

A black ZENOLGY Shine Pad MIDI controller is shown at an angle. The device features a color LCD screen displaying 'ZENOLGY' and '001: Shine Pad'. Below the screen are several circular buttons with icons for 'MIDI', 'MIDI', 'MIDI', and 'MIDI'. The background shows a blurred image of the same device on a keyboard.

# ZENOLGY

## Owner's Manual

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06

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# Contents

---

Tone Screen / Drum Kit Screen (Common Items)

---

Tone Screen

[Tone VISUAL/PRO Screen](#)

If STEP is selected for LFO

[How to Apply the LFO](#)

---

Drum Kit Screen

[Drum Kit VISUAL/PRO Screen](#)

---

KEYBOARD Panel

---

MFX Panel

---

Tone/Drum Kit Browser Screen

[Tone/Drum Kit List](#)

---

Tone/Drum Kit Manager Screen

---

Drum Inst Browser Screen

---

Model Screen (JUPITER-8)

[Detailed Settings Screen \(JUPITER-8\)](#)

---

Model Screen (JUNO-106)

[Detailed Settings Screen \(JUNO-106\)](#)

---

Model Screen (JX-8P)

[Detailed Settings Screen \(JX-8P\)](#)

---

Model Screen (SH-101)

[Detailed Settings Screen \(SH-101\)](#)

---

Model Screen (JD-800)

[Detailed Settings Screen \(JD-800\)](#)

---

MFX Parameters

[MFX list](#)

[NO ASSIGN](#)

[FILTER](#)

[PHASER](#)

[FLANGER](#)

[CHORUS](#)

[MODULATION](#)

[DRIVE/AMP](#)

[COMP/LIMITER](#)

[DELAY](#)

[LOOPER](#)

[LO-FI](#)

[PITCH](#)

[COMBINATION](#)

[Note](#)

## Tone Screen / Drum Kit Screen (Common Items)

**[EDIT] button**

Accesses the tone VISUAL/PRO screen or the drum kit VISUAL/PRO screen.

- \* This appears only in "Pro." It does not appear in "Lite" or in the unlabeled ZENOLOGY.

**[MENU] button**

Accesses the following menu.

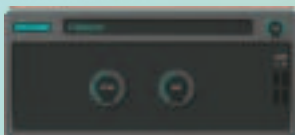
Zoom	Changes the size of the window with the mouse operation.
Clear MIDI Control Mapping	Clears the assignments of control change numbers to parameters.
Voice Limit Off, Soft, Hard	Specifies the load when generating notes.
Flip Scroll Direction (Only on Mac)	Inverts the direction of rotation when using the mouse wheel to edit a value.
Authentication	Performs user authentication for the ZENOLOGY.
Help	Shows the owner's manual (PDF).
About	Shows the About screen.

**[KEYBOARD] button**

Shows/hides the keyboard panel.

**[MFX EDIT] button**

Shows/hides the MFX panel.

**LEVEL**

Adjusts the overall volume of the tone or drum kit.

Right-click	LEARN MIDI CC Assigns a control change to LEVEL.
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**[WRITE] button**

Accesses the Tone/Drum Kit Manager, allowing you to save a tone or drum kit.

**[OVERWRITE] button**

This is shown only when a USER BANK tone or drum kit is selected.

It saves the tone or drum kit directly to the currently selected BANK/NUMBER without going through the Tone/Drum Kit Manager screen.

**[MASTER TUNE] button**

Adjusts the pitch of the tone or drum kit.

**Tone / drum kit indication**

Shows information about the currently selected tone (sound) or drum kit.

Preset/user      Bank name      Sound engine type      Category

Preset: PRST\_A Factory Presets      Z-COM1      Shine Pad/Str

001: Shine Pad

Tone / drum kit number  
(consecutive numbers within the bank)

Tone / drum kit name

**[^] [v] buttons**

Select the next or previous tone or drum kit.

- \* When you click this area, the Tone/Drum Kit Browser appears.

# Tone Screen

## [MONO] button

Specifies whether the tone will play monophonically (ON) or polyphonically (OFF).

## [UNISON] button

Layers multiple instances of a sound.

If unison is ON, the number of notes specified by each tone are layered together.

## [LEGATO] button

This is available when LEGATO is turned ON while MONO is ON. It makes the pitch change smoothly during legato performance (playing the next key before releasing the previous key).

## [PORTAMENTO] button

Specifies whether the portamento effect is applied (ON) or not applied (OFF).

Right-click

LEARN MIDI CC

Assigns a control change to each button.



## [CUTOFF] knob

Adjusts how far the filter is open.

Higher values make the sound brighter, and lower values make the sound darker.

## [RESO] knob

Boosts the components of the sound that are near the cutoff frequency, adding a distinctive character to the sound.

Raising this value excessively might cause oscillation, making the sound distorted.

Higher values produce a stronger character, and lower values produce a weaker character.

## [ATTACK] knob

Specifies the time from when the key is pressed until the sound completes its attack.

Higher values produce a softer attack, and lower values produce a sharper attack.

## [RELEASE] knob

Specifies the time from when the key is released until the sound disappears.

Higher values produce a longer release, and lower values produce a crisper release.

## [VIBRATO] knob

Adjusts the depth of the vibrato effect (the depth of pitch modulation).

Higher values produce greater pitch modulation, and lower values produce less modulation.

## How to operate the knobs

Right-click

LEARN MIDI CC

Assigns a control change to the parameter selected by [CUTOFF]-[VIBRATO].

Drag

Tone edit

Edits each parameter.

# Tone VISUAL/PRO Screen

## Switching between VISUAL EDIT and PRO EDIT

Press the [VISUAL EDIT] button to switch to the VISUAL EDIT screen, or the [PRO EDIT] button to switch to PRO EDIT.

### VISUAL EDIT screen

**[VISUAL EDIT] button**

Edit parameters in a graphical edit screen.

**[PRO EDIT] button**

Edit all parameters as a list.




### PRO EDIT screen

**[VISUAL EDIT] button**

Edit parameters in a graphical edit screen.

**[PRO EDIT] button**

Edit all parameters as a list.



**Navigation buttons**

Jump to the first parameter of each module.

**[UTILITY] button**

Copy/paste parameters in entire units (Tone Partial 1-4, Drum Kit Key/Inst, Drum Kit Comp 1-6, MFx).

Copy	Copies the selected parameter from the currently selected tone or drum kit to the clipboard.
Paste	Pastes the selected parameter from the clipboard to the current tone or drum kit.

**PARTIAL 1-4 (PARTIAL OFF) button**

Turns the partial on/off.

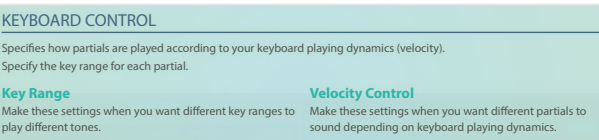
## VISUAL EDIT (partial layout)

Within STRUCTURE, clicking a [PARTIAL 1-4] button selects a layout that shows the modules (OSC, FILTER, AMP/EQ, PITCH, LFO) of the corresponding partial.



## VISUAL EDIT (module layout)

Within STRUCTURE, clicking an OSC causes every OSC to light, and selects a layout that shows the four partials side by side. The [PITCH] [OSC] [LFO] [FILTER] [AMP/EQ] buttons correspond to the module layout.



\* In the case of module layout, you can use the PARTIAL 1-4 (PARTIAL OFF) buttons located at the upper right of each module to turn the partial on/off.

## RANGE/CTRL

Within STRUCTURE, you can click one of the [RANGE CTRL] buttons to access a velocity range and matrix control edit screen for the corresponding partial.

**KEYBOARD CONTROL**

Specifies how partials are played according to your keyboard playing dynamics (velocity). Specify the key range for each partial.

**Key Range**

Make these settings when you want different key ranges to play different tones.

Specify the lowest note (Lower) and highest note (Upper) of the key range that you want to specify.

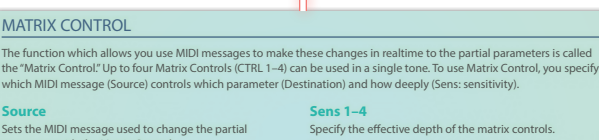
If you specify Fade, the sound decreases as you move outside the range.

**Velocity Control**

Make these settings when you want different partials to sound depending on keyboard playing dynamics.

Specify the softest (Lower) and strongest (Upper) velocities that will be sounded.

If you specify Fade, the sound decreases as you move outside the range.



## MATRIX CONTROL

The function which allows you use MIDI messages to make these changes in realtime to the partial parameters is called the "Matrix Control." Up to four Matrix Controls (CTRL 1-4) can be used in a single tone. To use Matrix Control, you specify which MIDI message (Source) controls which parameter (Destination) and how deeply (Sens: sensitivity).

**Source**

Sets the MIDI message used to change the partial parameter with the Matrix Control.

**Destination 1-4**

Selects the partial parameter that is to be controlled when using the Matrix Control.

When not controlling parameters with the Matrix Control, set this to "OFF."

Up to four parameters can be specified for each Matrix Control, and controlled simultaneously.

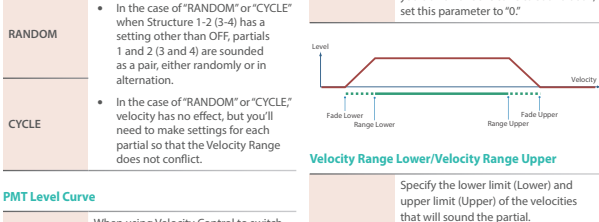
**Sens 1-4**

Specify the effective depth of the matrix controls.

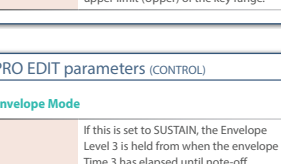
To make an increase in the currently selected value (to get higher values, move to the right, increase rates, and so on), select a positive (+) value; to make a decrease in the currently selected value (to get lower values, move to the left, decrease rates, and so on), select a negative (-) value.

For either positive or negative value, greater absolute values will allow greater amounts of change.

Set this to "0" if you don't want to apply the effect.



## PRO EDIT parameters (KEYBOARD)

Velocity Control	
<b>OFF</b>	Specifies how partials are played according to your keyboard playing dynamics (velocity). If this is set to "OFF," different partials are sounded according to the playing velocity and the Velocity Range Lower/Upper and Velocity Fade Lower/Upper settings.
<b>ON</b>	<ul style="list-style-type: none"> <li>If this is "RANDOM" or "CYCLE" each partial is sounded randomly or cyclically.</li> <li>In the case of "RANDOM" or "CYCLE" when Structure 1-2 (3-4) has a setting other than OFF, partials 1 and 2 (3 and 4) are sounded as a pair, either randomly or in alternation.</li> <li>In the case of "RANDOM" or "CYCLE," the velocity has no effect, but you'll need to make settings for each partial so that the Velocity Range does not conflict.</li> </ul>
<b>PMT Level Curve</b>	
<b>EXP</b>	When using Velocity Control to switch between partials, the crossfade level changes in a non-linear curve.
<b>LINEAR</b>	When using Velocity Control to switch between partials, the crossfade level changes in a linear curve.
	
Key Range Lower/Key Range Upper	
<b>C-69</b>	Specify the key range for each partial. Make these settings when you want different key ranges to play different tones. Specify the lower limit (Lower) and upper limit (Upper) of the range.

## PRO EDIT parameters (CONTROL)

Envelope Mode	
<b>NO-SUS, SUSTAIN</b>	If this is set to SUSTAIN, the Envelope Level 3 is held from when the envelope Time 3 has elapsed until the note-off. When note-off occurs, the envelope transitions from the current value to the Time 4 segment (release segment). If this is set to NO-SUS, the envelope transitions to the release segment after passing Time 3 regardless of the note-off timing, operating according to the times specified by the envelope.
<b>Damper Free Note</b>	For notes above the specified note number, the Envelope Mode operates as NO-SUS. Use this to simulate the undamped region of a piano sound.
<b>DF Decay Offset</b>	-100→+100 Specifies a fine adjustment to the time over which the sound decays when the Damper Free Note effect is applied.
<b>Receive Bender</b>	Specifies for each partial whether MIDI pitch bend messages are received (ON) or not received (OFF).
Receive Expression	
<b>OFF, ON</b>	Specifies for each partial whether MIDI expression messages are received (ON) or not received (OFF).
<b>Receive Hold-1</b>	Specifies for each partial whether MIDI hold 1 messages are received (ON) or not received (OFF).
<b>Redamper Switch</b>	If Redamper Switch is ON, you can perform the Half Damper operations used for piano sounds. However, the following conditions must be satisfied in order to use this operation. <ul style="list-style-type: none"> <li>Envelope Mode is NO-SUS</li> <li>Amp Envelope's Level 1 and 2 are 1 or greater</li> <li>Amp Envelope's Times are Time 3 &gt; Time 4</li> </ul>
<b>Soft EQ Sens</b>	Increases the proportion by which the EQ's High-Gain is lowered by the amount of pedal. With a setting of 0, this has no effect.

## PRO EDIT parameters (MATRIX CONTROL)

A number of the more typical of the ZENOLOGY's PARTIAL parameters have been designed so they accept the use of Control Change (or other) MIDI messages for the purpose of making changes in their values. This provides you with a variety of means of changing the way tones are played.

For example, you can use the Modulation Bar to change the LFO cycle rate, or use the keyboard's touch to open and close a filter.

The function which allows you use MIDI messages to make these changes in realtime to the partial parameters is called the "Matrix Control."

Up to four Matrix Controls can be used in a single tone.

To use Matrix Control, you specify which MIDI message (Source) controls which parameter (Destination) and how deeply (Sens: sensitivity).

Source 1-4 (Matrix Control 1-4)	
<b>OFF</b>	Matrix control will not be used.
<b>CC01-31, CC33-95</b>	Controller numbers 1-31, 33-95
<b>BEND</b>	Pitch bend
<b>AFT</b>	Aftertouch
<b>SYS-CTRL1-4</b>	<p>The following MIDI messages control the parameters.</p> <p><b>SYS-CTRL1:</b> CC01</p> <p><b>SYS-CTRL2:</b> Aftertouch</p> <p><b>SYS-CTRL3:</b> CC02</p> <p><b>SYS-CTRL4:</b> CC04</p> <ul style="list-style-type: none"> <li>If using the "Tone/Drum Kit Manager Screen" command [EXPORT] - For Hardware/Zenbeats (ZC1) to play the settings on a hardware product, the system settings of each hardware product are used.</li> </ul>
<b>VELOCITY</b>	Velocity (pressure you press a key with)
<b>KEYFOLLOW</b>	Keyfollow (keyboard position with C4 as 0)
<b>TEMPO</b>	Tempo specified by the DAW
<b>LFO1, LFO2</b>	LFO 1 LFO 2
<b>PIT-ENV</b>	Pitch envelope
<b>FLT-ENV</b>	Filter envelope
<b>AMP-ENV</b>	Amp Envelope
<b>* Velocity and Keyfollow correspond to Note Messages.</b>	
* Although there are no MIDI messages for LFO 1 through Amp Envelope, they can be used as Matrix Control. In this case, you can change the partial settings in realtime by playing tones.	

**NOTE**

There are parameters that determine whether or not Pitch Bend, Controller Number 11 (Expression) and Controller Number 64 (Hold 1) are received (p. 5). When these settings are "ON," and the MIDI messages are received, then when any change is made in the settings of the desired parameter, the Pitch Bend, Expression, and Hold 1 settings also change simultaneously. If you want to change the targeted parameters only, then set these to "OFF."

Destination 1-4 (MATRIX CONTROL 1-4)	
<b>OFF</b>	Matrix control will not be used.
<b>PCH</b>	Changes the pitch.
<b>CUT</b>	Changes the cutoff frequency.
<b>RES</b>	Emphasizes the overtones in the region of the cutoff frequency, adding character to the sound.
<b>LEV</b>	Changes the volume level.
<b>PAN</b>	Changes the pan.
<b>CHO</b>	Does not function on this product. If using the "Tone/Drum Kit Manager Screen" command [EXPORT] - For Hardware/Zenbeats (ZC1) to play the settings on another product, this changes the depth of that product's chorus.
<b>REV</b>	Does not function on this product. Does not function on this product. If using the "Tone/Drum Kit Manager Screen" command [EXPORT] - For Hardware/Zenbeats (ZC1) to play the settings on another product, this changes the depth of that product's reverb.
<b>PIT-LFO1</b>	Changes the vibrato depth.
<b>FLT-LFO1</b>	Changes the wah depth.
<b>AMP-LFO1</b>	Changes the tremolo depth.
<b>PAN-LFO1</b>	Changes the effect that the LFO will have on pan.
<b>LFO1-RATE</b>	Changes the speed of the LFO cycles. The speed will not change if LFO Rate is set to "note."
<b>PIT-ATK</b>	Changes the Time 1 of the pitch envelope.
<b>PIT-DCY</b>	Changes the Time 2 and Env Time 3 of the pitch envelope.
<b>PIT-REL</b>	Changes the Time 4 of the pitch envelope.
<b>FLT-ATK</b>	Changes the Time 1 of the FLT envelope.
<b>FLT-DCY</b>	Changes the Time 2 and Env Time 3 of the FLT envelope.
<b>FLT-REL</b>	Changes the Time 4 of the FLT envelope.
<b>AMP-ATK</b>	Changes the Time 1 of the Amp Envelope.
<b>AMP-DCY</b>	Changes the Time 2 and Env Time 3 of the Amp Envelope.

Sens 1-4 (MATRIX CONTROL 1-4)	
-63→+63	Specify the effective depth of the matrix controls. To make an increase in the currently selected value (to get higher values, toward the right, faster, etc.), or specify a negative (-) value if you want to change the value in a negative direction (smaller, toward the left, slower, etc.). Larger values will allow a greater amount of control.

## MFx

In the tone screen, press the [MFx EDIT] button to access the MFx screen.

**MFx Panel**

→ "MFx Panel"




## MFx CONTROL

Source 1-4	
<b>OFF</b>	Specifies the MIDI message that will control the corresponding MFx CONTROL parameter.
<b>Destination 1-4</b>	Specifies the multi-effect parameters that are controlled by MFx CONTROL. The multi-effects parameters available for control will depend on the multi-effects type.
Sens 1-4	
-63→+63	Specifies the depth of MFx CONTROL. Specify a positive (+) value if you want to change the value of the assigned destination in a positive direction (larger, toward the right, faster, etc.), or specify a negative (-) value if you want to change the value in a negative direction (smaller, toward the left, slower, etc.). Larger values will allow a greater amount of control.

## Tone screen

→ "Tone Screen / Drum Kit Screen (Common Items)"

→ "Tone Screen"

## 2 Structure

Structure lets you sound two partials as a set.

You can create a wide range of sounds by using partial 2 or 4 (the modulator) to modulate partial 1 or 3 (the carrier).

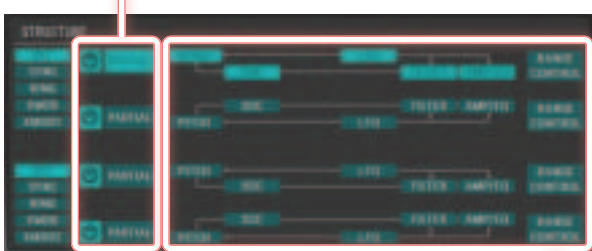
Since the Structure uses two partials as a pair, it provides parameters that are used in common by the carrier and modulator.

### [ON] button

Turns the partial on/off.

### [PARTIAL 1-4] button

Shows all modules of the selected partial in the tone VISUAL/PRO screen (partial layout).



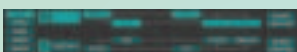
### [PITCH] [OSC] [LFO] [FILTER] [AMP/EQ] buttons

Shows the module selected in the tone VISUAL/PRO screen for all four partials (module layout).

### [RANGE/CTRL] button

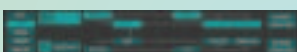
Shows a layout in which the tone VISUAL/PRO screen shows the velocity range and matrix control edit screen of each partial.

### [OFF] button



The two partials are used individually (not as a pair).

### [SYNC] button

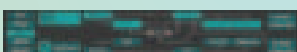


Implements the oscillator sync function that is provided by an analog synthesizer.

The partial 1 oscillator is reset at intervals of partial 2's pitch cycle.

\* This is effective only if OSC Type is VA or PCM-Sync.

### [RING] button

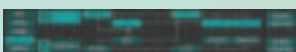


Implements the ring modulator function that is provided by an analog synthesizer.

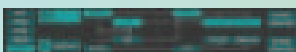
The output sound of partial 2 is multiplied with partial 1.

### [XMOD] [XMOD2] buttons

#### XMOD



#### XMOD2



Implements the cross modulation function that is provided by an analog synthesizer.

The output sound of partial 2 is applied as the pitch of partial 1.

\* XMOD2 is available only when Partial 1 and 3 are OSC Type "VA."

## PRO EDIT parameter (STRUCTURE)

Structure lets you sound two partials as a set.

You can create a wide range of sounds by using partial 2 or 4 (the modulator) to modulate partial 1 or 3 (the carrier).

Since the Structure uses two partials as a pair, it provides parameters that are used in common by the carrier and modulator.

For the following parameters, only the partial settings of the carrier are valid (the settings of the modulator are ignored).

### KEYBOARD

- Keyboard Range Lower
- Keyboard Range Upper
- Keyboard Fade Width Lower
- Keyboard Fade Width Upper
- Velocity Range Lower
- Velocity Range Upper
- Velocity Fade Width Lower
- Velocity Fade Width Upper

### SWITCH

- Partial Switch

### OSC

- Delay Mode (note)
- Delay Mode
- Delay Time Sync
- Delay Time (note)
- Delay Time

### CONTROL

- Envelope Mode
- Receive Hold-1
- Redamper Switch
- Damper Free Note
- MATRIX CONTROL
- Destination: PMT
- Destination: CROSS-MOD

### Structure1-2

The sound of partial 1 is modulated by partial 2.

OFF	OFF
SYNC	Implements the oscillator sync function that is provided by an analog synthesizer. The partial 1 oscillator is reset at intervals of partial 2's pitch cycle. This is effective only if OSC Type is VA or PCM-Sync.
RING	Implements the ring modulator function that is provided by an analog synthesizer. The output sound of partial 2 is multiplied with partial 1.
XMOD, XMOD2	Implements the cross modulation function that is provided by an analog synthesizer. The output sound of partial 2 is applied as the pitch of partial 1. XMOD2 is available only when Partial 1 and 3 are OSC Type "VA."

### Structure3-4

The sound of partial 3 is modulated by partial 4.

OFF	OFF
SYNC	Implements the oscillator sync function that is provided by an analog synthesizer. The partial 3 oscillator is reset at intervals of partial 4's pitch cycle. This is effective only if OSC Type is VA or PCM-Sync.
RING	Implements the ring modulator function that is provided by an analog synthesizer. The output sound of partial 4 is multiplied with partial 3.
XMOD, XMOD2	Implements the cross modulation function that is provided by an analog synthesizer. The output sound of partial 4 is applied as the pitch of partial 3. XMOD2 is available only when Partial 1 and 3 are OSC Type "VA."

### RING1-2 Level

0-127 RING level when Structure1-2 is RING.

### RING3-4 Level

0-127 RING level when Structure3-4 is RING.

### RING OSC1 Level

0-127 Effective when Structure1-2 is RING. Sets the partial 1 OSC level.

### RING OSC2 Level

0-127 Effective when Structure1-2 is RING. Sets the partial 2 OSC level.

### RING OSC3 Level

0-127 Effective when Structure3-4 is RING. Sets the partial 3 OSC level.

### RING OSC4 Level

0-127 Effective when Structure3-4 is RING. Sets the partial 4 OSC level.

### XMOD 1-2 Depth

0-9600 [cent] Cross Modulation Depth when Structure1-2 is XMOD.

### XMOD 3-4 Depth

0-9600 [cent] Cross Modulation Depth when Structure3-4 is XMOD.

### XMOD2 1-2 Depth

0-127 Cross Modulation Depth when Structure1-2 is XMOD2.

### XMOD2 3-4 Depth

0-127 Cross Modulation Depth when Structure3-4 is XMOD2.

### CrossMod OSC1 Level

0-127 Effective when Structure1-2 is XMOD/XMOD2. Sets the partial 1 OSC level.

### CrossMod OSC2 Level

0-127 Effective when Structure1-2 is XMOD/XMOD2. Sets the partial 2 OSC level.

### CrossMod OSC3 Level

0-127 Effective when Structure3-4 is XMOD/XMOD2. Sets the partial 3 OSC level.

### CrossMod OSC4 Level

0-127 Effective when Structure3-4 is XMOD/XMOD2. Sets the partial 4 OSC level.

### Partial Phase Lock

OFF, ON This is available if OSC Type is "VA"; it locks the waveform phase between partials. It is effective to use this with XMOD2.

### 3 Overall settings (COMMON)

#### PORTAMENTO TIME

When portamento is used, this specifies the time over which the pitch will change.

#### ANALOG FEEL

Applies time-varying change to the pitch and volume of the tone that is producing sound, adding a sense of variability.

#### COARSE TUNE

Shifts the pitch in units of a semitone.

#### FINE TUNE

Finely adjusts the pitch in units of one cent.

#### UNISON DETUNE

Detunes each of the notes that are allocated by the Unison Size number, producing a detuned effect.

#### UNISON SIZE

If unison is on, this specifies the number of notes that are assigned to each key that is pressed.

#### PRO EDIT parameters (COMMON)

##### Category

0-49 Selects the tone's category.

##### Level

Adjusts the overall volume of the tone.

\* This is a different parameter than the LEVEL and Common Level parameters in "Tone Screen / Drum Kit Screen (Common Items)." Common Level is also effective when using the "Tone/Drum Kit Manager Screen" command [EXPORT]- For Hardware/Zenbeats (ZC1) to play the settings on a hardware product. In contrast, the LEVEL parameter of the tone screen and drum kit screen is effective only on this product.

##### Pan

Specifies the pan of the tone.

"L64" is far left, "0" is center, and "63R" is far right.

##### Priority

This determines how notes will be managed when the maximum polyphony is exceeded.

**LAST** The last-played voices will be given priority, and currently sounding notes will be turned off in order, beginning with the first-played note.

**LOUDEST** The voices with the loudest volume will be given priority, and currently sounding notes will be turned off, beginning with the lowest volume voice.

##### Coarse Tune

-48 to +48 [semitone] Adjusts the pitch of the sound up or down in semitone steps (+/- 4 octaves).

##### Fine Tune

-50 to +50 [cent] Adjusts the pitch of the sound up or down in 1-cent steps (+/- 50 cents).

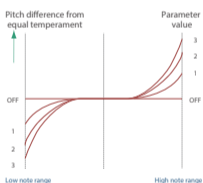
##### Octave Shift

-3 to +3 Adjusts the pitch of the tone's sound up or down in units of an octave (+/- 3 octaves).

##### Stretch Tune Depth

This setting allows you to apply "stretched tuning" to the tone. (Stretched tuning is a system by which acoustic pianos are normally tuned, causing the lower range to be lower and the higher range to be higher than the mathematical tuning ratios would otherwise dictate.) With a setting of "OFF," the tone's tuning will be equal temperament. A setting of "3" will produce the greatest difference in the pitch of the low and high ranges. The diagram shows the pitch change relative to equal temperament that will occur in the low and high ranges. This setting will have a subtle effect on the way in which chords resonate.

OFF,  
1-3



##### Analog Feel

Applies time-varying change to the pitch and volume of the tone that is producing sound, adding a sense of variability.

As you increase this value toward the maximum, the variability becomes greater, producing instability.

##### Mono/Poly

Specifies whether the tone will play polyphonically (POLY) or monophonically (MONO).

**MONO** Sound only the last-played key one at a time.

**POLY** Two or more notes can be played simultaneously.

##### Unison Switch

This layers a single sound. If the Unison Switch is on, the number of notes layered on one key will change according to the number of keys you play.

**OFF, ON**

- If the OSC Type is PCM, this is limited to mono playing.
- If the Legato Switch is on, the Delay Time is ignored while playing legato.
- Even if Legato Retrigger Interval is specified, it operates as OFF.

##### Unison Size

If unison is on, this specifies the number of notes that are assigned to each key that is pressed. Increasing the Unison Size increases the polyphony, making it more likely that notes will be cut off.

##### Unison Detune

Detunes each of the notes that are allocated by the Unison Size number, producing a detuned effect. As you increase this value, each note is detuned more greatly, producing a thicker sound.

##### Legato Switch

This is effective when MONO/POLY is set to MONO and Legato Switch is turned ON. When you press the next key while still holding down the previous key (legato performance), the pitch changes smoothly. The way in which the change occurs depends on the Legato Retrigger Interval.

**OFF, ON**

##### Legato Retrigger Interval

When Legato Switch is enabled and you play legato, this specifies whether retriggering occurs (0-12) or does not occur (OFF).

If this is off, only the pitch of the currently-sounding tones changes according to the pitch of the key. If this is set to 1-12, retriggering occurs smoothly when the pitch difference during legato performance exceeds the specified value.

For example, if this is set to 4, and using C4 as the reference pitch, playing notes Db4-E4 legato will change only the pitch without retriggering, but playing the F4 note (which is five semitones away from C4) legato will retrigger F4. When F4 is retriggered at this time, F4 now becomes the reference pitch. If this is set to 0, each note is retriggered every time regardless of the pitch difference. For acoustic-type sounds in particular, an unnatural impression can occur if only the pitch is changed, so you'll need to adjust the Legato Retrigger Interval.

##### Portamento Switch

Specifies whether the portamento effect will be applied (ON) or not applied (OFF).

**OFF, ON**

\* Portamento is an effect which smoothly changes the pitch from the first-played key to the next-played key. By applying portamento when the MONO/POLY parameter is "MONO," you can simulate slide performance techniques on a violin or similar instrument.

##### Portamento Mode

Specifies the performance conditions for which portamento will be applied.

**NORMAL** Portamento will always be applied.

**LEGATO** Applies portamento only when you play legato (i.e., when you press the next key before releasing the previous key).

##### Portamento Type

Specifies the type of portamento effect.

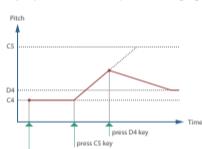
**RATE** The time it takes will depend on the distance between the two pitches.

**TIME** The time it takes will be constant.

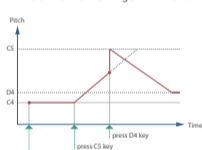
##### Portamento Start

When another key is pressed during a pitch change produced by portamento, a new pitch change will begin. This setting specifies the pitch at which the change will begin.

**Pitch** Starts a new portamento when another key is pressed while the pitch is changing.



**NOTE** Portamento will begin from the pitch where the current change would end.



##### Portamento Time

When portamento is used, this specifies the time over which the pitch will change.

**0-1023** Higher settings will cause the pitch change to the next note to take more time.

##### Bend Range Up

Specifies the degree of pitch change in semitones when the Pitch Bend lever is all the way right. For example, if this parameter is set to "48," the pitch will rise four octave when the pitch bend lever is moved to the right-most position.

##### Bend Range Down

Specifies the degree of pitch change in semitones when the Pitch Bend lever is all the way left. For example if this is set to "48" and you move the pitch bend lever all the way to the left, the pitch will fall 4 octaves.

##### Bend Range Fine Up

Finely adjusts the degree of pitch change in one-cent units when the Pitch Bend lever is moved to the right.

##### Bend Range Fine Down

Finely adjusts the degree of pitch change in one-cent units when the Pitch Bend lever is moved to the left.

##### Bend Mode

**NORMAL** The pitch bend lever works in the conventional way.

**CATCH + LAST** The pitch bend effect applies only to the last-played note. If a note-on occurs while pitch bend is already applied, the new note sounds at the center pitch. The pitch starts changing only after the controller passes through the center position.

##### Soft Level Sens

Specifies the amount of volume change that occurs when you operate the soft pedal (CC#67).

**0-100** This is effective when specified for piano sounds.

##### ADSR Envelope Switch

This imitates the operation of the ADSR envelope that is provided on an analog synthesizer.

**OFF, ON** If ADSR Env Switch is ON, the "Time 2" parameters of Pitch/Filter/Amp Env Time respectively are ignored, and only the "Level 3" parameters of Pitch/Filter/Amp Env Level are valid.

##### Partial Switch

**OFF, ON** Use these switch to turn the partials on/off.

# 4 OSC

## OSC common

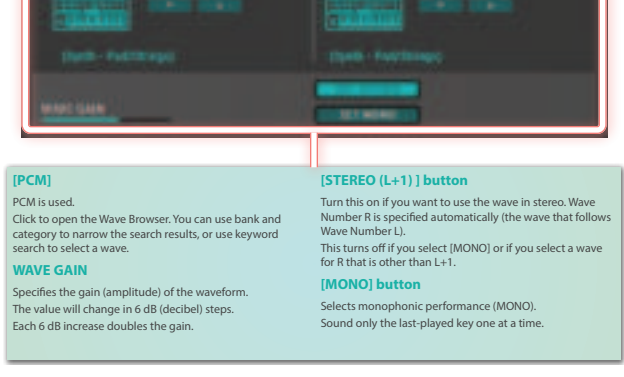
### OSC Type

Specifies the oscillator type.

[PCM]	PCM is used. Click to open the Wave Browser. You can use bank and category to narrow the search results, or use keyword search to select a wave.
[VA]	A numerically calculated analog-modeled wave is generated.
[PCM SYNC]	A PCM wave that allows an oscillator sync effect with STRUCTURE = SYNC is used.
[SUPER SAW]	SuperSAW is used.
[NOISE]	White noise is used.

### PARTIAL 1-4 [ON/OFF] button

Turn each partial on/off.  
\* These are shown only in the module layout.



### [PCM]

PCM is used. Click to open the Wave Browser. You can use bank and category to narrow the search results, or use keyword search to select a wave.

### WAVE GAIN

Specifies the gain (amplitude) of the waveform. The value will change in 6 dB (decibel) steps. Each 6 dB increase doubles the gain.

### [STEREO (L+1) ] button

Turn this on if you want to use the wave in stereo. Wave Number R is specified automatically (the wave that follows Wave Number L). This turns off if you select [MONO] or if you select a wave for R that is other than L+1.

### [MONO] button

Selects monophonic performance (MONO). Sound only the last-played key one at a time.

### [VA]

A numerically calculated analog-modeled wave is generated.

[^~]	Sawtooth wave
[□]	Square wave
[^△]	Triangle wave
[^~]	Sine wave
[RAMP]	Ramp wave
[JUNO]	Modulated sawtooth wave
[^~2]	Triangle wave variation
[^~3]	Triangle wave variation
[^~2]	Sine wave variation

### WAVE GAIN

Specifies the gain (amplitude) of the waveform. The value will change in 6 dB (decibel) steps. Each 6 dB increase doubles the gain.

### PULSE WIDTH

This effect is produced when the waveform is deformed by varying the duty cycle of the pulse width. It is also effective with waveforms other than SQR (square wave).  
\* If the value is 64, the pulse width has a 50%:50% duty cycle.

### PWM DEPTH (LFO2)

Specifies the amount (depth) of LFO applied to PW (Pulse Width). PW is modulated according to the LFO2 setting.

### FAT

Boosts the low-frequency region.

### INVERT

If this is ON, the phase of the VA waveform is inverted.

### [PCM SYNC]

Produces the wave of the specified waveform. PCM SYNC is effective if specified as Slave when the structure is SYNC (the sync-modulated partial is 1 or 3).

### WAVE GAIN

Specifies the gain (amplitude) of the waveform. The value will change in 6 dB (decibel) steps. Each 6 dB increase doubles the gain.

### [SUPER SAW]

SuperSAW is used.

### WAVE GAIN

Specifies the gain (amplitude) of the waveform. The value will change in 6 dB (decibel) steps. Each 6 dB increase doubles the gain.

### WAVE GAIN

Specifies the gain (amplitude) of the waveform. The value will change in 6 dB (decibel) steps. Each 6 dB increase doubles the gain.

### [NOISE]

White noise is used.

### WAVE GAIN

Specifies the gain (amplitude) of the waveform. The value will change in 6 dB (decibel) steps. Each 6 dB increase doubles the gain.

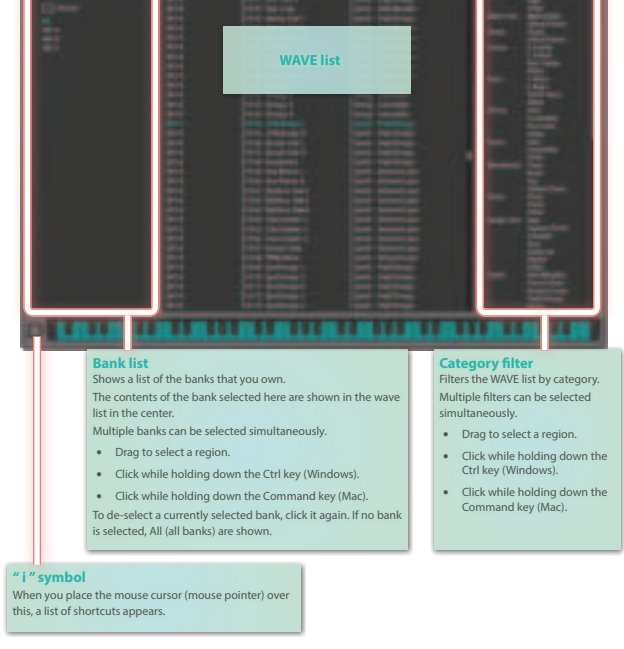
## Wave Browser

### WAVE information

Shows the category, thumbnail, sound number, and sound name of the selected WAVE.

### Keyword search

Lets you use keywords (multiple selections are allowed) to further narrow the focus of the displayed result.



### Bank list

Shows a list of the banks that you own. The contents of the bank selected here are shown in the wave list in the center. Multiple banks can be selected simultaneously.

- Drag to select a region.
- Click while holding down the Ctrl key (Windows).
- Click while holding down the Command key (Mac).

To de-select a currently selected bank, click it again. If no bank is selected, All (all banks) are shown.

### Category filter

Filters the WAVE list by category. Multiple filters can be selected simultaneously.

- Drag to select a region.
- Click while holding down the Ctrl key (Windows).
- Click while holding down the Command key (Mac).

### "i" symbol

When you place the mouse pointer (mouse pointer) over this, a list of shortcuts appears.

## PRO EDIT parameters (OSC)

### OSC Type

Specifies the oscillator type.

PCM	PCM is used.
VA	A numerically calculated analog-modeled wave is generated.
PCM-Sync	A PCM wave that allows an oscillator sync effect with STRUCTURE = SYNC is used.
SuperSAW	SuperSAW is used.
Noise	White noise is used.

### FXM Color

Specifies how FXM will perform frequency modulation. Higher settings result in a grainier sound, while lower settings result in a more metallic sound.

1-4

### Wave Bank

INT\_A, INT\_B, INT\_C, ... This is the bank name of the wave that is sounded when the OSC Type is PCM.

### FXM Depth

Specifies the depth of the modulation produced by FXM.

0-16

### Wave L/R

Specifies the wave that is sounded when OSC Type is PCM. If using mono, specify only the left side (L). If using stereo, specify the right side (R) as well. If using mono, specify only Wave L and leave Wave R at 0: OFF. If you specify only Wave R, no sound is heard.

### Delay Mode

**Partial Delay**  
This produces a time delay between the moment a key is pressed (or released), and the moment the partial actually begins to sound. You can also make settings that shift the timing at which each partial is sounded.  
By modifying the tonal character of the partial that is sounded with a delay, or by modifying the pitch for each partial, you can produce arpeggio-like performances by pressing a single key. The partial delay time can also be synchronized to the tempo.  
If Legato Retrigger Interval is other than OFF, legato operation occurs only when Delay Mode is NORMAL. Also in this case, Legato Retrigger Interval operates as 0 (retriggers at each Delay Time).

**NORMAL**  
The partial begins to play after the time specified in the Partial Delay Time parameter has elapsed.

### VA Waveform

Specifies the wave that is used when OSC Type is VA.

SAW	Sawtooth wave
SQR	Square wave
TRI	Triangle wave
SIN	sine wave
RAMP	Ramp wave
JUNO	Modulated sawtooth wave
TRI2	Triangle wave variation
TRI3	Triangle wave variation
SIN2	Sine wave variation

**HOLD**  
Although the partial begins to play after the time specified in the Partial Delay Time parameter has elapsed, if the key is released before the time specified in the Partial Delay Time parameter has elapsed, the partial is not played.

### VA Waveform Invert Sw

OFF, ON If this is ON, the phase of the VA waveform is inverted.

**KEY-OFF-NORMAL**  
Rather than being played while the key is pressed, the partial begins to play once the period of time specified in the Partial Delay Time parameter has elapsed after release of the key. This is effective in situations such as when simulating noises from guitars and other instruments.

### PCM-Sync Wave Name

Specifies the wave that is used when OSC Type is PCM-Sync. The PCM-Sync oscillator is effective when specified as the Slave (the sync-modulated partial 1 or 3) when Structure is set to SYNC.

**KEY-OFF-DECAY**  
Rather than being played while the key is pressed, the partial begins to play once the period of time specified in the Partial Delay Time parameter has elapsed after release of the key. Here, however, changes in the Amp Envelope begin while the key is pressed, which in many cases means that only the sound from the release portion of the envelope is heard.

### Gain

Specifies the gain (amplitude) of the waveform. The value will change in 6 dB (decibel) steps. Each 6 dB increase doubles the gain.

-18~+12 [dB]

### Pulse Width

This effect is produced when the waveform is deformed by varying the duty cycle of the pulse width. It is effective when OSC Type is VA, and is also effective with waveforms other than SQR (square wave).  
\* If the value is 64, the pulse width has a 50%:50% duty cycle.

0-127

### PWM Depth

Specifies the amount (depth) of LFO applied to PW (Pulse Width). PW is modulated according to the LFO2 setting.

-63~+63

### SuperSAW Detune

Adjusts the Detune depth for SuperSAW. Higher values produce a deeper Detune effect.  
\* This is effective only when SuperSAW is selected as the OSC Type.

0-127

### Click Type

SOFT	
HARD	Changes the sense of attack by varying the position at which the sound starts. This is available if OSC Type is VA.
NATURAL	However, HARD is effective only when Waveform is TRI, TRI2, SIN, or SIN2.
OFF	

### Fat

Boosts the low-frequency region. This is effective if OSC Type is VA.

0-127

### OSC Attenuator

Specifies the OSC level. 255 is the reference value. If you want only the self-oscillation of the filter to be heard, set this to 0.

0-255

### FXM Switch

This sets whether FXM will be used (ON) or not (OFF).  
\* FXM (Frequency Cross Modulation) uses a specified waveform to apply frequency modulation to the currently selected waveform, creating complex overtones. This is useful for creating dramatic sounds or sound effects.

OFF, ON

### Delay Time Sync

OFF, ON Set this ON if you want the partial delay time to synchronize with the tempo.

### Delay Time (note)

This is available when Delay Time Sync is ON. It specifies the delay time in terms of a note value.

1/64T-2

### Delay Time

This is available when Delay Time Sync is OFF. It specifies the delay time without regard to the tempo.

0-1023

### Wave Tempo Sync

Adjust wave playback to the tempo. Valid only when you select a Wave with BPM. When this feature is enabled, the parameters associated with pitch and FXM are disabled, and for the carrier side of the XMOD, the XMOD effect is disabled.

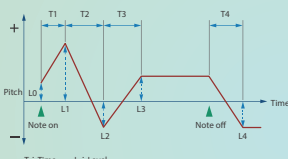
OFF, ON





## 6 Pitch

### Pitch Envelope



Specify the pitch envelope times (Time 1–Time 4). Higher settings will result in a longer time until the next pitch is reached. (For example, Time 2 is the time over which the pitch changes from Level 1 to Level 2.)

\* If ADSR Env Sw is ON, the Time 2 has no effect.

Specify the pitch envelope levels (Level 0–Level 4).

It determines how much the pitch changes from the reference pitch (the value set with Coarse Tune or Fine Tune on the Pitch screen) at each point.

Positive (+) value will cause the pitch to be higher than the standard pitch, and negative (-) value will cause it to be lower.

\* If ADSR Env Sw is ON, only Level 3 (Sustain) has an effect. Also in this case, settings with a negative value are ignored.

### PARTIAL 1–4 [⏻] button

Turn each partial on/off.

\* These are shown only in the module layout.



### COARSE TUNE

Shifts the pitch in units of a semitone.

### FINE TUNE

Finely adjusts the pitch in units of one cent.

### RANDOM

This specifies the width of random pitch deviation that will occur each time a key is pressed. If you do not want the pitch to change randomly, set this to "0."

\* These values are in units of cents (1/100th of a semitone).

### ENV DEPTH

Adjusts the amount by which the pitch envelope modulates the OSC.

### LFO 1, LFO 2

Adjust the amount by which LFO 1/2 modulate the OSC.

## PRO EDIT parameters (Pitch)

### Coarse Tune

**-48→+48 [semitone]** Adjusts the pitch of the sound up or down in semitone steps (+/-4 octaves).

### Fine Tune

**-50→+50 [cent]** Adjusts the pitch of the sound up or down in 1-cent steps (+/-50 cents).

### Random Depth

**0–1200 [cent]** This specifies the width of random pitch deviation that will occur each time a key is pressed. If you do not want the pitch to change randomly, set this to "0."

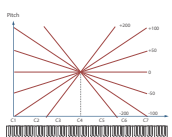
\* These values are in units of cents (1/100th of a semitone).

### Pitch Keyfollow

This specifies the amount of pitch change that will occur when you play a key one octave higher (i.e., 12 keys upward on the keyboard).

If you want the pitch to rise one octave as on a conventional keyboard, set this to "+100." If you want the pitch to rise two octaves, set this to "+200." Conversely, set this to a negative (-) value if you want the pitch to fall. With a setting of "0," all keys will produce the same pitch.

**-200→+200**



### Vibrato Pitch Sens

**-100→+100** Specifies the amount of change in the LFO1's Pitch Depth according to the [VIBRATO] knob of the "Tone Screen".

### Stereo Detune

**-50→+50 [cent]** Specifies the detune between L↔R when outputting in stereo.

## PRO EDIT parameters (PITCH ENV)

### Depth

**-100→+100** Adjusts the effect of the Pitch Envelope. Higher settings will cause the pitch envelope to produce greater change. Negative (-) value will invert the shape of the envelope. If OSC Type is other than VA, this is limited to ±63.

### Velocity Sens

**-100→+100** Keyboard playing dynamics can be used to control the depth of the pitch envelope. If you want the pitch envelope to have more effect for strongly played notes, set this parameter to a positive (+) value. If you want the pitch envelope to have less effect for strongly played notes, set this to a negative (-) value.

### T1 Velocity Sens

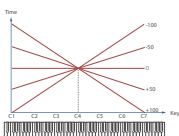
**-100→+100** This allows keyboard dynamics to affect the Time 1 of the Pitch envelope. If you want Time 1 to be speeded up for strongly played notes, set this parameter to a positive "+" value. If you want it to be slowed down, set this to a negative "-" value.

### T4 Velocity Sens

**-100→+100** Use this parameter when you want key release speed to affect the Time 4 value of the pitch envelope. If you want Time 4 to be speeded up for quickly released notes, set this parameter to a positive (+) value. If you want it to be slowed down, set this to a negative (-) value.

### Time Keyfollow

**-100→+100** Use this setting if you want the pitch envelope times (Time 2–Time 4) to be affected by the keyboard location. Based on the pitch envelope times for the C4 key, positive (+) value will cause notes higher than C4 to have increasingly shorter times, and negative (-) value will cause them to have increasingly longer times. Higher values will produce greater change.



### Velocity Curve

**FIXED, 1–7** Selects one of the following 7 curves that will determine how keyboard playing dynamics will affect the pitch envelope. Set this to "FIXED" if you don't want the pitch envelope to be affected by the keyboard velocity.



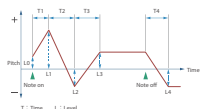
### LFO Trigger Switch

**OFF, ON** If this is ON, the pitch envelope is cyclically retriggered by LFO1. \* This is effective when Envelope Mode is SUSTAIN.

### T1/Attack, T2, T3/Decay, T4/Release

**0–1023** Specify the pitch envelope times (Time 1–Time 4). Higher settings will result in a longer time until the next pitch is reached. (For example, Time 2 is the time over which the pitch changes from Level 1 to Level 2.)

\* If ADSR Env Sw is ON, the Time 2 has no effect.



### L0, L1, L2, L3/Sustain, L4

**-511→+511** Specify the pitch envelope levels (Level 0–Level 4). It determines how much the pitch changes from the reference pitch (the value set with Coarse Tune or Fine Tune on the Pitch screen) at each point.

Positive (+) value will cause the pitch to be higher than the standard pitch, and negative (-) value will cause it to be lower.

\* If ADSR Env Sw is ON, only Level 3 (Sustain) has an effect. Also in this case, settings with a negative value are ignored.

## 7 Filter

### FILTER

#### [FILTER] button

Shows the filter edit screen.

#### [ENVELOPE] button

Shows the filter envelope edit screen.

#### Filter Type

Selects the type of filter.

OFF	No filter is used.
LPF	Low Pass Filter. This cuts the frequencies in the region above the cutoff frequency (Cutoff Frequency). Since this cuts the high-frequency region, the sound becomes more mellow. This is the most common filter used in synthesizers.
BPF	Band Pass Filter. This leaves only the frequencies in the region of the cutoff frequency (Cutoff Frequency), and cuts the rest. This can be useful when creating distinctive sounds.
HPF	High Pass Filter. This cuts the frequencies in the region below the cutoff frequency (Cutoff Frequency). This is suitable for creating percussive sounds emphasizing their higher tones.
PKG	Peaking Filter. This emphasizes the frequencies in the region of the cutoff frequency (Cutoff Frequency). You can use this to create wah-wah effects by employing an LFO to change the cutoff frequency cyclically.

LPF2	Low Pass Filter 2. Although frequency components above the Cutoff frequency (Cutoff Frequency) are cut, the sensitivity of this filter is half that of the LPF. This makes it a comparatively warmer low pass filter. This filter is good for use with simulated instrument sounds such as the acoustic piano. * If you set "LPF2," the setting for the Resonance parameter will be ignored.
LPF3	Low Pass Filter 3. Although frequency components above the Cutoff frequency (Cutoff Frequency) are cut, the sensitivity of this filter changes according to the Cutoff frequency. While this filter is also good for use with simulated acoustic instrument sounds, the nuance it exhibits differs from that of the LPF2, even with the same Filter Envelope settings. * If you set "LPF3," the setting for the Resonance parameter will be ignored.
VCF1	Each setting simulates the operation of an analog synthesizer's LPF. In particular, MG, JP, and P5 are types that are suitable for reproducing synthesizer sounds of the past.
JP	
MG	
P5	

#### PARTIAL 1-4 [ON/OFF] button

Turn each partial on/off.

\* These are shown only in the module layout.



#### Filter Slope [-12] [-18] [-24] buttons

This button selects the slope (steepness) of the filter. For VCF, you can choose -12, -18, or -24. For TVF, only -12 or -24 can be selected.

#### CUTOFF

Selects the frequency at which the filter begins to have an effect on the waveform's frequency components.

#### RESONANCE

Emphasizes the portion of the sound in the region of the cutoff frequency, adding character to the sound. Excessively high settings can produce oscillation, causing the sound to distort.

#### ENV DEPTH

Specifies the depth of the Filter envelope. Higher settings increase the change produced by the Filter envelope.

Negative (-) value will invert the shape of the envelope.

#### LFO 1/LFO 2

Specifies how deeply the LFO 1/LFO 2 will affect the cutoff frequency.

### ENVELOPE

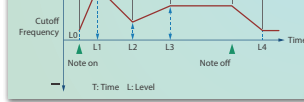
#### [FILTER] button

Shows the filter edit screen.

#### [ENVELOPE] button

Shows the filter envelope edit screen.

#### Filter Envelope



Specify the filter envelope times (Time 1–Time 4). Higher settings will lengthen the time until the next cutoff frequency level is reached. (For example, Time 2 is the time over which Level 1 will change to Level 2.)  
\* If ADSR Env Sw is ON, the Time 2 has no effect.

Specify the filter envelope levels (Level 0–Level 4). Specify the amount of cutoff frequency change at each point relative to the reference cutoff frequency (the cutoff frequency value specified in the Filter screen).  
\* If ADSR Env Sw is ON, only Level 3 (Sustain) has an effect.

#### PARTIAL 1-4 [ON/OFF] button

Turn each partial on/off.

\* These are shown only in the module layout.



#### Filter Slope [-12] [-18] [-24] buttons

This button selects the slope (steepness) of the filter. For VCF, you can choose -12, -18, or -24. For TVF, only -12 or -24 can be selected.

#### CUTOFF KEY FOLLOW

Use this parameter if you want the cutoff frequency to change according to the key that is pressed.

#### CUTOFF V SENS

Use this parameter when changing the cutoff frequency to be applied as a result of changes in playing velocity.

#### ENV DEPTH

Specifies the depth of the Filter envelope. Higher settings increase the change produced by the Filter envelope.

Negative (-) value will invert the shape of the envelope.

#### LFO 1/LFO 2

Specifies how deeply the LFO 1/LFO 2 will affect the cutoff frequency.

### PRO EDIT parameters (FILTER)

<b>Filter Type</b>	Selects the type of filter. * TVF stands for Time Variant Filter, a filter that lets you specify in detail how the frequency components of the sound change over time. If you select VCF, the polyphony will be lower than if you select TVF.
<b>TVF Filter Type</b>	Selects the type of TVF filter. * If Filter Type is set to VCF, this will be LPF.
OFF	No filter is used.
LPF	Low Pass Filter. This cuts the frequencies in the region above the cutoff frequency (Cutoff Frequency). Since this cuts the high-frequency region, the sound becomes more mellow. This is the most common filter used in synthesizers.
BPF	Band Pass Filter. This leaves only the frequencies in the region of the cutoff frequency (Cutoff Frequency), and cuts the rest. This can be useful when creating distinctive sounds.
HPF	High Pass Filter. This cuts the frequencies in the region below the cutoff frequency (Cutoff Frequency). This is suitable for creating percussive sounds emphasizing their higher tones.
PKG	Peaking Filter. This emphasizes the frequencies in the region of the cutoff frequency (Cutoff Frequency). You can use this to create wah-wah effects by employing an LFO to change the cutoff frequency cyclically.
LPF2	Low Pass Filter 2. Although frequency components above the Cutoff frequency (Cutoff Frequency) are cut, the sensitivity of this filter is half that of the LPF. This makes it a comparatively warmer low pass filter. This filter is good for use with simulated instrument sounds such as the acoustic piano. * If you set "LPF2," the setting for the Resonance parameter will be ignored.
LPF3	Low Pass Filter 3. Although frequency components above the Cutoff frequency (Cutoff Frequency) are cut, the sensitivity of this filter changes according to the Cutoff frequency. While this filter is also good for use with simulated acoustic instrument sounds, the nuance it exhibits differs from that of the LPF2, even with the same Filter Envelope settings. * If you set "LPF3," the setting for the Resonance parameter will be ignored.
<b>VCF Type</b>	VCF1: This parameter is effective when Filter Type is VCF. JP: Each setting simulates the operation of an analog synthesizer's LPF. In particular, MG, JP, and P5 are types that are suitable for reproducing synthesizer sounds of the past. MG: Each setting simulates the operation of an analog synthesizer's LPF. In particular, MG, JP, and P5 are types that are suitable for reproducing synthesizer sounds of the past. P5: Each setting simulates the operation of an analog synthesizer's LPF. In particular, MG, JP, and P5 are types that are suitable for reproducing synthesizer sounds of the past.
<b>Filter Slope</b>	This button selects the slope (steepness) of the filter. For VCF, you can choose -12, -18, or -24. For TVF, only -12 or -24 can be selected. If Filter Type is TVF, the following limitations apply. -12, -18, -24 [dB/Oct] • You can specify only -12 dB or -24 dB. If you specify -18 dB, the sound generator operates internally with the -12 dB setting. • If you specify -24 dB, the polyphony will be lower than if you specify -12 dB.
<b>HPF Cutoff</b>	Specifies the cutoff frequency of the -6 dB high-pass filter. 0–1023 * This parameter is effective when Filter Type is VCF.

<b>Cutoff</b>	Selects the frequency at which the filter begins to have an effect on the waveform's frequency components. With "LPF/LPF2/LPF3" selected for the TVF Filter Type parameter, lower cutoff frequency settings reduce a tone's upper harmonics for a more rounded, warmer sound. Higher settings make it sound brighter. If "BPF" is selected for the Filter Type, harmonic components will change depending on the TVF Cutoff Frequency setting. This can be useful when creating distinctive sounds. With "HPF" selected, higher Cutoff Frequency settings will reduce lower harmonics to emphasize just the brighter components of the sound. With "PKG" selected, the harmonics to be emphasized will vary depending on Cutoff Frequency setting. 0–1023
<b>Cutoff Keyfollow</b>	Use this parameter if you want the cutoff frequency to change according to the key that is pressed. Relative to the cutoff frequency at the key specified by Cutoff Keyfollow Base Point, positive "+" values cause the cutoff frequency to become higher as you play above the reference key, and negative "-" values cause the cutoff frequency to become lower. Higher values will produce greater change. -200→+200 
<b>Cutoff Velocity Curve</b>	Selects one of the following seven curves that determine how keyboard playing dynamics (velocity) influence the cutoff frequency. Set this to "FIXED" if you don't want the Cutoff frequency to be affected by the keyboard velocity. FIXED, 1–7 
<b>Cutoff Velocity Sens</b>	Use this parameter when changing the cutoff frequency to be applied as a result of changes in playing velocity. Specify a positive "+" value if you want the cutoff frequency to raise when you play strongly, or a negative "-" value if you want it to lower. -100→+100
<b>Cutoff Keyfollow Base Point</b>	Specifies the reference key when using Keyfollow to modify the cutoff frequency. 0–127 If this is 60, the C4 key (middle C) is the reference key.
<b>Resonance</b>	Emphasizes the portion of the sound in the region of the cutoff frequency, adding character to the sound. Excessively high settings can produce oscillation, causing the sound to distort. 0–1023 
<b>Resonance Velocity Sens</b>	Use this parameter when changing the resonance to be applied as a result of changes in playing velocity. Specify a positive "+" value if you want resonance to increase when you play strongly, or a negative "-" value if you want it to decrease. -100→+100
<b>Vibrato Cutoff Sens</b>	LFO1's Filter Depth according to the [VIBRATO] knob of the "Tone Screen". -100→+100

### PRO EDIT parameters (FILTER ENV)

<b>Depth</b>	Specifies the depth of the Filter envelope. Higher settings increase the change produced by the Filter envelope. Negative (-) value will invert the shape of the envelope. -63→+63
<b>Fine Depth</b>	Finely adjusts the depth of the filter envelope. -63→+63
<b>Velocity Curve</b>	Selects one of the following seven types of curve by which keyboard playing dynamics affect the depth of the filter envelope. If you don't want keyboard playing dynamics to affect the filter envelope depth, specify "FIXED." FIXED, 1–7 
<b>Velocity Sens</b>	Specify this if you want keyboard playing dynamics to affect the filter envelope depth. Specify a positive "+" value if you want the filter envelope to apply more deeply as you play more strongly, or a negative "-" value if you want it to apply less deeply. -100→+100
<b>T1 Velocity Sens</b>	Specify this if you want keyboard playing dynamics to affect Time 1 of the filter envelope. If you want Time 1 to be speeded up for strongly played notes, set this parameter to a positive "+" value. If you want it to be slowed down, set this to a negative "-" value. -100→+100
<b>T4 Velocity Sens</b>	Specify this if you want key release velocity to affect Time 4 of the filter envelope. If you want Time 4 to be speeded up for quickly released notes, set this parameter to a positive (+) value. If you want it to be slowed down, set this to a negative (-) value. -100→+100

<b>Time Keyfollow</b>	Specify this if you want the filter envelope times (Time 2–Time 4) to vary depending on the keyboard position you play. Relative to the filter envelope times at the C4 key (middle C), positive "+" values shorten the times for notes played in the region above C4, and negative "-" values lengthen the times. Higher values will produce greater change. -100→+100 
<b>LFO Trigger Switch</b>	If this is ON, the filter envelope is cyclically retriggered by LFO1. OFF, ON * This is effective only when Envelope Mode is SUSTAIN.
<b>T1/Attack, T2, T3/Decay, T4/Release</b>	Specify the filter envelope times (Time 1–Time 4). Higher settings will lengthen the time until the next cutoff frequency level is reached. (For example, Time 2 is the time over which Level 1 will change to Level 2.) 0–1023 * If ADSR Env Sw is ON, the Time 2 has no effect.
<b>L0, L1, L2, L3/Sustain, L4</b>	Specify the filter envelope levels (Level 0–Level 4). Specify the amount of cutoff frequency change at each point relative to the reference cutoff frequency (the cutoff frequency value specified in the Filter screen). 0–1023 * If ADSR Env Sw is ON, only Level 3 (Sustain) has an effect.

## AMP

**[AMP] button**

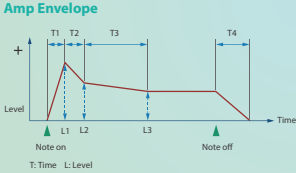
Shows the amp edit screen.

**[☺] switch**

Turns each partial's equalizer on/off.

**[EQ] button**

Shows the PARTIAL EQ edit screen.

**Amp Envelope**

Specify the Amp Envelope times (Time 1–Time 4). Higher settings lengthen the time until the next volume level is reached. (For example, Time 2 is the time over which Level 1 will change to Level 2.)

\* If ADSR Env Sw is ON, the Time 2 has no effect.

Specify the Amp Envelope levels (Level 1–Level 3). These specify the amount of change at each point relative to the reference volume (the partial level value specified in the Amp screen).

\* If ADSR Env Sw is ON, only Level 3 (Sustain) has an effect.

**PARTIAL 1–4 [☺] button**

Turn each partial on/off.

\* These are shown only in the module layout.

**LEVEL**

Adjusts the volume of the tone.

**PAN**

Specifies the pan of the tone.

**VELOCITY SENS**

Specifies how keyboard playing dynamics affects the volume of the partial.

**LFO 1/LFO 2**

Specify the amount by which LFO 1 and LFO 2 affect the amp.

## EQ (PARTIAL EQ)

**[AMP] button**

Shows the amp edit screen.

**[☺] switch**

Turns each partial's equalizer on/off.

**[EQ] button**

Shows the PARTIAL EQ edit screen.

**PARTIAL 1–4 [☺] buttons**

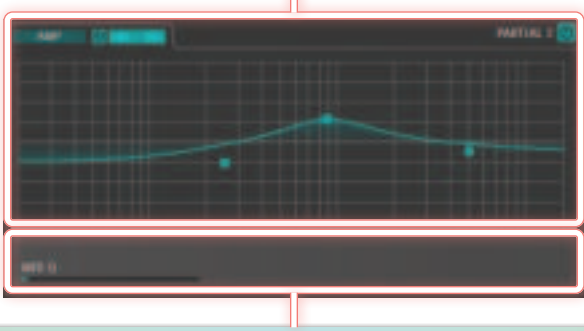
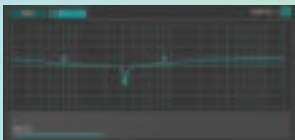
Turn each partial on/off.

\* These are shown only in the module layout.

**PARTIAL EQ**

This is a three-band equalizer.

You can specify the reference frequency and gain of each band (low, mid, and high). Information for the selected band is shown in the upper left of the screen.

**MID Q**

Width of the middle range.

Set a higher value to narrow the range to be affected.

## PRO EDIT parameters (AMP)

**Level**

0–127 Sets the volume of the partial. This setting is useful primarily for adjusting the volume balance between partials.

**Velocity Curve**

Selects one of the following seven curves that determine how keyboard dynamics will affect the volume. Set this to "FIXED" if you don't want the volume of the partial to be affected by the keyboard velocity.

FIXED, 1–7

**Velocity Sens**

Set this when you want the volume of the partial to change depending on the force with which you press the keys.

Set this to a positive (+) value to have the changes in partial volume increase the more forcefully the keys are played; to make the partial play more softly as you play harder, set this to a negative (-) value.

-100–+100

**Bias Level**

Adjusts the angle of the volume change that will occur in the selected Bias Direction.

Higher values will produce greater change. Negative (-) values will invert the change direction.

-100–+100

**Bias Position**

Specifies the key relative to which the volume will be modified. A setting of 64 is the C4 key (middle C).

0–127

**Bias Direction**

Selects the direction in which change will occur starting from the Bias Position.

LOWER The volume will be modified for the keyboard area below the Bias Point.

UPPER The volume will be modified for the keyboard area above the Bias Point.

LOWER &amp; UPPER The volume will be modified symmetrically toward the left and right of the Bias Point.

ALL The volume changes linearly with the bias point at the center.

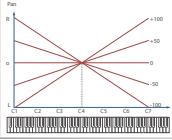
**Pan**

L64–63R Sets the pan of the partial. "L64" is far left, "0" is center, and "63R" is far right.

**Pan Keyfollow**

Use this parameter if you want key position to affect panning. Positive (+) value will cause notes higher than C4 key (center C) to be panned increasingly further toward the right, and negative (-) value will cause notes higher than C4 key (center C) to be panned toward the left. Higher values will produce greater change.

-100–+100

**Random Pan Depth**

Use this parameter when you want the stereo location to change randomly each time you press a key.

Higher values will produce a greater amount of change.

0–63

**Alternate Pan Depth**

This setting causes panning to be alternated between left and right each time a key is pressed. Higher values will produce a greater amount of change. "L" or "R" settings will reverse the order in which the pan will alternate between left and right.

For example if two partials are set to "L" and "R" respectively, the panning of the two tones will alternate each time they are played.

L63–63R

**Vibrato Level Sens**

Specifies the amount of change in the LFO1's Amp Depth according to the [VIBRATO] knob of the "Tone Screen".

-100–+100

**Stereo Width**

Adjusts the amount of width when outputting in stereo. This has no effect when outputting in mono.

0–100

## PRO EDIT parameters (AMP ENV)

**T1 Velocity Sens**

Specify this if you want keyboard dynamics to affect the Amp Envelope's Time 1. If you want Time 1 to be speeded up for strongly played notes, set this parameter to a positive (+) value. If you want it to be slowed down, set this to a negative (-) value.

-100–+100

**T4 Velocity Sens**

Specify this if you want key release velocity to affect the Amp Envelope's Time 4. If you want Time 4 to be speeded up for quickly released notes, set this parameter to a positive (+) value. If you want it to be slowed down, set this to a negative (-) value.

-100–+100

**LFO Trigger Switch**

If this is ON, the Amp Envelope is cyclically retriggered by LFO1.

\* This is effective when Envelope Mode is SUSTAIN.

OFF, ON

**T1/Attack, T2, T3/Decay, T4/Release**

Specify the Amp Envelope times (Time 1–Time 4). Higher settings lengthen the time until the next volume level is reached. (For example, Time 2 is the time over which Level 1 will change to Level 2.)

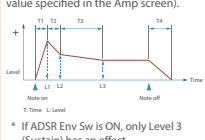
0–1023

\* If ADSR Env Sw is ON, the Time 2 has no effect.

**L1, L2, L3/Sustain**

Specify the Amp Envelope levels (Level 1–Level 3). These specify the amount of change at each point relative to the reference volume (the partial level value specified in the Amp screen).

0–1023

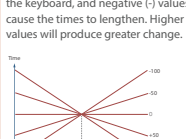


\* If ADSR Env Sw is ON, only Level 3 (Sustain) has an effect.

**Time Keyfollow**

Specify this if you want keyboard position to affect the Amp Envelope's times (Time 2–Time 4). Relative to the Amp Envelope times at the C4 key (middle C), positive (+) values cause the times to shorten as you play higher on the keyboard, and negative (-) values cause the times to lengthen. Higher values will produce greater change.

-100–+100



## PRO EDIT parameters (PARTIAL EQ)

**Switch**

OFF, ON Turns the equalizer on/off for each partial.

**Low Gain**

-24.0–+24.0 [dB] Gain of the low range.

**Mid Gain**

-24.0–+24.0 [dB] Gain of the middle range.

**High Gain**

-24.0–+24.0 [dB] Gain of the high range.

**Low Frequency**

20–16000 [Hz] Frequency of the low range.

**Mid Frequency**

20–16000 [Hz] Frequency of the middle range.

**High Frequency**

20–16000 [Hz] Frequency of the high range.

**Mid Q**

0.5–16.0 Width of the middle range. Set a higher value to narrow the range to be affected.

## PRO EDIT parameters (OUTPUT)

**Output Assign**

DRY, MFX Specifies how the sound of each partial will be output.

# Drum Kit Screen

A different drum instrument is assigned to each of the 16 pads.

You can click these pads to play the sound, or drag them to edit the instrument parameters.

Instruments that are not assigned to a pad can also be played or selected from the keyboard.

Select a drum edit parameter.

## [LEVEL] button

Specifies the volume.

## [PAN] button

Specifies the stereo position.

## [ATTACK] button

Specifies the time from when the note begins until the sound completes its attack.

Higher values produce a softer attack, and lower values produce a sharper attack.

## [DECAY] button

Specifies the time from when the sound completes its attack until the sound disappears.

Higher values produce a longer decay, and lower values produce a shorter decay.

## [RELEASE] button

Specifies the time from when the note is released until the sound disappears.

Higher values produce a longer release, and lower values produce a crisper release.



The pad corresponding to the selected drum instrument is highlighted.

## Pads

A different drum instrument is assigned to each of the 16 pads.

Left-click	Selects a drum instrument and plays it.
Right-click	LEARN MIDI CC Assigns a control change to the parameter selected by [LEVEL]–[RELEASE].
Drag/wheel	Edits the parameter selected by drum edit [LEVEL]–[RELEASE].

## Drum Inst information

Shows information about the selected drum instrument.

- \* Click this area to access the Drum Inst Browser for the instrument that is shown.

## [LOCK] button

- \* The displayed instrument will switch as you play the instruments. If you want to have the Drum Inst Browser continue showing a specific instrument while you play, turn on the [LOCK] button.

# Drum Kit VISUAL/PRO Screen

## Switching between VISUAL EDIT and PRO EDIT

Press the [VISUAL EDIT] button to switch to the VISUAL EDIT screen, or the [PRO EDIT] button to switch to PRO EDIT.

### VISUAL EDIT screen

#### [VISUAL EDIT] button

Edit parameters in a graphical edit screen.

#### [PRO EDIT] button

Edit all parameters as a list.



### PRO EDIT screen

#### [VISUAL EDIT] button

Edit parameters in a graphical edit screen.

#### [PRO EDIT] button

Edit all parameters as a list.



#### Navigation buttons

Jump to the first parameter of each module.

#### [UTILITY] button

Copy/paste parameters in entire units (Tone Partial 1-4, Drum Kit Key/Inst, Drum Kit Comp 1-6, MFX).

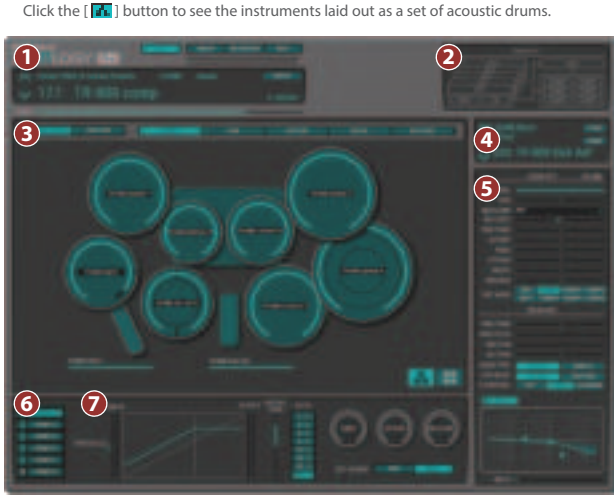
Copy	Copies the selected parameter from the currently selected tone or drum kit to the clipboard.
Paste	Pastes the selected parameter from the clipboard to the current tone or drum kit.

#### [C2]-[C3] buttons

Specify the key.

## VISUAL Edit (drum instrument layout)

Click the [ ] button to see the instruments laid out as a set of acoustic drums.



## VISUAL Edit (drum pad layout)

Click the [ ] button to see the instruments laid out as drum pads.



## MFX

From the tone screen, click the [MFX EDIT] button to access the MFX screen.

### MFX Panel

→ "MFX Panel"



### MFX CONTROL

#### Source 1-4

Specifies the MIDI message that will control the corresponding MFX CONTROL parameter.

#### Destination 1-4

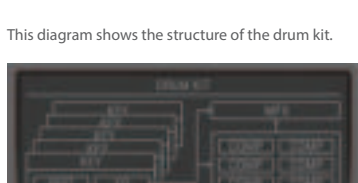
Specifies the multi-effect parameters that are controlled by MFX CONTROL. The multi-effects parameters available for control will depend on the multi-effects type.

## 1 Tone screen

- "Tone Screen / Drum Kit Screen (Common Items)"
- "Tone Screen"

## 2 Structure

This diagram shows the structure of the drum kit.



### 3 Edit area

#### Drum Instrument Layout/Drum Instrument View

##### [LEVEL] button

Specifies the volume.

##### [PAN] button

Specifies the stereo position.

##### [ATTACK] button

Specifies the time from when the note begins until the sound completes its attack.

Higher values produce a softer attack, and lower values produce a sharper attack.

##### [DECAY] button

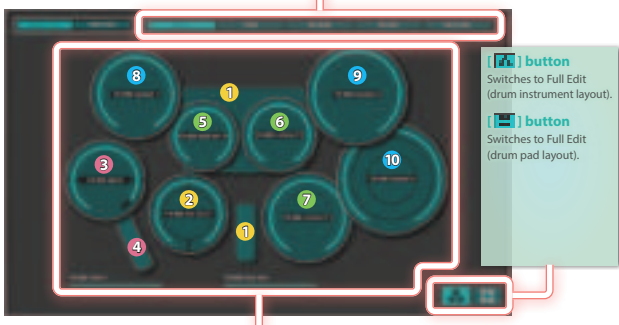
Specifies the time from when the sound completes its attack until the sound disappears.

Higher values produce a longer decay, and lower values produce a shorter decay.

##### [RELEASE] button

Specifies the time from when the note is released until the sound disappears.

Higher values produce a longer release, and lower values produce a crisper release.



##### [Full Edit (drum instrument layout)] button

Switches to Full Edit (drum instrument layout).

##### [Full Edit (drum pad layout)] button

Switches to Full Edit (drum pad layout).

#### Drum Instruments

Drum instruments are assigned as follows.

##### 1 Bass Drum (kick pedal)

Bass drum

##### 2 Snare Drum

Snare drum

**Interior:** head shot

**Left rim:** open rim shot

**Right rim:** closed rim shot

##### 3 Hi-hat

Hi-hat

**Upper side:** open hi-hat

**Lower side:** closed hi-hat

##### 4 Hi-hat pedal

Pedal hi-hat

##### 5 Tom1

Tom 1

##### 6 Tom2

Tom 2

##### 7 Tom3

Tom 3

##### 8 Crash Cymbal 1

Crash cymbal 1

##### 9 Crash Cymbal 2

Crash cymbal 2

##### 10 Ride Cymbal

Ride cymbal

**Rim:** edge

**Intermediate:** bow

**Interior:** bell

#### Drum Pad Layout/Drum Pad View



##### Drum Instrument Name

Click this to access the Drum Inst Browser and select a drum instrument.

You can also use the [▲] [▼] buttons to select a drum instrument directly.

##### Pads

A different drum instrument is assigned to each of the 16 pads.

The note name is shown in the upper left.

Left-click	Selects a drum instrument and plays it.
Right-click	LEARN MIDI CC Assigns a control change to the parameter selected by [LEVEL]–[RELEASE].
Drug/wheel	Edits the parameter selected by drum edit [LEVEL]–[RELEASE].

## 4 DRUM INST information

Shows information about the selected drum instrument.

- \* Click this area to access the Drum Inst Browser for the instrument that is shown.

### DRUM INST information

Shows information about the currently selected drum instrument.

- \* Click this area to access the Drum Inst Browser for the instrument that is shown.
- \* You can select an instrument by using [^] [V] located at the left of the instrument name.



### [LOCK] button

- \* The displayed instrument will switch as you play the instruments. If you want to have the Drum Inst Browser continue showing a specific instrument while you play, turn on the [LOCK] button.



## 5 DRUM KEY/DRUM INST/EQ

Shows the parameters of the currently selected drum instrument.

### DRUM KEY

#### LEVEL

Adjusts the volume of the key.

#### PAN

Adjusts the stereo location of the key.

#### MUTE GRP (Mute Group)

On an actual acoustic drum set, an open hi-hat and a closed hi-hat sound can never occur simultaneously. To reproduce the reality of this situation, you can set up a Mute Group.

The Mute Group function allows you to designate two or more keys that are not allowed to sound simultaneously. Up to 31 Mute Groups can be used.

Keys that are not belong to any such group should be set to "OFF."

#### KEY OFST (Key Offset)

Shifts the pitch in units of a semitone.

#### FINE TUNE (Fine Tune Offset)

Finely adjusts the pitch in units of one cent.

#### CUTOFF (Cutoff Offset)

Adjusts how far the filter is open.

Higher values make the sound brighter, and lower values make the sound darker.

#### RESO (Resonance Offset)

Emphasizes the portion of the sound in the region of the cutoff frequency, adding character to the sound. Excessively high settings can produce oscillation, causing the sound to distort.

Increasing this value strengthens the character, and decreasing it weakens the character.

#### ATTACK (Attack Time Offset)

Adjusts the time over which the sound reaches its maximum volume after you press the key.

Larger settings of this value make the attack gentler, and smaller settings make the attack sharper.

#### DECEY (Decay Time Offset)

Adjusts the time over which the volume decreases from its maximum value.

Larger settings of this value make the decay longer, and smaller settings make the decay shorter.

#### RELEASE (Release Time Offset)

The time it takes after the key is released for a sound to become inaudible.

If Envelope Mode is NO-SUS, this is the time until the sounded note becomes inaudible.

Larger settings of this value make the sound linger, and smaller settings make the sound end more sharply.

#### OUT ASN (Output Assign)

Specifies the output destination for each key.

### DRUM INST

#### FINE TUNE

Adjusts the pitch of the sound up or down in 1-cent steps (+/-50 cents).

#### RDM PITCH (Random Pitch Depth)

Specifies the width in which the pitch is randomly changed each time the note is sounded.

If you do not want the pitch to change randomly, set this to "0."

#### RDM PAN (Random Pan Depth)

Use this parameter when you want the stereo location to change randomly each time you press a key.

Higher values will produce a greater amount of change.

#### ALT PAN (Alternate Pan Depth)

This setting causes panning to be alternated between left and right each time a key is pressed.

#### ASGN TYPE (Assign Type)

Sets the way sounds are played when the same key is pressed a number of times.

**MULTI:** Layer the sound of the same keys.

**SINGLE:** Only one sound can be played at a time when the same key is pressed.

#### ENV Mode (Envelope Mode)

When a loop waveform is selected, the sound will normally continue as long as the key is pressed. If you want the sound to decay naturally even if the key remains pressed, set this to "NO-SUS."

\* If a one-shot type Wave is selected, it will not sustain even if this parameter is set to "SUSTAIN."

#### V. CONTROL

##### (WMT Velocity Control)

Determines whether a different wave is played (ON) or not (OFF) depending on the force with which the key is played. When set to "RANDOM," the tone's constituent wave will sound randomly, regardless of any velocity messages.

### EQ (KEY EQ)

This is a three-band equalizer that can be individually specified for each instrument.

You can specify the reference frequency and gain of each band (low, mid, high). Information for the selected band is shown in the upper left of the screen.

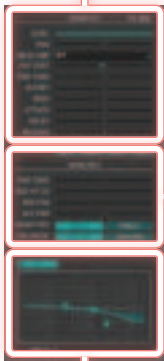
#### [EQ] button

Turns KEY EQ on/off.

#### MID Q

Width of the middle range.

Set a higher value to narrow the range to be affected.



## 6 KIT COMP 1–6 (switch)



### [⏻] button

Turns the compressor on/off.

### [COMP1–6] button

Selects the compressor that is shown in the edit area.

## 7 KIT COMP 1-6 (Edit area)



### Threshold

Specifies the level at which compression starts being applied.

### INPUT meter

Provides a realtime indication of the input level.

### Input/output graph

Shows the relationship between input level (horizontal axis) and output level (vertical axis). Drag horizontally on the graph to change the Threshold, or drag vertically to change the Post Gain.

### OUTPUT meter

Provides a realtime indication of the output level.

### POST GAIN

Specifies the level of the output sound.

### Ratio

Compression ratio

### KNEE

This is a function that smooths the onset of compression from the uncompressed state; it gradually applies compression starting earlier than Threshold. Higher values produce a smoother transition.

### ATTACK (Attack Time)

Time from when the input exceeds the threshold until compression begins

### RELEASE (Release Time)

Time from when the input falls below the threshold until compression is turned off

## PRO EDIT parameters (COMMON)

## Level

0-127	Adjusts the overall volume of the tone. * This is a different parameter than the LEVEL and Common Level parameters in "Tone Screen / Drum Kit Screen (Common Items)." Common Level is also effective when using the "Tone/Drum Kit Manager Screen" command [EXPORT]- For Hardware/Zenbeats (ZC1) to play the settings on a hardware product. In contrast, the LEVEL parameter of the tone screen and drum kit screen is effective only on this product.
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## PRO EDIT parameters (COMP1-6)

## Switch

OFF, ON	Compressor on/off
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## Attack Time

0.1-100ms	Time from when the input exceeds the threshold until compression begins
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## Release Time

10-1000ms	Time from when the input falls below the threshold until compression is turned off
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## Threshold

-60-0 [dB]	Level at which compression is applied
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## Ratio

1: 1-inf: 1	Compression ratio
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## Knee

0-30 [dB]	This is a function that smooths the onset of compression from the uncompressed state; it gradually applies compression starting earlier than Threshold. Higher values produce a smoother transition.
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## Output Gain

-24+24 [dB]	Adjusts the output gain.
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## Output Assign

DRY, MFX, MAIN, SUB1, SUB2, AFX	Specifies the compressor output destination.
---------------------------------	--

## PRO EDIT parameters (KEY PARAM)

## Inst Bank

(Inst bank name)	Name of the instrument's bank.
------------------	--------------------------------

## Inst

(Inst name)	Selects the Inst to be assigned to the key.
-------------	---

## Level

0-127	Adjusts the volume of the key.
-------	--------------------------------

## Pan

L64-0-63R	Adjusts the stereo location of the key.
-----------	---

## Mute Group

OFF, 1-31	On an actual acoustic drum set, an open hi-hat and a closed hi-hat sound can never occur simultaneously. To reproduce the reality of this situation, you can set up a Mute Group. The Mute Group function allows you to designate two or more keys that are not allowed to sound simultaneously. Up to 31 Mute Groups can be used. Keys that are not belong to any such group should be set to "OFF."
-----------	---

## Output Assign

DRY, MFX, COMP1-6	Specifies the output destination for each key.
-------------------	--

## Key Offset

-24+24	Shifts the pitch in units of a semitone.
--------	--

## Fine Tune Offset

-50+50 [cent]	Finely adjusts the pitch in units of one cent.
---------------	--

## Cutoff Offset

-100+100	Adjusts how far the filter is open. Increasing this value makes the sound brighter, and decreasing it makes the sound darker.
----------	---

## Resonance Offset

-100+100	Emphasizes the portion of the sound in the region of the cutoff frequency, adding character to the sound. Excessively high settings can produce oscillation, causing the sound to distort. Increasing this value strengthens the character, and decreasing it weakens the character.
----------	--

## Attack Time Offset

-100+100	Adjusts the time over which the sound reaches its maximum volume after you press the key. Larger settings of this value make the attack gentler, and smaller settings make the attack sharper.
----------	--

## Decay Time Offset

-100+100	Adjusts the time over which the volume decreases from its maximum value. Larger settings of this value make the decay longer, and smaller settings make the decay shorter.
----------	--

## Release Time Offset

-100+100	The time it takes after the key is released for a sound to become inaudible. If Envelope Mode is NO-SUS, this is the time until the sounded note becomes inaudible. Larger settings of this value make the sound linger, and smaller settings make the sound end more sharply.
----------	--

## PRO EDIT parameters (KEY EQ)

## Switch

OFF, ON	Turns the equalizer on/off for each key.
---------	--

## Low Gain

-24.0+24.0 [dB]	Gain of the low range.
-----------------	------------------------

## Mid Gain

-24.0+24.0 [dB]	Gain of the middle range.
-----------------	---------------------------

## High Gain

-24.0+24.0 [dB]	Gain of the high range
-----------------	------------------------

## Low Frequency

20-16000 [Hz]	Frequency of the low range.
---------------	-----------------------------

## Mid Frequency

20-16000 [Hz]	Frequency of the middle range.
---------------	--------------------------------

## High Frequency

20-16000 [Hz]	Frequency of the high range.
---------------	------------------------------

## Mid Q

0.5-16.0 (0.1step)	Width of the middle range. Set a higher value to narrow the range to be affected.
--------------------	---

## PRO EDIT parameters (INST COMMON)

## Category

0-21	Selects the Inst's category.
------	------------------------------

## Level

0-127	Adjusts the volume of the Inst.
-------	---------------------------------

## Source Key

0-127	Specifies the pitch in semitone steps relative to 60 (the original pitch of the instrument).
-------	--

## Fine Tune

-50+50 [cent]	Adjusts the pitch of the sound up or down in 1-cent steps (+/-50 cents).
---------------	--

## Random Pitch Depth

0-1200 [cent]	Specifies the width in which the pitch is randomly changed each time the note is sounded. If you do not want the pitch to change randomly, set this to "0."
---------------	---

## Assign Type

Sets the way sounds are played when the same key is pressed a number of times.

MULTI	Layer the sound of the same keys. Even with continuous sounds where the sound plays for an extended time, such as with crash cymbals, the sounds are layered, without previously played sounds being eliminated.
SINGLE	Only one sound can be played at a time when the same key is pressed. With continuous sounds where the sound plays for an extended time, the previous sound is stopped when the following sound is played.

## Envelope Mode

NO-SUS, SUSTAIN	When a loop waveform is selected, the sound will normally continue as long as the key is pressed. If you want the sound to decay naturally even if the key remains pressed, set this to "NO-SUS." * If a one-shot type Wave is selected, it will not sustain even if this parameter is set to "SUSTAIN."
-----------------	---

## WMT Velocity Control

OFF, ON, RANDOM	Determines whether a different wave is played (ON) or not (OFF) depending on the force with which the key is played. When set to "RANDOM," the tone's constituent wave will sound randomly, regardless of any velocity messages.
-----------------	--

## Tempo Sync

OFF, ON	Matches the wave playback to the tempo. This is valid only if a wave with a specified BPM is selected. If this function is enabled, parameters related to pitch and FXM are ignored.
---------	--

## PRO EDIT parameters (INST WAVE)

Each instrument consists of four waves (WAVE 1-4). You can edit the following parameters for each wave.

## Switch

OFF, ON	Turns the corresponding wave on/off.
---------	--------------------------------------

## Wave L/R

(Wave number)	Specifies the wave number within the group specified by Wave Group. Click this to open the Wave Browser. You can use bank and category to narrow the search results, or use keyword search to select a wave. If using mono, specify only the left side (L). If using stereo, specify the right side (R) as well. If using mono, specify only Wave L and leave Wave R at 0: OFF. If you specify only Wave R, no sound is heard.
---------------	---

## Gain

-18+12 [dB]	Specifies the gain (amplitude) of the waveform. The value will change in 6 dB (decibel) steps. Each 6 dB increase doubles the gain.
-------------	---

## FXM Switch

OFF, ON	This sets whether FXM will be used (ON) or not (OFF). * FXM (Frequency Cross Modulation) uses a specified waveform to apply frequency modulation to the currently selected waveform, creating complex overtones. This is useful for creating dramatic sounds or sound effects.
---------	---

## FXM Color

1-4	Specifies how FXM will perform frequency modulation. Higher settings result in a grainier sound, while lower settings result in a more metallic sound.
-----	--

## FXM Depth

0-16	Specifies the depth of the modulation produced by FXM.
------	--

## Coarse Tune

-48+48	Adjusts the pitch of each wave's sound up or down in semitone steps (+/-4 octaves). <b>MEMO</b> The Coarse Tune of the entire drum partial is set by the "Source Key".
--------	--

## Fine Tune

-50+50	Adjusts the pitch of each Wave's sound up or down in 1-cent steps (+/-50 cents). * One cent is 1/100th of a semitone. <b>MEMO</b> The Fine Tune of the entire drum partial is set by the "Fine Tune Offset".
--------	---

## Level

0-127	Adjusts the level of each Wave. <b>MEMO</b> The volume level of each drum partial is set with the Partial Level; the volume levels of the entire drum kit is set with the "Level".
-------	--

## Pan

L64-63R	This specifies the pan of the waveform. "L64" is far left, "0" is center, and "63R" is far right.
---------	---

## Random Pan Sw

OFF, ON	Use this setting to cause the waveform's panning to change randomly each time a key is pressed (ON) or not (OFF). * The range of the panning change is set by the "Random Pan Depth".
---------	--

## Alternate Pan Sw

OFF, ON, REVS	This setting causes panning of the waveform to be alternated between left and right each time a key is pressed. Set this to "ON" to pan the Wave according to the Alternate Pan Depth settings, or to "REVS" when you want the panning reversed. If you do not want the panning to change each time a key is pressed, set this to "OFF."
---------------	--

## PRO EDIT parameters (INST WMT)

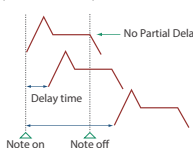


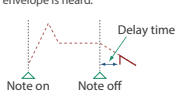
Each instrument consists of four waves (WAVE 1–4). You can edit the following parameters for each wave.

## Wave Delay Mode

## Wave delay

This produces a time delay between the moment a key is pressed (or released), and the moment the Wave actually begins to sound. You can also make settings that shift the timing at which each Wave is sounded.

By modifying the tonal character of the wave that is sounded with a delay, or by modifying the pitch of each wave, you can produce arpeggio-like performances by pressing a single key. The wave delay time can also be synchronized to the tempo.

NORMAL	<p>The Wave begins to play after the time specified in the Wave Delay Time parameter has elapsed.</p>  <p>Labels: No Partial Delay, Delay time, Note on, Note off.</p>
HOLD	<p>Although the Wave begins to play after the time specified in the Wave Delay Time parameter has elapsed, if the key is released before the time specified in the Wave Delay Time parameter has elapsed, the Wave is not played.</p>  <p>Labels: Delay time, Note on, Note off, No sound played.</p>
KEY-OFF-NORMAL	<p>Rather than being played while the key is pressed, the Wave begins to play once the period of time specified in the Wave Delay Time parameter has elapsed after release of the key. This is effective in situations such as when simulating noises from guitars and other instruments.</p>  <p>Labels: Note on, Note off, Delay time.</p>
KEY-OFF-DECAY	<p>Rather than being played while the key is pressed, the Wave begins to play once the period of time specified in the Wave Delay Time parameter has elapsed after release of the key. Here, however, changes in the Amp Envelope begin while the key is pressed, which in many cases means that only the sound from the release portion of the envelope is heard.</p>  <p>Labels: Note on, Note off, Delay time.</p>

## Wave Delay Time Sync

**OFF, ON** Set this ON if you want the Wave delay time to synchronize with the tempo.

## Wave Delay Time (note)

**1/64T–2** This is available when Wave Delay Time Sync is ON. It specifies the delay time in terms of a note value.

## Wave Delay Time

**0–1023** This is available when Wave Delay Time Sync is OFF. It specifies the delay time without regard to the tempo.



## Velocity Range Lower/Velocity Range Upper

**1–127** Specifies the lower limit (Lower) and upper limit (Upper) of the velocities that will sound the Wave. Make these settings when you want to play different Waves depending on your keyboard dynamics.

## Velocity Fade Lower

**0–127** Specifies the degree to which the Wave is sounded by notes played more softly than Velocity Range Lower. If you don't want the tone to sound at all, set this parameter to "0."

## Velocity Fade Upper

**0–127** Specifies the degree to which the Wave is sounded by notes played more strongly than Velocity Range Upper. If you don't want the tone to sound at all, set this parameter to "0."

## PRO EDIT parameters (INST PITCH ENV)

## Depth

**-100+100** Adjusts the effect of the Pitch Envelope. Higher settings will cause the pitch envelope to produce greater change. Negative (-) value will invert the shape of the envelope.

## Velocity Curve

Selects one of the following seven types of curve by which keyboard playing dynamics affect the depth of the pitch envelope. If you don't want keyboard playing dynamics to affect the pitch envelope depth, specify "FIXED."



## Velocity Sens

Keyboard playing dynamics can be used to control the depth of the pitch envelope. If you want the pitch envelope to have more effect for strongly played notes, set this parameter to a positive (+) value. If you want the pitch envelope to have less effect for strongly played notes, set this to a negative (-) value.

## Time 1 Velocity Sens

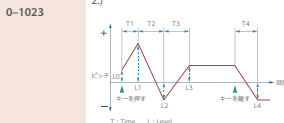
**-100+100** This allows keyboard dynamics to affect the Time 1 of the Pitch envelope. If you want Time 1 to be speeded up for strongly played notes, set this parameter to a positive (+) value. If you want it to be slowed down, set this to a negative (-) value.

## Time 4 Velocity Sens

**-100+100** Use this parameter when you want key release speed to affect the Time 4 value of the pitch envelope. If you want Time 4 to be speeded up for quickly released notes, set this parameter to a positive (+) value. If you want it to be slowed down, set this to a negative (-) value.

## Time 1–4

Specify the pitch envelope times (Time 1–Time 4). Higher settings will result in a longer time until the next pitch is reached. (For example, Time 2 is the time over which the pitch changes from Level 1 to Level 2.)



## Level 0–4

**-511+511** Specify the pitch envelope levels (Level 0–Level 4). It determines how much the pitch changes from the reference pitch (the value set with Coarse Tune or Fine Tune on the Pitch screen) at each point. Positive (+) value will cause the pitch to be higher than the standard pitch, and negative (-) value will cause it to be lower.

## PRO EDIT parameters (INST FILTER)

## Filter Type

Selects the type of filter.

OFF	No filter is used.
LPF	Low Pass Filter. This cuts the frequencies in the region above the cutoff frequency (Cutoff Frequency). Since this cuts the high-frequency region, the sound becomes more mellow. This is the most common filter used in synthesizers.
BPF	Band Pass Filter. This leaves only the frequencies in the region of the cutoff frequency (Cutoff Frequency), and cuts the rest. This can be useful when creating distinctive sounds.
HPF	High Pass Filter. This cuts the frequencies in the region below the cutoff frequency (Cutoff Frequency). This is suitable for creating percussive sounds emphasizing their higher tones.
PKG	Peaking Filter. This emphasizes the frequencies in the region of the cutoff frequency (Cutoff Frequency). This can be used to portray the resonance peak of a drum.
LPF2	Low Pass Filter 2. Although frequency components above the Cutoff frequency (Cutoff Frequency) are cut, the sensitivity of this filter is half that of the LPF. This makes it a comparatively warmer low pass filter. This filter is good for use with simulated instrument sounds such as the acoustic piano.  * If you set "LPF2," the setting for the "Resonance" parameter will be ignored.
LPF3	Low Pass Filter 3. Although frequency components above the Cutoff frequency (Cutoff Frequency) are cut, the sensitivity of this filter changes according to the Cutoff frequency. While this filter is also good for use with simulated acoustic instrument sounds, the nuance it exhibits differs from that of the LPF2, even with the same TVF Envelope settings.  * If you set "LPF3," the setting for the "Resonance" parameter will be ignored.

## Cutoff Frequency

	Selects the frequency at which the filter begins to have an effect on the waveform's frequency components. With "LPF/LPF2/LPF3" selected for the Filter Type parameter, lower cutoff frequency settings reduce a tone's upper harmonics for a more rounded, warmer sound. Higher settings make it sound brighter.  If "BPF" is selected for the Filter Type, harmonic components will change depending on the TVF Cutoff Frequency setting. This can be useful when creating distinctive sounds. With "HPF" selected, higher Cutoff Frequency settings will reduce lower harmonics to emphasize just the brighter components of the sound. With "PKG" selected, the harmonics to be emphasized will vary depending on Cutoff Frequency setting.
0-1023	

## Cutoff Velocity Curve

	Selects one of the following seven curves that determine how keyboard playing dynamics (velocity) influence the cutoff frequency. Set this to "FIXED" if you don't want the Cutoff frequency to be affected by the keyboard velocity.
FIXED, 1-7	

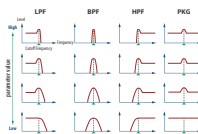


## Cutoff Velocity Sens

	Use this parameter when changing the cutoff frequency to be applied as a result of changes in playing velocity. Specify a positive "+" value if you want the cutoff frequency to raise when you play strongly, or a negative "-" value if you want it to lower.
-100-+100	

## Resonance

	Emphasizes the portion of the sound in the region of the cutoff frequency, adding character to the sound. Excessively high settings can produce oscillation, causing the sound to distort.
0-1023	



## Resonance Velocity Sens

	Use this parameter when changing the resonance to be applied as a result of changes in playing velocity. Specify a positive "+" value if you want resonance to increase when you play strongly, or a negative "-" value if you want it to decrease.
-100-+100	

## PRO EDIT parameters (INST FILTER ENV)

## Depth

	Specifies the depth of the Filter envelope. Higher settings increase the change produced by the Filter envelope. Negative (-) value will invert the shape of the envelope.
-63-+63	

## Velocity Curve

	Selects one of the following seven types of curve by which keyboard playing dynamics affect the depth of the filter envelope. If you don't want keyboard playing dynamics to affect the filter envelope depth, specify "FIXED."
FIXED, 1-7	



## Velocity Sens

	Specify this if you want keyboard playing dynamics to affect the filter envelope depth. Specify a positive "+" value if you want the filter envelope to apply more deeply as you play more strongly, or a negative "-" value if you want it to apply less deeply.
-100-+100	

## Time 1 Velocity Sens

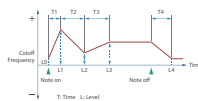
	Specify this if you want keyboard playing dynamics to affect Time 1 of the filter envelope. If you want Time 1 to be speeded up for strongly played notes, set this parameter to a positive (+) value. If you want it to be slowed down, set this to a negative (-) value.
-100-+100	

## Time 4 Velocity Sens

	Specify this if you want key release velocity to affect Time 4 of the filter envelope. If you want Time 4 to be speeded up for quickly released notes, set this parameter to a positive (+) value. If you want it to be slowed down, set this to a negative (-) value.
-100-+100	

## Time 1-4

	Specify the filter envelope times (Time 1-Time 4). Higher settings will lengthen the time until the next cutoff frequency level is reached. (For example, Time 2 is the time over which Level 1 will change to Level 2.)
0-1023	



## Level 0-4

	Specify the filter envelope levels (Level 0-Level 4). Specify the amount of cutoff frequency change at each point relative to the reference cutoff frequency (the cutoff frequency value specified in the Filter screen).
0-1023	

## PRO EDIT parameters (INST AMP)

## Velocity Curve

FIXED, 1–7

Selects one of the following seven curves that determine how keyboard dynamics will affect the volume. Set this to "FIXED" if you don't want the volume of the partial to be affected by the keyboard velocity.



## Velocity Sens

-100--+100

Set this when you want the volume of the partial to change depending on the force with which you press the keys. Set this to a positive (+) value to have the changes in partial volume increase the more forcefully the keys are played; to make the partial play more softly as you play harder, set this to a negative (-) value.

## Random Pan Depth

0–63

Use this parameter when you want the stereo location to change randomly each time you press a key. Higher values will produce a greater amount of change.

## Alternate Pan Depth

L64–63R

This setting causes panning to be alternated between left and right each time a key is pressed. Higher values will produce a greater amount of change. "L" or "R" settings will reverse the order in which the pan will alternate between left and right.

For example, if the INST WAVE setting Wave Alter Pan Sw is ON or REVS for the two waves, the pan will alternate each time the key is pressed.

## PRO EDIT parameters (INST AMP ENV)

## Time 1 Velocity Sens

-100--+100

Specify this if you want keyboard dynamics to affect the Amp Envelope's Time 1. If you want Time 1 to be speeded up for strongly played notes, set this parameter to a positive (+) value. If you want it to be slowed down, set this to a negative (-) value.

## Time 4 Velocity Sens

-100--+100

Specify this if you want key release velocity to affect the Amp Envelope's Time 4. If you want Time 4 to be speeded up for quickly released notes, set this parameter to a positive (+) value. If you want it to be slowed down, set this to a negative (-) value.

## Time 1–4

0–1023

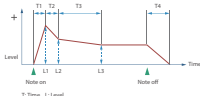
Specify the Amp Envelope times (Time 1–Time 4). Higher settings lengthen the time until the next volume level is reached. (For example, Time 2 is the time over which Level 1 will change to Level 2.)

## Level 1–3

Env Level 1–3

Specify the Amp Envelope levels (Level 1–Level 3).

These specify the amount of change at each point relative to the reference volume (the partial level value specified in the Amp screen).





# KEYBOARD Panel

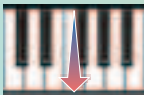
## Playing and controlling dynamics

Click the keyboard to play notes.

The velocity increases as you click toward the front of the key.

Clicking the very front of the key produces the maximum velocity.

Minimum velocity



Maximum velocity



## Octave Shift

Use the mouse wheel to change the octave shift of the keyboard.

When you change the octave shift, the setting is shown on the keyboard for a few seconds.



# MFX Panel

**[MFX] button**  
Turns MFX on/off.

**[MFX TYPE] indication**  
Shows the currently selected MFX name.  
To change the MFX, click the MFX name and choose from the list that appears.

**[MFX LEVEL] knob**  
Adjusts the MFX output level.



**MFX parameters**  
The edit screen is different for each MFX type.  
➔ For details, refer to "MFX Parameters."

# Tone/Drum Kit Browser Screen

## [Recent] button

Shows recently selected tones and drum kits in chronological order (ON/OFF).

You can also narrow the focus of the search result by bank and category.

## Keyword search

Lets you use keywords (multiple selections are allowed) to further narrow the focus of the displayed result.

## Tone/Drum Kit information

Shows the sound engine type, category, rating, bank name, bank thumbnail, sound number, and sound name of the selected tone or drum kit.

## Tone/Drum Kit list

## Bank list

Shows a list of the banks that you own.

There are preset banks (recall-only) and user banks (recall or save).

The contents of the bank selected here is shown in the tone/drum kit list located in the center of the screen.

Multiple banks can be selected simultaneously.

- Drag to select a region.
- Click while holding down the Ctrl key (Windows).
- Click while holding down the Command key (Mac).

To de-select a currently selected bank, click it again. If no bank is selected, All (all banks) are shown.

## Model filter

Filters the Tone/Drum Kit list by model/category.

## Category filter

Filters the Tone/Drum Kit list by category.

Multiple filters can be selected simultaneously.

- Drag to select a region.
- Click while holding down the Ctrl key (Windows).
- Click while holding down the Command key (Mac).

## "i" symbol

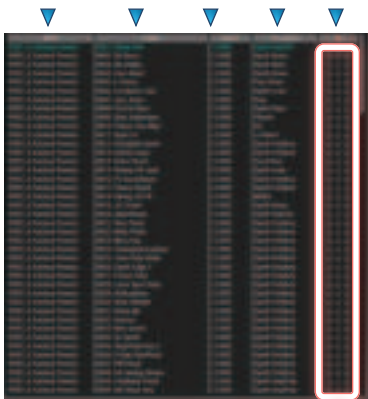
When you place the mouse cursor (mouse pointer) over this, a list of shortcuts appears.

# Tone/Drum Kit List

## Sorting the list

By clicking a tab in the tone/drum kit list, you can sort the list using that tab as the key.

By clicking again, you can switch between ascending and descending order.



## Rating

To each tone or drum kit you can assign a four-step rating (number of ☆: 0-3).

You can use this rating to sort the tone/drum kit list.

# Tone/Drum Kit Manager Screen

## User bank list

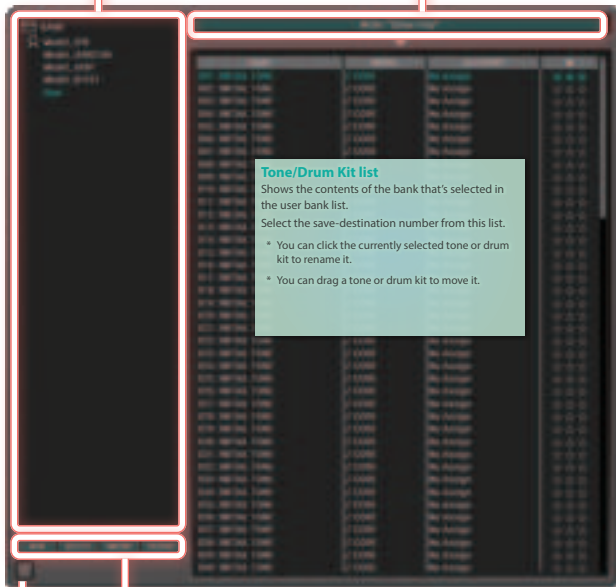
Shows a list of the user banks.

Select the save-destination bank.

- \* You can click the currently selected bank to rename it.
- \* Multiple banks cannot be selected.

## [Write] button

When you click this button, the tone or drum kit is saved to the specified location.



## Tone/Drum Kit list

Shows the contents of the bank that's selected in the user bank list.

Select the save-destination number from this list.

- \* You can click the currently selected tone or drum kit to rename it.
- \* You can drag a tone or drum kit to move it.

## [NEW] button

Creates a new user bank.

## [DELETE] button

Deletes the selected user bank.

## [IMPORT] button

Imports a user bank file.

## [EXPORT] button

Opens the following menu.

### For Plug-in

Save as a ZENOLOGY backup file.

### For Hardware/Zenbeats (ZC1)

Saves data compatible with hardware products that use the ZEN-Core Synthesis System such as the FANTOM, JUPITER-X and so on, as well as Zenbeats (ZC1).

## "i" symbol

When you place the mouse cursor (mouse pointer) over this, a list of shortcuts appears.

# Drum Inst Browser Screen

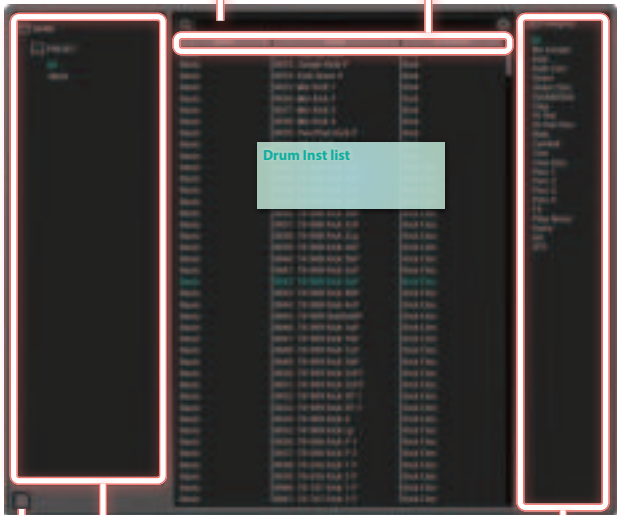
## Keyword search

Lets you use keywords (multiple selections are allowed) to further narrow the focus of the displayed result.

## Sorting the list

By clicking a tab in the drum instrument list, you can sort the list using that tab as the key.

By clicking again, you can switch between ascending and descending order.



## Drum Inst list

## Bank list

Shows a list of the banks that you own.

The contents of the bank selected here are shown in the drum instrument list located in the center of the screen.

Multiple banks can be selected simultaneously.

- Drag to select a region.
- Click while holding down the Ctrl key (Windows).
- Click while holding down the Command key (Mac).

To de-select a currently selected bank, click it again. If no bank is selected, All (all banks) are shown.

## Category

Filters the drum instrument list by category.

Multiple categories can be selected simultaneously.

- Drag to select a region.
- Click while holding down the Ctrl key (Windows).
- Click while holding down the Command key (Mac).

## "i" symbol

When you place the mouse cursor (mouse pointer) over this, a list of shortcuts appears.

# Model Screen (JUPITER-8)

## [EDIT] button

Switches between the small screen and detailed settings screen.

## [WRITE] button

Accesses the Tone/Drum Kit Manager, allowing you to save a tone or drum kit.

## [OVERWRITE] button

Overwrite-saves the settings.



## KEY MODE

### [SOLO] button

Sound is produced monophonically.

### [POLY] button

Sound is produced polyphonically.

### [UNISON] button

Sound is produced in unison.

### [SL-UNISON] button

Sound is produced in monophonic unison.

Right-click

LEARN MIDI CC

Assigns a control change to each button.



### [CUTOFF] knob

Adjusts how far the filter is open.

Higher values make the sound brighter, and lower values make the sound darker.

### [RESO] knob

Emphasizes the portion of the sound in the region of the cutoff frequency, adding character to the sound. Excessively high settings can produce oscillation, causing the sound to distort.

Increasing this value strengthens the character, and decreasing it weakens the character.

### [ATTACK] knob

Specifies the time from when the key is pressed until the sound completes its attack.

Higher values produce a softer attack, and lower values produce a sharper attack.

### [RELEASE] knob

Specifies the time from when the key is released until the sound disappears.

Higher values produce a longer release, and lower values produce a crisper release.

### [CROSS MOD] knob

Uses the OSC2 waveform to change the frequency of OSC1. Higher values cause the sound of OSC1 to be more complex, allowing you to create metallic sounds or sound effects.

## How to operate the knobs

Right-click

LEARN MIDI CC

Assigns a control change to the parameter selected by [CUTOFF]–[CROSS MOD].

Drag

Tone edit

Edits each parameter.

# Detailed Settings Screen (JUPITER-8)



## 1 System

**CONDITION**  
Simulates the changes that occur as a unit ages.

**PITCH DRIFT**  
Adjusts the slight pitch drift that occurs when notes are played on an analog synthesizer.

**KEY MODE**

**[SOLO] button**  
Sound is produced monophonically.

**[POLY] button**  
Sound is produced polyphonically.

**[UNISON] button**  
Sound is produced in unison.

**[SL-UNISON] button**  
Sound is produced in monophonic unison.

**PORTAMENTO [OFF] [ON] button (PORTA MODE/PORTA TIME)**  
Selects whether portamento is applied to the performance. Use the bar below to specify the portamento time.

**PORTA CRV**

**[ORIG] button**  
Change according to the original curve of the model.

**[LIN] button**  
Change in a linear curve.

**[EXP-1] button**  
Change in a non-linear curve (gentle slope).

**[EXP-2] button**  
Change in a non-linear curve (steep slope).

**[PRM EXP] button (PARAM EXPANSION)**  
If this is ON, the range of the LFO RATE, CUTOFF, RESONANCE, and FILTER ENV DEPTH parameters are extended beyond the range of the original model.

## 2 VCO-1

**[CROSS MOD] knob**  
Uses the OSC2 waveform to change the frequency of OSC1. Higher values cause the sound of OSC1 to be more complex, allowing you to create metallic sounds or sound effects.

**[RANGE] knob (OSC1 RANGE)**  
Specifies the octave of OSC1.  
16, 8, 4, 2'

**[WAVE FORM] knob (OSC1 WAVE FORM)**  
Selects the waveform that is the basis of the OSC1 sound.  
TRI, SAW, PW, SQR

## 3 VCO-2

**[SYNC] button (SYNC SWITCH)**  
This is oscillator sync. It produces a complex waveform by forcibly resetting OSC1 to the beginning of its cycle in synchronization with the cycle of OSC2.

**[FINE TUNE] knob (OSC2 FINE TUNE)**  
Specifies a fine adjustment to the pitch of OSC2.

**[WAVE FORM] knob (OSC2 WAVE FORM)**  
Selects the waveform that is the basis of the OSC2 sound.  
SINE, SAW, PW, NOISE

**OSC2 MODE**

**[NORMAL] button**  
OSC2 operates as NORMAL (audible frequency range). Use the [RANGE] (OSC2 RANGE) knob to set the frequency. -12~+24

**[LOW FREQ] button**  
OSC2 operates as LFO (low frequency range). Use the [LOW FREQ] knob to set the frequency. 0~127

## 4 MIXER

**[VCO-1] knob (OSC1 LEVEL)**  
Adjusts the volume balance of OSC1.

**[VCO-2] knob (OSC2 LEVEL)**  
Adjusts the volume balance of OSC2.

## 5 VCF

**[HPF] knob**  
Adjusts the cutoff frequency of the high-pass filter.

**[FREQ] knob (CUTOFF)**  
Specifies the cutoff frequency of the low-pass filter. The frequency region above the cutoff frequency is cut, producing a more mellow tonal character.

**[RES] knob (RESONANCE)**  
Boosts the region of the filter's cutoff frequency. Higher values produce a stronger result, giving the sound a distinctively synthesizer-like character.

**[SLOPE] (FILTER SLOPE)**  
Selects the type of slope for the low-pass filter.  
-12dB/OCT, -24dB/OCT

**[ENV-1] [ENV-2] buttons (FLT ENV MODE)**  
Selects the envelope that is used to control the ENV-1/ENV-2 cutoff frequency.

**ENV MOD (FLT ENV DEPTH)**  
Adjusts the amount by which the cutoff frequency is controlled by the envelope.

**[R] [M] [S] buttons (VINTAGE FLT TYPE)**  
If a vintage type model is selected, these buttons change the type of filter.  
[R] models a Roland filter, and [M] and [S] model vintage synthesizers made by other companies.

**[FILTER MOD]**  
Adjusts the amount by which the LFO modulates the cutoff frequency.

**KEY FOLLOW (FLT KEY FOLLOW)**  
Adjusts the amount by which the keyboard pitch affects the cutoff frequency (key follow). With smaller values, the cutoff frequency becomes lower as you play higher notes.

## 6 VCA

**[LEVEL] knob (AMP LEVEL)**  
Adjusts the volume of the tone.

**LFO MOD (AMP MOD STEP)**  
Uses the LFO to vary the AMP volume (tremolo effect). Higher values produce a greater effect.

## 7 LFO

**RATE (LFO RATE)**  
Specifies the rate of the LFO cycle.

**DELAY TIME (LFO DELAY TIME)**  
Adjusts the time from when the key is pressed until the LFO starts to apply modulation.

**WAVEFORM (LFO WAVEFORM)**  
Selects the waveform of the LFO.  
SINE, SAW-DW, SQR, S&H

## 8 VCO MODULATOR

**LFO MOD**  
Adjusts the depth at which the LFO modulates the OSC.

**ENV MOD (PIT ENV DEPTH)**  
Adjusts the depth at which the LFO modulates the ENV1.

**FREQ MOD (DEST SELECT)**  
Selects the OSC that is modulated by LFO MOD.

**Select buttons (PW MODE)**  
Specifies the pulse width mode.  
**LFO**: The pulse width is changed by the LFO.  
**MANUAL**: The pulse width is changed by the slider.  
**ENV**: The pulse width is changed by the ENV1.

**Slider (PULSE WIDTH MOD)**  
Adjusts the amount of pulse width change.

## 9 ENV-1 (Envelope)

**KEY FOLLOW (ENV1 KEY FLW SW)**  
Specifies the ENV1 key follow. If key follow is on, ADR times become longer for lower notes and shorter for higher notes.

**POLARITY**  
Specifies the polarity of the envelope.

**Envelope**  
You can directly drag the curve in the screen to edit the ADSR settings of the envelope in a visual way.

The values of the [A] [D] [S] [R] knobs also change in tandem.  
To make fine adjustments, hold down the [shift] key while you drag.

**[A] knob (ENV1 ATTACK)**  
Adjusts the Attack time.

**[D] knob (ENV1 DECAY)**  
Adjusts the Decay time.

**[S] knob (ENV1 SUSTAIN)**  
Adjusts the Sustain level.

**[R] knob (ENV1 RELEASE)**  
Adjusts the Release time.

## 10 ENV-2 (Envelope)

**KEY FOLLOW (ENV2 KEY FLW SW)**  
Specifies the ENV2 key follow. If key follow is on, ADR times become longer for lower notes and shorter for higher notes.

**Envelope**  
You can directly drag the curve in the screen to edit the ADSR settings of the envelope in a visual way.

The values of the [A] [D] [S] [R] knobs also change in tandem.  
To make fine adjustments, hold down the [shift] key while you drag.

**[A] knob (ENV2 ATTACK)**  
Adjusts the Attack time.

**[D] knob (ENV2 DECAY)**  
Adjusts the Decay time.

**[S] knob (ENV2 SUSTAIN)**  
Adjusts the Sustain level.

**[R] knob (ENV2 RELEASE)**  
Adjusts the Release time.

## 11 MFX

**[MFX] button**  
Turns MFX on/off.

**[MFX TYPE] indication**  
Shows the currently selected MFX name.  
To change the MFX, click the MFX name and choose from the list that appears.

**[MFX LEVEL] knob**  
Adjusts the MFX output level.

**MFX parameters**  
The edit screen is different for each MFX type.  
→ For details, refer to "MFX Parameters."

## 12 Controller

**BEND [PIT] knob (BEND PITCH)**  
Specifies the range of pitch change produced by pitch bend.

**BEND [FILT] knob (BEND FILTER)**  
Specifies the range of filter change produced by pitch bend.

**MOD [LFO] knob (MODULATION LFO)**  
Specifies the amount of LFO applied by modulation.

**A.TOUCH [LEVEL] knob**  
Specifies how the volume of the tone is affected by aftertouch.

**A.TOUCH [FREQ] knob**  
Specifies how the frequency of the low-pass filter is affected by aftertouch.

**A.TOUCH [LFO] knob**  
Specifies how the LFO depth is affected by aftertouch.



# Model Screen (JUNO-106)

## [EDIT] button

Switches between the small screen and detailed settings screen.

## [WRITE] button

Accesses the Tone/Drum Kit Manager, allowing you to save a tone or drum kit.

## [OVERWRITE] button

Overwrite-saves the settings.



## KEY MODE

### [SOLO] button

Sound is produced monophonically.

### [POLY] button

Sound is produced polyphonically.

### [UNISON] button

Sound is produced in unison.

### [SL-UNISON] button

Sound is produced in monophonic unison.

#### Right-click

LEARN MIDI CC

Assigns a control change to each button.



### [CUTOFF] knob

Adjusts how far the filter is open.

Higher values make the sound brighter, and lower values make the sound darker.

### [RESO] knob

Emphasizes the portion of the sound in the region of the cutoff frequency, adding character to the sound. Excessively high settings can produce oscillation, causing the sound to distort.

Increasing this value strengthens the character, and decreasing it weakens the character.

### [ATTACK] knob

Specifies the time from when the key is pressed until the sound completes its attack.

Higher values produce a softer attack, and lower values produce a sharper attack.

### [RELEASE] knob

Specifies the time from when the key is released until the sound disappears.

Higher values produce a longer release, and lower values produce a crisper release.

### [SUB OSC] knob

Adjusts the volume of the sub oscillator.

## How to operate the knobs

#### Right-click

LEARN MIDI CC

Assigns a control change to the parameter selected by [CUTOFF]-[SUB OSC].

#### Drag

Tone edit

Edits each parameter.

# Detailed Settings Screen (JUNO-106)



## 1 System

**CONDITION**  
Simulates the changes that occur as a unit ages.

**PITCH DRIFT**  
Adjusts the slight pitch drift that occurs when notes are played on an analog synthesizer.

**KEY MODE**

**[SOLO] button**  
Sound is produced monophonically.

**[POLY] button**  
Sound is produced polyphonically.

**[UNISON] button**  
Sound is produced in unison.

**[SL-UNISON] button**  
Sound is produced in monophonic unison.

**PORTAMENTO [OFF] [ON] button (PORTA MODE/PORTA TIME)**  
Selects whether portamento is applied to the performance. Use the bar below to specify the portamento time.

**PORTA CRV**

**[ORIG] button**  
Change according to the original curve of the model.

**[LIN] button**  
Change in a linear curve.

**[PRM EXP] button (PARAM EXPANSION)**  
If this is ON, the range of the LFO RATE, CUTOFF, RESONANCE, and FILTER ENV DEPTH parameters are extended beyond the range of the original model.

**[EXP-1] button**  
Change in a non-linear curve (gentle slope).

**[EXP-2] button**  
Change in a non-linear curve (steep slope).

## 2 LFO

**[RATE] knob (LFO RATE)**  
Specifies the rate of the LFO cycle.

**[DELAY TIME] knob (FLO DELAY TIME)**  
Adjusts the time from when the key is pressed until the LFO starts to apply modulation.

## 3 DCO

**[RANGE] knob (OSC RANGE)**  
Specifies the octave of the oscillator. 16', 8', 4', 2'

**LFO (OSC LFO MOD)**  
Uses the LFO to vary the pitch (vibrato).

**[SUB] button (SUB LEVEL)**  
Adjusts the volume of the sub oscillator.

**[NOISE] button (NOISE LEVEL)**  
Adjusts the volume of the noise.

**PWM**  
**PM MODE = LFO:** Adjusts the modulation depth.  
**PM MODE = MANUAL:** Adjusts the pulse width.

**[LFO] [MAN] button (PW MODE)**  
Selects whether the pulse width is modulated by the LFO (LFO) or kept at the fixed value specified by PULSE WIDTH MOD (MANUAL).

**[P.W.] button (PW SWITCH)**  
Turns the PWM wave on/off.

**[SAW] button (SAW SWITCH)**  
Turns the sawtooth wave on/off.

## 4 HPF

**[FREQ] knob (HPF STEP)**  
Sets the high-pass filter's cutoff frequency in four steps. 0, 1, 2, 3

## 5 VCF

**[R] [M] [S] buttons (VINTAGE FLT TYPE)**  
If a vintage type model is selected, these buttons change the type of filter. [R] models a Roland filter, and [M] and [S] model vintage synthesizers made by other companies.

**[FREQ] knob (CUTOFF)**  
Specifies the cutoff frequency of the low-pass filter. The frequency region above the cutoff frequency is cut, producing a more mellow tonal character.

**[RES] knob (RESONANCE)**  
Boosts the region of the filter's cutoff frequency. Higher values produce a stronger result, giving the sound a distinctively synthesizer-like character.

**Polarity buttons**  
Specify the polarity of the filter.

**ENV (FLT ENV DEPTH)**  
Adjusts the amount by which the cutoff frequency is controlled by the envelope.

**LFO (FILTER MOD)**  
Adjusts the amount by which the LFO modulates the cutoff frequency.

**KYBD (FLT KEY FOLLOW)**  
Adjusts the amount by which the volume pitch affects the cutoff frequency (key follow). With smaller values, the cutoff frequency becomes lower as you play higher notes.

## 6 VCA

**[LEVEL] knob (AMP LEVEL)**  
Adjusts the volume of the tone.

**[ENV] [GATE] button (AMP ENV SEL)**  
Specifies whether the volume is controlled by the ENV (ENV) or by the gate signal (GATE).

## 7 ENV

**Envelope**  
You can directly drag the curve in the screen to edit the ADSR settings of the envelope in a visual way.

The values of the [A] [D] [S] [R] knobs also change in tandem.  
To make fine adjustments, hold down the [shift] key while you drag.

**[A] knob (ENV ATTACK)**  
Adjusts the Attack time.

**[D] knob (ENV DECAY)**  
Adjusts the Decay time.

**[S] knob (ENV SUSTAIN)**  
Adjusts the Sustain level.

**[R] knob (ENV RELEASE)**  
Adjusts the Release time.

## 8 MFX

**[MFX] button**  
Turns MFX on/off.

**[MFX TYPE] indication**  
Shows the currently selected MFX name. To change the MFX, click the MFX name and choose from the list that appears.

**[MFX LEVEL] knob**  
Adjusts the MFX output level.

**MFX parameters**  
The edit screen is different for each MFX type.  
➔ For details, refer to "MFX Parameters."

## 9 Controller

**BEND [PIT] knob (BEND PITCH)**  
Specifies the range of pitch change produced by pitch bend.

**BEND [FILT] knob (BEND FILTER)**  
Specifies the range of filter change produced by pitch bend.

**MOD [LFO] knob (MODULATION LFO)**  
Specifies the amount of LFO applied by modulation.

**A.TOUCH [LEVEL] knob**  
Specifies how the volume of the tone is affected by aftertouch.

**A.TOUCH [FREQ] knob**  
Specifies how the frequency of the low-pass filter is affected by aftertouch.

**A.TOUCH [LFO] knob**  
Specifies how the LFO depth is affected by aftertouch.

# Model Screen (JX-8P)

## [EDIT] button

Switches between the small screen and detailed settings screen.

## [WRITE] button

Accesses the Tone/Drum Kit Manager, allowing you to save a tone or drum kit.

## [OVERWRITE] button

Overwrite-saves the settings.



## KEY MODE

### [SOLO] button

Sound is produced monophonically.

### [POLY] button

Sound is produced polyphonically.

### [UNISON] button

Sound is produced in unison.

### [SL-UNISON] button

Sound is produced in monophonic unison.

#### Right-click

#### LEARN MIDI CC

Assigns a control change to each button.



### [CUTOFF] knob

Adjusts how far the filter is open.

Higher values make the sound brighter, and lower values make the sound darker.

### [RESO] knob

Emphasizes the portion of the sound in the region of the cutoff frequency, adding character to the sound. Excessively high settings can produce oscillation, causing the sound to distort.

Increasing this value strengthens the character, and decreasing it weakens the character.

### [ATTACK] knob

Specifies the time from when the key is pressed until the sound completes its attack.

Higher values produce a softer attack, and lower values produce a sharper attack.

### [RELEASE] knob

Specifies the time from when the key is released until the sound disappears.

Higher values produce a longer release, and lower values produce a crisper release.

### [CROSS MOD] button (OSC2 MOD MODE)

Selects the MOD MODE type (OFF, SYNC, X-MOD).

## How to operate the knobs

#### Right-click

#### LEARN MIDI CC

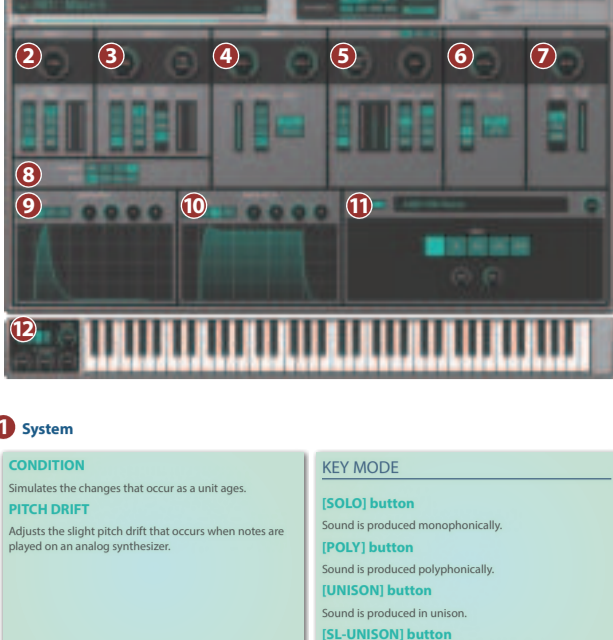
Assigns a control change to the parameter selected by [CUTOFF]-[CROSS MOD].

#### Drag

#### Tone edit

Edits each parameter.

# Detailed Settings Screen (JX-8P)



## 1 System

**CONDITION**  
Simulates the changes that occur as a unit ages.

**PITCH DRIFT**  
Adjusts the slight pitch drift that occurs when notes are played on an analog synthesizer.

**KEY MODE**

**[SOLO] button**  
Sound is produced monophonically.

**[POLY] button**  
Sound is produced polyphonically.

**[UNISON] button**  
Sound is produced in unison.

**[SL-UNISON] button**  
Sound is produced in monophonic unison.

**PORTAMENTO [OFF] [ON] button (PORTA MODE/PORTA TIME)**  
Selects whether portamento is applied to the performance. Use the bar below to specify the portamento time.

**PORTA CRV**

**[ORG] button**  
Change according to the original curve of the model.

**[LINER] button**  
Change in a linear curve.

**[EXP-1] button**  
Change in a non-linear curve (gentle slope).

**[EXP-2] button**  
Change in a non-linear curve (steep slope).

**[PRM EXP] button (PARAM EXPANSION)**  
If this is ON, the range of the LFO RATE, CUTOFF, RESONANCE, and FILTER ENV DEPTH parameters are extended beyond the range of the original model.

## 2 DCO-1

**[RANGE] button (OSC1 RANGE)**  
Specifies the octave of OSC1.  
16; 8; 4; 2'

**[TUNE] knob (OSC1 TUNE)**  
Adjusts the OSC1 pitch.

**[WAVEFORM] button (OSC1 WAVEFORM)**  
Selects the waveform that is the basis of the OSC1 sound.  
SAW, PULSE, SQR, NOISE

**LFO (OSC1 LFO MOD)**  
Adjusts the depth to which LFO modulates OSC1.

**ENV (OSC1 PIT ENV)**  
Adjusts the depth to which the ENV specified by OSC ENV MODE affects the OSC1 pitch envelope.

## 3 DCO-2

**[RANGE] button (OSC2 RANGE)**  
Specifies the octave of OSC2.  
16; 8; 4; 2'

**[WAVEFORM] button (OSC2 WAVEFORM)**  
Selects the waveform that is the basis of the OSC2 sound.  
SAW, PULSE, SQR, NOISE

**[TUNE] knob (OSC2 TUNE)**  
Adjusts the OSC2 pitch.

**[FINE TUNE] knob (OSC2 FINE TUNE)**  
Finely adjusts the OSC2 pitch.

**[CROSS MOD] button (OSC2 MOD MODE)**  
Selects the MOD MODE type (OFF, SYNC, X-MOD).

**LFO (OSC2 LFO MOD)**  
Adjusts the depth to which the LFO modulates OSC2.

**ENV (OSC2 PIT ENV)**  
Adjusts the depth to which the ENV specified by OSC ENV MODE affects the OSC2 pitch envelope.

## 4 MIXER

**[DCO-1] knob (OSC1 LEVEL)**  
Adjusts the volume balance of OSC1.

**[DCO-2] knob (OSC2 LEVEL)**  
Adjusts the volume balance of OSC2.

**ENV (MIXER ENV DEPTH)**  
Adjusts the depth to which the envelope specified by MIXER ENV MODE controls the OSC2 level.

**[DYNAMICS] button (MIXER DYNAMICS)**  
Adjusts the sensitivity at which the velocity controls the depth of MIXER ENV.

**[MODE] button (MIXER ENV MODE)**  
Selects the envelope that is used as MIXER ENV.

## 5 VCF

**[HPF] button (HPF STEP)**  
Sets the high-pass filter's cutoff frequency in four steps.

**LFO (FILTER MOD)**  
Adjusts the amount by which the LFO modulates the cutoff frequency.

**ENV (FLT ENV DEPTH)**  
Adjusts the amount by which the envelope selected by the [MODE] button modulates the cutoff frequency.

**[R] [M] [S] buttons (VINTAGE FLT TYPE)**  
If a vintage type model is selected, these buttons change the type of filter.  
[R] models a Roland filter, and [M] and [S] model vintage synthesizers made by other companies.

**[CUTOFF FREQ] knob (CUTOFF)**  
Specifies the cutoff frequency of the low-pass filter. The frequency region above the cutoff frequency is cut, producing a more mellow tonal character.

**[RES] knob (RESONANCE)**  
Boosts the region of the filter's cutoff frequency. Higher values produce a stronger result, giving the sound a distinctively synthesizer-like character.

**KEY F (FLT KEY FOLLOW)**  
Adjusts the amount by which the keyboard pitch affects the cutoff frequency (key follow). With smaller values, the cutoff frequency becomes lower as you play higher notes.

**[DYNAMICS] button (FILTER DYNAMICS)**  
Adjusts the amount by which the envelope selected by the [MODE] button affects the velocity.

**[MODE] button (FLT ENV MODE)**  
Select the envelope and polarity used to control the filter.

## 6 VCA

**[LEVEL] knob (AMP LEVEL)**  
Adjusts the volume of the tone.

**[MODE] button (AMP ENV MODE)**  
Selects whether the volume is controlled by ENVELOPE-2 (ENV2) or stays at a fixed volume as long as the key is held down (GATE).

**[DYNAMICS] button (AMP DYNAMICS)**  
Adjusts the sensitivity at which velocity controls the AMP ENV depth.

## 7 LFO

**[RATE] knob (LFO RATE)**  
Specifies the rate of the LFO cycle.

**[WAVEFORM] button (LFO WAVEFORM)**  
Selects the waveform of the LFO.  
SINE, SQR, S&H

**DELAY TIME (LFO DELAY TIME)**  
Adjusts the time from when the key is pressed until the LFO starts to apply modulation.

**[DYNAMICS] button (PITCH DYNAMICS)**  
Adjusts the sensitivity at which the velocity controls the depth of the pitch envelope.

**[MODE] button (OSC ENV MODE)**  
Selects the envelope and polarity used to control OSC.

## 9 ENVELOPE-1

**KEY [FOLLOW] button (ENV1 KEY FOLLOW-S)**  
Specifies the ENV1 key follow in four levels. With higher values, ADR times become longer as you play lower on the keyboard, and shorter as you play higher.

**[A] knob (ENV1 ATTACK)**  
Adjusts the Attack time.

**[D] knob (ENV1 DECAY)**  
Adjusts the Decay time.

**[S] knob (ENV1 SUSTAIN)**  
Adjusts the Sustain level.

**[R] knob (ENV1 RELEASE)**  
Adjusts the Release time.

**Envelope**  
You can directly drag the curve in the screen to edit the ADSR settings of the envelope in a visual way.

The values of the [A] [D] [S] [R] knobs also change in tandem.  
To make fine adjustments, hold down the [shift] key while you drag.

## 10 ENVELOPE-2

**KEY [FOLLOW] button (ENV2 KEY FOLLOW-S)**  
Specifies the ENV2 key follow in four levels. With higher values, ADR times become longer as you play lower on the keyboard, and shorter as you play higher.

**[A] knob (ENV2 ATTACK)**  
Adjusts the Attack time.

**[D] knob (ENV2 DECAY)**  
Adjusts the Decay time.

**[S] knob (ENV2 SUSTAIN)**  
Adjusts the Sustain level.

**[R] knob (ENV2 RELEASE)**  
Adjusts the Release time.

**Envelope**  
You can directly drag the curve in the screen to edit the ADSR settings of the envelope in a visual way.

The values of the [A] [D] [S] [R] knobs also change in tandem.  
To make fine adjustments, hold down the [shift] key while you drag.

## 11 MFX

**[MFX] button**  
Turns MFX on/off.

**[MFX TYPE] indication**  
Shows the currently selected MFX name.  
To change the MFX, click the MFX name and choose from the list that appears.

**[MFX LEVEL] knob**  
Adjusts the MFX output level.

**MFX parameters**  
The edit screen is different for each MFX type.  
➔ For details, refer to "MFX Parameters."

## 12 Controller

**BEND [2] [3] [4] [7] buttons (BEND PITCH-STEP)**  
Specifies the range of pitch change produced by pitch bend in four levels: 2, 3, 4, or 7 semitones.

**MOD [LFO] knob (MODULATION LFO)**  
Specifies the amount of LFO applied by modulation.

**A.TOUCH [LEVEL] knob**  
Specifies how the volume of the tone is affected by aftertouch.

**A.TOUCH [FREQ] knob**  
Specifies how the frequency of the low-pass filter is affected by aftertouch.

**A.TOUCH [LFO] knob**  
Specifies how the LFO depth is affected by aftertouch.

# Model Screen (SH-101)

## [EDIT] button

Switches between the small screen and detailed settings screen.

## [WRITE] button

Accesses the Tone/Drum Kit Manager, allowing you to save a tone or drum kit.

## [OVERWRITE] button

Overwrite-saves the settings.



## KEY MODE

### [SOLO] button

Sound is produced monophonically.

### [POLY] button

Sound is produced polyphonically.

### [UNISON] button

Sound is produced in unison.

### [SL-UNISON] button

Sound is produced in monophonic unison.

#### Right-click

#### LEARN MIDI CC

Assigns a control change to each button.



### [CUTOFF] knob

Adjusts how far the filter is open.

Higher values make the sound brighter, and lower values make the sound darker.

### [RESO] knob

Emphasizes the portion of the sound in the region of the cutoff frequency, adding character to the sound. Excessively high settings can produce oscillation, causing the sound to distort.

Increasing this value strengthens the character, and decreasing it weakens the character.

### [ATTACK] knob

Specifies the time from when the key is pressed until the sound completes its attack.

Higher values produce a softer attack, and lower values produce a sharper attack.

### [RELEASE] knob

Specifies the time from when the key is released until the sound disappears.

Higher values produce a longer release, and lower values produce a crisper release.

### [SUB OSC] knob

Adjusts the volume of the sub oscillator.

## How to operate the knobs

#### Right-click

#### LEARN MIDI CC

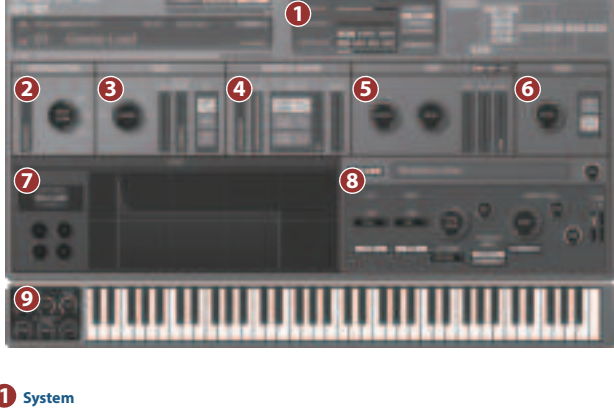
Assigns a control change to the parameter selected by [CUTOFF]-[SUB OSC].

#### Drag

#### Tone edit

Edits each parameter.

## Detailed Settings Screen (SH-101)



## 1 System

## CONDITION

Simulates the changes that occur as a unit ages.

## PITCH DRIFT

Adjusts the slight pitch drift that occurs when notes are played on an analog synthesizer.

## KEY MODE

## [SOLO] button

Sound is produced monophonically.

## [POLY] button

Sound is produced polyphonically.

## [UNISON] button

Sound is produced in unison.

## [SL-UNISON] button

Sound is produced in monophonic unison.

## PORTAMENTO [OFF] [ON] [AUTO] buttons (PORTA MODE)

Turns portamento on/off. If this is on, the pitch will change smoothly from one note to the next-played note.

**OFF:** Regardless of the portamento time setting, portamento is not applied.

**ON:** Portamento is always applied.

**AUTO:** Portamento is applied only when you play legato (pressing the next key before completely releasing the previously-played key). This lets you use your playing technique to control portamento on/off.

## [ORIG] button

Change according to the original curve of the model.

## [LIN] button

Change in a linear curve.

## [EXP-1] button

Change in a non-linear curve (gentle slope).

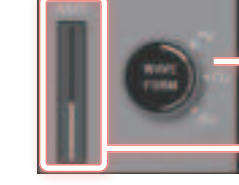
## [EXP-2] button

Change in a non-linear curve (steep slope).

## [PRM EXP] button (PARAM EXPANSION)

If this is ON, the range of the LFO RATE, CUTOFF, RESONANCE, and FILTER ENV DEPTH parameters are extended beyond the range of the original model.

## 2 MODULATOR



## [WAVEFORM] knob (LFO WAVEFORM)

Selects the waveform of the LFO. TRI, SQR, S&H

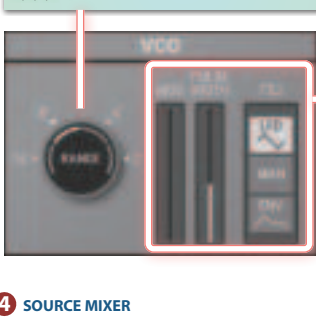
## RATE (LFO RATE)

Specifies the rate of the LFO cycle.

## 3 VCO

## [RANGE] knob (OSC RANGE)

Specifies the octave of the oscillator. 16', 8', 4', 2'



## MOD (OSC LFO MOD)

Adjusts the depth at which the LFO modulates the OSC.

## PULSE WIDTH (PULSE WIDTH MOD)

**PW MODE = MAN:** Adjusts the pulse width.

**PW MODE = LFO/ENV:** Adjusts the modulation depth.

## [ ] (PW MODE)

Specifies the pulse width mode.

**LFO:** The pulse width is changed by the LFO.

**MAN:** The pulse width is changed by PULSE WIDTH MOD.

**ENV:** The pulse width is changed by the ENV1.

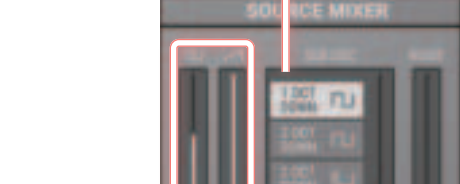
## 4 SOURCE MIXER

## SUB OSC (SUB OSC LEVEL)

Adjusts the volume of the sub oscillator.

## [1OCT DOWN] [2OCT DOWN] [2OCT DOWN (small pulse width)] buttons (SUB OSC)

Specifies the SUB OSC type.



## [ ] (PWM wave) (PW LEVEL)

Adjusts the volume of the PWM wave.

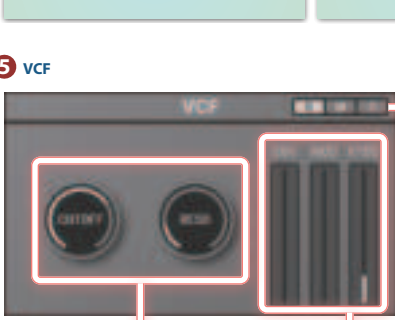
## [ ] (Sawtooth wave) (SAW LEVEL)

Adjusts the volume of the sawtooth wave.

## NOISE (NOISE LEVEL)

Adjusts the volume of the noise.

## 5 VCF



## [CUTOFF] knob

Specifies the cutoff frequency of the low-pass filter. The frequency region above the cutoff frequency is cut, producing a more mellow tonal character.

## [RES] knob (RESONANCE)

Boosts the region of the filter's cutoff frequency. Higher values produce a stronger result, giving the sound a distinctively synthesizer-like character.

## [R] [M] [S] buttons (VINTAGE FLT TYPE)

If a vintage type model is selected, these buttons change the type of filter.

[R] models a Roland filter, and [M] and [S] model vintage synthesizers made by other companies.

## ENV (FLT ENV DEPTH)

Adjusts the amount by which the cutoff frequency is controlled by the envelope.

## MOD (FILTER MOD)

Adjusts the amount by which the LFO modulates the cutoff frequency.

## KYBD (FLT KEY FOLLOW)

Varies the filter's cutoff frequency according to the note played on the keyboard.

## 6 VCA



## [LEVEL] knob (AMP LEVEL)

Adjusts the volume of the tone.

## [ENV] [GATE] button (AMP ENV SEL)

Specifies whether the volume is controlled by the ENV (ENV) or stays at a fixed volume as long as the key is held down (GATE).

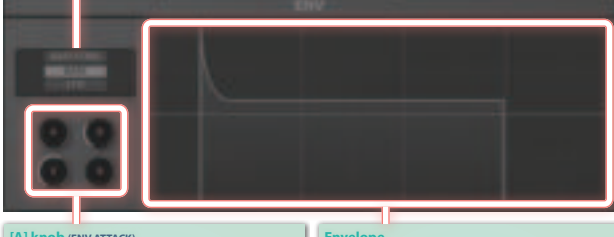
## 7 ENV

## [GATE+TRIG] [GATE] [LFO] buttons (ENV MODE)

Specifies what causes the envelope to attack.

Button	Explanation
GATE+TRIG	Attack each time a key is pressed.
GATE	Attack when a key is pressed anew. No attack when playing legato.

Button	Explanation
LFO	Attack repeatedly at each cycle of the LFO as long as the key is held.



## [A] knob (ENV ATTACK)

Adjusts the Attack time.

## [D] knob (ENV DECAY)

Adjusts the Decay time.

## [S] knob (ENV SUSTAIN)

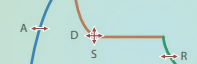
Adjusts the Sustain level.

## [R] knob (ENV RELEASE)

Adjusts the Release time.

## Envelope

You can directly drag the curve in the screen to edit the ADSR settings of the envelope in a visual way.



The values of the [A] [D] [S] [R] knobs also change in tandem.

To make fine adjustments, hold down the [shift] key while you drag.

## 8 MFX

## [MFX] button

Turns MFX on/off.

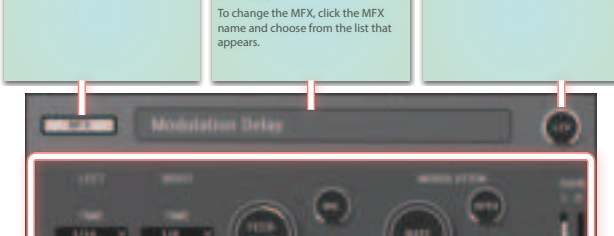
## [MFX TYPE] indication

Shows the currently selected MFX name.

To change the MFX, click the MFX name and choose from the list that appears.

## [MFX LEVEL] knob

Adjusts the MFX output level.



## MFX parameters

The edit screen is different for each MFX type.

→ For details, refer to "MFX Parameters."

## 9 Controller

## BEND [PIT] knob (BEND PITCH)

Specifies the range of pitch change produced by pitch bend.

## BEND [FLT] knob (BEND FILTER)

Specifies the range of filter change produced by pitch bend.

## MOD [LFO] knob (MODULATION LFO)

Specifies the amount of LFO applied by modulation.



## A.TOUCH [LEVEL] knob

Specifies how the volume of the tone is affected by aftertouch.

## A.TOUCH [FREQ] knob

Specifies how the frequency of the low-pass filter is affected by aftertouch.

## A.TOUCH [LFO] knob

Specifies how the LFO depth is affected by aftertouch.

# Model Screen (JD-800)

## [EDIT] button

Switches between the small screen and detailed settings screen.

## [WRITE] button

Accesses the Tone/Drum Kit Manager, allowing you to save a tone or drum kit.

## [OVERWRITE] button

Overwrite-saves the settings.



## PALETTE

Select the parameter to operate using the [PARTIAL 1]–[PARTIAL 4] knobs.

### [LEVEL] button

Adjust the level of each partial using the [PARTIAL 1]–[PARTIAL 4] knobs.

### [ATTACK] button

Adjust the TVA-T1 of each partial using the [PARTIAL 1]–[PARTIAL 4] knobs.

### [CUTOFF] button

Adjust the cutoff frequency of each partial using the [PARTIAL 1]–[PARTIAL 4] knobs.

### [FINE TUNE] button

Adjust the pitch of each partial using the [PARTIAL 1]–[PARTIAL 4] knobs.

### [RELEASE] button

Adjust the TVA-T4 of each partial using the [PARTIAL 1]–[PARTIAL 4] knobs.

### [RESONANCE] button

Adjust the resonance of each partial using the [PARTIAL 1]–[PARTIAL 4] knobs.

### Assignable button

The parameters operated by the sliders and knobs you last used are registered in the assignable button. The button names change to the respective parameter names.

When the assignable button is selected, the registered parameters can be adjusted using the [PARTIAL 1]–[PARTIAL 4] knobs.



Assignable button

## [PARTIAL 1] [PARTIAL 2] [PARTIAL 3] [PARTIAL 4] knobs

Set the parameters selected with the PALETTE button for each partial.

## How to operate the knobs

Right-click	LEARN MIDI CC Assigns a control change message to a parameter.
Drag	Tone edit Edits each parameter.





# MFX Parameters

## MFX list

---

### NO ASSIGN

Thru

### FILTER

Equalizer

Mid-Side EQ

Spectrum

Isolator

Low Boost

Super Filter

Multi Mode Filter

Step Filter

Enhancer

Exciter

Auto Wah

Humanizer

### PHASER

Phaser

Small Phaser

Script 90

Script 100

Step Phaser

Multi Stage Phaser

Infinite Phaser

### FLANGER

Flanger

SBF-325 (Flanger)

Step Flanger

### CHORUS

Chorus

Hexa-Chorus

Tremolo Chorus

Space-D

CE-1 (Chorus)

SDD-320 (DIMENSION D)

JUNO-106 Chorus

### MODULATION

Ring Modulator

Tremolo

Auto Pan

Slicer

Rotary

VK Rotary

### DRIVE/AMP

Overdrive

Distortion

T-Scream

Fuzz

Tone Fattener

HMS Distortion

Saturator

Warm Saturator

Guitar Amp Simulator

RD EPAmSim

Speaker Simulator

### COMP/LIMITER

Compressor

Mid-Side Compressor

Limiter

Sustainer

Transient

Gate

### DELAY

Delay

Modulation Delay

2Tap Pan Delay

3Tap Pan Delay

4Tap Pan Delay

Multi Tap Delay

Reverse Delay

Time Ctrl Delay

Tape Echo

Mid-Side Delay

### LOOPER

DJFX Looper

BPM Looper

### LO-FI

LOFI Compress

Bit Crusher

Phonograph

### PITCH

Pitch Shifter

2Voice Pitch Shifter

### COMBINATION

Overdrive → Chorus

Overdrive → Flanger

Overdrive → Delay

Distortion → Chorus

Distortion → Flanger

Distortion → Delay

OD/DS → TouchWah

OD/DS → AutoWah

GtAmpSim → Chorus

GtAmpSim → Flanger

GtAmpSim → Phaser

GtAmpSim → Delay

EPAmSim → Tremolo

EPAmSim → Chorus

EPAmSim → Flanger

EPAmSim → Phaser

EPAmSim → Delay

Enhancer → Chorus

Enhancer → Flanger

Enhancer → Delay

Chorus → Delay

Flanger → Delay

Chorus → Flanger

JD-Multi

# NO ASSIGN

Thru

L in  L out

R in  R out

# FILTER

## Equalizer

This is a four-band stereo equalizer (low, mid x 2, high).



Parameter	Value	Explanation
Low Freq (Low Frequency)	20, 25, 31, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400 [Hz]	Frequency of the low range
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
Mid1 Freq (Mid1 Frequency)	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Frequency of the middle range 1
Mid1 Gain	-15–+15 [dB]	Gain of the middle range 1
Mid1 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the middle range 1 Set a higher value for Q to narrow the range to be affected.
Mid2 Freq (Mid2 Frequency)	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Frequency of the middle range 2
Mid2 Gain	-15–+15 [dB]	Gain of the middle range 2
Mid2 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the middle range 2 Set a higher value for Q to narrow the range to be affected.
HighFreq (High Frequency)	2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 16000 [Hz]	Frequency of the high range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level

## Mid-Side EQ

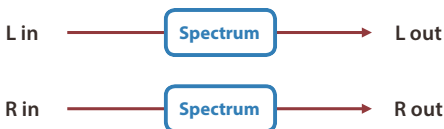
This effect allows the left/right signals that have similar phase to be tonally adjusted in a different way than the left/right signals that have different phase.



Parameter	Value	Explanation
M EQ Switch	OFF, ON	Switches whether to apply tonal adjustment to left/right input signals whose phase is similar (in phase).
M Input Gain	-12.00--+12.00 [dB]	Volume of left/right input signals whose phase is similar (in phase)
M Low Frequency	20, 25, 31, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400 [Hz]	Frequency of the low range
M Low Gain	-12.00--+12.00 [dB]	Amount of boost/cut for the low-frequency range
M Mid1 Frequency	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Frequency of the middle range 1
M Mid1 Gain	-12.00--+12.00 [dB]	Gain of the middle range 1
M Mid1 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the middle range 1 Set a higher value for Q to narrow the range to be affected.
M Mid2 Frequency	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Frequency of the middle range 2
M Mid2 Gain	-12.00--+12.00 [dB]	Gain of the middle range 2
M Mid2 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the middle range 2 Set a higher value for Q to narrow the range to be affected.
M Mid3 Frequency	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Frequency of the middle range 3
M Mid3 Gain	-12.00--+12.00 [dB]	Gain of the middle range 3
M Mid3 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the middle range 3 Set a higher value for Q to narrow the range to be affected.
M High Frequency	2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 16000 [Hz]	Frequency of the high range
M High Gain	-12.00--+12.00 [dB]	Amount of boost/cut for the high-frequency range
S EQ Switch	OFF, ON	Switches whether to apply tonal adjustment to left/right input signals whose phase is distant (opposite phase).
S Input Gain	-12.00--+12.00 [dB]	Volume of left/right signals whose phase is distant (opposite phase)
S Low Frequency	20, 25, 31, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400 [Hz]	Frequency of the low range
S Low Gain	-12.00--+12.00 [dB]	Amount of boost/cut for the low-frequency range
S Mid1 Frequency	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Frequency of the middle range 1
S Mid1 Gain	-12.00--+12.00 [dB]	Gain of the middle range 1
S Mid1 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the middle range 1 Set a higher value for Q to narrow the range to be affected.
S Mid2 Frequency	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Frequency of the middle range 2
S Mid2 Gain	-12.00--+12.00 [dB]	Gain of the middle range 2
S Mid2 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the middle range 2 Set a higher value for Q to narrow the range to be affected.
S Mid3 Frequency	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Frequency of the middle range 3
S Mid3 Gain	-12.00--+12.00 [dB]	Gain of the middle range 3
S Mid3 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the middle range 3 Set a higher value for Q to narrow the range to be affected.
S High Frequency	2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 16000 [Hz]	Frequency of the high range
S High Gain	-12.00--+12.00 [dB]	Amount of boost/cut for the high-frequency range
Level	0-127	Output Level

## Spectrum

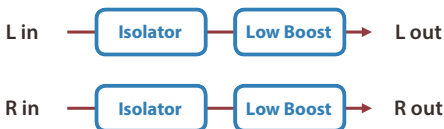
This is a stereo spectrum. Spectrum is a type of filter which modifies the timbre by boosting or cutting the level at specific frequencies.



Parameter	Value	Explanation
Band1 (250 Hz)	-15--+15 [dB]	Gain of each frequency band
Band2 (500 Hz)		
Band3 (1000 Hz)		
Band4 (1250 Hz)		
Band5 (2000 Hz)		
Band6 (3150 Hz)		
Band7 (4000 Hz)		
Band8 (8000 Hz)		
Q	0.5, 1.0, 2.0, 4.0, 8.0	Simultaneously adjusts the width of the adjusted ranges for all the frequency bands.
Level	0-127	Output Level

## Isolator

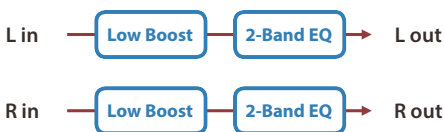
This is an equalizer which cuts the volume greatly, allowing you to add a special effect to the sound by cutting the volume in varying ranges.



Parameter	Value	Explanation
Boost/Cut Low	-60--+4 [dB]	These boost and cut each of the High, Middle, and Low frequency ranges.
Boost/Cut Mid	-60--+4 [dB]	At -60 dB, the sound becomes inaudible. 0 dB is equivalent to the input level of the sound.
Boost/Cut High	-60--+4 [dB]	
Anti Phase Low Sw	OFF, ON	Turns the Anti-Phase function on and off for the Low frequency ranges. When turned on, the counter-channel of stereo sound is inverted and added to the signal.
Anti Phase Low Level	0-127	Adjusts the level settings for the Low frequency ranges. Adjusting this level for certain frequencies allows you to lend emphasis to specific parts (This is effective only for stereo source.).
Anti Phase Mid Sw	OFF, ON	Settings of the Anti-Phase function for the Middle frequency ranges.
Anti Phase Mid Level	0-127	The parameters are the same as for the Low frequency ranges.
Low Boost Sw	OFF, ON	Turns Low Booster on/off. This emphasizes the bottom to create a heavy bass sound.
Low Boost Level	0-127	Increasing this value gives you a heavier low end. Depending on the Isolator and filter settings this effect may be hard to distinguish.
Level	0-127	Output Level

## Low Boost

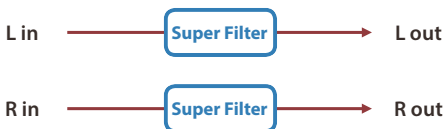
Boosts the volume of the lower range, creating powerful lows.



Parameter	Value	Explanation
Boost Frequency	50, 56, 63, 71, 80, 90, 100, 112, 125 [Hz]	Center frequency at which the lower range will be boosted
Boost Gain	0–+12 [dB]	Center frequency at which the lower range will be boosted
Boost Width	WIDE, MID, NARROW	Width of the lower range that will be boosted
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level

## Super Filter

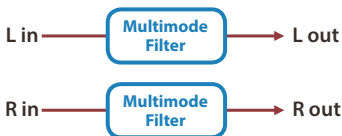
This is a filter with an extremely sharp slope. The cutoff frequency can be varied cyclically.



Parameter	Value	Explanation
Filter Type	LPF, BPF, HPF, NOTCH	Type of filter Frequency range that will pass through each filter <b>LPF:</b> Frequencies below the cutoff <b>BPF:</b> Frequencies in the region of the cutoff <b>HPF:</b> Frequencies above the cutoff <b>NOTCH:</b> Frequencies other than the region of the cutoff
Filter Slope	-12, -24, -36 [dB]	Amount of attenuation per octave <b>-12 dB:</b> Gentle, <b>-24 dB:</b> Steep, <b>-36 dB:</b> Extremely steep
Filter Cutoff	0–127	Cutoff frequency of the filter Increasing this value will raise the cutoff frequency.
Filter Resonance	0–100	Filter resonance level Increasing this value will emphasize the region near the cutoff frequency.
Filter Gain	0–+12 [dB]	Amount of boost for the filter output
Modulation Sw	OFF, ON	On/off switch for cyclic change
Modulation Wave	TRI, SQR, SIN, SAW1, SAW2	How the cutoff frequency will be modulated <b>TRI:</b> Triangle wave <b>SQR:</b> Square wave <b>SIN:</b> Sine wave <b>SAW1:</b> Sawtooth wave (upward) <b>SAW2:</b> Sawtooth wave (downward)
	SAW1	SAW2
Rate (sync <sup>sw</sup> w)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Rate (Hz)	0.05–10.00 [Hz]	
Rate (note)	Note → "Note"	Frequency of modulation
Depth	0–127	Depth of modulation
Attack	0–127	Speed at which the cutoff frequency will change This is effective if Modulation Wave is SQR, SAW1, or SAW2.
Level	0–127	Output Level

## Multi Mode Filter

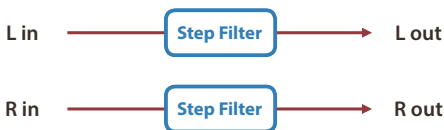
This is a filter that is adjusted for effective use in a DJ performance.



Parameter	Value	Explanation
Filter Type	LPF/HPF, LPF, HPF, BPF	Type of filter <b>LPF/HPF:</b> The filter type is automatically switched according to the Filter Tone parameter value.
Filter Tone	0–255	Frequency at which the filter operates
Filter Color	0–255	Filter resonance level Higher values more strongly emphasize the region of the operating frequency.
Filter Slope	-12, -24, -36 [dB]	Amount of attenuation per octave <b>-12 dB:</b> Gentle, <b>-24 dB:</b> Steep, <b>-36 dB:</b> Extremely steep
Filter Gain	0–+12 [dB]	Amount of boost for the filter output
Level	0–127	Output Level

## Step Filter

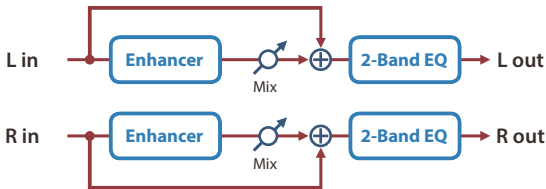
This is a filter whose cutoff frequency can be modulated in steps. You can specify the pattern by which the cutoff frequency will change.



Parameter	Value	Explanation
Step 01–16	0–127	Cutoff frequency at each step
Rate (sync>w)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Rate (note)	Note → <b>"Note"</b>	
Attack	0–127	Speed at which the cutoff frequency changes between steps
Filter Type	LPF, BPF, HPF, NOTCH	Type of filter Frequency range that will pass through each filter <b>LPF:</b> Frequencies below the cutoff <b>BPF:</b> Frequencies in the region of the cutoff <b>HPF:</b> Frequencies above the cutoff <b>NOTCH:</b> Frequencies other than the region of the cutoff
Filter Slope	-12, -24, -36 [dB]	Amount of attenuation per octave <b>-12 dB:</b> Gentle, <b>-24 dB:</b> Steep, <b>-36 dB:</b> Extremely steep
Filter Resonance	0–127	Filter resonance level Increasing this value will emphasize the region near the cutoff frequency.
Filter Gain	0–+12 [dB]	Amount of boost for the filter output
Level	0–127	Output Level

## Enhancer

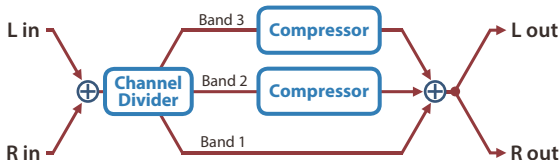
Controls the overtone structure of the high frequencies, adding sparkle and tightness to the sound.



Parameter	Value	Explanation
Sens	0-127	Sensitivity of the enhancer
Mix	0-127	Level of the overtones generated by the enhancer
Low Gain	-15--+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15--+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0-127	Output Level



## Exciter



Parameter	Value	Explanation
Split1 Frequency (BAND2 (MID) FLT)	200–500	Sets the frequency at which the low and middle frequency ranges are split.
Band2 Threshold	-800–0	Sets the threshold value for the middle frequency range. A gain effect is applied when the middle frequency range volume falls below the threshold.
Band2 Max Gain	0–24	Sets the level to which the sound is raised when the middle frequency range volume falls below the threshold.
Split2 Frequency (BAND3 (HIGH) FLT)	300–1000	Sets the frequency at which the middle and high frequency ranges are split.
Band3 Threshold	-800–0	Sets the threshold of the high frequency range. A gain effect is applied when the high frequency range volume falls below the threshold.
Band3 Max Gain	0–24	Sets the level to which the sound is raised when the high frequency range volume falls below the threshold.
Level	0–127	Sets the output volume.

## Auto Wah

Cyclically controls a filter to create cyclic change in timbre.



Parameter	Value	Explanation
Filter Type	LPF, BPF	Type of filter <b>LPF:</b> The wah effect will be applied over a wide frequency range. <b>BPF:</b> The wah effect will be applied over a narrow frequency range.
Manual	0–127	Center frequency at which the wah effect is applied
Peak	0–127	Width of the frequency region at which the wah effect is applied Increasing this value will make the frequency region narrower.
Sens	0–127	Sensitivity with which the filter is modified
Polarity	UP, DOWN	Direction in which the filter will move <b>UP:</b> The filter will change toward a higher frequency. <b>DOWN:</b> The filter will change toward a lower frequency.
Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Rate (Hz)	0.05–10.00 [Hz]	
Rate (note)	Note ⇒ "Note"	Frequency of modulation
Depth	0–127	Depth at which the wah effect is modulated
Phase	0–180 [deg]	Adjusts the degree of phase shift of the left and right sounds when the wah effect is applied.
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level

## Humanizer

Adds a vowel character to the sound, making it similar to a human voice.

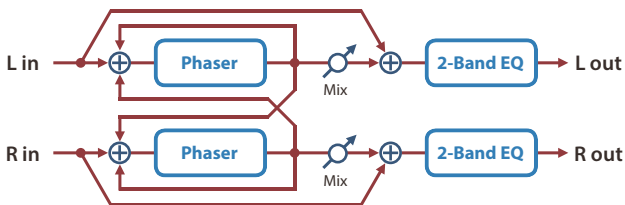


Parameter	Value	Explanation
Drive Sw	OFF, ON	Overdrive on/off
Drive	0–127	Degree of distortion Also changes the volume.
Vowel1	a, e, i, o, u	
Vowel2	a, e, i, o, u	Selects the vowel.
Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Rate (Hz)	0.05–10.00 [Hz]	
Rate (note)	Note ⇒ "Note"	Frequency at which the two vowels switch
Depth	0–127	Effect depth
Input Sync Sw	OFF, ON	LFO reset on/off Determines whether the LFO for switching the vowels is reset by the input signal (ON) or not (OFF).
Input Sync Threshold	0–127	Volume level at which reset is applied
Manual	0–100	Point at which Vowel 1/2 switch <b>0–49:</b> Vowel 1 will have a longer duration. <b>50:</b> Vowel 1 and 2 will be of equal duration. <b>51–100:</b> Vowel 2 will have a longer duration.
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Pan	L64–63R	Stereo location of the output sound
Level	0–127	Output Level

# PHASER

## Phaser

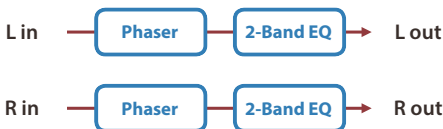
A phase-shifted sound is added to the original sound and modulated.



Parameter	Value	Explanation
Mode	4-STAGE, 8-STAGE, 12-STAGE	Number of stages in the phaser
Manual	0–127	Adjusts the basic frequency from which the sound will be modulated.
Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Rate (note)	Note ⇒ "Note"	
Depth	0–127	Depth of modulation
Polarity	INVERSE, SYNCHRO	Selects whether the left and right phase of the modulation will be the same or the opposite. <b>INVERSE:</b> The left and right phase will be opposite. When using a mono source, this spreads the sound. <b>SYNCHRO:</b> The left and right phase will be the same. Select this when inputting a stereo source.
Resonance	0–127	Amount of feedback
Cross Feedback	-98–+98 [%]	Adjusts the proportion of the phaser sound that is fed back into the effect. Negative (-) settings will invert the phase.
Mix	0–127	Level of the phase-shifted sound
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level

## Small Phaser

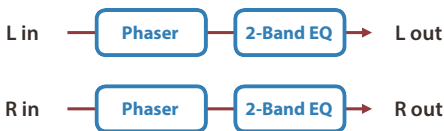
This simulates an analog phaser of the past. It is particularly suitable for electric piano.



Parameter	Value	Explanation
Rate	0–100	Frequency of modulation
Color	1, 2	Modulation character
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level

## Script 90

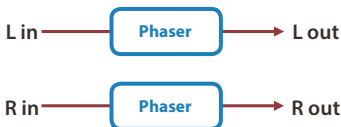
This simulates a different analog phaser than Small Phaser. It is particularly suitable for electric piano.



Parameter	Value	Explanation
Speed	0–100	Speed of modulation
Depth	0–127	Depth of modulation
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level

## Script 100

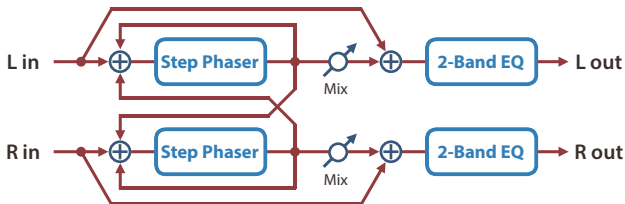
This simulates an analog phaser of the past.



Parameter	Value	Explanation
Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Rate (Hz)	0.05–10.00 [Hz]	
Rate (note)	Note → <b>"This simulates a different analog phaser than Small Phaser. It is particularly suitable for electric piano."</b>	Frequency of modulation
Duty	-50–50	Adjusts the ratio of speeds at which the modulation rises or falls.
Min	0–100	Lower limit reached by modulation
Max	0–100	Upper limit reached by modulation
Manual Sw	OFF, ON	Turn this OFF if you want to apply modulation, or ON if you want to stop modulation.
Manual	0–100	Tonal character when Manual Sw is OFF
Resonance	0–66	Amount of feedback
Mix	0–127	Level of the phase-shifted sound
Level	0–127	Output Level

## Step Phaser

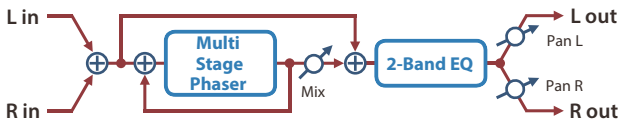
The phaser effect will be varied gradually.



Parameter	Value	Explanation
Mode	4-STAGE, 8-STAGE, 12-STAGE	Number of stages in the phaser
Manual	0–127	Adjusts the basic frequency from which the sound will be modulated.
Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Rate (Hz)	0.05–10.00 [Hz]	
Rate (note)	Note ➔ <b>“This simulates a different analog phaser than Small Phaser. It is particularly suitable for electric piano.”</b>	Frequency of modulation
Depth	0–127	Depth of modulation
Polarity	INVERSE, SYNCHRO	Selects whether the left and right phase of the modulation will be the same or the opposite. <b>INVERSE:</b> The left and right phase will be opposite. When using a mono source, this spreads the sound. <b>SYNCHRO:</b> The left and right phase will be the same. Select this when inputting a stereo source.
Resonance	0–127	Amount of feedback
Cross Feedback	-98–+98 [%]	Adjusts the proportion of the phaser sound that is fed back into the effect. Negative (-) settings will invert the phase.
Step Rate (sync =w)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Step Rate (Hz)	0.10–20.00 [Hz]	
Step Rate (note)	Note ➔ <b>“This simulates a different analog phaser than Small Phaser. It is particularly suitable for electric piano.”</b>	Rate of the step-wise change in the phaser effect
Mix	0–127	Level of the phase-shifted sound
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level

## Multi Stage Phaser

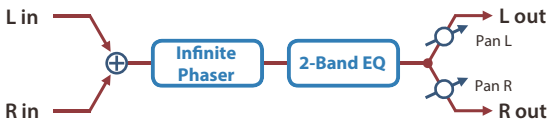
Extremely high settings of the phase difference produce a deep phaser effect.



Parameter	Value	Explanation
Mode	4-STAGE, 8-STAGE, 12-STAGE, 16-STAGE, 20-STAGE, 24-STAGE	Number of stages in the phaser
Manual	0–127	Adjusts the basic frequency from which the sound will be modulated.
Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Rate (Hz)	0.05–10.00 [Hz]	
Rate (note)	Note ➔ <b>“This simulates a different analog phaser than Small Phaser. It is particularly suitable for electric piano.”</b>	Frequency of modulation
Depth	0–127	Depth of modulation
Resonance	0–127	Amount of feedback
Mix	0–127	Level of the phase-shifted sound
Pan	L64–63R	Stereo location of the output sound
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level

## Infinite Phaser

A phaser that continues raising/lowering the frequency at which the sound is modulated.

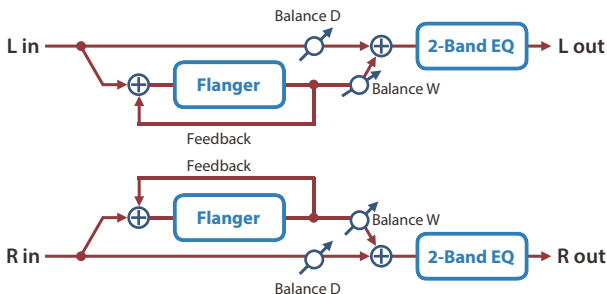


Parameter	Value	Explanation
Mode	1, 2, 3, 4	Higher values will produce a deeper phaser effect.
Speed	-100–+100	Speed at which to raise or lower the frequency at which the sound is modulated (+: upward / -: downward)
Resonance	0–127	Amount of feedback
Mix	0–127	Level of the phase-shifted sound
Pan	L64–63R	Stereo location of the output sound
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level

# FLANGER

## Flanger

This is a stereo flanger (The LFO has the same phase for left and right.). It produces a metallic resonance that rises and falls like a jet airplane taking off or landing. A filter is provided so that you can adjust the timbre of the flanged sound.



Parameter	Value	Explanation
Filter Type	OFF, LPF, HPF	Type of filter <b>OFF:</b> No filter is used <b>LPF:</b> Cuts the frequency range above the Cutoff Freq <b>HPF:</b> Cuts the frequency range below the Cutoff Freq
Cutoff Freq	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Basic frequency of the filter
Pre Delay	0.0–100 [msec]	Adjusts the delay time from when the direct sound begins until the flanger sound is heard.
Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Rate (note)	Note ➔ <b>"Note"</b>	
Depth	0–127	Depth of modulation
Phase	0–180 [deg]	Spatial spread of the sound
Feedback	-98–+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100:0W–D0:100W	Volume balance between the direct sound (D) and the flanger sound (W)
Level	0–127	Output Level

## SBF-325 (Flanger)

This effect reproduces Roland's SBF-325 analog flanger. It provides three types of flanging effect (which adds a metallic resonance to the original sound) and a chorus-type effect.

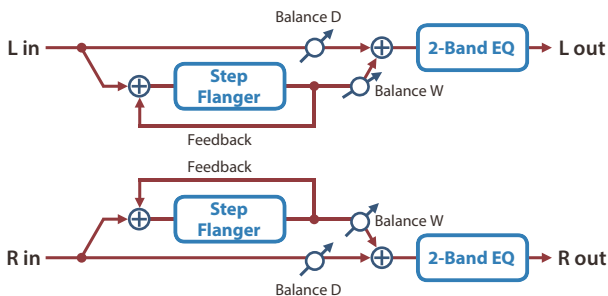


Parameter	Value	Explanation
Mode		Types of flanging effect
	FL1	A typical mono flanger
	FL2	A stereo flanger that preserves the stereo positioning of the original sound
	FL3	A cross-mix flanger that produces a more intense effect
CHO	A chorus effect	
Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Rate (Hz)	0.02–5.00 [Hz]	
Rate (note)	Note → "Note"	Modulation frequency of the flanger effect
Depth	0–127	Modulation depth of the flanger effect
Manual	0–127	Center frequency at which the flanger effect is applied
Feedback	0–127	Amount by which the flanging effect is boosted If Mode is CHO, this setting is ignored.
CH-R Mod Phase	NORM, INV	Phase of the right channel modulation: Normally, you will leave this at Normal (NORM). If you specify Inverted (INV), the modulation (upward/downward movement) of the right channel is inverted.
CH-L Phase		Phase when mixing the flanging sound with the original sound
CH-R Phase		<b>NORM:</b> normal phase <b>INV:</b> inverse phase
Level	0–127	Output Level



## Step Flanger

This is a flanger in which the flanger pitch changes in steps. The speed at which the pitch changes can also be specified in terms of a note-value of a specified tempo.

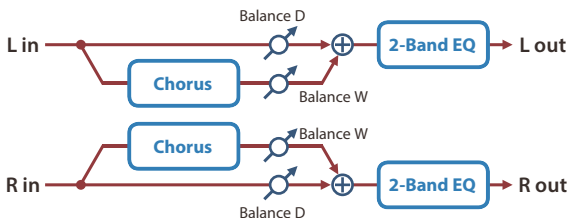


Parameter	Value	Explanation
Filter Type	OFF, LPF, HPF	Type of filter <b>OFF:</b> No filter is used <b>LPF:</b> Cuts the frequency range above the Cutoff Freq <b>HPF:</b> Cuts the frequency range below the Cutoff Freq
Cutoff Freq	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Basic frequency of the filter
Pre Delay	0.0–100.0 [msec]	Adjusts the delay time from when the direct sound begins until the flanger sound is heard.
Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Rate (Hz)	0.05–10.00 [Hz]	
Rate (note)	Note ➔ <b>"Note"</b>	Frequency of modulation
Depth	0–127	Depth of modulation
Phase	0–180 [deg]	Spatial spread of the sound
Feedback	-98–+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.
Step Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Step Rate (Hz)	0.10–20.00 [Hz]	
Step Rate (note)	Note ➔ <b>"Note"</b>	Rate (period) of pitch change
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the flanger sound (W)
Level	0–127	Output Level

# CHORUS

## Chorus

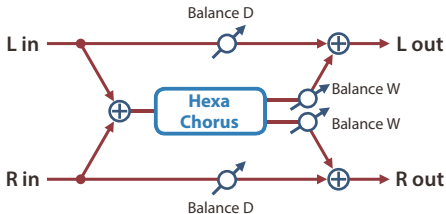
This is a stereo chorus. A filter is provided so that you can adjust the timbre of the chorus sound.



Parameter	Value	Explanation
Filter Type	OFF, LPF, HPF	Type of filter <b>OFF:</b> No filter is used <b>LPF:</b> Cuts the frequency range above the Cutoff Freq <b>HPF:</b> Cuts the frequency range below the Cutoff Freq
Cutoff Freq	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Basic frequency of the filter
Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Rate (note)	Note ⇒ "Note"	
Depth	0–127	Depth of modulation
Phase	0–180 [deg]	Spatial spread of the sound
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the chorus sound (W)
Level	0–127	Output Level

## Hexa-Chorus

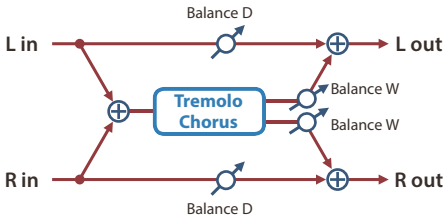
Uses a six-phase chorus (six layers of chorused sound) to give richness and spatial spread to the sound.



Parameter	Value	Explanation
Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Rate (note)	Note → "Note"	
Depth	0–127	Depth of modulation
Pre Delay Deviation	0–20	Adjusts the differences in Pre Delay between each chorus sound.
Depth Deviation	-20–+20	Adjusts the difference in modulation depth between each chorus sound.
Pan Deviation	0–20	Adjusts the difference in stereo location between each chorus sound. <b>0:</b> All chorus sounds will be in the center. <b>20:</b> Each chorus sound will be spaced at 60 degree intervals relative to the center.
Balance	D100:0W–D0:100W	Volume balance between the direct sound (D) and the chorus sound (W)
Level	0–127	Output Level

# Tremolo Chorus

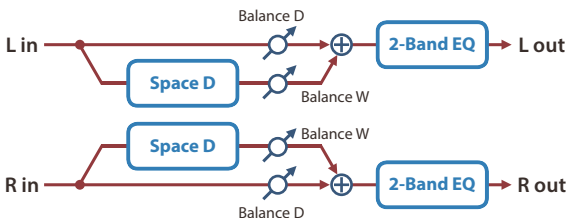
This is a chorus effect with added Tremolo (cyclic modulation of volume).



Parameter	Value	Explanation
Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Chorus Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Chorus Rate (Hz)	0.05–10.00 [Hz]	
Cho Note (Chorus Rate (note))	Note ⇒ <b>"Note"</b>	Modulation frequency of the chorus effect
Chorus Depth	0–127	Modulation depth of the chorus effect
Tremolo Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Tremolo Rate (Hz)	0.05–10.00 [Hz]	
Tremolo Rate (note)	Note ⇒ <b>"Note"</b>	Modulation frequency of the tremolo effect
Tremolo Separation	0–127	Depth of the tremolo effect
Tremolo Phase	0–180 [deg]	Spread of the tremolo effect
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the tremolo chorus sound (W)
Level	0–127	Output Level

## Space-D

This is a multiple chorus that applies two-phase modulation in stereo. It gives no impression of modulation, but produces a transparent chorus effect.



Parameter	Value	Explanation
Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Rate (note)	Note → "Note"	
Depth	0–127	Depth of modulation
Phase	0–180 [deg]	Spatial spread of the sound
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100:0W–D0:100W	Volume balance between the direct sound (D) and the chorus sound (W)
Level	0–127	Output Level

## CE-1 (Chorus)

This models the classic BOSS CE-1 chorus effect unit. It provides a chorus sound with a distinctively analog warmth.



Parameter	Value	Explanation
Intensity	0–127	Chorus depth
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level

## SDD-320 (DIMENSION D)

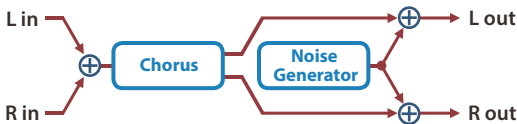
This models Roland's DIMENSION D (SDD-320). It provides a clear chorus sound.



Parameter	Value	Explanation
Mode	1, 2, 3, 4, 1+4, 2+4, 3+4	Switches the mode.
Low Gain	-15 to +15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15 to +15 [dB]	Amount of boost/cut for the high-frequency range
Level	0-127	Output Level

## JUNO-106 Chorus

This models the chorus effects of the Roland JUNO-106.



Parameter	Value	Explanation
Mode	I, II, I+II, JX I, JX II	Type of Chorus <b>I+II:</b> The state in which two buttons are pressed simultaneously.
Noise Level	0-127	Volume of the noise produced by chorus
Balance	D100:0W-D0:100W	Volume balance between the dry sound (D) and effect sound (W)
Level	0-127	Output Level

# MODULATION

## Ring Modulator

This is an effect that applies amplitude modulation (AM) to the input signal, producing bell-like sounds. You can also change the modulation frequency in response to changes in the volume of the sound sent into the effect.



Parameter	Value	Explanation
Frequency	0–127	Adjusts the frequency at which modulation is applied.
Sens	0–127	Adjusts the amount of frequency modulation applied.
Polarity	UP, DOWN	Determines whether the frequency modulation moves towards higher frequencies or lower frequencies. <b>UP:</b> The filter will change toward a higher frequency. <b>DOWN:</b> The filter will change toward a lower frequency.
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the effect sound (W)
Level	0–127	Output Level

## Tremolo

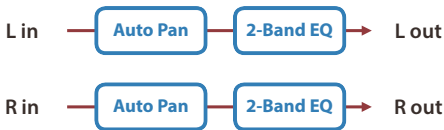
Cyclically changes the volume.



Parameter	Value	Explanation
Mod Wave	TRI, SQR, SIN, SAW1, SAW2, TRP	Modulation Wave <b>TRI:</b> Triangle wave <b>SQR:</b> Square wave <b>SIN:</b> Sine wave <b>SAW1/2:</b> Sawtooth wave <b>TRP:</b> Trapezoidal wave
	SAW1	SAW2
Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Rate (Hz)	0.05–10.00 [Hz]	Frequency of the change
Rate (note)	Note → "Note"	
Depth	0–127	Depth to which the effect is applied
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level

# Auto Pan

Cyclically modulates the stereo location of the sound.



Parameter	Value	Explanation
Mod Wave	TRI, SQR, SIN, SAW1, SAW2, TRP	Modulation Wave <b>TRI:</b> Triangle wave <b>SQR:</b> Square wave <b>SIN:</b> Sine wave <b>SAW1/2:</b> Sawtooth wave <b>TRP:</b> Trapezoidal wave
	SAW1	SAW2
Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Rate (Hz)	0.05–10.00 [Hz]	
Rate (note)	Note → <b>"Note"</b>	Frequency of the change
Depth	0–127	Depth to which the effect is applied
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level



## Slicer

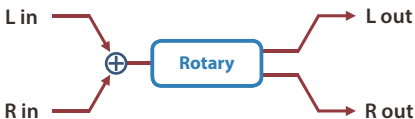
By applying successive cuts to the sound, this effect turns a conventional sound into a sound that appears to be played as a backing phrase. This is especially effective when applied to sustain-type sounds.



Parameter	Value	Explanation
Step 01–16	0–127	Level at each step
Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Rate (Hz)	0.05–10.00 [Hz]	
Rate (note)	Note ➔ "Note"	Rate at which the 16-step sequence will cycle
Attack	0–127	Speed at which the level changes between steps
Input Sync Sw	OFF, ON	Specifies whether an input note will cause the sequence to resume from the first step of the sequence (ON) or not (OFF)
Input Sync Threshold	0–127	Volume at which an input note will be detected
Mode	LEGATO, SLASH	<p>Sets the manner in which the volume changes as one step progresses to the next.</p> <p><b>LEGATO:</b> The change in volume from one step's level to the next remains unaltered.</p> <p>If the level of a following step is the same as the one preceding it, there is no change in volume.</p> <p><b>SLASH:</b> The level is momentarily set to 0 before progressing to the level of the next step.</p> <p>This change in volume occurs even if the level of the following step is the same as the preceding step.</p>
Shuffle	0–127	<p>Timing of volume changes in levels for even-numbered steps (step 2, step 4, step 6...).</p> <p>The higher the value, the later the beat progresses.</p>
Level	0–127	Output Level

## Rotary

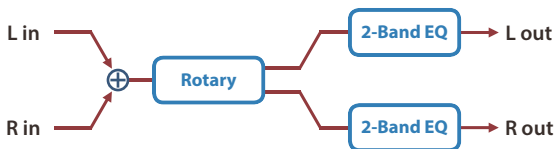
This simulates a classic rotary speaker of the past. Since the operation of the high-frequency and low-frequency rotors can be specified independently, the distinctive modulation can be reproduced realistically. This is most effective on organ patches.



Parameter	Value	Explanation
Speed	SLOW, FAST	Simultaneously switch the rotational speed of the low frequency rotor and high frequency rotor. <b>SLOW:</b> Slows down the rotation to the Slow Rate. <b>FAST:</b> Speeds up the rotation to the Fast Rate.
Woofers Slow Speed	0.05–10.00 [Hz]	Slow speed (SLOW) of the low frequency rotor
Woofers Fast Speed	0.05–10.00 [Hz]	Fast speed (FAST) of the low frequency rotor
Woofers Acceleration	0–15	Adjusts the time it takes the low frequency rotor to reach the newly selected speed when switching from fast to slow (or slow to fast) speed. Lower values will require longer times.
Woofers Level	0–127	Volume of the low frequency rotor
Tweeters Slow Speed	0.05–10.00 [Hz]	Settings of the high frequency rotor The parameters are the same as for the low frequency rotor
Tweeters Fast Speed	0.05–10.00 [Hz]	
Tweeters Acceleration	0–15	
Tweeters Level	0–127	
Separation	0–127	Spatial dispersion of the sound
Level	0–127	Output Level

## VK Rotary

This type provides modified response for the rotary speaker, with the low end boosted further. This effect features the same specifications as the VK-7's built-in rotary speaker.



Parameter	Value	Explanation
Speed	SLOW, FAST	Rotational speed of the rotating speaker <b>SLOW:</b> Slow <b>FAST:</b> Fast
Brake	OFF, ON	Switches the rotation of the rotary speaker. When this is turned on, the rotation will gradually stop. When it is turned off, the rotation will gradually resume.
Woofers Slow Speed	0.05–10.00 [Hz]	Low-speed rotation speed of the woofer
Woofers Fast Speed	0.05–10.00 [Hz]	High-speed rotation speed of the woofer
Woofers Trans Up	0–127	Adjusts the rate at which the woofer rotation speeds up when the rotation is switched from Slow to Fast.
Woofers Trans Down	0–127	Adjusts the rate at which the woofer rotation speeds up when the rotation is switched from Fast to Slow.
Woofers Level	0–127	Volume of the woofer
Tweeters Slow Speed	0.05–10.00 [Hz]	Settings of the tweeter The parameters are the same as for the woofer.
Tweeters Fast Speed	0.05–10.00 [Hz]	
Tweeters Trans Up	0–127	
Tweeters Trans Down	0–127	
Tweeters Level	0–127	
Spread	0–10	Sets the rotary speaker stereo image. ?The higher the value set, the wider the sound is spread out.
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level
OD Switch	OFF, ON	Overdrive on/off
OD Gain	0–127	Overdrive input level Higher values will increase the distortion.
OD Drive	0–127	Degree of distortion
OD Level	0–127	Volume of the overdrive

# DRIVE/AMP

## Overdrive

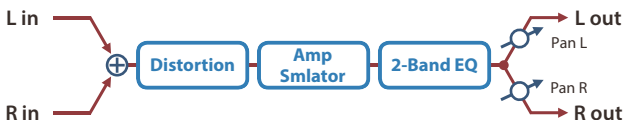
This is an overdrive that provides heavy distortion.



Parameter	Value	Explanation
Drive	0–127	Degree of distortion Also changes the volume.
Tone	0–127	Sound quality of the Overdrive effect
Amp Sw	OFF, ON	Turns the Amp Simulator on/off.
Amp Type	SMALL, BUILT-IN, 2-STACK, 3-STACK	Type of guitar amp <b>SMALL:</b> Small amp <b>BUILT-IN:</b> Single-unit type amp <b>2-STACK:</b> Large double stack amp <b>3-STACK:</b> Large triple stack amp
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Pan	L64–63R	Stereo location of the output sound
Level	0–127	Output Level

## Distortion

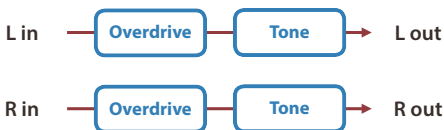
Produces a more intense distortion than Overdrive.



Parameter	Value	Explanation
Drive	0–127	Degree of distortion Also changes the volume.
Tone	0–127	Sound quality of the Overdrive effect
Amp Sw	OFF, ON	Turns the Amp Simulator on/off.
Amp Type	SMALL, BUILT-IN, 2-STACK, 3-STACK	Type of guitar amp <b>SMALL:</b> Small amp <b>BUILT-IN:</b> Single-unit type amp <b>2-STACK:</b> Large double stack amp <b>3-STACK:</b> Large triple stack amp
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Pan	L64–63R	Stereo location of the output sound
Level	0–127	Output Level

## T-Scream

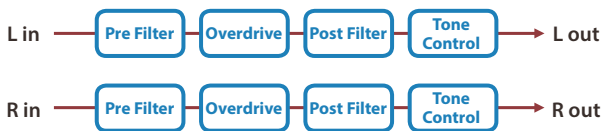
This models a classic analog overdrive. It is distinctive in adding an appropriate amount of overtones without muddying the sound.



Parameter	Value	Explanation
Distortion	0–127	Degree of distortion Also changes the volume.
Tone	0–127	Tonal character of the overdrive
Level	0–127	Output Level

## Fuzz

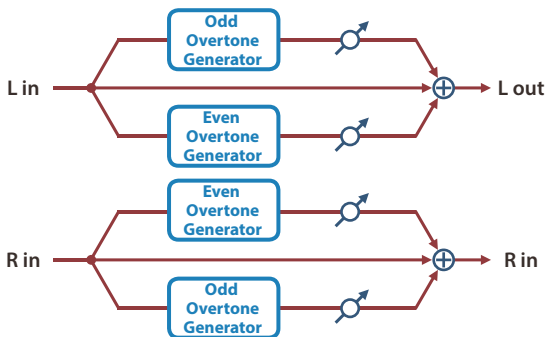
Adds overtones and intensely distorts the sound.



Parameter	Value	Explanation
Drive	0–127	Adjusts the depth of distortion. This also changes the volume.
Tone	0–100	Sound quality of the Overdrive effect
Level	0–127	Output Level

## Tone Fattener

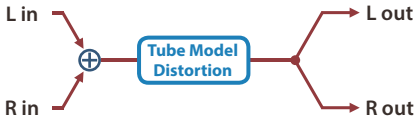
This effect applies distinctive distortion, adding overtones to give more depth to the sound.



Parameter	Value	Explanation
Odd Level	0–400 [%]	Raising the value adds odd-order overtones.
Even Level	0–400 [%]	Raising the value adds even-order overtones.
Level	0–127	Output Level

## HMS Distortion

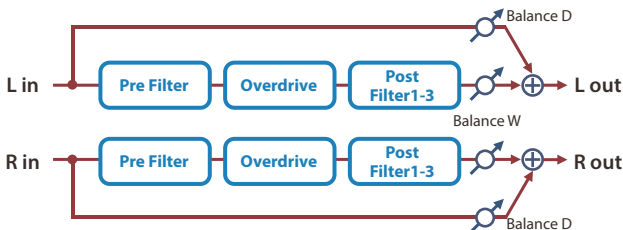
This is a distortion-type effect that models the vacuum tube amp section of a rotary speaker of the past.



Parameter	Value	Explanation
Distortion	0-127	Strength of distortion
Level	0-127	Output Level

# Saturator

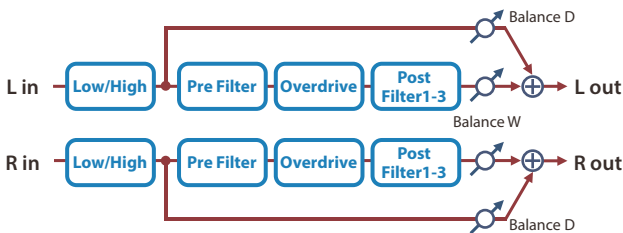
This effect combines overdrive and filter.



Parameter	Value	Explanation
DrvPre1 Type	THRU, LPF, HPF, LSV, HSV	Type of filter that precedes the distortion processing <b>THRU:</b> No filter is applied <b>LPF:</b> A filter that passes the sound below the specified frequency <b>HPF:</b> A filter that passes the sound above the specified frequency <b>LSV:</b> A filter that boosts/cuts the sound below the specified frequency <b>HSV:</b> A filter that boosts/cuts the sound above the specified frequency
DrvPre1 Frequency	20–16000 [Hz]	Frequency at which the pre-distortion filter operates
DrvPre1 Gain	-24.0–+24.0 [dB]	For the LSV/HSV types, the amount of boost/cut
Drive	0.0–+48.0 [dB]	Strength of distortion
DrvPost1 Type	THRU, LPF, HPF, LSV, HSV	Type of filter 1 which follows the distortion processing
DrvPost1 Frequency	20–16000 [Hz]	Frequency at which post-distortion filter 1 operates
DrvPost1 Gain	-24.0–+24.0 [dB]	For the LSV/HSV types, the amount of boost/cut
DrvPost2 Type	THRU, LPF, HPF, LSV, HSV	Type of filter 2 which follows the distortion processing
DrvPost2 Frequency	20–16000 [Hz]	Frequency at which post-distortion filter 2 operates
DrvPost2 Gain	-24.0–+24.0 [dB]	For the LSV/HSV types, the amount of boost/cut
DrvPost3 Type	THRU, LPF, HPF, BPF, PKG	Type of filter 3 which follows the distortion processing <b>THRU:</b> No filter is applied <b>LPF:</b> A filter that passes the sound below the specified frequency <b>HPF:</b> A filter that passes the sound above the specified frequency <b>BPF:</b> A filter that passes only the specified frequency <b>PKG:</b> A filter that boosts/cuts the specified frequency
DrvPost3 Frequency	20–16000 [Hz]	Frequency at which post-distortion filter 3 operates
DrvPost3 Gain	-24.0–+24.0 [dB]	For the PKG type, the amount of boost/cut
DrvPost3 Q	0.5–16.0	Width of the frequency range affected by the filter
Makeup Sense	-60.0–0.0 [dB]	Adjust this value so that the sound is not made louder when distortion is applied.
DrvPost Gain	-48.0–+12.0 [dB]	Gain following distortion processing
Drive Balance	D100:0W–D0:100W	Volume balance between the dry sound (D) and effect sound (W)
Level	0–127	Output Level

# Warm Saturator

This is a variety of saturator, and is distinctive for its warmer sound.

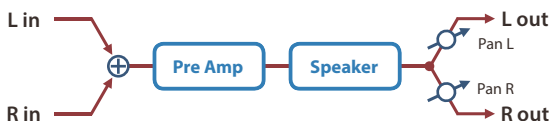


Parameter	Value	Explanation
EQ Low Frequency	20–16000 [Hz]	Input filter (low range) Boosts/cuts the sound below the specified frequency.
EQ Low Gain	-24→+24 [dB]	Amount of boost/cut
EQ High Slope	THRU, -12dB, -24dB	Input filter (high range) Boosts/cuts the sound above the specified frequency.
EQ High Frequency	20–16000 [Hz]	Amount of boost/cut
DrvPre1 Type	THRU, LPF, HPF, LSV, HSV	Type of filter that precedes the distortion processing <b>THRU</b> : No filter is applied <b>LPF</b> : A filter that passes the sound below the specified frequency <b>HPF</b> : A filter that passes the sound above the specified frequency <b>LSV</b> : A filter that boosts/cuts the sound below the specified frequency <b>HSV</b> : A filter that boosts/cuts the sound above the specified frequency
DrvPre1 Frequency	20–16000 [Hz]	Frequency at which the pre-distortion filter operates
DrvPre1 Gain	-24.0→+24.0 [dB]	For the LSV/HSV types, the amount of boost/cut
Drive	0.0→+48.0 [dB]	Strength of distortion
DrvPost1 Type	THRU, LPF, HPF, LSV, HSV	Type of filter 1 which follows the distortion processing
DrvPost1 Frequency	20–16000 [Hz]	Frequency at which post-distortion filter 1 operates
DrvPost1 Gain	-24.0→+24.0 [dB]	For the LSV/HSV types, the amount of boost/cut
DrvPost2 Type	THRU, LPF, HPF, LSV, HSV	Type of filter 2 which follows the distortion processing
DrvPost2 Frequency	20–16000 [Hz]	Frequency at which post-distortion filter 2 operates
DrvPost2 Gain	-24.0→+24.0 [dB]	For the LSV/HSV types, the amount of boost/cut
DrvPost3 Type	THRU, LPF, HPF, BPF, PKG	Type of filter 3 which follows the distortion processing <b>THRU</b> : No filter is applied <b>LPF</b> : A filter that passes the sound below the specified frequency <b>HPF</b> : A filter that passes the sound above the specified frequency <b>BPF</b> : A filter that passes only the specified frequency <b>PKG</b> : A filter that boosts/cuts the specified frequency
DrvPost3 Frequency	20–16000 [Hz]	Frequency at which post-distortion filter 3 operates
DrvPost3 Gain	-24.0→+24.0 [dB]	For the PKG type, the amount of boost/cut
DrvPost3 Q	0.5–16.0	Width of the frequency range affected by the filter
Makeup Sense	-60.0–0.0 [dB]	Adjust this value so that the sound is not made louder when distortion is applied.
DrvPost Gain	-48.0→+12.0 [dB]	Gain following distortion processing
Drive Balance	D100: 0W–D0: 100W	Volume balance between the dry sound (D) and effect sound (W)
Level	0–127	Output Level



# Guitar Amp Simulator

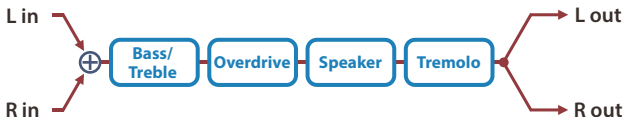
This is an effect that simulates the sound of a guitar amplifier.



Parameter	Value	Explanation		
Pre Amp Sw	OFF, ON	Turns the amp switch on/off.		
Pre Amp Type		<b>Type of guitar amp</b>		
	JC-120	This models the sound of the Roland JC-120.		
	CLEAN TWIN	This models a Fender Twin Reverb.		
	MATCH DRIVE	This models the sound input to left input on a Matchless D/C-30. A simulation of the latest tube amp widely used in styles from blues and rock.		
	BG LEAD	This models the lead sound of the MESA/ Boogie combo amp. The sound of a tube amp typical of the late '70s to '80s.		
	MS1959I	This models the sound input to Input I on a Marshall 1959. This is a trebly sound suited to hard rock.		
	MS1959II	This models the sound input to Input II on a Marshall 1959.		
	MS1959I+II	The sound of connecting inputs I and II of the guitar amp in parallel, creating a sound with a stronger low end than I.		
	SLDN LEAD	This models a Soldano SLO-100. This is the typical sound of the eighties.		
	METAL 5150	This models the lead channel of a Peavey EVH 5150.		
	METAL LEAD	This is distortion sound that is ideal for performances of heavy riffs.		
	OD-1	This models the sound of the BOSS OD-1. This produces sweet, mild distortion.		
	OD-2 TURBO	This is the high-gain overdrive sound of the BOSS OD-2.		
	DISTORTION	This gives a basic, traditional distortion sound.		
	FUZZ	A fuzz sound with rich harmonic content.		
Pre Amp Drive	0–127	Volume and amount of distortion of the amp		
Pre Amp Master	0–127	Volume of the entire pre-amp		
Pre Amp Gain	LOW, MIDDLE, HIGH	Amount of pre-amp distortion		
Pre Amp Bass				
Pre Amp Middle	0–127	Tone of the bass/mid/treble frequency range		
Pre Amp Treble				
Pre Amp Presence	0–127	Tone for the ultra-high frequency range		
Pre Amp Bright	OFF, ON	Turning this "On" produces a sharper and brighter sound. * This parameter applies to the "JC-120," "CLEAN TWIN," "MATCH DRIVE," and "BG LEAD" Pre Amp Types.		
Speaker Sw	OFF, ON	Selects whether the sound will be sent through the speaker simulation (ON) or not (OFF)		
Speaker Type		<b>Cabinet</b>	<b>Diameter (in inches) and number of the speaker</b>	<b>Microphone</b>
	SMALL 1	small open-back enclosure	10	dynamic
	SMALL 2	small open-back enclosure	10	dynamic
	MIDDLE	open back enclosure	12 x 1	dynamic
	JC-120	open back enclosure	12 x 2	dynamic
	BUILT-IN 1	open back enclosure	12 x 2	dynamic
	BUILT-IN 2	open back enclosure	12 x 2	condenser
	BUILT-IN 3	open back enclosure	12 x 2	condenser
	BUILT-IN 4	open back enclosure	12 x 2	condenser
	BUILT-IN 5	open back enclosure	12 x 2	condenser
	BG STACK1	sealed enclosure	12 x 2	condenser
	BG STACK2	large sealed enclosure	12 x 2	condenser
	MS STACK1	large sealed enclosure	12 x 4	condenser
	MS STACK2	large sealed enclosure	12 x 4	condenser
	MTL STACK	large double stack	12 x 4	condenser
2-STACK	large double stack	12 x 4	condenser	
3-STACK	large triple stack	12 x 4	condenser	
Mic Setting	1, 2, 3	Adjusts the location of the mic that is recording the sound of the speaker. This can be adjusted in three steps, with the mic becoming more distant in the order of 1, 2, and 3.		
Mic Level	0–127	Volume of the microphone		
Direct Level	0–127	Volume of the direct sound		
Pan	L64–63R	Stereo location of the output sound		
Level	0–127	Output Level		

## RD EPAmPsim

This is an effect that was developed for the RD series SuperNatural E.Piano.



Parameter	Value	Explanation
Bass	-50–+50	Amount of low-frequency boost/cut
Treble	-50–+50	Amount of high-frequency boost/cut
Tremolo Switch	OFF, ON	Tremolo on/off
Tremolo Type		Type of tremolo effect
	OLDCASE MONO	A standard electric piano sound of the early 70s (mono)
	OLDCASE STEREO	A standard electric piano sound of the early 70s (stereo)
	NEWCASE	A standard electric piano sound of the late 70s and early 80s
	DYNO	A classic modified electric piano
	WURLY	A classic electric piano of the '60s
Tremolo Speed <small>(sync sw)</small>	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Tremolo Speed <small>(Hz)</small>	0.05–10.00 [Hz]	Rate of the tremolo effect
Tremolo Speed <small>(note)</small>	Note ⇒ <b>"Note"</b>	
Tremolo Depth	0–127	Depth of the tremolo effect
Tremolo Shape	0–20	Adjusts the waveform of the tremolo.
AMP Switch	OFF, ON	Turns the speaker and distortion on/off
Speaker Type	LINE, OLD, NEW, WURLY, TWIN	Type of speaker If LINE is selected, the sound will not be sent through the speaker simulation.
OD Drive	0–127	Degree of distortion Also changes the volume.
Level	0–127	Output Level

# Speaker Simulator

Simulates the speaker type and mic settings used to record the speaker sound.

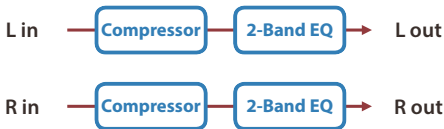


Parameter	Value	Explanation		
Speaker Type		Cabinet	Speaker	Microphone
	SMALL 1	small open-back enclosure	10	dynamic
	SMALL 2	small open-back enclosure	10	dynamic
	MIDDLE	open back enclosure	12 x 1	dynamic
	JC-120	open back enclosure	12 x 2	dynamic
	BUILT-IN 1	open back enclosure	12 x 2	dynamic
	BUILT-IN 2	open back enclosure	12 x 2	condenser
	BUILT-IN 3	open back enclosure	12 x 2	condenser
	BUILT-IN 4	open back enclosure	12 x 2	condenser
	BUILT-IN 5	open back enclosure	12 x 2	condenser
	BG STACK 1	sealed enclosure	12 x 2	condenser
	BG STACK 2	large sealed enclosure	12 x 2	condenser
	MS STACK 1	large sealed enclosure	12 x 4	condenser
	MS STACK 2	large sealed enclosure	12 x 4	condenser
	METAL STACK	large double stack	12 x 4	condenser
2-STACK	large double stack	12 x 4	condenser	
3-STACK	large triple stack	12 x 4	condenser	
Mic Setting	1, 2, 3	Adjusts the location of the mic that is recording the sound of the speaker. This can be adjusted in three steps, with the mic becoming more distant in the order of 1, 2, and 3.		
Mic Level	0-127	Volume of the microphone		
Direct Level	0-127	Volume of the direct sound		
Level	0-127	Output Level		

# COMP/LIMITER

## Compressor

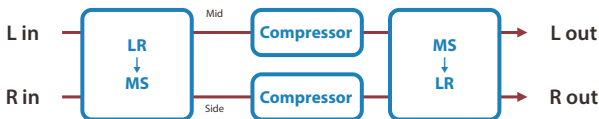
Flattens out high levels and boosts low levels, smoothing out fluctuations in volume.



Parameter	Value	Explanation
Attack	0–124	Sets the speed at which compression starts
Release	0–124	Adjusts the time after the signal volume falls below the Threshold Level until compression is no longer applied.
Threshold	-60–0 [dB]	Adjusts the volume at which compression begins
Knee	0–30 [dB]	This is a function that smooths the onset of compression from the uncompressed state; it gradually applies compression starting earlier than Threshold. Higher values produce a smoother transition.
Ratio	1: 1, 1.5: 1, 2: 1, 4: 1, 16: 1, INF: 1	Compression ratio
Post Gain	0–+18 [dB]	Level of the output sound
Level	0–127	Output Level

## Mid-Side Compressor

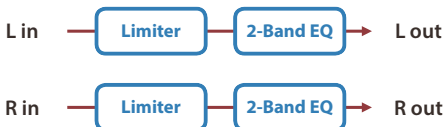
This effect allows the left/right signals that have similar phase to be adjusted to a different sense of volume than the left/right signals that have different phase.



Parameter	Value	Explanation
M Comp Switch	OFF, ON	Switches whether to adjust the sense of volume for left/right input signals whose phase is similar (in phase).
M Attack	0–124	Sets the speed at which compression starts
M Release	0–124	Adjusts the time after the signal volume falls below the Threshold Level until compression is no longer applied.
M Threshold	-60–0 [dB]	Adjusts the volume at which compression begins
M Knee	0–30 [dB]	This is a function that smooths the onset of compression from the uncompressed state; it gradually applies compression starting earlier than Threshold. Higher values produce a smoother transition.
M Ratio	1: 1, 1.5: 1, 2: 1, 4: 1, 16: 1, INF: 1	Compression ratio
M Post Gain	0–+18 [dB]	Level of the output sound
S Comp Switch	OFF, ON	Switches whether to adjust the sense of volume for left/right input signals whose phase is distant (opposite phase).
S Attack	0–124	Sets the speed at which compression starts
S Release	0–124	Adjusts the time after the signal volume falls below the Threshold Level until compression is no longer applied.
S Threshold	-60–0 [dB]	Adjusts the volume at which compression begins
S Knee	0–30 [dB]	This is a function that smooths the onset of compression from the uncompressed state; it gradually applies compression starting earlier than Threshold. Higher values produce a smoother transition.
S Ratio	1: 1, 1.5: 1, 2: 1, 4: 1, 16: 1, INF: 1	Compression ratio
S Post Gain	0–+18 [dB]	Level of the output sound
Level	0–127	Output Level

## Limiter

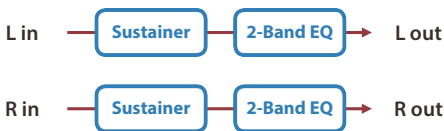
Compresses signals that exceed a specified volume level, preventing distortion from occurring.



Parameter	Value	Explanation
Release	0–127	Adjusts the time after the signal volume falls below the Threshold Level until compression is no longer applied.
Threshold	0–127	Adjusts the volume at which compression begins
Ratio	1.5: 1, 2: 1, 4: 1, 100: 1	Compression ratio
Post Gain	0–+18 [dB]	Level of the output sound
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level

## Sustainer

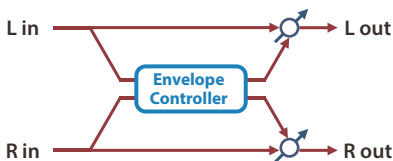
By compressing loud input and boosting low input, this effect keeps the volume consistent to produce a sustain effect without distortion.



Parameter	Value	Explanation
Sustain	0–127	Adjusts the range in which a low input signal is boosted to a consistent volume. Higher values produce longer sustain.
Attack	0–127	Time until the volume is compressed
Release	0–127	Time until compression is removed
Post Gain	-15–+15 [dB]	Level of the output sound
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level

## Transient

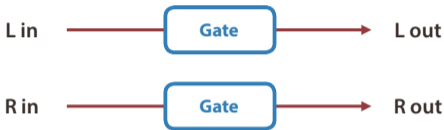
This effect lets you control the way in which the sound attacks and decays.



Parameter	Value	Explanation
Attack	-50–+50	Character of the attack. Higher values make the attack more aggressive; lower values make the attack milder.
Release	-50–+50	Character of the decay. Higher values make the sound linger; lower values make the sound cut off quickly.
Output Gain	-24–+12 [dB]	Output gain
Sense	LOW, MID, HIGH	Quickness with which the attack is detected
Level	0–127	Output Level

## Gate

Cuts the reverb's delay according to the volume of the sound sent into the effect. Use this when you want to create an artificial-sounding decrease in the reverb's decay.



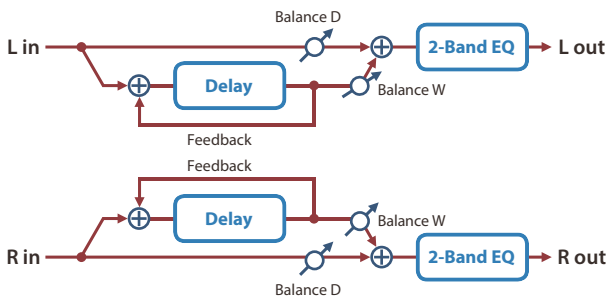
Parameter	Value	Explanation
Threshold	0–127	Volume level at which the gate begins to close
Mode	GATE, DUCK	Type of gate <b>GATE:</b> The gate will close when the volume of the original sound decreases, cutting the original sound. <b>DUCK (Ducking):</b> The gate will close when the volume of the original sound increases, cutting the original sound.
Attack	0–127	Adjusts the time it takes for the gate to fully open after being triggered.
Hold	0–127	Adjusts the time it takes for the gate to start closing after the source sound falls beneath the Threshold.
Release	0–127	Adjusts the time it takes the gate to fully close after the hold time.
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the effect sound (W)
Level	0–127	Output Level

# DELAY

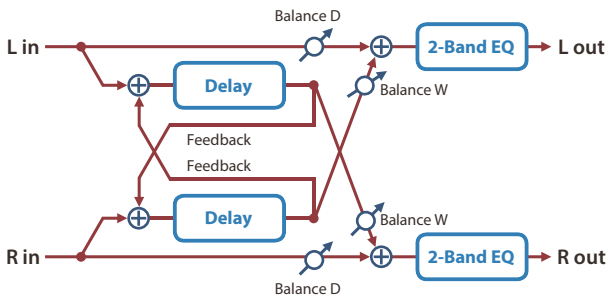
## Delay

This is a stereo delay.

### When Feedback Mode is NORMAL:



### When Feedback Mode is CROSS:



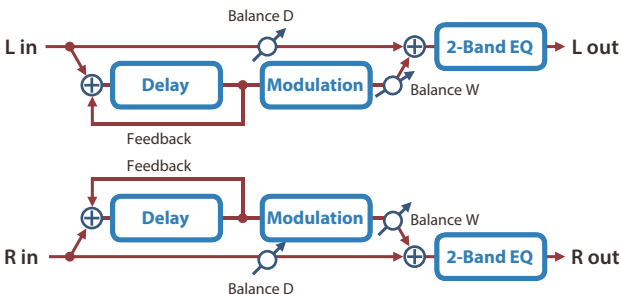
Parameter	Value	Explanation
Delay Left (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay Left (msec)	1–1300 [msec]	
Delay Left (note)	Note ⇒ "Note"	Adjusts the time until the left delay sound is heard.
Delay Right (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay Right (msec)	1–1300 [msec]	
Delay Right (note)	Note ⇒ "Note"	Adjusts the time until the right delay sound is heard.
Phase Left		Phase of left and right delay sound
Phase Right	NORMAL, INVERSE	<b>NORMAL:</b> Non-inverted <b>INVERT:</b> Inverted
Feedback Mode	NORMAL, CROSS	Selects the way in which delay sound is fed back into the effect. (See the figures above.)
Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect is filtered out. If you don't want to filter out any high frequencies, set this parameter to BYPASS.
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the delay sound (W)
Level	0–127	Output Level



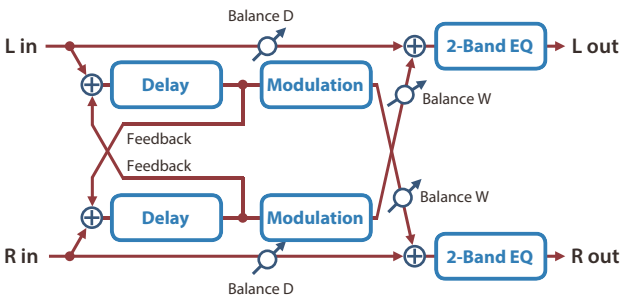
# Modulation Delay

Adds modulation to the delayed sound.

## When Feedback Mode is NORMAL:

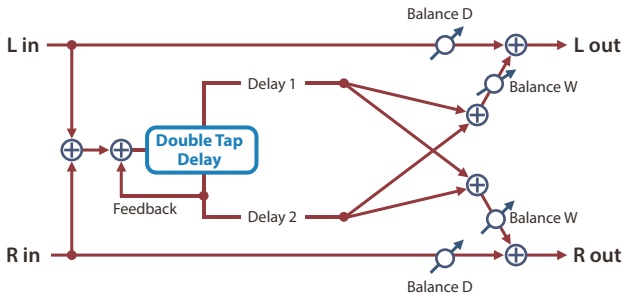


## When Feedback Mode is CROSS:



Parameter	Value	Explanation
Delay Left (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay Left (msec)	1–1300 [msec]	
Delay Left (note)	Note → "Note"	Adjusts the time until the left delay sound is heard.
Delay Right (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay Right (msec)	1–1300 [msec]	
Delay Right (note)	Note → "Note"	Adjusts the time until the right delay sound is heard.
Feedback Mode	NORMAL, CROSS	Selects the way in which delay sound is fed back into the effect. (See the figures above.)
Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect is filtered out. If you don't want to filter out any high frequencies, set this parameter to BYPASS.
Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Rate (Hz)	0.05–10.00 [Hz]	
Rate (note)	Note → "Note"	Frequency of modulation
Depth	0–127	Depth of modulation
Phase	0–180 [deg]	Spatial spread of the sound
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the delay sound (W)
Level	0–127	Output Level

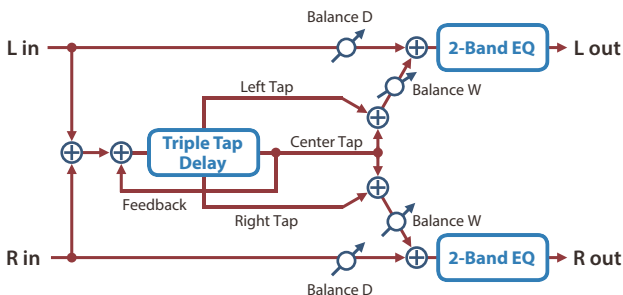
## 2Tap Pan Delay



Parameter	Value	Explanation
Delay Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay Time (msec)	1–2600 [msec]	
Delay Time (note)	Note → "Note"	Adjusts the time until the second delay sound is heard.
Delay Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Delay HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect is filtered out. If you don't want to filter out any high frequencies, set this parameter to BYPASS.
Delay 1 Pan	L64–63R	Stereo location of Delay 1
Delay 2 Pan	L64–63R	Stereo location of Delay 2
Delay 1 Level	0–127	Volume of delay 1
Delay 2 Level	0–127	Volume of delay 2
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the delay (W) and the sound that is not sent through the delay (D).
Level	0–127	Output Level

## 3Tap Pan Delay

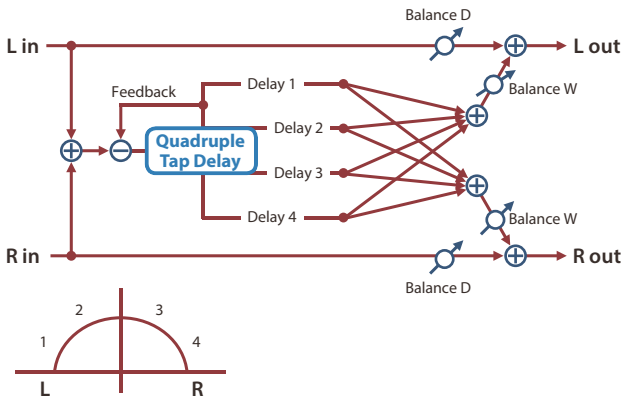
Produces three delay sounds; center, left and right.



Parameter	Value	Explanation
Delay Left (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay Left (msec)	1–2600 [msec]	
Delay Left (note)	Note ⇒ "Note"	Adjusts the time until the left delay sound is heard.
Delay Right (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay Right (msec)	1–2600 [msec]	
Delay Right (note)	Note ⇒ "Note"	Adjusts the time until the right delay sound is heard.
Delay Center (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay Center (msec)	1–2600 [msec]	
Delay Center (note)	Note ⇒ "Note"	Adjusts the time until the center delay sound is heard.
Center Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect is filtered out. If you don't want to filter out any high frequencies, set this parameter to BYPASS.
Left Level	0–127	
Right Level	0–127	Volume of each delay sound
Center Level	0–127	
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the delay sound (W)
Level	0–127	Output Level

## 4Tap Pan Delay

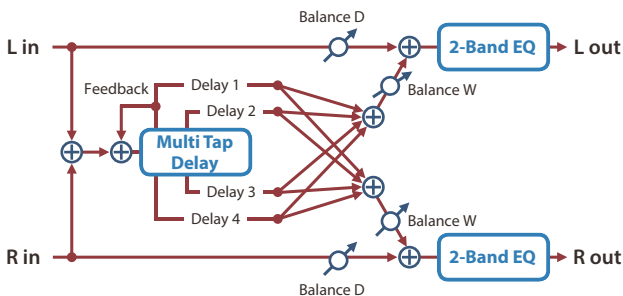
This effect has four delays.



Parameter	Value	Explanation
Delay 1 Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay 1 Time (msec)	1–2600 [msec]	Adjusts the time from the original sound until delay 1 sounds is heard.
Delay 1 Time (note)	Note ⇒ "Note"	
Delay 2 Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay 2 Time (msec)	1–2600 [msec]	Adjusts the time from the original sound until delay 2 sounds is heard.
Delay 2 Time (note)	Note ⇒ "Note"	
Delay 3 Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay 3 Time (msec)	1–2600 [msec]	Adjusts the time from the original sound until delay 3 sounds is heard.
Delay 3 Time (note)	Note ⇒ "Note"	
Delay 4 Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay 4 Time (msec)	1–2600 [msec]	Adjusts the time from the original sound until delay 4 sounds is heard.
Delay 4 Time (note)	Note ⇒ "Note"	
Delay 1 Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect is filtered out. If you don't want to filter out any high frequencies, set this parameter to BYPASS.
Delay 1 Level	0–127	Volume of each delay
Delay 2 Level		
Delay 3 Level		
Delay 4 Level		
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the delay sound (W)
Level	0–127	Output Level

## Multi Tap Delay

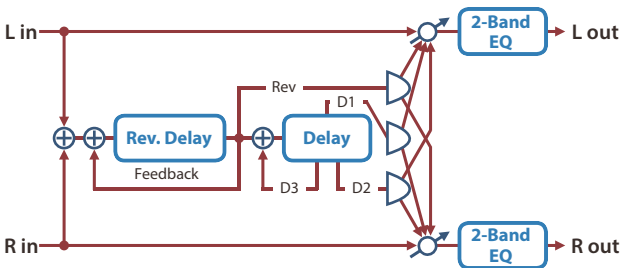
This effect provides four delays. Each of the Delay Time parameters can be set to a note length based on the selected tempo. You can also set the panning and level of each delay sound.



Parameter	Value	Explanation
Delay 1 Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay 1 Time (msec)	1–2600 [msec]	Adjusts the time from the original sound until delay 1 sounds is heard.
Delay 1 Time (note)	Note ⇒ "Note"	
Delay 2 Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay 2 Time (msec)	1–2600 [msec]	Adjusts the time from the original sound until delay 2 sounds is heard.
Delay 2 Time (note)	Note ⇒ "Note"	
Delay 3 Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay 3 Time (msec)	1–2600 [msec]	Adjusts the time from the original sound until delay 3 sounds is heard.
Delay 3 Time (note)	Note ⇒ "Note"	
Delay 4 Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay 4 Time (msec)	1–2600 [msec]	Adjusts the time from the original sound until delay 4 sounds is heard.
Delay 4 Time (note)	Note ⇒ "Note"	
Delay 1 Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect is filtered out. If you don't want to filter out any high frequencies, set this parameter to BYPASS.
Delay 1 Pan	L64–63R	Stereo location of Delays 1–4
Delay 2 Pan		
Delay 3 Pan		
Delay 4 Pan		
Delay 1 Level	0–127	Volume of each delay
Delay 2 Level		
Delay 3 Level		
Delay 4 Level		
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100:0W–D0:100W	Volume balance between the direct sound (D) and the effect sound (W)
Level	0–127	Output Level

## Reverse Delay

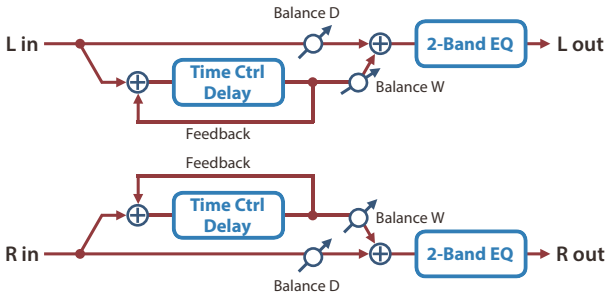
This is a reverse delay that adds a reversed and delayed sound to the input sound. A tap delay is connected immediately after the reverse delay.



Parameter	Value	Explanation
Threshold	0–127	Volume at which the reverse delay will begin to be applied
Rev Delay Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Rev Delay Time (msec)	1–1300 [msec]	Delay time from when sound is input into the reverse delay until the delay sound is heard
Rev Delay Time (note)	Note → "Note"	
Rev Delay Feedback	-98–+98 [%]	Proportion of the delay sound that is to be returned to the input of the reverse delay (negative (-) values invert the phase)
Rev Delay HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Frequency at which the high-frequency content of the reverse-delayed sound will be cut (BYPASS: no cut)
Rev Delay Pan	L64–63R	Panning of the reverse delay sound
Rev Delay Level	0–127	Volume of the reverse delay sound
Delay 1 Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay 1 Time (msec)	1–1300 [msec]	Delay time from when sound is input into the tap delay until the delay sound is heard
Delay 1 Time (note)	Note → "Note"	
Delay 2 Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay 2 Time (msec)	1–1300 [msec]	Delay time from when sound is input into the tap delay until the delay sound is heard
Delay 2 Time (note)	Note → "Note"	
Delay 3 Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay 3 Time (msec)	1–1300 [msec]	Delay time from when sound is input into the tap delay until the delay sound is heard
Delay 3 Time (note)	Note → "Note"	
Delay 3 Feedback	-98–+98 [%]	Proportion of the delay sound that is to be returned to the input of the tap delay (negative (-) values invert the phase)
Delay HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Frequency at which the hi-frequency content of the tap delay sound will be cut (BYPASS: no cut)
Delay 1 Pan	L64–63R	Panning of the tap delay sounds
Delay 2 Pan	L64–63R	
Delay 1 Level	0–127	Volume of the tap delay sounds
Delay 2 Level	0–127	
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the delay sound (W)
Level	0–127	Output Level

## Time Ctrl Delay

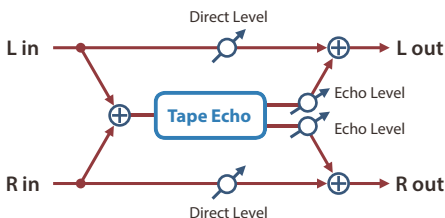
A stereo delay in which the delay time can be varied smoothly.



Parameter	Value	Explanation
Delay Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay Time (msec)	1–1300 [msec]	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay Time (note)	Note → "Note"	
Acceleration	0–15	Adjusts the speed which the Delay Time changes from the current setting to a specified new setting. The rate of change for the Delay Time directly affects the rate of pitch change.
Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect is filtered out. If you don't want to filter out any high frequencies, set this parameter to BYPASS.
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the delay sound (W)
Level	0–127	Output Level

## Tape Echo

A virtual tape echo that produces a realistic tape delay sound. This simulates the tape echo section of a Roland RE-201 Space Echo.

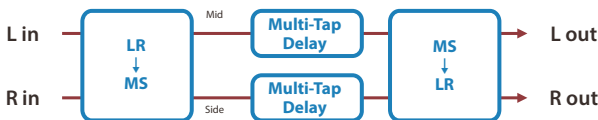


Parameter	Value	Explanation
Mode	S, M, L, S+M, S+L, M+L, S+M+L	Combination of playback heads to use Select from three different heads with different delay times. <b>S</b> : short <b>M</b> : middle <b>L</b> : long
Repeat Rate	0–127	Tape speed Increasing this value will shorten the spacing of the delayed sounds.
Intensity	0–127	Amount of delay repeats
Bass	-15–+15 [dB]	Boost/cut for the lower range of the echo sound
Treble	-15–+15 [dB]	Boost/cut for the upper range of the echo sound
Head S Pan	L64–63R	Independent panning for the short, middle, and long playback heads
Head M Pan	L64–63R	
Head L Pan	L64–63R	
Tape Distortion	0–5	Amount of tape-dependent distortion to be added This simulates the slight tonal changes that can be detected by signal-analysis equipment. Increasing this value will increase the distortion.
W/F Rate	0–127	Speed of wow/flutter (complex variation in pitch caused by tape wear and rotational irregularity)
W/F Depth	0–127	Depth of wow/flutter
Echo Level	0–127	Volume of the echo sound
Direct Level	0–127	Volume of the original sound
Level	0–127	Output Level



## Mid-Side Delay

This effect applies different amounts of delay to left/right signals of similar phase and differing phase.

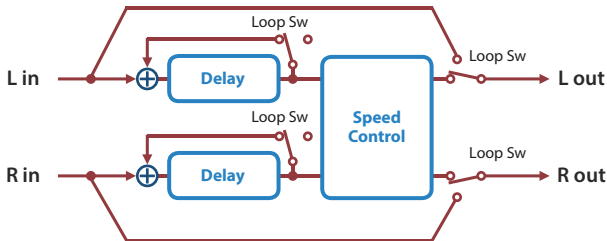


Parameter	Value	Explanation
M Delay Level	0–127	Delay volume of left/right input signals whose phase is similar (in phase)
M Delay Mode	2Tap, 3Tap, 4Tap	Delay divisions for the input signals whose left/right phase is similar (identical phase)
M Delay Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
M Delay Time (msec)	1–1300 [msec]	Adjusts the delay time from the direct sound until the delay sound is heard.
M Delay Time (note)	Note ⇒ <b>"Note"</b>	
M Delay 1 Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
M HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect is filtered out. If you don't want to filter out any high frequencies, set this parameter to BYPASS.
M Delay 1 Pan	L64–63R	Panning of the first delay sound
M Delay 2 Pan		Panning of the second delay sound
M Delay 3 Pan		Panning of the third delay sound
M Delay 4 Pan		Panning of the fourth delay sound
S Delay Level	0–127	Delay volume of left/right input signals whose phase is distant (opposite phase)
S Delay Mode	2Tap, 3Tap, 4Tap	Delay divisions for the input signals whose left/right phase is distant (reverse phase)
S Delay Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
S Delay Time (msec)	1–1300 [msec]	Adjusts the delay time from the direct sound until the delay sound is heard.
S Delay Time (note)	Note ⇒ <b>"Note"</b>	
S Delay 1 Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
S HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect is filtered out. If you don't want to filter out any high frequencies, set this parameter to BYPASS.
S Delay 1 Pan	L64–63R	Panning of the first delay sound
S Delay 2 Pan		Panning of the second delay sound
S Delay 3 Pan		Panning of the third delay sound
S Delay 4 Pan		Panning of the fourth delay sound
Level	0–127	Output Level

# LOOPER

## DJFX Looper

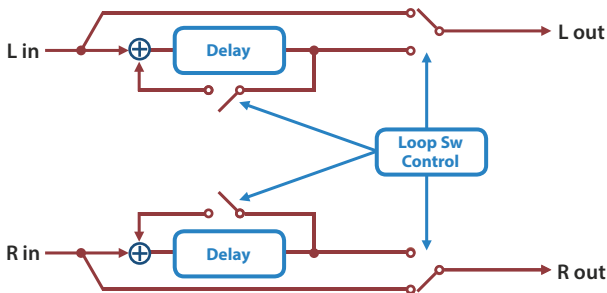
Loops a short portion of the input sound. You can vary the playback direction and playback speed of the input sound to add turntable-type effects.



Parameter	Value	Explanation
Length	0–127	Specifies the length of the loop.
Speed	-1.00→+1.00	Specifies the playback direction and playback speed. <b>- direction:</b> Reverse playback <b>+ direction:</b> Normal playback <b>0:</b> Stop playback As the value moves away from 0, the playback speed becomes faster.
Loop Sw	OFF, ON	If you turn this on while the sound is heard, the sound at that point will be looped. Turn this off to cancel the loop. * If the effect is recalled with this ON, this parameter must be turned OFF and then turned ON again in order to make the loop operate.
Level	0–127	Output Level

## BPM Looper

Loops a short portion of the input sound. This can automatically turn the loop on/off in synchronization with the rhythm.



Parameter	Value	Explanation
Length	0–127	Specifies the length of the loop.
Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Rate Hz	0.05–10.00 [Hz]	
Rate Note	Note ⇒ "Note"	Cycle at which the loop automatically turns on/off
On Timing	1–8	Specifies the timing within the cycle at which the loop automatically starts (which step of the eight timing divisions at which the sound is heard)
On Length	1–8	Specifies the length at which the loop automatically ends within the cycle (the number of times that the 1/8-length of sound is heard)
Loop Mode	OFF, AUTO, ON	If this is AUTO, the loop automatically turns on/off in synchronization with the rhythm. * If the effect is recalled with this ON, this parameter must first be set to something other than ON in order to make the loop operate.
Level	0–127	Output Level

## LO-FI

## LOFI Compress

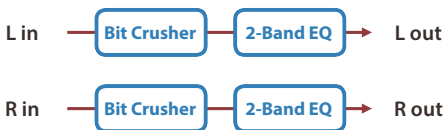
Degrades the sound quality.



Parameter	Value	Explanation
Pre Filter Type	1, 2, 3, 4, 5, 6	Selects the type of filter applied to the sound before it passes through the Lo-Fi effect. <b>1:</b> Compressor off <b>2–6:</b> Compressor on
LoFi Type	1, 2, 3, 4, 5, 6, 7, 8, 9	Degrades the sound quality. The sound quality grows poorer as this value is increased.
Post Filter Type	OFF, LPF, HPF	Type of filter <b>OFF:</b> No filter is used <b>LPF:</b> Cuts the frequency range above the Cutoff Freq <b>HPF:</b> Cuts the frequency range below the Cutoff Freq
Post Filter Cutoff	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Basic frequency of the Post Filter
Low Gain	-15+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100:0W–D0:100W	Volume balance between the direct sound (D) and the effect sound (W)
Level	0–127	Output Level

## Bit Crusher

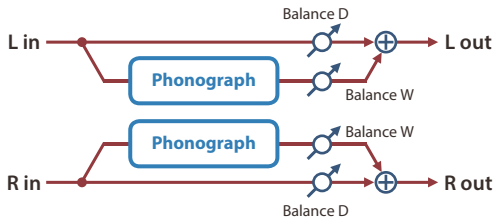
Produces an extreme lo-fi effect.



Parameter	Value	Explanation
Sample Rate	0–127	Adjusts the sample rate.
Bit Down	0–20	Adjusts the bit depth.
Filter	0–127	Adjusts the filter depth.
Low Gain	-15+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level

## Phonograph

Recreates the sound of an analog record being played on a record player. This lets you simulate the unique noises produced when a record is played, as well as the variations that occur when the record spins.

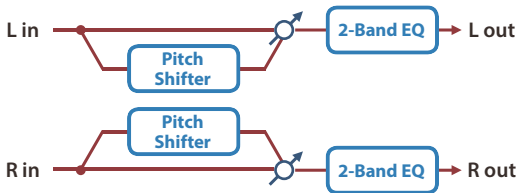


Parameter	Value	Explanation
Signal Distortion	0–127	Sets the amount of distortion.
Frequency Range	0–127	Sets the frequency characteristics of the playback system. Smaller values create the feeling of an older system with narrow frequency bands.
Disc Type	LP, EP, SP	Sets the turntable rotation speed. This has an effect on the scratch noise cycle.
Scratch Noise	0–127	Sets the volume of noise created by scratches in the record.
Dust Noise Level	0–127	Sets the volume of noise created by dust on the record.
Hiss Noise Level	0–127	Sets the volume of continuous hiss noise.
Total Noise Level	0–127	Sets the volume of noise overall.
Wow	0–127	Sets the amount of variation in record spin (long cycle).
Flutter	0–127	Sets the amount of variation in record spin (short cycle).
Random	0–127	Sets the amount of non-cyclical variation in record spin.
Total Wow/Flutter	0–127	Sets the volume of variation in record spin overall.
Balance	D100: 0W -D0: 100W	Sets the volume balance between the original sound (D) and the effect sound (W).
Level	0–127	Sets the output volume.

# PITCH

## Pitch Shifter

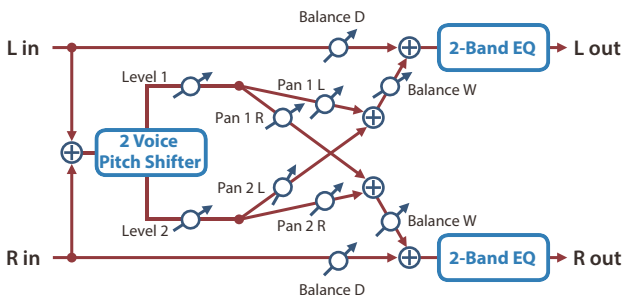
A stereo pitch shifter.



Parameter	Value	Explanation
Coarse	-24+12 [semi]	Adjusts the pitch of the pitch shifted sound in semitone steps.
Fine	-100+100 [cent]	Adjusts the pitch of the pitch shifted sound in 2-cent steps.
Delay Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay Time (msec)	1-1300 [msec]	Adjusts the time from the original sound until pitch shifted sounds is heard.
Delay Time (note)	Note ⇒ "Note"	
Feedback	-98+98 [%]	Adjusts the proportion of the pitch shifted sound that is fed back into the effect. Negative (-) settings will invert the phase.
Low Gain	-15+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100:0W-D0:100W	Volume balance between the direct sound (D) and the pitch shifted sound (W)
Level	0-127	Output Level

## 2Voice Pitch Shifter

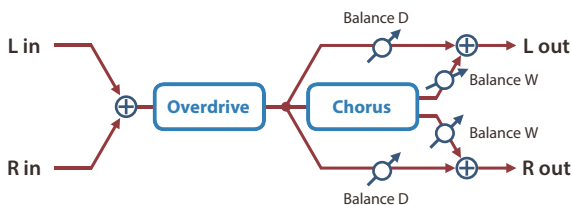
Shifts the pitch of the original sound. This 2-voice pitch shifter has two pitch shifters, and can add two pitch shifted sounds to the original sound.



Parameter	Value	Explanation
Pitch1 Coarse	-24—+12 [semi]	Adjusts the pitch of Pitch Shift 1 in semitone steps.
Pitch1 Fine	-100—+100 [cent]	Adjusts the pitch of Pitch Shift 1 in 2-cent steps.
Pitch1 Delay (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Pitch1 Delay (msec)	1—1300 [msec]	Adjusts the delay time from the direct sound until the Pitch Shift 1 sound is heard.
Pitch1 Delay (note)	Note → "Note"	
Pitch1 Feedback	-98—+98 [%]	Adjusts the proportion of the pitch shifted sound that is fed back into the effect. Negative (-) settings will invert the phase.
Pitch1 Pan	L64—63R	Stereo location of the Pitch Shift 1 sound
Pitch1 Level	0—127	Volume of the Pitch Shift 1 sound
Pitch2 Coarse	-24—+12 [semi]	Settings of the Pitch Shift 2 sound. The parameters are the same as for the Pitch Shift 1 sound.
Pitch2 Fine	-100—+100 [cent]	
Pitch2 Delay (sync sw)	OFF, ON	
Pitch2 Delay (msec)	1—1300 [msec]	
Pitch2 Delay (note)	Note → "Note"	
Pitch2 Feedback	-98—+98 [%]	
Pitch2 Pan	L64—63R	
Pitch2 Level	0—127	
Low Gain	-15—+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15—+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100:0W—D0:100W	Volume balance between the direct sound (D) and the pitch shifted sound (W)
Level	0—127	Output Level

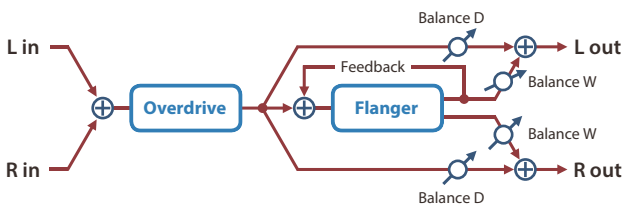
## COMBINATION

## Overdrive → Chorus



Parameter	Value	Explanation
Overdrive Drive	0–127	Degree of distortion Also changes the volume.
Overdrive Pan	L64–63R	Stereo location of the overdrive sound
Chorus Pre Delay	0.0–100 [msec]	Adjusts the time from the original sound until chorus sounds is heard.
Chorus Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Chorus Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Chorus Rate (note)	Note → "Note"	
Chorus Depth	0–127	Depth of modulation
Chorus Balance	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the chorus (W) and the sound that is not sent through the chorus (D).
Level	0–127	Output Level

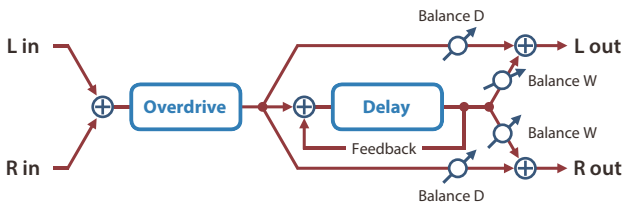
## Overdrive → Flanger



Parameter	Value	Explanation
Overdrive Drive	0–127	Degree of distortion Also changes the volume.
Overdrive Pan	L64–63R	Stereo location of the overdrive sound
Flanger Pre Delay	0.0–100 [msec]	Adjusts the time from the original sound until flanger sounds is heard.
Flanger Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Flanger Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Flanger Rate (note)	Note → "Note"	
Flanger Depth	0–127	Depth of modulation
Flanger Feedback	-98–+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.
Flanger Balance	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the flanger (W) and the sound that is not sent through the flanger (D).
Level	0–127	Output Level

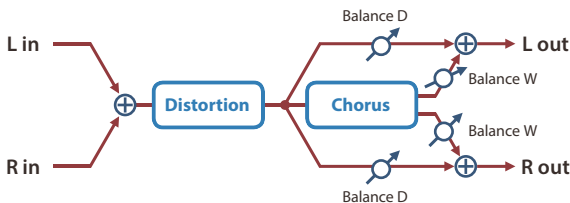


## Overdrive → Delay



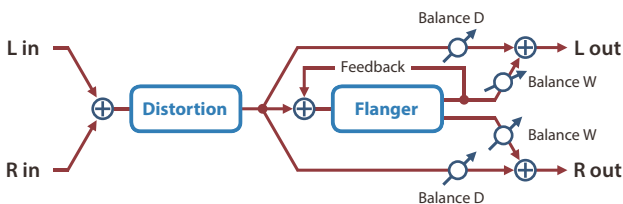
Parameter	Value	Explanation
Overdrive Drive	0–127	Degree of distortion Also changes the volume.
Overdrive Pan	L64–63R	Stereo location of the overdrive sound
Delay Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay Time (msec)	1–2600 [msec]	Adjusts the time from the original sound until delay sounds is heard.
Delay Time (note)	Note → "Note"	
Delay Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Delay HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect will be cut. If you do not want to cut the high frequencies, set this parameter to BYPASS.
Delay Balance	D100:0W–D0:100W	Adjusts the volume balance between the sound that is sent through the delay (W) and the sound that is not sent through the delay (D).
Level	0–127	Output Level

## Distortion → Chorus



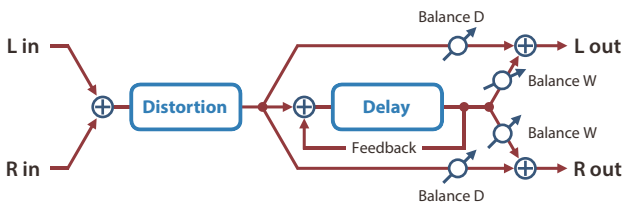
Parameter	Value	Explanation
Distortion Drive	0–127	Degree of distortion Also changes the volume.
Distortion Pan	L64–63R	Stereo location of the overdrive sound
Chorus Pre Delay	0.0–100 [msec]	Adjusts the time from the original sound until chorus sounds is heard.
Chorus Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Chorus Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Chorus Rate (note)	Note → "Note"	
Chorus Depth	0–127	Depth of modulation
Chorus Balance	D100:0W–D0:100W	Adjusts the volume balance between the sound that is sent through the chorus (W) and the sound that is not sent through the chorus (D).
Level	0–127	Output Level

## Distortion → Flanger



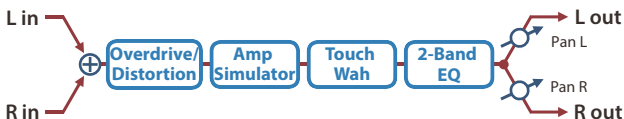
Parameter	Value	Explanation
Distortion Drive	0–127	Degree of distortion Also changes the volume.
Distortion Pan	L64–63R	Stereo location of the overdrive sound
Flanger Pre Delay	0.0–100 [msec]	Adjusts the time from the original sound until flanger sounds is heard.
Flanger Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Flanger Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Flanger Rate (note)	Note → "Note"	
Flanger Depth	0–127	Depth of modulation
Flanger Feedback	-98–+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.
Flanger Balance	D100:0W–D0:100W	Adjusts the volume balance between the sound that is sent through the flanger (W) and the sound that is not sent through the flanger (D).
Level	0–127	Output Level

## Distortion → Delay



Parameter	Value	Explanation
Distortion Drive	0–127	Degree of distortion Also changes the volume.
Distortion Pan	L64–63R	Stereo location of the overdrive sound
Delay Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay Time (msec)	1–2600 [msec]	Adjusts the time from the original sound until delay sounds is heard.
Delay Time (note)	Note → "Note"	
Delay Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Delay HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect will be cut. If you do not want to cut the high frequencies, set this parameter to BYPASS.
Delay Balance	D100:0W–D0:100W	Adjusts the volume balance between the sound that is sent through the delay (W) and the sound that is not sent through the delay (D).
Level	0–127	Output Level

## OD/DS → TouchWah



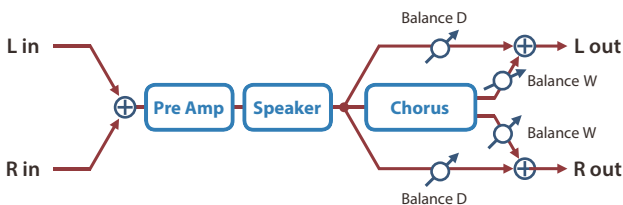
Parameter	Value	Explanation
Drive Switch	OFF, ON	Turns overdrive/distortion on/off
Drive Type	OVERDRIVE, DISTORTION	Type of distortion
Drive	0–127	Degree of distortion Also changes the volume.
Tone	0–127	Sound quality of the Overdrive effect
Amp Switch	OFF, ON	Turns the Amp Simulator on/off.
Amp Type	SMALL, BUILT-IN, 2-STACK, 3-STACK	Type of guitar amp <b>SMALL:</b> Small amp <b>BUILT-IN:</b> Single-unit type amp <b>2-STACK:</b> Large double stack amp <b>3-STACK:</b> Large triple stack amp
TWah Switch	OFF, ON	Wah on/off
TWah Mode	LPF, BPF	Filter type <b>LPF:</b> The wah effect will be applied over a wide frequency range. <b>BPF:</b> The wah effect will be applied over a narrow frequency range.
TWah Polarity	DOWN, UP	Direction in which the filter will move <b>UP:</b> The filter will change toward a higher frequency. <b>DOWN:</b> The filter will change toward a lower frequency.
TWah Sens	0–127	Sensitivity with which the filter is modified
TWah Manual	0–127	Center frequency at which the wah effect is applied
TWah Peak	0–127	Width of the frequency region at which the wah effect is applied Increasing this value will make the frequency region narrower.
TWah Balance	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the wah (W) and the sound that is not sent through the wah (D).
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level

## OD/DS → AutoWah



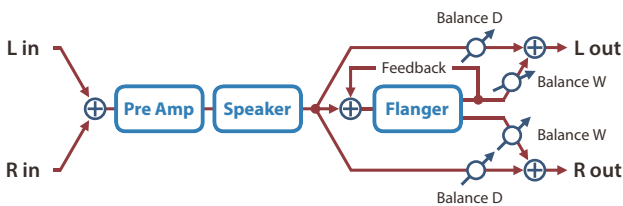
Parameter	Value	Explanation
Drive Switch	OFF, ON	Turns overdrive/distortion on/off
Drive Type	OVERDRIVE, DISTORTION	Type of distortion
Drive	0–127	Degree of distortion Also changes the volume.
Tone	0–127	Sound quality of the Overdrive effect
Amp Switch	OFF, ON	Turns the Amp Simulator on/off.
Amp Type	SMALL, BUILT-IN, 2-STACK, 3-STACK	Type of guitar amp <b>SMALL:</b> Small amp <b>BUILT-IN:</b> Single-unit type amp <b>2-STACK:</b> Large double stack amp <b>3-STACK:</b> Large triple stack amp
AutoWah Switch	OFF, ON	Wah on/off
AutoWah Mode	LPF, BPF	Filter type <b>LPF:</b> The wah effect will be applied over a wide frequency range. <b>BPF:</b> The wah effect will be applied over a narrow frequency range.
AutoWah Manual	0–127	Center frequency at which the wah effect is applied
AutoWah Peak	0–127	Width of the frequency region at which the wah effect is applied Increasing this value will make the frequency region narrower.
AutoWah Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
AutoWah Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
AutoWah Rate (note)	Note ⇒ <b>"Note"</b>	
AutoWah Depth	0–127	Depth at which the wah effect is modulated
AutoWah Balance	D100:0W–D0:100W	Adjusts the volume balance between the sound that is sent through the wah (W) and the sound that is not sent through the wah (D).
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level

## GtAmpSim → Chorus



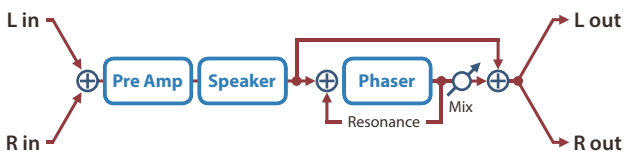
Parameter	Value	Explanation		
Pre Amp Sw	OFF, ON	Turns the amp switch on/off.		
Pre Amp Type		Type of guitar amp		
	JC-120	This models the sound of the Roland JC-120.		
	CLEAN TWIN	This models a Fender Twin Reverb.		
	MATCH DRIVE	This models the sound input to left input on a Matchless D/C-30. A simulation of the latest tube amp widely used in styles from blues and rock.		
	BG LEAD	This models the lead sound of the MESA/ Boogie combo amp. The sound of a tube amp typical of the late '70s to '80s.		
	MS1959I	This models the sound input to Input I on a Marshall 1959. This is a trebly sound suited to hard rock.		
	MS1959II	This models the sound input to Input II on a Marshall 1959.		
	MS1959I+II	The sound of connecting inputs I and II of the guitar amp in parallel, creating a sound with a stronger low end than I.		
	SLDN LEAD	This models a Soldano SLO-100. This is the typical sound of the eighties.		
	METAL 5150	This models the lead channel of a Peavey EVH 5150.		
	METAL LEAD	This is distortion sound that is ideal for performances of heavy riffs.		
	OD-1	This models the sound of the BOSS OD-1. This produces sweet, mild distortion.		
	OD-2 TURBO	This is the high-gain overdrive sound of the BOSS OD-2.		
	DISTORTION	This gives a basic, traditional distortion sound.		
	FUZZ	A fuzz sound with rich harmonic content.		
Pre Amp Drive	0–127	Volume and amount of distortion of the amp		
Pre Amp Master	0–127	Volume of the entire pre-amp		
Pre Amp Gain	LOW, MIDDLE, HIGH	Amount of pre-amp distortion		
Pre Amp Bass	0–127			
Pre Amp Middle	0–127	Tone of the bass/mid/treble frequency range		
Pre Amp Treble	0–127			
Speaker Sw	OFF, ON	Selects whether the sound will be sent through the speaker simulation (ON) or not (OFF)		
Speaker Type		Cabinet	Diameter (inches) and number of the speaker	Microphone
	SMALL 1	small open-back enclosure	10	dynamic
	SMALL 2	small open-back enclosure	10	dynamic
	MIDDLE	open back enclosure	12 x 1	dynamic
	JC-120	open back enclosure	12 x 2	dynamic
	BUILT-IN1	open back enclosure	12 x 2	dynamic
	BUILT-IN2	open back enclosure	12 x 2	condenser
	BUILT-IN3	open back enclosure	12 x 2	condenser
	BUILT-IN4	open back enclosure	12 x 2	condenser
	BUILT-IN5	open back enclosure	12 x 2	condenser
	BG STACK1	sealed enclosure	12 x 2	condenser
	BG STACK2	large sealed enclosure	12 x 2	condenser
	MS STACK1	large sealed enclosure	12 x 4	condenser
	MS STACK2	large sealed enclosure	12 x 4	condenser
	MTL STACK	large double stack	12 x 4	condenser
2-STACK	large double stack	12 x 4	condenser	
3-STACK	large triple stack	12 x 4	condenser	
Chorus Switch	OFF, ON	Chorus on/off		
Chorus Pre Delay	0.0–100 [msec]	Adjusts the time from the original sound until chorus sounds is heard.		
Chorus Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation		
Chorus Depth	0–127	Depth of modulation		
Chorus Balance	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the chorus (W) and the sound that is not sent through the chorus (D).		
Level	0–127	Output Level		

## GtAmpSim → Flanger



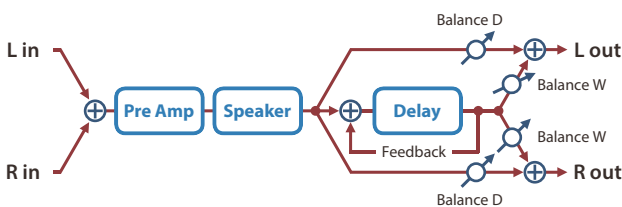
Parameter	Value	Explanation		
Pre Amp Sw	OFF, ON	Turns the amp switch on/off.		
Pre Amp Type		<b>Type of guitar amp</b>		
	JC-120	This models the sound of the Roland JC-120.		
	CLEAN TWIN	This models a Fender Twin Reverb.		
	MATCH DRIVE	This models the sound input to left input on a Matchless D/C-30. A simulation of the latest tube amp widely used in styles from blues and rock.		
	BG LEAD	This models the lead sound of the MESA/ Boogie combo amp. The sound of a tube amp typical of the late '70s to '80s.		
	MS1959I	This models the sound input to Input I on a Marshall 1959. This is a trebly sound suited to hard rock.		
	MS1959II	This models the sound input to Input II on a Marshall 1959.		
	MS1959I+II	The sound of connecting inputs I and II of the guitar amp in parallel, creating a sound with a stronger low end than I.		
	SLDN LEAD	This models a Soldano SLO-100. This is the typical sound of the eighties.		
	METAL 5150	This models the lead channel of a Peavey EVH 5150.		
	METAL LEAD	This is distortion sound that is ideal for performances of heavy riffs.		
	OD-1	This models the sound of the BOSS OD-1. This produces sweet, mild distortion.		
	OD-2 TURBO	This is the high-gain overdrive sound of the BOSS OD-2.		
	DISTORTION	This gives a basic, traditional distortion sound.		
	FUZZ	A fuzz sound with rich harmonic content.		
Pre Amp Drive	0–127	Volume and amount of distortion of the amp		
Pre Amp Master	0–127	Volume of the entire pre-amp		
Pre Amp Gain	LOW, MIDDLE, HIGH	Amount of pre-amp distortion		
Pre Amp Bass	0–127	Tone of the bass/mid/treble frequency range		
Pre Amp Middle	0–127			
Pre Amp Treble	0–127			
Speaker Sw	OFF, ON	Selects whether the sound will be sent through the speaker simulation (ON) or not (OFF)		
Speaker Type		<b>Cabinet</b>	<b>Diameter (in inches) and number of the speaker</b>	<b>Microphone</b>
	SMALL 1	small open-back enclosure	10	dynamic
	SMALL 2	small open-back enclosure	10	dynamic
	MIDDLE	open back enclosure	12 x 1	dynamic
	JC-120	open back enclosure	12 x 2	dynamic
	BUILT-IN1	open back enclosure	12 x 2	dynamic
	BUILT-IN2	open back enclosure	12 x 2	condenser
	BUILT-IN3	open back enclosure	12 x 2	condenser
	BUILT-IN4	open back enclosure	12 x 2	condenser
	BUILT-IN5	open back enclosure	12 x 2	condenser
	BG STACK1	sealed enclosure	12 x 2	condenser
	BG STACK2	large sealed enclosure	12 x 2	condenser
	MS STACK1	large sealed enclosure	12 x 4	condenser
	MS STACK2	large sealed enclosure	12 x 4	condenser
	MTL STACK	large double stack	12 x 4	condenser
2-STACK	large double stack	12 x 4	condenser	
3-STACK	large triple stack	12 x 4	condenser	
Flanger Switch	OFF, ON	Flanger on/off		
Flanger Pre Delay	0.0–100 [msec]	Adjusts the time from the original sound until flanger sounds is heard.		
Flanger Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation		
Flanger Depth	0–127	Depth of modulation		
Flanger Feedback	-98–+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.		
Flanger Balance	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the flanger (W) and the sound that is not sent through the flanger (D).		
Level	0–127	Output Level		

## GtAmpSim → Phaser



Parameter	Value	Explanation		
Pre Amp Sw	OFF, ON	Turns the amp switch on/off.		
Pre Amp Type		<b>Type of guitar amp</b>		
	JC-120	This models the sound of the Roland JC-120.		
	CLEAN TWIN	This models a Fender Twin Reverb.		
	MATCH DRIVE	This models the sound input to left input on a Matchless D/C-30. A simulation of the latest tube amp widely used in styles from blues and rock.		
	BG LEAD	This models the lead sound of the MESA/ Boogie combo amp. The sound of a tube amp typical of the late '70s to '80s.		
	MS1959I	This models the sound input to Input I on a Marshall 1959. This is a trebly sound suited to hard rock.		
	MS1959II	This models the sound input to Input II on a Marshall 1959.		
	MS1959+II	The sound of connecting inputs I and II of the guitar amp in parallel, creating a sound with a stronger low end than I.		
	SLDN LEAD	This models a Soldano SLO-100. This is the typical sound of the eighties.		
	METAL 5150	This models the lead channel of a Peavey EVH 5150.		
	METAL LEAD	This is distortion sound that is ideal for performances of heavy riffs.		
	OD-1	This models the sound of the BOSS OD-1. This produces sweet, mild distortion.		
	OD-2 TURBO	This is the high-gain overdrive sound of the BOSS OD-2.		
	DISTORTION	This gives a basic, traditional distortion sound.		
FUZZ	A fuzz sound with rich harmonic content.			
Pre Amp Drive	0–127	Volume and amount of distortion of the amp		
Pre Amp Master	0–127	Volume of the entire pre-amp		
Pre Amp Gain	LOW, MIDDLE, HIGH	Amount of pre-amp distortion		
Pre Amp Bass	0–127			
Pre Amp Middle	0–127	Tone of the bass/mid/treble frequency range		
Pre Amp Treble	0–127			
Speaker Sw	OFF, ON	Selects whether the sound will be sent through the speaker simulation (ON) or not (OFF)		
Speaker Type		<b>Cabinet</b>	<b>Diameter (in inches) and number of the speaker</b>	<b>Microphone</b>
	SMALL 1	small open-back enclosure	10	dynamic
	SMALL 2	small open-back enclosure	10	dynamic
	MIDDLE	open back enclosure	12 x 1	dynamic
	JC-120	open back enclosure	12 x 2	dynamic
	BUILT-IN1	open back enclosure	12 x 2	dynamic
	BUILT-IN2	open back enclosure	12 x 2	condenser
	BUILT-IN3	open back enclosure	12 x 2	condenser
	BUILT-IN4	open back enclosure	12 x 2	condenser
	BUILT-IN5	open back enclosure	12 x 2	condenser
	BG STACK1	sealed enclosure	12 x 2	condenser
	BG STACK2	large sealed enclosure	12 x 2	condenser
	MS STACK1	large sealed enclosure	12 x 4	condenser
	MS STACK2	large sealed enclosure	12 x 4	condenser
MTL STACK	large double stack	12 x 4	condenser	
2-STACK	large double stack	12 x 4	condenser	
3-STACK	large triple stack	12 x 4	condenser	
Phaser Switch	OFF, ON	Phaser on/off		
Phaser Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation		
Phaser Manual	0–127	Adjusts the basic frequency from which the sound will be modulated.		
Phaser Depth	0–127	Depth of modulation		
Phaser Resonance	0–127	Amount of feedback		
Phaser Mix	0–127	Level of the phase-shifted sound		
Level	0–127	Output Level		

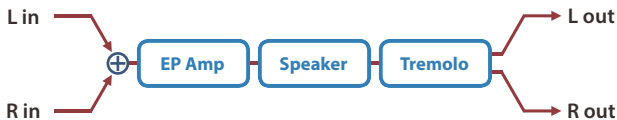
## GtAmpSim → Delay



Parameter	Value	Explanation		
Pre Amp Sw	OFF, ON	Turns the amp switch on/off.		
Pre Amp Type		<b>Type of guitar amp</b>		
	JC-120	This models the sound of the Roland JC-120.		
	CLEAN TWIN	This models a Fender Twin Reverb.		
	MATCH DRIVE	This models the sound input to left input on a Matchless D/C-30. A simulation of the latest tube amp widely used in styles from blues and rock.		
	BG LEAD	This models the lead sound of the MESA/ Boogie combo amp. The sound of a tube amp typical of the late '70s to '80s.		
	MS1959I	This models the sound input to Input I on a Marshall 1959. This is a trebly sound suited to hard rock.		
	MS1959II	This models the sound input to Input II on a Marshall 1959.		
	MS1959I+II	The sound of connecting inputs I and II of the guitar amp in parallel, creating a sound with a stronger low end than I.		
	SLDN LEAD	This models a Soldano SLO-100. This is the typical sound of the eighties.		
	METAL 5150	This models the lead channel of a Peavey EVH 5150.		
	METAL LEAD	This is distortion sound that is ideal for performances of heavy riffs.		
	OD-1	This models the sound of the BOSS OD-1. This produces sweet, mild distortion.		
	OD-2 TURBO	This is the high-gain overdrive sound of the BOSS OD-2.		
	DISTORTION	This gives a basic, traditional distortion sound.		
	FUZZ	A fuzz sound with rich harmonic content.		
Pre Amp Drive	0–127	Volume and amount of distortion of the amp		
Pre Amp Master	0–127	Volume of the entire pre-amp		
Pre Amp Gain	LOW, MIDDLE, HIGH	Amount of pre-amp distortion		
Pre Amp Bass	0–127			
Pre Amp Middle	0–127	Tone of the bass/mid/treble frequency range		
Pre Amp Treble	0–127			
Speaker Sw	OFF, ON	Selects whether the sound will be sent through the speaker simulation (ON) or not (OFF)		
Speaker Type		<b>Cabinet</b>	<b>Diameter (in inches) and number of the speaker</b>	<b>Microphone</b>
	SMALL 1	small open-back enclosure	10	dynamic
	SMALL 2	small open-back enclosure	10	dynamic
	MIDDLE	open back enclosure	12 x 1	dynamic
	JC-120	open back enclosure	12 x 2	dynamic
	BUILT-IN1	open back enclosure	12 x 2	dynamic
	BUILT-IN2	open back enclosure	12 x 2	condenser
	BUILT-IN3	open back enclosure	12 x 2	condenser
	BUILT-IN4	open back enclosure	12 x 2	condenser
	BUILT-IN5	open back enclosure	12 x 2	condenser
	BG STACK1	sealed enclosure	12 x 2	condenser
	BG STACK2	large sealed enclosure	12 x 2	condenser
	MS STACK1	large sealed enclosure	12 x 4	condenser
	MS STACK2	large sealed enclosure	12 x 4	condenser
	MTL STACK	large double stack	12 x 4	condenser
2-STACK	large double stack	12 x 4	condenser	
3-STACK	large triple stack	12 x 4	condenser	
Delay Switch	OFF, ON	Delay on/off		
Delay Time	1–1300 [msec]	Adjusts the time from the original sound until delay sounds is heard.		
Delay Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.		
Delay HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Frequency at which the high-frequency portion of the delay sound will be cut (BYPASS: no cut)		
Delay Balance	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the delay (W) and the sound that is not sent through the delay (D).		
Level	0–127	Output Level		

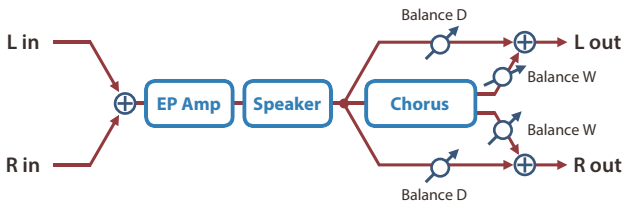


## EP AmpSim → Tremolo



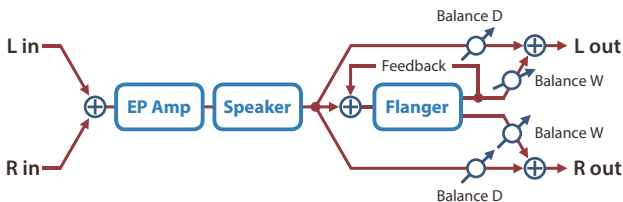
Parameter	Value	Explanation
Type	OLDCASE	Type of amp A standard electric piano sound of the early 70s
	NEWCASE	A standard electric piano sound of the late 70s and early 80s
	WURLY	A standard electric piano sound of the 60s
Bass	-50+50	Amount of low-frequency boost/cut
Treble	-50+50	Amount of high-frequency boost/cut
Tremolo Switch	OFF, ON	Tremolo on/off
Tremolo Speed (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Tremolo Speed (Hz)	0.05–10.00 [Hz]	
Tremolo Speed (note)	Note ⇒ <b>"Note"</b>	Rate of the tremolo effect
Tremolo Depth	0–127	Depth of the tremolo effect
Tremolo Duty	-10+10	Adjusts the duty cycle of the LFO waveform used to apply tremolo.
Speaker Type	LINE, OLD, NEW, WURLY, TWIN	Type of speaker If LINE is selected, the sound will not be sent through the speaker simulation.
OD Switch	OFF, ON	Overdrive on/off
OD Gain	0–127	Overdrive input level
OD Drive	0–127	Degree of distortion Also changes the volume.
Level	0–127	Output Level

## EPAmplSim → Chorus



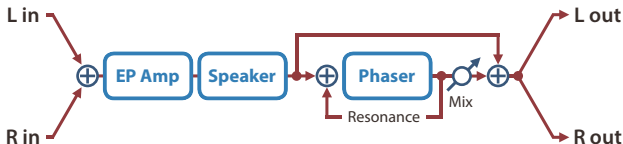
Parameter	Value	Explanation
Type		Type of amp
	OLDCASE	A standard electric piano sound of the early 70s
	NEWCASE	A standard electric piano sound of the late 70s and early 80s
Bass	-50+50	Amount of low-frequency boost/cut
Treble	-50+50	Amount of high-frequency boost/cut
Chorus Switch	OFF, ON	Chorus on/off
Chorus Pre Delay	0.0–100 [msec]	Adjusts the time from the original sound until chorus sounds is heard.
Chorus Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Chorus Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Chorus Rate (note)	Note → <b>"Note"</b>	
Chorus Depth	0–127	Depth of modulation
Chorus Balance	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the chorus (W) and the sound that is not sent through the chorus (D).
Speaker Type	LINE, OLD, NEW, WURLY, TWIN	Type of speaker If LINE is selected, the sound will not be sent through the speaker simulation.
OD Switch	OFF, ON	Overdrive on/off
OD Gain	0–127	Overdrive input level
OD Drive	0–127	Degree of distortion Also changes the volume.
Level	0–127	Output Level

# EP AmpSim → Flanger



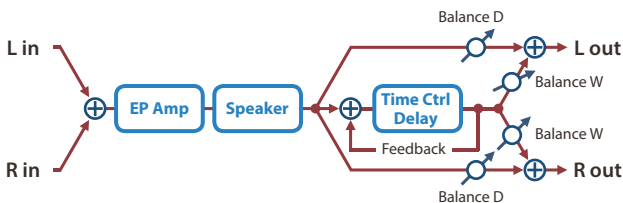
Parameter	Value	Explanation
Type	OLDCASE NEWCASE	Type of amp A standard electric piano sound of the early 70s A standard electric piano sound of the late 70s and early 80s
Bass	-50+50	Amount of low-frequency boost/cut
Treble	-50+50	Amount of high-frequency boost/cut
Flanger Switch	OFF, ON	Flanger on/off
Flanger Pre Delay	0.0-100 [msec]	Adjusts the time from the original sound until flanger sounds is heard.
Flanger Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Flanger Rate (Hz)	0.05-10.00 [Hz]	Frequency of modulation
Flanger Rate (note)	Note ⇒ <b>"Note"</b>	
Flanger Depth	0-127	Depth of modulation
Flanger Feedback	-98+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.
Flanger Balance	D100: 0W-D0: 100W	Adjusts the volume balance between the sound that is sent through the flanger (W) and the sound that is not sent through the flanger (D).
Speaker Type	LINE, OLD, NEW, WURLY, TWIN	Type of speaker If LINE is selected, the sound will not be sent through the speaker simulation.
OD Switch	OFF, ON	Overdrive on/off
OD Gain	0-127	Overdrive input level
OD Drive	0-127	Degree of distortion Also changes the volume.
Level	0-127	Output Level

# EPAmplSim → Phaser



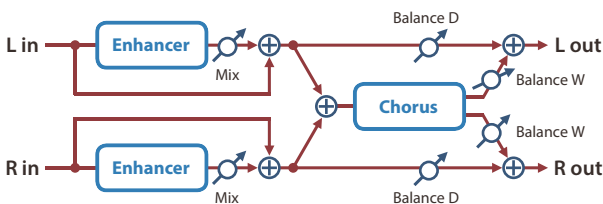
Parameter	Value	Explanation
Type		Type of amp
	OLDCASE	A standard electric piano sound of the early 70s
	NEWCASE	A standard electric piano sound of the late 70s and early 80s
Bass	-50+50	Amount of low-frequency boost/cut
Treble	-50+50	Amount of high-frequency boost/cut
Phaser Switch	OFF, ON	Phaser on/off
Phaser Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Phaser Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Phaser Rate (note)	Note → <b>"Note"</b>	
Phaser Manual	0–127	Adjusts the basic frequency from which the sound will be modulated.
Phaser Depth	0–127	Depth of modulation
Phaser Resonance	0–127	Amount of feedback
Phaser Mix	0–127	Level of the phase-shifted sound
Speaker Type	LINE, OLD, NEW, WURLY, TWIN	Type of speaker If LINE is selected, the sound will not be sent through the speaker simulation.
OD Switch	OFF, ON	Overdrive on/off
OD Gain	0–127	Overdrive input level
OD Drive	0–127	Degree of distortion Also changes the volume.
Level	0–127	Output Level

# EPAmplSim → Delay



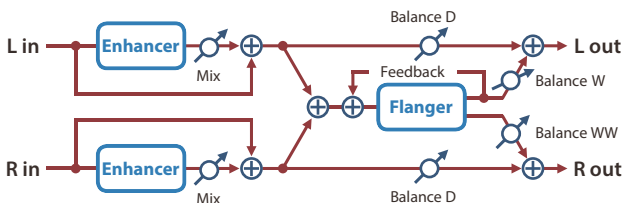
Parameter	Value	Explanation
Type		Type of amp
	OLDCASE	A standard electric piano sound of the early 70s
	NEWCASE	A standard electric piano sound of the late 70s and early 80s
Bass	-50+50	Amount of low-frequency boost/cut
Treble	-50+50	Amount of high-frequency boost/cut
Delay Switch	OFF, ON	Delay on/off
Delay Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay Time (msec)	1-1300 [msec]	Adjusts the time from the original sound until delay sounds is heard.
Delay Time (note)	Note → "Note"	
Delay Accel	0-15	Speed at which the current delay time changes to the specified delay time when you change the delay time. The speed of the pitch change will change simultaneously with the delay time.
Delay Feedback	-98+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Delay HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Frequency at which the high-frequency portion of the delay sound will be cut (BYPASS: no cut)
Delay Balance	D100: 0W-D0: 100W	Adjusts the volume balance between the sound that is sent through the delay (W) and the sound that is not sent through the delay (D).
Speaker Type	LINE, OLD, NEW, WURLY, TWIN	Type of speaker If LINE is selected, the sound will not be sent through the speaker simulation.
OD Switch	OFF, ON	Overdrive on/off
OD Gain	0-127	Overdrive input level
OD Drive	0-127	Degree of distortion Also changes the volume.
Level	0-127	Output Level

## Enhancer → Chorus



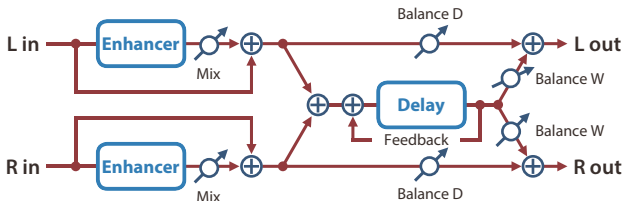
Parameter	Value	Explanation
Enhancer Sens	0–127	Sensitivity of the enhancer
Enhancer Mix	0–127	Level of the overtones generated by the enhancer
Chorus Pre Delay	0.0–100 [msec]	Adjusts the time from the original sound until chorus sounds is heard.
Chorus Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Chorus Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Chorus Rate (note)	Note → "Note"	
Chorus Depth	0–127	Depth of modulation
Chorus Balance	D100:0W–D0:100W	Adjusts the volume balance between the sound that is sent through the chorus (W) and the sound that is not sent through the chorus (D).
Level	0–127	Output Level

## Enhancer → Flanger



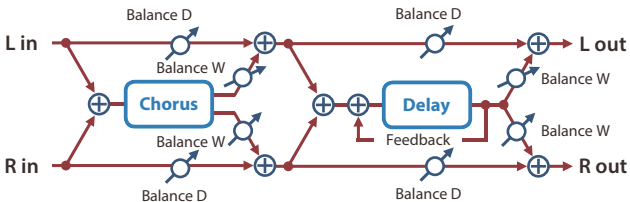
Parameter	Value	Explanation
Enhancer Sens	0–127	Sensitivity of the enhancer
Enhancer Mix	0–127	Level of the overtones generated by the enhancer
Flanger Pre Delay	0.0–100 [msec]	Adjusts the time from the original sound until flanger sounds is heard.
Flanger Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Flanger Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Flanger Rate (note)	Note → "Note"	
Flanger Depth	0–127	Depth of modulation
Flanger Feedback	-98+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.
Flanger Balance	D100:0W–D0:100W	Adjusts the volume balance between the sound that is sent through the flanger (W) and the sound that is not sent through the flanger (D).
Level	0–127	Output Level

## Enhancer → Delay



Parameter	Value	Explanation
Enhancer Sens	0–127	Sensitivity of the enhancer
Enhancer Mix	0–127	Level of the overtones generated by the enhancer
Delay Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay Time (msec)	1–2600 [msec]	Adjusts the time from the original sound until delay sounds is heard.
Delay Time (note)	Note ⇒ <b>"Note"</b>	
Delay Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Delay HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect will be cut. If you do not want to cut the high frequencies, set this parameter to BYPASS.
Delay Balance	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the delay (W) and the sound that is not sent through the delay (D).
Level	0–127	Output Level

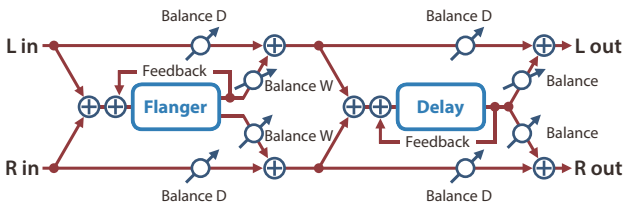
## Chorus → Delay



Parameter	Value	Explanation
Chorus Pre Delay	0.0–100 [msec]	Adjusts the time from the original sound until chorus sounds is heard.
Chorus Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Chorus Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Chorus Rate (note)	Note ⇒ <b>"Note"</b>	
Chorus Depth	0–127	Depth of modulation
Chorus Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the chorus sound (W)
Delay Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay Time (msec)	1–2600 [msec]	Adjusts the time from the original sound until delay sounds is heard.
Delay Time (note)	Note ⇒ <b>"Note"</b>	
Delay Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Delay HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect will be cut. If you do not want to cut the high frequencies, set this parameter to BYPASS.
Delay Balance	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the delay (W) and the sound that is not sent through the delay (D).
Level	0–127	Output Level

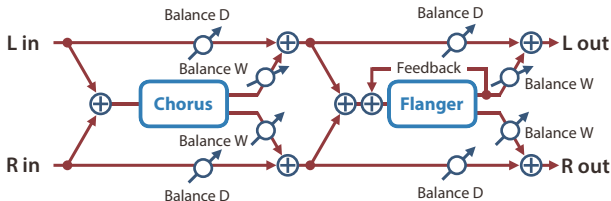


## Flanger → Delay



Parameter	Value	Explanation
Flanger Pre Delay	0.0–100 [msec]	Adjusts the time from the original sound until flanger sounds is heard.
Flanger Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Flanger Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Flanger Rate (note)	Note ⇒ <b>"Note"</b>	
Flanger Depth	0–127	Depth of modulation
Flanger Feedback	-98–+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.
Flanger Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the flanger sound (W)
Delay Time (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Delay Time (msec)	1–2600 [msec]	Adjusts the time from the original sound until delay sounds is heard.
Delay Time (note)	Note ⇒ <b>"Note"</b>	
Delay Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Delay HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect will be cut. If you do not want to cut the high frequencies, set this parameter to BYPASS.
Delay Balance	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the delay (W) and the sound that is not sent through the delay (D).
Level	0–127	Output Level

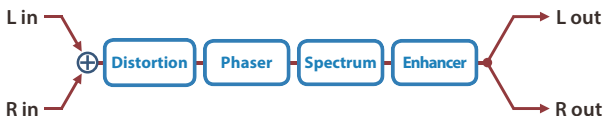
## Chorus → Flanger



Parameter	Value	Explanation
Chorus Pre Delay	0.0–100 [msec]	Adjusts the time from the original sound until chorus sounds is heard.
Chorus Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Chorus Rate (Hz)	0.05–10.00 [Hz]	Modulation frequency of the chorus effect
Chorus Rate (note)	Note → "Note"	
Chorus Depth	0–127	Modulation depth of the chorus effect
Chorus Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the chorus sound (W)
Flanger Pre Delay	0.0–100 [msec]	Adjusts the time from the original sound until flanger sounds is heard.
Flanger Rate (sync sw)	OFF, ON	Synchronize to the tempo of the DAW if this is ON.
Flanger Rate (Hz)	0.05–10.00 [Hz]	Modulation frequency of the flanger effect
Flanger Rate (note)	Note → "Note"	
Flanger Depth	0–127	Modulation depth of the flanger effect
Flanger Feedback	-98–+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.
Flanger Balance	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the flanger (W) and the sound that is not sent through the flanger (D).
Level	0–127	Output Level






















# JD-Multi

Recreates the effects included in group A of the JD-800.



Parameter	Value	Explanation
Structure		Selects the connection order of the effects. DS: Distortion, PH: Phaser, SP: Spectrum, EN: Enhancer
	1	DS - PH - SP - EN
	2	DS - PH - EN - SP
	3	DS - SP - PH - EN
	4	DS - SP - EN - PH
	5	DS - EN - PH - SP
	6	DS - EN - SP - PH
	7	PH - DS - SP - EN
	8	PH - DS - EN - SP
	9	PH - SP - DS - EN
	10	PH - SP - EN - DS
	11	PH - EN - DS - SP
	12	PH - EN - SP - DS
	13	SP - DS - PH - EN
	14	SP - DS - EN - PH
	15	SP - PH - DS - EN
	16	SP - PH - EN - DS
	17	SP - EN - DS - PH
	18	SP - EN - PH - DS
	19	EN - DS - PH - SP
	20	EN - DS - SP - PH
	21	EN - PH - DS - SP
	22	EN - PH - SP - DS
	23	EN - SP - DS - PH
24	EN - SP - PH - DS	
DISTORTION	OFF, ON	Turns the distortion on/off.
PHASER	OFF, ON	Turns the phaser on/off.
SPECTRUM	OFF, ON	Turns the spectrum on/off.
ENHANCER	OFF, ON	Turns the enhancer on/off.
Distortion Type		Sets the type of distortion.
	MELLOW DRIVE	Softer distortion with a slightly darker sound.
	OVERDRIVE	Distortion that resembles a vacuum tube amp being driven.
	CRY DRIVE	Distortion that emphasizes the high end.
	MELLOW DIST	Gives the feeling of distortion playing through a large amp.
	LIGHT DIST	Strong distortion with a bright sound.
	FAT DIST	Thick distortion that emphasizes the low and high ends.
FUZZ DIST	Distortion that's even more powerful than FAT DIST.	
Distortion Drive	0–100	Sets the amount of distortion.
Distortion Level	0–100	Sets the distortion output level.
Phaser Manual	50Hz–15kHz	Sets the basic frequency from which the sound is modulated with the phaser effect.
Phaser Rate	0.1Hz–10.0Hz	Sets the cycle of the phaser modulation.
Phaser Depth	0–100	Sets the depth of the phaser modulation.
Phaser Reso	0–100	Sets the amount of feedback for the phaser. Increasing the value creates a more unusual sound.
Phaser Mix	0–100	Sets the level of the phase-shifted sound.
Spectrum Band1	-15dB→+15dB	Sets the gain (amount of boost/cut) in the 250 Hz range.
Spectrum Band2		Sets the gain (amount of boost/cut) in the 500 Hz range.
Spectrum Band3		Sets the gain (amount of boost/cut) in the 1000 Hz range.
Spectrum Band4		Sets the gain (amount of boost/cut) in the 2000 Hz range.
Spectrum Band5		Sets the gain (amount of boost/cut) in the 4000 Hz range.
Spectrum Band6		Sets the gain (amount of boost/cut) in the 8000 Hz range.
Spectrum Width	1–5	Sets the bandwidth for changing the levels, common to all bands.
Enhancer Sens	0–100	Sets how easily the enhancer effect is applied.
Enhancer Mix	0–100	Sets the ratio at which the harmonics generated by the enhancer are mixed with the original sound.
Level	0–127	Sets the output volume.

# Note

 $1/16T$ Sixteenth-note triplet	 $1/16$ Sixteenth note	 $1/32T$ Thirty-second-note triplet	 $1/32$ Thirty-second note
 $1/16D$ Dotted sixteenth note	 $1/32D$ Dotted thirty-second note	 $1/16$ Sixteenth note	 $1/8T$ Eighth-note triplet
 $1/8$ Eighth note	 $1/4T$ Quarter-note triplet	 $1/8D$ Dotted eighth note	
 $1/4$ Quarter note	 $1/2T$ Half-note triplet	 $1/4D$ Dotted quarter note	 $1/2$ Half note
 $1/1T$ Whole-note triplet	 $1/2D$ Dotted half note	 $1/1$ Whole note	 $2/1T$ Double-note triplet
 $1/1D$ Dotted whole note	 $2/1$ Double note		