UA-100 Startup Supplement

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Before Installing

Before installing the UA-100 please complete the following checklist:

A) Make sure your USB host controller is installed and compatible. Follow the instructions outlined under "Compatibility Information/USB Host Controller" in this document. If your card is installed and compatible, check with your computer manufacturer to verify that you have the newest versions of both your motherboard BIOS and your USB controller drivers.
Some computers with USB ports were shipped without full software support for USB.

B) Disable drivers for Modem audio as described on pages 15–17 of the UA-100 Startup manual.

C) Check your hard drives DMA settings as described in the troubleshooting section of your Startup manual (p.54–55)

D) Make sure you meet the UA-100 minimum system requirements listed on the UA-100 packaging, or in the Edirol catalog or website. The UA-100 will not be supported on systems that do not meet these requirements.

Software Requirements

Though the UA-100 will provide basic audio and MIDI functionality in most Windows software, a few requirements need to be met by recording software to provide access to the full capabilities of the UA-100 as a multitrack recording device.

A) The software must support multiple audio/MIDI ports. If your software only allows for the selection of one audio recording port you will not be able to record from both audio inputs simultaneously. And, if your software only allows for the selection of one MIDI port you will not be able to use both MIDI ports on the UA-100 independently. Most multi-track sequencing software supports this feature.

B) The software must support BOTH audio and MIDI to take advantage of certain functions, such as the harmonizing functions of the voice transformer. A majority of effects, though, can be used by "audio only" software by running the UA-100 control software simultaneously.

C) The software must be capable of basic multitrack audio recording. Software that records a single wave or MIDI channel at a time or cannot record and playback simultaneously will not allow multi-track capability.

*   *The UA-100 does not contain a MIDI synthesizer. In order to use multi-track MIDI software you will need a separate synthesizer or keyboard such as the Roland Sound Canvas or, at bare minimum, an internal sound card with a MIDI synth chip.*

Compatibility Information

The UA-100 is compatible with most Microsoft Windows 98 software and supported hardware. It fully supports Microsoft's DirectX audio system, and can be used for nearly any audio/MIDI production application. A few known incompatibilities have arisen which, though they may be resolved in the future, require consideration at this time.

1) USB Host Controller

The UA-100 is NOT compatible with the following host controllers

A) NEC Open HCD Controller*
B) Compaq PCI to USB Open Host Controller*
C) VIA Tech PCI Universal Serial Bus Host Controller
D) OPTi 82C861 PCI to USB Open Host Controller
E) SiS7001 PCI to USB Open Host Controller

NEC and Compaq host controllers may exist in computers not manufactured by NEC or Compaq. Also, most NEC and Compaq computers do not contain these host controllers. Also, Microsoft has determined, as expressed in Knowledge Base article Q181250, that some early Intel 82371 SB PCI to USB Universal Host Controllers are not fully compatible with Windows 98. If you have version 000 of this controller you may experience difficulties with Windows recognizing USB devices.

Checking your Host Controller

1. Go to Control Panel (available in the "Start" menu under "Settings").
   Double-click the "System" icon. Choose the "Device Manager" tab.

2. Click the "plus" sign (+) next to "Universal Serial Bus Controller".

• This section will expand to reveal two items. One item should be "USB Root Hub" and the other is your host controller. If this is one of the controllers listed above, you may have any compatibility issues.

   * *If one or both of these devices are not listed under "Universal Serial Bus Controller" or the "plus" sign is not available, then you do not have a USB port on your computer or it is disabled. For information on enabling your port, please contact your computer manufacturer. If you do not have a USB port on your computer, you can purchase a compatible PCI to USB or PCMCIA to USB upgrade card from Edirol directly, your local computer dealer or your computer manufacturer.*

• If you have the Intel 82371 SB controller, highlight this controller device and click the "properties" button. You will see a line on the default "general" tab that list the "Hardware Version". If this version is "000" you need to contact your computer manufacturer for upgrade possibilities.

   * *To install a PCMCIA USB card your computer must have a compatible32-bit CardBus PCMCIA slot available. To install a PCI to USB card your computer must have one internal PCI slot free.*

2) Recording Software

The UA-100 is currently incompatible with the following software products

A) Emagic Logic
The UA-100 is not known to function correctly with Emagic's Logic line of recording software at this time. This issue may be resolved.

B) Cubase VST versions 3.5 and earlier
The UA-100 does supports standard Microsoft driver systems. Earlier Cubase versions only supported Steinburg's ASIO driver system. Contact Steinburg for upgrade information concerning version 3.55 or above.

C) Any other software that does not support Microsoft standard drivers
Software that requires proprietary driver systems or specific non-DirectX driver compatibility will not be supported.

All other software we are aware of functions correctly with the UA-100 with exception of the known issues outlined in the Troubleshooting section of this document.

3) Operating System

The UA-100 is currently only compatible with Microsoft's Windows 98 operating system. Do not attempt to install this device in Windows 95 (all versions), Windows NT, UNIX (all versions), MacOS, or OS/2. Though support for operating systems other than Windows 98 may be released in the future, Edirol will not currently support or be held liable for issues caused by attempted installation in other operating systems.

Installation Troubleshooting

1) "USB Composite Device" Misidentification Issue

If you have "installed" the UA-100 and do not have UA-100 listed in Control Panel under Multimedia or in your audio software you may have inadvertently installed the generic USB Composite Device driver. This is often caused by attempting to install the UA-100 and following Windows' onscreen instructions without first placing the driver CD in the CD-ROM drive.

To resolve this misidentification, please follow the directions below.

1. In Control Panel select "System". Go to the Device Manager tab.

2. Click the "plus" sign next to "Universal Serial Bus Controllers".

3. Under this you may see "USB Composite Device". If you do, highlight the device and click "remove".

4. Unplug the UA-100 and then reattach it.

5. You should, at this point receive the "New Hardware Found" message and be able to reinstall the driver from the included CD as described in the startup manual.

If you do not receive the "New Hardware Found" message or Windows does not prompt for the drivers disk you may need to manually install the driver. To do this, highlight the USB Composite Device, as above, but do not remove it. Instead, click the "Properties" button.

1. Go to the "Drivers" tab and click the button labeled "Update Driver".

2. Click "Next". On the next page select "Display a list of drivers..." and click "Next".

3. Press the "Have Disk" button. In the location line type "X:\Drivers\Win98" where "X" is the drive letter of your CD-ROM.

4. Select "OK". On the next two pages select "next" and "finish". You should be successfully installed.

5. Continue in the Startup manual from page 23.

2) "Unknown Device" Issue

In some instances, when attempting to install the UA-100 driver Windows will detect an "Unknown" device but will not find a driver for the UA-100.

If you put the driver CD-ROM in and browse to the "drivers\win98" directory manually, Windows responds "The selected location does not contain a driver for your device."

This issue is usually caused by a malfunctioning USB controller, USB driver or an erroneous BIOS setting. Contact your computer manufacturer to determine that you have the newest version of your system BIOS and controller drivers. Also, make sure that you do not have "Legacy USB Support" enabled in BIOS. Microsoft has determined that this setting may cause some problems with USB operation. Your computer manufacturer should be able to assist you in altering this setting.

Software Troubleshooting

1) Cakewalk (All Versions)

A) Full-Duplex not functioning
("Not able to record a second audio track while first track is playing.")
In Cakewalk within the "settings" or "tools" menu (depending on your version) select "Audio Options".

1. Go to the "Advanced" tab.

2. Check the box labeled "Enable simultaneous record and playback".

B) Studioware Panel not functioning
Make sure you have the "UA-100 Control" output port selected under the "settings∕ tools" menu in "MIDI Devices". This port allows Cakewalk panels to control the UA-100. Also, if you are not using the UA-100 song template provided to construct your song, make sure that Track 17's port is selected as "UA-100 Control". The Studioware panels communicate their information via the selected port on track 17.

C) Wave Profiler

Do not, under any circumstances, run Cakewalk's Wave Profiler while the UA-100 is operational. In most cases Cakewalk will ask you before running this function with a question such as "Would you like Cakewalk to run a test of your audio hardware?" (version dependant). Always answer such questions "No". If you have run this function (either manually or by installing Cakewalk after you installed the UA-100), you may experience timing problems, intermittent MIDI and audio or system crashes. To solve this issue, uninstall Cakewalk and reinstall the software while the UA-100 is turned off or unplugged.

2) Cakewalk 8.0

Certain video cards combined with the UA-100 and Cakewalk 8.0 are known to cause intermittent system hanging or crashing. We do not have a complete list of cards that cause this issue at this time, but a patch is being developed by Cakewalk which will resolve this issue. So, if you find that your computer is experiencing difficulty running the UA-100 smoothly and you have Cakewalk 8.0 installed you may have one of these problematic combinations. The patch to resolve this issue will be posted on Cakewalk's website by the end of January 1999.

3) Musicator

Musicator may play a loud distorted sound the first time the record or play button is activated during a session. No current fix for this is available at this time. To work around the problem press the play and stop controls in Musicator once when you first load the application, preferably with the UA-100 volume turned to its lowest setting. After the first time the button is pressed Musicator will work normally.

4) Cubase VST 3.55 and Above

A few steps are required before attempting to use the UA-100 with Cubase VST.

1. First, click on the USB icon on your taskbar and select "Set properties of the Roland UA-100".

2. Select the "Wave OUTPUT" tab. On this tab set the buffer size to "5 MAX".

3. Next, in the Start Menu, open Steinburg Cubase's "ASIO DirectX Setup".
   Check the box to the left of "Roland UA-100 Direct Sound" and press "OK".

4. Then, open Steinburg's "ASIO Multimedia Setup".
   From the resulting Window select "Advanced Options".

5. In the Advanced Options screen disable all devices which are not the UA-100 by unchecking the boxes located to the left of these devices.

6. Set the sampling rate to 44100Hz.

7. Set the "Audio Buffers" of all UA-100 listings to "5".

8. Set all the "Buffer Sizes" to "5512".

9. Set "Synch reference" to "Sample Position - Output".
Under card options check all options except for "Start Input First", which should remain unchecked. If you have not run Cubase previously, these will be your default settings.

10. Finally, click the "Run Simulation".
It is possible that you may not successfully pass the synch simulation the first time. If you do not, you will need to try values for "Buffer Size" between 5505–5525 and rerun the simulation for each value until successful.
The appropriate buffer size should not vary much from this range. Do NOT allow Cubase to "Detect Buffer Size". It will invariably detect an incorrect value.

11. Once you have passed the simulation, select "OK".
In a few cases, some computers may not pass the synchronization test on any value within the range. If you find that you have trouble passing this test simply set your buffer size back to the default 5512 and ignore further offers to test. Cubase should run effectively with the UA-100 buffer size at the default setting.

12. The last steps are as follows. Open Cubase. From the Audio menu, select "System". Under ASIO Device select "ASIO Multimedia Driver". Click "OK".
Now you should be ready to record.

   *   *you may experience a delay in your monitor mix using Cubase. This is an issue with Cubase VST that is common on many computers with various audio systems. Fortunately, the UA-100 monitors your input without software monitor support. Turn off the monitor of all audio tracks to resolve this issue.*

5) Software (General)

You must plug in and turn on the UA-100 before opening your recording software. USB drivers unload when the device is off or disconnected. If you open the software before enabling the UA-100, you will not have a listing for the UA-100 in the recording software. You will not be able to record or playback.
Also, if you should unplug or turn off the unit while the software is running you will lose record and playback function until you restart the software. And, in some situations, you may experience errors, as some software is not programmed to deal with hot-swappable audio and/or MIDI devices.

General Troubleshooting

If you should experience problems with audio or MIDI playback such as stuttering, distortion or timing issues, first consult pages 49–65. Try each suggestion, even if the symptoms of your problem are not exactly as described. Individual computers react differently to certain combinations of issues.

Also, you may attempt to lower your display adapter's settings to determine if your video card is interfering with operation.

1. First, in control panel double-click the "system" icon. Select the "performance tab".

2. Click on the graphics button. From this page you can lower your hardware acceleration. Lower your acceleration to the left-most setting. This may resolve your problem.
If it does, try higher settings until you determine the highest acceleration setting that works reliably on your computer.

If this does not resolve the issue, go to "Display" in control panel.

1. Choose the "Settings" tab.
From this screen, lower your display settings to 640x480, 256 colors. If this resolves the issue, attempt higher settings until you determine the best graphics quality that does not interfere with performance.
If either of these solutions do resolve your issues, make sure to contact your computer manufacturer for alternate drivers for your display adapter that may resolve the issue without the necessity of running at lower resolutions or with less hardware acceleration. It is possible that a driver, patch or update is available that was not shipped with your machine.

Roland UA-100 Audio Canvas tutorial

UA-100 Controller software-Main mixer overview

With the UA-100 set to PC mode, boot up the UA-100 controller software. You are given two choices: Mixer and VT Mixer. Signal routing and processing is done through the mixer. The Vocal Transformer (and effects) is controlled through VT Mixer.

Mixer overview

The main mixer screen will come up. This is where you choose settings for signal routing and processing.

1. In the upper left portion entitled **Input**, there are mouse controlled dials (or pots) to control pan (ratio left/right), Send 1 (level of effect 1), and Send 2 (level of effect 2).

2. On the far left, in the middle is the **Sub** button. This button toggles the Sub Faders on and off. Their use will be described later.

3. In the bottom left are faders controlling the master levels of Mic 1/Guitar, Mic 2, Wave 1, and Wave 2, respectively. There are mute and solo buttons for each.

4. The section in the upper middle entitled **System Effect** has two more pots controlling system effects levels.

5. The section in the top right is entitled **Effect**. From the top, you can choose from two lists of insertion effects:
   Compact Effects and Full Effects. You would choose the individual effect by pressing the button to apply it to: Line, Mic 1, Mic 2, Wav 1, or Wav 2.
   There are also buttons for choosing System Effect 1 and System Effect 2.

6. In the section in the bottom entitled **Easy Setting** you can automatically set up your input device and output routing just by pushing the button of your choice.

7. The output can also be chosen manually in the **Output** section in the lower right. The left Source Select (in white) is what you hear from the speakers. The right Source Select (in red) is what you record.

To help you understand the signal routing, there is a block diagram.

Block Diagram

• Open the **Block Diagram** by pressing the icon of the magnifying glass. It is in the very top right corner.
  Position the windows so that you can see both the mixer and the block diagram as much as possible.

With the block diagram you can trace the path of your signal from left to right.

On the far right there are two gray boxes, the Record Selector and the Master Selector. You can route the signal so that what you record is different than what you hear.

It is a common practice by most audio engineers to record a track "dry", or without effects added, so that you always have the choice to make a new mix from scratch, or to make changes to your current mix. If you recorded your vocalist with hall reverb, you would be committed to that choice. Recording your vocalist dry leaves you the most options. But the vocalist may prefer to hear their performance "wet", or with reverb (or other effects) applied.

1. In the Mixer Easy Setting section, click on the easy setting **Use Mic 1**.

2. In the block diagram, left click on the gray box entitled, "**Rec Selector**".
Notice as you click repeatedly, that a little black line in the box moves.
This line shows you which channel is actually recording in software. You can toggle through all these channels.

  A) The top four channels; Mic 1, Mic 2, Wave 1, and Wave 2 run from the input straight to the Record Selector.
  If the little black line in the Record Selector box is attached to one of these, a dry signal is recorded.
  B) Beneath those channels are another set of four channels. They do not run straight to the Record Selector, but run through the insertion effects first. If you were to toggle the little black line in the Record Selector to one of these channels, you would record the signal plus insertion effects.
  C) If you toggled to the last selection Main, you would record the signal plus all effects.

3. The other gray box entitled Master Selector works the same way as the Record Selector, except that your changes affect what you are hearing through your monitor speakers and not what you are recording in software.
Any changes you make in the block diagram are also changed in the mixer. And any changes you make in the mixer are applied to the block diagram.

Now lets record something. Open up Cakewalk 8 with your UA-100 controller still open... .

Project 1

Record a dry track while reverb is heard.

1. In Cakewalk 8, open a new song.

2. In track view, double click on the "Source" box. You'll get a dialog box in which you will make two changes:
   • For **source** choose "Left 1: Roland UA-100 Wave.
   • For **port** choose:"Roland UA-100 Wave 1".
   If you do not have these choices, your UA-100 has not been set up properly.

3. In the UA-100 Mixer Easy Setting section, press the **Mic 1** button.

4. In the Effects section, press the **Mic 1** button and the Full Effects box will come up with High Quality Reverb set.

5. Back in Cakewalk track view to the left of the track name box, there are three small boxes with a letter. M is for mute, S is for solo, and R is for Armed to record.

6. Press the "R" box and it will turn red.

7. Now press the **record** button and sing something.

8. When you're finished press the space bar, or the **stop** button.

9. **Rewind** it and press **play** or the space bar.
   You should hear what you just sang without the reverb.
   Do you notice it is panned far left? Well, double click in the pan box and type 64. That puts right in the center on a scale of 0–127.

Apply effect to a dry track

1. In the UA-100 Mixer Easy Setting section, press the **Effects Loop** button.

2. In the Effects section choose Full Effects and not Compact Effects, and push the **Wav1** button. Choose High Quality Reverb.

3. In Cakewalk, set up a second track the same way you set up the first one. Press the arm button (R) on each track so that it is off on track one, and red on track two.

4. Press **Rewind** and then **Record**. Let it record for the whole performance and then press **Stop**.

5. Press **Rewind**. On track one, press the mute (M) button so that it turns yellow, and unarm track 2 so that it is no longer red.

6. Press **Play**. Now you hear your voice with lots of reverb.

7. On your Windows 98 taskbar click on UA-100 mixer to pull it up. On the small window entitled "Full Effects...", the one with reverb control there is an on/off switch that is lit green. Press it to turn the effect off for now. Then click on Cakewalk again. Mute track 2 and listen to track 1.
   Verify that it is dry (has no reverb). Try playing both tracks and the same time, setting the volume of track 2 much lower so the reverb is less.

Project 2

Record 2 separate tracks simultaneously

1. On the front of your UA-100, plug your guitar or microphone into the left jack and a microphone into the right jack.
Remember, if you plug a microphone into the left jack you must press the input volume knob so that the green light goes out. If you plug a guitar in, the light must be on.

2. In the UA-100 Mixer Easy Setting section, press the **Karaoke** button.

3. In the UA-100 Mixer Output section, change the **Source Select** to Mic1+Mic2.

4. Now in the top left of the Mixer, there are separate pan pots for Mic1/Guitar and Mic2. Pan Mic1/Guitar far left to 0. Pan Mic 2 far right to 127.

5. In Cakewalk 8 track view, set up you two audio channels. On track one, double-click on the source box. In the dialog box that comes up, set the **source** to Left 1 Roland UA-100 Wave and the **port** to Wave 1 (and click OK).
Do the same for track two except choose the **source** Right Roland UA-100 Wave and the **port** to Wave 2.

6. Record you performance in Cakewalk.

7. You will have two separate tracks that you can pan from 0 to 127 in Cakewalk. These tracks will record dry as they are set up in this procedure, so to apply effects do them one track at a time using the procedure in Project 1.

Project 3

Vocal pitch follows MIDI note

If you are having trouble singing on key, try this procedure to correct the note you are singing to be absolutely right on. Anyone can sound like a trained professional with this nice feature.

1. From the UA-100 Main controller, press the VT Mixer button. On the far left are input faders, and buttons that toggle the effects on and off.

2. The next two sections to the right control the vocal characters of pitch and formant. There is a toggle button for each to choose manual pitch shift (with the slider) or MIDI. For this procedure, toggle to **MIDI**.

3. Click on the icon in the upper right corner of this section. It is a picture of a finger pointing to a page.
   In the dialog box that comes up, make sure to check the box for "**note on**", and choose the **MIDI channel** you want to use to control the pitch (the receive channel). If you are using a MIDI file song with the melody line on Track/Channel four (which is most often the case) choose that channel.

4. In Cakewalk, double click on the **Port** box (of the applicable track, perhaps track four) in track view, and a dialog for track properties will come up.

5. For port, choose Roland UA-100 MIDI Control. (MIDI Control must be selected in Tools/MIDI devices for it to show up here). Also, choose a channel (for this example choose channel 4) Press OK.

6. Try it out. Sing into the microphone as you play your MIDI keyboard (with channel 4 selected in Cakewalk). The pitch of your voice will be shifted to the notes you play. Or if you push Play, and you have a MIDI file with a melody line on Channel four, the pitch of your voice will be shifted to that melody line.

Manual Vocal Transformer

Experiment with the vocal transformer manually. Set the toggle button from MIDI to Manual. Adjust the pitch and formant sliders to achieve various vocal effects or harmonies. You find a setting that you like, you can save it in a file. Just click on the icon of a floppy disk toward the right side of the VT Mixer to save it.

Project 4

Recording output from MIDI Sound module (basic)

In this project, labeled as basic, we will record all MIDI simultaneously onto two tracks, left and right.

1. In the UA-100 Mixer Easy Setting section, press the **Use Line** button.

2. In the Effects section, choose Compact Effects (not Full Effects).

3. Push the **Line** button to bring up the list of effects.

4. In the Compact Effects controller box, choose **Filter**. Under that, for the type of filter choose Stereo EQ (experiment later with Spectrum, Enhancer, and Humanizer).

5. In Cakewalk record at least 3 tracks of MIDI. Record a drum track (chn.10) pan center. Record a bass track and pan it far right. Record a treble or solo track and pan it far left.

6. Now to set up some audio tracks to record. On a new track, double click the **Source** box to bring up the Track Properties box. In the Source box, click the down arrow and choose "Left: UA-100 Wave. In the Port box, click on the down arrow and choose UA-100 Wave 1. On another new track do the same but for **Source** choose "Right: UA-100 Wave" and for **Port** choose "UA-100 Wave 1" and press OK.

7. Arm the two audio tracks to record by pressing the R buttons so that they are red.

8. **Rewind** the sequence and Press **Record**. Let the sequence finish and then hit **Stop** (or the spacebar).

9. Now select the two audio tracks. Draw a box completely around the graphical representation of the audio waves. Click and drag the audio tracks to the left so that the beginning starts at the end of the MIDI sequence. This way, you can rewind and listen to the MIDI version, and then hear the audio version and compare the difference.

   Most likely the MIDI version sounds a little better, a more full and rich sound. Was the audio recording hot or cold? Hot means it was recorded at the highest level of gain without distorting. Cold means it recorded at too low of a level, perhaps loosing some of the dynamics or containing unnecessary noise. There are three places where you can adjust the recording level.

   A) The volume control on your MIDI sound module.
   I would suggest setting it at 85 or 90 percent. Placing it at 100% might cause distortion.
   B) The small input knob on the back of the UA-100.
   Again, set it a little under 100%.
   C) On the UA-100 Mixer,set Input volume for Wave 1and Wave 2.
   Output volume of the Source Select. When you pressed the Use Line button the volume faders were set by default to 100 on a scale of 0–127 which is about 79%. You always want the volume on the MIDI sound module to be almost all the way up so that you get a strong signal. If you experience distortion, lower the volume on the UA-100 Mixer.

Roland Corporation