly onto a track in Samplitude Music Studio 15. This VST plug-in will be additionally registered and from now on will turn up in the plug-ins dialog as a VST effect.

Removing available VST plug-ins from the list

VST plug-ins that you no longer want to see displayed with the available ones can be easily removed if you click on them and take them out of the list with "Del"...

Buttons in the dialog

Save/Load: Use these two buttons in the top right-hand corner of the dialog field to save, insert, and complete plug-in set up (the sequence of the plug-ins with all the set parameters). [Plug-in](#) setups can thus be transferred conveniently if the various possibilities for plug-in use in Samplitude Music Studio 15 are utilized.

Copy/Insert

: This enables complete plug-in configurations to be transferred quickly between tracks or objects.

Play/Stop

: This button activates the real-time preview with the active plug-ins in the left-hand list. This function is ideal for testing the settings of a plug-in if this runs quickly enough for the real-time calculation.

Remove

: The selected plug-in is removed from the effects plug-in list.

Settings

: Opens this dialog...

DirectX / VST plug-in set-up

- The "Write DirectX logfile" option only serves support purposes and should normally be switched off.
- The "Start all object-related plug-ins" option can be activated at play/start. Some plug-ins cause delays when switched on, and in this case they should be switched on at play/start, because otherwise there could be a failure when the relevant object starts to play.
- Deactivate all DirectX effects during the scrubbing/jogging: Under certain circumstance DirectX plug-ins can cause errors during the scrubbing/jogging or simply break down. With this option the link to the DirectX plug-ins can be deactivated and thus circumvented.

Process only left (right) stereo channel

Only the left/right channel of a stereo wave project will be affected by effects when "Left/Right processing only" is activated. This options is only available when in wave editing /destructive editing mode.

The same effect have the L/R buttons in the lower left corner of the wave project window.

Tools menu

In this chapter

[Track bouncing](#)

[Range track bouncing](#)

[Remove unused samples](#)

[Delete freeze data](#)

[Waveform generator](#)

[Open new manager](#)

[Managers](#)

[Take manager](#)

[Timestretch patcher](#)

[Remix Agent](#)

Track bouncing

The current virtual multitrack project ([VIP](#))

can be converted into a wave file or Samplitude Music Studio 15 HD wave project and saved with a new name. All tracks in the VIP are mixed and so are all real-time processing, cuts, crossfades; all mixer settings, mixer effects, DirectX plug-Ins, volume automation, and panorama automation are included in the bounced version.

The "Track bouncing" function may require a large amount of storage, depending on the length of the VIP.

Four track projects are internally mixed to combine two tracks for playback on each channel. To prevent clipping, an amplitude reduction of 6 dB is applied (which corresponds with a 50% representation of the source material).

For eight track projects, the reduction is normally 12 dB. However, you can change the value in "Options -> Project info" ("I").

There are two variations for the track bouncing implementation:

Only selected range

: Samplitude Music Studio 15 uses any selected range in a VIP for the track bouncing. This command function work track-dependently, meaning that the number of tracks spanned by the selected range does not matter. Track bouncing will always use all tracks for the period of the selected range.

Complete project

: The complete contents of the VIP project are used.

Calculate maximum amplitude

: When checked, this option displays the peak level of the mixed wave file in dB. Further processing of the bounced audio file can use the specs to make precise adjustments. After the track bouncing process, Samplitude Music Studio 15 displays a dialog with the maximum amplitude value.

Range track bouncing

Use this function to convert the objects within a selected range to a new wave file. The selected objects in the [VIP](#)

are replaced with the track-bounced version. This is very useful to combine multiple objects into a single object so that the function to create track markers automatically can be used.

Remove unused samples

This function removes all material from wave projects belonging to the current [VIP](#) that is not used by any of the VIP objects. The objects in the VIP will point to the proper audio ranges in the linked audio files. This leaves the VIP itself unchanged.

Using this function can conserve a lot of storage space, but the downside of using it is that object length changes are only possible in a limited form. [Objects](#) can be made shorter, but they cannot be extended.

Tip: If you need the complete contents of the audio files for other production projects, it is recommended to archive the finished project in the following way: Save the complete project to a new folder ("File > Save complete project to"). The VIP is now located with the complete contents (all the audio files) in an unaltered form (wave, RAP, etc.) in the same folder that the VIP was saved to. Next, use the "Remove unused samples" command. The same folder will now only contain the audio data or samples that are actually used by the archived VIP. The contents can be easily backed up to any storage medium, e.g. CD-ROM, Data DAT, etc.

Delete freeze data

Freeze data administration

When saving freeze files, a considerable amount of data may accrue. Automatic freeze data administration therefore becomes necessary.

The principle is simple: As mentioned previously, freeze data and freeze VIPs are stored in a special directory within the current project directory. After completion of the current project, all freeze data that is no longer required is deleted in the background.

Data requiring an unfreeze is preserved as long as the respective frozen tracks or objects are found within the current project.

There is one limitation: If freeze data exists at the moment that the current project is temporarily stored, all freeze data existing at this point in time is also kept, even if it is no longer required for unfreeze after project completion.

Example

:

Tracks 1 and 2 are frozen. Track 2 is unfrozen before completion of the current project. The project is then saved and brought to completion. During completion, the freeze data and freeze [VIP](#) of track 2 is deleted. Freeze data and freeze VIP of track 1 remains unchanged.

However, if the current project is stored temporarily before track 2 is unfrozen, the freeze data of track 2 is also kept.

Deleting freeze data manually

There is a special command to get rid of data that is no longer required, i.e. "Delete freeze data" ("Tools" menu).

If no freeze data exists in the current project yet, this command is disabled and cannot be selected.

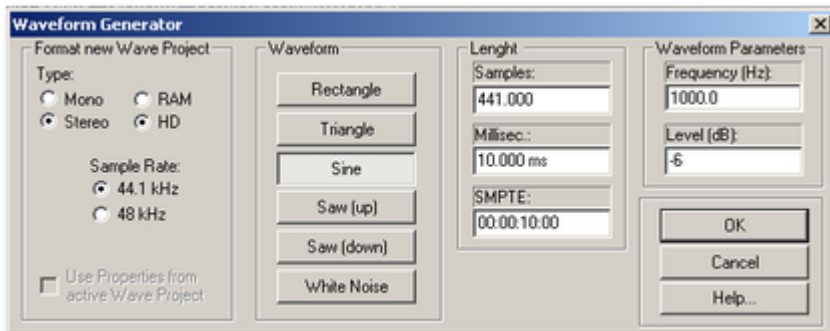
All freeze audio data no longer required in the current project is deleted.

Existing freeze projects, however, remain unaffected. As the original state prior to the use of the freeze command is found in a freeze [VIP](#)

, it can be re-established, as long as the necessary audio data is still found in its original position.

Waveform generator

This dialog contains a powerful generator of several test tones. Please be sure to have activated a wave project (HDP or RAP) before opening this dialog!



The generated waveform is stored in the clipboard with the same properties as the opened wave project. Please rename the clip logically after generating the waveform, so it can be easily included into other projects without naming conflicts.

You can adjust the type, frequency, and length of the waveform created in samples.

The generated samples are always fully amplified. The volume level can be easily reduced with the "Normalizing" function.

Type: Square, pulse, triangle, sine, saw up, saw down and white noise

Length:

Use these boxes to enter the desired length of the generated sound in samples, milliseconds, and SMPTE.

Wave shape parameter:

The wave shape parameter determines the pitch and volume.

Once you've made all your settings, click on "OK", or press "Enter".

The generated signal will then appear in a new window to be edited further.

Open new manager

This menu point opens a new manager window. Several managers can be opened simultaneously.

Managers

Please also read the corresponding chapter [The managers](#)

Take manager

The take manager is another powerful feature of Samplitude Music Studio 15. It is especially for those who work with many different recording takes and need to manage them.

Samplitude Music Studio 15 registers the [VIP](#)

position of the recorded audio material. This time stamp is stored on the HD or in RAM and offers the option to always return the recorded object to its original position.

Application examples:

- Selection of the best take after five loop-punch recording passes.
- Locating the best material between bars 32 and 34 of 12 takes from a classical production.
- A clear overview of all available takes during a SMPTE time of 30:00 to 35:00.

Basis for working with the take manager is a selected object. This could be the last created object after using punch-in recording. This object is referenced in the take list with a colored "O".

Attention: The take manager does not work if objects are used in a VIP which are not created by recording material into Samplitude Music Studio 15. This would be the case for any material imported via wave import or CD track features!

When objects are present that were not created by recording, a manual time stamp can be assigned to the objects by using the "Object -> Set new original position" function. Once completed, the take manager will list the objects in the takes list.

Display filter

Same file only

: Only those takes are displayed that belong to the same audio file as the selected object.

Same track only

: Only those takes are displayed that are positioned in the same track as the selected object.

Match time

: Only those takes are listed that match the original time position of the selected object.

Play

: Starts the playback. Before opening the take manager set the play cursor to the desired playback position.

Replace

: This replaces the selected object with the currently chosen takes from the take list.

Statistic (verbose):

Creates a new [VIP](#)

with the currently shown takes from the take list. Every take is listed in a new track. The VIP can be used to audition the individual takes with the "Solo" and "Mute" functions of each track.

Statistic (brief)

: Creates a new VIP with the currently chosen takes from the take list. All takes are lined up on the same track.

Timestretch patcher

This tool enables wave files used in Samplitude Music Studio 15 and other MAGIX programs (e.g. MAGIX Music Maker) to be patched.

Additional information and settings are written into the wave project to make them easier to find, thus ensuring better timestretching and pitchshifting results.

The following can be patched:

- Algorithms for timestretching/ pitchshifting
- BPMs
- Beat markers

Überblick

Algorithms for timestretching / pitchshifting

Different algorithms (besides the standard algorithm) can be used for real-time timestretching and/or pitchshifting for better results. Check [resampling/timestretching/pitchshifting](#) for more details. With the patcher you can store the optimal timestretching algorithm in the wave project. This ensures that the "correct" algorithm is used automatically when timestretching/pitchshifting is used on these projects as object effects (e.g. with the timestretch mouse mode).

Beat markers

Beat markers are also saved in the wave project when using beat marker-based algorithms.

In contrast to the timestretching dialog, the patcher is non-modal, meaning that if the patcher is open, you can move beat markers in a wave project while checking out the timestretching result.

BPM value

Patches the BPM value (beats per minute). This is useful for when the timestretching factor must be determined later in order to adapt the wave project to the tempo of an existing arrangement.

Patches in brief

Patches only work if you have opened the wave project in destructive wave editing mode and if it is not open in a [VIP](#) simultaneously.

On the right of the dialog (patch) you can select the algorithm to be used and specify the wave file tempo.

On the left side (test) is the control element from the timestretching/pitchshifting dialog.

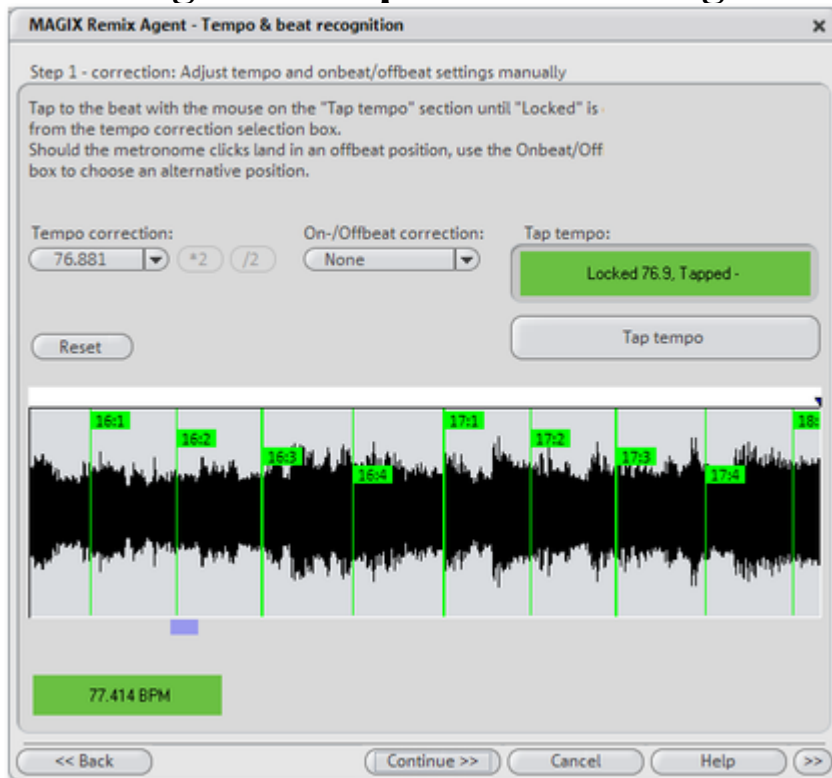
It allows you to test the selected algorithm in connection with the "Play/Stop" and "Play original" buttons.

Patch saves the information in the wave file.

Remix Agent

Der Remix Agent ist ein leistungsfähiges Werkzeug, mit dem die Tempi (BPM - Beats pro Minute) und die Zeitpositionen der Beats von Viertelnoten von beliebigen Songs bestimmt werden können. Dies ist z.B. wichtig, wenn ein Titel einer [Audio](#)-CD in Samplitude Music Studio 15 eingelesen wurde und jetzt zu diesem Titel weitere Sounds wie Drumloops, Effekte oder Synthesizer-Stimmen zugemischt werden sollen.

Remix agent: Tempo and beat assignment



The Auto Remix Assistant is a powerful tool that determines the tempo (measured in beats per minute, or BPM) as well as the timing of the beats for a song's quarter notes. This is important if an audio CD title is imported into Samplitude Music Studio 15, and you want to mix in sounds like drum loops, effects, or synthesizer voices.

When to use the Auto Remix Assistant:

- When the tempo of the arrangement must be adapted to the tempo of the song.
- When the tempo of the song must be adapted to the tempo of an existing arrangement.
- When the song is to be cut up precisely to create a remix object which can then be rearranged as desired.

Requirements

- The song must be longer than 15 seconds.
- The songs have to contain "rhythmic" music.
- The song must be in stereo.

Preparation: Setting the start marker and object end

Before opening the Auto Remix Assistant, you should set the start marker at the position in the song object in the arranger where you want detection to start. If the song contains a long intro without beats, set the start marker after the intro. As a rule of thumb, the Auto Remix Assistant should always be "fed" dance music.

- The start marker should be set before a quarter note beat or, better still, briefly before a beat at the start of a bar.
- If the start marker lies before the song object, the object is examined from the beginning.
- If detection is not performed by the end of the song, the object can be shortened accordingly with the object handle at the end of the object.

Checking the automatic tempo and bar recognition

After Ex opens, the selected track object will be analyzed. Following the analysis, the track will be played, and during playback a metronome corresponding with the computed result will sound; vertical tick marks visualize the quarter note positions in the wave form display.

The following is indicated:

- Position of the start of the measure (one): red lines
- Position of the other quarter notes (two, three or four): green lines
- Reliably recognized positions: thick lines
- Unreliably recognized positions: thin lines
- Tapping is indicated by additional blue lines

If the tempo and beat information is already available, then dots above the display at the corresponding positions will appear. To the left underneath the waveform display the metronome volume can be adjusted. To the right the calculated BMP value will appear. If the BPM value is valid, the display will be green.

If the metronome clicks match the rhythm of the music, the bar starts will then be determined. If not, you can correct the tempo manually.

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Corrections: Manual tempo and onbeat / offbeat setting

If the result is incorrect, you can help the Auto Remix Assistant with a few mouse clicks on the correction buttons.

There are two possibilities: On the one hand, the "Tempo correction" list offers alternative BPM numbers which could also fit with the music. The adjustable BPM values are detected automatically, and the total number of BPM can deviate from song to song.

Tap tempo

: With difficult audio material we recommend the using tapping input mode. Either "T" must be pressed, or the "Tap tempo" button must be clicked in time with the music. While repeatedly tapping the tempo correction button, one should keep an eye on the color in the BPM display. In the "unlocked" condition (red) the tapping is not in time with the music. One should tap until the "locked" condition is displayed. After a short time one hears if the result is correct via the metronome.

Subsequently, offbeat correction takes place if required. If the detected quarter notes beats lie around the length of an eighth note (transferred behind the real positions of the quarter note beats), then one or more alternatives can be selected from the on beat/off beat correction list.

Set the start of the bar

Start bar correction takes place next. The beat at the start of the bar should coincide with the high sound of the metronome, or the red line in the wave form display.

Correction is achieved in one step: If the start of the beat can be heard, then click on "Tap one" once, or press "T". Alternatively, you can also choose how many quarter notes the "One" is to be moved back by.

If the start marker is set right before the first beat of a bar, then no correction is necessary.

Hint:

After every adjustment, the metronome and tick mark visualization reacts with a delay.

Set the start of the bar

Start bar correction takes place next. The beat at the start of the bar should coincide with the high sound of the metronome, or the red line in the wave form display.

Correction is achieved in one step: If the start of the beat can be heard, then click on "Tap one" once, or press "T". Alternatively, you can also choose how many quarter notes the "One" is to be moved back by.

If the start marker is set right before the first beat of a bar, then no correction is necessary.

Hint:

After every adjustment, the metronome and tick mark visualization reacts with a delay.

Step 3: Use of the BPM and beat recognition

With this last step you determine what is to be done with the material currently being analyzed. There are three possibilities:

1. You want to generate remix objects from the song (the analyzed material),
2. You want to bring your project tempo into line with the tempo of the song or vice versa,
3. You initially only want to save the tempo and beat information in the audio file to edit them later.

Generating remix objects

The song is cut up beat by beat into individual objects which can then be used and re-edited in any required way in the [VIP](#).

Some usage examples:

- Generate loops out of complete songs that you can use with your own material.
- Remix songs, i.e. change the sequence of the remix object, cut and duplicate the individual parts or beats of the songs, or enhance the song with any other loops, samples, etc.

Caution! The "Generate remix objects" option can only be selected if the remix agent was opened from a VIP.

[Audio](#) quantizing

: The new objects are fitted exactly into the beat grid of the arrangement.

In the case of manually produced music there are always slight tempo fluctuations which result in different bar lengths. In order to ensure that the objects still fit into the rigid beat grid of the arrangement, the "Object timestretching" option is activated and used in such a way that the differences in lengths are corrected.

For small corrections, use resampling. If the necessary corrections are very small, the higher-quality resampling technique can be used instead of timestretching.

Note: If you decide to alter the tempo of your multi-track object later and to adjust the audio object in the VIP to the new tempo value, clearly audible pitch changes will appear in the remix.

Remix objects in loop mode

: The new objects are put into loop mode. When the objects are lengthened with the right-hand object mouse handle, the object will continue to be played at its original length.

Setting arrangement tempo at object tempo

: The arrangement (VIP) takes over the BPM value it has found. If you want to use the dissected song as the basis for a new composition (remixing), this option should be active.

Note: the time correction is allocated to the objects by setting the object real-time timestretching and can therefore be corrected in the object editor. Conversely, timestretching settings that have already been set can be over-written.

Grouping

: The remix objects are grouped.

Use crossfades

: The remix objects are superimposed. The parameters of the superimposition can be set in the crossfade editor.

Exit

: The dialog is closed without the changes being saved.

Adjust tempo

: This option offers you the possibility of adjusting the song tempo to your project speed or the project speed to your song tempo.

Caution!

The "Adjust tempo" option can only be selected if the remix agent has been opened from a VIP.

Set object tempo to arrangement tempo:

This adjusts the object length to the existing arrangement. Three different procedures are possible:

Timestretching

: The song's pitch remains constant, but under certain circumstances the sound quality may suffer.

Resampling

: Resampling changes the pitch, in the same way as changing the speed on a turntable, but significantly retains the sound quality of the song.

Note: If you decide to alter the tempo of your multi-track object later and to adjust the audio object in

the VIP to the new tempo value, clearly audible pitch changes will appear in the remix with objects edited with resampling.

Audio quantizing

: Audio quantizing calculates the tempo adjustments into the audio file. This is done in such a way as if initial remix objects (see below) were being produced and immediately compiled into a new audio file. If the recognition is uncertain, the result can include extreme tempo fluctuations. It is particularly important to set the start marker before calling up the remix agent in such a way that the tempo is recognized with certainty.

The advantage of audio quantizing is that small tempo fluctuations are evened out in the music. The bar starts of the music always match the bar starts of the arrangement and therefore do not tend to wander away from one another.

Set arrangement tempo at object tempo

: The arrangement (VIP) takes over the BPM value it has found. If you want to use the dissected song as the basis for a new composition, as with remixing, this option should be active.

Change global setting

: The BPM value of the arrangements (VIP) is set at the calculated value.

Adjust tempo map

: From the position of the play cursor to the final position of the remix object, a tempo marker is set for each bar in the arrangement (VIP).

Generate bar marker in the current range

: This option enables markers to be set at start of each bar in the song (the positions of the lines marked in red in the wave form display).

Generate quaver markers in the current range

: Select this option in order to set markers at the positions of the starts of the quaver-bars (the positions of all lines presented in the wave form display).

One example of the use in both cases

:

Mixing two songs:

1. First, adjust the project tempo to the song over which you intend to dub in the second song ("Set arrangement tempo to object tempo", "Alter global setting").
2. Then, adjust the tempo of the second song to the project tempo ("Set object tempo to arrangement tempo").
3. Since the project tempo and the tempo of both songs now match exactly, it will be possible to fade from one song to the other without any problem.

Save only tempo and beat information

: If this option is selected the tempo and beat information is transferred to the audio file. The objects in the VIP and the VIP itself remain unchanged.

Generate beat markers in the current range

: With this option markers are set at the start of each bar in the song (the positions of the lines marked in red in the wave form display).

Generate quaver markers in the current range

: Select this option in order to set markers at the positions at the start of each quaver-bar (the positions of all the lines marked in red in the wave form display).

Playback / Record menu

In this chapter

[Play once](#)

[Play loop](#)

[Play in range](#)

[Play with preload](#)

[Play only selected objects](#)

[Stop](#)

[Stop and go to current position](#)

[Change play direction](#)

[Restart play](#)

[Playback options](#)

[Record](#)

[Record options](#)

[Record mode / Punch in](#)

[Monitoring](#)

[Auto Jam Session](#)

Play once

The project or the range is played once.

Key: Space bar

Play loop

The project or the range is played in a loop.

Key: Space bar

Play in range

If you have specified a range, selecting this menu option (or button) will start playback of the sample from the beginning; enter the range and continue to loop through the range until you press stop. This mode is very useful for testing loops for instrument samples.

Key: Space bar

Play with preload

All buffers are loaded and the playback is ready to be started. Another window will appear with which playback can be started at your convenience. No delays will occur. This function is useful on slower systems and if synchronization must be started in manual mode and an exact start has to be performed.

Keys: Shift + Space bar

Play only selected objects

Play only selected objects

Only selected objects will be played. All unselected objects will be muted temporarily. If the play cursor is not at the first selected object's time position, it will be reset.

Key: Alt + Ctrl + P / Alt Gr + P

Stop

The playback is stopped for all projects types.

Stop and go to current position

The playback is stopped; the play cursor goes to the current position.

Change play direction

The playback direction can be changed even during the actual playback.

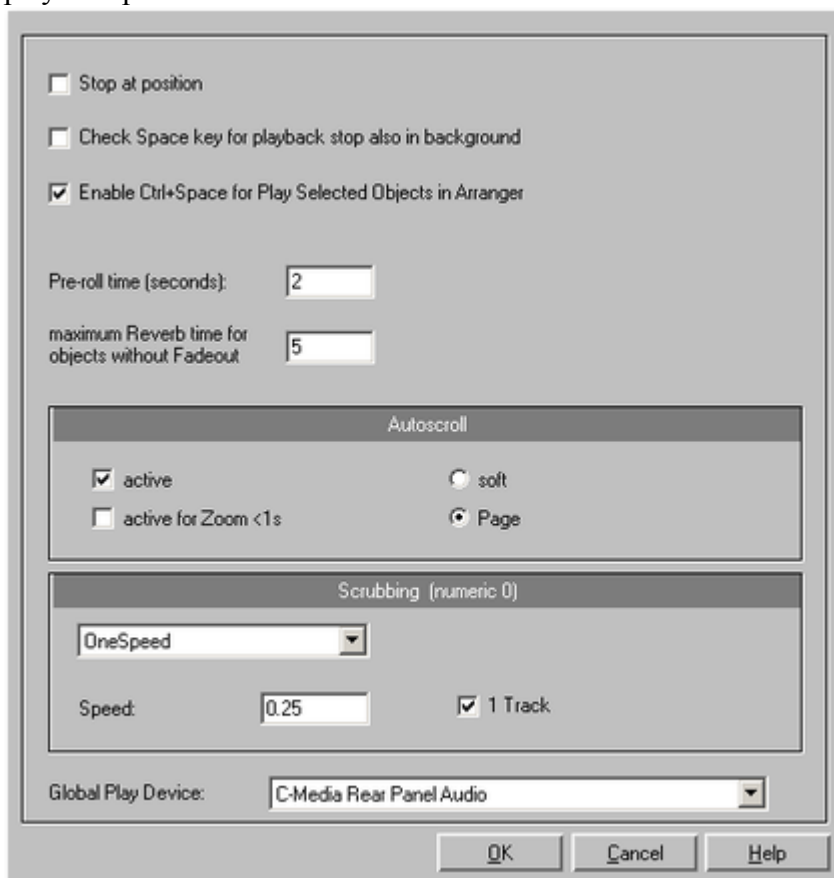
Restart play

Playback will start at the beginning even during the actual playback.

Keys: Backspace

Playback options

The play parameters window which appears after selecting this menu option is designed to quickly enter playback parameters.



Sample rate

: The sample rate can be changed here as long as the sound card supports the new rate (some sound cards even support changing the rate while playing the sample). This is especially useful for hearing notes in a sample range played in a different octave. When selecting half the sample rate, the pitch should be the same. It would be played one octave lower.

Device

: Use this dialog box to specify the sound card's driver. This is necessary if playback takes place through a single sound card device, and is especially important if multiple output devices are located in the computer.

Autoscroll

: This you to activate the "Autoscroll" feature. This is especially useful when working with large disk files. The HD wave project window will follow the play cursor during playback. When working in "2" or "3" section display mode, the autoscroll feature causes the individual sections to follow the play cursor as well. If you have zoomed into one of the sections, the play cursor will move through the section faster, resulting in more screen re-draws.

You can choose between page and soft scrolling, but be careful: Scrolling requires [CPU](#) power (depending on the processor, graphics adaptor, and resolution), and the CPU may be overloaded in critical situations which may result in playback dropouts. Deactivate autoscroll mode if this happens.

Scrubbing

: If you "Insert" ("Insert", or "0" on the number pad), Samplitude Music Studio 15 will switch to "Scrubbing" mode, and playback speed can be controlled directly by the mouse. The further to the right

the mouse goes, the faster Samplitude Music Studio 15 plays.

In comparison to many HD recording systems, this even works in a virtual multitrack project.

Use scrubbing mode to find passages, crackling, etc. in material. The older generation of sound engineers are, no doubt, very familiar with this method from analog tape editing.

There are two scrubbing modes ("P"):

Relative:

The relative distance between the play cursor (positions bar) and the mouse position can be used to control the speed. The play cursor follows the movement of the mouse.

Absolute:

You can also use the absolute position of the mouse in the window to control the speed:

Left border

= Double speed backwards

Center

= No movement

Right border

= Double speed forwards

Tip for scrubbing:

For buffer sizes (4000, 2000 samples) scrolling is "softer". Test if your computer functions at this buffer size without any playback errors.

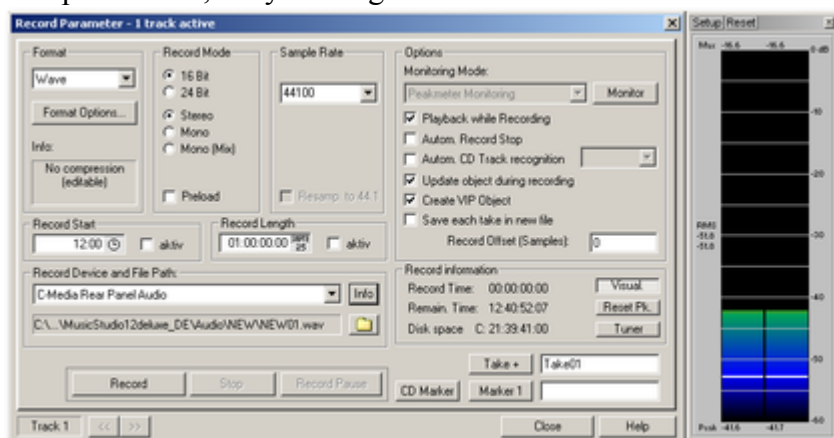
Combined with "Soft scroll", editing becomes very convenient on faster computers.

Record

Starts recording.

Record options

This menu option opens the "Record" window. All necessary settings for recording can be entered here. If you don't need to open the dialog again once it is set, just start recording using the record button on the transport control, or by clicking the toolbar icon



Record mode

: Select between stereo and mono and if you want to record the audio into a RAM wave project or to the hard disk as an HD wave project.

Preload

: The "Preload" option allows you to load all the buffers before recording actually begins. This enables an immediate recording once you click the record button. Otherwise, Samplitude Music Studio 15 will load the buffers, and depending on the size of the buffers and the overall computer speed, this may take some time.

Sample rate

: Select the audio file's sample rate. Make sure that your sound card supports the selected sample rate.

Resampling to 44.1 kHz: Some Samplitude Music Studio 15 versions can perform a real-time sample rate conversion to 44.1 kHz, if you are recording with a different sample rate. For example, a DAT tape is often recorded at 48 kHz, but the tape needs to be mastered and prepared for [Red Book](#) audio CD processing (44.1 kHz). Samplitude Music Studio 15 allows you to automatically convert the audio during the recording, eliminating the additional sample rate conversion step after the recording.

Device

: This selects the desired device driver you want to use for the recording. If you have more than one sound card installed in your system, this window will let you specify which card to use. Make sure the sound card is properly installed in Windows and is operational. If you do not see an entry in this window, check whether a device driver has been installed for your sound card. This usually is done during the software installation for your sound card.

? (Device)

: By clicking the "?" button, you can check the recording capabilities of the selected sound card, i.e. information about the sound card driver and its capabilities.

Info: [Dialog](#)

for detailing sound card properties. If your sound card supports 24-bit recording, you can activate this recording mode via the info dialog.

Playback while recording

: Simultaneous recording and playback is especially important when wanting to monitor existing tracks while recording a new track. This option allows you to turn the feature on. To conserve system resources and keep the recording error free on slower systems, you may need to turn this feature off.

File name / Browse

: The name of the audio file to be produced and the pre-set index path are displayed at the bottom of the

recording window; both can be changed by clicking "File" button.

Set CD track marker

: While the recording is running, you can set track markers by clicking "Set CD track marker" in the recording dialog.

Automatic recording stop

: When this field is activated, recording stops automatically after approximately 16 seconds of silence. This allows you to make a recording without having to worry about stopping it at the end.

Automatic CD track recognition

: When this field is activated, track markers will be set automatically at the end of pauses between songs.

Create [VIP](#) object with name

: Samplitude Music Studio 15 allows you to choose whether you want to automatically create objects in a VIP once you are done with the recording.

Monitor

: This check box activates the VU meters. Please note that the correct recording device must be selected prior to beginning this. While recording, the LED control displays move slower, do, however, show each maximum level.

Recording level

: This display indicates that the signal level to be digitized is correctly set. Play the loudest part of the material to be recorded and watch the display.

Low-level recording leads to a loss in sound quality, while high-level recording can produce unpleasant "clipping" sounds.

You can adjust the record level either on the sound source or with the mixer of your sound card.

Osc / Correl:

Opens the oscillograph or phase correlator. The oscillograph displays the wave form at the input in a scalable window.

The phase correlator displays the phase level of a stereo signal. A vertical line corresponds to a mono signal, and a horizontal line corresponds to a 180° phase-inverted signal which usually indicates an incorrect cable connection.

Tuner

: For "tuning" guitars and other string instruments. A calibrating line appears when the A0 note is played. If deviating tones are played, the deviation can be read on the basis of the calibration line and the numerically indicated pitch is corrected accordingly.

Record offset

: This option allows you to specify an offset, which is calculated in samples. Sometimes it is necessary to compensate for any delays due to processing speed and other factors, such as your sound card's ability to switch between playback and recording mode. Delays can occur between the recording and the playback of audio if the "Playback while recording" feature is turned on. This option allows adjustments if this occurs. Good values to start with are in the 20-2000 sample range. You can determine this value by playing a project with a distinct start in a multitrack VIP and recording it simultaneously. You can then measure the offset precisely using the zoom functions.

Set marker 1

: You can drop markers into the project. The current position of the play cursor is used to drop a marker at positions you want to select for later clean-up or similar tasks.

Record

: Starts recording by activating this button.

Stop

: Stops the recording process. Samplitude Music Studio 15 will ask you whether you wish to keep the recording or delete it.

Should the computer become overloaded due to swapping data or hard disk access for example, simply interrupt the recording with a click of the right mouse button or the space key.

OK

: Closes the record parameter dialog.

Shortcut

: "R" (second "R" starts recording)

Record mode / Punch in

Play while recording

This option corresponds to the option in the recording options with the same name.

Record without playback

Use this option to record without playing the [VIP](#)

Punch in mode active

This option activates the punch mode. Punch in and punch out are processes for automating the recording start and end of an audio segment. Once punch mode is active, the punch in record feature can be used to record audio segments without stopping playback.

The requirement for this mode is an armed record track. Use the "Rec" button on each track to select it for punch recording!

Punch recording can be done in two ways:

1. Punch in/ out "On-the-fly":

This allows you to start the recording (punch in) at any time during the playback. Once the recording commences, it can be stopped at any time (punch-out), while the playback continues.

This is very similar to tape based multi-track recorders, which allow you to correct mistakes during previous recording takes by overwriting segments of the tape.

Simply start the playback with the space bar. Punch-in recording can be started by clicking "Punch record" in the toolbar.

2. Punch in/ out with markers:

The second method is to punch in and out of recording using special markers. This is a more automated way of dealing with punch-in/-out recording. This is useful when specific punch in and punch out points are determined and you don't want to take any risks in possible punching in or out of the recording.

"Punch in and out with markers" lets you specify the exact points where the recording should start and stop. To operate in this mode, a range has to be selected which defines the beginning and end of the recording. The "Set punch-in marker" and "Set punch-out marker" functions are used to tell Samplitude Music Studio 15 where to punch in and where to punch out. Next, set the play cursor to an appropriate position prior to the punch-in point and start playback/recording with the "Punch record" button in the "Punch" toolbar.

Important: When working with the punch in/out functionality, make sure that "Auto crossfade" mode is activated by clicking on the corresponding button in the toolbar. The auto crossfade will create smooth transitions between the takes. This helps to prevent little pops and clicks!

There is also a way to perform looped punch-in recording. Simply select a range over the desired punch region. The range is played back until you stop the playback with the space bar. Each time the program loops through the range, new takes are recorded at the punch markers. To find the best take after the recording is completed, use the take manager!

Punch in record

This function/button starts and stops punch-in recording.

Set start marker

This function/button sets the punch-in marker

Set end marker

This function/button sets the punch-out marker.

Remove punch markers

This function/button deletes the punch-in and punch-out markers.

Monitoring

New, more flexible input signal monitoring is now available via ASIO driver support.

Monitoring > Input monitoring on/off

This function activates/deactivates the input monitoring (corresponds with "Rec M" button on the transport control). When actively monitoring, the input signal of the tracks for active monitoring (loudspeaker button in the [VIP](#)

or mixer is activated) are played according to the selected monitoring type at the output. Furthermore, the LED peak meters in the VIP and mixers react according to the input signal.

Note: If the "Rec" button is activated on a track, then the loudspeaker button is activated simultaneously in order to switch on monitoring.

Monitoring > Tape player monitoring

The preset method for monitoring, similar to tape players and familiar from earlier versions of Samplitude Music Studio 15:

When "Stop" is displayed, the input signal is rendered, "Play" renders the track contents, "Record" renders the input signal. If the option is deactivated, the user has to choose whether the input signal is shown or not. Use the "Force monitoring" button (small loudspeaker symbol beside/above the peak meter in the [VIP](#)/mixer).

Monitoring > Peak meter monitoring

This corresponds with the normal characteristics of the [VIP](#), i.e. the track's peak meter displays the sound card input level.

Monitoring > Software monitoring / Software FX monitoring

Software

monitoring for cards with ASIO drivers is also possible if the card does not support hardware monitoring (ASIO direct monitoring).

Software FX monitoring also calculates the track effects into the monitoring signal with the exception of all high latency-affected FX inserts (e.g. FFT filters, dehisser, or vocoder). The amp simulator, however, is applicable. Samplitude Music Studio 15 can therefore also be used as an effects device to play live directly.

If you need all of the mixer effects, then use the conventional live input mode (functions without ASIO, but is afflicted with higher latencies).

Furthermore, software or software FX monitoring must be active to be able to play VST instruments live using the "[MIDI](#) in" port.

Auto Jam Session

Read more on this in the [Auto DJ](#) chapter.

Shortcut: J

Menu tempo

In this chapter

[Tempo / Time signature](#)

[Set new tempo marker](#)

[Set new beat marker](#)

[Set new beat position marker](#)

[Ignore all tempo markers, use only project tempo](#)

[Metronome active](#)

[Metronome settings](#)

Tempo / Time signature

Tempo and bar changes are an important expression criteria of all music. Samplitude Music Studio 15 offers comprehensive creation possibilities.

In this case the definition of tempo and time changes is done entirely by means of markers within the project window. Special tempo and bar markers can be defined using linear or immediate tempo or bar changes. The resulting tempo curves are calculated automatically. The display in the transport window serves as a visual control of the current tempo or time which displays the current values when playing back or repositioning the current respective value.

The musical grid can also be adjusted by placing support points at certain time positions or already available audio and [MIDI](#)

events, e.g. a reference drum track (so-called "advanced tempo mapping").

There are three types of markers:

- Tempo
- Time signature (musical signature)
- Bar position

Of course, tempo information can also be adopted when importing MIDI files into the current project.

Samplitude Music Studio 15 creates the required tempo markers automatically.

If required, MIDI/audio events can be coupled with the musical grid and positioned precisely for tempo changes.

Set new tempo marker

A new project first has a single "master" tempo which can be defined in the transport control or in the project settings ("I").

You can define unlimited tempo changes directly in the project window at anytime. The tempo marker is the most important tool as it can be used to define a tempo change at a precise position, which can also be interpolated linearly to a previous tempo definition.

Set new beat marker

The time signature marker changes the type of beat after the marker position, e.g. from a 4/4 beat to a 3/4 beat. A new project first has a uniform 4/4 beat that can be defined in the transport control or in the project settings ("T").

Bar markers can only be inserted at the beginning of a bar. If an imported [MIDI](#) file contains bar changes, bar position markers are automatically generated.

Set new beat position marker

Beat position markers assign a specific musical position to a specific time position. This way, the bar frame/grid and [MIDI](#) events can be easily synchronized with existing audio material.

Bar position markers (Advanced Tempo Mapping)

The tempo of a piece of music is usually defined when it's composed. If you want to increase the tempo at a certain bar position, simply define a tempo marker, with tempo interpolation referring to the previous marker.

However, recorded audio material often does not correspond with the project tempo, e.g. a drummer's reference track to indicate the tempo of further recordings or additionally composed material with many timing nuances. Instead of placing tempo makers or even having to adapt the reference material using time-stretching, you can create the musical grid at certain time positions in the linear course of playback of the project using support points; so-called bar position markers. This way you can synchronize the bar grid, musical grid, and the corresponding [MIDI](#) data with available audio material.

Example:

The drummer has recorded a track using a metronome, but has deliberately not hit important beginnings of a bar precisely. The musical grid is adapted to keep the groove within this performance. By placing a bar position marker, the project beat of "20", including the beginning of the chorus, is moved exactly to the first beat of the 20th bar played by the drummer.

This practical example shows that the bar position markers are used to combine the audio-based sample/time position (or SMPTE) with the musical bar position by means of defined support points. This allows for easy editing of projects with changing musical tempo when the musical grid is edited in the actual time course (e.g. bar 20 should begin at this point in time!).

A tempo marker is different in that it defines a clear command: Faster (or slower) from here. A bar position marker, however, defines the tempo indirectly by adjusting the tempo before the marker in such a manner that the desired musical position ("beat 20") is met precisely at the marker position.

The grid, the grid display, the metronome and the events in the MIDI editor are automatically adjusted according to the changed musical tempo.

Note

: Bar position markers immediately following a tempo marker always create a tempo run. Instead of a tempo jump, a bar position marker is used to set a tempo run if there is a bar position marker immediately before the tempo marker. As the tempo before the bar position marker has already been defined, the adjustment of the musical position has to be carried out by decreasing or increasing the tempo to such an extent that the required bar position meets the required time position at the bar position marker.

Working with tempo and bar markers

Creating tempo markers

Tempo and bar changes in Samplitude Music Studio 15 are set directly in the project window using project markers.

So, you have to create a marker to insert a tempo change at a certain playback position. There are several ways to do this:

1. Tempo/beat marker window

Set the playback cursor to the position where you would like the tempo or bar change to be. The option "Snap to grid" is very useful for placing the cursor directly on a bar or 1/4 bar. Click on the "Snap" button in the transport control ("Tempo" section). Open the tempo/bar marker window from the marker menu (right click on time bar), or from the [MIDI](#) menu.

Click on the "New marker" button in the window. A marker is inserted at the current position. You can now use the marker option to set the properties of this marker. For a new tempo marker, enter the required tempo in BPM or the new bar for the bar marker.

Please observe that the settings are only valid for the markers currently selected in the marker list. For example, you cannot set the marker properties such as type or tempo after it has been created.

Please also observe that a beat marker only makes sense at the start of a new beat. If the play cursor is at a different position, the marker position is automatically moved to the beginning of the next bar.

2. Marker menu

Tempo and bar markers can also be created using the marker menu context menu and the MIDI menu of the program. You can of course assign shortcuts.

3. Timestretch mouse mode: Click on the time border

In "Timestretch mouse" mode you can create markers directly with one click on the required playback position.

Tempo-marker: "Shift + Click"

Bar position marker: "Alt + Click"

Edit marker/ tempo/bar marker window

If a tempo marker is changed or a bar position marker is moved, this influences the following markers and audio/ MIDI projects in the [VIP](#).

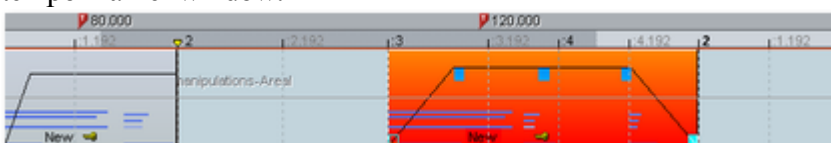
There are principally two possibilities: The time position either remains constant, or the musical position remains and the time position is adjusted (tempo/bar marker window).

Illustration

: The time position in the VIP is the absolute position within the VIP. The musical position is flexible, which is made clear by the grid. Maintaining the musical position therefore means that the objects or markers are adapted to the newly created grid and that their time position in the VIP therefore changes. If the time position is maintained, the musical position changes accordingly.

When tempo markers are manipulated, the behavior of the markers, audio and MIDI objects can be controlled separately. With each presetting the musical (grid) positions are maintained for MIDI objects and tempo markers, as is the time position for markers and audio objects. The time position is always maintained if "Alt" is pressed while manipulating with the mouse.

The time position, however, is always maintained for fixed tracks (preset). This can be changed in the tempo marker window.





In this example the first tempo marker in the second image has been changed. The MIDI object and the second tempo marker were moved correspondingly so that the musical positions (3:01:000 and 4:01:000) are retained. The time position of the audio object was not changed, so that its musical position has moved forwards (from 2:2:000 to 2:01:181).

Further options:

Each tempo and bar position marker can be ignored using the "Bypass" option. This occurs automatically for bar position markers if absurd bar positions are created while moving, e.g. if bar position markers are exchanged (bar 20 before bar 19) or are moved to a position within the project so that these bar positions that originate from a previous tempo marker cannot be met by tempo interpolation.

Ignore all tempo markers

: In the beat marker window there is an option for ignoring all tempo markers. In this case only the set project tempo is used ("T").

Manipulating the tempo marker in timestretch mouse mode.

The timestretch mouse mode simplifies working with tempo markers.

You can easily create tempo markers using "Shift + click". markers are then initialized according to the tempo. You can, however, adapt this tempo immediately by moving the mouse vertically holding "Shift" and clicking.

Bar position markers are created with "Alt + click" and can be moved by "Alt + horizontal mouse movement" (without adjusting the time position), e.g. to manipulate the bar grid and to adapt it to available audio events.

Tips, examples of use

Loading MIDI files that include tempo changes: The tempo changes are adopted by the current project and are accounted for during subsequent editing and in the MIDI editor.

Tempo markers can be placed when composing in the MIDI editor (these then apply to all tracks).

Subsequent MIDI objects and tempo markers retain their musical position (advanced setting).

The grid can be adjusted to available audio events, e.g. assigning beat numbers to certain time positions.

You can either use the "Set new bar position marker" menu command to create a marker at a position within the project and can assign the corresponding bar position or, for smaller changes, "Alt + mouse click" on the respective bar grid position and immediately move it to the required time position, e.g. to the beginning of an object.

If the project includes MIDI data, this is automatically adjusted (preset). The newly created tempo grid is used in the MIDI editor for subsequent editing or for a new composition (e.g. quantization).

When working with MIDI files and complex tempo changes the tempo map can be deactivated and, if necessary, the tempo can be reduced before recording new MIDI files. After recording, the tempo map can be used again. The newly recorded MIDI data is now adapted automatically.

Ignore all tempo markers, use only project tempo

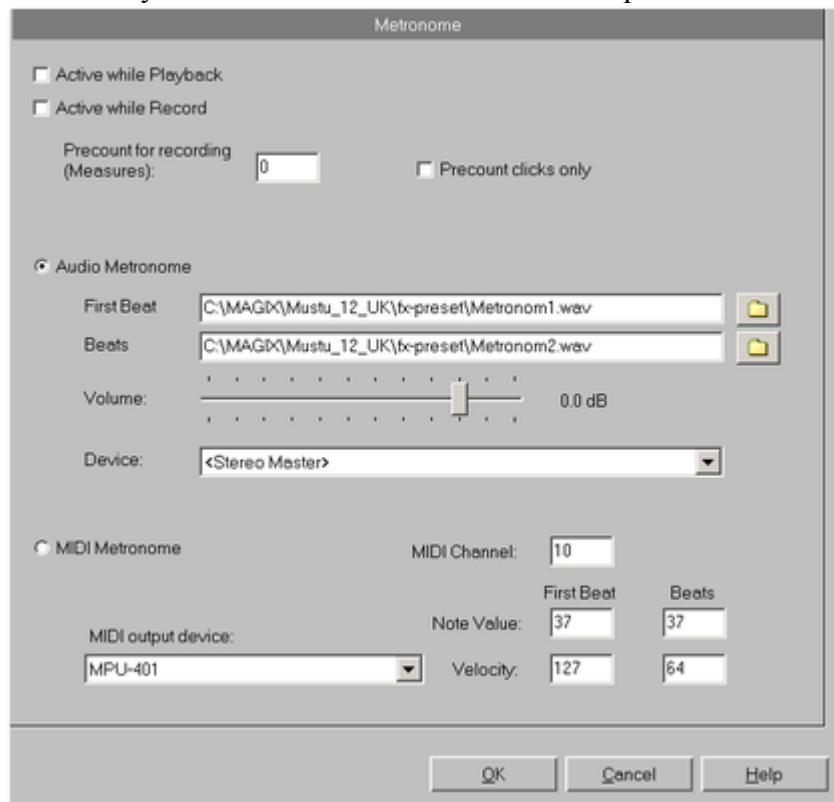
Ignore all tempo markers. Only the project tempo is used.

Metronome active

Activates/deactivated the metronome. This function can also be activated via the "Click" button of the transport console.

Metronome settings

Here you can set a metronome to help keep in time with the beat during recordings. You will require sound card with [MIDI](#) functionality and/or an external MIDI instrument to provide the metronome click.



Active during recording

: This option allows you to hear the metronome click during recording.

Active while playing

: This option allows you to hear the metronome click while playing.

Output device

: Selects the device that will provide the metronome click (usually the sound card).

MIDI channel

: Sets the MIDI channel, through which MIDI commands are sent.

Tact / Tact velocity

: Here you can set the various notes and velocities for the first beat of each tact and/or the subsequent tacts.

MIDI menu

In this chapter

[New MIDI object](#)

[New MIDI track](#)

[MIDI editor](#)

[MIDI object editor](#) Ctrl + O

[Glue MIDI objects](#)

[Trim MIDI objects](#)

[MIDI bouncing](#)

[Separate MIDI objects according to channels](#)

[MIDI quantization \(start and length\)](#)

[MIDI start quantization](#)

[MIDI length quantization](#)

[Cancel MIDI quantization](#)

[Track information](#)

[Track MIDI record](#)

[VST instrument editor](#)

[Metronome active](#)

[Metronome settings](#)

[MIDI options](#)

[MIDI record modes](#)

[MIDI panic – All notes off](#)

New MIDI object

A new [MIDI](#)

object is created on the selected track. After choosing the command, you can select a prefabricated MIDI template (from the subdirectory "Templates" in the Samplitude Music Studio 15 directory) from a small pop-up menu. It deals with normal standard MIDI files which can be copied into this directory or directly exported from Samplitude Music Studio 15 as a template. If only one file is in the template listing, no menu appears the object is created immediately.

New MIDI track

Use this function to create a new track in [MIDI](#) mode to which you can add [MIDI](#) objects and edit them.

MIDI editor

This menu point opens the [MIDI](#) editor. Here, the content of the MIDI object selected in the [VIP](#) can be displayed and edited. Here, you can choose from the matrix editor, drum editor, score editor, event list, and velocity/controller editor.

If a MIDI object is not selected, you will be asked if you wish to create one. If you confirm this with "YES", a MIDI object in the current track is created at the cursor position/start of the range.

Read more about the MIDI editor in the "MIDI editor" chapter.

MIDI object editorCtrl + O

The [MIDI object editor](#) enables flexible, quick, and easy editing of each selected object independent of your general settings. If an audio object was previously selected, then the normal [Object editor](#) opens correspondingly.

Keyboard shortcut: Ctrl + O

Glue MIDI objects

This command lets you glue together two or more subsequent [MIDI](#) objects of a track.

Shortcut:

Ctrl + Alt + G

Trim MIDI objects

This function moves the object borders of a selected object to the edges of the current range. For this to occur, the range must be fully within the object's borders.

MIDI bouncing

All selected [MIDI](#) objects are mixed into one object.

Separate MIDI objects according to channels

If a [MIDI](#)

object contains several channels, you can use this menu item to split it up into several MIDI objects.

Hint: Please note that the created tracks have to be allocated to the corresponding instrument/[MIDI](#) device.

MIDI quantization (start and length)

All note on and note off events are quantized in the selected object according to the settings.

MIDI start quantization

Only the start positions of the note on events are moved in the selected [MIDI](#) object; the note lengths remain.

MIDI length quantization

The note lengths in the selected [MIDI](#) object are changed according to the quantization settings.

Cancel MIDI quantization

Quantization can be undone for the selected object.

Track information

To be able to adjust the settings for [MIDI](#) data, open the track info dialog. Here you can set the playback device for MIDI data, for example. Please also read the corresponding section in the chapter "Track menu".
Shortcut: Alt + I

Track MIDI record

Activates [MIDI](#)
record for the selected track.

VST instrument editor

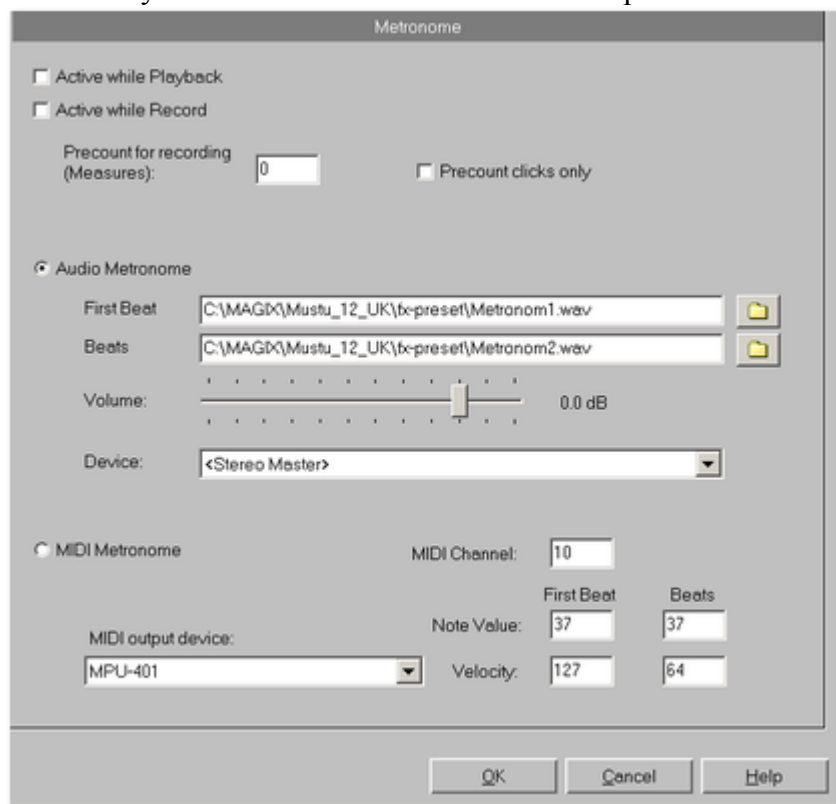
[Software](#) instruments as well as MAGIX synths (e.g. Robota Pro) can be integrated into a virtual project and controlled via internal [MIDI](#) functions and editors. All instruments are seamlessly integrated into all effects and routing options. Please also read the chapter "MIDI in Samplitude Music Studio 15" in the first section of the manual.

Metronome active

Activates/deactivated the metronome. This function can also be activated via the "Click" button of the transport console.

Metronome settings

Here you can set a metronome to help keep in time with the beat during recordings. You will require sound card with [MIDI](#) functionality and/or an external MIDI instrument to provide the metronome click.



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Active while playing

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Output device

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MIDI channel

: Sets the MIDI channel, through which MIDI commands are sent.

Tact / Tact velocity

: Here you can set the various notes and velocities for the first beat of each tact and/or the subsequent tacts.

MIDI options

Here you can specify which [MIDI devices](#) to use in Samplitude Music Studio 15.

MIDI options

Here you can specify which [MIDI devices](#) to use in Samplitude Music Studio 15.

MIDI record modes

The [MIDI](#) record modes define how the newly recorded MIDI data is inserted into the [VIP](#) if there are already MIDI objects at the recording position.

Normal

The [MIDI](#)

data is recorded in the existing object; the new data is mixed with the existing data. If a recording extends over several MIDI objects, then these are combined into one.

Overdub

The [MIDI](#)

data is recorded in the existing object; the new data is mixed with the existing data. If a recording extends over several MIDI objects, then these are combined into one.

Replace

Replaces the [MIDI](#)

data of the existing object. If you record over several objects, these are combined into a single new object.

Unlike when recording audio, existing MIDI objects on the recording track are also played in "Playback while recording" mode. This way, you can choose one of the recording modes even after the recording was successfully ended.

MIDI panic – All notes off

This command sends a note off command to all [MIDI](#) devices which are not deactivated in the MIDI options for all 128 notes on all 16 channels. Furthermore, sustain (Controller 64) is switched off and the pitch wheel and modulation are set to 0. In addition, an all notes off command is sent to all VSTi's used in the project.

If MIDI tracks or objects exist in the project, the same function is also accessible by clicking the stop button in the transport console or toolbar when the project is in "STOP" state.

CD menu

The CD menu contains all special functions for audio CDs and CD mastering processes, e.g. setting CD tracks and subindexes as well as the "Create CD" function. The options at a glance:

In this chapter

[Load audio CD track\(s\)](#)

[Set track](#)

[Set subindex](#)

[Set pause](#)

[Set CD end](#)

[Set track markers automatically](#)

[Set track indices on object edges](#)

[Remove index](#)

[Remove all indices](#)

[Make CD](#)

[Show CD-R drive information](#)

[Show CD-R disc information](#)

[CD track options](#)

[CD disc options](#)

[CD text / MPEG ID3 editor](#)

[Set pause time](#)

[Set start pause time](#)

[CD arrange mode](#)

[Get CD info \(FreeDB Internet\)](#)

[FreeDB options](#)

[Audio ID](#)

Load audio CD track(s)

This option is also located in the "CD" menu.

This function allows you to import audio data from most CD-ROM drives and CD burners without any quality loss. Please contact our technical support for the latest list of supported drives if you require it.

The HD wave projects are recorded as wave files and can therefore be edited with other audio editing programs without having to convert them first.

To do this, please follow these steps:

1. Open the drive list dialog and select the CD-ROM drive you desire if you have more than one drive
2. Click on the "Track list" button
3. Select one or more tracks in the CD track list dialog list box
4. Click on "Copy selected track(s)..."
5. Select a file name for the new wave file or HD wave project and click "OK".
6. Now the audio data is copied from the CD-ROM to your hard disk as a new wave file.
7. Close the track list and drive list dialogs; one or more new objects appear in your [VIP](#) which contain the audio data from your CD.

In this section

[Features of the track list dialog](#)

[Features of the drive list dialog](#)

[Features of the CD-ROM drive configuration dialog](#)

Features of the track list dialog

Copy selected track(s)

: This button starts the audio data copy process; all selected tracks from the list are copied into one wave file.

Play

: Starts audio playback of the first selected track in the list.

Stop

: Stops audio playback.

Pause

: Stops audio playback (to be resumed later).

Resume

: Resumes playback (if previously paused).

Select all tracks

: Selects all tracks of the CD for copying the complete volume. You can select multiple tracks with "Ctrl + mouse click" or with "Shift/Alt + cursor".

Unselect tracks

: Closes the drive door of the CD-ROM drive

Features of the drive list dialog

Track list

: This button opens the track list dialog for selecting several audio tracks on a CD.

Configuration

: This button opens the drive configuration dialog to select special copy modes and SCSI IDs.

Reset

: Restores the standard drive settings.

Add drive

: Creates a new drive entry in the list for editing configuration data.

Delete

: Deletes the selected drive entry from the drive list.

Save setup

: Saves the drive list and all configuration data in a *.cfg file.

Load setup

: Loads the drive list and all configuration data from a *.cfg file.

Features of the CD-ROM drive configuration dialog

Drive name

: Edits the name of the drive in the list. This is useful if you create more than one entry which access the same physical drive.

Host adapter number

: Specifies the number of your SCSI adapter (normally 0).

SCSI-ID

: Sets your CD-ROM drive's ID. Make sure you set the correct ID, there is no error checking!

SCSI-LUN

: Selects the SCSI LUN parameter (normally 0).

Alias

: Selects your CD ROM drive's manufacturer.

Normal copy mode

: Copies the audio data without any software correction.

Sector synchronization copy mode

: Copies the audio data using a software correction algorithm. Some CD-ROM drives cannot seek exactly to the same position between two read accesses, but Samplitude Music Studio 15 can correct these differences using this algorithm.

Burst copy mode

: Optimizes the copy process speed (no software correction).

Sectors per read

: Defines the number of audio sectors per read cycle; the higher the number, the faster the copy process will be. Not all SCSI adapters support more than 27 sectors.

Sync sectors

: Defines the number of audio sectors used for sector synchronization. A higher number results in a better synchronization, but also in a slower copy process.

Set track

Use this function to set a track marker (index marker) at the current play cursor position. All markers behind the insertion point will be renumbered.

Each track on your CD needs a track marker, typically set after a short pause at the beginning of the next title.

Use the "Track markers on object edges" function to create the markers automatically on the borders of the sample objects!

To manage the markers or to rename them use the marker / CD track manager in the menu "Tools".

Key: T

Set subindex

Use this function to set a sub-index marker on the current play cursor position. All sub-index markers behind the insertion point will be renumbered.

Sub indices are not necessary for your CD but useful for selecting several regions in one track..

Set pause

Use this function to set a pause marker on the current play cursor position. This lets the CD player switch the output to absolute silence while continuing playback until to the next track index/marker is encountered.

Set CD end

Use this function for setting an end marker for the CD you want to burn. Without the end marker, the CD you want to burn comprises the entire project to the project end.

Set track markers automatically

If you are inserting a larger audio file which contains various titles (for example a live take, or recordings on DAT), then you can automatically insert track markers between the titles using this function.

Set track indices on object edges

This function sets track markers (Index markers) automatically at the beginning of each [VIP](#) object in the first VIP track.

Prior to using the function, execute "Remove all indices" to delete any possible track markers.

If there are multiple objects that make up a single track or title, then you may want to use the "Bouncing" function to combine the objects to ensure proper track assignments.

Remove index

Use this function to remove a previously set track or subindex marker. First, click on the marker (the small rectangle below the number), and then activate this function to delete it!

Remove all indices

Use this function to remove all previously set track or sub-index markers. This can be helpful before calling the function "Set track markers on object edges"!

Make CD

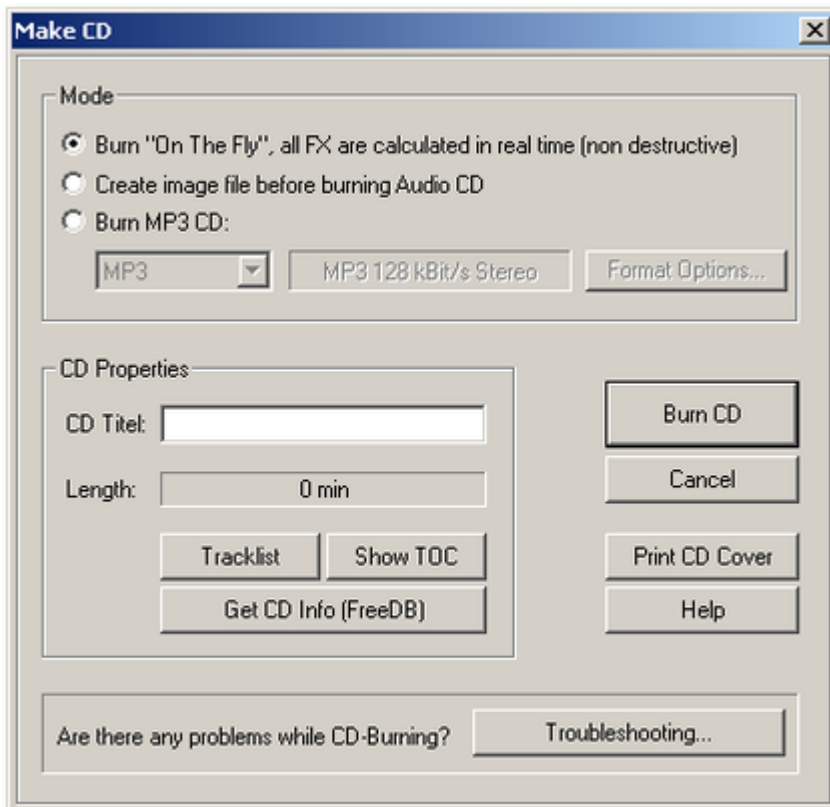
This dialog starts the CD writing process. Samplitude Music Studio 15 contains high-grade CD creation routines that are constantly updated. The software code is licensed from Point [Software](#) & Systems.

Samplitude Music Studio 15 creates a TOC (Table of Contents) file prior to starting the CD creation.

The name of the current [VIP](#)

is used and the extension *.tcx is added to the file. The TOC file is located in the same folder as the current VIP. It is therefore important to save the VIP to the hard disk prior to starting the burning process.

The "Make CD" menu in detail:



Burn “on the fly”

Use this extremely powerful mode if you want to create the CD directly from within the [VIP](#)

. All necessary calculations are performed in real time during the burning process. The following real-time tasks are calculated during the process:

- Volume and panorama settings
- Fades and crossfades
- Mixing of tracks
- Mixer track effects
- Mixer master section effects

To get a good idea whether your system is able to sustain the real-time processing needed for this functionality, try this:

Play back the VIP sections that contain the largest number of tracks and/or where the most real-time effects are used. Watch the DSP meter (bottom left-hand). Below are the expected performances at the different DSP values:

- Below 25%: CD creation with up to 4x mode
- Below 50%: CD creation with up to 2x mode
- Below 90%: CD creation with up to 1x mode
- Above 90%: Real-time creation is not possible, use the second mode (Bouncing)

Generate a complete new file

Use this option if your system is not fast enough to sustain the real-time creation of the CD (see above). This mode calculates all wave files, including fades, crossfades, and volume automation into a new audio file. Any other real-time processing is also part of the newly created audio file. Make sure that you have sufficient hard disk space prior to starting the process (approx. 700 MB for a complete CD).

The original wave files used in the [VIP](#) remain unchanged. This makes this procedure non-destructive!

Print TOC

This starts the external TOC printer application. This convenient tool allows you to print the contents information of the current CD. You may choose between a text style format to print the production documentation and a formatted printout for the CD jewel case. Please refer to the online help for the TOC printer for more specific information!

Show TOC

This button opens a text window which shows the contents of the current TOC. The "Copy" function can be used to copy the contents to the Windows clipboard for use with other text editing applications.

Show CD-R drive information

This dialog shows you information about the active CD-R drive(s). Among the information displayed is the manufacturer, drive name, hardware revision, cache size, and the features supported by the drive mechanism.

The "Disc at once" feature is extremely important, since it is needed to produce [Red Book](#) compatible audio CDs that are accepted as masters by pressing plants

Show CD-R disc information

This dialog shows information about the currently inserted CD-R media. The most important information is the maximum length that cannot be exceeded during the production (i.e. 74 minutes and 5 seconds).

CD track options

The CD track dialog shows all CD tracks and sub-indexes used in the current [VIP](#)

. Every track can be assigned with a name, which is also displayed in the VIP. Other settings such as pre-emphasis, copy protection, and second generation protection flags can be set for each of the tracks.

The "Set all" button allows you to use the current flags to set all tracks to the chosen settings. Other settings are the ISRC codes for every CD track.

CD disc options

This dialog configures settings for the current CD.

CD title

The title is written to the CD and is used in the TOC printer application to print the CD information.

UPC / Ean code

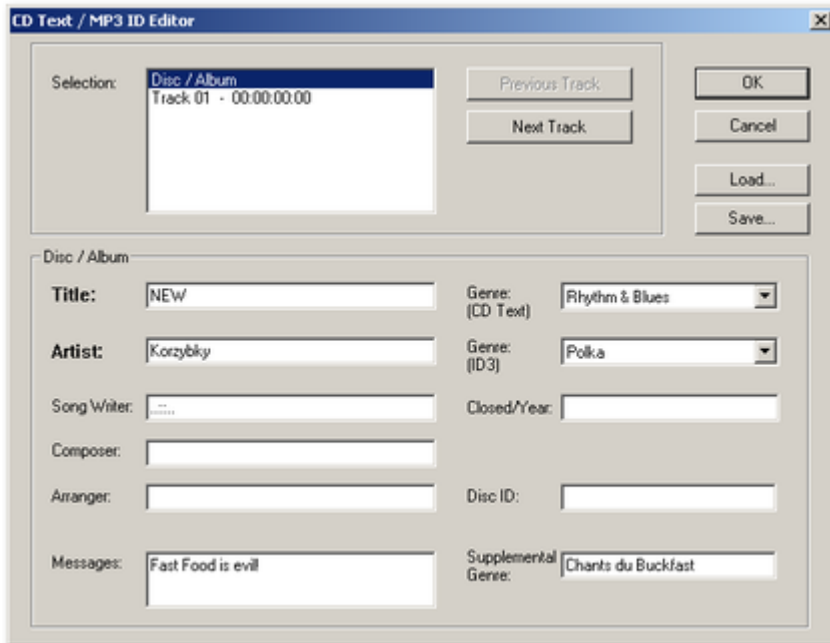
This code is also written to the CD and can be requested by special CD players that work with this format.

Number of first CD track

Under certain circumstances, such as writing with "Track-at-once", the number of the first track can be determined with this setting. When using the "Disk-at-once" mode, this setting does not have any significance. The CD will always start with track 1 in this mode.

CD text / MPEG ID3 editor

This function allows you to supply data regarding a song or CD content, such as album, artist, etc.



The screenshot shows a window titled "CD Text / MP3 ID Editor". It has a "Selection:" list box containing "Disc / Album" and "Track 01 - 00:00:00:00". To the right of this list are buttons for "Previous Track", "Next Track", "OK", "Cancel", "Load...", and "Save...". Below the selection area is a section titled "Disc / Album" containing several input fields and dropdown menus:

Title:	NEW	Genre: (CD Text)	Rhythm & Blues
Artist:	Korzybkiy	Genre: (ID3)	Polka
Song Writer:	---	Closed/Year:	
Composer:		Disc ID:	
Arranger:		Supplemental Genre:	Chants du Buckfast
Messages:	Fast Food is evil		

[MP3](#) files do not only transport audio data, but also information about the coded music piece through so-called "[ID3 tags](#)". These are file appendages into which an encoder can write standardized information. The ID3 tags are recognized by the decoders and displayed as music data by the [MP3](#) player.

Set pause time

Use this function to set the length of the default pause between two tracks. The pause length is needed for the grid function which lets the sample objects snap to the edges of other objects + this pause time. Normally a pause time of 2 seconds is used.

Set start pause time

Use this function to set the length of the default pause before the first track. Normally a start pause time of 2 seconds is used.

CD arrange mode

If you activate this menu feature, Samplitude Music Studio 15 will arrange the next objects introducing a [Red Book](#)

-standard pause between them.

The following procedure highly recommended:

- Open a new [VIP](#) with 4 tracks (for example), so that you may reedit it later on
- Activate the "Special CD arrange" mode in the CD menu
- Load wave files, audio tracks, or make a recording using the microphone

You will notice gaps in the VIP between the individual objects; these represent the inserted breaks. You can adjust the length of the included pauses in the adjust pause length dialog, if you want.

Get CD info (FreeDB Internet)

Calls up FreeDB data for audio CDs. You have to register first before using FreeDB.

FreeDB options

Submit CD to FreeDB

Allows you to add a CD to the online CD database. The FreeDB™ project relies on user contributions to keep an updated database available.

If you own a CD that's not in the database, you may add it to the database.

- Insert the CD in the drive
- Select "Add CD to FreeDB"
- Enter data in the dialog. Please double check your data.
- Press "OK"
- Your contribution should be online after an hour or two

Clear FreeDB cache

The FreeDB™ online database assigns a cache to your hard disc containing all files that can be read online . This allows you to read files without having to go online. This option allows you to delete the cache.

Audio ID

It's possible to identify audio files with this function. In contrast to [Freedb-Suche](#), the audio file does not need to be a part of an album or CD, and it doesn't even need to be played back completely.

Samplitude Music Studio 15 analyzes typical sound characteristics of a song or part of a song and sends this data as a query to the Internet server. The server compares this "acoustic fingerprint" with saved information about already known songs and then provides the required song information.

Options menu

In this chapter

[Project properties](#)

[Project options](#)

[Track information](#)

[Synchronization](#)

[Program settings](#)

[System / Audio](#)

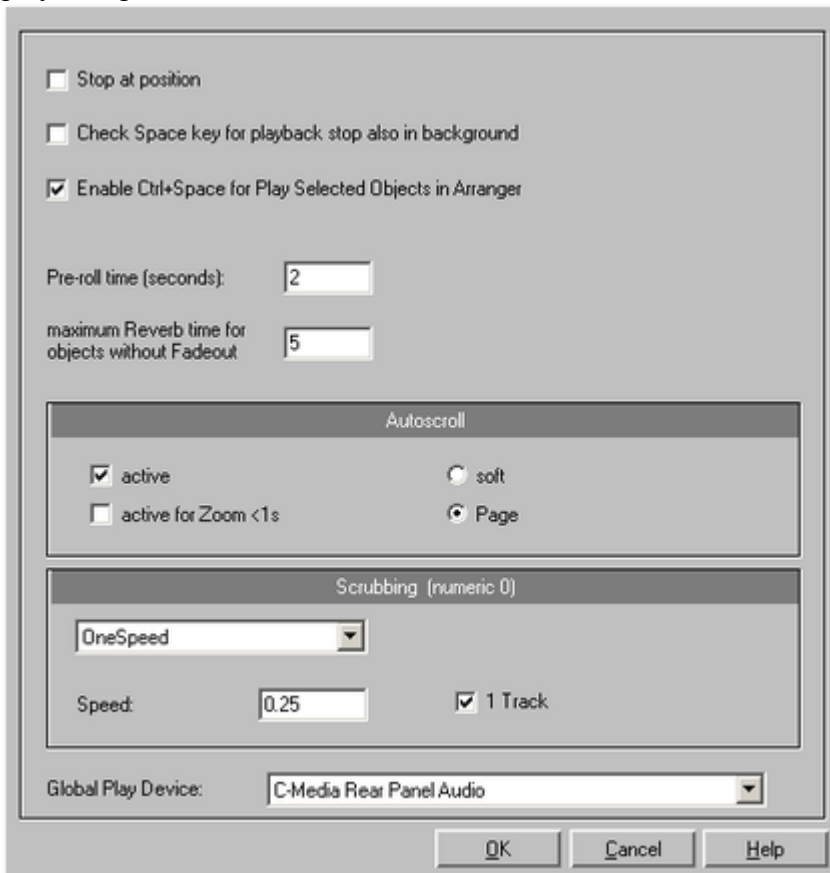
Project properties

Mixer setup

Here you can open the [mixer setup](#) dialog. Use this to set the number of tracks, AUX buses and submix buses as well as the routing presets for the most frequent use cases.

Playback options

The play parameters window which appears after selecting this menu option is designed to quickly enter playback parameters.



Sample rate

: The sample rate can be changed here as long as the sound card supports the new rate (some sound cards even support changing the rate while playing the sample). This is especially useful for hearing notes in a sample range played in a different octave. When selecting half the sample rate, the pitch should be the same. It would be played one octave lower.

Device

: Use this dialog box to specify the sound card's driver. This is necessary if playback takes place through a single sound card device, and is especially important if multiple output devices are located in the computer.

Autoscroll

: This you to activate the "Autoscroll" feature. This is especially useful when working with large disk files. The HD wave project window will follow the play cursor during playback. When working in "2" or "3" section display mode, the autoscroll feature causes the individual sections to follow the play cursor as well. If you have zoomed into one of the sections, the play cursor will move through the section faster, resulting in more screen re-draws.

You can choose between page and soft scrolling, but be careful: Scrolling requires [CPU](#) power (depending on the processor, graphics adaptor, and resolution), and the CPU may be overloaded in critical situations which may result in playback dropouts. Deactivate autoscroll mode if this happens.

Scrubbing

: If you "Insert" ("Insert", or "0" on the number pad), Samplitude Music Studio 15 will switch to "Scrubbing" mode, and playback speed can be controlled directly by the mouse. The further to the right the mouse goes, the faster Samplitude Music Studio 15 plays.

In comparison to many HD recording systems, this even works in a virtual multitrack project.

Use scrubbing mode to find passages, crackling, etc. in material. The older generation of sound engineers are, no doubt, very familiar with this method from analog tape editing.

There are two scrubbing modes ("P"):

Relative:

The relative distance between the play cursor (positions bar) and the mouse position can be used to control the speed. The play cursor follows the movement of the mouse.

Absolute:

You can also use the absolute position of the mouse in the window to control the speed:

Left border

= Double speed backwards

Center

= No movement

Right border

= Double speed forwards

Tip for scrubbing:

For buffer sizes (4000, 2000 samples) scrolling is "softer". Test if your computer functions at this buffer size without any playback errors.

Combined with "Soft scroll", editing becomes very convenient on faster computers.

Media link

Opens the dialog for the [Media link](#)

Project information

A simple text editor can be used to enter comments for the current project. This text can be displayed every time the project is opened so that important information about project can be preserved together with the audio material.

Project status

This dialog displays various, project specific information such as name, path, the number of ranges as well as marker changes, and time of creation, number of objects count and file size.

You will also find a list of all audio files used in the project.

Keyboard shortcut: Alt + I

Project status

This dialog displays various, project specific information such as name, path, the number of ranges as well as marker changes, and time of creation, number of objects count and file size.

You will also find a list of all audio files used in the project.

Keyboard shortcut: Alt + I

CD arrange mode

If you activate this menu feature, Samplitude Music Studio 15 will arrange the next objects introducing a [Red Book](#)

-standard pause between them.

The following procedure highly recommended:

- Open a new [VIP](#) with 4 tracks (for example), so that you may reedit it later on
- Activate the "Special CD arrange" mode in the CD menu
- Load wave files, audio tracks, or make a recording using the microphone

You will notice gaps in the VIP between the individual objects; these represent the inserted breaks. You can adjust the length of the included pauses in the adjust pause length dialog, if you want.

Destructive wave edit mode

[Wave projects](#)

can be edited destructively as well as virtually. Please also read the corresponding descriptions in the first chapter of the handbook. You can select the desired editing method from the list.

Units of measurement

See "View" menu!

Project options

This menu entry opens the dialog with [project-dependent options and information](#)

Track information

Please refer to "Track" menu!

Synchronization

Opens the [synchronisation dialog](#)

. Here you can specify whether Samplitude Music Studio 15 should operate as master or slave, which protocol to use, and which interface should be used to send or receive synchronization data.

Program settings

Program settings

VIP mouse mode

This submenu features the same functions as the mouse mode bar. Please also read "[Mouse functions and mouse modes](#)"

".

Wave mouse mode

You can select between five draw modes for wave projects (HD and RAM wave projects):
Please read the chapter "Mouse functions and mouse modes".

Object mode

Link curves and objects

In this mode, volume and panorama curves are attached to the objects beneath them so that they can be moved together. This can be useful if the curves are aligned exactly with the audio material of the object and the object has to be moved.

Link all objects in one track

In this mode, all objects following the current track are selected and moved together. This can be useful when the latter part of a project is already complete and a part further forward is still being edited. This way, the latter part remains in the front range even if it is moved or if something is added to it. This also works if multiple objects are selected which then have to be on several tracks.

Editing keyboard shortcuts and menus

Here you can open the dialog for [Editing keyboard shortcuts, menu entries and mouse functions](#)

Change toolbar style

You can change the style of the toolbars between a 3D and a 2D look. You have to restart Samplitude Music Studio 15 if you changed the toolbar style.

Edit toolbars

With this command you open the tool bar editor for the according toolbar. The same function can be called by right clicking on the tool bar. All tool bars are customizable. You can customize any toolbar by adding or removing any command, which is available as a toolbar icon. Inside the toolbar editor there is a context-sensitive popup help dialog.

Reset toolbars

This menu lets you reset several toolbars.

Grid setup

See "View -> Snap setup" menu!

Video height

If the option to display the [AVI](#) frames in the [VIP](#) window, the height of the AVI pictures is determined with this setting. This selection can also be reached by clicking on the video track.

Font selection

Samplitude Music Studio 15 will also let you specify the font used for text display in the various objects.

Font for time display

This option lets you select the display font for the time display ([Menu](#) "Window" > "Time display").

MIDI options

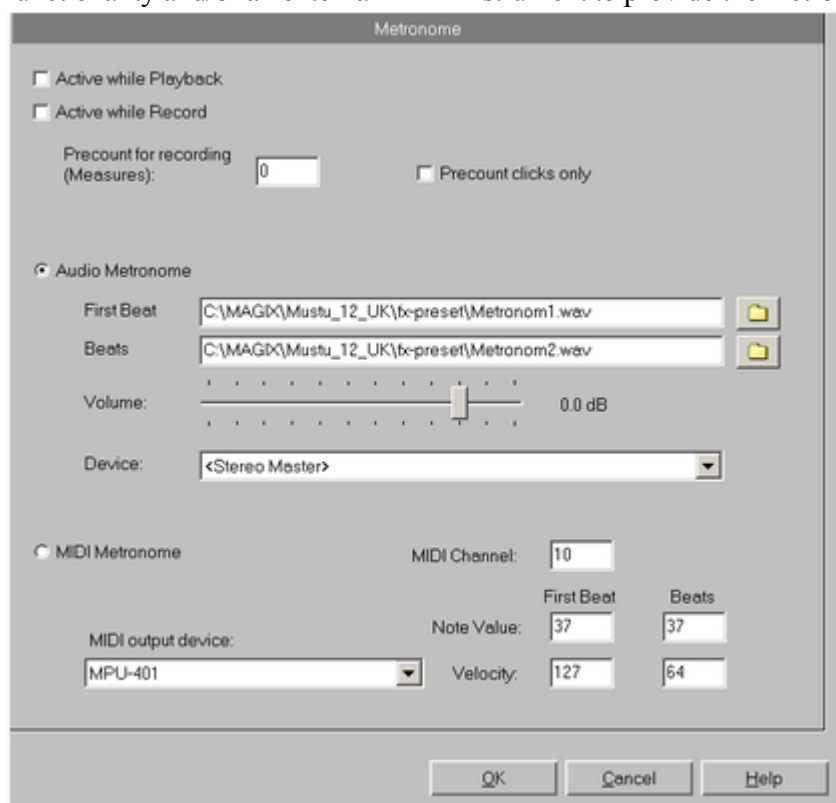
Here you can specify which [MIDI devices](#) to use in Samplitude Music Studio 15.

MIDI options

Here you can specify which [MIDI devices](#) to use in Samplitude Music Studio 15.

Metronome settings

Here you can set a metronome to help keep in time with the beat during recordings. You will require sound card with [MIDI](#) functionality and/or an external MIDI instrument to provide the metronome click.



Active during recording

: This option allows you to hear the metronome click during recording.

Active while playing

: This option allows you to hear the metronome click while playing.

Output device

: Selects the device that will provide the metronome click (usually the sound card).

MIDI channel

: Sets the MIDI channel, through which MIDI commands are sent.

Tact / Tact velocity

: Here you can set the various notes and velocities for the first beat of each tact and/or the subsequent tacts.

Display mode

Please read the explanations in the "View" menu.

Color setup

Here you can adjust the foreground and background color for displaying samples in wave projects, the colors of the volume and panorama curve, the grid, the oscillograph and the time display.

Color selector

The standard Windows color selector has its own integrated online help which can be accessed with "F1" or "?" in the dialog.

In addition to the mentioned function attributes, the sets of the user-defined colors can be saved onto a file and reloaded again.

Right click in the color selector dialog to access a menu with all the saved user-defined color palettes. With "Current user-defined save as..." you can save the current palette onto a new file which will then appear under "Color palettes" in the menu.

Undo settings

This menu entry opens the basic [Settings for the "Undo" function](#)

Object lock definitions...

Here you can select which functions should not be permitted by locking the objects.

The choice consists of:

Moving:

The objects cannot be moved unintentionally (default). This is especially useful for multi-track recordings to prevent inadvertent offset between each track from the beginning.

Volume changes:

Deactivates the volume handles of the objects.

System / Audio

This menu item opens the [system/options](#) dialog where most general project settings can be made for Samplitude Music Studio 15.
Keyboard shortcut: Y

Window menu

In this chapter

[Kaskadieren](#)

[Tile](#)

[Untile](#)

[Arrange icons](#)

[Main toolbar](#)

[Position bar](#)

[Mouse mode toolbar](#)

[Range bar](#)

[Workspace bar](#)

[Button bar](#)

[Status bar](#)

[Mixer](#)

[Track editor](#)

[Time display](#)

[Visualization](#)

[Transport control](#)

[Managers](#)

[Close all windows](#)

[Iconize all wave projects](#)

[Hide all wave projects](#)

[Half height](#)

Kaskadieren

This function arranges all open windows in a cascade style.

Tile

All open windows are moved next to each other, making use of the whole display area. This is useful when dragging physical sample ranges into VIPs.

Keys: Enter

Untile

This function will return the window order to the previous state.

Keys: Shift + Enter

Arrange icons

All icons are rearranged along the lower portion of the screen.

Main toolbar

Please use this command for hiding or showing the [main toolbar](#). Here you will find buttons for frequently used Samplitude Music Studio 15 commands. A check behind the menu item indicates that the toolbar is visible.

Position bar

Shows or hides the positioning bar on the lower portion of the display.

Mouse mode toolbar

Shows or hides the mouse mode toolbar with buttons to select different mouse modes in VIPs.

Range bar

Shows or hides the range bar on the lower portion of the display.

Workspace bar

Displays or hides the workspace bar at the bottom part of the screen.

Button bar

Shows or hides the button bar at the bottom part of the screen which includes the 4 buttons "Object editor", "Visualization", "Transport", and "Mixer".

Status bar

Shows or hides the status bar on the lower portion of the display. A tick behind the menu point shows that the status bar is visible.

The status bar is located at the bottom of the screen and describes the current status of the program.

Mixer

Opens the mixer. Please refer to the "Mixer" chapter!

Key: M

Track editor

This menu entry activates or deactivates the [Track editor](#) in the arrangement window in Samplitude Music Studio 15.

Time display

Shows or hides the time display window

This lets you read the current position while externally synchronizing large sections. Fonts and colors of the display can be selected in the context menu (right click on the time display).

In the context menu of the time display the number of lines/fields that are to be displayed can be set between 1 and 5. For each line/field the size that is to be displayed can be selected from the menu.

Double clicking lets you edit the sizes (with the exception of the current mouse position and the current mixer value).

The most important options:

Position/Start of range:

Displays the current position of the current play cursor, or of the beginning of the range. When moving the objects, you can see the starting position of the object here. Should you enter a negative number into the range when editing, the play cursor will be set to the end of the range.

[Range](#) length:

"Object -> Object Length; negative number" saves the end of the range instead of the start of the range.

End of the range:

"End of the object, negative number -> Start of the range".

Current mouse position:

Not editable

Current mixer value: Value of the mixer fader which was just changed, or the volume or pan fader in the [VIP](#)

; not editable.

Visualization

The visualization meter is a floating control which enables you to meter (measure) the audio in a variety of ways.

You can choose between the following display options: Peak meter, oscilloscope, phase correlator, spectroscope, and spectrogram.

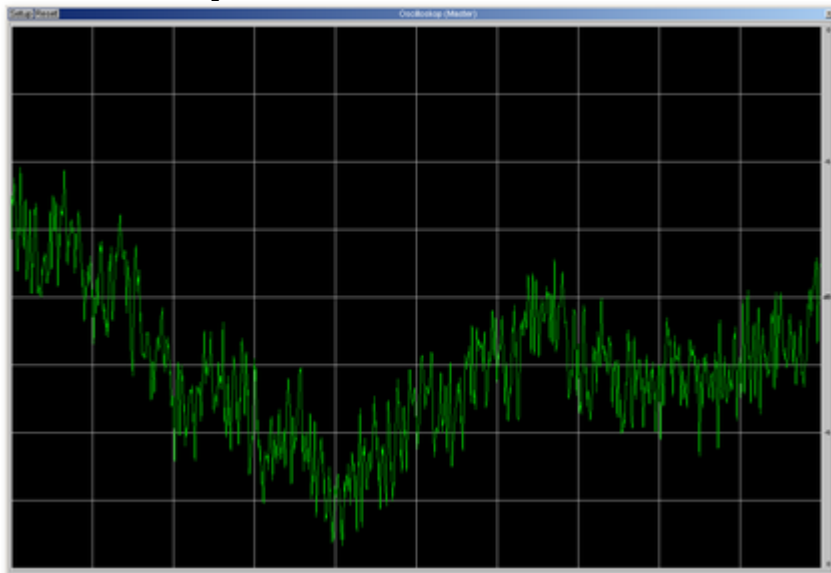
The settings of the meter can be adjusted by right clicking on the meter and selecting the appropriate adjustment. Use the mouse to click on setup. A context menu now opens in which you can set the value ranges, update speeds, drop times, and colors. You can also reset the peak values.

Peak meter

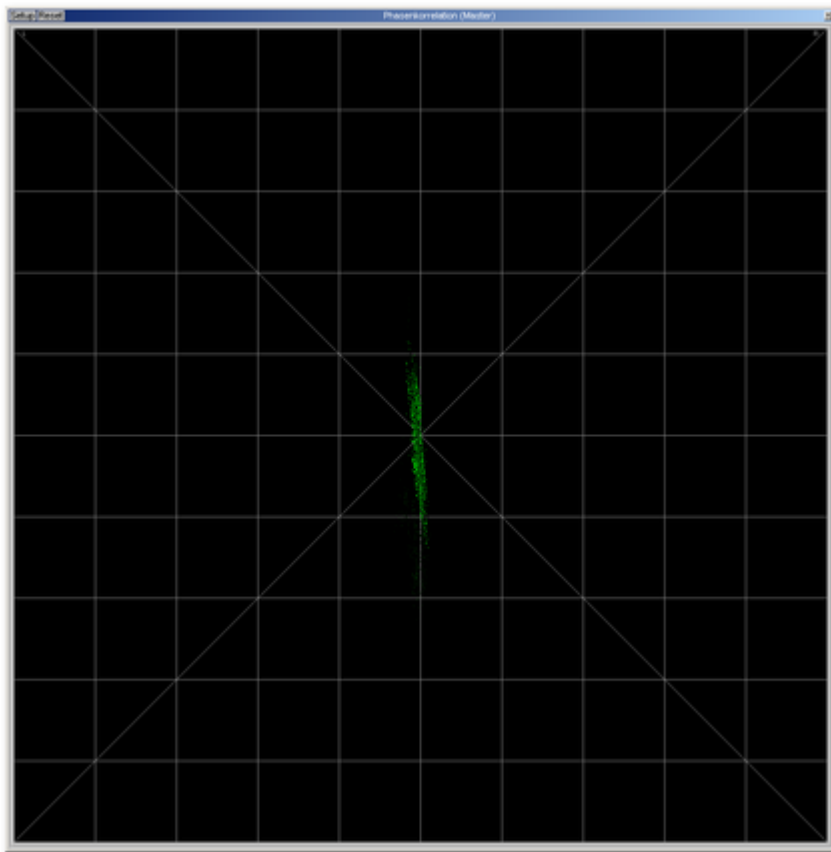


The peak meter provides an exact display of the volume level.

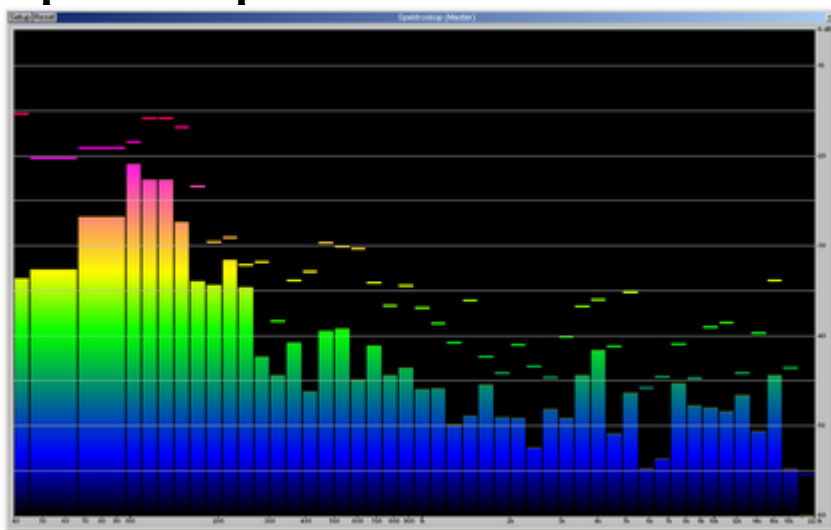
Oscilloscope



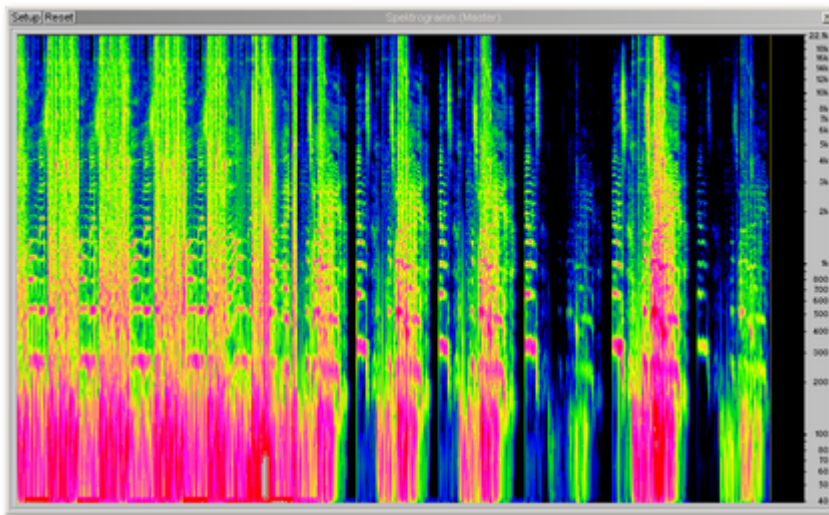
Phase correlation



Spectroscope

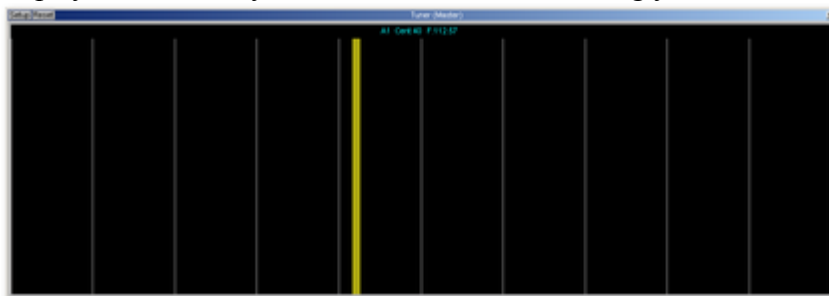


Spectrogramme



Tuner

Tune guitars and other instruments with this option. The visualization will display a calibration line at note A0. If different tones are played, the deviation is indicated by the calibration line, and the tone pitch is displayed numerically and can be corrected accordingly.



Transport control

The transport control window contains the most important commands for playback, recording, and positioning.

"Start", "Stop", "Forward", and "Rewind" buttons: These allow positioning similar to that of any audio player.

Right clicking the "Playback" button opens the playback parameter window for the stereo master operation. This lets you determine the sample rate, playback device, and the scrubbing/varipitch options.

Record

: Starts recording for all active tracks. This means that tracks with the red REC button enabled need to be configured with the proper recording devices prior to starting the recording. Right click on the REC button for each track to select the device.

Right clicking "Record" displays the record parameters window. This lets you make settings such as "Playback during recording", and also lets you record material directly from the record parameter window.

Time display

: This displays the current playback position of the project. Double clicking on the window lets you numerically enter a new playback position. Clicking the green arrow lets you set various units of measurement.

L/R time display

: This displays the length of a selected range and is editable by double clicking the display.

Marker 1-12

: Clicking on one of the marker buttons saves the current playback position to the button. If it already contains a previously saved position (marker appears in light color), the program will place the playback position to the saved position. A right click clears the button memory and allows you to store a new position to the button.

Marker

: This button open the marker manager for more detailed marker editing.

Punch

: This button switch Samplitude Music Studio 15 into punch record mode. This means that the recording process can be started any time during playback. This is also called "On-the-fly recording". This can be repeated numerous times. Punch-in and out markers are set automatically. You can stop a punch in recording process with another click on the record button. However, this does not stop the playback of the project.

Punch in

: This sets the punch in position.

Punch out

: This sets the punch out position. If the both the punch in and punch out markers are set, the punch recording can be started with the "Playback" button. The program will play back the project until it reaches the punch in point.

Sync

: This button opens the synchronization window.

Loop

: The loop button activates loop mode, meaning that playback continues to loop through a previously selected range.

RCMON

: This button activates Samplitude Music Studio 15's "Record monitoring" feature. All tracks that have their REC buttons activated are monitored with the peak meters. The inputs of the audio device(s) are directly routed to the outputs of the sound card, if the sound card offers this functionality (check with your sound card manufacturer). This offers the same functionality as with audio players.

Scrub >> <<

: These buttons allow you to scrub through your project. During scrubbing the playback of the project continues with varying speed while the playback direction can be changed. This also offers a convenient way of finding audio sections such as clicks or mistakes in the audio material.

Jog & shuttle wheel

: The transport control includes a jog & shuttle wheel which you can use to "scrub" over the files. The "Scrubbing" function behaves like the editing function of an audio player. The motor is switched off, the tape, however, remains at the sound head. With a digital system it is more difficult to realize scrubbing as there are no mechanical moving parts. Turning the tape reels manually moves the material slowly along the player. Using the scrubbing function in Samplitude Music Studio 15 is similar to using a tape player, since playback follows the movement of the mouse. Quickly moving the mouse increases the playback speed, while slowly moving it decreases the speed accordingly.

Tempo: In the tempo section of the transport console you can change the playback speed and the beat of the whole arrangement. All objects in the [VIP](#) are adapted to the speed of your choice with timestretching.

"Tap tempo..." opens a dialog where you can "tap in" the beat by clicking on the "Tap" button, or by pressing the "T" key on your keyboard.

In addition, you can fade in the bar grid with the "SNAP" button and switch on the metronome click with the "CLICK" button.

Managers

Please also read the corresponding chapter [The managers](#)

Close all windows

Closes all opened projects. Before closing a window/project, Samplitude Music Studio 15 will ask you whether you would like to save the project.

Shortcut: H

Iconize all wave projects

This function will reduce all wave projects to their icons to make room for the display of the virtual projects.

Hide all wave projects

This function will hide all wave projects to make room for the display of the virtual projects.

Half height

The Samplitude Music Studio 15 screen is shown in the upper half of the display.

This is particularly useful if you want to simultaneously use a sequencer program so that both programs are operated simultaneously, without having to switch between programs with "Alt + Tab".

Tasks menu

In this menu you will find direct solution and short video explanations on how to perform tasks in different topics. Not only will you find step-by-step instructions for sound and pictures here, but you also find quick access to many of functions.

If you click on an entry with a camera symbol, then you will open a short tutorial video which displays a solution. Entries without camera symbols offer a solution to the problem immediately.

Online menu

Here you can get an overview of MAGIX Online World.

Extensive information regarding the individual services can be found under: MAGIX Services in detail.

In this section:

[MAGIX Online World](#)

[MAGIX Community](#)

[MAGIX Blog Service](#)

[Make podcast](#)

MAGIX Online World

With MAGIX Online World, MAGIX offers a series of interesting new services for your photos, videos, and music. Link up Samplitude Music Studio 15 to these services and enrich your projects with a whole world of multimedia.

More on this topic can be found under MAGIX Online World.

MAGIX Community

MAGIX Community is the place to exchange photos, videos, and music with friends and the world. As soon as you have registered for free, you can use all of its great features.

[You can also read the FAQ \(frequently asked questions\) online](#)

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[You can also read the FAQ \(frequently asked questions\) online](#)

MAGIX Blog Service

With MAGIX Blog Service, YOU make the news! Share your thoughts, experiences, and news with a worldwide audience in no time using your own interactive online multimedia journal. Invite family, friends, and acquaintances to join in and enter their comments! A free MAGIX Online Album belongs to the MAGIX Blog Service so that you always have full control over your contributions.

[You can also read the FAQ \(frequently asked questions\) on the Internet.](#)

Make podcast

[Podcast](#) is the name for a relatively new Internet transfer form. It is made up of "**pod**" from "*iPod*", the name of a popular portable [MP3](#) player, and the term "*casting*" for broadcasting content to a wide group of listeners/viewers.

A podcast is therefore something like an online radio station. "Broadcasting" web radio stations means you can only listen to and record the currently broadcast radio station. [Podcasting](#) is different. You as the listener can *subscribe*

to the podcast and the files will be downloaded at a specific time and you can listen to them whenever you like, for example, on the move with your portable player. The shows are pre-produced and placed on an Internet server for download.

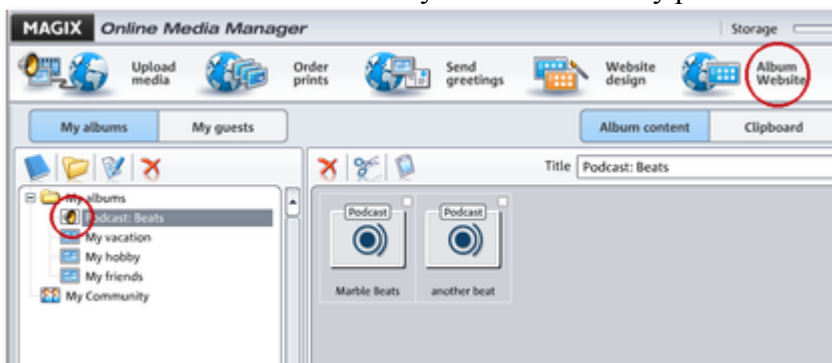
Select the "Upload arrangement as podcast show (audio)" in the Online > MAGIX Podcast Service menu and the exciting journey of your podcast to the pages of the largest podcast providers begins.

The first stop is your personal MAGIX Online Album, the place your podcast will call its online home.

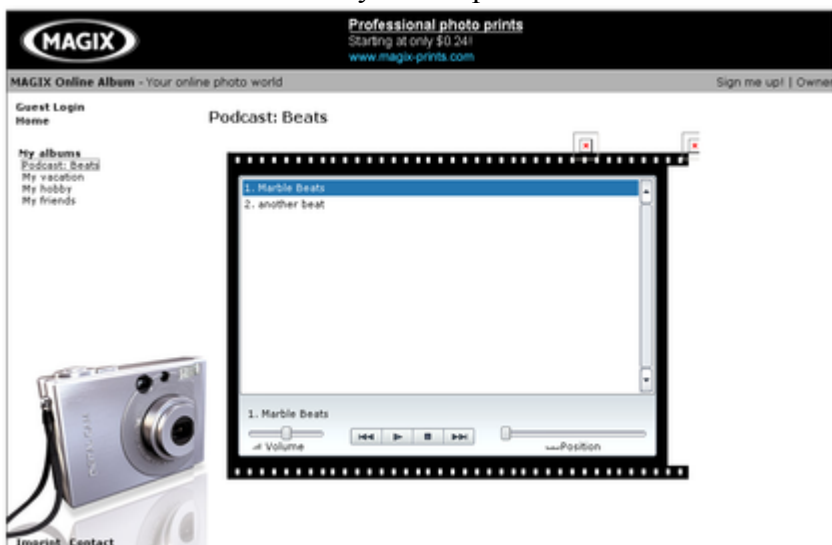
From here it can be accessed from anywhere in the world. Login with your password or register.

Your free MAGIX Online Album with 128 MB webspace can be set up at any time. It will then be available to you from anywhere in the world.

When uploaded via the "Make podcast" button the podcast will be sent to your personal MAGIX Online Album. In the MAGIX Online Media Manager of your MAGIX Online Album the cast can now be found in its new format in the newly created folder "My podcasts".



Now take a look at your album website: Here you can listen to the cast on your own website. You will immediately notice the small button "Subscribe to RSS feed" which allows any user of your MAGIX Online Album to automatically receive podcasts now and in future.



How is your podcast distributed?

Your RSS feed - the technology behind a podcast - will automatically guarantee that your podcast will

be sent from your MAGIX Online Album to many large podcatchers, including MAGIX Podcast Service. Here your podcast can now be subscribed to by a worldwide audience. Currently, a podcast created with Samplitude Music Studio 15 and uploaded to MAGIX Online Album is sent to 10-20 international podcatchers. The distribution depends on the topic of the podcast.

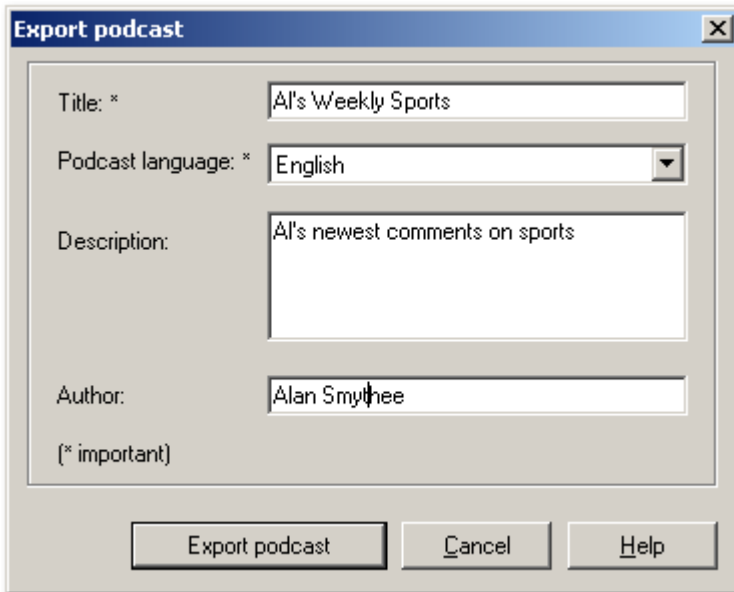
You may even find your podcast via a search engine without knowing how long the journey of a cast over the web may be.

Make podcast

can be used to publish your project as a title in one of your podcasts.

The export podcast

dialog opens and you will be required to enter important information about your podcast title.



Title: The title of your contribution. A podcast typically contains multiple tracks and new ones are regularly added. This is **not** the name of the podcast. You add this once you upload the entire podcast to MAGIX Online Album. A podcast corresponds with an album, in this case.

Export podcast:

The project is encoded as an MP3 file and uploaded to the MAGIX Online Album. You can only ever upload one contribution at once (one file).

Description:

A logical name for the title and a good description are important for ensuring that your podcast programs can be found by other listeners.

Author:

Enter your name or email address for inquiries, etc.

Help menu

In this chapter

[Help](#)

[Help index](#)

[Context help](#)

[About Samplitude Music Studio 15](#)

[Start selection / Tip of the day](#)

[System information](#)

[MAGIX auto-update](#)

[Encoder activation](#)

Help

This command is available for almost every feature of the program, and it opens the "Help" file for the corresponding topic. Use this command to get help on any of Samplitude Music Studio 15's functions.
Keyboard shortcut: F1

Help index

Use this command to show the index of the help. From this page you can jump to specific commands or read through the instructions step by step.

Context help

Use this command to get help about any part of Samplitude Music Studio 15. By pressing the "Context help" button in the top tool bar, the mouse indicator will become an arrow with a question mark. Then, click on any button or menu in one of the tool bars. Information about this topic will then be displayed.

About Samplitude Music Studio 15

[Copyright](#)

notices and version numbers are displayed.

Start selection / Tip of the day

Use this command to get the tip of the day and to display the start selection window.
For tips, the file >tips.txt< is required in the Samplitude Music Studio 15 folder.

System information

A window is displayed, containing information about the memory status and other parameters. Particularly useful is the display of the free storage on all connected disk drives, the system resources being utilized by Samplitude Music Studio 15 and the memory usage. Make sure the parameter for system memory used by Samplitude Music Studio 15 never grows larger than the displayed overall system memory available (physical RAM). If this happens, the performance of Samplitude Music Studio 15 is reduced caused by page swapping (virtual memory) done to compensate for the missing memory.

MAGIX auto-update

Automatically searches the Internet for updates to Samplitude Music Studio 15. An Internet connection must first be provided for this purpose.

Encoder activation

Why activate?

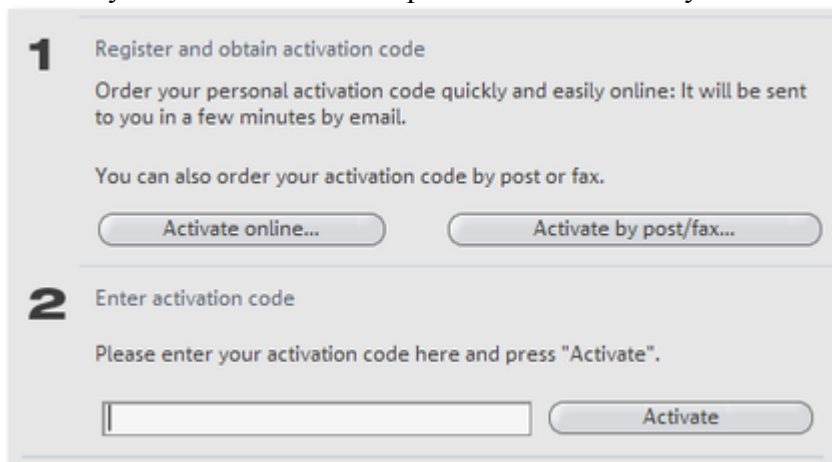
For importing (decoding) or exporting (encoding) specific audio and video formats you require a suitable codec for importing or exporting such formats. Integrating third party de- and encoders usually incurs costs. By offering you such costs as an option and not including them in our programs in general, MAGIX will in future also be able to offer to you our software at good value for money.

Why activate?

For importing (decoding) or exporting (encoding) specific audio and video formats you require a suitable codec for importing or exporting such formats. Integrating third party de- and encoders usually incurs costs. By offering you such costs as an option and not including them in our programs in general, MAGIX will in future also be able to offer to you our software at good value for money.

How does activation work?

Activation is fee-based and can be done online or via post/fax. The quickest and easiest way to order an activation code is via the Internet. Ordering the activation code takes just a few minutes via email. The order of your activation code via post/fax takes a few days.



The screenshot shows a two-step activation process. Step 1, 'Register and obtain activation code', offers two options: 'Activate online...' and 'Activate by post/fax...'. Step 2, 'Enter activation code', features a text input field and an 'Activate' button.

1 Register and obtain activation code

Order your personal activation code quickly and easily online: It will be sent to you in a few minutes by email.

You can also order your activation code by post or fax.

Activate online... Activate by post/fax...

2 Enter activation code

Please enter your activation code here and press "Activate".

 Activate

This is how activation works:

Order activation code online

Click on "Order online..." (Field 1). Your web browser will open where you can register your Samplitude Music Studio 15 first (if you have not already done so). You will then be forwarded to a website where you can request the corresponding activation to be carried out.

Order activation code via post/fax

After clicking on "Order via post/fax" (field 2) your user code will appear. This automatically assigns your personal activation code to your PC. Click on "Continue to order form" to transfer your user code automatically to the post/fax form. Now send the completed form as a print out to the address/fax no. mentioned. Once payment has been processed successfully, your activation code will be sent to you in the post/via fax in just a few days. Optionally it can also be sent by mail if an email address is stated.

Enter activation code

After receiving your personal activation code, you can use the activation dialog for the corresponding file format to start exporting for the respective format. If you receive the activation code via email, then copy it into the input field in the dialog and click "Activate..."

This is how activation works:

Order activation code online

Click on "Order online..." (Field 1). Your web browser will open where you can register your Samplitude Music Studio 15 first (if you have not already done so). You will then be forwarded to a website where you can request the corresponding activation to be carried out.

Order activation code via post/fax

After clicking on "Order via post/fax" (field 2) your user code will appear. This automatically assigns your personal activation code to your PC. Click on "Continue to order form" to transfer your user code automatically to the post/fax form. Now send the completed form as a print out to the address/fax no. mentioned. Once payment has been processed successfully, your activation code will be sent to you in the post/via fax in just a few days. Optionally it can also be sent by mail if an email address is stated.

Enter activation code

After receiving your personal activation code, you can use the activation dialog for the corresponding file format to start exporting for the respective format. if you receive the activation code via email, then copy it into the input field in the dialog and click "Activate...".

Possible problems and their solutions

The MAGIX website won't open

Check your Internet connection, you may have to use manual dial-up.

The MAGIX website won't open

Check your Internet connection; you may have to use manual dial-up.

The form for ordering via post/fax won't open

- Check that an adequate text editing program is installed and activated (for example, MS Word).

I still haven't received an email with the activation code

- Check that your inbox isn't full.
- Have a look in your spam folder.

You can always send questions via email to our support whenever you like. Please have the following information at hand so that we can assist you as quickly and as specifically as possible.

- Complete product name
- Exact version number (to be found in the about box in the "About" menu item of the "Help" menu)
- Encoder/Decoder name

Your user code (accessible via the "Activate via post/fax" dialog)

I installed my MAGIX program onto my new computer or built a new hard disk (sound card, memory...) into my old computer. Now my activation code is no longer accepted.

Activation is linked to a specific computer. Changes to the computer's hardware, for example, integrating a larger hard disk can lead to the computer no longer being recognized as the one for which the activation code has been calculated. This will most likely happen if you install Samplitude Music Studio 15 on a new computer. If this is the case, simply request a new activation code. Since you're already registered as a MAGIX customer, you won't have to pay for another activation.

Online:

When registering on the MAGIX website use your existing MAGIX login details.

Post/Fax:

Print out the order form again and send it to the addressee/fax number stated.

Mouse functions and mouse modes

In this chapter

[Universal mode](#)

[Curves / Object mode](#)

[Range mode \(safe mode\)](#)

[Curve mode](#)

[Cut mode](#)

[Pitchshift / Timestretch mode](#)

[Draw volume mode](#)

[Draw panorama mode](#)

[Wave edit mode \(only wave projects\)](#)

[Scrub mouse mode](#)

[Zoom mode](#)

Universal mode

Right mouse button:	Displays context sensitive pop-up menu.
Left mouse button :	In universal mode a distinction is made between the upper and lower half of a track in the VIP . More mouse functions are available for the left mouse button.

Mouse functions for the upper half of the track:

- Stretch and move ranges (with "Shift")
- Set the start position of the play cursor by clicking next to the object
- Reduce the horizontal zoom level by double clicking next to a range
- Increase of the horizontal zoom level by clicking on a range

Select objects

Single click selects objects (or group of objects).

Single click + Ctrl selects multiple single objects.

Single click + Shift selects multiple objects, including all objects between the two clicks.

If you click left next to an object, you can sketch a rectangle with the mouse button pressed down by dragging the mouse the right. All objects contained therein are selected (lasso function).

Moving objects

Objects

(or a group of objects) are moved if you click into their lower half and drag them to the desired position while holding the mouse key.

Dragging + Shift moves objects or object groups up or down the track list without changing the time position.

Dragging + key "k" move the object under the mouse pointer, plus all objects behind on the same track.

Duplicating objects

Dragging + Ctrl duplicates one or more objects. To do this you also have to click the lower half of the object.

Dragging + Shift + Ctrl duplicates one or more objects and allows the objects to be moved up or down the track list without changing the time position.

Lasso function

Object lasso:

If you click left next to an object in the lower half of the track, you can sketch a rectangle with the mouse button pressed down by dragging the mouse the right. All included objects are selected.

Volume and panorama lasso:

If you click left next to an object in the lower half of the track, you can sketch a rectangle with the mouse button pressed down by dragging the mouse the right. All contained volume and panorama points are selected.

Volume and length of individual objects

You can individually adjust the volume and length with the five object handles.

Object handles: The upper handle changes the object volume. The changed level is shown in dB in the upper left-hand corner of the [VIP](#)

Side handles:

Fade-in or fade-out. The fade curves used here can be set in the crossfade editor.

Lower handle:

Adjusts the length of an object.

Volume and panorama automation curves

The volume and panorama curves can be used to graphically adjust the volume and stereo panorama curves of the tracks. Movable handle points are created on the curve.

Double clicking on the automation curve creates a new curve event. Another double click on the same curve event deletes the event. Selected handles can also be deleted by selecting "Delete curve handles" from the edit menu.

A volume or panorama handle is selected simply by clicking it. Several handles are selected by holding "Ctrl" while clicking.

If you click right next to an object, you can sketch a rectangle with the mouse button by dragging the mouse to the right. All volume and panorama points contained are selected (lasso function).

Selected volume and panorama points can be moved with the mouse. To move several points, you have to hold "Ctrl" while dragging.

Curves / Object mode

This mode differs from the universal mode only in that the track is not split in two halves.

Play cursor, fields, and zooming are not set in the upper part of the track, but rather in the beat line above the first track. All other functions are handled by the universal mode (tracks are split).

The curves/object mode is less complicated to use and is therefore a default setting.

Range mode (safe mode)

Right mouse button

: Displays context sensitive popup menu.

Left mouse button: Selecting ranges and moving ranges ("Shift"). [Objects](#) or automation curves cannot be changed by accident (i.e. "Safe mode").

Create ranges

In range mode, ranges are sketched by clicking and dragging the mouse pointer while holding the mouse button.

The range mode is a "safe" mode, since objects or curves cannot be moved accidentally.

Play cursor

Single clicks place the play cursor anywhere in the track.

Zoom

Double clicks outside of a selected range (or no range) zoom out. Double clicks inside a selected range zoom in.

Quick switch to other mouse modes

Using the "." (period key) temporarily switches to the object mode to allow objects to be moved.

Using the "-" (minus key) temporarily switches to curve mode to allow automation curve events to be moved and manipulated.

Curve mode

Right mouse button: [Context menu](#)

Left mouse button

: Offers a range of functions. I.e.:

Volume and panorama rubber band

When you click on the track near an object, you can, by pulling the mouse to the left or right, spread a rectangle by holding down the mouse key. This will select all volume and panorama points contained in the selection box.

Volume and panorama gradients for the whole track

Using the panorama and volume curves, volume and stereo panorama graduations can be graphically recorded. For this purpose sizing handles which are moved are created on the curve.

A double click on the volume or panorama curve creates a new handle, and another double click clears it. Selected handles may also be cleared by selecting the option "clear handles" in menu "edit".

You may select a volume or panorama handle by a single click. You will select further handles by holding "Ctrl" while clicking.

When you click the track on the right beside an object, you can spread a rectangle with the mouse held down. This selects all volume and panorama points contained within (rubber band function).

You may move selected volume and panorama handles with the mouse. To move several handles, "Ctrl" must be kept depressed.

Cut mode

Right mouse button: [Context menu](#)

Left mouse button

: You can use the mouse cursor like a pair of scissors to crop objects.

Pitchshift / Timestretch mode

Right mouse button: [Context menu](#)

Left mouse button

:The lower right tab allows an object to be compressed or stretched. A timestretching effect is created:

The object is not played as a loop or shorter version, but simply in a different play tempo.

Using the center tab, the pitch can be altered via pitchshifting.

Draw volume mode

Right mouse button

: Displays context sensitive popup menu.

Left mouse button: Draws volume automation curves into [VIP](#) tracks. "V" needs to be active for a respective track prior to drawing the volume curve.

Draw panorama mode

Right mouse button:

Displays context sensitive popup menu.

Left mouse button: Draws volume automation curves into [VIP](#) tracks. "P" needs to be active for a respective track prior to drawing the panorama curve.

Wave edit mode (only wave projects)

Right mouse button: [Context menu](#)

Left mouse button

: Freehand drawing function for wave format.

Scrub mouse mode

Right mouse button: [Context menu](#)

Left mouse button

: Scrub function. Click project to pre-listen with control over play tempo. The project will be played forward and back controlled by the distance of the mouse pointer from the actual play cursor position. The larger the distance the faster the play tempo. You can set 3 individual scrub modes in the play parameter window .

Zoom mode

Right mouse button

: Zooms out of the project

Left mouse button

: Zooms into the project

Button overview

When the program is first started, only the tools and mouse mode bars are opened in the upper right corner of the monitor. All further ones may be added via menu "windows".

All toolbars may be placed on the screen at discretion, and they are automatically arranged in the upper part of the screen by a double click onto the header line.

In this chapter

[Toolbar \(left\)](#)

[Toolbar \(right\)](#)

[Mouse mode bar](#)

[Positioning bar \(left\)](#)

[Positioning bar \(right\)](#)

[Range bar](#)

Toolbar (left)



- 1 New multitrack project
- 2 Open [VIP](#)
- 3 Open audio file
- 4 Save project
- 5 Cut
- 6 Copy
- 7 Insert
- 8 Split object

Toolbar (right)



- 1 Magnetic raster
- 2 Auto crossfade mode
- 3 [Crossfade](#)
editor
- 4 Group selected objects
- 5 Ungroup selected objects
- 6 Set marker
- 7 Set track index
- 8 Set sub index
- 9 Set pause
- 10 Set CD end
- 11 Set indexes at object borders
- 12 Make CD
- 13 Play once
- 14 Play loop
- 15 Play into range
- 16 Stop
- 17 Record options
- 18 Multi-I/O recording
- 19 Mixer

Mouse mode bar



- 1 Universal mode
- 2 [Range](#) mode
- 3 Curve mode
- 4 Object and curve mode
- 5 Cut mode
- 6 Pitchshift/Timestrech mode
- 7 Draw volume mode
- 8 Draw panorama mode
- 9 Draw wave mode (wave projects only)
- 10 Scrubbing mouse mode
- 11 Zoom mode

Positioning bar (left)



1	Cropping at start
2	Cropping to left
3	Half cropping to left
4	Half cropping to right
5	Cropping to right
6	Cropping at end
7	Object edge left
8	Object edge right
9	Range to last marker
10	Range to next marker
11	Zoom in
12	Zoom out
13	Zoom all
14	Range as clipping
15	1 pixel = 1 sample

Positioning bar (right)



- 1 - 4 Zooming range 1 sec, 10 sec, 60 sec, or 10 min
- 5 - 8 Freely definable zoom sections
- 9 Zoom in vertically
- 10 Zoom out vertically
- 11 Zoom all vertically
- 12 [Range](#)
 as vertical clipping
- 13 Zoom in waveform
- 14 Zoom out waveform

Range bar



- 1 Play cursor to start of range
- 2 Play cursor to end of range
- 3 Fold range to the left
- 4 Fold range to the right
- 5 Start range at previous zero point
- 6 Start range at next zero point
- 7 End range at previous zero point
- 8 End range at next zero point
- 9 [Range](#)
editor

Preset keyboard shortcuts

Note:

Create, change, and remove your own keyboard shortcuts via "Options -> Program settings -> Edit keyboard shortcuts and menus...". One click in the dialog on "All" opens an overview of all keyboard shortcuts defined in the menu. Keyboard shortcuts in brackets (<>) cannot be changed.

In this chapter

[File menu](#)

[Edit menu](#)

[View menu](#)

[Track menu](#)

[Object menu](#)

[Real-time effects menu](#)

[Offline effects menu](#)

[Range menu](#)

[CD/DVD menu](#)

[Tools menu](#)

[Playback menu](#)

[MIDI menu](#)

[Options menu](#)

[Window menu](#)

[Help menu](#)

[Mouse](#)

File menu

New Virtual Project (VIP)	E
Open	
Virtual Project (*.vip)	O
HD wave project (*.hdp)	Shift + L
Load / Import	
Load audio file	W
Import audio file	Ctrl + I
MIDI	Shift + M
(*.mid)	
Save	Ctrl + S
Save as	Shift + S
Export audio (wave)	Ctrl + E

Edit menu

Undo

Ctrl + Z

Redo

Ctrl + Y

Cut

X

Delete

Del

Copy

C / Ctrl + C / Ctrl +

Ins

Paste from clip

V / Ctrl + V / Shift +

Ins

More

Set silence

Alt + Del

Copy + silence

Ctrl + Alt + C

Copy as...

Shift + C

Overwrite with clip

Alt + V / Ins

View menu

Sections

1	Shift + B
Activate next section	Page down
Activate previous section	Page up
Grid	'
Snap to grid	Ctrl + '
VIP	Shift + Tab
display mode > Definition	
Switch 1/2 mode	Tab
Store position and zoom factor	
1	Ctrl + Numeric "1"
2	Ctrl + Numeric "2"
3	Ctrl + Numeric "3"
Store zoom factor	
1	Ctrl + Numeric "4"
2	Ctrl + Numeric "5"
3	Ctrl + Numeric "6"
Get position and zoom factor	
1	Numeric "1"
2	Numeric "2"
3	Numeric "3"
Get zoom factor	
1	Numeric "4"
'2	Numeric "5"
3	Numeric "6"
Horizontal	
Half section left	Ctrl + Alt + Cursor left
Half section right	Ctrl + Alt + Cursor right
Section to play cursor	Ctrl + Alt + ,
Section to range start	Alt + Home, Ctrl + Shift + Page up
Section to range end	Alt + End, Ctrl + Shift + Page down
Zoom in	Cursor up, Ctrl + Cursor right
Zoom out	Cursor down, Ctrl + Cursor left
Show all	Ctrl + Alt + Cursor up
Zoom to range	Ctrl + Alt + Cursor down
Vertical	

Half section up
Half section down
Zoom out wave
Zoom in wave

Shift + Cursor up
Shift + Cursor down
Ctrl + Cursor down
Ctrl + Cursor up

Track menu

Track properties

Mute

Mute / Inactive

Solo

Solo exclusive

Record

Monitoring

Lock

Volume curve active

Pan curve active

Edit volume

Edit Pan

Alt + M

Ctrl + Alt + M

Alt + S

Ctrl + Alt + S

Alt + R

Ctrl + Alt + Shift + F

Alt + L

Alt + K

Alt + P

Ctrl + Shift + K

Ctrl + Shift + P

Object menu

Cut objects	
Duplicate and move	Ctrl + D
Separate with alternative crossfade	Shift + T
Separate objects	T
Trim objects	Ctrl + T
Undo object split	Ctrl + Alt + T
Glue objects	Ctrl + Alt + G
Move/edit objects/crossfade	
Object step size 1	
(left) Object to left	Ctrl + 1
(right) Object to left	Alt + 1
(left) Object to right	Ctrl + 2
(right) Object to right	Alt + 2
Object(s) to left	Ctrl + Alt + 1
Object(s) to right	Ctrl + Alt + 2
Object start to left	Ctrl + 3
Object start to right	Ctrl + 4
Object end to left	Alt + 3
Object end to right	Alt + 4
Crossfade	Ctrl + Alt + 3
to left	
Crossfade to right	Ctrl + Alt + 4
Object start offset to left	Ctrl + 5
Object start offset to right	Ctrl + 6
Object end offset to left	Alt + 5
Object end offset to right	Alt + 6
Increase left volume	Ctrl + 8
Reduce left volume	Ctrl + 7
Increase right volume	Alt + 8
Reduce right volume	Alt + 7
Increase volume	Ctrl + Alt + 8
Reduce volume	Ctrl + Alt + 7
(left) Object content to left	Ctrl + 9
(left) Object content to right	Ctrl + 0
(right) Object content to left	Alt + 9
(right) Object content to right	Alt + 0
Object content to left	Ctrl + Alt + 9
Object content to right	Ctrl + Alt + 0
Object step size 2	
(left) Object to left	Ctrl + Shift + 1

(right) Object to left	Alt + Shift + 1
(left) Object to right	Ctrl + Shift + 2
(right) Object to right	Alt + Shift + 2
Object(s) to left	Ctrl + Alt + Shift + 1
Object(s) to right	Ctrl + Alt + Shift + 2
Object start to left	Ctrl + Shift + 3
Object start to right	Ctrl + Shift + 4
Object end to left	Alt + Shift + 3
Object end to right	Alt + Shift + 4
Crossfade to left	Ctrl + Alt + Shift + 3
Crossfade to right	Ctrl + Alt + Shift + 4
Object start offset to left	Ctrl + Shift + 5
Object start offset to right	Ctrl + Shift + 6
Object end offset to left	Alt + Shift + 5
Object end offset to right	Alt + Shift + 6
Increase left volume	Ctrl + Shift + 8
Reduce left volume	Ctrl + Shift + 7
Increase right volume	Alt + Shift + 8
Reduce right volume	Alt + Shift + 7
Increase volume	Ctrl + Alt + Shift + 8
Reduce volume	Ctrl + Alt + Shift + 7
(left) Object content to left	Ctrl + Shift + 9
(left) Object content to right	Ctrl + Shift + 0
(right) Object content to left	Alt + Shift + 9
(right) Object content to right	Alt + Shift + 0
Object content to left	Ctrl + Alt + Shift + 9
Object content to right	Ctrl + Alt + Shift + 0
Object to position of play marker	Ctrl + Alt + P
Object to original position	Ctrl + Alt + O
Arrange objects	Ctrl + Alt + Shift + A
Mute objects	Ctrl + M
Create looped object	Ctrl + L
Select objects	
Select all objects	Ctrl + A
Unselect all objects	Ctrl + Shift + A
Select next object	> / Ctrl + Alt + W
Select previous object	< / Ctrl + Alt + Q
Object lasso	Ctrl + Alt + L
Build group	Ctrl + G
Ungroup	Ctrl + U
Object name	Ctrl + N
Object editor	Ctrl + O
Object manager	Ctrl + Shift + O
Take manager	Ctrl + Alt + Shift + T

Real-time effects menu

Elastic [Audio](#)

Ctrl + Shift + E

Offline effects menu

Normalize...

Normalize (quick access)

Manual declicker

Shift + N

N

Ctrl + Shift + D

Range menu

Select all as range	A
Move play markers	
Marker at start	Home
Set marker at end	End
Move left in side mode	Arrow left
Move left in scroll mode	Alt + arrow left
Move right in side mode	Arrow right
Move right in scroll mode	Alt + arrow right
Object edge left	Ctrl + Q
Object edge right	Ctrl + W
Track marker left	F 2 / Alt + Q
Marker right	F 3 / Alt + W
Manipulate range	
Range	Alt + '/'
start to left	
Range start to right	Alt + '*'
Range end to left	Shift + arrow left / Alt + '-'
Range end to right	Alt + '+' / Shift + Arrow right
Fold range to left	Ctrl + Shift + Arrow right
Fold range to right	Ctrl + Shift + Arrow right
Range start -> 0	Ctrl + Page Up
Range start <- 0	Shift + Page Up
Range end -> 0	Ctrl + Page Up
Range end <- 0	Shift + Page Down
Set range start to left marker	Shift + F2
Set range start to right marker	Shift + F3
Split range	B
Remember range	Alt + F2 - F10 (exception: Alt + F4 and F9)
Other...	Alt + F11
Get range	Ctrl + F2-F10
Get range length	Ctrl + Shift + F2-F10
Save marker	Shift + 0-9
Marker with name...	?
Marker with automatic numbering	Shift + #
Set marker to record position	Alt + ?
Get marker	1 - 9, 0
Restore	Shift + Backspace
previous range	
Box 1	Alt + Numpad 1
Box 2	Alt + Numpad 2

Box 3

Alt + Numpad 3

Box 4

Alt + Numpad 4

Box 5

Alt + Numpad 5

CD/DVD menu

Set track index

Ctrl + Alt + I

Remove all indexes

Ctrl + Alt + Shift + I

CD index manager

Ctrl + Alt + Shift + D

Tools menu

Manager	
File browser	Ctrl + Shift + B
Object manager	Ctrl + Shift + O
Track manager	Ctrl + Shift + S
Marker manager	Ctrl + Alt + Shift + M
Range manager	Ctrl + Alt + Shift + B
Take manager	Ctrl + Alt + Shift + T

Playback menu

Play	Space
Replay	Space
Play with preload	Shift + Space
Play in range/loop	Shift + P
Only play selected objects	Ctrl + Space
Stop and jump to	
Current position	Number block ','
Playback parameters	P
Playback mode	
Auto scroll	Scroll lock
Soft autoscroll	Shift + Scroll
Scrubbin activated	Alt + Shift + Arrow down
Scrubbing left	Alt + Shift + Arrow left
Scrubbing right	Alt + Shift + Arrow right
Recording	R
Record options...	Shift + R
Input monitoring	Alt + Shift + M

MIDI menu

Object editor

Glue [MIDI](#)

objects

Track information

MIDI controllers

Ctrl + O

Ctrl + Alt + G

Alt + I

Ctrl + Alt + A

Options menu

Project properties

Mixer setup...

Playback parameters

Project status

Project options

Track information...

Synchronization active

Synchronization settings...

Display options

System

Ctrl + Shift + M

P

Shift + I

Ctrl + Shift + #/I

Alt + I

G

Shift + G

Shift + Tab

Y

Window menu

Tiled

[Restore](#)

Mixer

Time display

Visualization

Transport console

Close all windows

Enter

Shift + Backspace

M

Ctrl + Shift + Z

Ctrl + Alt + Shift + V

Ctrl + Shift + T

Ctrl + H

Help menu

Help

Context help

F1

Shift+ F1

Mouse

Center click

Wheel

Shift + Wheel

+ Ctrl

+ Shift

+ Ctrl + Shift

Start/Stop playback

Horizontal scrolling

Fine tuning for active
dials/faders

Horizontal zoom

Vertical zoom

(Enlarge/diminish
waveform)

Vertical scrolling in
VIPs (tracks)

Mouse

Center click

Wheel

Shift + Wheel

+ Ctrl

+ Shift

+ Ctrl + Shift

Start/Stop playback

Horizontal scrolling

Fine tuning for active
dials/faders

Horizontal zoom

Vertical zoom

(Enlarge/diminish
waveform)

Vertical scrolling in

VIPs (tracks)

General settings

You can access the project-independent Samplitude Music Studio 15 settings this way. These settings are also global.

"Easy mode" displays a simplified dialog with the most important basic settings.

Keyboard shortcut: Y

In this chapter

[System / Audio](#)

[Program](#)

[Editing keyboard shortcuts and menus](#)

[Design](#)

[Easy setup](#)

System / Audio

In the "System" menu, you have options to fine-tune Samplitude Music Studio 15.

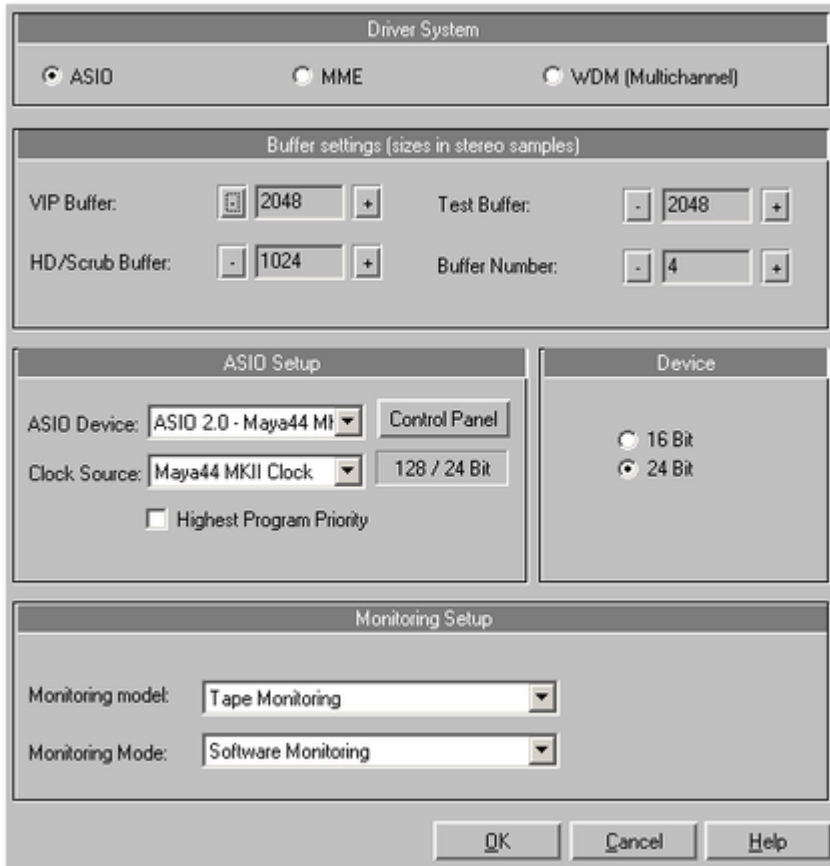
In detail, these are:

- [Audio](#) playback settings (playback devices)
- Audio record settings (recording devices)
- Program options
- Paths/Skins
- View options
- Color setup (colors)
- Metronome settings ([MIDI](#) options)

Most of the dialogs can also be activated separately via the different menus and are explained at a the corresponding position. In the following, you can find the explanations on system settings directly via the system/audio dialog.

Audio setup (audio playback settings)

The installed sound cards are listed in the large window at the top of the dialog. The "Device info" button opens a small dialog with information about the sound card activated in the adjacent window (supported sample rates, manufacturer, etc.).



Device resolution/communication

Here you can specify the bit resolution for communicating with the audio driver for recording and playback. Usually, resolution selection is automatic. If the output device is not able to display at the desired resolution (e.g. 24-bit), Samplitude Music Studio 15 automatically creates an appropriate lower solution (dithered) which is then sent to the driver. In certain circumstances, e.g. if the driver triggers error messages (because it registers certain resolutions but can not actually play/record them), you can force a 16-bit driver address.

Driver system

You can choose between MME, WDM Multichannel and ASIO. MME is the standard Windows multimedia driver system. WDM (Multichannel): try to use this driver if your sound card supports 24/32-bit playback and problems result when playing back high-resolution audio files.

ASIO

ASIO drivers have some advantages over MME (provided that your sound card model is issued with ASIO drivers):

MAGIX includes LoLa, a universal ASIO driver which can be applied by many sound cards which do not have ASIO drivers.

- Lower latency of the driver system. This results in considerably lower response times for real-time editing. This enables software monitoring of the inputs (and VST instruments). The [CPU](#) load of the system drops, more high-quality effects are possible without intermediate bouncing.
- Driver-side synchronization between recording and playback is available. This ensures that overdub recordings are 100 % stable regarding timing. This also allows for mechanisms for

compensating latency for effects permitting software FX monitoring.

- Furthermore, ASIO offers a general method for treating multi-channel audio. All bit resolutions and multi-channel problems that can otherwise occur with WDM drivers in Win2K/XP are thereby avoided fundamentally.
- Advanced hardware monitoring options via use of ASIO direct monitoring (flexible routing including pan & volume, regardless of sound card).

ASIO setup

ASIO drivers

: The drivers of each ASIO device currently available in the system are listed here. "Settings" opens the settings dialog of the sound card driver. Please refer to the sound card manual for more information.

Buffer settings

Play/Record buffer

: Specifies the buffer sizes for playback or recording of audio data.

In principle, the larger the buffer, the safer playback will operate on slower systems or at full load. The number of simultaneously playable tracks also increases. However, this reduces the reaction time of the CPU, which can particularly disturb real-time effects. We therefore recommend searching for an optimum compromise for your system.

When recording and playing simultaneously, the record and play buffer have to be the same size.

HD buffer

: 8000 samples is the preset buffer. This buffer is applied during playback directly in HD wave projects. Test smaller values here for even faster reaction times!

[VIP](#) buffer

: 16000 samples is the preset buffer used for playing back virtual projects. As error-free playback is usually more important than fast reaction times, this value should be possible to be increased from 16000 to 32000 when playing many tracks. When playing virtual projects or using the mixer only these settings are relevant.

Test buffer

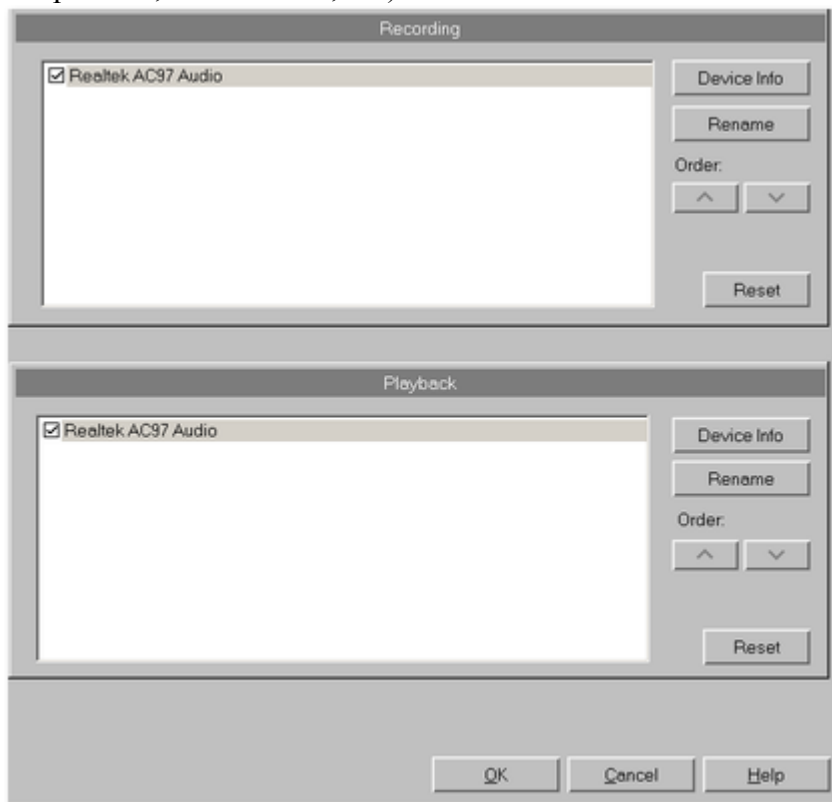
: 8000 samples is the preset buffer. This buffer is only used for real-time preview of effects from the effects menu.

Buffer number

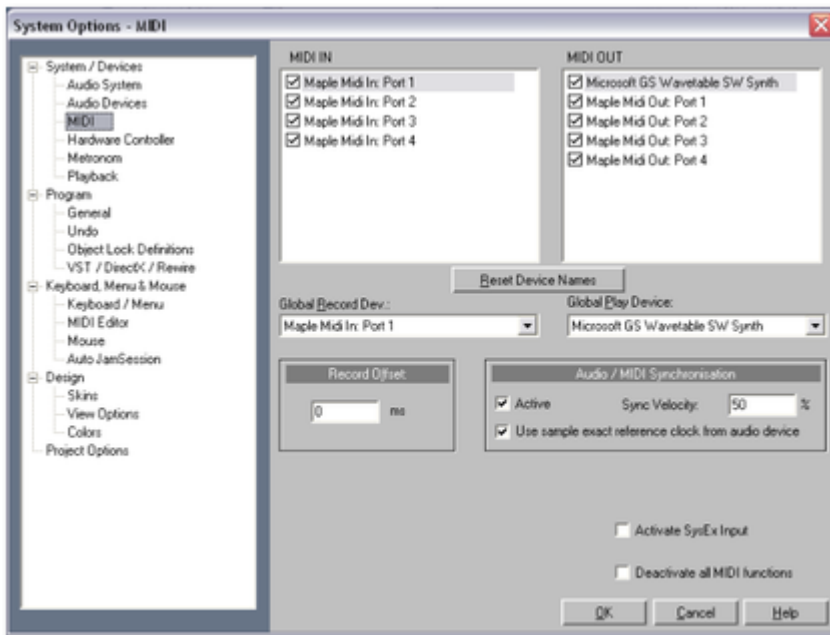
: Specify how many of the buffers described above should be used (between 2 and 10). More buffers increase reliability, but also increase the memory requirements. Reaction times become longer. You can check the current buffer usage levels in the status bar to the bottom right.

Record devices

The installed sound cards are listed in the large window at the top of the dialog. With "Device info" you can open the small dialog for information on the sound card activated in the adjacent window (supported sample rates, manufacturer, etc.).



MIDI



Playback devices:

Here you can define which devices are available in Samplitude Music Studio 15 and which are not.

Global play/Record devices: Specifies the driver that Samplitude Music Studio 15 should use to playback [MIDI](#) tracks by default. Of course an individual driver or one of the installed VST plug-ins can be selected for any [VIP](#) track (only in the VIP track).

Global play/Record devices:

Specifies the driver that Samplitude Music Studio 15 should use to playback MIDI tracks by default.

You can also disable all MIDI functions for troubleshooting purposes by checking the "**Deactivate all MIDI functions**

" option. Samplitude Music Studio 15 will then refrain from reproducing any MIDI data in any of its project windows.

Recording offset:

Here you can enter the delay in milliseconds to be used when starting recording.

[Audio/MIDI synchronisation](#)

: If this box is checked you can specify the intensity of audio/MIDI synchronization coupling.

0% Very low

50% Medium

100% Very high

Hardware controllers

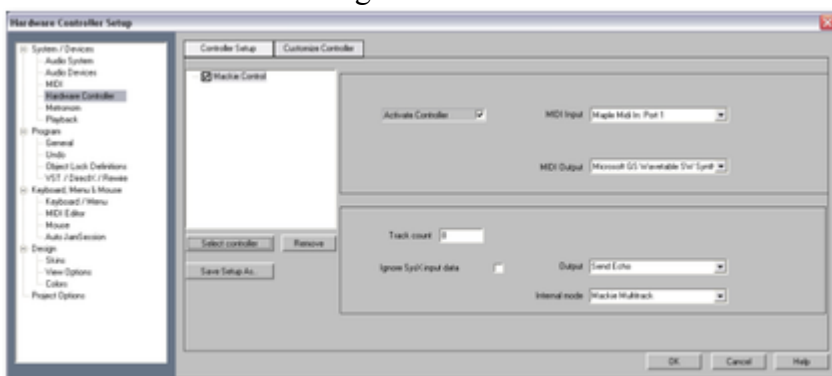
Samplitude Music Studio 15 lets you use external hardware controllers to conveniently control the software. Several presets for common controllers are included (.cps files). The number of supported devices is continuously being increased and adapted to new devices available on the market.

A [MIDI](#) interface is required for using a hardware controller. Please ensure that the MIDI functions of the program are not deactivated as they are necessary for addressing the [MIDI](#) controllers.

Installing a hardware controller

Open the **hardware controller setup** dialog by pressing "Y". You are now in the system/options dialog. Now open the subcategory "[Hardware controllers](#)".

The hardware controller setup contains two tabs. The first one is used for general settings while the second one is used for learning functions.



1. Press the "**Select controller**" button. Then select your controller or a compatible model from the list. With **Delete** or "Del" you can remove selected controllers again. You can use the mouse to change the order of the controllers and their internal assignment. A controller that is indented corresponds to an expansion module. You can use the check box above the controller or the "**Activate controller**" button to temporarily deactivate a controller.
2. On the right you can select the [MIDI](#) parts that are connected to your controller.
3. Your controller is ready for action after you have closed the dialog.

Track number

Specifies the number of tracks in a bank available to the controller. These are usually 8 tracks. Mackie Control and HUI Protocol can only access 8 channels per bank. However, there are also controllers that have a native mode letting you learn several channels. Here you can set this value to 16 or 24 (max. 64). The value is set to "1" for single-track controllers.

Ignore SysEx input data

SysEx data sent by the controller is not processed by Samplitude Music Studio 15.

Internal mode

The internal modes are used to adapt Samplitude Music Studio 15 to different hardware controllers that have a different concept. Depending on the mode, the controller display is addressed differently and the controller information is interpreted differently by Samplitude Music Studio 15.

Hint:

If you are using a controller different to the one listed here you should select one from the list that is similar to yours in concept and design.

Internal mode description:

► [Mackie Multitrack](#)

Track mode (Standard)

Activation:

Assignment Track

Active Control Mode

Activation:

2 x Assignment Track

Function:

Changes the value of the selected element in the mixer with the 1st fader.

Panorama mode

Activation:

Assignment Pan

Function:

Panorama values are shown in the display.

PhatChannel AUX mode

Activation: Assignment AUX

Function: Controls all AUX sends in the selected channel.

AUX track mode

Activation:

2 x Assignment AUX

Function:

Controls AUX sends of the different tracks in the selected slot.

The active slot can be selected with the used keys for "Mixer track 8 up" or "Mixer track 8 down".

PhatChannel EQ mode

Activation:

EQ assignment

Function:

Controls the EQ of the selected track using VPots.

The display page is toggled with the keys "Mixer track 8 up/down".

PhatChannel EQ mode band type

Activation:

2 x Assignment EQ

Function: Controls the EQ of the selected track using VPots in a different order.

[Plug-in mode](#)

Activation:

EQ assignment

Preset:

- Select the plug-in by pressing the corresponding VPot, e.g. 2nd plug-in with 2nd VPot. ("Push VPot" can also be assigned to a different key).
- Now you can control all parameters of the corresponding plug-ins with the vpots. The display page is toggled with the keys "Mixer track 8 up/down".

► [Frontier AlphaTrack](#)

Panorama mode

Activation:

Assignment Track

Features:

- Panorama control
- Navigate to markers
- Move selected track

Active Control Mode

Activation:

2 x Assignment Track

Function:

Changes the value of the selected element in the mixer with the fader.

AUX mode

Activation:

Assignment AUX

Features:

- Select other track
- Select other slot
- Change AUX send of the selected track/selected slot

EQ mode

Activation:

EQ assignment

Function:

Controlling the input volume, frequency and quality bands of the selected EQs.

The bands are selected with "Mixer track up/down".

Plug-in mode

Activation:

EQ assignment

Features:

- Select track
- Select plug-in slot in the track with "Mixer track up/down" key
- Now you can control 3 parameters of the corresponding plug-ins with the vpots. The display page is toggled with the keys "Mixer track up/down".

► [Frontier Tranzport](#)

Functions:

For transport only

► [JLCooper \(MCS\)](#)

Track mode (Standard)

Activation:

Assignment Track

Active Control Mode

Activation:

2 x Assignment Track

Function:

Changes the value of the selected element in the mixer with the 1st fader.

AUX mode

Activation: Assignment AUX

Function: Controls all AUX sends in the selected channel.

EQ mode

Activation:

EQ assignment

Function:

Controls the EQ of the selected track using VPots.

Output

Deactivate:

If your PC does not have a motor fader, you can use this option to deactivate the transmission of controller data.

Normal send: The [MIDI](#)

controller data is received and processed. Program data (e.g. fade changes in the mixer) are sent to the controller.

Send echo:

The MIDI controller data is received and processed and forwarded straight back to the controller.

Controllers need this for their displays (lamps, LEDs). Program data (e.g. fade changes in the mixer) are sent to the controller. If your controller has difficulties with this (e.g. Logic Control), activate "Normal send".

Send echo (without fader touch):

The MIDI controller data is received, processed and returned to the controller. However, the fader values are not sent back while it is moved (activated fader touch). Only the last value is released to prevent increased data volumes. Program data (e.g. fade changes in the mixer) are sent to the controller. If your controller has difficulties with this (e.g. Logic Control), activate "Normal send".

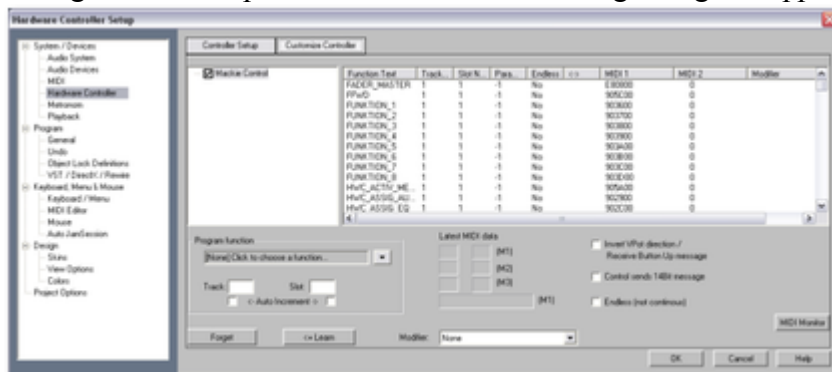
Adjusting the hardware controller/creating your own set

Most devices available on the market understand protocols such as Mackie Control or HUI. If your device is not included in the list simply select the nearest compatible device.

If you can't find your device in the list or want to change the default settings, you should proceed as follows:

Before adapting an existing template to your controller you should save it under a new name using the "Save as..." option.

Now go to the "Adapt controller" tab. The following dialog will appear:



Use Mackie Control if your controller can emulate this mode. In this case 7-bit values are transmitted.

You can see this in the [MIDI](#)

input monitor. Pressing a key displays a new line, another line is displayed upon key release. HUI receives 14-bit messages, i.e. two lines respectively.

In the parallel opened mixer you can now select the element you want to program on your controller. The

saved function is displayed in the **Program function** section, e.g. "[Fader master](#)" for the fader in Samplitude Music Studio 15's mixer. Alternatively, you can open the context menu which contains a list of all remotely controllable functions in Samplitude Music Studio 15. You can now assign them to your controller one after another. The upper commands are mixer-only functions and intended only for connecting the controller. The lower ones represent the entire menu structure of Samplitude Music Studio 15. This allows you to assign any menu command to a controller key. Please note that the test LED of the controller is not active for menu commands. Now move the fader or press the corresponding key on your controller. The MIDI data of this element is displayed in the **Last MIDI data** section. Press the **Learn** button to allocate the new data to the function.

Note: [Hardware](#)

controllers with touch-sensitive faders transmit data to Samplitude Music Studio 15 when released again, so that the "learn" button has to be pressed after moving and before releasing a fader!

If you want to use a key/fader for multiple tracks, e.g. learn mute, select "Mixer/tracks/track mute" in "Samplitude Music Studio 15 functions". Now activate the check for "**Auto increment**" and start programming the first track. After pressing **Learn** the value of the track is automatically increased by "1". All you have to do is to actuate the next element on your controller and press **Learn** again.

You can use the "Del" button to abandon a function assignment. However, you can also simply overwrite the data by relearning.

If a controller should move in the wrong direction after programming, please repeat the programming sequence and activate **Invert Vpot direction upon button release**.

If you want to know which functions have been assigned to a key of your controller, simply actuate this key. The data appears in the list of assigned functions.

This way you can let Samplitude Music Studio 15 learn individual control elements of your hardware controller.

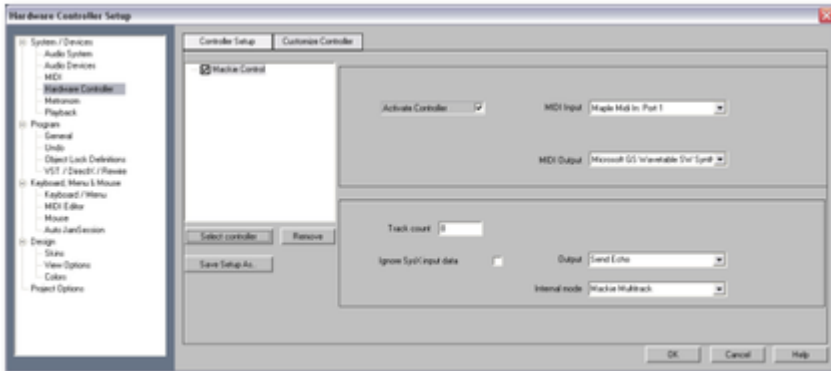
Hint:

If object mode is activated, then you can jump to the next object with the rewind/fast forward keys on your hardware controller's transport control. The same applies to marker mode, whereby you can jump to the previous or next controller in the project.

Installing a hardware controller

Open the **hardware controller setup** dialog by pressing "Y". You are now in the system/options dialog. Now open the subcategory "[Hardware controllers](#)".

The hardware controller setup contains two tabs. The first one is used for general settings while the second one is used for learning functions.



1. Press the "**Select controller**" button. Then select your controller or a compatible model from the list. With **Delete** or "Del" you can remove selected controllers again. You can use the mouse to change the order of the controllers and their internal assignment. A controller that is indented corresponds to an expansion module. You can use the check box above the controller or the "**Activate controller**" button to temporarily deactivate a controller.
2. On the right you can select the [MIDI](#) parts that are connected to your controller.
3. Your controller is ready for action after you have closed the dialog.

Track number

Specifies the number of tracks in a bank available to the controller. These are usually 8 tracks. Mackie Control and HUI Protocol can only access 8 channels per bank. However, there are also controllers that have a native mode letting you learn several channels. Here you can set this value to 16 or 24 (max. 64). The value is set to "1" for single-track controllers.

Ignore SysEx input data

SysEx data sent by the controller is not processed by Samplitude Music Studio 15.

Internal mode

The internal modes are used to adapt Samplitude Music Studio 15 to different hardware controllers that have a different concept. Depending on the mode, the controller display is addressed differently and the controller information is interpreted differently by Samplitude Music Studio 15.

Hint:

If you are using a controller different to the one listed here you should select one from the list that is similar to yours in concept and design.

Internal mode description:

► [Mackie Multitrack](#)

Track mode (Standard)

Activation:

Assignment Track

Active Control Mode

Activation:

2 x Assignment Track

Function:

Changes the value of the selected element in the mixer with the 1st fader.

Panorama mode

Activation:

Assignment Pan

Function:

Panorama values are shown in the display.

PhatChannel AUX mode

Activation: Assignment AUX

Function: Controls all AUX sends in the selected channel.

AUX track mode

Activation:

2 x Assignment AUX

Function:

Controls AUX sends of the different tracks in the selected slot.

The active slot can be selected with the used keys for "Mixer track 8 up" or "Mixer track 8 down".

PhatChannel EQ mode

Activation:

EQ assignment

Function:

Controls the EQ of the selected track using VPots.

The display page is toggled with the keys "Mixer track 8 up/down".

PhatChannel EQ mode band type

Activation:

2 x Assignment EQ

Function: Controls the EQ of the selected track using VPots in a different order.

[Plug-in mode](#)

Activation:

EQ assignment

Preset:

- Select the plug-in by pressing the corresponding VPot, e.g. 2nd plug-in with 2nd VPot. ("Push VPot" can also be assigned to a different key).
- Now you can control all parameters of the corresponding plug-ins with the vpots. The display page is toggled with the keys "Mixer track 8 up/down".

► [Frontier AlphaTrack](#)

Panorama mode

Activation:

Assignment Track

Features:

- Panorama control
- Navigate to markers
- Move selected track

Active Control Mode

Activation:

2 x Assignment Track

Function:

Changes the value of the selected element in the mixer with the fader.

AUX mode**Activation:**

Assignment AUX

Features:

- Select other track
- Select other slot
- Change AUX send of the selected track/selected slot

EQ mode**Activation:**

EQ assignment

Function:

Controlling the input volume, frequency and quality bands of the selected EQs.

The bands are selected with "Mixer track up/down".

Plug-in mode**Activation:**

EQ assignment

Features:

- Select track
- Select plug-in slot in the track with "Mixer track up/down" key
- Now you can control 3 parameters of the corresponding plug-ins with the vpots. The display page is toggled with the keys "Mixer track up/down".

► [Frontier Tranzport](#)**Functions:**

For transport only

► [JLCooper \(MCS\)](#)**Track mode (Standard)****Activation:**

Assignment Track

Active Control Mode**Activation:**

2 x Assignment Track

Function:

Changes the value of the selected element in the mixer with the 1st fader.

AUX mode

Activation: Assignment AUX

Function: Controls all AUX sends in the selected channel.

EQ mode**Activation:**

EQ assignment

Function:

Controls the EQ of the selected track using VPots.

Output

Deactivate:

If your PC does not have a motor fader, you can use this option to deactivate the transmission of controller data.

Normal send: The [MIDI](#)

controller data is received and processed. Program data (e.g. fade changes in the mixer) are sent to the controller.

Send echo:

The MIDI controller data is received and processed and forwarded straight back to the controller. Controllers need this for their displays (lamps, LEDs). Program data (e.g. fade changes in the mixer) are sent to the controller. If your controller has difficulties with this (e.g. Logic Control), activate "Normal send".

Send echo (without fader touch):

The MIDI controller data is received, processed and returned to the controller. However, the fader values are not sent back while it is moved (activated fader touch). Only the last value is released to prevent increased data volumes. Program data (e.g. fade changes in the mixer) are sent to the controller. If your controller has difficulties with this (e.g. Logic Control), activate "Normal send".

Adjusting the hardware controller/creating your own set

Most devices available on the market understand protocols such as Mackie Control or HUI. If your device is not included in the list simply select the nearest compatible device.

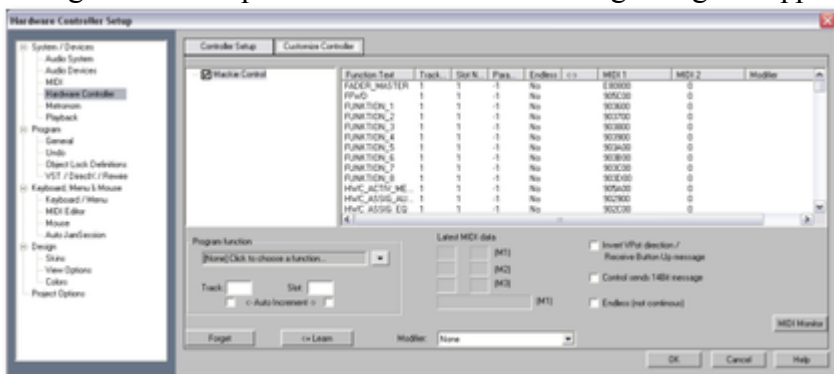
If you can't find your device in the list or want to change the default settings, you should proceed as follows:

Before adapting an existing template to your controller you should save it under a new name using the "

Save as..."

option.

Now go to the "Adapt controller" tab. The following dialog will appear:



Use Mackie Control if your controller can emulate this mode. In this case 7-bit values are transmitted.

You can see this in the [MIDI](#)

input monitor. Pressing a key displays a new line, another line is displayed upon key release. HUI receives 14-bit messages, i.e. two lines respectively.

In the parallel opened mixer you can now select the element you want to program on your controller. The saved function is displayed in the **Program function** section, e.g. "[Fader](#)

master" for the fader in Samplitude Music Studio 15's mixer. Alternatively, you can open the context menu which contains a list of all remotely controllable functions in Samplitude Music Studio 15. You can now assign them to your controller one after another. The upper commands are mixer-only functions and intended only for connecting the controller. The lower ones represent the entire menu structure of Samplitude Music Studio 15. This allows you to assign any menu command to a controller key. Please note that the test LED of the controller is not active for menu commands.

Now move the fader or press the corresponding key on your controller. The MIDI data of this element is

displayed in the **Last MIDI data** section. Press the **Learn** button to allocate the new data to the function.

Note: [Hardware](#)

controllers with touch-sensitive faders transmit data to Samplitude Music Studio 15 when released again, so that the "learn" button has to be pressed after moving and before releasing a fader!

If you want to use a key/fader for multiple tracks, e.g. learn mute, select "Mixer/tracks/track mute" in "Samplitude Music Studio 15 functions". Now activate the check for "**Auto increment**" and start programming the first track. After pressing **Learn** the value of the track is automatically increased by "1". All you have to do is to actuate the next element on your controller and press **Learn** again.

You can use the "Del" button to abandon a function assignment. However, you can also simply overwrite the data by relearning.

If a controller should move in the wrong direction after programming, please repeat the programming sequence and activate **Invert Vpot direction upon button release**.

If you want to know which functions have been assigned to a key of your controller, simply actuate this key. The data appears in the list of assigned functions.

This way you can let Samplitude Music Studio 15 learn individual control elements of your hardware controller.

Hint:

If object mode is activated, then you can jump to the next object with the rewind/fast forward keys on your hardware controller's transport control. The same applies to marker mode, whereby you can jump to the previous or next controller in the project.

Track number

Specifies the number of tracks in a bank available to the controller. These are usually 8 tracks. Mackie Control and HUI Protocol can only access 8 channels per bank. However, there are also controllers that have a native mode letting you learn several channels. Here you can set this value to 16 or 24 (max. 64). The value is set to "1" for single-track controllers.

Ignore SysEx input data

SysEx data sent by the controller is not processed by Samplitude Music Studio 15.

Internal mode

The internal modes are used to adapt Samplitude Music Studio 15 to different hardware controllers that have a different concept. Depending on the mode, the controller display is addressed differently and the controller information is interpreted differently by Samplitude Music Studio 15.

Hint:

If you are using a controller different to the one listed here you should select one from the list that is similar to yours in concept and design.

Internal mode description:

► [Mackie Multitrack](#)

Track mode (Standard)

Activation:

Assignment Track

Active Control Mode

Activation:

2 x Assignment Track

Function:

Changes the value of the selected element in the mixer with the 1st fader.

Panorama mode

Activation:

Assignment Pan

Function:

Panorama values are shown in the display.

PhatChannel AUX mode

Activation: Assignment AUX

Function: Controls all AUX sends in the selected channel.

AUX track mode

Activation:

2 x Assignment AUX

Function:

Controls AUX sends of the different tracks in the selected slot.

The active slot can be selected with the used keys for "Mixer track 8 up" or "Mixer track 8 down".

PhatChannel EQ mode

Activation:

EQ assignment

Function:

Controls the EQ of the selected track using VPots.

The display page is toggled with the keys "Mixer track 8 up/down".

PhatChannel EQ mode band type

Activation:

2 x Assignment EQ

Function: Controls the EQ of the selected track using VPots in a different order.

Plug-in mode

Activation:

EQ assignment

Preset:

- Select the plug-in by pressing the corresponding VPot, e.g. 2nd plug-in with 2nd VPot. ("Push VPot" can also be assigned to a different key).
- Now you can control all parameters of the corresponding plug-ins with the vpots. The display page is toggled with the keys "Mixer track 8 up/down".

► Frontier AlphaTrack

Panorama mode

Activation:

Assignment Track

Features:

- Panorama control
- Navigate to markers
- Move selected track

Active Control Mode

Activation:

2 x Assignment Track

Function:

Changes the value of the selected element in the mixer with the fader.

AUX mode

Activation:

Assignment AUX

Features:

- Select other track
- Select other slot
- Change AUX send of the selected track/selected slot

EQ mode

Activation:

EQ assignment

Function:

Controlling the input volume, frequency and quality bands of the selected EQs.

The bands are selected with "Mixer track up/down".

Plug-in mode

Activation:

EQ assignment

Features:

- Select track
- Select plug-in slot in the track with "Mixer track up/down"

- key
- Now you can control 3 parameters of the corresponding plug-ins with the vpots. The display page is toggled with the keys "Mixer track up/down".

► [Frontier Tranzport](#)

Functions:

For transport only

► [JLCooper \(MCS\)](#)

Track mode (Standard)

Activation:

Assignment Track

Active Control Mode

Activation:

2 x Assignment Track

Function:

Changes the value of the selected element in the mixer with the 1st fader.

AUX mode

Activation: Assignment AUX

Function: Controls all AUX sends in the selected channel.

EQ mode

Activation:

EQ assignment

Function:

Controls the EQ of the selected track using VPots.

Output

Deactivate:

If your PC does not have a motor fader, you can use this option to deactivate the transmission of controller data.

Normal send: The [MIDI](#)

controller data is received and processed. Program data (e.g. fade changes in the mixer) are sent to the controller.

Send echo:

The MIDI controller data is received and processed and forwarded straight back to the controller. Controllers need this for their displays (lamps, LEDs). Program data (e.g. fade changes in the mixer) are sent to the controller. If your controller has difficulties with this (e.g. .Logic Control), activate "Normal send".

Send echo (without fader touch):

The MIDI controller data is received, processed and returned to the controller. However, the fader values are not sent back while it is moved (activated fader touch). Only the last value is released to prevent increased data volumes. Program data (e.g. fade changes in the mixer) are sent to the controller. If your controller has difficulties with this (e.g. Logic Control), activate "Normal send".

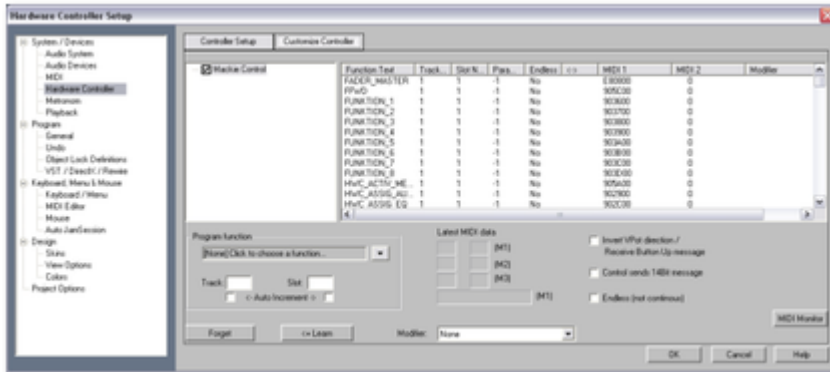
Adjusting the hardware controller/creating your own set

Most devices available on the market understand protocols such as Mackie Control or HUI. If your device is not included in the list simply select the nearest compatible device.

If you can't find your device in the list or want to change the default settings, you should proceed as follows:

Before adapting an existing template to your controller you should save it under a new name using the "**Save as...**" option.

Now go to the "Adapt controller" tab. The following dialog will appear:



Use Mackie Control if your controller can emulate this mode. In this case 7-bit values are transmitted.

You can see this in the [MIDI](#)

input monitor. Pressing a key displays a new line, another line is displayed upon key release. HUI receives 14-bit messages, i.e. two lines respectively.

In the parallel opened mixer you can now select the element you want to program on your controller. The saved function is displayed in the **Program function** section, e.g. "[Fader master](#)" for the fader in Samplitude Music Studio 15's mixer. Alternatively, you can open the context menu which contains a list of all remotely controllable functions in Samplitude Music Studio 15. You can now assign them to your controller one after another. The upper commands are mixer-only functions and intended only for connecting the controller. The lower ones represent the entire menu structure of Samplitude Music Studio 15. This allows you to assign any menu command to a controller key. Please note that the test LED of the controller is not active for menu commands.

Now move the fader or press the corresponding key on your controller. The MIDI data of this element is displayed in the **Last MIDI data** section. Press the **Learn** button to allocate the new data to the function.

Note: [Hardware](#)

controllers with touch-sensitive faders transmit data to Samplitude Music Studio 15 when released again, so that the "learn" button has to be pressed after moving and before releasing a fader!

If you want to use a key/fader for multiple tracks, e.g. learn mute, select "Mixer/tracks/track mute" in "Samplitude Music Studio 15 functions". Now activate the check for "**Auto increment**" and start programming the first track. After pressing **Learn** the value of the track is automatically increased by "1". All you have to do is to actuate the next element on your controller and press **Learn** again.

You can use the "Del" button to abandon a function assignment. However, you can also simply overwrite the data by relearning.

If a controller should move in the wrong direction after programming, please repeat the programming sequence and activate **Invert Vpot direction upon button release**

If you want to know which functions have been assigned to a key of your controller, simply actuate this key. The data appears in the list of assigned functions.

This way you can let Samplitude Music Studio 15 learn individual control elements of your hardware controller.

Hint:

If object mode is activated, then you can jump to the next object with the rewind/fast forward keys on your hardware controller's transport control. The same applies to marker mode, whereby you can jump to the previous or next controller in the project.

Internal mode

The internal modes are used to adapt Samplitude Music Studio 15 to different hardware controllers that have a different concept. Depending on the mode, the controller display is addressed differently and the controller information is interpreted differently by Samplitude Music Studio 15.

Hint:

If you are using a controller different to the one listed here you should select one from the list that is similar to yours in concept and design.

Internal mode description:

► [Mackie Multitrack](#)

Track mode (Standard)

Activation:

Assignment Track

Active Control Mode

Activation:

2 x Assignment Track

Function:

Changes the value of the selected element in the mixer with the 1st fader.

Panorama mode

Activation:

Assignment Pan

Function:

Panorama values are shown in the display.

PhatChannel AUX mode

Activation: Assignment AUX

Function: Controls all AUX sends in the selected channel.

AUX track mode

Activation:

2 x Assignment AUX

Function:

Controls AUX sends of the different tracks in the selected slot.

The active slot can be selected with the used keys for "Mixer track 8 up" or "Mixer track 8 down".

PhatChannel EQ mode

Activation:

EQ assignment

Function:

Controls the EQ of the selected track using VPots.

The display page is toggled with the keys "Mixer track 8 up/down".

PhatChannel EQ mode band type

Activation:

2 x Assignment EQ

Function: Controls the EQ of the selected track using VPots in a different order.

[Plug-in mode](#)

Activation:

EQ assignment

Preset:

- Select the plug-in by pressing the corresponding VPot, e.g. 2nd plug-in with 2nd VPot. ("Push VPot" can also be assigned to a different key).
- Now you can control all parameters of the corresponding plug-ins with the vpots. The display page is toggled with the keys "Mixer track 8 up/down".

► [Frontier AlphaTrack](#)

Panorama mode

Activation:

Assignment Track

Features:

- Panorama control
- Navigate to markers
- Move selected track

Active Control Mode

Activation:

2 x Assignment Track

Function:

Changes the value of the selected element in the mixer with the fader.

AUX mode

Activation:

Assignment AUX

Features:

- Select other track
- Select other slot
- Change AUX send of the selected track/selected slot

EQ mode

Activation:

EQ assignment

Function:

Controlling the input volume, frequency and quality bands of the selected EQs.

The bands are selected with "Mixer track up/down".

Plug-in mode

Activation:

EQ assignment

Features:

- Select track
- Select plug-in slot in the track with "Mixer track up/down" key
- Now you can control 3 parameters of the corresponding plug-ins with the vpots. The display page is toggled with the keys "Mixer track up/down".

► [Frontier Tranzport](#)

Functions:

For transport only

► [JLCooper \(MCS\)](#)

Track mode (Standard)

Activation:

Assignment Track

Active Control Mode**Activation:**

2 x Assignment Track

Function:

Changes the value of the selected element in the mixer with the 1st fader.

AUX mode

Activation: Assignment AUX

Function: Controls all AUX sends in the selected channel.

EQ mode**Activation:**

EQ assignment

Function:

Controls the EQ of the selected track using VPots.

Output**Deactivate:**

If your PC does not have a motor fader, you can use this option to deactivate the transmission of controller data.

Normal send: The [MIDI](#)

controller data is received and processed. Program data (e.g. fade changes in the mixer) are sent to the controller.

Send echo:

The MIDI controller data is received and processed and forwarded straight back to the controller. Controllers need this for their displays (lamps, LEDs). Program data (e.g. fade changes in the mixer) are sent to the controller. If your controller has difficulties with this (e.g. Logic Control), activate "Normal send".

Send echo (without fader touch):

The MIDI controller data is received, processed and returned to the controller. However, the fader values are not sent back while it is moved (activated fader touch). Only the last value is released to prevent increased data volumes. Program data (e.g. fade changes in the mixer) are sent to the controller. If your controller has difficulties with this (e.g. Logic Control), activate "Normal send".

Adjusting the hardware controller/creating your own set

Most devices available on the market understand protocols such as Mackie Control or HUI. If your device is not included in the list simply select the nearest compatible device.

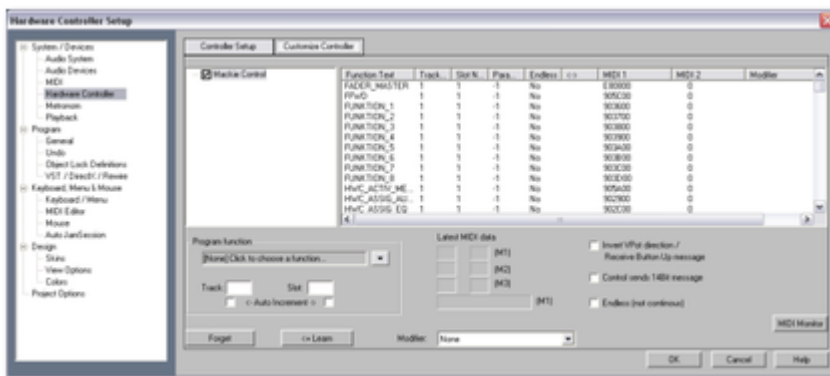
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Before adapting an existing template to your controller you should save it under a new name using the "

Save as..."

option.

Now go to the "Adapt controller" tab. The following dialog will appear:



Use Mackie Control if your controller can emulate this mode. In this case 7-bit values are transmitted.

You can see this in the [MIDI](#)

input monitor. Pressing a key displays a new line, another line is displayed upon key release. HUI receives 14-bit messages, i.e. two lines respectively.

In the parallel opened mixer you can now select the element you want to program on your controller. The saved function is displayed in the **Program function** section, e.g. "[Fader master](#)" for the fader in Samplitude Music Studio 15's mixer. Alternatively, you can open the context menu which contains a list of all remotely controllable functions in Samplitude Music Studio 15. You can now assign them to your controller one after another. The upper commands are mixer-only functions and intended only for connecting the controller. The lower ones represent the entire menu structure of Samplitude Music Studio 15. This allows you to assign any menu command to a controller key. Please note that the test LED of the controller is not active for menu commands.

Now move the fader or press the corresponding key on your controller. The MIDI data of this element is displayed in the **Last MIDI data** section. Press the **Learn** button to allocate the new data to the function.

Note: [Hardware](#)

controllers with touch-sensitive faders transmit data to Samplitude Music Studio 15 when released again, so that the "learn" button has to be pressed after moving and before releasing a fader!

If you want to use a key/fader for multiple tracks, e.g. learn mute, select "Mixer/tracks/track mute" in "Samplitude Music Studio 15 functions". Now activate the check for "**Auto increment**" and start programming the first track. After pressing **Learn** the value of the track is automatically increased by "1". All you have to do is to actuate the next element on your controller and press **Learn** again.

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If a controller should move in the wrong direction after programming, please repeat the programming sequence and activate **Invert Vpot direction upon button release**

If you want to know which functions have been assigned to a key of your controller, simply actuate this key. The data appears in the list of assigned functions.

This way you can let Samplitude Music Studio 15 learn individual control elements of your hardware controller.

Hint:

If object mode is activated, then you can jump to the next object with the rewind/fast forward keys on your hardware controller's transport control. The same applies to marker mode, whereby you can jump to the previous or next controller in the project.

Output

Deactivate:

If your PC does not have a motor fader, you can use this option to deactivate the transmission of controller data.

Normal send: The [MIDI](#)

controller data is received and processed. Program data (e.g. fade changes in the mixer) are sent to the controller.

Send echo:

The MIDI controller data is received and processed and forwarded straight back to the controller. Controllers need this for their displays (lamps, LEDs). Program data (e.g. fade changes in the mixer) are sent to the controller. If your controller has difficulties with this (e.g. Logic Control), activate "Normal send".

Send echo (without fader touch):

The MIDI controller data is received, processed and returned to the controller. However, the fader values are not sent back while it is moved (activated fader touch). Only the last value is released to prevent increased data volumes. Program data (e.g. fade changes in the mixer) are sent to the controller. If your controller has difficulties with this (e.g. Logic Control), activate "Normal send".

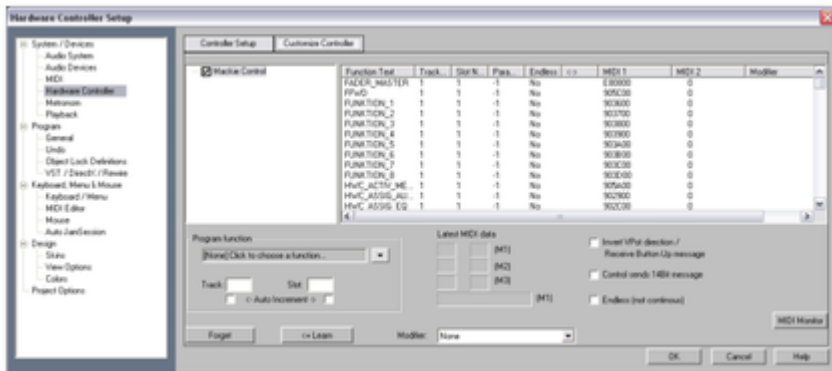
Adjusting the hardware controller/creating your own set

Most devices available on the market understand protocols such as Mackie Control or HUI. If your device is not included in the list simply select the nearest compatible device.

If you can't find your device in the list or want to change the default settings, you should proceed as follows:

Before adapting an existing template to your controller you should save it under a new name using the "Save as..." option.

Now go to the "Adapt controller" tab. The following dialog will appear:



Use Mackie Control if your controller can emulate this mode. In this case 7-bit values are transmitted.

You can see this in the [MIDI](#)

input monitor. Pressing a key displays a new line, another line is displayed upon key release. HUI receives 14-bit messages, i.e. two lines respectively.

In the parallel opened mixer you can now select the element you want to program on your controller. The saved function is displayed in the **Program function** section, e.g. "[Fader master](#)" for the fader in Samplitude Music Studio 15's mixer. Alternatively, you can open the context menu which contains a list of all remotely controllable functions in Samplitude Music Studio 15. You can now assign them to your controller one after another. The upper commands are mixer-only functions and intended only for connecting the controller. The lower ones represent the entire menu structure of Samplitude Music Studio 15. This allows you to assign any menu command to a controller key. Please note that the test LED of the controller is not active for menu commands.

Now move the fader or press the corresponding key on your controller. The MIDI data of this element is displayed in the **Last MIDI data** section. Press the **Learn** button to allocate the new data to the function.

Note: [Hardware](#)

controllers with touch-sensitive faders transmit data to Samplitude Music Studio 15 when released again, so that the "learn" button has to be pressed after moving and before releasing a fader!

If you want to use a key/fader for multiple tracks, e.g. learn mute, select "Mixer/tracks/track mute" in "Samplitude Music Studio 15 functions". Now activate the check for "**Auto increment**" and start programming the first track. After pressing **Learn** the value of the track is automatically increased by "1". All you have to do is to actuate the next element on your controller and press **Learn** again.

You can use the "Del" button to abandon a function assignment. However, you can also simply overwrite the data by relearning.

If a controller should move in the wrong direction after programming, please repeat the programming sequence and activate **Invert Vpot direction upon button release**.

If you want to know which functions have been assigned to a key of your controller, simply actuate this key. The data appears in the list of assigned functions.

This way you can let Samplitude Music Studio 15 learn individual control elements of your hardware controller.

Hint:

If object mode is activated, then you can jump to the next object with the rewind/fast forward keys on your hardware controller's transport control. The same applies to marker mode, whereby you can jump to the previous or next controller in the project.

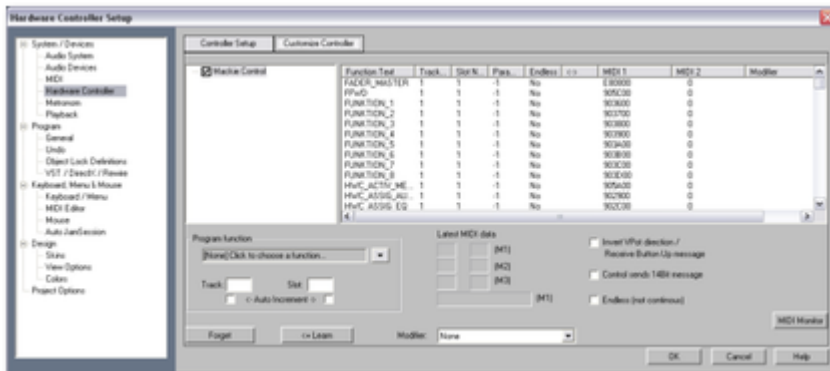
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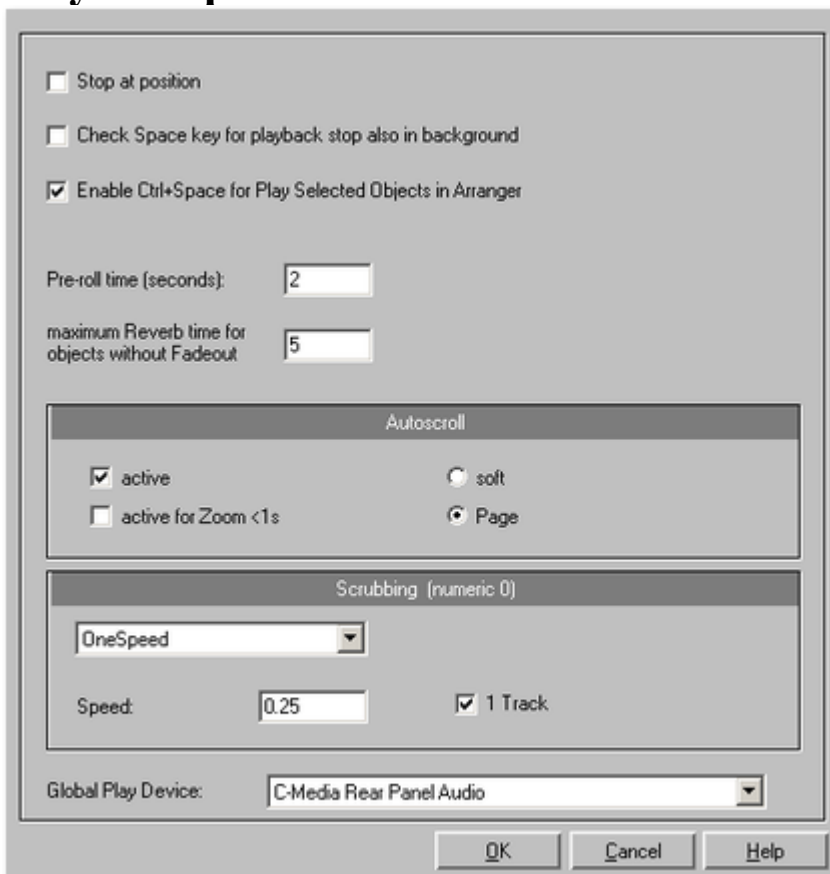
Hint:

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Metronome options

Please also read the section "Options -> Program settings -> Metronome options".

Playback parameters



Keyboard shortcut: P

The playback rate can be adjusted with **Samplerate**

as far as the sound card permits. Use the varipitch feature to adjust the speed during playback or for non-supported sample rates.

Device:

Allows you to define the device used for playback if it is to occur via a card. This is particularly important if you have several sound cards installed on your computer.

Use Autoscroll

to activate a feature which is especially useful when working with long HD wave projects: The graphical display always changes when the play cursor (position line) leaves the visible section. This way you always have a good overview of the settings, whereby it has proven most sensible to display the current project in two sections ("Setup -> 2 sections"), one displaying the entire project and one in a useful zoom depth with autoscrolling.

You can choose between page and soft scrolling. But be careful: Scrolling requires [CPU](#) power (depending on the processor, graphics adaptor, and resolution), and the CPU may be overloaded in critical situations, resulting in playback dropouts. You should then deactivate autoscroll mode.

Scrubbing:

If you press "Ins" ("Insert" or "0" on the number pad), Samplitude Music Studio 15 will switch to "Scrubbing" mode, i.e. playback speed can be controlled directly by the mouse. The further to the right the mouse goes, the faster Samplitude Music Studio 15 plays.

In comparison to many HD recording systems, this even works in a virtual multitrack project.

Use scrubbing mode to find passages, crackling, etc. in material – the older generation of sound engineers are, no doubt, very familiar with this method from analog tape editing.

There are 2 scrubbing modes available (in the playback parameter window: "P"):

Relative:

The relative distance between the play cursor (position bar) and the mouse position can be used to control the speed. The play cursor follows the movement of the mouse.

Absolute:

You can also use the absolute position of the mouse in the window to control the speed:

- **Left border** = double speed backwards,
- **Center** = no movement,
- **Right border** = double speed forwards.

Tip for scrubbing:

For buffer sizes (4000, 2000 samples) scrolling is "softer". Test if your computer functions at this buffer size without any playback errors. Using "Soft scroll" mode guarantees that working on your computer is easy and fast.

Varipitch / Practice mode

Samplitude Music Studio 15 supports smooth changes of the pitch during playback, even in multitrack projects (vertical slider in playback parameter window "P"). Activate "Varispeed" mode with the "active" button, and then you can change the playback speed in various ways:

"Practice" mode: When practice mode is activated, the pitch remains constant regardless of the playing speed. This mode is suitable particularly for pieces that have to be played more slowly for practice, e.g. a guitar accompaniment, since otherwise excessive demands are made on the player.

Vertical slider: Changes the playback speed from -200% to +200%

Pitch factor: Lets you specify a certain pitch factor manually

Halftones: Lets you specify a value of halftones. The playback will be transposed the number of halftones.

Internal rate: Here you can set a sample rate for the varipitch calculation. If you want to play a wave file with a sample rate of 48 KHz but your sound card can only play rates up to 44.1 KHz simply set the internal rate to 48 and activate varispeed. You hear the same result as playing back with real 48 KHz!

This function is also very useful for digital playback to DAT with 44.1 KHz samples and vice versa.

BPM: Here you can type in the original BPM value of your material and a destination bpm value, which is reached using varipitch.

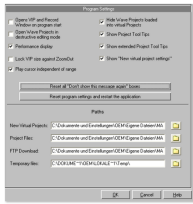
Important: Varipitch also works during recording! You can set the pitch to -2 halftones, sing a song into the computer, then switch off varipitch... Your track is transposed two halftones higher!

Then, deactivate varispeed, and your voice will reach unknown highs. But be careful: You'll sound like Mickey Mouse if you apply to much!

Key: P

Program

General



Open [VIP](#)

and record window on program start: Enable this option and Samplitude Music Studio 15 will automatically open an empty virtual project (VIP) and the "Recording parameters" dialog when the program is started.

Open wave projects in destructive editing mode: If this option is active, wave projects will be opened in destructive editing mode.

Performance display

: This option activates the DSP performance display in the lower left corner. If the display shows values of 100% or more, then the processor is overloaded. In that case, take the following steps:

- Reduce the number of DSP effects in the mixer or in the object editor.
- Reduce the number of tracks with audio objects.
- Increase the VIP buffer size in "System -> Playback/Record devices" to 16000 or 32000 samples.

The status bar will display suggestions if the processing capabilities of the [CPU](#) are exceeded (e.g. during use of "Noise reduction" or "FFT analyze filter") during real-time prelistening.

No changes to VIP size during zooming

: If you zoom the virtual project out beyond the section size, this option will automatically stop it from being extended.

Play cursor independent of range

: This option allows the play cursor to be set independently in "Loop" mode and playback to be started outside of the selected loop range.

Hide wave projects loaded into VIP

: The windows of the wave projects loaded directly into the VIP are hidden.

Use project tooltips

: If this option is active, additional information is displayed when the mouse pointer hovers over an interactive element.

Show extended project tooltips

: If this option is active, the extended tooltips are displayed when the mouse pointer is held over an inactive element in the virtual project.

Reset global "Don't show this message again"

: Press this button to reactivate all tips dialogs which you have deactivated over time.

Folders

New virtual project

: All new virtual projects as well as recorded and imported wave projects will be saved under this path.

Project files

: All other wave files saved on the hard drive that cannot be allocated to a specific VIP are under the given path.

FTP download

: All files downloaded via the integrated FTP client will be saved under this path.

Temporary files

: This preset path is directed to the standard temporary files folder. Please make sure that this folder is on

a hard drive or partition with sufficient free storage space.

Undo definitions

The depth of undo can be specified when working with VIPs. A value of "20" means that the last 20 changes can be undone.

Lock definitions

Here you can select which options you want disabled:

Disable moving:

Disables moving of objects (default). This is useful in multitrack projects to avoid delays between several tracks.

Disable volume changes

: The volume handles are disabled.

Disable fade in/out

: The fade handles are disabled.

Disable length changes

: The length handles are disabled.

VST / DirectX / ReWire setup / Plug-in buffer

The "Write DirectX logfile"

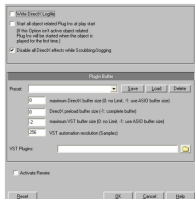
" option only serves support purposes and should usually be turned off.

You can also activate the "**Start all object-related plug-ins at play start**

" option. Some plug ins cause delays when switched on – in this case, these plug-ins should be switched on before starting playback, since otherwise errors may occur when the corresponding objects are played.

Disable all DirectX effects when scrubbing/jogging

: DirectX plug-ins may cause errors or distortions when scrubbing or jogging. Use this option to disable communication with DirectX plug-ins.



Plug-in buffer

The default presets usually cover most cases when working with plug-ins. Try out various presets if you happen to be experiencing problems with plug-ins or DSP cards. You can directly specify the buffer size which is then sent to the plug-in for XD and VST plug-ins.

VST plug-in path

: Here you can set the path for VST plug-in effects and VST instruments. You can execute a VST scan of the chosen folder. Not only are all the plug-ins imported, but they are also checked for usability within Samplitude Music Studio 15. This scan is only necessary once, since available VST plug-ins are saved during this process. If you have more than one VST plug-in folder, you can specify other folders which can also be scanned. Samplitude Music Studio 15 automatically finds newly installed plug-ins in the specified folders only. The corresponding details are saved in the "VSTplug-ins.ini" file.

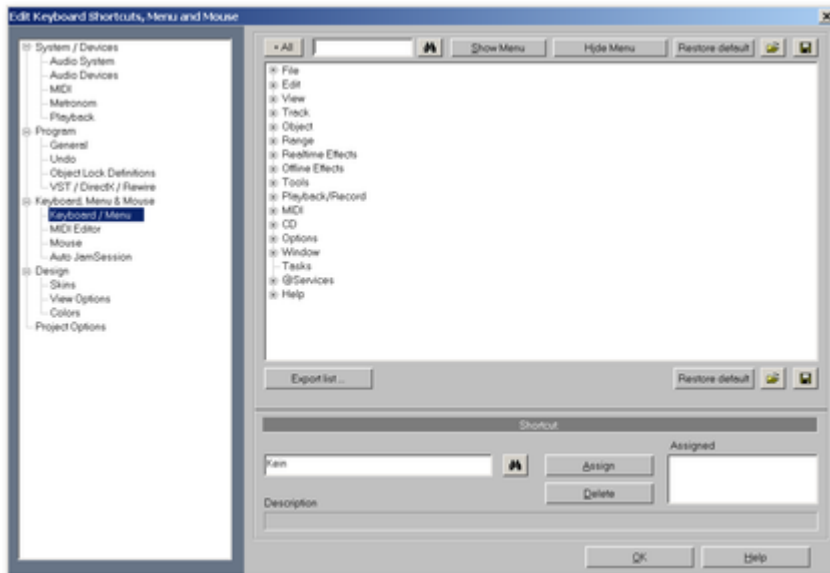
Activate ReWire

: If this option is activated, rewire-compatible client applications can be integrated into Samplitude Music Studio 15 as synthesizers.

Additional information about ReWire can be found in the chapter "Software instruments/VST plug-ins/ReWire -> ReWire client applications".

Editing keyboard shortcuts and menus

In this dialog, you can freely choose the keyboard shortcuts for every menu function in the main menu or for the Auto Jam [Session](#) of Samplitude Music Studio 15. This way, it's possible to set the commands you use most often to a special key combination so they can be opened quickly.



When you close Samplitude Music Studio 15, the shortcut settings are saved in the Windows folder file MusStu40.ini, so that they are automatically made available the next time the program is opened. It is, however, also possible to export sets of shortcut keys or menu definitions in files. The display of the entire menu tree is the key function of Samplitude Music Studio 15. Here, you can select which menu point you want to create a new shortcut or if the menu point should appear in the main menu of Samplitude Music Studio 15.

Shortcut list

Export list

: You can use this to export the shortcut as a list in a text file in different formats. A window will open in the shortcut editor which displays a complete list of the current shortcuts. The "Copy" button can be used to copy this list to the Windows clipboard to be edited and printed using a text editor.

Reset

: Activates all preset shortcuts again.

Load/Save

: Previously saved shortcuts are loaded and activated or the current shortcuts are saved under a file name.

Shortcut

To add a new shortcut, click on the desired menu item and then on the input box at the bottom. Then click on the shortcut key.

You can also use combinations of any key with "Shift", "Alt", or "Ctrl". Please do not use the space bar, "Esc", or "Insert" key ("0" on the number block), since the functions of these keys are permanently set in Samplitude Music Studio 15 and cannot be changed.

Assign shortcut

: This button can be used to activate the key sequence on the left as a shortcut. A warning will be displayed if this command has already have been assigned. However, you can also check in advance whether the key combination has already been assigned. To do this, click "Search" (binoculars) once the key sequence has been entered. An assigned menu command will then be displayed in the top list.

Delete

: Deletes the selected shortcut.

Assigned

: Shows all the shortcuts assigned to menu points. You can assign menu commands to multiple shortcuts.

Mouse

You can define several special options for keyboard and mouse to achieve compatibility with older versions. These are:

- **Disable range zoom for double mouse clicks**
- **Zoom lasso allows vertical zoom without "Shift"**
- **Disable mouse zoom for vertical mouse movement in timeline**
- **Downward-compatible use of "Shift + click" to mute/solo/record** (instead of "Alt + Shift" + click). This lets you change the shortcut for "exclusive switching" of solo/mute, and record. By clicking "Solo/Mute/Record" for the selected shortcut "Shift + Alt" / "Shift", you can switch the individual channels temporarily to "Exclusive" mode.
- **Treat knobs like faders:** If this option is activated, knobs can be pulled up and down like faders with a held-down mouse key.
- **2. Click required to move object:** This option requires a second click for moving objects. The first click selects objects and prevents unintentional moving.
- **Move delay:** When an object is selected by clicking on it, you might unintentionally move the object. If "Move threshold" is activated, Sequoia will wait a set time before it performs the operation.

"Mouse wheel" allows you to define the function of the mouse wheel for zooming and scrolling in the [VIP](#)

. You can define which modifier ("Alt", "Ctrl", "Shift") controls which function in combination with the mouse wheel.

Auto Jam Session

Editing this is basically identical to editing the main menu. However, you cannot set any keyboard shortcuts, but rather [MIDI](#) commands or joystick actions.

The commands listed here don't exist in any menu. For this reason, the buttons "Show/Hide menu point" and "Reset" (from show/hide menu command) are grayed out. Similarly, the list cannot be exported or saved.

Reset

: Activates all preset shortcuts again.

Note: The MIDI input device can be set in the metronome options.

To assign a new shortcut to a command, enter the type of shortcut in the drop-down menu "Status".

Note: MIDI commands can also be learned. If you should use control change events for remote controlling, you can choose between "CtrlUpDn" and "CtrlChg" in the "Status" menu.

- CtrlUpDn: This is a special adaptation for use with a sustain pedal from the MIDI keyboard. A command is activated only when the pedal is "tapped" lightly, because the sustain pedal is typically held longer than it takes to actually activate an assigned command when playing.
- NoteOn: Note on events are always transmitted when a key on the MIDI keyboard is pressed. It's also possible for other keys of the MIDI keyboard to transmit note on events. Please refer to the instructions of your MIDI device.
- CtrlChg: Control change events are transmitted to the MIDI device. The MIDI device can also be programmed so that pressing a key will transmit such a control change event. Please refer to the instructions of your MIDI device.
- PrgChg: Program change events are actually there to effect a sound change in the sound generator.
- PitchWheel: The pitch wheel normally serves to modulate the pitch of the sound played. When using it, a quick movement is all that's necessary to execute an assigned command.
- Joystick1/2: Use the buttons 1-4 of your joystick to control the Auto Jam [Session](#). In the field beside it ("[Button](#)"), enter the corresponding number of the desired button. You cannot set the channel, since joysticks don't have anything to do with MIDI devices.
- Channel: MIDI channel 1 is always set as the default. In case your MIDI device transmits to a different MIDI channel, you can set it here.
- Assign: With this button you can activate the specified MIDI event or set the joystick button as a new shortcut. A warning will be displayed if this command should already have been assigned.
- Delete: Deletes the selected shortcut.
- Assigned: Shows all the functions of shortcuts assigned to menu points. You can assign menu functions to multiple shortcuts.

Learning MIDI commands

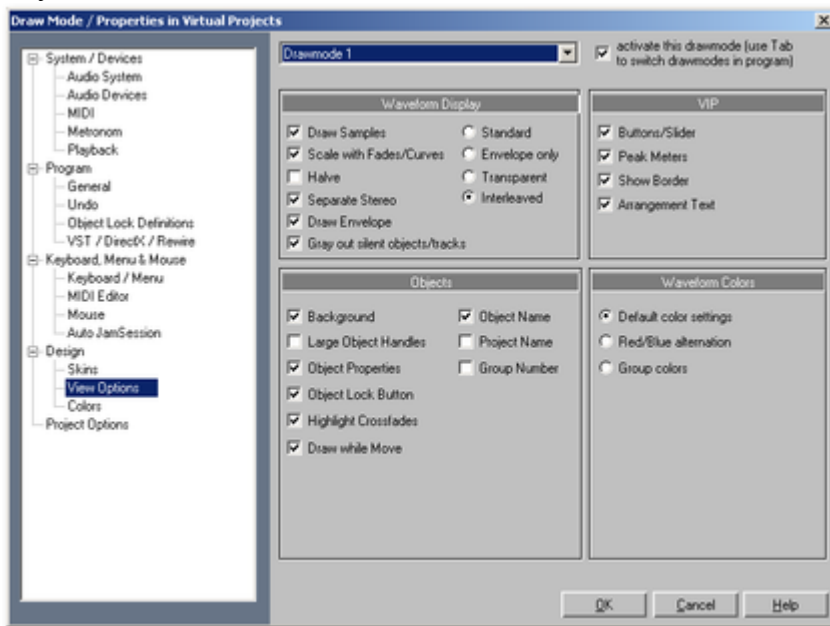
1. Select the function you want to remotely control via MIDI from the list at the top.
2. Click on the "Learn" button. This now turns red.
3. From the MIDI device, activate the MIDI command to start the function.
4. In the dialog, click on "Assign" to complete the learning process.

Design

Display options

This dialog can be used to change and select both alternative display formats for objects in virtual projects.

Keyboard shortcut: Shift + Tab



Draw mode 1/2

Switching between the two modes is possible by pressing "Tab". You can also toggle between mode 1 and mode 2 by selecting the appropriate mode from the menu item.

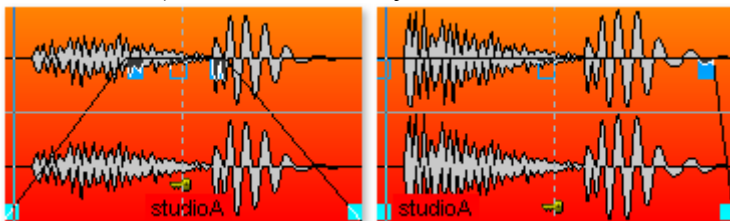
Waveform display

Draw samples

: The audio sample representation is switched on. Usually you will leave this on, but it can be advantageous to deactivate sample representation if you want to see the volume and pan curves more clearly.

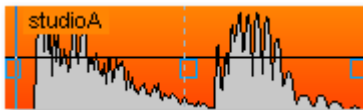
Scale with fades/curves

: In this default representation mode the waveform drawing is scaled according to the settings of the fade in/out or volume curves. The decay of the sound during a fade out (or volume changes caused by a volume curve) are more obviously visible.

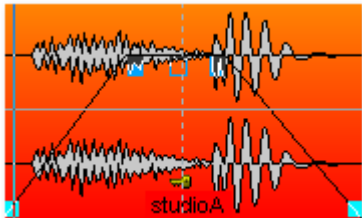


Halve

: The graphical representation of the audio material can be displayed as a whole waveform or half the form for higher definition. Checking this box will display the waveform with half its information. This mode is recommended, because the grid function (key #) and the vertical zoom functions ("Ctrl + cursor up/down") are perfectly adapted to this draw mode. Volume curves results also display better in this mode.

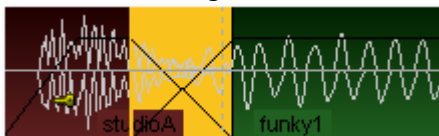


Separate stereo: If this option is active, stereo tracks in [VIP](#) projects are displayed with a two-channel waveform. This allows you to expand the display to both channels rather than displaying just one composite channel display. Please keep in mind that this will also affect the wave project display for stereo wave projects.



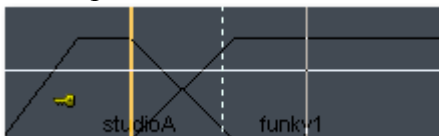
Envelope only

: When this radio button is selected only the waveform outline (envelope) is drawn. This can be useful when constructing crossfades, allowing for easier view of the overlapped waveforms.



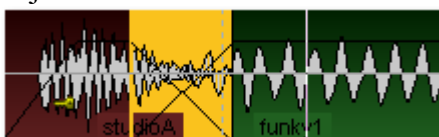
Transparent

: When this radio button is selected the colors of both crossfade waveforms are overlapped. This works best in front of a dark background (default). We recommend that you combine this mode and the draw mode option "Waveform colors -> Red/Blue alternation" to display the crossfade areas optimally.



Interleaved

: When this radio button is selected a sample of the left object and a sample of the right object is drawn alternately within a crossfade. You can then visually assess the fade area, especially if the adjacent objects have different colors.



VIP

Various [VIP](#) components (buttons/sliders, peak meters, show borders, arrangement text, and vertical auto zoom) can be activated and deactivated here.

Objects

Background: Each object in the [VIP](#) track can be assigned its own color. The color is displayed if this option is checked.

Object name: [Objects](#)

in VIP windows can have their own name. If this option is checked, the object name is displayed.

Large object handles

: When selected, larger handles for objects and volume / panorama curves will be displayed.

Project name

: Samplitude Music Studio 15 also allows you to display the audio file name in each object. This is

especially useful if you quickly want to identify the wave project used in an object.

Object properties

: This shows you which object related effects are applied to the object, e.g. EQ for equalizers, DYN for dynamics etc...

Group number

: Objects in VIP windows can be grouped together. When grouping objects, it is helpful if the group number is displayed in the object. This option allows you to display that information in the object.

Object lock button

: When locked, an object cannot be moved. Setting this option will let you comfortably change the lock/unlock status of an object by clicking on the key in the lower region of the object.

Waveform colors

Red/Blue alternation

: This representation mode alternately colors the waveforms of adjacent objects red and blue, to improve the visibility of crossfades in the transparent and interleaved drawing modes.

Colors

All colors used in the program can be set here. You can also load and save these colors as presets. Use automatic sample colors for record: Here a separate random color is chosen for each recorded object per track.

[Restore](#)

Restore last state

: Restores the last status of the color settings before the dialog was opened.

Original state

: Resets all colors to their default settings.

Semitransparent display

There are transparent displays in several effects dialogs and editors. These can be deactivated here to increase performance.

Easy setup

Sound card & drivers

Select the driver system or the sound card. Entries which start with "Asio" are ASIO drivers which enable shorter latencies, e.g. to play VST plug-ins live, etc.

Note

: If your sound card offers ASIO drivers, then it's best to use them. Only use "ASIO MAGIX Low Latency" drivers if you are having problems.

[Audio](#): Input & Output

Select the input and output channels for your sound card which should be preset for recording or playback.

[MIDI](#): Input & Output

Select the MIDI input and output devices which should be preset for recording or playback.

Mixer preset

:

These are the most conventional presets for different applications concerning track number, AUX and submix busses.

Plug-ins directory

Enter the path to the installed VST plug-ins.

"Advanced" switches to the [Settings dialog with all available options](#)

.

Project settings

Here you will find all information regarding settings that are dependent of a wave project (.HDP) or virtual project ([.VIP](#)).

In this chapter

[Project options](#)

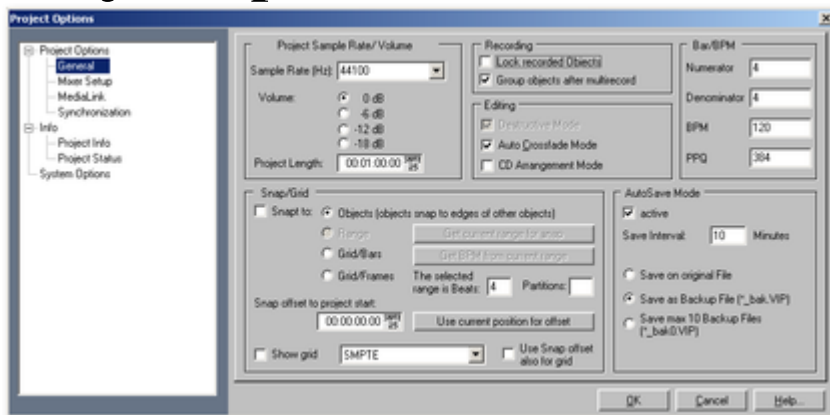
[Mixer setup](#)

[Media link](#)

[Synchronization / Synchronization settings](#)

[Capture options](#)

Project options



This will show you information on the current project, including creation date, memory size, paths, and file names. For virtual projects, a list of all included physical files is displayed. Virtual projects also display a list of linked wave projects.

Volume reduction in virtual projects

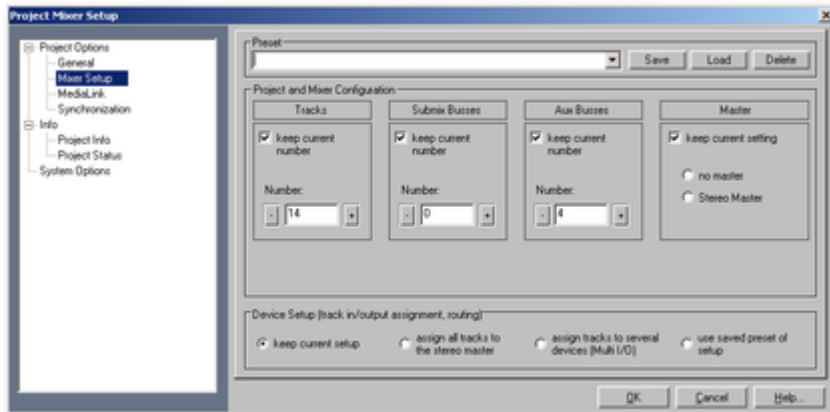
: In "Project information for virtual projects", you can reduce the level in 6 dB steps. This volume reduction is necessary for multitrack virtual projects, since the sum of all tracks in this case must not exceed 16-bit (0 dB). Theoretically, each track of a 4 track stereo project must be reduced by 2 bits (12 dB). In the real-world application, tracks are often not recorded or played back at the maximum level so that the reduction can be adjusted accordingly. However, raising the volume reduction setting can result in clipping.

Please keep in mind that Samplitude Music Studio 15 reduces the volume of wave projects to the setting in the virtual project that uses the wave project. This allows you to switch between the [VIP](#) and the wave project without the usual volume differences between project types. If a wave project is opened by itself (without using the wave project in a VIP), Samplitude Music Studio 15 automatically uses the maximum volume playback.

Key: I

Mixer setup

Opens the mixer setup dialog where you adjust the general settings for the mixer routing design.

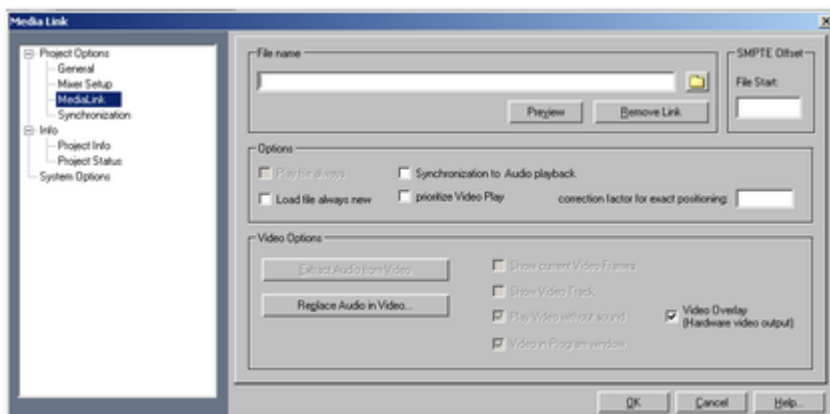


Project and mixer configuration: Sets the number of [VIP](#) and mixer tracks as well as the submix and AUX buses.

Device setup

: Sets the various routing paths.

Media link



Nearly all other media files can be linked to Sequoia projects. These can be complete [MIDI](#) songs (.MID files), video clips ([AVI](#) or MPEG files), or other files for which an MCI is installed, practically all formats that the Windows Media Player can play back.

"Linked" means that the linked media files are played back simultaneously with the Sequoia project and that no synchronization occurs. The time position is not verified directly. Sequoia uses the Windows Media Player for playback, which merely starts and stops the selected file

Linking Sequoia projects to videos

"Media link" lets you add soundtracks to videos with Sequoia in real time without requiring additional synchronization hardware.

In theory it is possible to work with digital videos directly in the original resolution. However, to ensure optimum synchronization and a smooth workflow the following procedure is recommended:

1. Digitize your source material with "MAGIX Move Edit Pro" video editing software (included with Sequoia) and export a pilot video of small size using a suitable codec which requires low decompression expenditure and only contains key frames if possible (DivX or MPEG are not suitable). MAGIX's own MXV format is recommended, as this format is optimized for real-time processing.
2. Link the video to Sequoia and apply the soundtrack.
3. Remove the link again after track bouncing.
4. Replace or store the finished wave project in the video using the "Replace audio in video" function. You can then save the sound in the original high-resolution movie without requiring recompression (merely the soundtrack needs to be exchanged). More details available from "File -> Export video sound".

File name

: Allows you to specify the file name, and source directory of the media file. Clicking on the folder button launches a file selection dialog that allows you to browse your hard disk(s) and specify the media file type. Once you have located the desired media file, simply click "OK", and Sequoia will make the link.

Play always

: This button activates synchronized playback.

Synchronization to audio playback: Synchronizes the new media link (e.g. AVI files) with the existing [VIP](#)

Always reload file before playback

: This button specifies whether the media file should be reloaded every time before each playback. This can make sense, for instance, if you are still editing a MIDI song in a simultaneously open MIDI sequencer. You then only have to save the file as a MIDI file from the sequencer; Sequoia will automatically reload it before it is played back the next time. If the media file is not yet complete, this

option should not be activated. The file will be loaded only once, which particularly makes sense with AVI files: The window with the video will then continue to remain open. This lets you check the image content that matches each marker precisely. Play start is faster.

Video options

Get audio from video

: With this button the audio files from an AVI file can be extracted and converted into a wave file. This wave file can then be edited further in Sequoia in virtual projects.

Replace audio in video

: This option can be opened using the "Export video sound" function to replace the existing soundtrack in a video or create a new video.

Show current video frames

: This option opens a keyframe window that you can freely scale on the screen without any loss of space in the VIP.

Show video track in the VIP

: This is an especially strong feature of Sequoia. In virtual projects a video timeline can be displayed above the audio tracks. A movie strip of any chosen size can be inserted, upon which the current video position can be perfectly recognized. With range and object selections the beginning and the end are displayed precisely according to the frame.

Play video without sound

: This option makes Sequoia integrate the video without the sound so that the audio can be adopted by Sequoia.

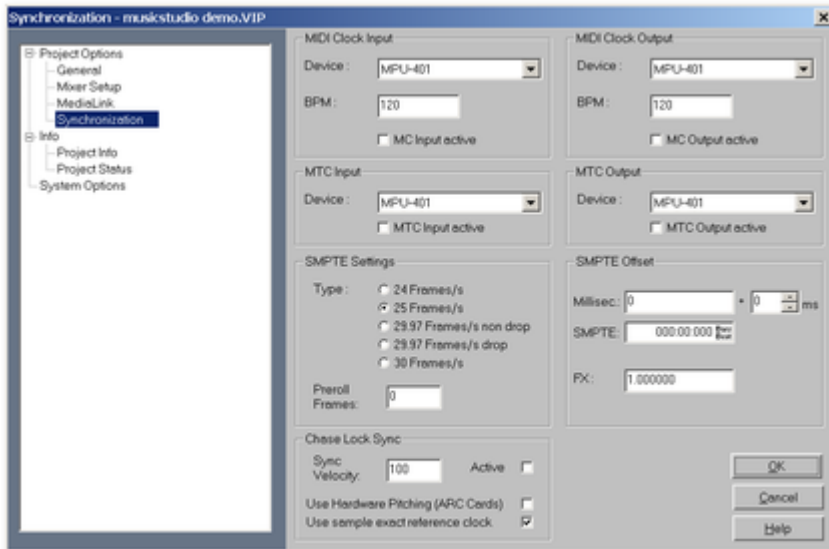
Video in Sequoia window

: This option opens the AVI window only on the Sequoia main screen. This is often more practical than a completely independent AVI video.

Video overlay (Video output of the graphics card)

: Video overlay means that the graphics card itself takes care of the video display and the video picture is positioned on top of the actual windows screen (overlay).

Synchronization / Synchronization settings



Master synchronization: Samplitude Music Studio 15 will slave to SMPTE/MTC/MC and can act as the master for [MIDI](#) clock and MIDI time code.

Sync output is directly linked to audio playback so that no delays occur between Samplitude Music Studio 15 and external devices, even with long tracks. This new synchronization technology was specially developed for connecting Samplitude Music Studio 15 with MIDI sequencers such as Cakewalk, Cubase, Logic, Evolution [Audio](#), MIDI Connections, etc. which can run on the same PC in multitasking mode.

In this case you should use a virtual MIDI router for internally linking the programs like "Hubis MIDI Loopback" from the Samplitude Music Studio 15 studio CD-ROM.

Wherever possible, please use MTC -25 frames/sec., since unlike the MIDI clock, no tempo changes have to be taken into account.

If Samplitude Music Studio 15 is running as master, please set the FX factor to 1.0.

Slave synchronization with real "chase lock":

Samplitude Music Studio 15 supports real "chase lock" synchronization, i.e. audio playback can be controlled precisely by a received time code signal (MC or MTC). In this case not only the starting point of audio playback is controlled externally, but sync also controls playback speed if "chase lock" is activated. This way Samplitude Music Studio 15 can follow the sync of analog tape machines or VCRs for quite some time, which always have a certain slip, without delay.

This is a very powerful feature which many "professional" systems only offer at a high price!

By entering the "sync velocity", you can influence the speed of the tempo adjustment. The greater the sync velocity, the faster Samplitude Music Studio 15 will follow a tempo change of the sync master; however, this also means that the pitch fluctuation in the audio material is greater.

Only use values greater than 100 if Samplitude Music Studio 15 does not synchronize precisely in standard cases.

The "chase lock" synchronization uses a real-time resampling routine requiring a certain [CPU](#) power. Anything as fast as a Pentium 90 processor should suffice.

When using the hardware pitching feature, the chase lock synchronization uses direct access to the sample rate of the sound card in 1 Hz steps. This achieves particularly precise synchronization without additional CPU load. However, the sound card has to support this feature, as is currently the case with the ARC44 and ARC88 4 or 8 channel.

MIDI clock input device

: Here the driver must be selected from which Samplitude Music Studio 15 will receive MIDI clocks for

the synchronization.

BPM

: Here you have to enter the tempo at which you want to receive MIDI clocks.

MIDI clock output device:

Here you have to select the driver via which Samplitude Music Studio 15 should send MIDI clocks for synchronization.

BPM:

Here you have to enter the tempo you want to send MIDI clocks.

SMPTE/MTC input device:

Here you have to select the driver via which Samplitude Music Studio 15 should receive MIDI timecode for synchronization.

Sync velocity:

The greater the sync velocity, the faster Samplitude Music Studio 15 will follow a tempo change of the sync master; however, this also means that the pitch fluctuation in the audio material is greater. Only use values greater than 100 if Samplitude Music Studio 15 does not synchronize precisely in standard cases.

MTC output device:

Here you have to select the driver via which Samplitude Music Studio 15 should send MIDI timecode for synchronization.

Type

: Select the proper frame rate. Use 24 frames for cinematic synchronization, 25 frames for PAL video, and audio synchronization, 30 frames for NTSC video.

Pre-roll-frames

: You can specify, how many frames Samplitude Music Studio 15 is to ignore before the synchronization starts. Here you can account for the fact, that certain analog instruments need time to reach the correct speed. In order to have Samplitude Music Studio 15 link up to the proper time values, a certain pre-roll frame count can be specified.

SMPTE offset

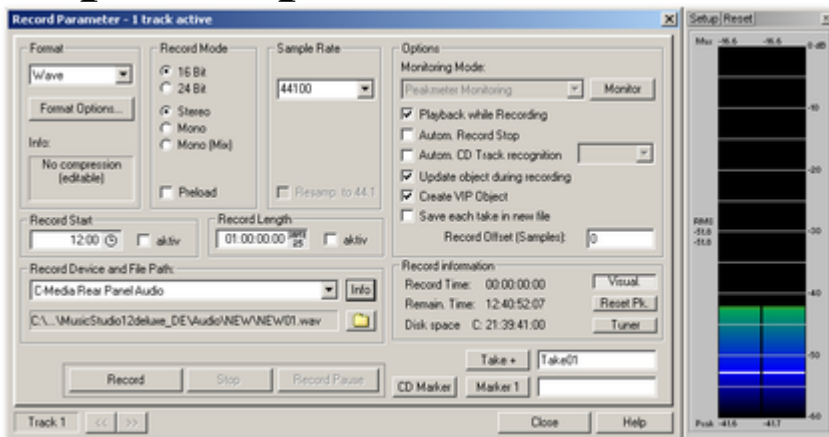
: The SMPTE offset is indicated in milliseconds and in SMPTE frames. The offset is removed from the incoming SMPTE time code signal to line up differences between tape material and recorded samples in Samplitude Music Studio 15. With an offset of "60:00:00" milliseconds (1 hour) a tape that was previously stripped can be synchronized, if the start point for the recording/playback starts at 1 hour. Samplitude Music Studio 15 will, however, start at the correct beginning position.

FX

: With this parameter, possible inaccuracies during the positioning of long samples can be equalized. Requirement is a flawless synchronization at the sample beginning. Follow the instructions in the chapter "problem solutions".

Key: G

Capture options



Keyboard shortcut: R

Record mode:

Here you can choose between stereo and mono, recording into the RAM via RAM wave projects, or onto hard drive via wave projects.

Preload:

The recording is prepared, all buffers will be loaded. A requester will appear enabling you to instantly start recording when the Record button is clicked. If disabled, there will be a short pause (depending on the size of the Buffers) before recording actually begins.

Sample rate:

This option allows you to select the sample rate of the recording. Your audio card must support the selected sample rate or recording will not work.

Resample to 44100 Hz:

With this button you can specify whether it should be recorded at 48 kHz or 32 kHz or even be converted into 44.1 kHz while recording. This is useful when recording from DAT recorders via a digital sound card if the material is to be used on CDs with 44.1 kHz.

Rec. dev:

Here you can select the sound card driver that should be used for recording. If there is no entry here, or a wrong one, then your card is not installed on Windows correctly. Try to do this via System/Options > Driver.

Info:

Here you can access a dialog that provides information on the sound card properties. If your sound card supports 24-bit recording, you can activate this record mode via the info dialog.

Playback:

Playback while recording with record offset: Here simultaneous recording and playback can be activated if supported by the sound card(s). If you record and play through multiple sound cards, small differences may come about during playback of longer passages. This is as a result of sample rates of cards which are not 100% synchronous. Ideally you should use the same card for recording as you do for playback. Should your card have a delay between the start of recording and the start of playback, you can balance it out in the Record Offset field.

To do so, play a sample with a noticeable impulse at the beginning and record it using a loop from the sound card's output to the input. Then zoom into the [VIP](#) to such a depth that you can precisely pinpoint the delay and gauge it.

File name/file path:

The name of the audio file that is to be created and the preset directory path are displayed in the bottom record window. Both can be changed by clicking on the folder button.

Set CD track marker:

While recording you can set track markers by clicking on "Set CD track marker" in the record dialog.

Automatic record stop:

If this button is activated recording will cease automatically after approx. 16 seconds of silence. This means that you can record without having to stop when the recording comes to an end.

Automatic CD track recognition:

If this button is activated track markers are automatically placed at the end of the pauses after a track.

Create VIP project:

With this mode you can specify whether all recordings should be automatically integrated into a virtual project or not.

Monitor

: Here the LED control displays can be activated. Please note that the correct recording device must be selected prior to beginning this. While recording, the LED control displays move slower, do, however, show each maximum level.

Visual:

Indicates whether the level of the signal that is to be digitized is adjusted correctly. To set the level, play the loudest part of the material you want to record and monitor the display.

Too low level settings result in lower sound quality; too high settings result in so-called "clipping".

You can adjust the record level either on the sound source or with the mixer of your sound card.

Osci./Correl:

Here you can open the oscillograph or phase correlator. The oscillograph displays the wave form at the input in a scalable window.

The phase correlator displays the phase level of a stereo signal. A vertical line corresponds to a mono signal, and a horizontal line corresponds to a 180° phase-inverted signal which usually indicates an incorrect cable connection.

Reset peak parameter:

Here you can reset the LED peak meter (peak hold display).

Tuner:

This option allows you to tune guitars and other string instruments (tune). The visualization will display a calibration line at note A0. If different tones are played, the deviation is indicated by the calibration line, and the tone pitch is displayed numerically and can be corrected accordingly.

Record offset:

Here you can enter the offset in sample values, which may develop in "Record-while-play" mode between playback and record start of the sound card. This allows you to balance the delay between record and play start of some cards. Typical values are between 20 and 1000 samples. You can determine this value by playing a project with a distinct start in a multitrack VIP and recording it simultaneously. You can then measure the offset precisely using the zoom functions.

Set marker 1:

While recording you have the option of selecting a marker at the current position of the play cursor (position line), in order to, for example, correct an erroneous passage later.

Record:

Click this button to start recording. Please note that with active external synchronization as a "Slave", the recording does not start immediately, but rather at the start of each master.

Stop:

Ends a recording process. Should the computer be overloaded, for example, as a result of swapping or disk access, the recording can be cancelled by pressing the right mouse button.

OK

: Closes the record window.