JUNO-D6
JUNO-D7
JUNO-D8

Parameter Guide

The content of this manual applies to system program version 1.10 or later. Download the latest system program from the Roland website to update this instrument.

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SCENE EDIT parameters

COMMON

COMMON

Parameter	Value	Explanation
Category	NO ASSIGN, A. PIANO, E. PIANO, ORGAN, KEYS, GUITAR, BASS, STRINGS, BRASS, WIND, CHOIR, SYNTH, PAD, FX, VOCODER, SAMPLE	Sets the category for the scene.
Scene Level	0–127	Sets the scene's volume.
Tempo	20.00–300.00	Sets the tempo of the scene (including the arpeggio, rhythm pattern, and step sequencer). * Hold down the [SHIFT] button while operating the controller to edit the value in 0.01 increments.
Voice Reserve Part 1–R	0–10	Specifies the number of voices reserved for each part when the performance exceeds the maximum polyphony.

PEDAL

Parameter	Value	Explanation
Hold Pedal Function	This sets the function that's controlled by the pedal connected to the PEDAL HOLD jack. ➡ "List of functions that can be assigned to the controllers" (p. 44)	
	OFF	No function is assigned.
	CC01–CC95	Controller number 1–95
	AFTER TOUCH	Aftertouch
	PITCH BEND DOWN	Lowers the pitch.
	PITCH BEND UP	Raises the pitch.
	SCENE DOWN	Switches the scene to the previous number.
	SCENE UP	Switches the scene to the next number.
	START/STOP	Assigns the pedal to start/stop the step sequencer.
Control Pedal Function	This sets the function that's controlled by the pedal connected to the PEDAL CONTROL jack. ➡ "List of functions that can be assigned to the controllers" (p. 44)	
	OFF	No function is assigned.
	CC01–CC95	Controller number 1–95
	AFTER TOUCH	Aftertouch
	PITCH BEND DOWN	Lowers the pitch.
	PITCH BEND UP	Raises the pitch.
	SCENE DOWN	Switches the scene to the previous number.
	SCENE UP	Switches the scene to the next number.
	START/STOP	Assigns the pedal to start/stop the step sequencer.

BEND/MOD

Parameter	Value	Explanation
Pitch Bend Function	Sets the function that's controlled by the pitch bend lever. ➡ "List of functions that can be assigned to the controllers" (p. 44)	
	OFF	No function is assigned.
	CC01–CC95	Controller number 1–95
	AFTER TOUCH	Aftertouch
	PITCH BEND	Applies the same effect as when the pitch bend lever is pushed to the left or right.
	ROTARY SPEED	Alternately switches between slow and fast for the rotary modulation speed.
Modulation Function	This sets the function that's controlled by the modulation lever. ➡ "List of functions that can be assigned to the controllers" (p. 44)	
	OFF	No function is assigned.
	CC01–CC95	Controller number 1–95
	AFTER TOUCH	Aftertouch
	PITCH BEND DOWN	Lowers the pitch.
	PITCH BEND UP	Raises the pitch.
	ROTARY SPEED	Alternately switches between slow and fast for the rotary modulation speed.

KNOB

Parameter	Value	Explanation
Knob 1–4 Function	This lets you assign the different functions that are controlled by the SOUND MODIFY [1]–[4] knobs. ➡ "List of functions that can be assigned to the controllers" (p. 44)	
	OFF	No function is assigned.
	CC01–CC95	Controller number 1–95
	AFTER TOUCH	Aftertouch
	PITCH BEND DOWN	Lowers the pitch.
	PITCH BNED UP	Raises the pitch.
	MFX	Controls the MFX parameters. * The multi-effects parameters available for control will depend on the MFX type.
	CHORUS/DELAY	Specifies the output level of the sound with chorus/delay applied.
	REVERB	The output level of the sound with reverb applied.
	MIC REVERB	Sets the output level of the mic input audio with reverb applied.
	EQ LOW GAIN	Specifies the amount of boost/cut for the low-frequency region.
	EQ MID GAIN	Specifies the amount of boost/cut for the mid-frequency region.
	EQ HIGH GAIN	Specifies the amount of boost/cut for the high-frequency region.
	USB AUDIO IN	Sets the USB audio input level.
	USB AUDIO OUT	Sets the USB audio output level.

SOURCE

Parameter	Value	Explanation
Control 1–4 Source	OFF, CC01–CC31, CC33–CC95, PITCH BEND, AFTER TOUCH	Sets which MIDI message changes the parameter.

PART

TONE

Parameter	Value	Explanation
Bank	PRESET-A, PRESET-B, PRESET-C, PRESET-D, PRESET-E, COMMON, USER	Selects the tone bank.
Number	(Number / Name)	Selects the tone.
Part Level	0–127	Specifies the volume of each part.
Pan	L64–63R	Specifies the pan of each part's sound when outputting in stereo.
Chorus Send Level	0–127	Specifies the send level to chorus.
Reverb Send Level	0–127	Specifies the send level to reverb.
Output Assign	THRU, IFX	Selects whether to bypass IFX for the output, or to pass the signal through the IFX.

KBD

Parameter	Value	Explanation
Keyboard Switch	OFF, ON	Turns on/off the part played by the keyboard.
Keyboard Range Lower	C- –UPPER	Set the keyboard range in which each part will sound.
Keyboard Range Upper	LOWER–G9	Make these settings when you want different key ranges to play different tones. Specifies the lower and upper limits of the key range.
Velocity Sens Offset	-63–+63	Adjusts the velocity sensitivity. Larger settings raise the sensitivity.
Velocity Range Lower	1–127	Sets the lower and upper limits for the velocities at which tones play.
Velocity Range Upper	1–127	Make these settings when you want different tones to sound depending on keyboard playing dynamics.
Velocity Mode	Specifies the velocity that is transmitted when you play the keyboard.	
	REAL	Transmits the velocity according to how hard you press a key.
	FIXED	Always transmits a fixed velocity, regardless of how hard you press the key.
Fixed Velocity	1–127	Sets the velocity value used for the "FIXED" Velocity Mode setting.
Velocity Curve Type	OFF, 1–4	Sets the strength (responsiveness to dynamics) of the keyboard feel (touch).

PITCH

Parameter	Value	Explanation
Coarse Tune	-48–+48	Shifts the pitch in units of a semitone.
Fine Tune	-50–+50	Finely adjusts the pitch in units of one cent.
Mono/Poly	MONO, POLY, TONE	Choose "MONO" if you want the tone assigned to the part to play monophonically; choose "POLY" if you want to play it polyphonically. To use the setting of the tone, choose "TONE".
Legato Switch	OFF, ON, TONE	Legato can be applied when playing monophonically. "Legato" is a playing technique that smooths the transition between notes, minimizing the sense of a gap between them. The effect is similar to the guitar performance techniques of hammering-on and pulling-off. Choose "ON" to apply legato, or "OFF" if not. To use the setting of the tone, choose "TONE".
Portamento Switch	OFF, ON, TONE	Specifies whether portamento is applied. Choose "ON" to apply portamento, or "OFF" if not. To use the setting of the tone, choose "TONE".
Portamento Time	0–127, TONE	When portamento is used, this specifies the time over which the pitch will change. Higher settings cause the pitch to take longer when gliding to the next note. To use the setting of the tone, choose "TONE".
Unison Switch	OFF, ON, TONE	This layers a single sound. Choose "ON" if you want to play using unison, or "OFF" if not. To use the setting of the tone, choose "TONE".
Octave Shift	-3–+3	Shifts the pitch of the keyboard in units of one octave.
Bend Range	0–24, TONE	Specifies the range of pitch change controlled by pitch bend, in semitone units. To use the setting of the tone, choose "TONE".
Bend Mode	Specifies the behavior when the pitch bend lever is operated.	
	NORMAL	The conventional pitch bend effect occurs.
	C+L	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 lever passes through the center position.
	TONE	The tone's settings are used.

OFFSET

Parameter	Value	Explanation
Cutoff Offset	-64–+63	Adjusts how far the filter is open. Increasing this value makes the sound brighter, and decreasing it makes the sound darker.
Resonance Offset	-64–+63	Emphasizes the overtones 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	-64–+63	Adjusts the time over which the sound reaches its maximum volume after you press the key. Higher values produce a milder attack; lower values produce a sharper attack.
Decay Time Offset	-64–+63	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	-64–+63	The time it takes after the key is released for a sound to become inaudible. Larger settings of this value make the sound linger, and smaller settings make the sound end more sharply.
Vibrato Rate	-64–+63	Adjusts the vibrato speed (the rate at which the pitch is modulated). The pitch will be modulated more rapidly for higher settings, and more slowly with lower settings.
Vibrato Depth	-64–+63	Adjusts the depth of the vibrato effect (the depth at which the pitch is modulated). The pitch will be modulated more greatly for higher settings, and less with lower settings.
Vibrato Delay	-64–+63	Adjusts the time until vibrato (pitch modulation) starts to apply. Higher settings will produce a longer delay time before vibrato begins, while lower settings produce a shorter time.

MIDI

Parameter	Value	Explanation
Rx Channel	1–16	Specifies the MIDI receive channel of each part.
Rx Program Change	OFF, ON	Specifies whether program change is received (ON) or not received (OFF).
Rx Bank Select	OFF, ON	Specifies whether bank select is received (ON) or not received (OFF).
Rx Pitch Bend	OFF, ON	Specifies whether pitch bend is received (ON) or not received (OFF).
Rx Poly Key Pressure	OFF, ON	Specifies whether polyphonic aftertouch is received (ON) or not received (OFF).
Rx Channel Pressure	OFF, ON	Specifies whether channel aftertouch is received (ON) or not received (OFF).
Rx Modulation	OFF, ON	Specifies whether modulation is received (ON) or not received (OFF).
Rx Volume	OFF, ON	Specifies whether volume is received (ON) or not received (OFF).
Rx Pan	OFF, ON	Specifies whether pan is received (ON) or not received (OFF).
Rx Expression	OFF, ON	Specifies whether expression is received (ON) or not received (OFF).
Rx Hold-1	OFF, ON	Specifies whether hold 1 is received (ON) or not received (OFF).

CTRL

Parameter	Value	Explanation
Rx Hold Pedal	OFF, ON	Specifies whether hold pedal operations are received (ON) or not received (OFF).
Rx Control Pedal	OFF, ON	Specifies whether control pedal operations are received (ON) or not received (OFF).
Rx Pitch Bend	OFF, ON	Sets whether to receive pitch bend lever operations (ON) or not (OFF).
Rx Modulation	OFF, ON	Sets whether to receive modulation lever operations (ON) or not (OFF).
Rx Knob 1–4	OFF, ON	Specifies whether SOUND MODIFY [1]–[4] knob operations are received (ON) or not received (OFF).

SCALE TUNE

Parameter	Value	Explanation
Type	This lets you create a custom scale.	
	CUSTOM	This setting is selected when you make fine adjustments to the pitch of each key.
	EQUAL (Equal temperament)	This tuning divides an octave into 12 equal parts. Every interval produces about the same amount of slight dissonance.
	JUST-MAJ (Just major)	This scale eliminates dissonance in fifths and thirds. It is unsuited to playing melodies and cannot be transposed, but is capable of beautiful sonorities.
	JUST-MIN (Just minor)	The scales of the major and minor just intonations are different. You can get the same effect with the minor scale as with the major scale.
	PYTHAGORE (Pythagorean)	This scale, devised by the philosopher Pythagoras, eliminates dissonance in fourths and fifths. Dissonance is produced in thirds, but melodies are euphonious.
	KIRNBERGE	This scale is a modification of the meantone and just intonations that permits greater freedom in transposition to other keys. Performances are possible in all keys (III).
	MEANTONE	This scale makes some compromises in just intonation, enabling transposition to other keys.
	WERCKMEIS (Werckmeister)	This is a combination of the meantone and Pythagorean scales. Performances are possible in all keys (first technique, III).
	ARABIC	This scale is suitable for Arabic music.
Key	C, C♯, D, D♯, E, F, F♯, G, G♯, A, A♯, B	Sets the keynote.
C	-64–+63	Finely adjusts the pitch.
C♯		
D		
D♯		
E		
F		
F♯		
G		
G♯		
A		
A♯		
B		

EXTERNAL

Parameter	Value	Explanation
Tx Mode	ON, OFF, MKB	Specifies whether MIDI messages are transmitted (ON) or not transmitted (OFF). If you're using this unit as a master keyboard, choose "MKB".
Master Keyboard Tx Channel	1–16	Specifies the transmit channel for MIDI messages of the keyboard part.
Master Keyboard Bank MSB	OFF, 0–127	Here you can enter numerical values for program number and bank select MSB/LSB to switch sounds on an external MIDI device.
Master Keyboard Bank LSB	OFF, 0–127	
Master Keyboard Program Change	OFF, 1–128	Here you can enter numerical values for program number and bank select MSB/LSB to switch sounds on an external MIDI device.
Master Keyboard Volume	OFF, 0–127	Adjusts the volume of an external MIDI device.

EFFECTS

PART EQ

Parameter	Value	Explanation
Switch	OFF, ON	Turns the equalizer (EQ) on/off.
Input Gain	-24–+24 [dB]	Specifies the amount of boost/cut for the input sound.
Low Gain	-24–+24 [dB]	Specifies the amount of boost/cut for the low-frequency region.
Mid Gain	-24–+24 [dB]	Specifies the amount of boost/cut for the mid-frequency region.
High Gain	-24–+24 [dB]	Specifies the amount of boost/cut for the high-frequency region.
Low Frequency	20–16000 [Hz]	Sets the center frequency of the low range.
Mid Frequency	20–16000 [Hz]	Sets the center frequency of the middle range.
High Frequency	20–16000 [Hz]	Sets the center frequency of the high range.
Mid Q	0.5–16.0	Specifies the width of the mid-frequency region. Higher values make the width more narrow.

PART MFX

Parameter	Value	Explanation
Follow Tone MFX	OFF, ON	If this is OFF, the following parameters are shown. To use the MFX setting of the tone, choose "ON".
Switch	OFF, ON	Switches the MFX on/off.
Category	Selects the MFX category. ➡ "MFX/IFX parameters" (p. 51)	
Type	Selects the MFX type. ➡ "MFX/IFX parameters" (p. 51)	
Chorus Send Level	0–127	Adjusts the amount of chorus. If you don't want to add the chorus effect, set it to "0".
Reverb Send Level	0–127	Adjusts the amount of reverb. If you don't want to add the reverb effect, set it to "0".
MFX parameters	Differs depending on the MFX type. For details, refer to the parameters for each MFX/IFX. ➡ "MFX/IFX parameters" (p. 51)	

MFX CTRL

Parameter	Value	Explanation
Control 1–4 Source	Specifies which MIDI message controls the corresponding MFX parameter.	
	OFF	MFX CONTROL will not be used.
	CC01–CC31	Controller number 1–31, 33–95
	CC33–CC95	
	PITCH BEND	Pitch bend
	AFTER TOUCH	Aftertouch
	SYS-CTRL1–4	Uses the controller that is assigned for Control 1–4 Source, set in SYSTEM EDIT > COMMON.
Control 1–4 Destination	Selects the parameters of the MFX that you want to control with Control Source 1–4. The available parameters differ depending on the MFX Type.	
Control 1–4 Sens	-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.

Controlling a MFX via MIDI (MFX CONTROL)

You can use MIDI messages such as control change messages to control the principal MFX parameters.

This capability is called "MFX CONTROL (multi-effects control)". The editable parameters are pre-determined according to the MFX type. You can specify up to four parameters for multi-effect control.

To use MFX CONTROL, you'll need to specify which MIDI message (Source) will affect which parameter (Destination), and how greatly (Sens).

IFX

Parameter	Value	Explanation
Switch	OFF, ON	Switches the IFX on/off.
Category	Selects the IFX category. ➡ "MFX/IFX parameters" (p. 51)	
Type	Selects the IFX type. ➡ "MFX/IFX parameters" (p. 51)	
Chorus Send Level	0–127	Adjusts the amount of chorus. If you don't want to add the chorus effect, set it to "0".
Reverb Send Level	0–127	Adjusts the amount of reverb. If you don't want to add the reverb effect, set it to "0".
IFX parameters	Differs depending on the IFX type. For details, refer to the parameters for each MFX/IFX. ➡ "MFX/IFX parameters" (p. 51)	

CHORUS/DELAY

If the Source parameter is set to "SCENE", the following parameters are shown, allowing you to edit the chorus type and other parameters.

If the parameter is set to "SYSTEM", the screen indicates "Jump to SYSTEM EDIT" and the parameters aside from Source are not shown.

Parameter	Value	Explanation
Source	SCENE, SYSTEM	Selects whether the chorus/delay effect follows the scene setting (SCENE) or the system setting (SYSTEM).
Switch	OFF, ON	Switches chorus/delay on/off.
Type	Selects the types of chorus/delay. ➡ "CHORUS/DELAY parameters" (p. 8)	
Level	0–127	Specifies the output level of the sound with chorus/delay applied.
Reverb Send Level	0–127	Adjusts the amount of reverb. If you don't want to add the reverb effect, set it to "0".
CHORUS/DELAY parameters	Differs depending on Type. For details, refer to the parameters for each chorus/delay (p. 8).	

CHORUS/DELAY parameters

00 OFF

01 Chorus

This is a stereo chorus.

Parameter	Value	Explanation
Rate	0–127	Adjusts the frequency of modulation.
Depth	0–127	Adjusts the depth of modulation.
Feedback	0–127	Level at which chorus sound is returned to the input.

02 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	Adjusts the depth of chorus.

03 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.

04 Delay

This is a stereo delay.

Parameter	Value	Explanation
Sync	OFF, ON	If this is ON, the delay synchronizes with the tempo.
Delay (msec)	1–1300 [msec]	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay (note)	Note	
Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect (minus: opposite phase).
HF Damp	200–8000 [Hz], BYPASS (*1)	Adjusts the frequency above which the delay sound fed back to the effect is filtered out (BYPASS: no cut).

05 T-Ctrl Delay (Time control delay)

A stereo delay in which the delay time can be varied smoothly.

Parameter	Value	Explanation
Sync	OFF, ON	If this is ON, the delay synchronizes with the tempo.
Delay (msec)	1–1300 [msec]	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay (note)	Note	
Acceleration	0–15	When you change the delay time, this specifies the time over which the current delay time changes to the specified delay time. The speed of the pitch change will change simultaneously with the delay time.
Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect (minus: opposite phase).
HF Damp	200–8000 [Hz], BYPASS (*1)	Adjusts the frequency above which the delay sound fed back to the effect is filtered out (BYPASS: no cut).

06 Delay → Tremolo

Tremolo is applied to the delay sound.

Parameter	Value	Explanation
Input Mode	MONAURAL	The input is mono-mixed.
	STEREO	The sound is input in stereo.
Sync	OFF, ON	If this is ON, the delay synchronizes with the tempo.
Delay (msec)	1–1300 [msec]	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay (note)	Note	
Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect (minus: opposite phase).
HF Damp	200–8000 [Hz], BYPASS (*1)	Adjusts the frequency above which the delay sound fed back to the effect is filtered out (BYPASS: no cut).
Tremolo Switch	OFF, ON	Switches the tremolo effect on/off.
Tremolo Mod Wave	Modulation Wave of panning	
	TRI	Triangle wave
	SQR	Square wave
	SIN	Sine wave
	SAW1	Sawtooth wave
	SAW2	
	TRP	Trapezoidal wave
Tremolo Sync	OFF, ON	If this is ON, the tremolo synchronizes with the tempo.
Tremolo Rate (Hz)	0.05–10.00 [Hz]	Adjusts the tremolo rate.
Tremolo Rate (note)	Note	
Tremolo Depth	0–127	Adjusts the tremolo depth.

07 2Tap Pan Delay

Delayed sound is heard from the two locations you specify.

Parameter	Value	Explanation
Sync	OFF, ON	If this is ON, the delay synchronizes with the tempo.
Delay (msec)	1–1300 [msec]	Adjusts the delay time from the direct sound until the second delay sound is heard.
Delay (note)	Note	
Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect (minus: opposite phase).
HF Damp	200–8000 [Hz], BYPASS (*1)	Adjusts the frequency above which the delay sound fed back to the effect is filtered out (BYPASS: no cut).
Delay 1 Pan	L64–63R	Adjusts the stereo location of delay 1.
Delay 2 Pan	L64–63R	Adjusts the stereo location of delay 2.
Delay 1 Level	0–127	Adjusts the volume of delay 1.
Delay 2 Level	0–127	Adjusts the volume of delay 2.

08 3Tap Pan Delay

Delayed sound is heard from the three locations you specify.

Parameter	Value	Explanation
Sync	OFF, ON	If this is ON, the delay synchronizes with the tempo.
Delay (msec)	1–2600 [msec]	Adjusts the delay time from the direct sound until the third delay sound is heard.
Delay (note)	Note	
Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect (minus: opposite phase).
HF Damp	200–8000 [Hz], BYPASS (*1)	Adjusts the frequency above which the delay sound fed back to the effect is filtered out (BYPASS: no cut).
Delay 1 Pan	L64–63R	Adjusts the stereo location of delay 1.
Delay 2 Pan	L64–63R	Adjusts the stereo location of delay 2.
Delay 3 Pan	L64–63R	Adjusts the stereo location of delay 3.
Delay 1 Level	0–127	Adjusts the volume of delay 1.
Delay 2 Level	0–127	Adjusts the volume of delay 2.
Delay 3 Level	0–127	Adjusts the volume of delay 3.

09 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	Specifies the type of chorus mode. **I+II:** The state in which two buttons are pressed simultaneously.
Noise Level	0–127	Adjusts the amount of noise produced by the chorus.

10 JV Chorus

Parameter	Value	Explanation
Filter Type	OFF	The filter is not used.
	LPF	This filter cuts off the high frequencies.
	HPF	This filter cuts off the low frequencies.
Cutoff Frequency	200–8000 [Hz]	Adjusts the center frequency used when the filter cuts a specific frequency region.
Pre Delay	0.0–100.0 [msec]	Adjusts the delay time from when the direct sound plays until the reverb sound is heard.
Sync	OFF, ON	If this is ON, the delay synchronizes with the tempo.
Rate (Hz)	0.05–10.00 [Hz]	Adjusts the frequency of modulation.
Rate (note)	Note	
Depth	0–127	Adjusts the depth of modulation.
Phase	0–180 [deg]	Adjusts the depth of the chorus sound.
Feedback	0–127	Adjusts how much of the sound that is fed into the chorus is returned to the input.

NOTE

Note 1/64T, 1/64, 1/32T, 1/32, 1/16T, 1/32., 1/16, 1/8T, 1/16., 1/8, 1/4T, 1/8., 1/4, 1/2T, 1/4., 1/2, 1T, 1/2., 1, 2T, 1., 2

(*1) 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz], BYPASS

REVERB

If the Source parameter is set to "SCENE", the following parameters are shown, allowing you to edit the reverb type and other parameters.

If the parameter is set to "SYSTEM", the screen indicates "Jump to SYSTEM EDIT" and the parameters aside from Source are not shown.

Parameter	Value	Explanation
Source	SCENE, SYSTEM	Selects whether the reverb effect follows the scene setting (SCENE) or the system setting (SYSTEM).
Switch	OFF, ON	Switches the reverb on/off.
Type	Selects the type of reverb. ➡ "REVERB parameters" (p. 10)	
Level	0–127	Specifies the output level of the sound with reverb applied.
REVERB parameters	Differs depending on Type. For details, refer to the parameters for each reverb (p. 10).	

REVERB parameters

00 OFF

01 INTEGRA-7 Reverb

Parameter	Value	Explanation
Character	ROOM1, ROOM2, HALL1, HALL2, PLATE	Selects the type of reverb.
Pre Delay	0–100 [msec]	Adjusts the delay time from when the direct sound plays until the reverb sound is heard.
Time	0.1–10.0 [sec]	Adjusts the decay length of the reverb sound.
Density	0–127	Adjusts the density of the reverb sound.
Diffusion	0–127	Adjusts how reverb density increases over time. This effect is especially noticeable with long reverb times.
LF Damp	0–100	Adjusts the low-frequency portion of the reverb.
HF Damp	0–100	Adjusts the high-frequency portion of the reverb.
Spread	0–127	Adjusts the reverb spread.
Tone	0–127	Adjust the tonal character of the reverb.

02 Warm Hall

Parameter	Value	Explanation
Pre Delay	0.0–100.0 [msec]	Adjusts the delay time from when the direct sound plays until the reverb sound is heard.
Time	0.3–30.0 [sec]	Adjusts the decay length of the reverb sound.
Pre LPF	16–15000 [Hz], BYPASS (*1)	Adjusts the frequency above which to cut the high-frequency portion of the sound entering the reverb.
Pre HPF	16–15000 [Hz], BYPASS, (*2)	Adjusts the frequency below which to cut the low-frequency portion of the sound entering the reverb.
Pre Loop LPF	16–15000 [Hz], BYPASS (*1)	Adjusts the frequency above which to cut the high-frequency portion of the extended reverberation.
Diffusion	0–127	Adjusts the change in the density of the reverb over time.
HF Damp Frequency	1000–8000 [Hz] (*3)	Adjusts the frequency above which the high-frequency portion of the reverb sound is cut.
HF Damp Ratio	0.1–1.0	Adjusts the amount by which to attenuate the high-frequency portion of the reverb.

03 Hall

Parameter	Value	Explanation
Pre Delay	0.0–100.0 [msec]	Adjusts the delay time from when the direct sound plays until the reverb sound is heard.
Time	0–127	Adjusts the decay length of the reverb sound.
Size	1–8	Adjusts the size of room/hall.
High Cut	160–12500 [Hz], BYPASS (*4)	Adjusts the frequency above which the high-frequency portion of the final output sound is cut (BYPASS: no cut).
Density	0–127	Adjusts the density of the reverb sound.
Diffusion	0–127	Adjusts how reverb density increases over time. This effect is especially noticeable with long reverb times.
LF Damp Frequency	50–4000 [Hz] (*5)	Adjusts the frequency below which the low-frequency portion of the reverb sound is cut.
LF Damp Gain	-36–0 [dB]	Adjusts the LF damp attenuation amount (0: no effect).
HF Damp Frequency	4000–12500 [Hz] (*6)	Adjusts the frequency above which the high-frequency portion of the reverb sound is cut.
HF Damp Gain	-36–0 [dB]	Adjusts the HF damp attenuation amount (0: no effect).

04 GS Reverb

Parameter	Value	Explanation
Character	ROOM1, ROOM2, ROOM3, HALL1, HALL2, PLATE, DELAY, PAN-DELAY	Selects the type of reverb.
Pre LPF	0–7	Adjusts the amount of high-frequency attenuation for the sound being input to the reverb.
Time	0–127	Adjusts the decay length of the reverb sound.
Delay Feedback	0–127	Adjusts the level at which the reverb sound is returned to the input.

05 SRV-2000

Parameter	Value	Explanation
Selection	R0.3, R1.0, R7.0, R15, R22, R26, R32, R37, H15, H22, H26, H32, H37, P-B, P-A	Selects the type of reverb offered by the Roland SRV-2000 digital reverb.
Pre Delay	0–160 [msec]	Adjusts the delay time from when the direct sound plays until the reverb sound is heard.
Time	0.1–99.0 [sec]	Adjusts the decay length of the reverb sound.
HF Damp	0.05–1.00	Adjusts the high-frequency portion of the reverb.
Density	0–9	Adjusts the density of the late reverberation.
Attack Gain	0–9	Adjusts the gain of the early reflections.
Attack Time	0–9	Adjusts the time of the early reflections.
ER Density	0–9	Adjusts the density of the early reflections.
ER Level	0–99	Adjusts the volume of the early reflections.
EQ Low Frequency	0.04–1.00 [kHz]	Sets the center frequency of the low range.
EQ Low Gain	-24–+12 [dB]	Adjusts the gain of the low range.
EQ Mid Frequency	0.25–9.99 [kHz]	Sets the center frequency of the middle range.
EQ Mid Gain	-24–+12 [dB]	Adjusts the gain of the middle range.
EQ Mid Q	0.2–9.0	Width of the middle range. Set a higher value for Q to narrow the range to be affected.
EQ Hi Frequency	0.80–9.99 [kHz]	Sets the center frequency of the high range.
EQ Hi Gain	-24–+12 [dB]	Adjusts the gain of the high range.
EQ Hi Q	0.2–9.0	Specifies the width of the high-frequency range. Set a higher value for Q to narrow the range to be affected.

06 SRV-2000 NON-LINEAR (NON-LINEAR)

Parameter	Value	Explanation
Pre Delay	0–120 [msec]	Adjusts the delay time from when the direct sound plays until the reverb sound is heard.
Reverb Time	-0.9–+99.0 [sec]	Adjusts the decay length of the reverb sound.
Gate Time	10–450 [msec]	Adjusts the time from when the reverb starts being heard until the reverb sound is cut off.
EQ Low Frequency	0.04–1.00 [kHz]	Sets the center frequency of the low range.
EQ Low Gain	-24–+12 [dB]	Adjusts the gain of the low range.
EQ Mid Frequency	0.25–9.99 [kHz]	Sets the center frequency of the middle range.
EQ Mid Gain	-24–+12 [dB]	Adjusts the gain of the middle range.
EQ Mid Q	0.2–9.0	Width of the middle range. Set a higher value for Q to narrow the range to be affected.
EQ Hi Frequency	0.80–9.99 [kHz]	Sets the center frequency of the high range.
EQ Hi Gain	-24–+12 [dB]	Adjusts the gain of the high range.
EQ Hi Q	0.2–9.0	Specifies the width of the high-frequency range. Set a higher value for Q to narrow the range to be affected.

07 GM2 Reverb

Parameter	Value	Explanation
Character	SMALL ROOM, MEDIUM ROOM, LARGE ROOM, MEDIUM HALL, LARGE HALL, PLATE	Selects the type of reverb.
Time	0–127	Adjusts the decay length of the reverb sound.

08 Gate Reverb

Parameter	Value	Explanation
Type	NORMAL	This is a standard gate reverb.
	REVERSE	This is a reverb for which the sound ramps up in volume.
	SWEEP1	The reverb sound moves from right to left.
	SWEEP2	The reverb sound moves from left to right.
Pre Delay	0.0–100.0 [msec]	Adjusts the delay time from when the direct sound plays until the reverb sound is heard.
Gate Time	5–500 [msec]	Adjusts the decay length of the reverb sound.

NOTE

(*1) 16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 15000 [Hz], BYPASS

(*2) BYPASS, 16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 15000 [Hz]

(*3) 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]

(*4) 160, 200, 250, 320, 400, 500, 640, 800, 1000, 1250, 1600, 2000, 2500, 3200, 4000, 5000, 6400, 8000, 10000, 12500 [Hz], BYPASS

(*5) 50, 64, 80, 100, 125, 160, 200, 250, 320, 400, 500, 640, 800, 1000, 1250, 1600, 2000, 2500, 3200, 4000 [Hz]

(*6) 4000, 5000, 6400, 8000, 10000, 12500 [Hz]

VOCODER

VOCODER/AUTO PITCH

Parameter	Value	Explanation
Switch	OFF, ON	Turns the vocoder function on/off.
Type	CARRIER THRU, VOCODER, AUTO PITCH	Select the type of vocoder. If "CARRIER THRU" is selected, VOCODER does not function.
VOCODER		
Envelope	This selects the type of pronunciation.	
	SHARP	The human voice is emphasized.
	SOFT	The sound of the instrument is emphasized.
	LONG	Produces a vintage sound with long reverberations.
Mic Dry Level	0–127	Sets the volume of direct audio input from the MIC INPUT jack.
Mic Sens	-24.0–+24.0 [dB]	Adjusts the input level to the vocoder.
Pan	L64–63R	Sets the panning of the sound played by the vocoder.
Level	0–127	Adjusts the output level of the sound played by the vocoder.
AUTO PITCH		
Auto Pitch Type	Selects how the auto pitch is corrected.	
	SOFT	Applies smooth corrections to the pitch.
	HARD	Applies rapid corrections to the pitch.
	ELECTRIC1	Applies step-like corrections to the pitch.
	ELECTRIC2	More pitch correction is applied than for "ELECTRIC1". This reproduces the mechanical step-like pitch changes used in pop music.
	ROBOT	Changes the pitch to a specific note name.
Scale	CHROMATIC, MAJOR, MINOR, PENTATONIC, RYUKYU, AUG, ♭5	Select the scale you want to use for correcting the auto pitch.
Key	C, C♯, D, D♯, E, F, F♯, G, G♯, A, A♯, B	Sets the key in which the vocoder pitches are produced when Scale is not "CHROMATIC".
Octave	-1–+1	Raises or lowers the pitch in octaves.
Gender	-10–+10	Adjusts the vocal character. Settings in the negative (–) range produce a more masculine vocal character, and settings in the positive (+) range produce a more feminine vocal character.
Note	C, C♯, D, D♯, E, F, F♯, G, G♯, A, A♯, B	Specifies the note name. * This is effective when Type is "ROBOT".
Delay	0–100 [msec]	Delays the output of the sound that's processed by auto pitch.
Tone	-50–+50	Adjusts the brightness of the voice of the sound that's processed by auto pitch. Smaller negative values produce a darker sound, and larger positive values produce a brighter sound.
Mic Dry Level	0–127	Sets the volume of direct audio input from the MIC INPUT jack.
Mic Sens	-24–+24 [dB]	Adjusts the level of signal input to the auto pitch.
Pan	L64–63R	Adjusts the panning of the sound that's processed by auto pitch.
Level	0–127	Adjusts the output level of the sound that's processed by auto pitch.

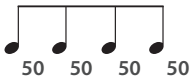
ARPEGGIO

COMMON

Parameter	Value	Explanation
Switch	OFF, ON	Turns the arpeggiator on/off. * This works in connection with the [ARPEGGIO] button on the control panel.
Hold Switch	OFF, ON	When this is set to "ON", the arpeggio keeps playing even after you take your fingers off the keyboard. **MEMO** Press the [ARPEGGIO] button while holding down the [SHIFT] button to turn the Hold Switch on/off.

PART

Parameter	Value	Explanation
Switch	OFF, ON	Turns the arpeggio on/off for each part.
Style	001–128	Sets the basic arpeggio style. ➡ "Arpeggio style list" (p. 46)
Variation	1–	The arpeggiator features several variations (playing patterns) for each arpeggio style. Select the variation number here. The number of variations depends on the arpeggio style.
Mode	You can set the order in which the chord tones are played as follows.	
	UP	The notes sound in ascending order.
	DOWN	The notes sound in descending order.
	UP&DOWN	The notes sound in ascending order, and then in descending order once the highest note is reached.
	RANDOM	The notes sound in random order.
	NOTE ORDER	The notes sound in the order in which you press the keys.
Octave Range	-3–+3	Sets the range in octaves over which the arpeggio plays. To hear only the chord you're playing on the keyboard, set this to "0". To hear the chord you're playing along with the notes up to octave higher, set this to "+1"; and to hear the chord you're playing along with the notes down to one octave lower, set this to "-1".
Duration	This sets the length of time (as a percentage) over which each of the arpeggiated notes is heard. You can set this to make the arpeggiated notes sound briefly for a staccato feel, or at their full duration for a tenuto feel.	
	0–100 [%]	For example, if you set this to "30%", the duration of the note is 30% of the note length.
Scale	4/1–1/32, 1/2T–1/16T, 1/2.–1/16.	Sets the length of one note for each step that the arpeggio plays.
Transpose	-36–+36	Shifts the arpeggio notes in semitone steps.

Parameter	Value	Explanation
Velocity	Sets the strength at which the arpeggio notes sound.	
	REAL	The velocity changes depending on how hard you press the keys.
	1–127	The notes sound at the velocity you set here, regardless of how hard you press the keys.
Offset Velocity	-127–+127	Shifts the velocity values. Use this if the velocity values are not an appropriate match with other parts.
Shuffle Rate	0–100%	Varies the timing of even-numbered beats, creating a shuffle rhythm. A setting of "50%" sounds the notes at equal timing, and increasing this value produces more of a dotted shuffle feel. **Shuffle Rate = 50%**  50 50 50 50 **Shuffle Rate = 90%**  90 10 90 10
Shuffle Resolution	Specifies the note resolution that is the reference for the shuffle setting.	
	16TH	Sixteenth note
	8TH	Eighth note

CHORD MEMORY

COMMON

Parameter	Value	Explanation
Switch	OFF, ON	Turns the chord memory function on/off. * This works in connection with the [CHORD] button on the control panel.
Form	Selects the type of chord set you want to assign to the C–B keys. ➡ "Chord memory list" (p. 47)	
Key	G–F♯	Changes the chord key.
Rolled Switch	ON	Instead of playing the chords at the same time, the chords are played sequentially. The speed at which the notes play depends on how hard you press the keys. For instance, you can simulate playing a guitar just by playing the keys.
	OFF	Plays the chord tones as a chord.
Rolled Type	UP	Plays the chord tones from low to high.
	DOWN	Plays the chord tones from high to low.
	ALTERNATE	Each time you press a key, the order in which the chord tones are played changes.

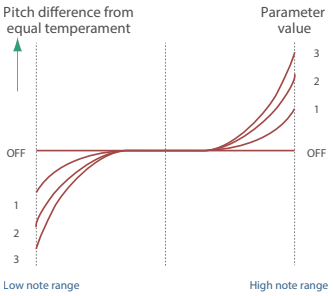
PART

Parameter	Value	Explanation
Switch	OFF, ON	Sets whether the chord memory for each part is on or off. * This switch works in conjunction with the arpeggio part switch.

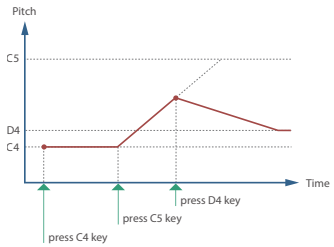
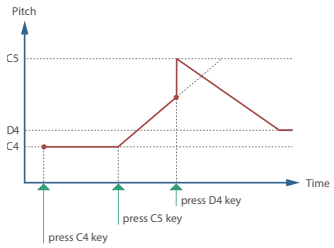
TONE EDIT parameters

COMMON

COMMON

Parameter	Value	Explanation
Category	Selects the tone's category. ➡ "Sound list" (Roland website): Preset tone list	
Tone Level	0–127	Adjusts the overall volume of the tone.
Tone Pan	L64–0–63R	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–+48	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.
Octave Shift	-3–+3	Adjusts the pitch of the tone's sound up or down in units of an octave.
Stretch Tune Depth	OFF, 1–3	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. 
Analog Feel	0–127	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.

Parameter	Value	Explanation
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	OFF, ON	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. • If the OSC Type is PCM, this is limited to monophonic 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	2–8	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	0–100	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	OFF, ON	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.
Legato Retrigger Interval	0–12, OFF	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 D♭4–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.

Parameter	Value	Explanation
Portamento Switch	OFF, ON	Specifies whether the portamento effect will be applied (ON) or not applied (OFF). * Portamento is an effect which smoothly changes the pitch from the first-played key to the next-played key. When "MONO/POLY" is set to "MONO" and portamento is applied, you can obtain slide effects like the sound of playing a violin.
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 when another key is pressed while the pitch is changing. 

Parameter	Value	Explanation
Portamento Time	0–1023	When portamento is used, this specifies the time over which the pitch will change. Higher settings will cause the pitch change to the next note to take more time.
Bend Range Up	0–48	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	0–48	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	0–100	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	0–100	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 lever passes through the center position.
Soft Level Sens	0–100	Specifies the amount of volume change that occurs when you operate the soft pedal (CC♯67). This is effective when specified for piano sounds.

PARTIAL

On the PARTIAL screen, you can make the following settings.

Tab	Explanation	Page
STRUCTURE	Determines how the partials are combined.	p. 18
KEYBOARD	Sets the key range and velocity range.	p. 19
OSC	Sets the basic waveform for the tone.	p. 20
PITCH	Configures the pitch-related settings.	p. 21
PITCH ENV	Configures the pitch envelope settings.	p. 22
FILTER	Configures the filter settings.	p. 22
FILTER ENV	Configures the filter envelope settings.	p. 24
AMP	Configures the volume settings.	p. 25
AMP ENV	Configures the amp envelope settings.	p. 25
LFO1–2	Sets the LFO's waveform and how fast it modulates.	p. 26
STEP LFO1–2	Sets the modulation of the sound for steps 1–16.	p. 27
OUTPUT	Configures how the sounds are output.	p. 28
CONTROL	Configures the settings for the controllers.	p. 28
MTRX CTRL1–4	Configures the matrix control 1–4 settings.	p. 29

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

- Key Range Low
- Key Range Up
- Key Range Fade Low
- Key Range Fade Up
- Velocity Range Low
- Velocity Range Up
- Velocity Fade Low
- Velocity Fade Up

SWITCH

- Partial Switch

OSC

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

CONTROL

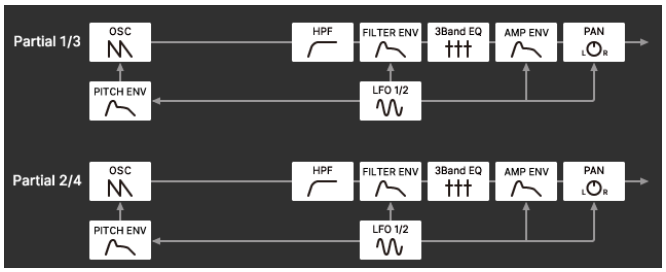
- Envelope Mode
- Receive Hold-1
- Redamper Switch
- Damper Free Note

MATRIX CONTROL

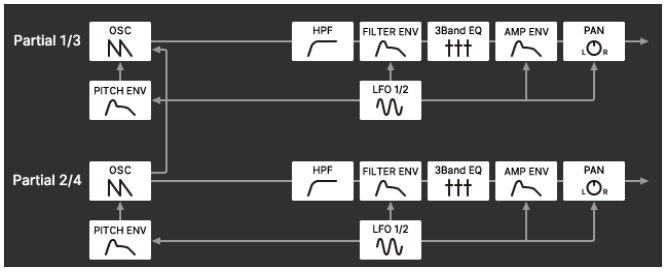
- Destination: PMT
- Destination: CROSS-MOD

Parameter	Value	Explanation
Structure 1-2 (also applies for Structure 3–4)	This configures how Partial 1 (Partial 3) is modulated by Partial 2 (Partial 4).	
	OFF	OFF
	SYNC	Implements the oscillator sync function that is provided by an analog synthesizer. Resets the oscillators of Partial 1 (Partial 3) with the pitch cycle of Partial 2 (Partial 4). * This is effective if OSC Type is VA or PCM-Sync.
	RING	Implements the ring modulator function that is provided by an analog synthesizer. Multiplies the sound of Partial 2 (Partial 4) with Partial 1 (Partial 3).
	XMOD, XMOD2	Implements the cross modulation function that is provided by an analog synthesizer. This produces the sound of Partial 2 (Partial 4) as the pitch of Partial 1 (Partial 3). * XMOD2 is available when Partial 1 and 3 are OSC Type "VA".
Ring 1-2 Level (also applies for Ring 3–4 Level)	0–127	Sets the ring level when Structure 1–2 (Structure 3–4) is set to "RING".
Ring OSC 1 Level (also applies for Ring OSC 2–4 Level)	0–127	Sets the Partial 1 (Partial 2–4) OSC level when Structure 1–2 (Structure 3–4) is set to "RING".
XMOD 1-2 Depth (also applies for XMOD2 1–2 Depth)	0–10800 [cent]	Sets the cross-modulation depth when Structure 1–2 (Structure 3–4) is set to "XMOD".
XMOD2 1-2 Depth (also applies for XMOD2 3–4 Depth)	0–127	Sets the cross-modulation depth when Structure 1–2 (Structure 3–4) is set to "XMOD2".
XMOD OSC 1 Level (also applies for XMOD OSC 2–4 Level)	0–127	Sets the OSC level for Partial 1 (Partial 2–4) when Structure 1–2 (Structure 3–4) is set to XMOD or XMOD2.
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.

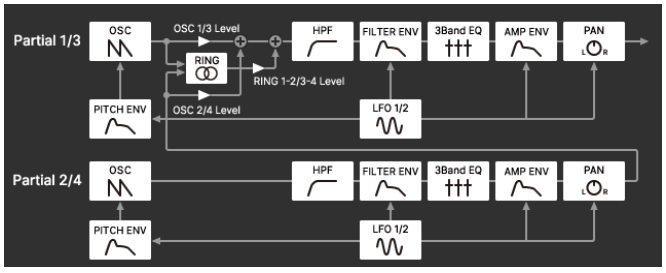
OFF



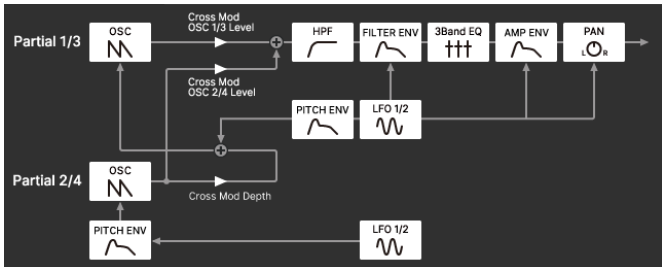
SYNC



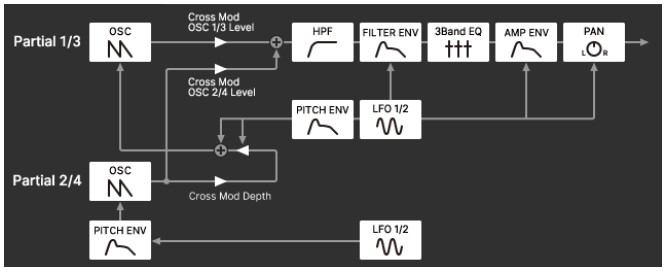
RING



XMOD

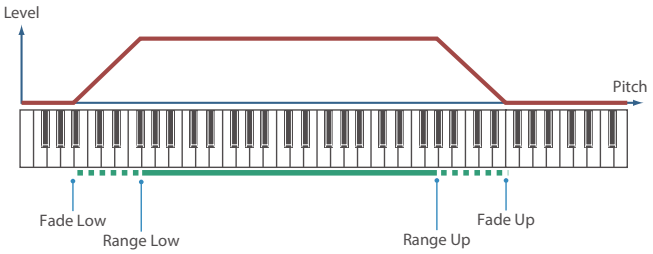


XMOD2

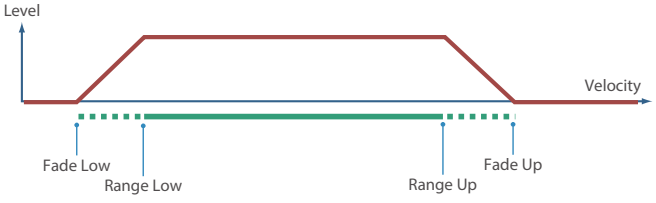


KEYBOARD

Parameter	Value	Explanation
Velocity Control	OFF, ON, RANDOM, CYCLE	Specifies how partials are played according to your keyboard playing dynamics (velocity). If this is "ON", different partials are sounded according to the playing velocity and the Velocity Range Low/Up and Velocity Fade Low/Up settings. • If this is "RANDOM" or "CYCLE", each partial is sounded randomly or cyclically. • 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. • In the case of "RANDOM" or "CYCLE", velocity has no effect, but you'll need to make settings for each partial so that the Velocity Range does not conflict.
PMT Level Curve	EXP	When using Velocity Control to switch between partials, the crossfade level changes in a non-linear curve.
	LINEAR	When using Velocity Control to switch between partials, the crossfade level changes in a linear curve.



Parameter	Value	Explanation
Key Range Low	0–127	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 key range.
Key Range Up	0–127	
Key Range Fade Low	0–127	Specifies the degree to which the partial is sounded by notes played below the Key Range Low. If you don't want the tone to sound at all, set this parameter to "0".
Key Range Fade Up	0–127	Specifies the degree to which the partial is sounded by notes played above the Key Range Up. If you don't want the tone to sound at all, set this parameter to "0".

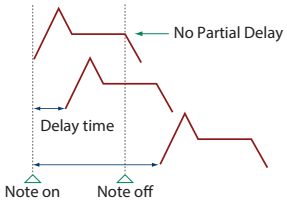
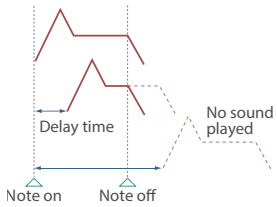
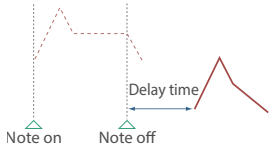
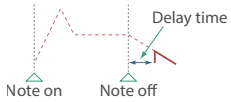


Parameter	Value	Explanation
Velocity Range Low	1–127	Specify the lower limit (Lower) and upper limit (Upper) of the velocities that will sound the partial.
Velocity Range Up	1–127	Make these settings when you want different partials to sound depending on keyboard playing dynamics.
Velocity Fade Low	0–127	Specifies the degree to which the partial is sounded by notes played more softly than Velocity Range Low. If you don't want the tone to sound at all, set this parameter to "0".
Velocity Fade Up	0–127	Specifies the degree to which the partial is sounded by notes played more strongly than Velocity Range Up. If you don't want the tone to sound at all, set this parameter to "0".

OSC

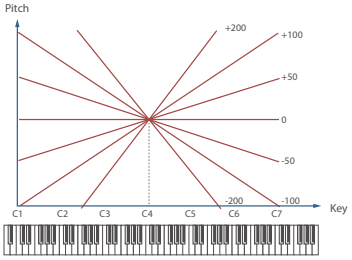
Parameter	Value	Explanation
OSC Type	Specifies the oscillator type.	
	PCM	PCM is used. The wave of the number specified by the Wave Group and Wave Number L/R is used.
	VA	A numerically calculated analog-modeled wave is generated. The wave specified by Waveform is used.
	P-Sync	The wave of the number specified by PCM-Sync Wave Number is used.
	SSAW	SuperSAW is used.
	Noise	White noise is used.
Wave Group	Sets the wave group that plays when OSC Type is "PCM".	
	INT	Uses the built-in waves.
	EXP	Uses the expansion waves.
	SAMP	Uses the samples as waves.
	MSAMP	Uses the multisamples as waves.
Wave Bank	A, B, C, D	Specifies the bank of the wave group that is used when OSC Type is PCM.
Wave Number L	Specifies the wave number within the group specified by Wave Group.	
Wave Number R	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 Number L and leave Wave Number R at 0: OFF. If you specify only Wave Number R, no sound is heard. ➡ Sound List (Roland website): Waveform list	
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
Waveform Invert Sw	OFF, ON	If this is ON, the phase of the VA waveform is inverted.

Parameter	Value	Explanation
PCM-Sync Wave No.	Specifies the wave that is used when OSC Type is PCM-Sync. PCM-Sync is an oscillator type that's effective when you configure it as follows: **Structure**: SYNC **Structure 1–2**: Partial 1 **Structure 3–4**: Partial 3	
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.
Pulse Width	0–127	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.
PWM Depth	-63–+63	Specifies the amount (depth) of LFO applied to PW (Pulse Width). PW is modulated according to the LFO2 setting.
SuperSAW Detune	0–127	Adjusts the Detune depth for SuperSAW. Higher values produce a deeper Detune effect. * This is effective when SuperSAW is selected as the OSC Type.
Click Type	SOFT, HARD, NTRL, OFF	Changes the sense of attack by varying the position at which the sound starts. This is effective if OSC Type is VA. However, HARD is effective only when Waveform is TRI, TRI2, SIN, or SIN2.
Fat	0–127	Boosts the low-frequency region. * This is effective if OSC Type is VA.
OSC Attenuator	0–255	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".
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.

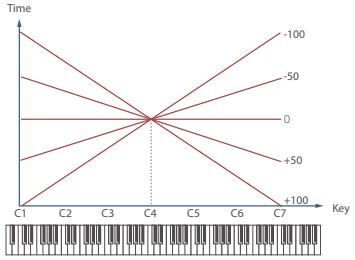
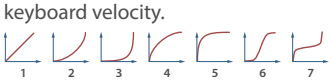
Parameter	Value	Explanation
Delay Mode		**Partial Delay** This produces a time delay between the moment a key is pressed (or released), and the moment the partial actually begins to sound. You can also make settings that shift the timing at which each partial is sounded. This differs from the Delay in the internal effects, in that by changing the sound qualities of the delayed partials and changing the pitch for each partial, you can also perform arpeggio-like passages just by pressing one key. You can also synchronize the partial delay time to the tempo of the external MIDI sequencer. 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).
	NORM	When you press a key, the partial begins to play after the time specified in the Partial Delay Time parameter has elapsed. 
	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. 
	OFF-N	The partial is not 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. 
	OFF-D	The partial is not played while the key is pressed. The partial plays once the period of time specified in the Partial Delay Time parameter has elapsed after release of the key. Here, however, changes in the TVA 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. 

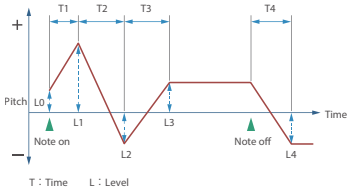
Parameter	Value	Explanation
Delay Time Sync	OFF, ON	Set this ON if you want the partial delay time to synchronize with the tempo.
Delay Time (note)	1/64T–2	This is available when Delay Time Sync is ON. It specifies the delay time in terms of a note value.
Delay Time	0–1023	This is available when Delay Time Sync is OFF. It specifies the delay time without regard to the tempo.
Wave Tempo Sync	OFF, ON	Matches the wave playback to the tempo. This only works with waves for which the BPM is indicated. 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.
ADSR Switch	OFF, ON	This simulates the operation of the ADSR envelope that is provided on an analog synthesizer. If ADSR 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.

PITCH

Parameter	Value	Explanation
Coarse Tune	-48–+48	Adjusts the pitch of the sound up or down in semitone steps (+/-4 octaves).
Fine Tune	-50–+50	Adjusts the pitch of the sound up or down in 1-cent steps.
Random Pitch Depth	0–1200	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	-200–+200	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. 
Vibrato Pitch Sens	-100–+100	Specifies how the Pitch Depth of LFO1 is affected by the part parameter's OFFSET: Vibrato Depth.
Stereo Detune	-50–+50	Specifies the detune between L↔R when outputting in stereo.

PITCH ENV

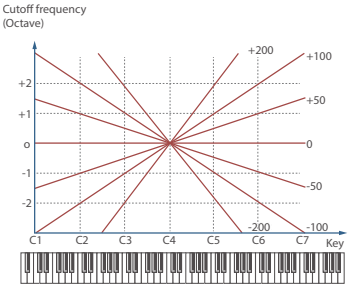
Parameter	Value	Explanation
Env Depth	-100–+100	Adjusts the effect of the Pitch Envelope. Higher settings will cause the pitch envelope to produce greater change. Negative (-) value will invert the shape of the envelope. If OSC Type is other than VA, this is limited to ±63.
Velocity Sens	-100–+100	Keyboard 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 key location. Based on the pitch envelope times for the C4 key (middle C), 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	0–7	Selects one of the following 7 curves that will determine how keyboard playing dynamics will affect the pitch envelope. Set this to "0" if you don't want the pitch envelope 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.

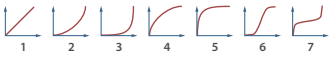
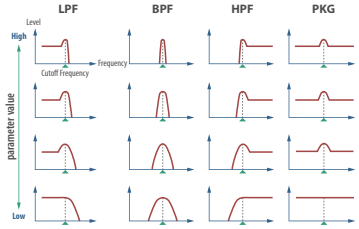
Parameter	Value	Explanation
T1/Attack, T2, T3/Decay, T4/Release	0–1023	Specify the pitch envelope times (Time 1–Time 4). Higher settings will result in a longer time until the next pitch is reached. (For example, Time 2 is the time over which the pitch changes from Level 1 to Level 2.) * If ADSR Envelope Switch 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 Envelope Switch is ON, only Level 3 (Sustain) has an effect. Also in this case, settings with a negative value are ignored.

FILTER

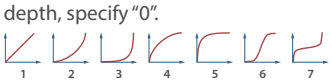
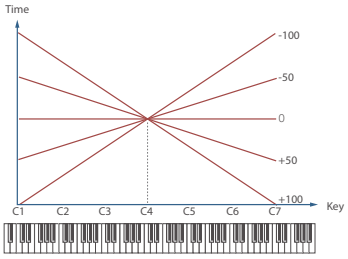
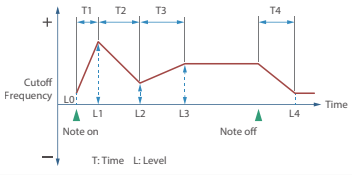
Parameter	Value	Explanation
Filter Type	TVF, VCF	Selects the type of filter. * TVF stands for Time Variant Filter, a filter that lets you specify in detail how the frequency components of the sound change over time. If you select VCF, the polyphony will be lower than if you select TVF.

Parameter	Value	Explanation
TVF Filter Type	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 (p. 24).
	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 (p. 24).
VCF Type	1–4	* This parameter is effective when Filter Type is VCF. Each setting simulates the operation of an analog synthesizer's LPF.

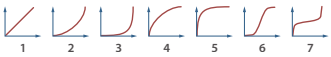
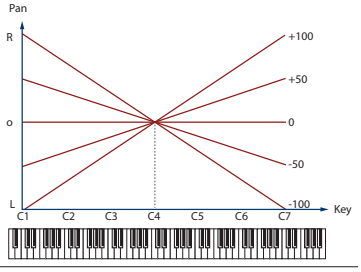
Parameter	Value	Explanation
Filter Slope	-12, -18, -24 [dB/Oct]	This button selects the slope (steepness) of the filter. For VCF, you can choose -12, -18, or -24. For TVF, only -12 or -24 can be selected. If Filter Type is TVF, the following limitations apply. • You can specify only -12 dB or -24 dB. 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.
HPF Cutoff	0–1023	Specifies the cutoff frequency of the -6 dB high-pass filter. * This parameter is effective when Filter Type is VCF.
Cutoff	0–1023	Selects the frequency at which the filter begins to have an effect on the waveform's frequency components. When the TVF Filter Type is set to "LPF/LPF2/LPF3" and when the Filter Type is set to "VCF", lower cutoff frequency settings reduce a tone's upper harmonics for a more rounded, warmer sound. Higher settings make it sound brighter. When TVF Filter Type is set to "BPF", the harmonic components that sound change depending on the cutoff frequency value. This can be useful when creating distinctive sounds. When TVF Filter Type is set to "HPF", a higher cutoff frequency produces less lower overtones, which emphasizes the sound's brightness. When TVF Filter Type is set to "PKG", the harmonic components that are emphasized change depending on the cutoff frequency value.
Keyfollow	-200–+200	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. 

Parameter	Value	Explanation
Cutoff Velocity Curve	0–7	Selects one of the following seven curves that determine how keyboard playing dynamics (velocity) influence the cutoff frequency. Set this to "0" if you don't want the cutoff frequency to be affected by the keyboard velocity. 
Cutoff Velocity Sens	-100–+100	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.
Cutoff Keyfollow BP	0–127	Specifies the reference key when using Keyfollow to modify the cutoff frequency. If this is 60, the C4 key (middle C) is the reference key.
Resonance	0–1023	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. 
Resonance Velo Sens	-100–+100	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.
Vibrato Cutoff Sens	-100–+100	Specifies how the TVF Depth of LFO1 is affected by the part parameter's OFFSET: Vibrato Depth.

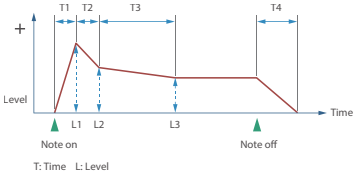
FILTER ENV

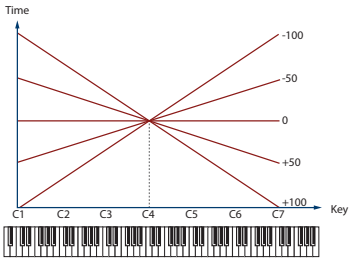
Parameter	Value	Explanation
Env Depth	-63–+63	Specifies the depth of the Filter envelope. Higher settings increase the change produced by the Filter envelope. Negative (-) value will invert the shape of the envelope.
TVF Env Fine Depth	-63–+63	Finely adjusts the depth of the filter envelope.
Velocity Curve	0–7	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 "0". 
Velocity Sens	-100–+100	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.
T1 Velocity Sens	-100–+100	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.
T4 Velocity Sens	-100–+100	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.
Time Keyfollow	-100–+100	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. 
LFO Trigger Switch	OFF, ON	If this is ON, the filter 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 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 Envelope Switch is ON, the Time 2 has no effect. 
L0, L1, L2, L3/Sustain, L4	0–1023	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 Envelope Switch is ON, only Level 3 (Sustain) has an effect.

AMP

Parameter	Value	Explanation
Level	0–127	Sets the volume of the partial. This setting is useful primarily for adjusting the volume balance between partials.
Velocity Curve	0–7	Selects one of the following seven curves that determine how keyboard dynamics will affect the volume. Set this to "0" 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.
Bias Level	-100–+100	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.
Bias Position	0–127	Specifies the key relative to which the volume will be modified. A setting of 64 is the C4 key (middle C).
Bias Direction	Selects the direction in which change will occur starting from the Bias Position.	
	LWR	The volume will be modified for the keyboard area below the Bias Point.
	UPR	The volume will be modified for the keyboard area above the Bias Point.
	L&U	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	-100–+100	Use this parameter if you want key position to affect panning. Positive (+) value will cause notes higher than C4 key (middle C) to be panned increasingly further toward the right, and negative (-) value will cause notes higher than C4 key (middle C) to be panned toward the left. Higher values will produce greater change. 
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 two partials are set to "L" and "R" respectively, the panning of the two tones will alternate each time they are played.
Vibrato Level Sens	-100–+100	Specifies how the Amp Depth of LFO1 is affected by the part parameter's OFFSET: Vibrato Depth.
Stereo Width	0–100	Adjusts the amount of width when outputting in stereo. This has no effect when outputting in mono.

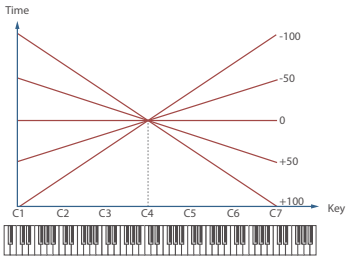
AMP ENV

Parameter	Value	Explanation
T1 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.
T4 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.
LFO Trigger Switch	OFF, ON	If this is ON, the amp 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 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 Envelope Switch is ON, the Time 2 has no effect.
L1, L2, L3/Sustain	0–1023	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 Envelope Switch is ON, only Level 3 (Sustain) has an effect.

Parameter	Value	Explanation
Time Keyfollow	-100–+100	Specify this if you want key 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. 

LFO1/LFO2

Parameter	Value	Explanation
Waveform	Selects the waveform of the LFO.	
	SIN	Sine wave
	TRI	Triangle wave
	S-UP	Sawtooth wave
	S-DW	Sawtooth wave (negative polarity)
	SQR	Square wave
	RND	Random wave
	TRP	Trapezoidal wave
	S&H	Sample & Hold wave (one time per cycle, LFO value is changed)
	CHS	Chaos wave
	VSIN	Modified sine wave. The amplitude of a sine wave is randomly varied once each cycle.
	STEP	A waveform generated by the data specified by LFO Step 1–16. This produces stepped change with a fixed pattern similar to a step modulator.
Tempo Sync Switch	OFF	Set this ON if you want the LFO rate to synchronize with the tempo.
	ON	
Rate (note)	1/64T–4	This is effective if Tempo Sync Switch is ON. Specifies the LFO rate in terms of a note value.
Rate	0–1023	This is effective if Tempo Sync Switch is OFF. Specifies the LFO rate without regard to the tempo. Higher values produce a faster LFO rate (a shorter cycle).
Offset	-100–+100	Raises or lowers the LFO waveform relative to the central value (pitch or cutoff frequency).Positive (+) value will move the waveform so that modulation will occur from the central value upward. Negative (-) value will move the waveform so that modulation will occur from the central value downward.

Parameter	Value	Explanation
Rate Detune	0–127	Subtly changes the LFO cycle speed (Rate parameter) each time you press a key. Higher values produce greater change. This parameter is invalid when Rate is set to "note".
Delay Time	0–1023	Specifies the time elapsed before the LFO effect is applied (the effect continues) after the key is pressed (or released). * After referring to "How to Apply the LFO" (p. 28), change the setting until the desired effect is achieved.
Delay Time Keyflw	-100–+100	Adjusts the value for the Delay Time parameter depending on the key position, relative to the C4 key (middle C). To decrease the time that elapses before the LFO effect is applied (the effect is continuous) with each higher key that is pressed in the upper registers, select a positive (+) value; to increase the elapsed time, select a negative (-) value. Higher values will produce greater change. If you do not want the elapsed time before the LFO effect is applied (the effect is continuous) to change according to the key pressed, set this to "0". 
Fade Mode	ON-IN	Specifies how the LFO will be applied. * After referring to "How to Apply the LFO" (p. 28), change the setting until the desired effect is achieved.
	ON-OUT	
	OFF-I	
	OFF-O	
Fade Time	0–1023	Specifies the time over which the LFO amplitude will reach the maximum (minimum). * After referring to "How to Apply the LFO" (p. 28), change the setting until the desired effect is achieved.
Key Trigger Switch	OFF, ON	Specifies whether the LFO cycle will be synchronized to begin when the key is pressed (ON) or not (OFF).
Pitch Depth	-100–+100	Specifies how deeply the LFO will affect pitch. * If OSC Type is other than VA, the range is limited to -63–+63.
Filter Depth	-100–+100	Specifies how deeply the LFO will affect the cutoff frequency.
Amp Depth	-100–+100	Specifies how deeply the LFO will affect the volume.

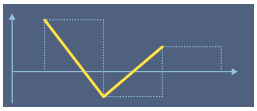
Parameter	Value	Explanation
Pan Depth	-63–+63	Specifies how deeply the LFO will affect the pan. **MEMO** Positive (+) and negative (-) value for the Depth parameter result in differing kinds of change in pitch and volume. For example, if you set the Depth parameter to a positive (+) value for one partial, and set another partial to the same numerical value, but make it negative (-), the modulation phase for the two partials will be the reverse of each other. This allows you to shift back and forth between two different partials, or combine it with the Pan setting to cyclically change the location of the sound image.
Phase Position	Specifies the LFO's starting phase value when Key Trigger is ON. * This has no effect if Waveform is RND, S&H, or CHS.	
	0	1 cycle
	1	1/4 cycle
	2	1/2 cycle
	3	3/4 cycle

STEP LFO1/STEP LFO2

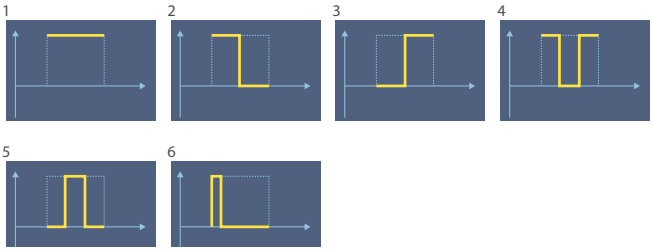
Parameter	Value	Explanation
Step Length	1–16	This is effective if Waveform is STEP. Specifies the step size that is looped.
Step 1-16	-72–+72	This is effective if Waveform is STEP. Specify the Depth value of each step. If you want to specify this in semitones (100 cents), the settings are as follows. 1 Pitch Depth: 51, Step: multiples of 6 … up to one octave of change 2 Pitch Depth: 74, Step: multiples of 3 … up to two octaves of change 3 Pitch Depth: 89, Step: multiples of 2 … up to three octaves of change * If OSC Type is not VA, the Pitch Depth setting range is limited to -63–+63, so only "1" above is possible.
Step Curve 1-16	0–36	Specifies the type of curve at each step. ➡ "Step curve types" (p. 27)

Step curve types

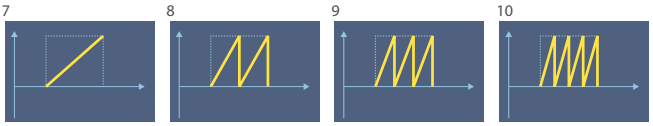
Curve Type 0



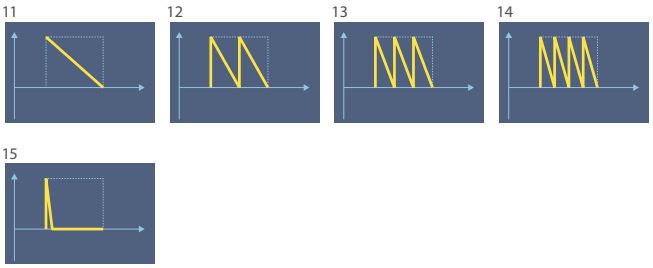
Curve Type 1–6 (variations of square wave)



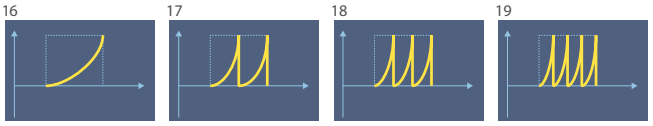
Curve Type 7–10 (variations of ascending saw)



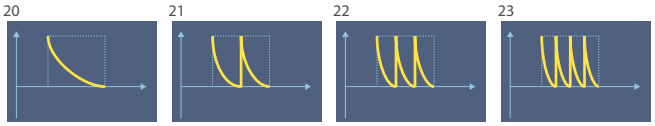
Curve Type 11–15 (variations of descending saw)



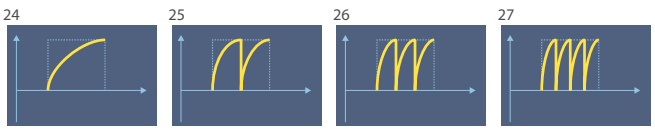
Curve Type 16–19 (variations of ascending exponential)



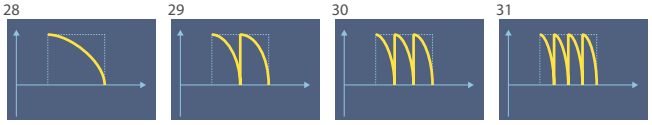
Curve Type 20–23 (variations of descending exponential)



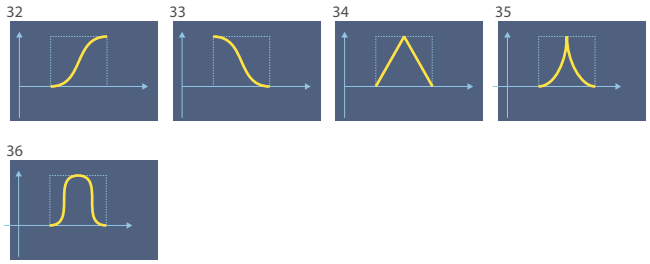
Curve Type 24–27 (variations of ascending charging curve)



Curve Type 28–31 (variations of descending charging curve)



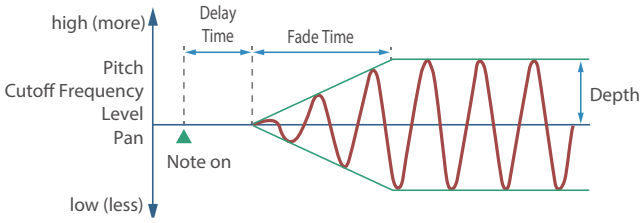
Curve Type 32–36 (other variations)



How to Apply the LFO

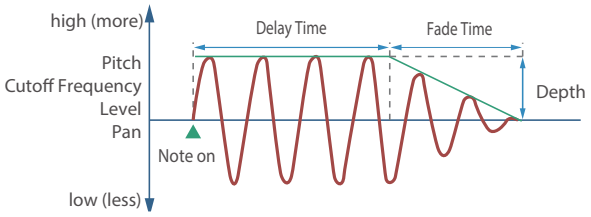
Apply the LFO gradually after the key is pressed

Fade Mode: ON-IN



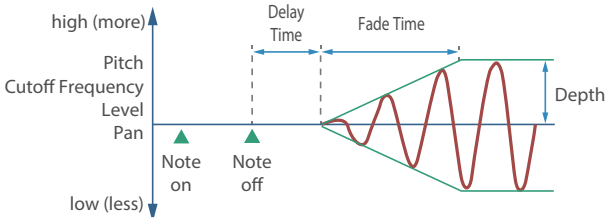
Apply the LFO immediately when the key is pressed, and then gradually begin to decrease the effect

Fade Mode: ON-OUT



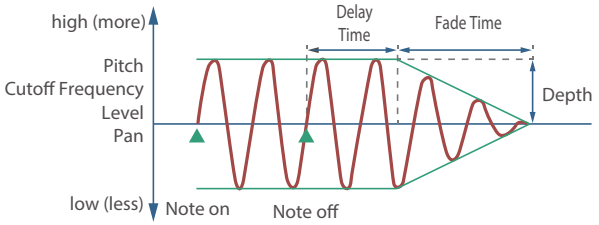
Apply the LFO gradually after the key is released

Fade Mode: OFF-I



Apply the LFO from when the key is pressed until it is released, and gradually begin to decrease the effect when the key is released

Fade Mode: OFF-O



OUTPUT

Parameter	Value	Explanation
Output Assign	DRY, MFX	Specifies how the sound of each partial will be output.
Chorus Send Level	0–127	Specifies the level of the signal sent to the chorus for each partial.
Reverb Send Level	0–127	Specifies the level of the signal sent to the reverb for each partial.

CONTROL

Parameter	Value	Explanation
Envelope Mode	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.
	SUS	The Envelope Level 3 is held from when the envelope Time 3 has elapsed until note-off. When note-off occurs, the envelope transitions from the current value to the Time 4 segment (release segment).
Damper Free Note	OFF, 1–127	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.
Damper Free Dcy Ofs	-100–+100	Specifies a fine adjustment to the time over which the sound decays when the Damper Free Note effect is applied.
Receive Bender	OFF, ON	Specifies for each partial whether MIDI pitch bend messages are received (ON) or not received (OFF).
Receive Expression	OFF, ON	Specifies for each partial whether MIDI expression messages are received (ON) or not received (OFF).
Receive Hold-1	OFF, ON	Specifies for each partial whether MIDI hold 1 messages are received (ON) or not received (OFF).
Redamper Switch	OFF, ON	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. • Envelope Mode is NO-SUS • Amp Envelope's Level 1 and 2 are 1 or greater • Amp Envelope's Times are Time 3 > Time 4
Soft EQ Sens	0–100	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.

MATRIX CONTROL 1–4

Ordinarily, if you wanted to change partial parameters using an external MIDI device, you would need to send System Exclusive messages-MIDI messages designed exclusively for the JUNO-D. However, System Exclusive messages tend to be complicated, and the amount of data that needs to be transmitted can get quite large.

For that reason, a number of the more typical of the JUNO-D'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 lever 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).

Parameter	Value	Explanation
Source (MTRX CTRL 1–4)	Sets the MIDI message used to change the partial parameter with the Matrix Control.	
	OFF	Matrix control will not be used.
	CC01–31, CC33–95	Controller numbers 1–31, 33–95
	BEND	Pitch bend
	AFT	Aftertouch
	S-CTL1–4	Uses the MIDI messages set in the SYSTEM parameters, System Control Source 1–4.
	VELO	Velocity (pressure you press a key with)
	K-FLLW	Keyfollow (keyboard position with C4 as 0)
	TEMPO	Tempo specified by the tempo assign source
	LFO1, LFO2	LFO 1 LFO 2
	P-ENV	Pitch envelope
	F-ENV	Filter envelope
	A-ENV	AMP envelop
Source 1–4 (MTRX CTRL 1–4)	* Velocity and Keyfollow correspond to note messages. * 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. * If you want to use common controllers for the entire JUNO-D, select "S-CTL1"–"S-CTL4". MIDI messages used as System Control 1–4 are set with the SYSTEM EDIT Control 1–4 Source ("MIDI" (p. 42)). **NOTE** • There are parameters that determine whether or not Pitch Bend, Controller Number 11 (Expression) and Controller Number 64 (Hold 1) are received (p. 28). 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". • There are parameters that let you specify whether specific MIDI messages will be received for each zone in a scene (p. 6). When a tone with Matrix Control settings is assigned to a part, confirm that any MIDI messages used for the Matrix Control will be received. If the instrument is set up such that reception of MIDI messages is disabled, then the Matrix Control will not function.	
Destination 1–4 (MTRX CTRL 1–4)	Selects the partial parameter that is to be controlled when using the Matrix Control. The following parameters can be controlled. 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.	
	OFF	Matrix control will not be used.
	PCH	Changes the pitch.
	CUT	Changes the cutoff frequency.
	RES	Emphasizes the portion of the sound in the region of the cutoff frequency, adding character to the sound.
	LEV	Changes the volume level.
	PAN	Changes the pan.
	CHO	Changes the amount of chorus.
	REV	Changes the amount of reverb.
	P-LFO1	Changes the vibrato depth.
	P-LFO2	
	F-LFO1	Changes the wah depth.
	F-LFO2	
	A-LFO1	Changes the tremolo depth.
	A-LFO2	
	PAN-L1	Changes the effect that the LFO will have on pan.
	PAN-L2	

Parameter	Value	Explanation
Destination 1–4 (MTRX CTRL 1–4)	L1-RATE	Changes the speed of the LFO cycles. The speed will not change if LFO Rate is set to "note".
	L2-RATE	
	P-ATK	Changes the Time 1 of the pitch envelope.
	P-DCY	Changes the Time 2 and Env Time 3 of the pitch envelope.
	P-REL	Changes the Time 4 of the pitch envelope.
	F-ATK	Changes the Time 1 of the FLT envelope.
	F-DCY	Changes the Time 2 and Env Time 3 of the FLT envelope.
	F-REL	Changes the Time 4 of the FLT envelope.
	A-ATK	Changes the Time 1 of the AMP envelope.
	A-DCY	Changes the Time 2 and Env Time 3 of the AMP envelope.
	A-REL	Changes the Time 4 of the AMP envelope.
	PMT	If the Matrix Control is used to split partials, set the PMT Velocity Control (p. 19) to "OFF". • If the Matrix Control is used to split partials, we recommend setting the Sens (p. 30) to "+63". Selecting a lower value may prevent switching of the partials. Furthermore, if you want to reverse the effect, set the value to "-63". • If you want to use matrix control to switch smoothly between partials, use the Velocity Fade Low and Velocity Fade Up (p. 20). The higher the values set, the smoother the switch is between the partials.
	FXM	Changes the depth of frequency modulation produced by FXM.
	MFX1	Applies a change to MFX CTRL 1–4 Source. If this is specified for more than one partial, the result will be the summed values.
	MFX2	
	MFX3	
	MFX4	
	PW	Applies change to PW.
	PWM	Applies change to PWM.
	FAT	Applies change to FAT.
	XMOD	This setting is valid only for the carrier partial (Partial 1 or 3), and applies change to the XMOD 1-2 Depth or XMOD 3-4 Depth.
	L1-STP	This is valid if the LFO1/LFO2 Waveform is STEP; it specifies the step position. In this case, the Sens value is ignored.
	L2-STP	
	S-DETN	This is effective if OSC Type is SuperSAW; it applies change to SuperSAW Detune.

Parameter	Value	Explanation
Destination 1–4 (MTRX CTRL 1–4)	P-DPTH	Changes the depth of the Pitch envelope.
	F-DPTH	Changes the depth of the Filter envelope.
	A-DPTH	Changes the depth of the AMP envelope.
	XMOD2	This is effective when Structure 1-2 (3-4) is XMOD2; it applies change to XMOD2 1-2 (3-4) Depth.
	ATT	You can select OSC Attenuator as the Destination.
	RING1	This is effective if Structure is RING. **In the case of Partial 1:** Changes the RING OSC 1 Level of STRUCTURE. **In the case of Partial 2:** This setting has no effect. **In the case of Partial 3:** Changes the RING OSC 3 Level of STRUCTURE. **In the case of Partial 4:** This setting has no effect.
	RING2	This is effective if Structure is RING. **In the case of Partial 1:** Changes the RING OSC 2 Level of STRUCTURE. **In the case of Partial 2:** This setting has no effect. **In the case of Partial 3:** Changes the RING OSC 4 Level of STRUCTURE. **In the case of Partial 4:** This setting has no effect.
	XMOD1	This is effective when Structure is XMOD or XMOD2. **In the case of Partial 1:** Changes the XMOD OSC 1 Level of STRUCTURE. **In the case of Partial 2:** This setting has no effect. **In the case of Partial 3:** Changes the XMOD OSC 3 Level of STRUCTURE. **In the case of Partial 4:** This setting has no effect.
	XMOD2	This is effective when Structure is XMOD or XMOD2. **In the case of Partial 1:** Changes the XMOD OSC 2 Level of STRUCTURE. **In the case of Partial 2:** This setting has no effect. **In the case of Partial 3:** Changes the XMOD OSC 4 Level of STRUCTURE. **In the case of Partial 4:** This setting has no effect.
Sens 1–4 (MTRX CTRL 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, 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.

EFFECTS

PARTIAL EQ

Parameter	Value	Explanation
Switch	OFF, ON	Turns the equalizer on/off for each partial.
Low Gain	-24.0–+24.0 [dB]	Adjusts the gain of the low range.
Mid Gain	-24.0–+24.0 [dB]	Adjusts the gain of the middle range.
High Gain	-24.0–+24.0 [dB]	Adjusts the gain of the high range
Low Frequency	20–16000 [Hz]	Sets the center frequency of the low range.
Mid Frequency	20–16000 [Hz]	Sets the center frequency of the middle range.
High Frequency	20–16000 [Hz]	Sets the center frequency of the high range.
Mid Q	0.5–16.0 (0.1step)	Sets the width of the middle range. Higher values make the width more narrow.

TONE MFX

Parameter	Value	Explanation
Follow Tone MFX	OFF, ON	Select "ON" to enable MFX for the tone.
Switch	OFF, ON	Switches the MFX on/off.
Category	Selects the effect's category. ➡ "MFX/IFX parameters" (p. 51)	
Type	Selects the MFX type. ➡ "MFX/IFX parameters" (p. 51)	
Chorus Send Level	0–127	Adjusts the amount of chorus. If you don't want to add the chorus effect, set it to "0".
Reverb Send Level	0–127	Adjusts the amount of reverb. If you don't want to add the reverb effect, set it to "0".
MFX Parameters	Edit the parameters for the selected MFX. The available parameters differ depending on the type of the effects you selected in MFX Type. ➡ "MFX/IFX parameters" (p. 51)	

MFX CTRL

Parameter	Value	Explanation
Control 1–4 Source	Specifies the MIDI message that will control the corresponding MFX CONTROL parameter.	
	OFF	MFX CONTROL will not be used.
	CC01–31	Controller number 1–31
	CC33–95	Controller number 33–95
	PITCH BEND	Pitch bend
	AFTER TOUCH	Aftertouch
	SYS-CTRL1–4	Use the controller that is assigned by the System Control Source 1–4.
Control 1–4 Destination	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.	
Control 1–4 Sens	-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.

Controlling a MFX via MIDI (MFX CONTROL)

You can use MIDI messages such as control change messages to control the principal MFX parameters. This capability is called "MFX CONTROL (multi-effects control)".

The editable parameters are pre-determined according to the MFX type. You can specify up to four parameters for multi-effect control.

To use MFX CONTROL, you'll need to specify which MIDI message (Source) will affect which parameter (Destination), and how greatly (Sens).

DRUM EDIT parameters

COMMON

COMMON

Parameter	Value	Explanation
Level	0–127	Adjusts the volume of the entire drum kit.

INST

On the INST screen, you can make the following settings.

Tab	Explanation	Page
KEY PARAM	Configures the basic settings for each key.	p. 32
INST CMN	Configures the basic settings for each instrument.	p. 33
INST WAVE	Sets the basic waveform for the instrument.	p. 33
INST WMT	Configures the settings for making different instruments play according to velocity.	p. 34
PITCH ENV	Configures the pitch envelope settings.	p. 35
INST FILTER	Configures the filter settings.	p. 35
FILTER ENV	Configures the filter envelope settings.	p. 36
INST AMP	Configures the volume-related settings.	p. 37
AMP ENV	Configures the amp envelope settings.	p. 37

KEY PARAM

Parameter	Value	Explanation
Inst Number	000–	Selects the Inst to be assigned to the key.
Inst Bank	A, B	Selects the Inst group ID.
Level	0–127	Adjusts the volume of the key.
Pan	L64–0–63R	Adjusts the stereo location of the key.
Chorus Send Level	0–127	Adjusts the amount of chorus for each key.
Reverb Send Level	0–127	Adjusts the amount of reverb for each 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.

Parameter	Value	Explanation
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.

INST CMN

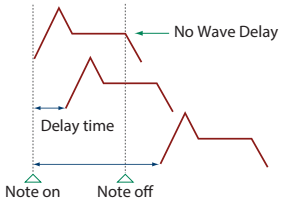
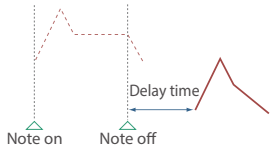
Parameter	Value	Explanation
Category	No Assign, Kick, ...SFX	Selects the Inst's category.
Level	0–127	Adjusts the volume of the Inst.
Source Key	0–127	Specifies the pitch in semitone steps relative to 60 (the original pitch of the instrument).
Fine Tune	-50–+50 [cent]	Adjusts the pitch of the sound up or down in 1-cent steps.
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	MULTI, SINGLE	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 waveform 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.
Wave Tempo Sync	OFF, ON	Matches the wave playback to the tempo. This only works with waves for which the BPM is indicated. When this function is enabled, parameters related to pitch and FXM are disabled.

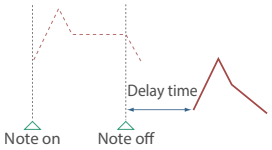
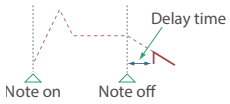
INST WAVE

Parameter	Value	Explanation
Wave Group	INT, EXP, SAMP	Sets the wave group. **INT:** Uses the built-in waves. **EXP:** Uses the expansion waves. **SAMP:** Uses the samples as waves.
Wave Bank	A, B, C, D	Specifies the bank of the Wave Group.
Wave Number L	Specifies the wave number within the group specified by Wave Group.	
Wave Number R	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 Number L and leave Wave Number R at 0: OFF. If you specify only Wave Number R, no sound is heard. ➡ "Sound List" (Roland website): Waveform list	
Wave 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). **MEMO** The Coarse Tune of the entire drum partial is set by the Source Key (p. 33).
Fine Tune	-50–+50	Adjusts the pitch of each Wave's sound up or down in 1-cent steps. * One cent is 1/100th of a semitone. **MEMO** The Fine Tune of the entire drum partial is set by the Fine Tune (p. 33).
Wave Level	0–127	Adjusts the level of each Wave. **MEMO** The volume level of each drum partial is set with the Wave Level; the volume levels of the entire drum kit is set with the Level (p. 32).
Wave Pan	L64–63R	This specifies the pan of the waveform. "L64" is far left, "0" is center, and "63R" is far right.
Random Pan	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 (p. 25).

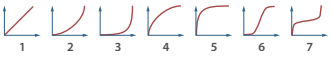
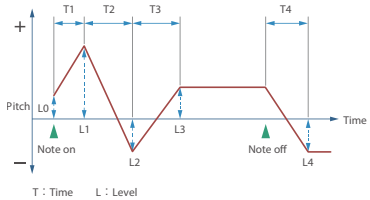
Parameter	Value	Explanation
Alternate Pan	OFF, ON, REVS	This setting causes panning of the waveform to be alternated between left and right each time a key is pressed. Set this to "ON" to pan the Wave according to the Alternate Pan Depth settings, or to "REVS" when you want the panning reversed. If you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

INST WMT

Parameter	Value	Explanation
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. This differs from the Delay in the internal effects, in that by changing the sound qualities of the delayed Wave and changing the pitch for each Wave, you can also perform arpeggio-like passages just by pressing one key. You can also synchronize the Wave delay time to the tempo of the external MIDI sequencer.
	NORMAL	The Wave begins to play after the time specified in the Delay Time parameter has elapsed. 
	HOLD	Although the Wave begins to play after the time specified in the Delay Time parameter has elapsed, if the key is released before the time specified in the Delay Time parameter has elapsed, the Wave is not played. 

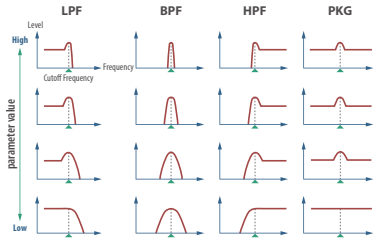
Parameter	Value	Explanation
Delay Mode	OFF-N	Rather than being played while the key is pressed, the Wave begins to play once the period of time specified in the Delay Time parameter has elapsed after release of the key. This is effective in situations such as when simulating noises from guitars and other instruments. 
	OFF-D	Rather than being played while the key is pressed, the Wave begins to play once the period of time specified in the Delay Time parameter has elapsed after release of the key. Here, however, changes in the TVA 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. 
Delay Time Sync	OFF, ON	Set this ON if you want the Wave delay time to synchronize with the tempo.
Delay Time (note)	1/64T–2	This is available when Delay Time Sync is ON. It specifies the delay time in terms of a note value.
Delay Time	0–1023	This is available when Delay Time Sync is OFF. It specifies the delay time without regard to the tempo.
Velocity Range Low	1–127	Specify the lower limit (Lower) and upper limit (Upper) of the velocities that will sound the Waves. Make these settings when you want to play different Waves depending on your keyboard dynamics.
Velocity Range Up	1–127	
Velocity Fade Low	0–127	Specifies the degree to which the Wave is sounded by notes played softer than Velocity Range Low. If you don't want the tone to sound at all, set this parameter to "0".
Velocity Fade Up	0–127	Specifies the degree to which the Wave is sounded by notes played stronger than Velocity Range Low. If you don't want the tone to sound at all, set this parameter to "0".

PITCH ENV

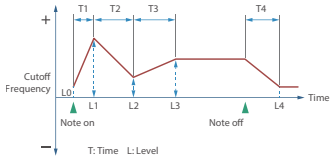
Parameter	Value	Explanation
Env Depth	-100–+100	Adjusts the effect of the Pitch Envelope. Higher settings will cause the pitch envelope to produce greater change. Negative (-) value will invert the shape of the envelope.
Velocity Curve	0–7	You can select from one of seven curves, which affect how the pitch changes according to how hard you play the keys. If you don't want the pitch to change according to how hard you play the keys, set this to "0". 
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.
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.) 
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.

INST FILTER

Parameter	Value	Explanation
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 (p. 36).
	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 (p. 36).

Parameter	Value	Explanation
Cutoff Frequency	0–1023	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.
Cutoff Velocity Curve	0–7	Selects one of the following seven curves that determine how keyboard playing dynamics (velocity) influence the cutoff frequency. Set this to "0" if you don't want the Cutoff frequency to be affected by the keyboard velocity. 
Cutoff Velocity Sens	-100–+100	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.
Resonance	0–1023	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. 
Resonance Velo Sens	-100–+100	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.

FILTER ENV

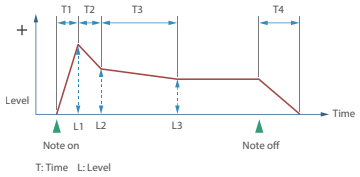
Parameter	Value	Explanation
Env Depth	-63–+63	Specifies the depth of the Filter envelope. Higher settings increase the change produced by the Filter envelope. Negative (-) value will invert the shape of the envelope.
Velocity Curve	0–7	Selects one of the following seven types of curve by which keyboard playing dynamics affect the depth of the filter envelope. If you don't want keyboard playing dynamics to affect the filter envelope depth, specify "0". 
Velocity Sens	-100–+100	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.
T1 Velocity Sens	-100–+100	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.
T4 Velocity Sens	-100–+100	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.
T1/Attack, T2, T3/Decay, T4/Release	0–1023	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.) 
L0, L1, L2, L3/Sustain, L4	0–1023	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).

INST AMP

Parameter	Value	Explanation
Level Velocity Curve	0–7	Selects one of the following seven curves that determine how keyboard dynamics will affect the volume. Set this to "0" if you don't want the volume of the partial to be affected by the keyboard velocity. 
Level 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 Alternate Pan is ON or REVS for the two waves, the pan will alternate each time the key is pressed.

AMP ENV

Parameter	Value	Explanation
T1 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.
T4 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.
T1/Attack, T2, T3/Decay, T4/Release	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.)

Parameter	Value	Explanation
L1, L2, L3/Sustain	0–1023	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). 

Drum kit effects

KIT COMP1–6

These settings configure the compressors 1–6 that are applied to the drum kit.

Parameter	Value	Explanation
Switch	OFF, ON	Turns the compressor on/off.
Attack Time	0.1–100 [msec]	Specifies the time from when the input exceeds the threshold until compression begins.
Release Time	10–1000 [msec]	Specifies the time from when the input falls below the threshold until compression is turned off.
Threshold	-60–0 [dB]	Sets the base level at which compression starts.
Ratio	1:1–INF:1	Compression ratio
Knee	0–30 [dB]	This smooths out the sonic transition, from when the compression is not engaged until when the compression begins. This gradually applies compression from just before the Threshold point. Higher values produce a smoother transition.
Output Gain	-24–+24 [dB]	Sets the level of the output sound.
Output Assign	DRY, MFX, MAIN	Specifies the compressor output destination.

KIT EQ

Configures the equalizer for the entire drum kit.

Parameter	Value	Explanation
Switch	OFF, ON	Turns the equalizer on/off for each key.
Low Gain	-24.0–+24.0 [dB]	Adjusts the gain of the low range.
Mid Gain	-24.0–+24.0 [dB]	Adjusts the gain of the middle range.
High Gain	-24.0–+24.0 [dB]	Adjusts the gain of the high range
Low Frequency	20–16000 [Hz]	Sets the center frequency of the low range.
Mid Frequency	20–16000 [Hz]	Sets the center frequency of the middle range.
High Frequency	20–16000 [Hz]	Sets the center frequency of the high range.
Mid Q	0.5–16.0 (0.1step)	Adjusts the width of the middle range. Set a higher value to narrow the range to be affected.

KIT MFX

These settings configure the multi-effect that's applied to the entire drum kit.

Parameter	Value	Explanation
Follow Tone MFX	OFF, ON	Select "ON" to enable MFX for the tone.
Switch	OFF, ON	Turns the MFX on/off.
Category	Selects the effect's category. ➡ "MFX/IFX parameters" (p. 51)	
Type	Selects the effect type. ➡ "MFX/IFX parameters" (p. 51)	
Chorus Send Level	0–127	Adjusts the amount of chorus. If you don't want to add the chorus effect, set it to "0".
Reverb Send Level	0–127	Adjusts the amount of reverb. If you don't want to add the reverb effect, set it to "0".
MFX Parameters	Edit the parameters for the selected MFX. The available parameters differ depending on the type of the effects you selected in MFX Type. ➡ "MFX/IFX parameters" (p. 51)	

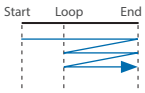
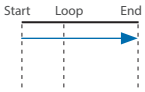
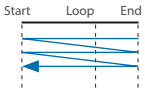
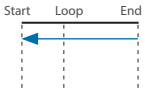
MFX CTRL

These are the settings for controlling the MFX via MIDI.

Parameter	Value	Explanation
Control 1–4 Source	Specifies the MIDI message that will control the corresponding MFX CONTROL parameter.	
	OFF	MFX CONTROL will not be used.
	CC01–31	Controller number 1–31
	CC33–95	Controller number 33–95
	PITCH BEND	Pitch bend
	AFTER TOUCH	Aftertouch
	SYS-CTRL1–4	Use the controller that is assigned by the System Control Source 1–4.
Control 1–4 Destination	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.	
Control 1–4 Sens	-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.

SAMPLE parameters

EDIT

Parameter	Value	Explanation
Loop Mode	FWD	Plays the sample from the start point to the end point, and then repeats the loop forward from the start point to the end point. 
	ONE-SHOT	Plays the sample only once from the start point to the end point. 
	REV	Repeats playback in the opposite direction from the sample end point to the start point. If the Loop Point has been set, it is disabled. 
	REV-ONE	Plays the sample only once in reverse, from the end point to the start point. 
Level	0–127	Adjusts the sample volume.
Fine Tune	-50.0– +50.0 [cent]	Specifies the pitch of the sample in cents.
Gain	0–+12 [dB]	Adjusts the sample gain. You can use this setting to increase the volume of a sampled sound.
Original Key	C-1–G9	Sets the note number used for shifting the pitch at which a sound was sampled.
Start Point	0–	The playback start position. Set this to skip unwanted waveforms at the beginning of the sample and make the sample sound at the right time.
Loop Start Point	0–	The starting point used for repeated sample playback.
End Point	to (end of sample)	The playback end position. Set this to prevent unwanted waveforms at the end of the sample from sounding.

SYSTEM EDIT parameters

COMMON

COMMON

Parameter	Value	Explanation
Master Tune	415.3–466.2 [Hz]	Adjusts the overall tuning. The displayed value is the frequency of the A4 key (middle A).
Master Key Shift	-24–+24	Shifts the 's overall pitch range in semitone steps.
System Tempo	20.00–300.00	Specifies the system tempo.
Tempo Source	SYSTEM, SCENE	When you switch scenes, this setting specifies whether to use the system tempo (SYSTEM) or the tempo stored in the scene (SCENE).
Local Switch	OFF, ON	Turns on/off the connection between the controller section (keyboard, pitch bend/modulation lever, panel buttons and sliders, pedals, etc.) and the internal sound engine. Normally you'll leave this "ON". Set this to "OFF" if you want to control only the DAW on your computer when you operate the JUNO-D.
LCD Backlight	1–10	Adjusts the brightness of the screen.
LED Brightness	1–10	Adjusts the overall brightness of the LEDs when lit.
Auto Off	OFF, 20min, 240min	Specifies whether the unit will turn off automatically after a certain time has elapsed. If you don't want the unit to turn off automatically, choose "OFF" setting. Note that when the setting is turned off, the unit may consume more power. * A confirmation message appears if you select "OFF" or "240min". To confirm, move the cursor to "OK" and press the [ENTER] button.
USB Driver Select	GENERIC, VENDOR	Specifies the USB driver setting. * This setting takes effect after the changes have been saved and the instrument is turned on again.
Arpeggio Sync Start	Sets how the arpeggio starts.	
	OFF	The arpeggio starts playing when you press the key.
	BEAT	If you press a key while the step sequencer or rhythm pattern is playing, the arpeggio automatically starts at the top of the beat.
	MEASURE	If you press a key while the step sequencer or rhythm pattern is playing, the arpeggio automatically starts at the beginning of the measure.
Startup Scene	A001–U128	Select the scene that loads when the instrument is powered on.
Scale Tune Switch	OFF, ON	Switches the scale tune on/off.
GUI Mode	Configures the scene display and how it works.	
	ADVANCED	If the scene setting is Single, Split, Dual, Super Layer, or Multipart, the scene is displayed according to the setting. In this case, the [1]–[16] buttons select the scene categories.
	BASIC	Always displays in multipart mode, regardless of the scene setting (Single, Split, Dual, Super Layer or Multipart). In this case, the [1]–[16] buttons select the scene number. You can also press the [BANK] button and the [1]–[16] buttons to switch between scene/tone banks.

KEY TOUCH

Parameter	Value	Explanation
Keyboard Velocity	Specifies the velocity that is transmitted when you play the keyboard.	
	REAL	Transmits the velocity according to how hard you press a key.
	1–127	Always transmits a fixed velocity, regardless of how hard you press the key.
Velocity Curve	Here's how to adjust the playing feel (key touch) of the keyboard.	
	LIGHT	Sets the keyboard feel to respond with a lighter touch. With this setting, you can achieve fortissimo (ff) levels by playing with a lighter touch than the "MEDIUM" setting, so the keyboard action feels lighter. This makes the keyboard easier to play for players who have less strength in their hands.
	MEDIUM	Sets the keyboard feel to respond with a standard touch.
	HEAVY	Sets the keyboard feel to respond with a heavier touch. With this setting, the keys must be played with more force than the "MEDIUM" setting to achieve fortissimo (ff) levels, so the keyboard action feels heavier. This lets you play dynamic passages with greater emotion.
Velocity Curve Offset	-10–+9	Adjusts the keyboard velocity curve. Lower settings make the touch feel lighter. Higher settings make the touch feel heavier.

PEDAL

Parameter	Value	Explanation
Hold Pedal Source	SCENE, SYSTEM	Specifies whether the function assigned to the pedal connected to the PEDAL HOLD jack follows the setting of the currently selected scene (SCENE) or the system setting (SYSTEM).
Hold Pedal Function	Specifies the function assigned to the pedal connected to the PEDAL HOLD jack. ➡ "List of functions that can be assigned to the controllers" (p. 44)	
	OFF	No function is assigned.
	CC01–CC95	Controller number 1–95
	AFTER TOUCH	Aftertouch
	PITCH BEND DOWN	Lowers the pitch.
	PITCH BEND UP	Raises the pitch.
	SCENE DOWN	Switches the scene to the previous number.
	SCENE UP	Switches the scene to the next number.
	START/STOP	Assigns the step sequencer start/stop function.
Hold Pedal Polarity	STANDARD, REVERSE	Specifies the polarity of the pedal connected to the PEDAL HOLD jack. * Some pedals work the opposite when the pedal is depressed or released. In this case, use the "REVERSE" setting. Set this to "STANDARD" when using a Roland pedal (one without a polarity switch).
Control Pedal Source	SYSTEM, SCENE	Selects whether the function controlled by the pedal connected to the PEDAL CONTROL jack follows the system setting (SYSTEM) or the currently selected scene (SCENE).
Control Pedal Function	Sets how the function assigned to the pedal that's connected to the PEDAL CONTROL jack works. ➡ "List of functions that can be assigned to the controllers" (p. 44)	
	OFF	No function is assigned.
	CC01–CC95	Controller number 1–95
	AFTER TOUCH	Aftertouch
	PITCH BEND DOWN	Lowers the pitch.
	PITCH BEND UP	Raises the pitch.
	SCENE DOWN	Switches the scene to the previous number.
	SCENE UP	Switches the scene to the next number.
	START/STOP	Assigns the step sequencer start/stop function.
Control Pedal Polarity	STANDARD, REVERSE	Specifies the polarity of the pedal connected to the PEDAL CONTROL jack. * Some pedals work the opposite when the pedal is depressed or released. In this case, use the "REVERSE" setting. Set this to "STANDARD" when using a Roland pedal (one without a polarity switch).

BEND/MOD

Parameter	Value	Explanation
Pitch Bend Source	SYSTEM, SCENE	Selects whether the function controlled by the pitch bend lever follows the system setting (SYSTEM) or the currently selected scene (SCENE).
Pitch Bend Function	Specifies the function assigned to the pitch bend lever. ➡ "List of functions that can be assigned to the controllers" (p. 44)	
	OFF	No function is assigned.
	CC01–CC95	Controller number 1–95
	AFTER TOUCH	Aftertouch
	PITCH BEND	Applies the same effect as when the pitch bend lever is pushed to the left or right.
	ROTARY SPEED	Alternately switches between slow and fast for the rotary modulation speed.
Modulation Source	SYSTEM, SCENE	Selects whether the function controlled by the modulation lever follows the system setting (SYSTEM) or the currently selected scene (SCENE).
Modulation Function	Specifies the function assigned to the modulation lever. ➡ "List of functions that can be assigned to the controllers" (p. 44)	
	OFF	No function is assigned.
	CC01–CC95	Controller number 1–95
	AFTER TOUCH	Aftertouch
	PITCH BEND DOWN	Lowers the pitch.
	PITCH BEND UP	Raises the pitch.
	ROTARY SPEED	Alternately switches between slow and fast for the rotary modulation speed.

KNOB

Parameter	Value	Explanation
Knob1–4 Source	SCENE, SYSTEM	Specifies whether the functions assigned to the SOUND MODIFY [1]–[4] knobs follow the settings of the currently selected scene (SCENE) or follow the system settings (SYSTEM).
Knob1–4 Function	Specifies the functions that are assigned to the SOUND MODIFY [1]–[4] knobs. ➡ "List of functions that can be assigned to the controllers" (p. 44)	
	OFF	No function is assigned.
	CC01–CC95	Controller number 1–95
	AFTER TOUCH	Aftertouch
	PITCH BEND DOWN	Lowers the pitch.
	PITCH BEND UP	Raises the pitch.
	MFX	Controls the MFX parameters. * The multi-effects parameters available for control will depend on the MFX type.
	CHORUS/ DELAY	Specifies the output level of the sound with chorus/delay applied.
	REVERB	Specifies the output level of the sound with reverb applied.
	MIC REVERB	Sets the output level of the mic input audio with reverb applied.
	EQ LOW GAIN	Specifies the amount of boost/cut for the low-frequency region.
	EQ MID GAIN	Specifies the amount of boost/cut for the mid-frequency region.
	EQ HIGH GAIN	Specifies the amount of boost/cut for the high-frequency region.
	USB AUDIO IN	Configures the USB audio input level.
	USB AUDIO OUT	Configures the USB audio output level.

MIDI

Parameter	Value	Explanation
Sync Mode	AUTO, INT, MIDI, USB COM, USB MEM	Sets the port or connector used to receive the synchronization signal.
Sync Out	OFF, MIDI, USB COM, MIDI/USB COM, USB MEM, ALL	Sets the port or connector used to output the clock, start and stop MIDI messages.
Control Channel	1–16, OFF	Specifies the MIDI receive channel on which MIDI messages (program change and bank select) from an external MIDI device can be received to switch programs. If you don't want programs to be switched from a connected MIDI device, turn this "OFF".
Remote Keyboard	OFF, MIDI IN, USB COM, USB MEM	Sets which connector is used for input when you use an external MIDI keyboard instead of the keyboard of the JUNO-D. In this case, the MIDI transmit channel of the external MIDI keyboard does not matter. Normally you will leave this "OFF".
Control Source Select	SYSTEM	Uses the system's Control Source 1–4 for tone control.
	SCENE	Uses the scene's Control Source 1–4 for tone control.
Control 1–4 Source	OFF, CC01-CC31, CC33-CC95, PITCH BEND, AFTER TOUCH	Specify the MIDI messages used for tone control. Tone control is a common setting used to control the volume, timbre and other settings of the JUNO-D overall with MIDI messages. You can set up to four MIDI messages to use for control. To configure the settings for the timbre and effects in real time for each tone, use "MATRIX CTRL" (p. 18) or "MFX CTRL" (p. 31, p. 38).
Rx Program Change	OFF, ON	Specifies whether program change messages will be received (ON) or not be received (OFF).
Rx Bank Select	OFF, ON	Specifies whether bank select messages will be received (ON) or not be received (OFF).
Rx Start/Stop	OFF, ON	Specifies whether to receive (ON) or not receive (OFF) start/stop messages.
Device ID	17–32	When transmitting and receiving system exclusive messages, the device ID numbers of both devices must match.
Soft Thru	OFF, ON	Specifies whether MIDI messages received at the MIDI IN connector are retransmitted as-is from the MIDI OUT connector (ON) or are not retransmitted (OFF).
USB-MIDI Thru	OFF, ON	Specifies whether MIDI messages received at the USB COMPUTER port/ MIDI IN connector are retransmitted without change from the MIDI OUT connector/USB COMPUTER port (ON) or are not retransmitted (OFF).

Parameter	Value	Explanation
Rx Exclusive	OFF, ON	Specifies whether system exclusive messages will be received (ON) or not be received (OFF).
Tx Edit Data	OFF, ON	Specify whether changes you make in the settings of a scene will be transmitted as system exclusive messages (ON), or will not be transmitted (OFF).
Tx Program Change	OFF, ON	Sets whether to transmit a program change message (ON) or not (OFF) when you switch the scene or tone.
Tx Bank Select	OFF, ON	Sets whether to transmit a bank select message (ON) or not (OFF) when you switch the scene or tone.

USB AUDIO

Parameter	Value	Explanation
USB Audio Input Level	0–127	Adjusts the audio input level of the USB COMPUTER port.
USB Audio Output Level	0–127	Adjusts the audio output level to the USB COMPUTER port.
USB Audio USB IN Thru	OFF, ON	Specifies whether the audio input of the USB COMPUTER port is mixed into the audio output of the USB COMPUTER port (ON) or not (OFF). * When set to "ON", be careful that the audio is not looping back (creating a feedback loop) on your computer (DAW).

METRONOME

Parameter	Value	Explanation
Switch	OFF, ON	Sets whether the metronome plays (ON) or not (OFF) when recording.
Type	Specifies the sound of the metronome.	
	TYPE1	Normal metronome sound (first beat is a bell tone)
	TYPE2	Click sound
Level	1–127	Sets the volume of the metronome.
Count-in	OFF, 1–16	Sets the number of beats used for the metronome count-in when real-time recording begins.

PAD NOTE

Parameter	Value	Explanation
Pad 1–8 Part	PART 1–R	Selects the part you want to play on pads 1–8.
Pad 1–8 Note	C-–G9	Selects the note numbers triggered by pads 1–8.
Pad 1–8 Velocity	OFF, 1–127	Specifies the velocity used for notes played with pads 1–8.

LED COLOR

Parameter	Value	Explanation
Pad Note	OFF, CYAN, BLUE, GREEN, YELLOW, ORANGE, MAGENTA, RED, WHITE	Sets the LED color of the pads when playing notes.
Pad Track Select		Sets the LED color of the pads when a track is selected on the SEQUENCER screen.
Pad Track Mute		Sets the LED color of the pads when track mute is activated.
Pad Rhythm Pattern		Sets the LED color of the pads when a rhythm pattern is selected.
Pad Audio Player		Sets the LED color of the pads when the audio player is active.
Pad Keyboard Switch		Sets the pad LED color used for operating the keyboard switches.
Part Select		Sets the LED color used when a part is selected while editing a scene.
Partial Switch		Sets the LED color used when a partial switch is ON while editing a tone.
Partial Select		Sets the LED color that represents the partial to be edited while editing a tone.

List of functions that can be assigned to the controllers

Function	Knob 1–4	Pitch Bend	Modulation	Hold Pedal	Control Pedal
OFF	✓	✓	✓	✓	✓
CC01–CC95	✓	✓	✓	✓	✓
AFTER TOUCH	✓	✓	✓	✓	✓
PITCH BEND		✓			
PITCH BEND DOWN	✓		✓	✓	✓
PITCH BEND UP	✓		✓	✓	✓
MFX	✓				
CHORUS/DELAY	✓				
REVERB	✓				
MIC REVERB	✓				
EQ LOW GAIN	✓				
EQ MID GAIN	✓				
EQ HIGH GAIN	✓				
USB AUDIO IN	✓				
USB AUDIO OUT	✓				
ROTARY SPEED		✓	✓		
SCENE DOWN				✓	✓
SCENE UP				✓	✓
START/STOP				✓	✓

EFFECTS

MIC INPUT

Parameter	Value	Explanation
Input Level	0–127	Adjusts the input level of the MIC INPUT jack.
Reverb Switch	OFF, ON	Selects whether to apply reverb to the mic input signal (ON) or not (OFF).
Reverb Level	0–127	Specifies the amount of reverb that is applied to the mic input.
Reverb Type	ROOM1, ROOM2, ROOM3, HALL1, HALL2, PLATE, DELAY, PAN-DELAY	Specifies the type of reverb (delay) that is applied to the mic input.
Reverb Pre LPF	0–7	Adjusts the frequency above which to cut the high-frequency portion of the sound entering the reverb.
Reverb Time	0–127	Sets how long the reverb tone rings out (when Reverb Type is "ROOM1"–"PLATE") or how long the delay is (when Reverb Type is "DELAY" or "PAN-DELAY").
Reverb Delay Feedback	0–127	Adjusts the level at which the reverb/delay sound is returned to the input.
Noise Suppressor Switch	OFF, ON	Switches the noise suppressor on/off. The noise suppressor is a function that suppresses noise during periods of silence.
Noise Suppressor Threshold	-96–0 [dB]	Sets the volume at which noise suppression starts to be applied.
Noise Suppressor Release	0–127	Adjusts the time from when noise suppression starts until the volume reaches "0".
Comp Switch	OFF, ON	Specifies whether the mic compressor (a compressor applied to the mic input) is used (ON) or not used (OFF).
Comp Attack Time	0.1–100 [msec]	Specifies the time from when the input to the mic compressor exceeds the Comp Threshold level until the volume is compressed.
Comp Release Time	10–1000 [msec]	Specifies the time from when the input to the mic compressor falls below the Comp Threshold level until compression is no longer applied.
Comp Threshold	-60–0 [dB]	Specifies the level at which the mic compressor starts applying compression.
Comp Ratio	1:1–INF:1	Specifies the compression ratio for the mic compressor.
Comp Knee	0–30 [dB]	Smooths the transition until the mic compressor starts to be applied. Higher values make the transition smoother.
Comp Output Gain	-24.0–+24.0 [dB]	Specifies the output volume of the mic compressor.

SYSTEM EQ

Parameter	Value	Explanation
Switch	OFF, ON	Specifies whether the system EQ (an equalizer applied to the entire sound generator of the JUNO-D) is used (ON) or not used (OFF).
Input Gain	-24.0–+24.0 [dB]	Adjusts the amount of boost/cut for the input to the system EQ.
Low Gain	-24.0–+24.0 [dB]	Adjusts the gain of the low range.
Mid1–3 Gain	-24.0–+24.0 [dB]	Adjusts the amount of boost/cut of the mid-frequency range 1–3.
High Gain	-24.0–+24.0 [dB]	Adjusts the gain of the high range
Low Frequency	20–16000 [Hz]	Sets the center frequency of the low range.
Mid1–3 Frequency	20–16000 [Hz]	Sets the center frequency of the middle range 1–3.
High Frequency	20–16000 [Hz]	Sets the center frequency of the high range.
Mid1–3 Q	0.5–16.0	Sets the width of the mid-frequency range 1–3. Higher values make the width more narrow.

CHORUS/DELAY

Parameter	Value	Explanation
Source	SCENE, SYSTEM	Determines whether the chorus/delay settings follow the settings of the currently selected scene or the system settings.
Switch	OFF, ON	Switches chorus/delay on/off.
Type	Sets the chorus/delay type. ➡ "CHORUS/DELAY parameters" (p. 8)	
Level	0–127	Specifies the output level of the sound with chorus/delay applied.
Reverb Send Level	0–127	Specifies the level of the signal sent to reverb.
Chorus/Delay parameters	Sets the parameters of the selected chorus/delay type. The available parameters differ depending on the type of chorus/delay you selected in "Type". ➡ "CHORUS/DELAY parameters" (p. 8)	

REVERB

Parameter	Value	Explanation
Source	SCENE, SYSTEM	Sets whether the reverb settings should follow the settings for the scene, or whether they should follow the system settings.
Switch	OFF, ON	Switches the reverb on/off.
Type	Sets the type of reverb. ➡ "REVERB parameters" (p. 10)	
Level	0–127	Specifies the output level of the sound with reverb applied.
Reverb Parameters	Edit the parameters of the selected reverb type. The available parameters differ depending on the type of reverb you selected in "Type". ➡ "REVERB parameters" (p. 10)	

Arpeggio style list

No.	Name
001	SIMPLE
002	1/8BASIC1
003	1/8BASIC2
004	1/8BASIC3
005	1/8BASIC4
006	1/8BASIC5
007	1/8SYNC11
008	1/8SYNC12
009	1/8SYNC13
010	1/8SYNC14
011	1/8SYNC15
012	1/8SYNC21
013	1/8SYNC22
014	1/8SYNC23
015	1/8SYNC24
016	1/8SYNC25
017	1/8DRIVE1
018	1/8DRIVE2
019	1/8DRIVE3
020	1/8DRIVE4
021	1/8DRIVE5
022	1/8VARI1
023	1/8VARI2
024	1/8VARI3
025	1/8VARI4
026	1/8VARI5
027	1/16BASIC1
028	1/16BASIC2
029	1/16BASIC3
030	1/16BASIC4
031	1/16BASIC5
032	1/16SYN11
033	1/16SYN12
034	1/16SYN13
035	1/16SYN14
036	1/16SYN15
037	1/16SYN21
038	1/16SYN22
039	1/16SYN23
040	1/16SYN24
041	1/16SYN25
042	1/16DRIVE1
043	1/16DRIVE2
044	1/16DRIVE3
045	1/16DRIVE4
046	1/16DRIVE5
047	RHYTHM X1
048	RHYTHM X2
049	RHYTHM X3
050	RHYTHM X4
051	RHYTHM X5
052	RHYTHM X6
053	RHYTHM X7
054	RHYTHM X8
055	CYCLES3RD
056	CYCLES4TH
057	CYCLES5TH
058	CYCLESMAJ
059	CYCLESMIN
060	CYCMAJ/MN
061	AG PROGR1
062	AG PROGR2
063	AG CUTTIN
064	AG 3FINGR
065	AG ARPEGG
066	AG SPANS1
067	AG SPANS2
068	AG RIFFS
069	EG CUTTIN
070	EG RIFFS
071	EG ODRIF1
072	EG ODRIF2
073	EG ARPEGG
074	BLUES GTR
075	GTR TRILL
076	BASS PHR
077	BS SHUFFL
078	FRETLESBS
079	WALKINGBS
080	BALLADBAS
081	EP PROGR1
082	EP PROGR2
083	LTN PIANO
084	FUNKCLAV1
085	FUNKCLAV2
086	SYNTHLEAD
087	DANCE SYN
088	HARP
089	SYN BASS1
090	SYN BASS2
091	SYN BASS3
092	SYN LINE1
093	SYN LINE2
094	SYN LINE3
095	LEADLINE1
096	LEADLINE2
097	LEADLINE3
098	SEQUENCE1
099	SEQUENCE2
100	SEQUENCE3
101	CHORDS 1
102	CHORDS 2
103	CHORDS 3
104	SHORTIES1
105	SHORTIES2
106	SHORTIES3
107	FATTIES 1
108	FATTIES 2
109	FATTIES 3
110	SHRT&FAT1
111	SHRT&FAT2
112	FAT&SHRT1
113	FAT&SHRT2
114	MIXTURE 1
115	MIXTURE 2
116	MIXTURE 3
117	COMBINAT1
118	COMBINAT2
119	COMBINAT3
120	COMBINAT4
121	COMBINAT5
122	COMBINAT6
123	COMBINAT7
124	COMBINAT8
125	PLEXI 1
126	PLEXI 2
127	PLEXI 3
128	PLEXI 4

Chord memory list

01. Pop 1

Key	Chord	Notes in the chord structure
C	Cadd9	C3, G3, D4, E4
C♯	C♯maj9	C♯3, C4, D♯4, F4
D	D-7	D3, F4, A3, C4
D♯	D♯maj7	D♯3, A♯3, D4, G4
E	Cadd9 (on E)	E3, C4, D4, G4
F	Fmaj9	F2, A3, E4, G4
F♯	Dadd9 (on F♯)	F♯2, A3, D4, E4
G	Cadd9 (on G)	G2, D4, E4, G4
G♯	F-6 (on A♭)	G♯2, C4, D4, F4
A	F (on A)	A2, A3, C4, F4
A♯	G- (on B♭)	A♯2, A♯3, D4, G4
B	G (on B)	B2, B3, D4, G4

02. Pop 2

Key	Chord	Notes in the chord structure
C	Cmaj9	C3, E3, B3, D4
C♯	C♯dim7	C♯3, G3, A♯3, E4
D	D-9	D3, F3, C4, E4
D♯	D♯dim7	D♯3, A3, C4, F♯4
E	E-7	E3, B3, D4, G4
F	Fmaj9	F3, A3, E4, G4
F♯	F♯-7 (♭5)	F♯3, A3, C4, E4
G	G7sus4 (9 13)	G2, A3, C4, F4
G♯	G♯dim7	G♯2, B3, D4, F4
A	A-9	A2, B3, C4, G4
A♯	C7 (on B♭)	A♯2, G3, C4, E4
B	B-7 (♭5)	B2, A3, D4, F4

03. Jazz 1

Key	Chord	Notes in the chord structure
C	C6 9	C3, E3, A3, D4
C♯	C♯7 (♯9)	C♯3, F3, B3, E4
D	D-9	D3, F3, C4, E4
D♯	D♯7 (♯9)	D♯3, G3, C♯4, F♯4
E	E♯7 (♯9)	E3, G♯3, D4, G4
F	Fmaj9	F3, A3, E4, G4
F♯	F♯7 (♯9)	F♯3, A♯3, E4, A4
G	G7 (13)	G2, F3, B3, E4
G♯	G♯7 (13)	G♯2, F♯3, C4, F4
A	A-7 (11)	A2, G3, C4, D4
A♯	B♭9	A♯2, G♯3, C4, D4
B	B-7 (11)	B2, A3, D4, E4

04. Jazz 2

Key	Chord	Notes in the chord structure
C	C6 9	C3, E3, A3, D4
C♯	C♯9	C♯3, F3, B3, D♯4
D	D-9	D3, F3, C4, E4
D♯	D♯9	D♯3, G3, C♯4, F4
E	E-9	E3, G3, D4, F♯4
F	F-9	F2, G♯3, D♯4, G4
F♯	F♯-7 (♭5)	F♯2, A3, C4, E4
G	G7 (♭13)	G2, F3, B3, D♯4
G♯	G♯7 (13)	G♯2, F♯3, C4, F4
A	A7 (♭13)	A2, G3, C♯4, F4
A♯	B♭7 (13)	A♯2, G♯3, D4, G4
B	B-7 (11)	B2, A3, D4, E4

05. Jazz 3

Key	Chord	Notes in the chord structure
C	Cmaj9	C3, E3, G3, B3, D4
C♯	D♭maj7	C♯3, F3, G♯3, C4, D♯4
D	Dmaj9	D3, F♯3, A3, C♯4, E4
D♯	E♭maj9	D♯3, G3, A♯3, D4, F4
E	Emaj9	E3, G♯3, B3, D♯4, F♯4
F	Fmaj9	F3, A3, C4, E4, G4
F♯	G♭maj9	F♯3, A♯3, C♯4, F4, G♯4
G	Gmaj9	G3, B3, D4, F♯4, A4
G♯	A♭maj9	G♯3, C4, D♯4, G4, A♯4
A	Amaj9	A3, C♯4, E4, G♯4, B4
A♯	B♭maj9	A♯3, D4, F4, A4, C5
B	Bmaj9	B3, D♯4, F♯4, A♯4, C♯5

06. Blues

Key	Chord	Notes in the chord structure
C	C7 (9)	C3, A♯3, D4, E4
C♯	C♯7 (9)	C♯3, F3, B3, D♯4
D	D7 (9)	D3, F♯3, C4, E4
D♯	D♯7 (9)	D♯3, G3, C♯4, F4
E	E7 (♯9)	E3, G♯3, D4, G4
F	F7 (9)	F2, A3, D♯4, G4
F♯	F♯dim7	F♯2, A3, C4, D♯4
G	G7 (13)	G2, F3, B3, E4
G♯	G♯dim7	G♯2, B3, D4, F4
A	A7 (♭13)	A2, G3, C♯4, F4
A♯	B♭7 (13)	A♯2, G♯3, D4, G4
B	B-7 (♭5)	B2, A3, D4, F4

07. Trad Maj

Key	Chord	Notes in the chord structure
C	C	C3, E4, G4, C5
C♯	C♯dim7	C♯3, E4, G4, A♯4
D	D-	D3, D4, F4, A4
D♯	D♯dim7	D♯3, F♯4, A4, C5
E	E-	E3, E4, G4, B4
F	F	F3, F4, A4, C5
F♯	F♯-7 (♭5)	F♯3, E4, A4, C5
G	G	G3, D4, G4, B4
G♯	G♯dim7	G♯3, D4, F4, B4
A	A-	A2, E4, A4, C5
A♯	B♭	A♯2, D4, F4, A♯4
B	Bdim	B2, D4, F4, B4

08. Trad Min 1

Key	Chord	Notes in the chord structure
C	C-	C3, D♯4, G4, C5
C♯	D♭	C♯3, C♯4, F4, G♯4
D	Ddim	D3, D4, F4, G♯4
D♯	E♭	D♯3, D♯4, G4, A♯4
E	Edim7	E3, C♯4, G4, A♯4
F	F-	F2, C4, F4, G♯4
F♯	G♭dim7	F♯2, C4, D♯4, A4
G	G-	G2, A´3, D4, G4
G♯	A♭	G♯2, C4, D♯4, G♯4
A	A-7 (♭5)	A2, C4, D♯4, G4
A♯	B♭	A♯2, D4, F4, A♯4
B	Bdim7	B2, D4, F4, G♯4

09. Trad Min 2

Key	Chord	Notes in the chord structure
C	C-	C3, D♯4, G4, C5
C♯	D♭	C♯3, C♯4, F4, G♯4
D	Ddim	D3, D4, F4, G♯4
D♯	Eaug	D♯3, D♯4, G4, B4
E	E-	E3, E4, G4, B4
F	F-	F2, C4, F4, G♯4
F♯	G♭dim7	F♯2, C4, D♯4, A4
G	G	G2, B3, D4, G4
G♯	A♭	G♯2, G♯4, D♯4, C4
A	A-7 (♭5)	A2, C4, D♯4, G4
A♯	B♭	A♯2, D4, F4, A♯4
B	Bdim	B2, D4, F4, B4

10. Pop Min 1

Key	Chord	Notes in the chord structure
C	C-add9	C3, D4, D♯4, G4
C♯	D♭maj7	C♯3, G♯3, C4, F4
D	D-7 (♭5)	D3, C4, F4, G♯4
D♯	E♭maj7	D♯3, A♯3, D4, G4
E	Edim7	E3, A♯3, C♯4, G4
F	F-7 (9)	F2, G♯3, D♯4, G4
F♯	G♭dim7	F♯2, A3, C4, D♯4
G	G-7	G2, A♯3, D4, F4
G♯	A♭maj7	G♯2, C4, D♯4, G4
A	A-7 (♭5)	A2, C4, D♯4, G4
A♯	B♭7sus4 (9 13)	A♯2, G♯3, C4, D♯4
B	Bdim7	B2, G♯3, D4, F4

11. Pop Min 2

Key	Chord	Notes in the chord structure
C	C-add9	C3, D4, D♯4, G4
C♯	E♭7 (on D♭)	C♯3, A♯3, D♯4, G4
D	D-7 (♭5)	D3, G♯3, C4, F4
D♯	E♭maj7	D♯3, A♯3, D4, G4
E	Emaj7 (9)	E3, G♯3, D♯4, F♯4
F	F-7 (9)	F2, G♯3, D♯4, G4
F♯	G♭dim7	F♯2, A3, C4, D♯4
G	G7 (♭13)	G2, F3, B3, D♯4
G♯	A♭maj7	G♯2, C4, D♯4, G4
A	A-7 (♭5)	A2, C4, D♯4, G4
A♯	C-7 (on B♭)	A♯2, C4, D♯4, G4
B	C-maj7 (B)	B2, D4, D♯4, G4

12. Jazz Min 1

Key	Chord	Notes in the chord structure
C	C-7 (11)	C3, A♯3, D♯4, F4
C♯	D♭7 (♯9)	C♯3, F3, B3, E4
D	D-7 (♭5)	D3, C4, F4, G♯4
D♯	E♭aug maj7	D♯3, B3, D4, G4
E	E7 (9)	E2, G♯3, D4, F♯4
F	F7 (9)	F2, A3, D♯4, G4
F♯	G♭dim7	F♯2, A3, C4, D♯4
G	G7 (♯9)	G2, B3, F4, A♯4
G♯	A♭maj7 (♯11)	G♯2, C4, D4, G4
A	A-7 (♭5)	A2, C4, D♯4, G4
A♯	B♭-7	A♯2, G♯3, C♯4, F4
B	Bdim7	B2, G♯3, D4, F4

13. Jazz Min 2

Key	Chord	Notes in the chord structure
C	C-7 (9)	C3, D♯3, A♯3, D4
C♯	D♭7 (9)	C♯3, F3, B3, D♯4
D	D-7 (9)	D3, F3, C4, E4
D♯	E♭7 (9)	D♯3, G3, C♯4, F4
E	Emaj7 (9)	E2, G♯3, D♯4, F♯4
F	F-7 (9)	F2, G♯3, D♯4, G4
F♯	G♭dim7	F♯2, A3, C4, D♯4
G	G7 (13)	G2, F3, B3, E4
G♯	A♭-6	G♯2, B3, D♯4, F4
A	A-7 (♭5)	A2, C4, D♯4, G4
A♯	B♭-7	A♯2, G♯3, C♯4, F4
B	B-7 (♭5)	B2, A3, D4, F4

14. Oct Stack

Key	Chord	Notes in the chord structure
C	---	C4, C5
C♯	---	C♯4, C♯5
D	---	D4, D5
D♯	---	D♯4, D♯5
E	---	E4, E5
F	---	F4, F5
F♯	---	F♯4, F♯5
G	---	G4, G5
G♯	---	G♯4, G♯5
A	---	A4, A5
A♯	---	A♯4, A♯5
B	---	B4, B5

15. 4th Stack

Key	Chord	Notes in the chord structure
C	---	C4, F4
C♯	---	C♯4, F♯4
D	---	D4, G4
D♯	---	D♯4, G♯4
E	---	E4, A4
F	---	F4, A♯4
F♯	---	F♯4, B4
G	---	G4, C5
G♯	---	G♯4, C♯5
A	---	A4, D5
A♯	---	A♯4, D♯5
B	---	B4, E5

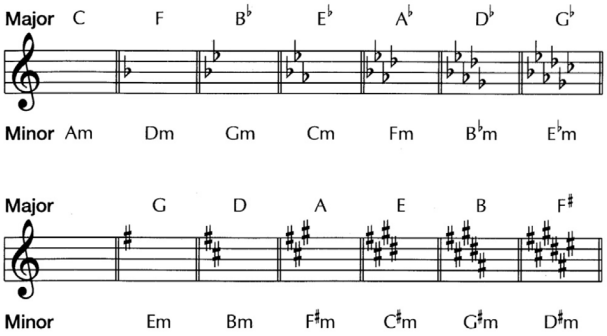
16. 5th Stack

Key	Chord	Notes in the chord structure
C	---	C4, G4
C♯	---	C♯4, G♯4
D	---	D4, A4
D♯	---	D♯4, A♯4
E	---	E4, B4
F	---	F4, C5
F♯	---	F♯4, C♯5
G	---	G4, D5
G♯	---	G♯4, D♯5
A	---	A4, E5
A♯	---	A♯4, F5
B	---	B4, F♯5

17. Scale Set

Key	Chord	Notes in the chord structure
C	Major Scale	C4, D4, E4, F4, G4, A4, B4
C♯	Major Pentatonic Scale	C4, D4, E4, G4, A4
D	Minor Scale	C4, D4, D♯4, F4, G4, G♯4, A♯4
D♯	Harmonic Minor Scale	C4, D4, D♯4, F4, G4, G♯4, B4
E	Melodic Minor Scale	C4, D4, D´4, F4, G4, A4, B4
F	Whole Tone Scale	C4, D4, E4, F♯4, G♯4, A♯4
F♯	Blue note Scale	C4, D♯4, F4, F♯4, G4, A♯4
G	Japanese Minor	C4, C♯4, F4, G4, A♯4
G♯	Ryukyu Scale	C4, E4, F4, G4, B4
A	Bari Scale	C4, C♯4, D♯4, G4, G♯4
A♯	Spanish Scale	C4, C♯4, E4, F4, G4, G♯4, A♯4
B	Gypsy Scale	C4, C♯4, E4, F4, G4, G♯4, B4

* If you want to change the key for each chord set, change the "Key" value in the CHORD MEMORY screen (p. 15). Refer to the following to decide the key of the song based on the composition of the score (♯, ♭).



Rhythm pattern list

Rhythm Pattern Group		Drum Kit		Pattern Name							
No.	Name	No.	Kit Name	Pad 1	Pad 2	Pad 3	Pad 4	Pad 5	Pad 6	Pad 7	Pad 8
001	Pop 1	AD018	Standard Kit 3	Intro	Verse1	PreCho	Chorus	Bridge	Verse2	Verse3	Outro
002	Pop 2	AD019	Standard Kit 4	Intro	Verse1	PreCho	Chorus	Bridge	Verse2	Verse3	Outro
003	Pop 3	AD013	Pop Dance Kit	Intro	Verse1	PreCho	Chorus	Bridge	Verse2	Verse3	Outro
004	Pop 4	CD027	80's Kit	Intro	Verse1	PreCho	Chorus	Bridge	Verse2	Verse3	Outro
005	Pop 5	CD022	Pop Kit w	Intro	Verse1	PreCho	Chorus	Bridge	Verse2	Verse3	Outro
006	Rock 1	AD020	Standard Kit 5	Intro	Verse1	PreCho	Chorus	Bridge	Verse2	Verse3	Outro
007	Rock 2	AD008	J-Rock Kit	Intro	Verse1	PreCho	Chorus	Bridge	Verse2	Verse3	Outro
008	Funk1	CD010	Standard kit w	Intro	Verse1	PreCho	Chorus	Bridge	Verse2	Verse3	Outro
009	Funk2	AD003	Standard Kit 2	Intro	Verse1	PreCho	Chorus	Bridge	Verse2	Verse3	Outro
010	Jazz 1	CD007	Brush Kit	Intro	Head	Cho1	Cho2	Bridge	Cho3	Cho4	Outro
011	Jazz 2	CD010	Standard kit w	Intro	Head	Cho1	Cho2	Bridge	Cho3	Cho4	Outro
012	Bossa	AD002	Jazz Combo Kit	Intro	Verse1	PreCho	Chorus	Bridge	Verse2	Verse3	Outro
013	Reggae	CD007	Brush Kit	Intro	Verse1	PreCho	Chorus	Bridge	Verse2	Verse3	Outro
014	6/8 Pop 1	AD018	Standard Kit 3	Intro	Verse1	PreCho	Chorus	Bridge	Verse2	Verse3	Outro
015	6/8 Pop 2	CD006	Jazz Kit	Intro	Verse1	PreCho	Chorus	Bridge	Verse2	Verse3	Outro
016	Shuffle	AD019	Standard Kit 4	Intro	Verse1	PreCho	Chorus	Bridge	Verse2	Verse3	Outro
017	12/8 Jazz	AD037	Brush Kit 2	Intro	Head	Cho1	Cho2	Bridge	Cho3	Cho4	Outro
018	Jazz Waltz	AD037	Brush Kit 2	Intro	Head	Cho1	Cho2	Bridge	Cho3	Cho4	Outro
019	EDM	AD011	Future Kit	Intro	Verse1	Bld Up	Drop	Bridge	Verse2	Verse3	Outro
020	House 1	CD039	House Kit w	Intro	Verse1	Verse2	Drop	Bridge	Verse3	Verse4	Outro
021	House 2	CD049	TR-808 comp	Intro	Verse1	Verse2	Drop	Bridge	Verse3	Verse4	Outro
022	Trance 1	CD047	TR-909 w comp	Intro	Verse1	Verse2	Drop	Bridge	Verse3	Verse4	Outro
023	Trance 2	CD037	Techno Kit w	Intro	Verse1	Verse2	Drop	Bridge	Verse3	Verse4	Outro
024	Hip Hop	CD042	HipHop Kit w cmp	Intro	Verse1	Verse2	Hook	Bridge	Verse3	Verse4	Outro
025	R&B	CD043	R&B kit	Intro	Verse1	Verse2	Hook	Bridge	Verse3	Verse4	Outro
026	Disco	CD053	TR-707&727 w cmp	Intro	Verse1	PreCho	Chorus	Bridge	Verse2	Verse3	Outro
027	Drum'n Bs	CD034	Drum&Bass Kit w	Intro	Verse1	Verse2	Drop	Bridge	Verse3	Verse4	Outro
028	Future Bass	AD012	Future Bass Kit2	Intro	Verse1	PreCho	Chorus	Bridge	Verse2	Verse3	Outro
029	Lo-Fi	AD022	Lo-Fi Comp Kit 2	Intro	Verse1	PreCho	Chorus	Bridge	Verse2	Verse3	Outro
030	Trap	CD050	TR-808 w comp	Intro	Verse1	Verse2	Hook	Bridge	Verse3	Verse4	Outro

MFX/IFX parameters

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MFX/IFX common parameters

Parameter	Value	Explanation
Type	Selects the MFX type.	
Switch	OFF, ON	Switches the MFX on/off.
Chorus Send Level	0–127	Adjusts the amount of chorus. If you don't want to add the chorus effect, set it to "0".
Reverb Send Level	0–127	Adjusts the amount of reverb. If you don't want to add the reverb effect, set it to "0".
MFX parameter	Differs depending on the MFX type.	For details, refer to the parameters for each MFX.
Control 1–4 Source	OFF, CC01–CC31, CC33–CC95, BEND, AFT, SYS-CTRL1, SYS-CTRL2, SYS-CTRL3, SYS-CTRL4	Specifies the MIDI message that will control the corresponding MFX CONTROL parameter.
Control 1–4 Sens	-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 produce more change.

00 Thru

Filter

01 Equalizer

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

Parameter	Value	Explanation
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 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 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.
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

02 Mid-Side EQ (Mid-Side Equalizer)

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
Mid EQ	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 Mid 1 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 Mid 1 Gain	-12.00–+12.00 [dB]	Gain of the middle range 1
M Mid 1 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 Mid 2 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 Mid 2 Gain	-12.00–+12.00 [dB]	Gain of the middle range 2
M Mid 2 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 Mid 3 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 Mid 3 Gain	-12.00–+12.00 [dB]	Gain of the middle range 3
M Mid 3 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
Side EQ	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 Mid 1 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 Mid 1 Gain	-12.00–+12.00 [dB]	Gain of the middle range 1
S Mid 1 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 Mid 2 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 Mid 2 Gain	-12.00–+12.00 [dB]	Gain of the middle range 2
S Mid 2 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 Mid 3 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 Mid 3 Gain	-12.00–+12.00 [dB]	Gain of the middle range 3
S Mid 3 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

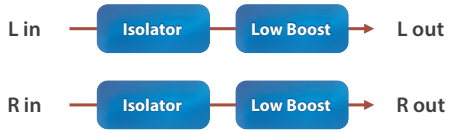
03 Spectrum

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
250Hz	-15–+15 [dB]	Gain of each frequency band
500Hz		
1000Hz		
1250Hz		
2000Hz		
3150Hz		
4000Hz		
8000Hz		
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

04 Isolator

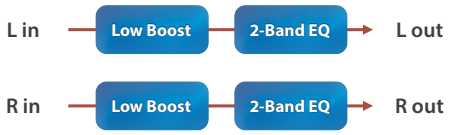
This is an equalizer which cuts the volume greatly, allowing you to add a special effect to the sound by cutting the volume in varying ranges.



Parameter	Value	Explanation
Low Gain	-60–+4 [dB]	Specifies the amount of boost/cut for the low/middle/high-frequency region. At -60 dB, the sound becomes inaudible. 0 dB is equivalent to the input level of the sound.
Mid Gain	-60–+4 [dB]	
High Gain	-60–+4 [dB]	
Anti Phase Low Switch	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 Switch	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 Switch	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

05 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]	Amount of boost/cut for 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

06 Super Filter

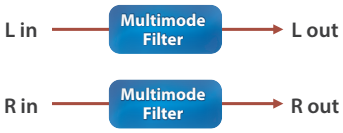
This is a filter with an extremely sharp slope. The cutoff frequency can be varied cyclically.

Parameter	Value	Explanation
Type	LPF, BPF, HPF, NOTCH	Filter type Frequency range that will pass through each filter **LPF:** Frequencies below the cutoff **BPF:** Frequencies in the region of the cutoff **HPF:** Frequencies above the cutoff **NOTCH:** Frequencies other than the region of the cutoff
Slope	-12, -24, -36 [dB]	Amount of attenuation per octave **-12 dB:** Gentle **-24 dB:** Steep **-36 dB:** Extremely steep
Cutoff	0–127	Cutoff frequency of the filter Increasing this value will raise the cutoff frequency.

Parameter	Value	Explanation
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 Switch	OFF, ON	On/off switch for cyclic change
Modulation Wave	TRI, SQR, SIN, SAW1, SAW2	How the cutoff frequency will be modulated **TRI:** Triangle wave **SQR:** Square wave **SIN:** Sine wave **SAW1:** Sawtooth wave (upward) **SAW2:** Sawtooth wave (downward)
	SAW1 SAW2 	
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Rate (note)	Note ➡ "Note" (p. 95)	
Depth	0–127	Depth of modulation
Attack	0–127	Speed at which the cutoff frequency changes.This is effective if the Modulation Wave is SQR, SAW1, or SAW2.
Level	0–127	Output Level

07 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	Filter type **LPF/HPF:** 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 **-12 dB:** Gentle **-24 dB:** Steep **-36 dB:** Extremely steep
Filter Gain	0–+12 [dB]	Amount of boost for the filter output
Level	0–127	Output Level

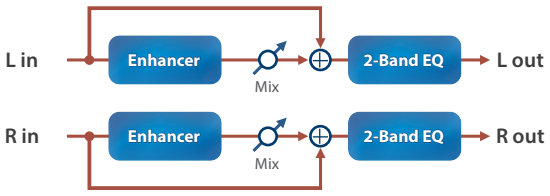
08 Step Filter

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
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Rate (note)	Note ➡ "Note" (p. 95)	
Attack	0–127	Speed at which the cutoff frequency changes between steps
Filter Type	LPF, BPF, HPF, NOTCH	Frequency range that will pass through each filter **LPF:** Frequencies below the cutoff **BPF:** Frequencies in the region of the cutoff **HPF:** Frequencies above the cutoff **NOTCH:** Frequencies other than the region of the cutoff
Filter Slope	-12, -24, -36 [dB]	Amount of attenuation per octave **-12 dB:** Gentle **-24 dB:** Steep **-36 dB:** 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

09 Enhancer

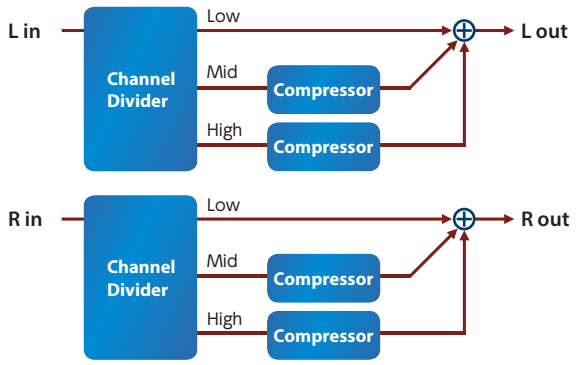
Controls the overtone structure of the high frequencies, adding sparkle and tightness to the sound.



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

10 Exciter

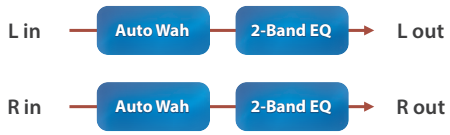
This adds dynamics to the sound, by dynamically bringing up the high end using a split-band compressor.



Parameter	Value	Explanation
Band 2 Threshold	-80.0–0.0 (dB)	Raises the midrange frequency levels when they fall below the specified amount.
Band 2 Max Gain	0–+24 (dB)	Sets how much to raise the levels when the midrange volume is low.
Band 3 Threshold	-80.0–0.0 (dB)	Raises the high-end frequency levels when they fall below the specified amount.
Band 3 Max Gain	0–+24 (dB)	Sets how much to raise the levels when the high-end frequency volume is low.
Split 1 Frequency	2000–5000 (Hz)	Frequency at which the low and midrange frequencies are split
Split 2 Frequency	3000–10000 (Hz)	Frequency at which the midrange and high-end frequencies are split
Level	0–127	Output Level

11 Auto Wah

Cyclically controls a filter to create cyclic change in timbre.



Parameter	Value	Explanation
Filter Type	LPF, BPF	Filter type **LPF**: The wah effect will be applied over a wide frequency range. **BPF**: 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 **UP:** The filter will change toward a higher frequency. **DOWN:** The filter will change toward a lower frequency.
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Rate (note)	Note ➡ "Note" (p. 95)	
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

12 Humanizer

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

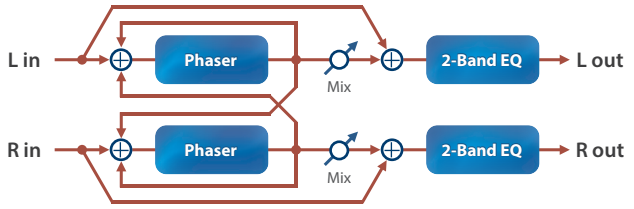
Parameter	Value	Explanation
Drive Switch	OFF, ON	Overdrive on/off
Drive	0–127	Degree of distortion Also changes the volume.
Vowel 1	a, e, i, o, u	Vowel 1
Vowel 2	a, e, i, o, u	Vowel 2
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Rate (Hz)	0.05–10.00 [Hz]	Frequency at which the two vowels switch
Rate (note)	Note ➡ "Note" (p. 95)	
Depth	0–127	Effect depth
Input Sync Switch	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 **0–49:** Vowel 1 will have a longer duration. **50**: Vowel 1 and 2 will be of equal duration. **51–100:** Vowel 2 will have a longer duration.

Parameter	Value	Explanation
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

13 Phaser

This is a stereo phaser. A phase-shifted sound is added to the original sound and modulated.

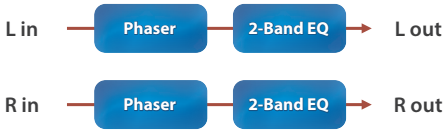


Parameter	Value	Explanation
Mode	4-STAGE, 8-STAGE, 12-STAGE	Number of stages in the phaser
Manual	0–127	Adjusts the basic frequency from which the sound will be modulated.
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Rate (note)	Note ➡ "Note" (p. 95)	
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. **INVERSE:** The left and right phase will be opposite. When using a mono source, this spreads the sound. **SYNCHRO:** 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

14 Small Phaser

This simulates an analog phaser of the past.

It is particularly suitable for electric piano.

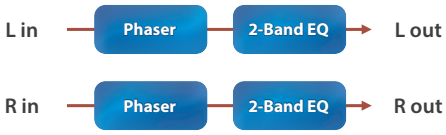


Parameter	Value	Explanation
Rate	0–100	Frequency of modulation
Color	1, 2	Modulation character
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level

15 Script 90

This simulates a different analog phaser than Small Phaser.

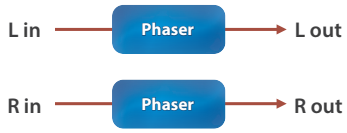
It is particularly suitable for electric piano.



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

16 Script 100

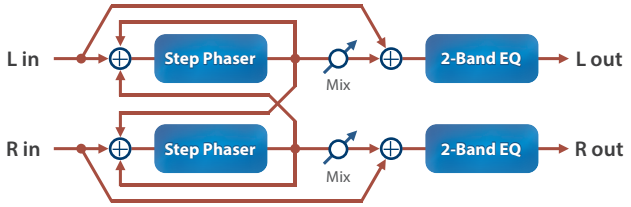
This simulates an analog phaser of the past.



Parameter	Value	Explanation
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Rate (note)	Note ➡ "Note" (p. 95)	
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 Switch	OFF, ON	Applies modulation according to the value of the Manual parameter, rather than modulating automatically.
Manual	0–100	Adjusts the basic frequency from which the sound will be modulated.
Resonance	0–66	Amount of feedback
Mix	0–127	Level of the phase-shifted sound
Level	0–127	Output Level

17 Step Phaser

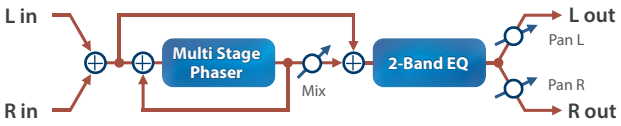
This is a stereo phaser. The phaser effect will be varied gradually.



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.
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Rate (note)	Note ➡ "Note" (p. 95)	
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. **INVERSE:** The left and right phase will be opposite. When using a mono source, this spreads the sound. **SYNCHRO:** 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 Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Step Rate (Hz)	0.10–20.00 [Hz]	Rate of the step-wise change in the phaser effect
Step Rate (note)	Note ➡ "Note" (p. 95)	
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

18 Multi Stage Phaser

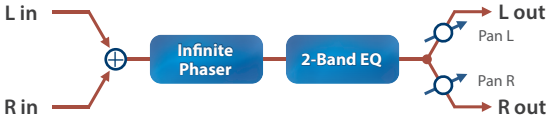
Extremely high settings of the phase difference produce a deep phaser effect.



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.
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Rate (note)	Note ➡ "Note" (p. 95)	
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

19 Infinite Phaser

A phaser that continues raising/lowering the frequency at which the sound is modulated.



Parameter	Value	Explanation
Mode	1–4	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

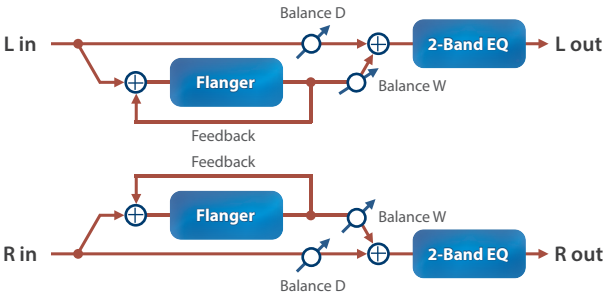
Flanger

20 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	Filter type **OFF**: No filter is used **LPF**: Cuts the frequency range above the Cutoff Frequency **HPF:** Cuts the frequency range below the Cutoff Frequency
Cutoff Frequency	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Adjusts the center frequency used when the filter cuts a specific frequency region.
Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the flanger sound is heard.
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Rate (note)	Note ➡ "Note" (p. 95)	
Depth	0–127	Depth of modulation
Phase	0–180 [deg]	Spatial spread of the flanger 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

21 SBF-325 (Flanger)

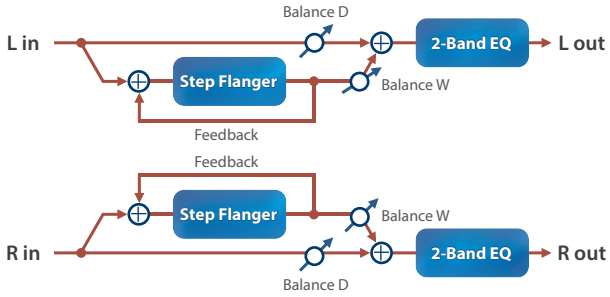
This effect reproduces Roland's SBF-325 analog flanger.

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	FL1, FL2, FL3, CHO	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
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Rate (Hz)	0.02–5.00 [Hz]	Modulation frequency of the flanger effect
Rate (note)	Note ➡ "Note" (p. 95)	
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	NORM, INV	Phase when mixing the flanging sound with the original sound **NORM:** normal phase **INV:** inverse phase
CH-R Phase	NORM, INV	
Level	0–127	Output Level

22 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.

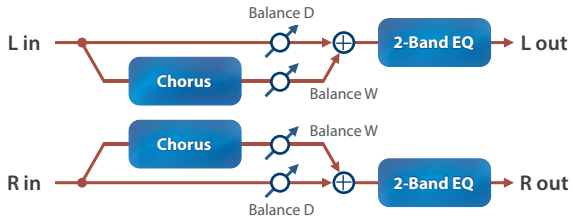


Parameter	Value	Explanation
Filter Type	OFF, LPF, HPF	Filter type **OFF**: No filter is used **LPF**: Cuts the frequency range above the Cutoff Freq **HPF:** Cuts the frequency range below the Cutoff Freq
Cutoff Frequency	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Adjusts the center frequency used when the filter cuts a specific frequency region.
Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the flanger sound is heard.
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Rate (note)	Note ➡ "Note" (p. 95)	
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 Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Step Rate (Hz)	0.10–20.00 [Hz]	Rate (period) of pitch change
Step Rate (note)	Note ➡ "Note" (p. 95)	
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

23 Chorus

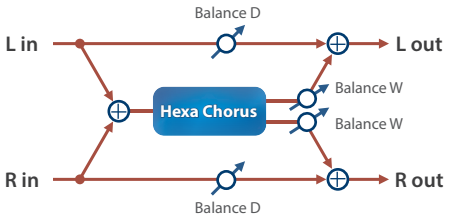
This is a stereo chorus. A filter is provided so that you can adjust the timbre of the chorus sound.



Parameter	Value	Explanation
Filter Type	OFF, LPF, HPF	Filter type **OFF**: No filter is used **LPF**: Cuts the frequency range above the Cutoff Freq **HPF:** Cuts the frequency range below the Cutoff Freq
Cutoff Frequency	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Adjusts the center frequency used when the filter cuts a specific frequency region.
Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Rate (note)	Note ➡ "Note" (p. 95)	
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

24 Hexa-Chorus

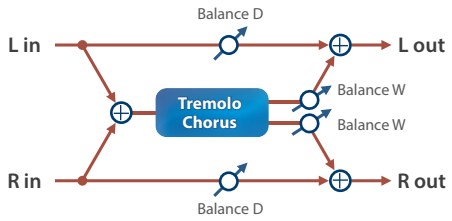
Uses a six-phase chorus (six layers of chorused sound) to give richness and spatial spread to the sound.



Parameter	Value	Explanation
Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Rate (note)	➡ "Note" (p. 95)	
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. **0:** All chorus sounds will be in the center. **20:** 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

25 Tremolo Chorus

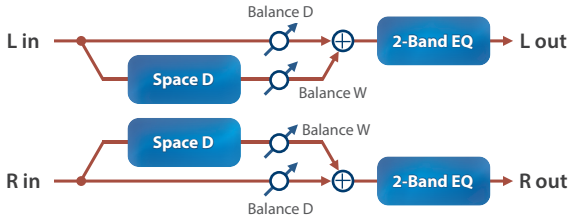
This is a chorus effect with added Tremolo (cyclic modulation of volume).



Parameter	Value	Explanation
Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Chorus Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Chorus Rate (Hz)	0.05–10.00 [Hz]	Modulation frequency of the chorus effect
Chorus Rate (note)	Note ➡ "Note" (p. 95)	
Chorus Depth	0–127	Modulation depth of the chorus effect
Tremolo Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Tremolo Rate (Hz)	0.05–10.00 [Hz]	Modulation frequency of the tremolo effect
Tremolo Rate (note)	Note ➡ "Note" (p. 95)	
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

26 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.

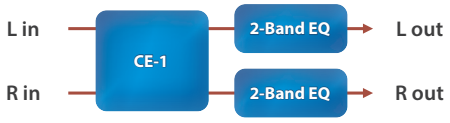


Parameter	Value	Explanation
Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Rate (note)	Note ➡ "Note" (p. 95)	
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

27 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

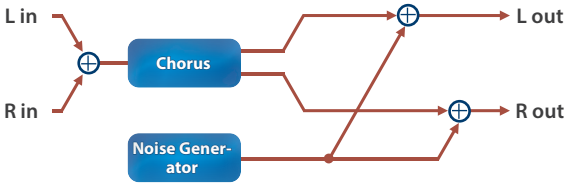
28 SDD-320 (DIMENSION D)

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–+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

29 JUNO-106 Chorus

This models the chorus effects of the Roland JUNO-106.

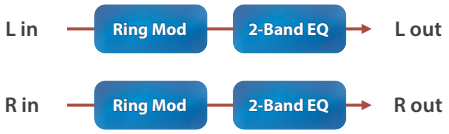


Parameter	Value	Explanation
Mode	I, II, I+II, JX I, JX II	Type of Chorus **I+II:** The state in which two buttons are pressed simultaneously.
Noise Level	0–127	Volume of the noise produced by chorus
Balance	D100:0W–D0:100W	Volume balance between the dry sound (D) and effect sound (W)
Level	0–127	Output Level

Modulation

30 Ring Modulation

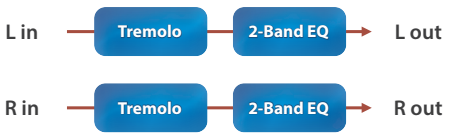
Applies amplitude modulation (AM) to the input signal, producing bell-like sounds. You can also change the modulation frequency in response to changes in the volume of the sound sent into the effect.



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. **UP:** The filter will change toward a higher frequency. **DOWN:** 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

31 Tremolo

Cyclically changes the volume.

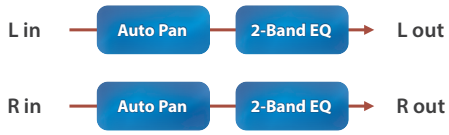


Parameter	Value	Explanation
Mod Wave	TRI, SQR, SIN, SAW1, SAW2, TRP	Modulation Wave **TRI:** Triangle wave **SQR:** Square wave **SIN:** Sine wave **SAW1/2:** Sawtooth wave **TRP:** Trapezoidal wave
	SAW1 SAW2 	
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Rate (Hz)	0.05–10.00 [Hz]	Frequency of the change
Rate (note)	Note ➡ "Note" (p. 95)	

Parameter	Value	Explanation
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

32 Auto Pan

Cyclically modulates the stereo location of the sound.



Parameter	Value	Explanation
Mod Wave	TRI, SQR, SIN, SAW1, SAW2, TRP	Modulation Wave **TRI:** Triangle wave **SQR:** Square wave **SIN:** Sine wave **SAW1/2:** Sawtooth wave **TRP:** Trapezoidal wave
	SAW1 R L / SAW2 R L	
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Rate (Hz)	0.05–10.00 [Hz]	Frequency of the change
Rate (note)	Note ➡ "Note" (p. 95)	
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

33 Slicer

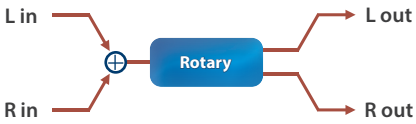
By applying successive cuts to the sound, this effect turns a conventional sound into a sound that appears to be played as a backing phrase. This is especially effective when applied to sustain-type sounds.

Parameter	Value	Explanation
Step 01–16	0–127	Level at each step
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Rate (Hz)	0.05–10.00 [Hz]	Rate at which the 16-step sequence will cycle
Rate (note)	Note ➡ "Note" (p. 95)	
Attack	0–127	Speed at which the level changes between steps
Input Sync Switch	OFF, ON	Selects whether to restart the step sequence from the beginning according to the presence of input sound (ON) or not (OFF).
Input Sync Threshold	0–127	Volume at which an input note will be detected
Mode	LEGATO, SLASH	Sets the manner in which the volume changes as one step progresses to the next. **LEGATO:** The change in volume from one step's level to the next remains unaltered. If the level of a following step is the same as the one preceding it, there is no change in volume. **SLASH:** The level is momentarily set to 0 before progressing to the level of the next step. This change in volume occurs even if the level of the following step is the same as the preceding step.
Shuffle	0–127	Timing of volume changes in levels for even-numbered steps (step 2, step 4, step 6...). The higher the value, the later the beat progresses.
Level	0–127	Output Level

34 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.

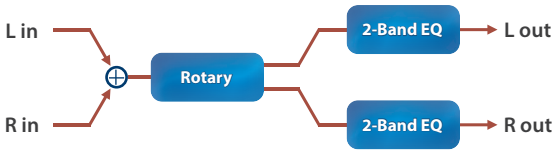


Parameter	Value	Explanation
Speed	SLOW, FAST	Simultaneously switch the rotational speed of the low frequency rotor and high frequency rotor. **SLOW**: Slows down the rotation to the Slow Rate. **FAST:** Speeds up the rotation to the Fast Rate.
Woofer Slow Speed	0.05–10.00 [Hz]	Slow speed (SLOW) of the low frequency rotor
Woofer Fast Speed	0.05–10.00 [Hz]	Fast speed (FAST) of the low frequency rotor
Woofer 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.
Woofer Level	0–127	Volume of the low frequency rotor
Tweeter Slow Speed	0.05–10.00 [Hz]	Settings of the high frequency rotor The parameters are the same as for the low frequency rotor
Tweeter Fast Speed	0.05–10.00 [Hz]	
Tweeter Acceleration	0–15	
Tweeter Level	0–127	
Separation	0–127	Spatial dispersion of the sound
Level	0–127	Output Level

35 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 **SLOW:** Slow **FAST:** 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.
Woofer Slow Speed	0.05–10.00 [Hz]	Low-speed rotation speed of the woofer
Woofer Fast Speed	0.05–10.00 [Hz]	High-speed rotation speed of the woofer
Woofer Trans Up	0–127	Adjusts the rate at which the woofer rotation speeds up when the rotation is switched from slow to fast.
Woofer Trans Down	0–127	Adjusts the rate at which the woofer rotation speeds up when the rotation is switched from fast to slow.
Woofer Level	0–127	Volume of the woofer
Tweeter Slow Speed	0.05–10.00 [Hz]	Settings of the tweeter The parameters are the same as for the woofer.
Tweeter Fast Speed	0.05–10.00 [Hz]	
Tweeter Trans Up	0–127	
Tweeter Trans Down	0–127	
Tweeter 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

36 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 Switch	OFF, ON	Turns the Amp Simulator on/off.
Amp Type	SMALL, BUILT-IN, 2-STACK, 3-STACK	Type of guitar amp **SMALL:** Small amp **BUILT-IN:** Single-unit type amp **2-STACK:** Large double stack amp **3-STACK:** 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

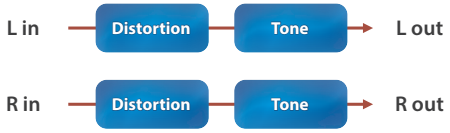
37 Distortion

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 Switch	OFF, ON	Turns the Amp Simulator on/off.
Amp Type	SMALL, BUILT-IN, 2-STACK, 3-STACK	Type of guitar amp **SMALL:** Small amp **BUILT-IN:** Single-unit type amp **2-STACK:** Large double stack amp **3-STACK:** 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

38 T-Scream

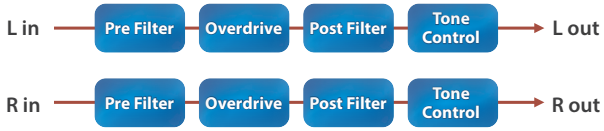
This models a classic analog overdrive. It is distinctive in adding an appropriate amount of overtones without muddying the sound.



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

39 Fuzz

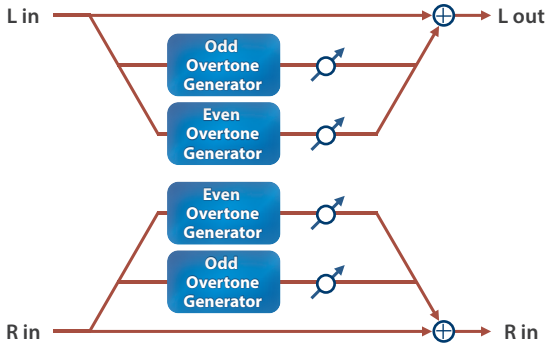
Adds overtones and intensely distorts the sound.



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

40 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

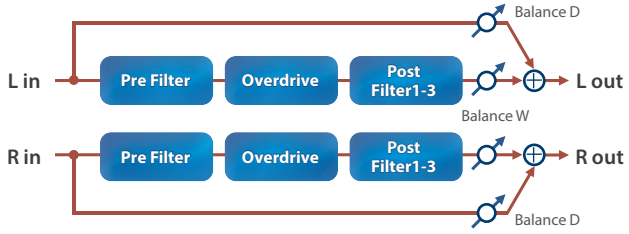
41 HMS Distortion

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

42 Saturator

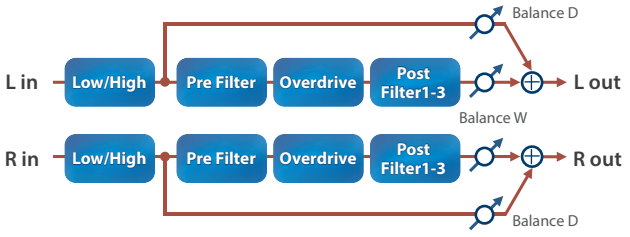
This effect combines overdrive and filter.



Parameter	Value	Explanation
Drv Pre Type	THRU, LPF, HPF, LSV, HSV	Types of filter that precedes the distortion processing **THRU:** No filter is applied **LPF:** A filter that passes the sound below the specified frequency **HPF:** A filter that passes the sound above the specified frequency **LSV:** A filter that boosts/cuts the sound below the specified frequency **HSV:** A filter that boosts/cuts the sound above the specified frequency
Drv Pre Frequency	20–16000 [Hz]	Frequency at which the pre-distortion filter operates
Drv Pre 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
Drv Post 1 Type	THRU, LPF, HPF, LSV, HSV	Type of filter 1 which follows the distortion processing
Drv Post 1 Frequency	20–16000 [Hz]	Frequency at which post-distortion filter 1 operates
Drv Post 1 Gain	-24.0–+24.0 [dB]	For the LSV/HSV types, the amount of boost/cut
Drv Post 2 Type	THRU, LPF, HPF, LSV, HSV	Type of filter 2 which follows the distortion processing
Drv Post 2 Frequency	20–16000 [Hz]	Frequency at which post-distortion filter 2 operates
Drv Post 2 Gain	-24.0–+24.0 [dB]	For the LSV/HSV types, the amount of boost/cut
Drv Post 3 Type	THRU, LPF, HPF, BPF, PKG	Type of filter 3 which follows the distortion processing **THRU:** No filter is applied **LPF:** A filter that passes the sound below the specified frequency **HPF:** A filter that passes the sound above the specified frequency **BPF:** A filter that passes only the specified frequency **PKG:** A filter that boosts/cuts the specified frequency
Drv Post 3 Frequency	20–16000 [Hz]	Frequency at which post-distortion filter 3 operates
Drv Post 3 Gain	-24.0–+24.0 [dB]	For the PKG type, the amount of boost/cut
Drv Post 3 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.
Drv Post 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

43 Warm Saturator

This is a variety of saturator, and is distinctive for its warmer sound.

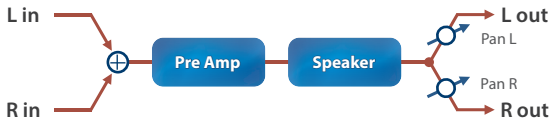


Parameter	Value	Explanation
EQ Low Frequency	20–16000 [Hz]	Input filter (low range) Boosts/cuts the sound below the specified frequency.
EQ Low Gain	-24.0–+24.0 [dB]	Input filter (low range) Amount of boost/cut
EQ High Slope	THRU, -12dB, -24dB	Input filter (high frequency) slope (attenuation characteristics or amount of attenuation per octave) **THRU:** No attenuation **-12 dB:** Gentle **-24 dB:** Steep
EQ High Frequency	20–16000 [Hz]	Input filter (high range) Boosts/cuts the sound above the specified frequency.

Parameter	Value	Explanation
Drv Pre Type	THRU, LPF, HPF, LSV, HSV	Types of filter that precedes the distortion processing **THRU:** No filter is applied **LPF:** A filter that passes the sound below the specified frequency **HPF:** A filter that passes the sound above the specified frequency **LSV:** A filter that boosts/cuts the sound below the specified frequency **HSV:** A filter that boosts/cuts the sound above the specified frequency
Drv Pre Frequency	20–16000 [Hz]	Frequency at which the pre-distortion filter operates
Drv Pre 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
Drv Post 1 Type	THRU, LPF, HPF, LSV, HSV	Type of filter 1 which follows the distortion processing
Drv Post 1 Frequency	20–16000 [Hz]	Frequency at which post-distortion filter 1 operates
Drv Post 1 Gain	-24.0–+24.0 [dB]	For the LSV/HSV types, the amount of boost/cut
Drv Post 2 Type	THRU, LPF, HPF, LSV, HSV	Type of filter 2 which follows the distortion processing
Drv Post 2 Frequency	20–16000 [Hz]	Frequency at which post-distortion filter 2 operates
Drv Post 2 Gain	-24.0–+24.0 [dB]	For the LSV/HSV types, the amount of boost/cut
Drv Post 3 Type	THRU, LPF, HPF, BPF, PKG	Type of filter 3 which follows the distortion processing **THRU:** No filter is applied **LPF:** A filter that passes the sound below the specified frequency **HPF:** A filter that passes the sound above the specified frequency **BPF:** A filter that passes only the specified frequency **PKG:** A filter that boosts/cuts the specified frequency
Drv Post 3 Frequency	20–16000 [Hz]	Frequency at which post-distortion filter 3 operates
Drv Post 3 Gain	-24.0–+24.0 [dB]	For the PKG type, the amount of boost/cut
Drv Post 3 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.
Drv Post 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

44 Guitar Amp Simulator

This is an effect that simulates the sound of a guitar amplifier.

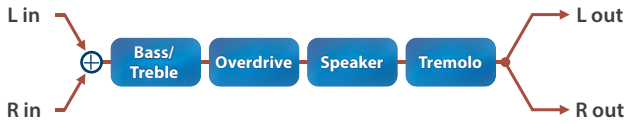


Parameter	Value	Explanation
Pre Amp Switch	OFF, ON	Turns the amp switch on/off.
Pre Amp Type	JC-120	This models the sound of the Roland JC-120.
	CLEAN TWIN	This models a Fender Twin Reverb.
	MATCH DRIVE	This models the sound input to left input on a Matchless D/C-30. A simulation of the latest tube amp widely used in styles from blues rock and fusion.
	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	A model of the Marshall 1959 sound, with inputs I and II connected in parallel. Offers a sound with a more emphasized low-end than MS1959I.
	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	
Pre Amp Presence	0–127	Tone for the ultra-high frequency range

Parameter	Value	Explanation		
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 Switch	OFF, ON	Selects whether the sound will be sent through the speaker simulation (ON) or not (OFF)		
Speaker Type		Cabinet	Diameter (in 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-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	1–3	Adjusts the location of the microphone that is recording the sound of the speaker. This can be adjusted in three steps, with the microphone 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		

45 RD EP Amp Sim (RD EP Amp Simulator)

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	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 Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Tremolo Rate (Hz)	0.05–10.00 [Hz]	Rate of the tremolo effect
Tremolo Rate (note)	Note ➡ "Note" (p. 95)	
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

46 Speaker Simulator

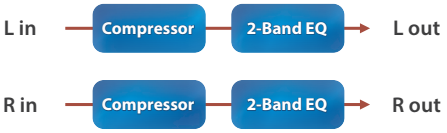
Simulates the speaker type and mic settings used to record the speaker sound.

Parameter	Value	Explanation		
Speaker Type		Cabinet	Diameter (in 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-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	1–3	Adjusts the location of the microphone that is recording the sound of the speaker. This can be adjusted in three steps, with the microphone 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

47 Compressor

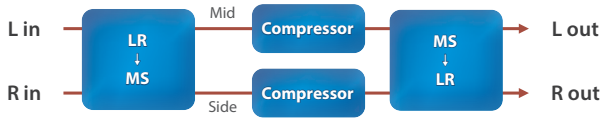
Flattens out high levels and boosts low levels, smoothing out fluctuations in volume.



Parameter	Value	Explanation
Attack	0–124	Specifies the time from when the input exceeds Threshold until compression is applied to the volume.
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 smooths out the sonic transition, from when the compression is not engaged until when the compression begins. This gradually applies compression from just before the Threshold point. 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

48 Mid-Side Compressor

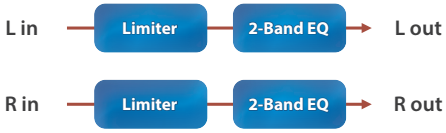
This effect allows the left/right signals that have similar phase to be adjusted to a different sense of volume than the left/right signals that have different phase.



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	Specifies the time from when the input exceeds M Threshold until compression is applied to the volume.
M Release	0–124	Adjusts the time after the signal volume falls below the M Threshold until compression is no longer applied.
M Threshold	-60–0 [dB]	Adjusts the volume at which compression begins.
M Knee	0–30 [dB]	This function smooths out the sonic transition, from when the compression is not engaged until when the compression begins. This gradually applies compression from just before the M Threshold point. 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	Specifies the time from when the input exceeds S Threshold until compression is applied to the volume.
S Release	0–124	Adjusts the time after the signal volume falls below the S 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 function smooths out the sonic transition, from when the compression is not engaged until when the compression begins. This gradually applies compression from just before the S Threshold point. 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

49 Limiter

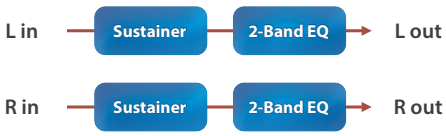
Compresses signals that exceed a specified volume level, preventing distortion from occurring.



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

50 Sustainer

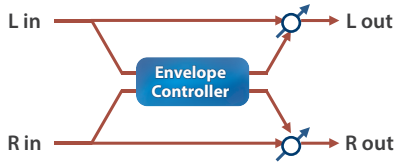
By compressing loud input and boosting low input, this effect keeps the volume consistent to produce a sustain effect without distortion.



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

51 Transient

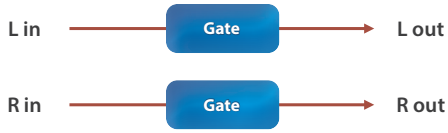
This effect lets you control the way in which the sound attacks and decays.



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 cutoff quickly.
Output Gain	-24–+12 [dB]	Output gain
Sense	LOW, MID, HIGH	Quickness with which the attack is detected
Level	0–127	Output Level

52 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.



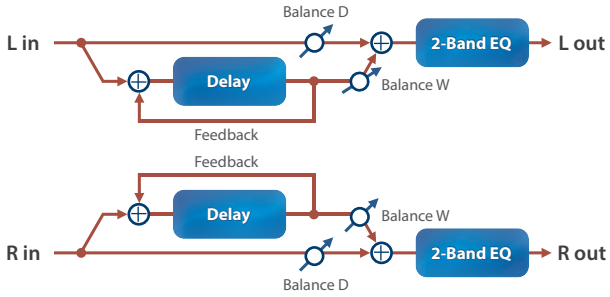
Parameter	Value	Explanation
Threshold	0–127	Volume level at which the gate begins to close
Mode	GATE, DUCK	Type of gate **GATE:** The gate will close when the volume of the original sound decreases, cutting the original sound. **DUCK (Duking):** The gate will close when the volume of the original sound 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

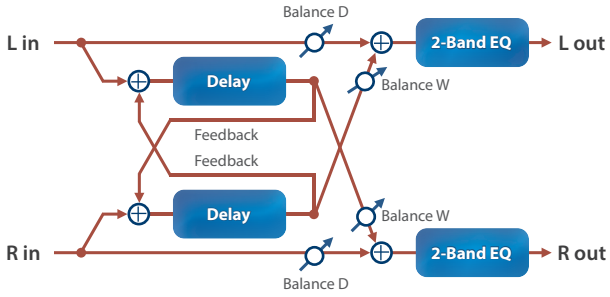
53 Delay

This is a stereo delay.

When Feedback Mode is NORMAL:



When Feedback Mode is CROSS:



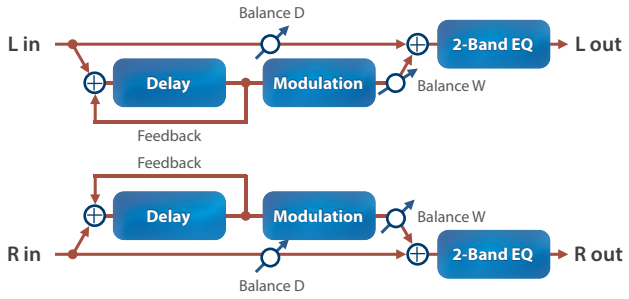
Parameter	Value	Explanation
Sync Left	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Delay Left (msec)	1–1300 [msec]	Adjusts the time until the left delay sound is heard.
Delay Left (note)	Note ➡ "Note" (p. 95)	
Sync Right	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Delay Right (msec)	1–1300 [msec]	Adjusts the time until the right delay sound is heard.
Delay Right (note)	Note ➡ "Note" (p. 95)	
Phase Left	NORMAL, INVERSE	Phase of left and right delay sound **NORMAL:** Non-inverted **INVERT:** Inverted
Phase Right	NORMAL, INVERSE	
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.

Parameter	Value	Explanation
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

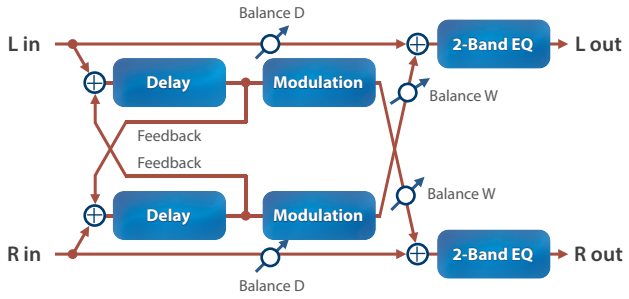
54 Modulation Delay

Adds modulation to the delayed sound.

When Feedback Mode is NORMAL:



When Feedback Mode is CROSS:

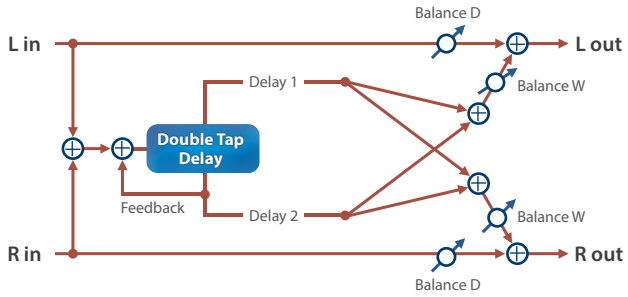


Parameter	Value	Explanation
Sync Left	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Delay Left (msec)	1–1300 [msec]	Adjusts the time until the left delay sound is heard.
Delay Left (note)	Note ➡ "Note" (p. 95)	
Sync Right	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Delay Right (msec)	1–1300 [msec]	Adjusts the time until the right delay sound is heard.
Delay Right (note)	Note ➡ "Note" (p. 95)	

Parameter	Value	Explanation
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.
Mod Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Mod Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Mod Rate (note)	Note ➡ "Note" (p. 95)	
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

55 2Tap Pan Delay

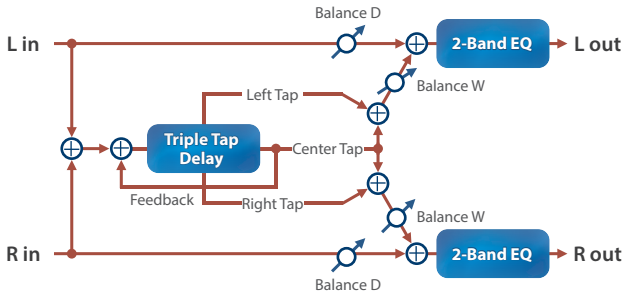
Produces two delay sounds; left and right.



Parameter	Value	Explanation
Delay Sync	OFF, ON	If this is ON, the delay synchronizes with the tempo.
Delay Time (msec)	1–2600 [msec]	Adjusts the time until the second delay sound is heard.
Delay Time (note)	Note ➡ "Note" (p. 95)	
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	Adjusts the stereo location of delay 1.
Delay 2 Pan	L64–63R	Adjusts the stereo location of delay 2.
Delay 1 Level	0–127	Adjusts the volume of delay 1.
Delay 2 Level	0–127	Adjusts the 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

56 3Tap Pan Delay

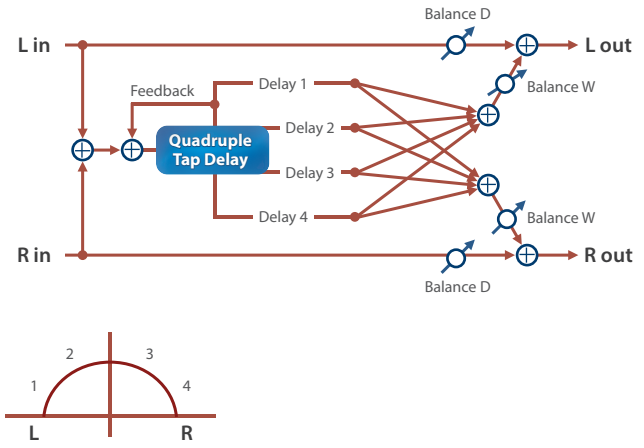
Produces three delay sounds; center, left and right.



Parameter	Value	Explanation
Sync Left	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Delay Left (msec)	1–2600 [msec]	Adjusts the time until the left delay sound is heard.
Delay Left (note)	Note ➡ "Note" (p. 95)	
Sync Right	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Delay Right (msec)	1–2600 [msec]	Adjusts the time until the right delay sound is heard.
Delay Right (note)	Note ➡ "Note" (p. 95)	
Sync Center	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Delay Center (msec)	1–2600 [msec]	Adjusts the time until the center delay sound is heard.
Delay Center (note)	Note ➡ "Note" (p. 95)	
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	Volume of each delay sound
Right Level	0–127	
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

57 4Tap Pan Delay

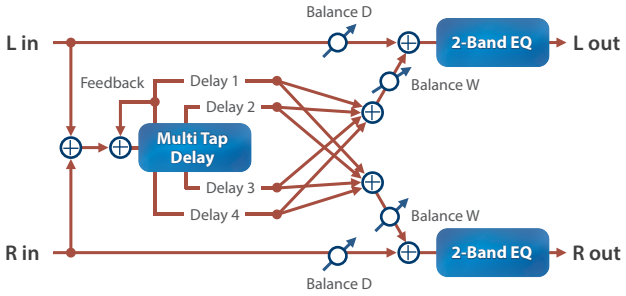
This effect has four delays.



Parameter	Value	Explanation
Sync 1	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
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" (p. 95)	
Sync 2	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
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" (p. 95)	
Sync 3	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
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" (p. 95)	
Sync 4	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
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" (p. 95)	
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	0–127	
Delay 3 Level	0–127	
Delay 4 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

58 Multi Tap Delay

This effect has 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.

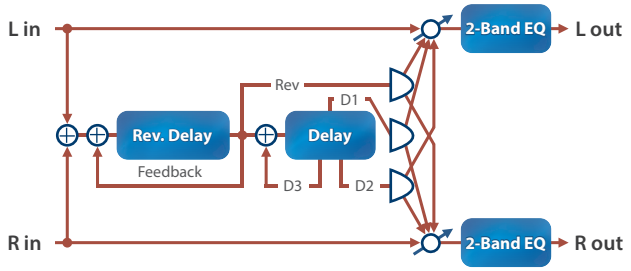


Parameter	Value	Explanation
Sync 1	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Delay 1 Time (msec)	1–2600 [msec]	Adjusts the time from the original sound until delay 1 sounds is heard.
Delay 1 Time (note)	Note ➡ "Note" (p. 95)	
Sync 2	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
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" (p. 95)	
Sync 3	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
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" (p. 95)	
Sync 4	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
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" (p. 95)	
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.

Parameter	Value	Explanation
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	L64–63R	
Delay 3 Pan	L64–63R	
Delay 4 Pan	L64–63R	
Delay 1 Level	0–127	Volume of each delay
Delay 2 Level	0–127	
Delay 3 Level	0–127	
Delay 4 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 effect sound (W)
Level	0–127	Output Level

59 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.

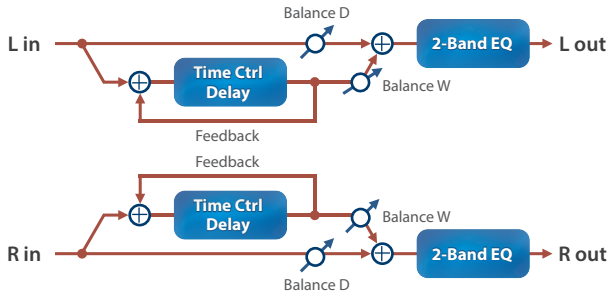


Parameter	Value	Explanation
Threshold	0–127	Volume at which the reverse delay will begin to be applied
Rev Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Rev Delay Time (msec)	1–1300 [msec]	Delay time from when sound is input into the reverse delay until the delay sound is heard
Rev Delay Time (note)	Note ➡ "Note" (p. 95)	
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

Parameter	Value	Explanation
Sync 1	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
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" (p. 95)	
Sync 2	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
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" (p. 95)	
Sync 3	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
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" (p. 95)	
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

60 Time Ctrl Delay (Time Control Delay)

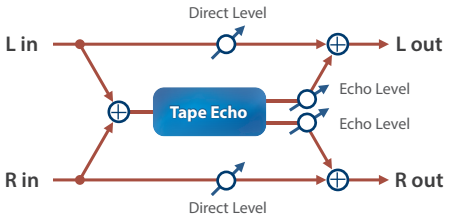
A stereo delay in which the delay time can be varied smoothly.



Parameter	Value	Explanation
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Delay Time (msec)	1–1300 [msec]	Delay time from when the original sound is heard to when the delay sound is heard
Delay Time (note)	Note ➡ "Note" (p. 95)	
Acceleration	0–15	Specifies the 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.
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

61 Tape Echo

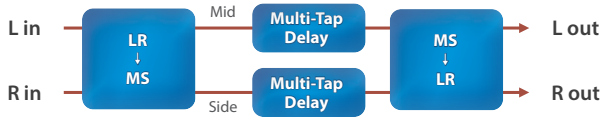
A virtual tape echo that produces a realistic tape delay sound. This simulates the tape echo section of a Roland RE-201 Space Echo.



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. **S:** short **M:** middle **L:** 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

62 Mid-Side Delay

This effect applies different amounts of delay to left/right signals of similar phase and differing phase.

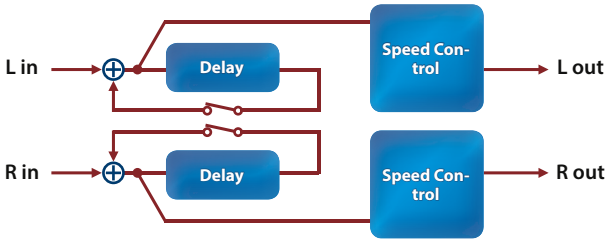


Parameter	Value	Explanation
M Delay Level	0–127	Delay volume of left/right input signals whose phase is similar (in phase)
M Delay Mode	2TAP, 3TAP, 4TAP	Delay divisions for the input signals whose left/right phase is similar (identical phase)
M Sync	OFF, ON	If this is ON, the delay synchronizes with the tempo.
M Delay Time (msec)	1–1300 [msec]	Delay time from when the original sound is heard to when the delay sound is heard
M Delay Time (note)	Note ➡ "Note" (p. 95)	
M 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	L64–63R	Panning of the second delay sound
M Delay 3 Pan	L64–63R	Panning of the third delay sound
M Delay 4 Pan	L64–63R	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 Sync	OFF, ON	If this is ON, the delay synchronizes with the tempo.
S Delay Time (msec)	1–1300 [msec]	Delay time from when the original sound is heard to when the delay sound is heard
S Delay Time (note)	Note ➡ "Note" (p. 95)	
S 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	L64–63R	Panning of the second delay sound
S Delay 3 Pan	L64–63R	Panning of the third delay sound
S Delay 4 Pan	L64–63R	Panning of the fourth delay sound
Level	0–127	Output Level

Looper

63 DJFX Looper

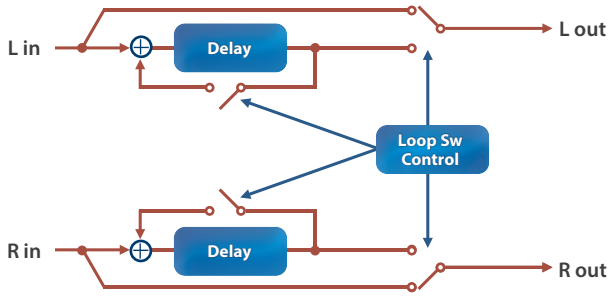
Loops a short portion of the input sound. You can vary the playback direction and playback speed of the input sound to add turntable-type effects.



Parameter	Value	Explanation
Length	230–12 [msec]	Sets the length of the loop.
Speed	-1.00–+1.00	Adjusts the playback direction and playback speed. **- direction:** Reverse playback **+ direction:** Normal playback **0:** Stop playback As the value moves away from 0, the playback speed becomes faster.
Loop Switch	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

64 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	230–12 [msec]	Sets the length of the loop.
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Rate (Hz)	0.05–10.00 [Hz]	Cycle at which the loop automatically turns on/off
Rate (note)	Note ➡ "Note" (p. 95)	
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

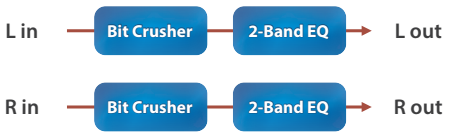
65 LOFI Compress

Degrades the sound quality.

Parameter	Value	Explanation
Pre Filter Type	1–6	Selects the type of filter applied to the sound before it passes through the Lo-Fi effect. **1:** Compressor off **2–6:** Compressor on
LoFi Type	1–9	Degrades the sound quality. The sound quality grows poorer as this value is increased.
Post Filter Type	OFF, LPF, HPF	Type of filter **OFF**: No filter is used **LPF**: Cuts the frequency range above the Cutoff Freq **HPF:** Cuts the frequency range below the Cutoff Freq
Post Filter Cutoff	200–8000 [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

66 Bit Crusher

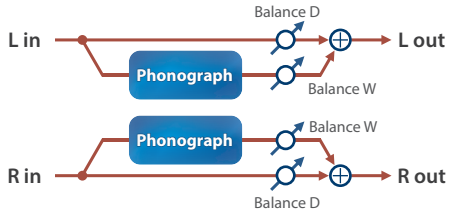
Produces an extreme lo-fi effect.



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

67 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.

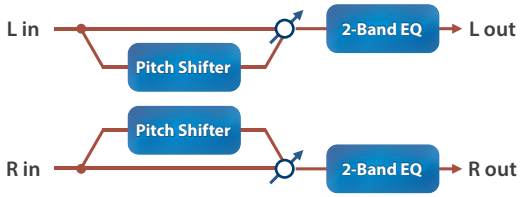


Parameter	Value	Explanation
Signal Dist	0–127	Sets the amount of distortion.
Frequency Range	0–127	Sets the frequency characteristics of the playback system. Smaller values create the feeling of an older system with narrow frequency bands.
Disc Type	LP, EP, SP	Sets the turntable rotation speed. This has an effect on the scratch noise cycle.
Scratch Noise Level	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 W/F	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

68 Pitch Shifter

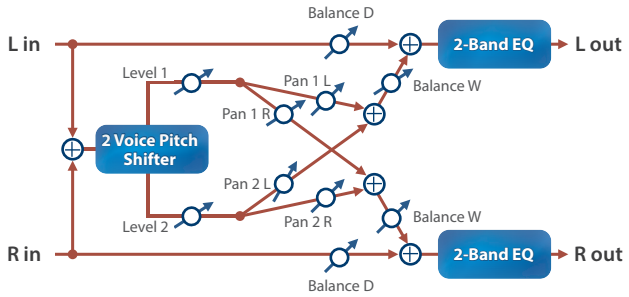
A stereo pitch shifter.



Parameter	Value	Explanation
Coarse	-24–+12	Adjusts the pitch of the pitch shifted sound in semitone steps.
Fine	-100–+100	Adjusts the pitch of the pitch shifted sound in 2-cent steps.
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Delay Time (msec)	1–1300 [msec]	Adjusts the delay time from the direct sound until the pitch shifted sound is heard.
Delay Time (note)	Note ➡ "Note" (p. 95)	
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

69 2Voice Pitch Shifter

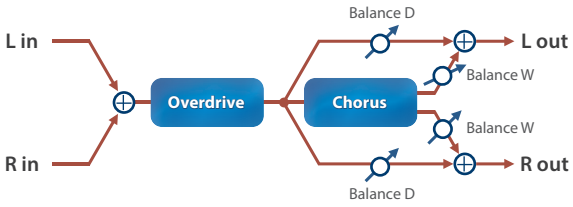
Shifts the pitch of the original sound. This 2-voice pitch shifter has two pitch shifters, and can add two pitch shifted sounds to the original sound.



Parameter	Value	Explanation
Pitch 1 Coarse	-24–+12	Adjusts the pitch of Pitch Shift 1 in semitone steps.
Pitch 1 Fine	-100–+100	Adjusts the pitch of Pitch Shift Pitch 1 in 2-cent steps.
Pitch 1 Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Pitch 1 Delay (msec)	1–1300 [msec]	Adjusts the delay time from the direct sound until the Pitch Shift 1 sound is heard.
Pitch 1 Delay (note)	Note ➡ "Note" (p. 95)	
Pitch 1 Feedback	-98–+98 [%]	Adjusts the proportion of the pitch shifted sound that is fed back into the effect. Negative (-) settings will invert the phase.
Pitch 1 Pan	L64–63R	Stereo location of the Pitch Shift 1 sound
Pitch 1 Level	0–127	Volume of the Pitch Shift 1 sound
Pitch 2 Coarse	-24–+12	Settings of the Pitch Shift 2 sound. The parameters are the same as for the Pitch Shift 1 sound.
Pitch 2 Fine	-100–+100	
Pitch 2 Sync	OFF, ON	
Pitch 2 Delay (msec)	1–1300 [msec]	
Pitch 2 Delay (note)	Note ➡ "Note" (p. 95)	
Pitch 2 Feedback	-98–+98 [%]	
Pitch 2 Pan	L64–63R	
Pitch 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 pitch shifted sound (W)
Level	0–127	Output Level

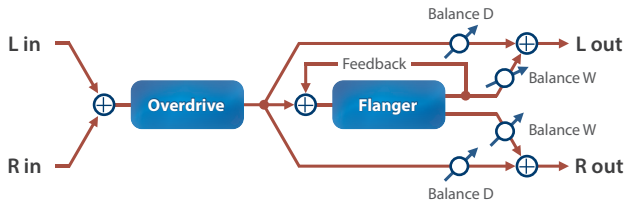
Combination

70 Overdrive → Chorus



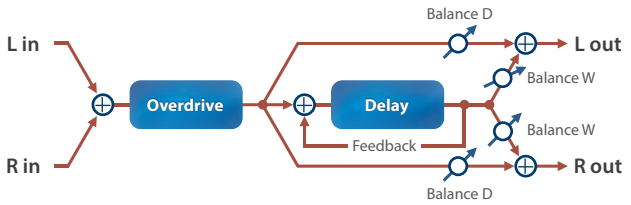
Parameter	Value	Explanation
Overdrive Drive	0–127	Degree of distortion Also changes the volume.
Overdrive Pan	L64–63R	Stereo location of the overdrive sound
Chorus Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Chorus Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Chorus Rate (note)	Note ➡ "Note" (p. 95)	
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

71 Overdrive → Flanger



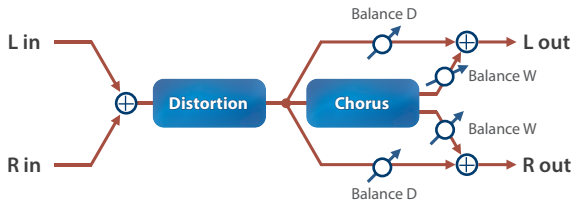
Parameter	Value	Explanation
Overdrive Drive	0–127	Degree of distortion Also changes the volume.
Overdrive Pan	L64–63R	Stereo location of the overdrive sound
Flanger Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the flanger sound is heard.
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Flanger Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Flanger Rate (note)	Note ➡ "Note" (p. 95)	
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

72 Overdrive → Delay



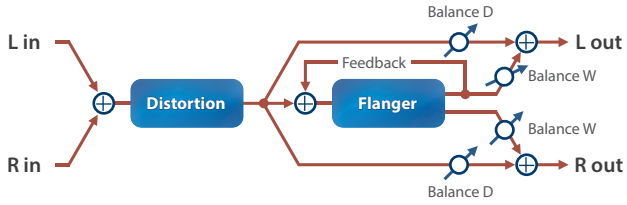
Parameter	Value	Explanation
Overdrive Drive	0–127	Degree of distortion Also changes the volume.
Overdrive Pan	L64–63R	Stereo location of the overdrive sound
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Delay Time (msec)	1–2600 [msec]	Delay time from when the original sound is heard to when the delay sound is heard
Delay Time (note)	Note ➡ "Note" (p. 95)	
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 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

73 Distortion → Chorus



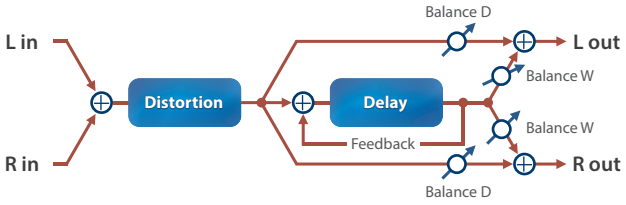
Parameter	Value	Explanation
Distortion Drive	0–127	Degree of distortion Also changes the volume.
Distortion Pan	L64–63R	Stereo location of the overdrive sound
Chorus Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Chorus Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Chorus Rate (note)	Note ➡ "Note" (p. 95)	
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

74 Distortion → Flanger



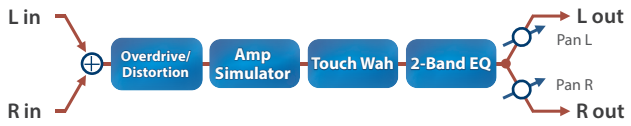
Parameter	Value	Explanation
Distortion Drive	0–127	Degree of distortion Also changes the volume.
Distortion Pan	L64–63R	Stereo location of the overdrive sound
Flanger Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the flanger sound is heard.
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Flanger Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Flanger Rate (note)	Note ➡ "Note" (p. 95)	
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

75 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
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Delay Time (msec)	1–2600 [msec]	Delay time from when the original sound is heard to when the delay sound is heard
Delay Time (note)	Note ➡ "Note" (p. 95)	
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 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

76 OD/DS → TouchWah (Overdrive/Deistortion → Touch Wah)

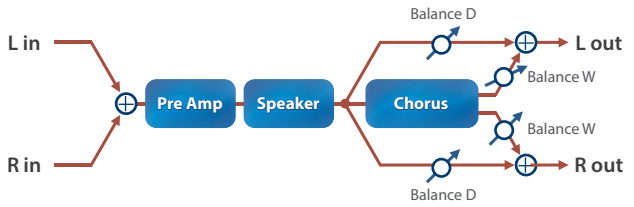


Parameter	Value	Explanation
Drive Switch	OFF, ON	Turns overdrive/distortion on/off.
Drive Type	OVERDRIVE, DISTORTION	Type of distortion
Drive	0–127	Degree of distortion Also changes the volume.
Tone	0–127	Sound quality of the Overdrive effect
Amp Switch	OFF, ON	Turns the Amp Simulator on/off.
Amp Type	SMALL, BUILT-IN, 2-STACK, 3-STACK	Type of guitar amp **SMALL:** Small amp **BUILT-IN:** Single-unit type amp **2-STACK:** Large double stack amp **3-STACK:** Large triple stack amp
TWah Switch	OFF, ON	Wah on/off
TWah Mode	LPF, BPF	Filter type **LPF:** The wah effect will be applied over a wide frequency range. **BPF:** The wah effect will be applied over a narrow frequency range.
TWah Polarity	DOWN, UP	Direction in which the filter will move **DOWN:** The filter will change toward a lower frequency. **UP:** The filter will change toward a higher 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

77 OD/DS → AutoWah (Overdrive/Deistortion → Auto Wah)

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 **SMALL:** Small amp **BUILT-IN:** Single-unit type amp **2-STACK:** Large double stack amp **3-STACK:** Large triple stack amp
AWah Switch	OFF, ON	Wah on/off
AWah Mode	LPF, BPF	Filter type **LPF**: The wah effect will be applied over a wide frequency range. **BPF**: The wah effect will be applied over a narrow frequency range.
AWah Manual	0–127	Center frequency at which the wah effect is applied
AWah Peak	0–127	Width of the frequency region at which the wah effect is applied. Increasing this value will make the frequency region narrower.
AWah Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
AWah Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
AWah Rate (note)	Note ➡ "Note" (p. 95)	
AWah Depth	0–127	Depth at which the wah effect is modulated
AWah 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

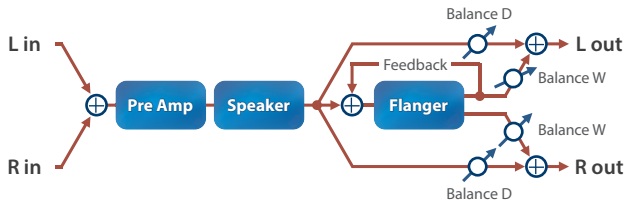
78 GtAmpSim → Chorus (Guitar amp simulator → Chorus)



Parameter	Value	Explanation
Pre Amp Switch	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 rock and fusion.
	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	A model of the Marshall 1959 sound, with inputs I and II connected in parallel. Offers a sound with a more emphasized low-end than MS1959I.
	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	

Parameter	Value	Explanation
Speaker Switch	OFF, ON	Selects whether the sound will be sent through the speaker simulation (ON) or not (OFF).
Speaker Type		Cabinet / Diameter (in 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-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
Chorus Switch	OFF, ON	Chorus on/off
Chorus Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the chorus sound 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

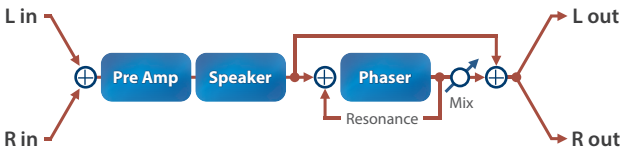
79 GtAmpSim → Flanger (Guitar amp simulator → Flanger)



Parameter	Value	Explanation
Pre Amp Switch	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 rock and fusion.
	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	A model of the Marshall 1959 sound, with inputs I and II connected in parallel. Offers a sound with a more emphasized low-end than MS1959I.
	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	

Parameter	Value	Explanation		
Speaker Switch	OFF, ON	Selects whether the sound will be sent through the speaker simulation (ON) or not (OFF).		
Speaker Type		Cabinet	Diameter (in 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-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
Flanger Switch	OFF, ON	Flanger on/off		
Flanger Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the flanger sound 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		

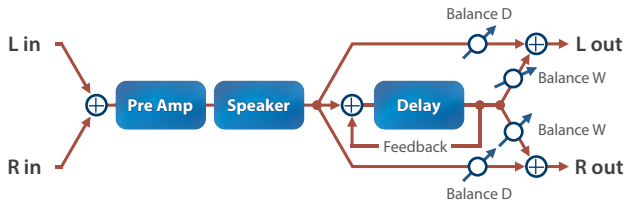
80 GtAmpSim → Phaser (Guitar amp simulator → Phaser)



Parameter	Value	Explanation
Pre Amp Switch	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 rock and fusion.
	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	A model of the Marshall 1959 sound, with inputs I and II connected in parallel. Offers a sound with a more emphasized low-end than MS1959I.
	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	

Parameter	Value	Explanation		
Speaker Switch	OFF, ON	Selects whether the sound will be sent through the speaker simulation (ON) or not (OFF).		
Speaker Type		Cabinet	Diameter (in 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-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
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		

81 GtAmpSim → Delay (Guitar amp simulator → Delay)



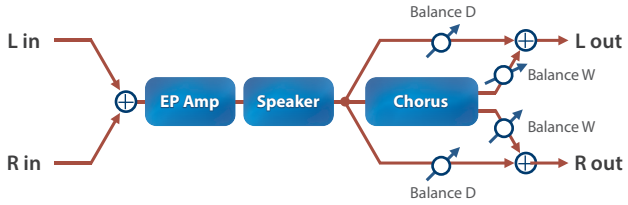
Parameter	Value	Explanation
Pre Amp Switch	OFF, ON	Turns the amp switch on/off.
Pre Amp Type		Type of guitar amp
	JC-120	This models the sound of the Roland JC-120.
	CLEAN TWIN	This models a Fender Twin Reverb.
	MATCH DRIVE	This models the sound input to left input on a Matchless D/C-30. A simulation of the latest tube amp widely used in styles from blues rock and fusion.
	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	A model of the Marshall 1959 sound, with inputs I and II connected in parallel. Offers a sound with a more emphasized low-end than MS1959I.
	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	

Parameter	Value	Explanation		
Speaker Switch	OFF, ON	Selects whether the sound will be sent through the speaker simulation (ON) or not (OFF).		
Speaker Type		Cabinet	Diameter (in 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-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
Delay Switch	OFF, ON	Delay on/off		
Delay Time	1–1300 [msec]	Delay time from when the original sound is heard to when the 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]	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		

82 EPAmpSim → Tremolo (EP amp simulator → Tremolo)

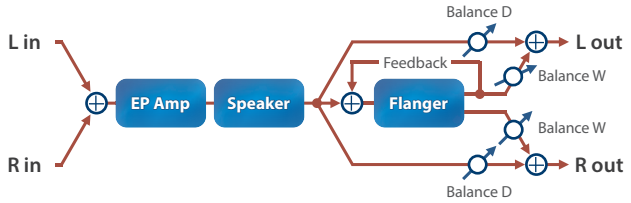
Parameter	Value	Explanation
Amp Type		Type of amp
	OLDCASE	A standard electric piano sound of the early '70s
	NEWCASE	A standard electric piano sound of the late '70s and early '80s
	WURLY	A standard electric piano sound of the 60s
Bass	-50–+50	Amount of low-frequency boost/cut
Treble	-50–+50	Amount of high-frequency boost/cut
Tremolo Switch	OFF, ON	Tremolo on/off
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Tremolo Rate (Hz)	0.05–10.00 [Hz]	Rate of the tremolo effect
Tremolo Rate (note)	Note ➡ "Note" (p. 95)	
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

83 EPAmpSim → Chorus (EP amp simulator) → Chorus)



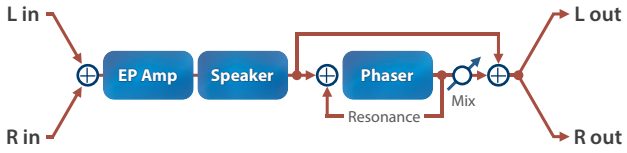
Parameter	Value	Explanation
Amp Type		Type of amp
	OLDCASE	A standard electric piano sound of the early '70s
	NEWCASE	A standard electric piano sound of the late '70s and early '80s
Bass	-50–+50	Amount of low-frequency boost/cut
Treble	-50–+50	Amount of high-frequency boost/cut
Chorus Switch	OFF, ON	Chorus on/off
Chorus Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Chorus Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Chorus Rate (note)	Note ➡ "Note" (p. 95)	
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

84 EPAmpSim → Flanger (EP amp simulator → Flanger)



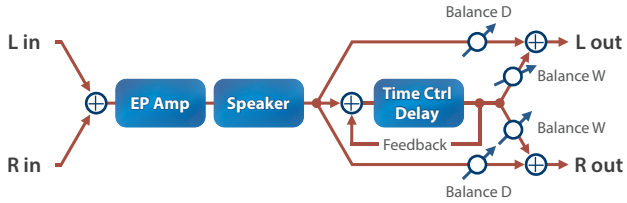
Parameter	Value	Explanation
Amp Type		Type of amp
	OLDCASE	A standard electric piano sound of the early '70s
	NEWCASE	A standard electric piano sound of the late '70s and early '80s
Bass	-50–+50	Amount of low-frequency boost/cut
Treble	-50–+50	Amount of high-frequency boost/cut
Flanger Switch	OFF, ON	Flanger on/off
Flanger Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the flanger sound is heard.
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Flanger Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Flanger Rate (note)	Note ➡ "Note" (p. 95)	
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

85 EPAmpSim → Phaser (EP amp simulator → Phaser)



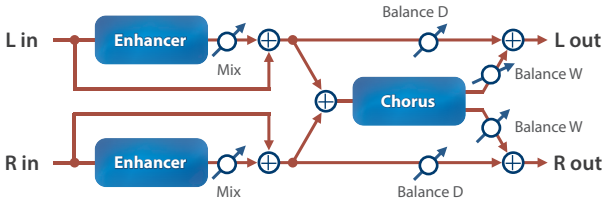
Parameter	Value	Explanation
Amp Type		Type of amp
	OLDCASE	A standard electric piano sound of the early '70s
	NEWCASE	A standard electric piano sound of the late '70s and early '80s
Bass	-50–+50	Amount of low-frequency boost/cut
Treble	-50–+50	Amount of high-frequency boost/cut
Phaser Switch	OFF, ON	Phaser on/off
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Phaser Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Phaser Rate (note)	Note ➡ "Note" (p. 95)	
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

86 EPAmpSim → Delay (EP amp simulator → Delay)



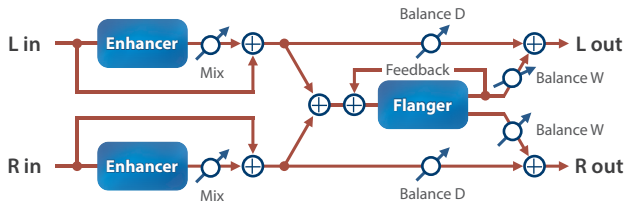
Parameter	Value	Explanation
Amp Type		Type of amp
	OLDCASE	A standard electric piano sound of the early '70s
	NEWCASE	A standard electric piano sound of the late '70s and early '80s
Bass	-50–+50	Amount of low-frequency boost/cut
Treble	-50–+50	Amount of high-frequency boost/cut
Delay Switch	OFF, ON	Delay on/off
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Delay Time (msec)	1–1300 [msec]	Delay time from when the original sound is heard to when the delay sound is heard
Delay Time (note)	Note ➡ "Note" (p. 95)	
Delay Accel	0–15	Specifies the 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

87 Enhancer → Chorus



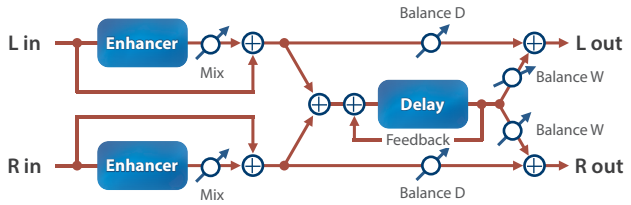
Parameter	Value	Explanation
Enhancer Sens	0–127	Sensitivity of the enhancer
Enhancer Mix	0–127	Level of the overtones generated by the enhancer
Chorus Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Chorus Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Chorus Rate (note)	Note ➡ "Note" (p. 95)	
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

88 Enhancer → Flanger



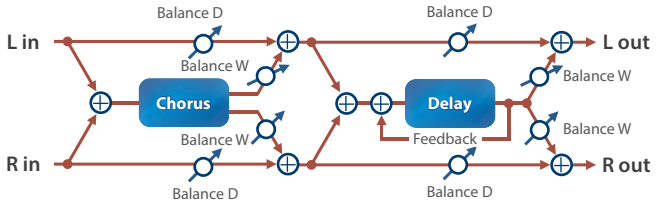
Parameter	Value	Explanation
Enhancer Sens	0–127	Sensitivity of the enhancer
Enhancer Mix	0–127	Level of the overtones generated by the enhancer
Flanger Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the flanger sound is heard.
Flanger Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Flanger Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Flanger Rate (note)	Note ➡ "Note" (p. 95)	
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

89 Enhancer → Delay



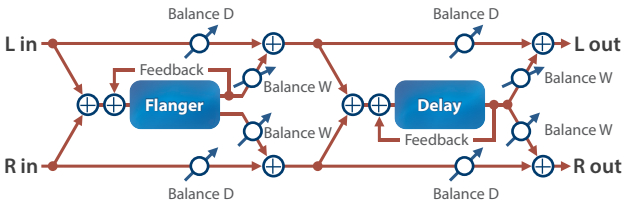
Parameter	Value	Explanation
Enhancer Sens	0–127	Sensitivity of the enhancer
Enhancer Mix	0–127	Level of the overtones generated by the enhancer
Delay Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Delay Time (msec)	1–2600 [msec]	Delay time from when the original sound is heard to when the delay sound is heard
Delay Time (note)	Note ➡ "Note" (p. 95)	
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 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

90 Chorus → Delay



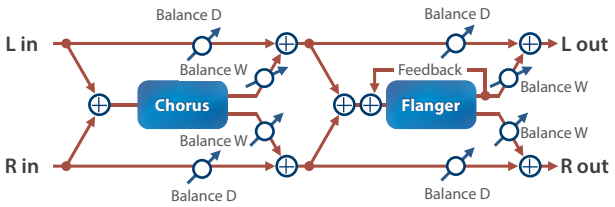
Parameter	Value	Explanation
Chorus Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Chorus Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Chorus Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Chorus Rate (note)	Note ➡ "Note" (p. 95)	
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 Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Delay Time (msec)	1–2600 [msec]	Delay time from when the original sound is heard to when the delay sound is heard
Delay Time (note)	Note ➡ "Note" (p. 95)	
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 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

91 Flanger → Delay



Parameter	Value	Explanation
Flanger Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the flanger sound is heard.
Flanger Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Flanger Rate (Hz)	0.05–10.00 [Hz]	Frequency of modulation
Flanger Rate (note)	Note ➡ "Note" (p. 95)	
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 Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Delay Time (msec)	1–2600 [msec]	Delay time from when the original sound is heard to when the delay sound is heard
Delay Time (note)	Note ➡ "Note" (p. 95)	
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 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

92 Chorus → Flanger



Parameter	Value	Explanation
Chorus Pre Delay	0.0–100 [msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Chorus Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Chorus Rate (Hz)	0.05–10.00 [Hz]	Modulation frequency of the chorus effect
Chorus Rate (note)	Note ➡ "Note" (p. 95)	
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 delay time from the direct sound until the flanger sound is heard.
Flanger Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 40)
Flanger Rate (Hz)	0.05–10.00 [Hz]	Modulation frequency of the flanger effect
Flanger Rate (note)	Note ➡ "Note" (p. 95)	
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

93 JD Multi

Recreates the effects included in group A of the JD-800.

Parameter	Value	Explanation
Sequence	DS - PH - SP - EN	Selects the connection order of the effects. **DS:** Distortion **PH:** Phaser **SP:** Spectrum **EN:** Enhancer
	DS - PH - EN - SP	
	DS - SP - PH - EN	
	DS - SP - EN - PH	
	DS - EN - PH - SP	
	DS - EN - SP - PH	
	PH - DS - SP - EN	
	PH - DS - EN - SP	
	PH - SP - DS - EN	
	PH - SP - EN - DS	
	PH - EN - DS - SP	
	PH - EN - SP - DS	
	SP - DS - PH - EN	
	SP - DS - EN - PH	
	SP - PH - DS - EN	
	SP - PH - EN - DS	
	SP - EN - DS - PH	
	SP - EN - PH - DS	
	EN - DS - PH - SP	
	EN - DS - SP - PH	
	EN - PH - DS - SP	
	EN - PH - SP - DS	
	EN - SP - DS - PH	
	EN - SP - PH - DS	
DS Switch	OFF, ON	Turns the distortion on/off.
DS Type	Sets the type of distortion.	
	MELLOW DRV	Softer distortion with a slightly darker sound.
	OVERDRIVE	Distortion that resembles a vacuum tube amp being driven.
	CRY DRV	Distortion that emphasizes the high end.
	MELLOW DST	Gives the feeling of distortion playing through a large amp.
	LIGHT DST	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 that FAT DIST.
DS Drive	0–100	Sets the amount of distortion.
DS Level	0–100	Sets the distortion output level.
PH Switch	OFF, ON	Turns the phaser on/off.
PH Manual	50 [Hz]–15.0 [kHz]	Sets the basic frequency from which the sound is modulated with the phaser effect.
PH Rate	0.1–10.0 [Hz]	Sets the cycle of the phaser modulation.
PH Depth	0–100	Sets the depth of the phaser modulation.
PH Resonance	0–100	Sets the amount of feedback for the phaser. Increasing the value creates a more unusual sound.
PH Mix	0–100	Sets the level of the phase-shifted sound.
SP Switch	OFF, ON	Turns the spectrum on/off.
SP Band Ctrl 1	-15–+15 [dB]	Sets the gain (amount of boost/cut) in the 250 Hz range.
SP Band Ctrl 2	-15–+15 [dB]	Sets the gain (amount of boost/cut) in the 500 Hz range.
SP Band Ctrl 3	-15–+15 [dB]	Sets the gain (amount of boost/cut) in the 1000 Hz range.
SP Band Ctrl 4	-15–+15 [dB]	Sets the gain (amount of boost/cut) in the 2000 Hz range.
SP Band Ctrl 5	-15–+15 [dB]	Sets the gain (amount of boost/cut) in the 4000 Hz range.
SP Band Ctrl 6	-15–+15 [dB]	Sets the gain (amount of boost/cut) in the 8000 Hz range.
SP Width	1–5	Sets the bandwidth for changing the levels, common to all bands.
EH Switch	OFF, ON	Turns the enhancer on/off.
EH Sens	0–100	Sets how easily the enhancer effect is applied.
EH Mix	0–100	Sets the ratio at which the harmonics generated by the enhancer are mixed with the original sound.
Pan	L64–63R	Sets the pan for stereo output.
Level	0–127	Sets the output volume.

Note

1/64T	Sixty-fourth-note triplet	**1/64**	Sixty-fourth note	**1/32T**	Thirty-second-note triplet
1/32	Thirty-second note	**1/16T**	Sixteenth-note triplet	**1/32.**	Dotted thirty-second note
1/16	Sixteenth note	**1/8T**	Eighth-note triplet	**1/16.**	Dotted sixteenth note
1/8	Eighth note	**1/4T**	Quarter-note triplet	**1/8.**	Dotted eighth note
1/4	Quarter note	**1/2T**	Half-note triplet	**1/4.**	Dotted quarter note
1/2	Half note	**1T**	Whole-note triplet	**1/2.**	Dotted half note
1	Whole note	**2T**	Double-note triplet	**1.**	Dotted whole note
2	Double note				