Roland®

V-Synth GT

COSM/Effects List

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COSM List

COSM Parameters

COSM provides 16 types. This section explains the features of each COSM, and the functions of the parameters.

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Explanations for each COSM Type are given on the following pages.

Overdrive / Distortion	OD/DS	(p. 2)
Wave Shape	W-SHAPE	(p. 2)
Amp Simulator	AMP	(p. 3)
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MEMO

Parameters marked by "#1"–"#4" can be selected as a destination parameter for matrix control (Destination). These correspond as follows.

#1: Destination CSM1/2-PRM1

#2: Destination CSM1/2-PRM2

#3: Destination CSM1/2-LFO-PRM1

#4: Destination CSM1/2-LFO-PRM2

Overdrive / Distortion

Overdrive produces a natural-sounding distortion similar to that produced by a vacuum tube amplifier. Distortion produces a more intense distortion than the overdrive effect.

Parameter	Value	Description
COSM Type	•	•
Drive Type	OD, DS	Selects whether to use over-
		drive (OD) or distortion
		(DS).
Output Level	0–127	Output Level
Drive		·
Drive #1	0–127	Degree of distortion
Drive LFO Depth	-63-+63	Amount of LFO applied to
#3		distortion
* For details on envelope settings, refer to Owner's Manual .		
Tone		
Tone #2	0–127	Tonal character
Tone KF	-200-+200	Key follow setting for tone
Tone LFO Depth	-63-+63	Amount of LFO applied to
#4		tone
* For details on envelope settings, refer to Owner's Manual .		
LFO		
* For details on LFO settings, refer to Owner's Manual .		

Wave Shape

You can use a variety of waveforms to create and distort the sound.

Parameter	Value	Description
COSM Type		
Shape Type	1-6	Type of waveform
Output Level	0–127	Output Level
Drive	•	•
Drive #1	0–127	Degree of distortion
Drive LFO Depth	-63-+63	Amount of LFO applied to
#3		distortion
* For details on envelope settings, refer to Owner's Manual .		
Tone		
Tone #2	0–127	Tonal character
Tone KF	-200-+200	Key follow setting for tone
Tone LFO Depth	-63-+63	Amount of LFO applied to
#4		tone
* For details on envelope settings, refer to Owner's Manual .		
LFO		
* For details on LFO settings, refer to Owner's Manual .		

Amp Simulator

Simulates an amp.

Parameter	Value	Description
COSM Type		
Атр Туре	1–3	Type of guitar amp
Bass	0–127	Tone of the bass/mid/tre-
Middle		ble range
Treble		
Output Level	0–127	Output Level
Gain		
Gain #1	0–127	Degree of distortion
Gain LFO Depth	-63-+63	Amount of LFO applied to
#3		distortion
* For details on envelope settings, refer to Owner's Manual .		
LFO		
* For details on LFO settings, refer to Owner's Manual .		

Speaker Simulator

Simulates the speaker type.

Parameter	Value	Description
COSM Type		
Speaker Type	1–12	

Resonator

Simulates the resonance of a guitar body.

Parameter	Value	Description	
COSM Type	COSM Type		
Filter Type	BANJO, AC.GTR,	Type of filter (guitar)	
	RE.GTR		
Size			
Size #1	0–127	Body size	
Size KF	-200-+200	Key follow setting for gui-	
		tar body	
Size LFO Depth #3	-63-+63	Amount of LFO applied to	
		guitar body	
* For details on en	* For details on envelope settings, refer to Owner's Manual .		
Balance			
Balance #2	0–100	Volume balance between	
		the direct sound and the ef-	
		fect sound	
Balance LFO	-63-+63	Amount of LFO applied to	
Depth #4		the volume balance	
* For details on envelope settings, refer to Owner's Manual .			
LFO			
* For details on LFO settings, refer to Owner's Manual .			

1st order SideBandFilter

By boosting the fundamental and overtones, you can apply a pitch to unpitched input sounds such as a noise or a drum phrase.

Parameter	Value	Description
COSM Type		
HPF	0–127	Cutoff frequency of the
		high pass filter
LPF	0–127	Cutoff frequency of the low
		pass filter
LPF KF	-200-+200	Key follow setting for cut-
		off frequency of low-pass
		filter
Sub	-100-+100	Sub detune
Octave	-2, -1, 0	Octave setting
Width	-	_
Width #1	0–127	Bandwidth
Width KF	-200-+200	Key follow setting for
		bandwidth
Dyn Env	-63-+63	Envelope depth for the in-
		put sound
Width LFO Depth	-63-+63	Amount of LFO applied to
#3		bandwidth
* For details on en	velope settings, refer	to Owner's Manual.
Detune		
Detune #2	-100-+100	Detune
Dyn Env	-63-+63	Envelope depth for the in-
		put sound
Detune LFO	-63-+63	Amount of LFO applied to
Depth #4		detune
* For details on envelope settings, refer to Owner's Manual .		
LFO		
* For details on LEO settings refer to Owner's Manual		

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2nd order SideBandFilter

By boosting the fundamental and overtones, you can apply a pitch to unpitched input sounds such as noise or a drum phrase. This lets you create a stronger effect than the first-order sideband filter.

Parameter	Value	Description	
COSM Type			
Q	0–127	Frequency bandwidth	
LPF	0–127	Cutoff frequency of the low	
		pass filter	
LPF KF	-200-+200	Key follow setting for cut-	
		off frequency of low-pass	
		filter	
Octave	-2, -1, 0	Octave setting	
Width			
Width #1	0–127	Bandwidth	
Width KF	-200-+200	Key follow setting for	
		bandwidth	
Dyn Env	-63-+63	Envelope depth for the in-	
		put sound	
Width LFO Depth	-63-+63	Amount of LFO applied to	
#3		bandwidth	
* For details on envelope settings, refer to Owner's Manual .			
Detune			
Detune #2	-100-+100	Detune	
Dyn Env	-63-+63	Envelope depth for the in-	
-		put sound	
Detune LFO	-63-+63	Amount of LFO applied to	
Depth #4		detune	
* For details on envelope settings, refer to Owner's Manual .			
LFO			
* For details on Ll	* For details on LFO settings, refer to Owner's Manual .		

Comb Filter

A comb filter can be used to boost or cut the fundamental or overtones.

Parameter	Value	Description
COSM Type		•
Octave	-2, -1, 0, +1, +2	Octave setting
Tone		
Tone #1	0–127	Tonal character
Tone LFO Depth	-63-+63	Amount of LFO applied to
#3		tone
* For details on envelope settings, refer to Owner's Manual .		
Detune		
Detune #2	-100-+100	Detune
Detune LFO	-63-+63	Amount of LFO applied to
Depth #4		detune
* For details on envelope settings, refer to Owner's Manual .		
LFO		
* For details on LFO settings, refer to Owner's Manual .		

Dual Filter

Two filters can be connected in series or parallel.

Parameter	Value	Description
COSM Type		1
Filter Type	LPF/HPF, LPF- >HPF, BPF/BPF	Type of filter
Filter1/2		
Freq #1/#2	0–127	Cutoff frequency of the fil-
		ter
Freq KF	-200-+200	Key follow setting for filter
		cutoff frequency
Reso	0-127	Resonance
Freq LFO Depth	-63-+63	Amount of LFO applied to
#3/#4		filter cutoff frequency
* For details on envelope settings, refer to Owner's Manual .		
LFO		
* For details on LFO settings, refer to Owner's Manual .		

TVF

Cuts off a specific frequency band to change a sounds brightness, thickness, and other qualities.

Parameter	Value	Description
COSM Type		
Filter Type	LPF, BPF, HPF,	Type of filter
	NOTCH, PEAK	
db/Octave	-24dB/oct, -12dB/	Amount of attenuation per
	oct, -6dB/oct	octave
Cutoff		-
Freq #1	0–127	Cutoff frequency of the fil-
		ter
Freq KF	-200-+200	Key follow setting for filter
		cutoff frequency
LFO Dp #3	-63-+63	Amount of LFO applied to
		filter cutoff frequency
* For details on envelope settings, refer to Owner's Manual .		
Resonance		
Reso #2	0–127	Resonance
R LFO Depth #4	-63-+63	Amount of LFO applied to
		resonance
* For details on envelope settings, refer to Owner's Manual .		
LFO		
* For details on LFO settings, refer to Owner's Manual .		

Dynamic TVF

Cuts off a specific frequency band to change a sounds brightness, thickness, and other qualities. A wah effect can be applied by using the volume of the input sound to vary the center frequency.

Parameter	Value	Description	
COSM Type	COSM Type		
Filter Type	LPF, BPF, HPF, NOTCH, PEAK	Type of filter	
db/Octave	-24dB/oct, -12dB/	Amount of attenuation per	
	oct, -6dB/oct	octave	
Cutoff	•	-	
Freq #1	0–127	Cutoff frequency of the fil-	
		ter	
Freq KF	-200-+200	Key follow setting for filter	
		cutoff frequency	
Dyn	-63-+63	Envelope depth for the in-	
		put sound	
LFO Dp #4	-63-+63	Amount of LFO applied to	
		filter cutoff frequency	
* For details on envelope settings, refer to Owner's Manual .			
Resonance			
Reso #2	0–127	Resonance	
Dyn Env	-63-+63	Envelope depth for the in-	
		put sound	
R LFO Dp #4	-63-+63	Amount of LFO applied to	
		resonance	
* For details on envelope settings, refer to Owner's Manual .			
LFO			
* For details on LFO settings, refer to Owner's Manual .			

Polyphonic Compressor

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

Parameter	Value	Description
COSM Type		
Attack #1	0–127	Attack time
Sustain #2	0–127	Sustain level
Output Level	0–127	Output Level

Polyphonic Limiter

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

Parameter	Value	Description		
COSM Type	СОЅМ Туре			
Thres	0–127	Sets the volume level at		
		which the compression be-		
		gins.		
Ratio	2:1, 4:1, 16:1, 100:1	Compression ratio		
Attack #1	0–127	Attack time		
Release #2	0–127	Release time		
Output	0–127	Output Level		

Frequency Shifter

By shifting the frequency relationship of the fundamental and overtones, a human voice can be given a "groaning" character.

Parameter	Value	Description
Effect		
Effect #1	0–127	Effect depth
Effect KF	-200-+200	Key follow setting for the
		effect volume
Effect LFO Depth	-63-+63	Amount of LFO applied to
#3		the effect volume
* For details on envelope settings, refer to Owner's Manual .		
Balance		
Balance #2	0–100	Volume balance between
		the direct sound and the ef-
		fect sound
Balance LFO	-63-+63	Amount of LFO applied to
Depth		the volume balance
* For details on envelope settings, refer to Owner's Manual .		
LFO		
* For details on LFO settings, refer to Owner's Manual .		

Lo-Fi Processor

By changing the bit count and sample rate, this effect recreates the Lo-Fi (Low-Fidelity) sounds of the early digital samplers and similar machines. After the Lo-Fi processor, a filter to change the tone is arranged in series.

Parameter	Value	Description	
COSM Type			
Bit Down	0–15	This setting is for reducing	
		the bit count.	
Sample Rate	Normal, 1/2, 1/4,	Sets the fraction of current	
Down	1/8, 1/16, 1/32	sampling rates to be used	
		for processing.	
Filter			
Filter #1	0–127	Cutoff frequency of the fil-	
		ter	
Filter KF	-200-+200	Key follow setting for filter	
		cutoff frequency	
Filter LFO Depth	-63-+63	Amount of LFO applied to	
#3		filter cutoff frequency	
* For details on envelope settings, refer to Owner's Manual .			
Balance			
Balance #2	0–100	Volume balance between	
		the direct sound and the ef-	
		fect sound	
Balance LFO	-63-+63	Amount of LFO applied to	
Depth		the volume balance	
LFO			
* For details on LFO settings, refer to Owner's Manual .			

TB Filter

This filter simulates the circuitry of the Roland TB-303. If Reso Follow is set to a value other than "0," the resonance will change according to the LFO cutoff frequency.

Parameter	Value	Description
COSM Type	•	•
Gain	0–127	Output Level
LPF		
Freq #1	0–127	Cutoff frequency of the low pass filter
Freq KF	-200-+200	Key follow setting for low pass filter cutoff fre- quency
Freq LFO Depth #3	-63-+63	Amount of LFO applied to low pass filter cutoff frequency
Reso #2	0–127	Resonance of the low pass filter
Reso Follow	-63-+63	Amount of resonance applied to low pass filter cutoff frequency
HPF		
Freq	0–127	Cutoff frequency of the high pass filter
Freq KF	-200-+200	Key follow setting for high pass filter cutoff frequency
Freq LFO Depth	-63-+63	Amount of LFO applied to high pass filter cutoff frequency
* For details on envelope settings, refer to Owner's Manual .		

Effects List

Tone FX Parameters

Tone FX (Tone-Effects) provides 41 types of effect. This section explains the features of each Tone FX, and the functions of the parameters.

MEMO

Parameters marked by "#1"-"#3" can be selected as a destination parameter for matrix control (Destination TFX1-TFX3). These correspond as follows.

- #1: Destination TFX1
- #2: Destination TFX2
- #3: Destination TFX3

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Explanations for each Tone FX Type are given on the following pages.

01: Parametric EQ	ParaEQ	(p. 8)
02: Graphic EQ	GrapEQ	(p. 8)
03: Resonant Filter	Reso F	(p. 8)
04: Isolator and Filter	Isolatr	(p. 9)
05: Distortion / OD	DS / OD	(p. 9)
06: Amp Simulator	GtrAmp	(p. 10)
07: Auto Wah	At Wah	(p. 11)
08: Humanizer	Humzr	(p. 11)
09: Dynamic Processor	Dyna P	(p. 12)
10: Tape Echo Simulator	T Echo	(p. 12)
11: Stereo Delay	St Dly	(p. 13)
12: Multi Tap Delay	TpDly	(p. 14)
13: Reverse Delay	Rvs Dly	(p. 14)
14: Vocal Echo	VoEcho	(p. 15)
15: Band Pass Delay	BP Dly	(p. 15)
16: Analog Delay->Chorus	AD>Cho	(p. 16)
17: Digital Chorus	Dg Cho	(p. 16)
18: Space Chorus	Sp Cho	(p. 17)
19: Hexa Chorus	Hx Cho	(p. 17)
20: Analog Flanger	An Flgr	(p. 18)
21: BOSS Flanger	BS Flgr	(p. 18)
22: Step Flanger	St Flgr	(p. 19)
23: Analog Phaser	AnPhsr	(p. 19)
24: Digital Phaser	DgPhsr	(p. 20)
25: Rotary	Rotary	(p. 20)
26: Tremolo/Auto Pan	Tr/Pan	(p. 21)
27: Stereo Pitch Shifter	P Shift	(p. 21)
28: OD/DS->Cho/Flg	OD>Cho	(p. 22)
29: OD/DS->Delay	OD>Dly	(p. 22)
30: Cho/Flg->Delay	Ch>Dly	(p. 23)
31: Enh->Cho/Flg	Eh>Cho	(p. 23)
32: Enh->Delay	Eh>Dly	(p. 24)
33: Vocal Multi	VoclMT	(p. 24)
34: Guitar Multi	Gtr MT	(p. 25)
35: Bass Multi	Bas MT	(p. 26)
36: EP Multi	EP MT	(p. 27)
37: Keyboard Multi	Kbd MT	(p. 28)
38: Phonograph	Phono	(p. 29)
39: Radio Tuning	Radio	(p. 29)
40: Bit Rate Converter	BitCnv	(p. 30)
41: Pseudo Stereo	Pse St	(p. 30)

01: Parametric EQ (Parametric Equalizer)

This is a 4 band (low range, midrange x 2, high range) stereo parametric equalizer.

L		\rightarrow
R	4-Band EQ	\longrightarrow

Parameter	Value	Description
Low Freq	50–4000 Hz	Frequency of the low range
Low Gain	-15– +15 dB	Gain of the low range
Mid 1 Freq	50–20000 Hz	Frequency of the middle range 1
Mid 1 Q	0.5, 0.7, 1.0, 2.0,	Width of the middle range 1
	4.0, 8.0	Set a higher value for Q to nar-
		row the range to be affected.
Mid 1 Gain	-15– +15 dB	Gain of the middle range 1
Mid 2 Freq	50–20000 Hz	Frequency of the middle range 2
Mid 2 Q	0.5, 0.7, 1.0, 2.0,	Width of the middle range 2
	4.0, 8.0	Set a higher value for Q to nar-
		row the range to be affected.
Mid 2 Gain	-15– +15 dB	Gain of the middle range 2
Hi Freq	2000–20000 Hz	Frequency of the high range
Hi Gain	-15– +15 dB	Gain of the high range
Total Gain	-15-+15 dB	Output Level

02: Graphic EQ (Graphic Equalizer)

This simulates a 12-band stereo graphic equalizer.



03: Resonant Filter

It allows for cyclical control of the cutoff frequency using an LFO. It allows you to make drastic changes in the frequency response of the input signal by the cutoff frequency and feedback, making the sound brighter or darker, or giving it a distinctive character.



Parameter	Value	Description
Cutoff Freq	50–20000 Hz	Basic frequency of the filter The LEO will control the cutoff
		frequency with this value as its
		maximum level.
Resonance	0–127	Filter's resonance level
		Raising the setting increases res-
		onance near the cutoff frequen-
		cy, producing a uniquely
		characteristic sound.
Band Mode	LOW, MID,	Frequency range to which the
	HIGH,	filter will be applied
	LOW+MID,	LOW: low frequency band
	MID+HIGH,	MID: mid-range frequency
	ALL	HIGH: high frequency
		LOW+MID: low and middle
		range frequency
		MID+HIGH: middle and high
		A L L all repairs
Curren Maria	TDI CAM/LID	ALL: all ranges
Sweep wave-	SAWDN SOP	TPI: Triangle wave
101111	SAWDIN, SQK	SAWLIP: Sawtooth Wave
		SAWDN: Sawtooth Wave
		SOR: Square wave
	SAWLIP	SAWDN
Sweep Rate	0.05–10.0 Hz,	Frequency of the LFO modula-
	note	tion
Sweep Depth	0–127	Modulation depth of the LFO
Balance	DRY100:0WET-	Volume balance between the di-
	DRY0:100WET	rect sound (DRY) and the effect
		sound (WET)

04: Isolator and Filter

A 3-band isolator, filter, and low booster are connected in stereo in series.

Isolator 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.

The filters allow you to modify the frequency response of the input sound widely and give sound a character.

The low booster emphasizes the bottom to create a heavy bass sound.



Parameter	Value	Description
Low Band Level	-60– +4 dB	These specify each level of the
#1		Low, Mid, and High frequency
Mid Band Level		ranges.
#2		At -60 dB, the sound becomes in-
Hi Band Level		audible. 0 dB is equivalent to the
#3		input level of the sound.
AP Low Sw	OFF, ON	Turns the Anti-Phase function on and off for the Low frequency ranges. When turned on, the counter- channel of stereo sound is in- verted and added to the signal.
AP 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.)
AP Mid Sw	OFF, ON	Settings of the Anti-Phase func-
AP Mid Level	0–127	tion for the Middle frequency ranges The parameters are the same as for the Low frequency ranges.
Filter Type	THRU, LPF,	Type of filter
	BPF, HPF,	THRU: no filter is used
	NOTCH	LPF: Passes frequencies below
		the Cutoff.
		BPF: Passes frequencies near the
		Cutoff.
		HPF: Passes frequencies above
		the Cutoff.
		NOTCH: Passes frequencies
		other than those near the Cutoff.
	Level LPF	Freq. HPF
	BPF	Freq. NOTCH
	=	

[Parameter	Value	Description
	Filter Slope	-12, -24 dB/O	Filter's attenuation slope -24 dB per octave: steep
			-12 dB per octave: gentle
	Filter Cutoff	0–127	Cutoff frequency of the filter
			The closer to zero it is set, the
			lower the cutoff frequency be-
			comes; set it closer to 127, and
			the cutoff frequency becomes
			higher.
	Filter Reso-	0–127	Resonance level of the filter
	nance		Raising the setting increases res-
			onance near the cutoff frequen-
			cy, giving the sound a special
			characteristic.
	Filter Gain	0– +24 dB	Compensates for the volume
			dropped in the cut frequency
			range with some filters.
			The level of compensation in-
			creases as the value is increased,
			and raise the volume.
	LowBoost Level	-15– +15 dB	Increasing this value gives you a
			heavier low end.
			* Depending on the Isolator and
			filter settings this effect may be
			hard to distinguish.

05: Distortion / OD (Distortion / Overdrive)

Overdrive produces a natural-sounding distortion similar to that produced by a vacuum tube amplifier. Distortion produces a more intense distortion than the overdrive effect.



Parameter	Value	Description
Input Mode	MONO, STE-	Selects whether to input in ste-
	REO	reo or in monaural.
		If MONO is selected, the left and
		right sound will be mixed, and
		input as monaural.
Drive Mode	OD, DS	Selects whether to use overdrive
		(OD) or distortion (DS).
Drive #1	0–127	Degree of distortion
Amp Sim Sw	OFF, ON	Turns the Amp Simulator on/
_		off.
Атр Туре	SMALL,	Type of guitar amp
	BUILT-IN, 2-	SMALL: small amp
	STACK, 3-	BUILT-IN: single-unit type amp
	STACK	2-STACK: large double stack
		amp
		3-STACK: large triple stack amp
Output Level	0–127	Output Level
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15- +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15- +15 dB	Gain of the high range

06: Amp Simulator (Guitar Amp Simulator)

This is an effect that simulates an guitar amp.



Parameter	Value	Description
NS Sw	OFF, ON	Turns the noise suppressor on/
		off.
		The noise suppressor leaves the
		original sound unmodified, but
		mutes only the noise during the
NIC 771 1 1 1	0.107	silent intervals.
NS Inreshold	0-127	Adjusts the level at which the
		take effect
		* When the signal drops below
		the specified level, it will be
		muted.
NS Release	0–127	Sets the transition time from
		when the noise suppression
		starts to the point where the vol-
		ume reaches 0.
Amp Type	JC-120, CLEAN	Type of guitar amp
	TWIN, MATCH	
	DRIVE, BG	
	LEAD, MS1959I	
	MS1959II	
	MS1959I+II.	
	SLDN LEAD,	
	METAL 5150,	
	METAL LEAD,	
	OD-1, OD-2	
	TURBO, DIS-	
	TORTION,	
	FUZZ	1 (D 1 11C 120
	JC-120: The soun	d of a Koland JC-120.
	type vacuum tub	ne sound of a standard built-in
	MATCH DRIVE:	The sound of a recent vacuum
	tube amp widely	used in blues, rock, and fusion.
	BG LEAD: The so	ound of a vacuum tube amp repre-
	sentative of the la	ate 70's and the 80's.
	MS1959 I: The sor	und of the large vacuum tube amp
	stack that was in	dispensable to the British hard
	rock of the 70's, w	with input I connected.
	MS1959 II: The sa	ame amp as MS1959 I, but with in-
	MS1959 I+II. The	same amp as MS1050 L but with
	inputs Land II co	nnected in parallel
	SLDN LEAD: Th	e sound of a vacuum tube amp us-
	able in a wide va	riety of styles.
	METAL 5150: Th	e sound of a large vacuum tube
	amp suitable for	heavy metal.
	METAL LEAD: A	A metal lead sound with a distinc-
	tive mid-range.	
	OD-1: The sound	or the BOSS OD-1 compact effects
	processor.	he sound of the BOSS OD 2 com
	pact effects proce	essor with the Turbo switch on
	DISTORTION: D	Distortion sound.
	FUZZ: Fuzz sour	nd.

Parameter	Value	Description
Volume	0–127	Volume and degree of distortion
		of the amp
Bass	0–127	Tone of the bass/mid/treble
Middle		range
Treble		* Middle cannot be set if
		MATCH DRIVE is selected
		for the Amp Type.
Presence	0–127	Tone for the ultra high frequen-
		cy range
Master Volume	0–127	Volume of the entire amp
Brightness Sw	OFF, ON	Turning this On will produce a
		sharper and brighter sound.
		* This parameter can be set if the
		Amp Type is set to JC-120,
		CLEAN TWIN, or BG LEAD.
Gain Sw	LOW, MID,	Degree of amp distortion
	HIGH	
Sp Sim Sw	OFF, ON	Turns the Speaker Simulator
		on/off.
Sp Type	(see below)	Type of speaker
Mic Setting	1–10	Adjusts the location of the mic
		that is recording the sound of
		the speaker.
		Increasing this value will pro-
		duce the effect of the mic being
		further away from the center of
		the speaker cone.
Mic Level	0–127	Volume of the microphone
Direct Level	0–127	Volume of the direct sound
Level	0-127	Output Level

Specifications of each Speaker Type

The speaker column indicates the diameter of each speaker unit (in inches) and the number of units.

Туре	Cabinet	Speaker	Microphone
SMALL	small open-back en-	10	dynamic
	closure		
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
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

Recommended	combination (nf.	nro-amr	h ne	enoako
necommentaca	combination		pre-amp	ana	speake

Amp type	Speaker type
BG LEAD	BG STACK 1, BG STACK 2, MIDDLE
MS1959 II	BG STACK 1–2, METAL STACK
MS1959 I+II	BG STACK 1–2, METAL STACK
SLDN LEAD	BG STACK 1–2, METAL STACK
METAL 5150	BG STACK 1–2, METAL STACK
METAL LEAD	BG STACK 1–2, METAL STACK
OD-2 TURBO	BUILT IN 1-4
DISTORTION	BUILT IN 1-4
FUZZ	BUILT IN 1–4

07: Auto Wah

Wah is an effect that modifies the frequency characteristics of a filter over time, producing a unique tone. The wah effect can change in relation to the volume of the input signal, and/or cyclically.



Parameter	Value	Description
Filter Type	LPF, BPF	Type of filter
		LPF: The wah effect will be ap-
		plied over a wide frequency
		range.
		BPF: The wah effect will be ap-
		plied over a narrow frequency
		range
Polarity	DOWN, UP	When using the volume of the
		input signal to control the wah
		effect, this setting determines
		whether the frequency of the fil-
		ter will be moved upward (UP)
		or downward (DOWN).
Frequency #1	0–127	Adjusts the frequency at which
		the wah effect will apply.
Peak	0–127	Adjusts the amount of the wah
		effect that will occur in the range
		of the center frequency.
		Set a higher value for Q to nar-
		row the range to be affected.
Trigger Sens #2	0–127	Adjusts the sensitivity with
		which the wah effect is con-
		trolled.
Rate	0.05–10.0 Hz,	Frequency of modulation
	note	
Depth	0–127	Depth of modulation
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15- +15 dB	Gain of the high range

08: Humanizer

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



Parameter	Value	Description
Overdrive Sw	OFF, ON	Turns Drive on/off.
Drive	0–127	Degree of distortion
Vowel 1	a, e, i, o, u	First vowel
Vowel 2	a, e, i, o, u	Second vowel
Rate #1	0.05–10.0 Hz,	Frequency at which the two
	note	vowels will be switched
Depth	0–127	Effect depth
		With a setting of 0, it will be
		fixed at Vowel 1.
Trigger Sens #2	-60–0 dB, LFO	Level at which the two vowels
		will be switched
		-60–0 dB: When the specified
		level is exceeded, the sound will
		change to the other vowel at the
		frequency (speed) specified by
		Kate.
		LFO: The two vowel sounds will
		alternate at the frequency speci-
		fied by Rate, regardless of the
		level.
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15-+15 dB	Gain of the high range

09: Dynamic Processor (Stereo Dynamic Processor)

A comp/limiter, enhancer, 3-band equalizer, and noise suppressor are connected in series.

Comp/Limiter is able to use as a compressor, which controls inconsistencies in sound levels by suppressing high sound levels while lifting weaker signals, or as a limiter that prevents the signal from reaching exceedingly high levels.

Enhancer regulates the high-end overtones, clarifying the sound and the sound contour.

3-Band Equalizer works in three frequency ranges: Low, Mid, and High. You can set the frequencies and boost or cut the level.

Noise Suppressor leaves the original sound unmodified, but mutes only the noise during the silent intervals.



Parameter	Value	Description
Comp Sw	OFF, ON	Turns the comp/limiter on/off.
Comp Thresh-	-60–0 dB	Sets the volume level at which
old #1		the compression begins.
Comp Attack	0–127	Sets the time after the sound vol-
		ume is crossed the compressor
		threshold until compression be-
		gins.
Comp Release	0–127	Specifies the time from when the
		volume drops below the com-
		pressor threshold until com-
		pression is no longer applied.
Comp Ratio	1.5:1, 2:1, 4:1,	Sets the "source sound:output
	100:1	sound" compression ratio.
Comp Gain	-60– +12 dB	Output gain
Enhan Sw	OFF, ON	Turns the enhancer on/off.
Enhan Sens	0–127	Sensitivity of the enhancer
Enhan Frequen-	0–127	Sets the lower limit of the fre-
cy		quencies to which the enhance-
		ment effect is added.
Enhan Mix Lev-	0–127	Level of the overtones generated
el		by the enhancer
Enhan Level	0–127	Volume of the enhancer sound
EQ Low Freq	50–4000 Hz	Frequency of the low range
EQ Low Gain	-15– +15 dB	Gain of the low range
EQ Mid Freq	50–20000 Hz	Frequency of the middle range
EQ Mid Q	0.5, 0.7, 1.0, 2.0,	Gain of the middle range
	4.0, 8.0	Set a higher value for Q to nar-
		row the range to be affected.
EQ Mid Gain	-15– +15 dB	Gain of the middle range
EQ Hi Freq	2000–20000 Hz	Frequency of the high range
EQ Hi Gain	-15– +15 dB	Gain of the high range
NS Sw	OFF, ON	Turns the noise suppressor on/off.
NS Threshold	0–127	Adjusts the level at which the
#2		noise suppressor will begin to
		take effect.
		* When the signal drops below
		the specified level, it will be
		muted.
NS Release	0–127	Sets the transition time from
		when the noise suppression
		starts to the point where the vol-
		ume reaches 0.

10: Tape Echo Simulator

This virtual tape echo gives you real tape delay sound. This simulates the tape echo part of Roland's RE-201 Space Echo.



Parameter	Value	Description
Mode	S, M, L, S+M,	Sets the combination of play-
	S+L, M+L,	back heads to be used.
	S+M+L	The RE-201 had three playback
		heads to make different delay
		times (Short, Medium, and Long
		delay) at once. For example, to
		use the short and middle heads,
		select S+M.
Repeat Rate #1	0–127	Sets the tape speed.
1		This corresponds to the delay
		time in a contemporary delay ef-
		fect.
Intensity #2	0–127	Sets the repeat times of the de-
		layed sound.
		This is analogous to a contempo-
		rary delay's feedback setting.
Bass	-100-+100	These are the echo sound's bass
Treble		and treble adjustments.
		When set to 0 , they make no
		change to the sound.
Head S Pan	L63-63R	These are the pan (left-right) set-
Head M Pan		tings for each of the heads for
Head L Pan		Short, Medium, and Long delay
		time.
		* This parameter does not
		appear on the original RE-201.
Tape Distortion	0–5	Adds the distortion characteris-
-		tic of tape.
		The distortion gets more intense
		as the value is increased.
W/F Rate	0–127	Frequency of the wow and flut-
		ter modulation
		The wavering of multiple pitch-
		es that appears from tape wear
		and irregularities in rotation is
		called wow and flutter.
W/F Depth	0–127	Modulation depth of the wow
		and flutter
Echo Level	0-127	Volume of the echo sound.

11: Stereo Delay

This is a stereo delay. Depending on the length of the delay you set, you can get long echoes, thick sounds, or spatial sounds.



When Mode parameter is MONO or ALTERNATE:

Parameter	Value	Description
Mode	MONO, STE-	Switches stereo, monaural, or al-
	REO, ALTER-	ternate.
	NATE	MONO: This is a single-input,
		dual-output delay. Stereo sound
		(left and right) are mixed before
		being input.
		STEREO: This is a dual-input,
		dual-output delay. The delay
		sound output features the same
		stereo placement as that of the
		input.
		ALIERNAIE: The left and right
		delay sound output alternately.
		(Alternate delay)
Delay Time	0–1300 ms	Adjusts the delay time from the
	(MONO), 0–650	direct sound until the delay
	ms (STEREO,	sound is heard.
	ALTERNATE),	
	note	
L-R Shift	0–650 ms, note	Of the left and right delay
		sounds, the delay time will be
		increased for only one side.
		If the L-R order is $L \rightarrow R$, the R
		sound will be later. In the case of
		$R \rightarrow L$, the L sound will be later.
		* When the mode is set to
		MONO or ALTERNATE, this
		setting will be ignored.
L-R Order	$L \rightarrow R, R \rightarrow L$	In STEREO or ALTERNATE
		mode, this setting determines
		which of the left or right sides
		has the delay sound before the
		other
		$L \rightarrow R$: The left side is expressed
		first
		$R \rightarrow L$: The right side is expressed
		tirst
		* In MONO mode, this setting
		will be ignored.

Parameter	Value	Description
Feedback	-98-+98%	Adjusts the proportion of the de- lay sound that is fed back into the effect. Negative (-) settings
		will invert the phase.
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the ef- fect will be cut.
		The lower range is attenuated earlier than other ranges (low- damp effect).
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the ef- fect will be cut. High Damp, by attenuating the higher frequencies first, makes the dolay sound more natural
Hi Damp Gain	-36-0 dB	Degree of High Damp
Balance	DRY100:0WET- DRY0:100WET	Volume balance between the di- rect sound (DRY) and the delay sound (WET)
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

12: Multi Tap Delay

The effect has five delays. Each of the Delay Time parameters can be specified as a note length of the selected tempo. You can also set the panning and level of each delay sound.



Parameter	Value	Description
Delay 1–5	0–1300 ms, note	Specifies the delay time from the
		original sound until each delay
		sound (Delay 1/2/3/4/5) is
		heard.
Fbk Dly Time	0–1300 ms, note	Adjusts the delay time for the
		feedback sound
Feedback #1	-98- +98%	Adjusts the proportion of the de-
		lay sound that is fed back into
		the effect. Negative (-) settings
		will invert the phase.
Delay 1–5 Level	0–127	Adjusts the volume of each de-
		lay sound (Delay 1/2/3/4/5)
Delay 1–5 Pan	L63–63R	Adjusts the pan of each delay
		sound (Delay 1/2/3/4/5)
Low Damp Freq	50–4000 Hz	Adjusts the frequency below
		which sound fed back to the ef-
		fect will be cut.
		The lower range is attenuated
		earlier than other ranges (low-
I D	2(0.10	damp effect).
Low Damp	-36–0 dB	Degree of Low Damp
Gain	•••••	
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above
		which sound fed back to the ef-
		fect will be cut.
		High Damp, by attenuating the
		higher frequencies first, makes
U'D C'	2(0 ID	the delay sound more natural.
Fil Damp Gain	-30-U ab	Degree of High Damp
Ps Low Freq	50-4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

13: Reverse Delay

Adds the reverse of the input sound as the delay sound.



Parameter	Value	Description
Threshold	0–127	Specifies the input level at which
		the delay will begin to apply.
Rvs Dly Time	0–650 ms, note	Specifies the delay time from the
		original sound until the delay
		sound is heard.
Rvs Feedback	-98-+98%	Adjusts the proportion of the re-
		verse delay sound that is fed
		back into the effect. Negative (-)
		settings will invert the phase.
Low Damp Freq	50–4000 Hz	Adjusts the frequency below
		which sound fed back to the ef-
		fect will be cut.
		The lower range is attenuated
		earlier than other ranges (low-
		damp effect).
Low Damp	-36–0 dB	Degree of Low Damp
Gain		
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above
		which sound fed back to the ef-
		fect will be cut.
		High Damp, by attenuating the
		higher frequencies first, makes
	26.0.10	the delay sound more natural.
Hi Damp Gain	-36-0 dB	Degree of High Damp
Balance	DRY100:0WET-	Volume balance between the di-
	DRY0:100WET	rect sound (DRY) and the effect
	F O. 4000 I.I.	sound (WEI)
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

14: Vocal Echo

This effect simulates a karaoke echo.



Parameter	Value	Description
Delay Time #1	0–650 ms, note	Adjusts the delay time from the direct sound until the delay sound is heard.
Pre LPF Freq	500–15000 Hz, THRU	Sets the filter's cutoff frequency (THRU: no filter is used)
Mod Rate	0.05–10.0 Hz, note	Specifies the modulation speed of the modulation effect.
Mod Depth	0–127	Specifies the modulation depth of the modulation effect.
Diffusion	0–100	Specifies the spaciousness of the delay sound.
Feedback #2	-98-+98%	Adjusts the proportion of the de- lay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Hi Damp Freq	500–15000 Hz, THRU	Adjusts the frequency above which sound fed back to the ef- fect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Echo Level #3	0–127	Volume of the echo sound
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

15: Band Pass Delay

This is a delay with a band pass filter (a filter that outputs only a specified frequency range) on each of five delays. A phaser is included before the delay. Phaser is an effect that adds a phase-shifted sound to the original sound to create time-varying change, modulating the sound.



D .	N/ 1	a
Parameter	Value	Description
Phaser Manual	0–127	Specifies the center frequency at
		which the sound is modulated.
Phaser Rate	0.05–10.0 Hz,	Specifies the frequency of mod-
	note	ulation.
Phaser Depth	0–127	Specifies the depth of modula-
		tion.
Phaser Reso-	0–127	Specifies the amount of feed-
nance		back for the phaser.
		Higher settings will give the
		sound a stronger character.
Phaser Mix Lev-	0–127	Specifies the volume of the
el		phase-shifted sound, relative to
		the direct sound.
Delay Time	0–1300 ms, note	Adjusts the delay time from the
		direct sound until the each delay
		sound is heard.
Fbk Dly Time	0–1300 ms, note	Adjusts the delay time for the
-		feedback sound.
Dly Time Dev	0–1300 ms, note	Specifies the differences in delay
		time for each of the delay
		sounds.
Delay Level	0–127	Adjusts the volume of each de-
		lay sound.
Delay Feedback	-98-+98%	Adjusts the proportion of the de-
#1		lay sound that is fed back into
		the effect. Negative (-) settings
		will invert the phase.
Delay Pan Type	1–10	Specifies the pan of each delay
		sound.
		Ten settings are provided as var-
		ious panning combinations of
		the delay sounds (see below).
BPF 1–5 Freq	50–20000 Hz	Sets the center frequency for
		each band pass filter (1–5).
BPF 1/2 Q	0.3–24.0	Specify the output bandwidth
BPF 3/4/5 Q		for each band pass filter (1-5).
Balance #2	DRY100:0WET-	Volume balance between the di-
	DRY0:100WET	rect sound (DRY) and the delay
		sound (WET)

Delay Pan Type

Values	Dly 1	Dly 2	Dly 3	Dly 4	Dly 5
1	L63	L32	0	32R	63R
2	L63	32R	L32	63R	0
3	L63	63R	L32	32R	0
4	32R	L32	L63	0	63R
5	63R	0	L63	L32	32R
6	L32	32R	L63	63R	0
7	0	63R	L63	32R	L32
8	0	63R	L32	32R	L63
9	0	32R	L32	63R	L63
10	63R	32R	0	L32	L63

16: Analog Delay->Chorus

This effect reproduces the sound of the BOSS CE-1 Chorus Ensemble. To reproduce the sound of the unit at the time, a monaural analog-type delay is first inserted in series.



Parameter	Value	Description
Dly Sw	OFF, ON	Turns the delay on/off.
Dly Repeat Rate #1	0–127	Corresponds to the delay time in a delay effects.
Dly Intensity #2	0–127	Corresponds to the feedback set- ting in a delay effects.
Dly Level	0–127	Sets the volume of the delay sound.
Chorus Sw	OFF, ON	Turns chorus or vibrato on/off.
Chorus Mode	CHORUS, VI- BRATO	Switches the sound between chorus and vibrato modes.
Chorus Intensi- ty #3	0–127	When Chorus Mode is CHO- RUS, this sets the pitch vibrato speed.
Vibrato Depth	0–127	When Chorus Mode is VIBRA- TO, this sets the pitch vibrato depth.
Vibrato Rate	0–127	When Chorus Mode is VIBRA- TO, this sets the pitch vibrato speed.
Chorus Out Mode	MONO, ST-1, ST-2	Switches the output format (mono/stereo). MONO: Output is monaural. ST-1: Chorus sound of the pitch vibration which phase is invert- ed between left and right is mixed with the source sound. This is a broader chorus, with a weaker feeling of placement. ST-2: The left output contains the source sound, and the right side has the wavering chorus sound.

17: Digital Chorus

This is a stereo chorus or flanger. Equalizers are provided before (Pre) and after (Post) the chorus (or flanger).



Deremeter	Value	Description
Parameter	Value	Description
Mode	CHORUS,	Selects either chorus or flanger.
	FLANGER	
Rate #1	0.05–10.0 Hz,	Sets the cycle for the chorus or
	note	flanger sound undulations.
Depth #2	0–127	Adjusts the depth of modulation
		for the chorus or flanger.
Phase	0–180 deg	Specifies the spaciousness of the
		chorus or flanger sound.
Pre Low Freq	50–4000 Hz	Frequency of the low range (Pre)
Pre Low Gain	-15– +15 dB	Gain of the low range (Pre)
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pro Hi Cain	15 ± 15 dB	(Tre)
Dre Div Time	-15-+15 db	A diverte the delay time from the
Fre Diy Time	0-50.0 ms	Aujusts the delay time from the
		flanger sound is heard
T 11 1	00 000/	hanger sound is heard.
Feedback	-98-+98%	Adjusts the proportion of the
		chorus or flanger sound that is
		fed back into the effect. Negative
V I F	F0 4000 II	(-) settings will invert the phase.
Xover LowFreq	50–4000 HZ	Attenuates the effect in the
		range below the specified fre-
N I C I	0(0 ID	quency.
Xover Low Gain	-36-0 dB	Specifies how greatly the low
	2000 20000 H	range will be attenuated.
Xover HiFreq	2000–20000 Hz	Attenuates the effect in the
		range above the specified fre-
	0 (0, 1 D	quency.
Xover Hi Gain	-36–0 dB	Specifies how greatly the high
		range will be attenuated.
Modulation	0–127	Volume of the chorus or flanger
Level		sound.
Ps Low Freq	50–4000 Hz	Frequency of the low range
		(Post)
Ps Low Gain	-15– +15 dB	Gain of the low range (Post)
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
		(Post)
Ps Hi Gain	-15– +15 dB	Gain of the high range (Post)

18: Space Chorus

This effect reproduces the sound of Roland's SDD-320 spatial expression effects. Greater breadth is added.



Parameter	Value	Description
Mode	1, 2, 3, 4, 1+4,	Selects the way in the chorus
	2+4, 3+4	will change.
		The SDD-320 features four
		mode buttons for changing the
		effect. This setting determines
		which buttons are to be pressed.
		("1+4" represents the condition
		when Buttons 1 and 4 are
		pressed simultaneously.)
Chorus Level #1	0–127	Volume level of the chorus
		sound
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

19: Hexa Chorus

Hexa-chorus is a six-stage chorus which adds depth and spaciousness to the sound. (Six chorus sounds with different delay times are overlaid.) An equalizer is provided before (Pre) and after (Post) the hexa chorus.



Parameter	Value	Description
Pre Dly Time	0–50.0 ms	Adjusts the delay time from the
		direct sound until the chorus
		sound is heard.
Pre Dly Dev	0–50.0 ms	Specifies the differences in Pre
		Delay time for each of the chorus
		sounds
Rate #1	0.05–10.0 Hz,	Specifies the modulation fre-
	note	quency of the chorus sound.
Depth	0–127	Specifies the modulation depth
		of the chorus sound.
Depth Devia-	0–127	Specifies the difference in mod-
tion		ulation depth between each of
		the chorus sounds.
Pan Deviation	L63-63R	Specifies the difference in stereo
		position between each of the
		chorus sounds.
		0: All of the chorus sounds will
		be panned to the center.
		L20/R20: each chorus sound
		will be placed in 30 degree inter-
		vals relative to the center posi-
		tion.
Chorus Level #2	0–127	Volume level of the chorus
		sound
Pre Low Freq	50–4000 Hz	Frequency of the low range (Pre)
Pre Low Gain	-15– +15 dB	Gain of the low range (Pre)
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
		(Pre)
Pre Hi Gain	-15– +15 dB	Gain of the high range (Pre)
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

20: Analog Flanger

This effect reproduces the sound of Roland's SBF-325 analog flanger. You can get three different types of flanger sounds (adding a metallic swelling sound to the source sound) and chorus like effect.

ı		
	Analog	
R	rianger	

Parameter	Value	Description
Mode	FL1, FL2, FL3,	Sets the effect type.
	CHO	FL1: A general monaural flanger
		FL2: A stereo flanger that utiliz-
		es the stereo placement of the
		source sound
		FL3: A cross mix flanger that
		providing a more intense effect
		CHO: Chorus effect
Rate #1	0.02–5.00 Hz,	Sets the rate of the swelling of
	note	the flanger sound.
Depth #2	0–127	Specifies the modulation depth
		of the flanger sound.
Manual	0–127	Adjusts the center frequency to
		which the flanger effect is ap-
		plied.
Feedback #3	0–127	Sets the intensity of the flanger's
		effect.
		* When the mode is set to CHO,
		this setting will be ignored.
CH-R Mod	NORM, INV	Sets the phase of the right chan-
Phase		nel.
		This is usually set to Normal
		(NORM). Setting this to Invert
		(INV) inverts the phase of the
		modulation (rise and fall) in the
		right channel.
CH-L Phase	NORM, INV	Sets the phase of the left and
CH-R Phase		right channels when the source
		sound is mixed with the flang-
		ing sound.
		NORM: Positive phase (+)
		INV: negative phase (-)

21: BOSS Flanger

This effect features a pair of the same flanger circuits used in the BOSS compact flangers, connected in parallel for stereo input. This adds a particular metallic-sounding modulation to the source sound.



Parameter	Value	Description
Туре	NORMAL, HI-	Selects the model of flanger sim-
	BAND	ulated. NORMAL: Normal type (BOSS BF-2)
		HI-BAND: High-Band type (BOSS HF-2). Setting HI-B raise
		above that at the NORM.
Manual	0–127	Sets the center frequency for the effect.
Depth #1	0–127	Sets the depth of the swelling of the flanger sound.
Rate #2	0.05–10.0 Hz,	Adjusts the modulation speed of
	note	the flanger effect.
Resonance	0–127	Sets the intensity of the flanger's effect.
		* If the Feedback Mode is
		CROSS, this setting is
		ignored.
Phase	0–180 deg	Specifies the spaciousness of the
		flanger sound.
Feedback Mode	NORMAL,	Specifies the input destination to
	CROSS	which the flanger sound will be
		returned.
		NORMAL: The left flanger
		sound will be returned to the left
		sound to the right input
		CROSS: The left flanger sound
		will be returned to the right in-
		put, and the right flanger sound
		to the left input.
Feedback	-98-+98%	This setting makes the flanging
		sound of each of right and left
		channels return to the input of
		the opposite channel. Negative
		(-) settings will invert the phase.
		* When the Feedback Mode is set
		to NORMAL, this setting will
Cross Mix Laval	100 +100	De Ignorea.
Cross with Level	-100-+100	sound from each of the right and
		left channels mix it with the
		flanging sound of the opposite
		channel. Negative (-) settings
		will invert the phase.
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

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	Description
Pre Dly Time	0–50.0 ms	Specifies the time delay from the
		original sound until the flanger
		sound is heard.
Rate #1	0.05–10.0 Hz,	Specifies the modulation fre-
	note	quency of the flanger sound.
Depth	0–127	Specifies the modulation depth
		of the flanger sound.
Feedback	-98-+98%	Adjusts the proportion of the
		flanger sound that is fed back
		into the effect. Negative (-) set-
		tings will invert the phase.
Phase	0–180 deg	Specifies the spaciousness of the
		flanger sound.
Step Rate #2	0.05–10.0 Hz,	Specifies the frequency of pitch
	note	change.
Flanger Level	0–127	Volume of the flanger sound
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

23: Analog Phaser

This effect features two analog-type phasers arranged in parallel, making it stereo compatible. The sound as it cyclically drifts in and out of phase is added to the source sound, creating the modulation with the characteristic of phasers.



Parameter	Value	Description
Shift Mode	4STAGE,	Sets the number of stages in the
	8STAGE	phase shift circuit (four (4STAG)
		or eight (8STAGE)).
		Setting this to eight stages
		(8STAGE) increases the number
		of the frequency points that
		sound is canceled, giving a
		sharper effect.
	Level	1 stage
		\vee \vee
		Freq.
	Level	0
		8 stage
		$\wedge \land \land \land \frown \frown \frown$
		(
		Freq.
Center Freq #1	0–127	Sets the center frequency to
_		which the phaser effect is ap-
		plied.
		Increasing this value moves the
		effect point of the phaser into
		higher frequency ranges.
Resonance	0–127	Amount of feedback
		Increasing this value gives a
		more distinctive sound to the ef-
		fect.
LFO 1 Rate	0.02–5.00 Hz,	Sets the LFO 1 rate of the swell-
	note	ing sound.
LFO 2 Rate	0.2–50.0 Hz	Sets the LFO 2 rate of the swell-
		ing sound.
LFO 1/2 Depth	0-127	Specifies the depth of modula-
		tion.
LFO 1/2 Phase	NORM, INV	Sets the phase of both left and
		right swelling.
		NORM: The left and right phase
		will be the same.
		INV: The left and right phase
		will be opposite.

24: Digital Phaser

Phaser is an effect that adds a phase-shifted sound to the original sound to create time-varying change, modulating the sound.



25: Rotary

The Rotary effect simulates the sound of the rotary speakers often used with the electric organs of the past. Since the movement of the high range and low range rotors can be set independently, the unique type of modulation characteristic of these speakers can be simulated quite closely. This effect is most suitable for electric organ Patches.



Darameter	Value	Description
Faralleler		
Speed #2	SLOW, FASI	Simultaneously switch the rota-
		tional speed of the low frequen-
		cy rotor and high frequency
		rotor
		SLOW: Slows down the rotation
		to the Slow Rate.
		FAST: Speeds up the rotation to
		the Fast Kate.
Low Slow Rate	0.05–10.0 Hz,	Slow speed (SLOW) of the low
	note	frequency rotor
Low Fast Rate	0.05–10.0 Hz,	Fast speed (FAST) of the low fre-
	note	quency rotor
Low Accelera-	0–15	Adjusts the time it takes the low
tion		frequency rotor to reach the
		newly selected speed when
		switching from fast to slow (or
		slow to fast) speed.
Low Level	0–127	Volume of the low frequency ro-
		tor
Hi Slow Rate	0.05–10.0 Hz,	Slow speed (SLOW) of the high
	note	frequency rotor
Hi Fast Rate	0.05–10.0 Hz,	Fast speed (FAST) of the high
	note	frequency rotor
Hi Acceleration	0–15	Adjusts the time it takes the high
		frequency rotor to reach the
		newly selected speed when
		switching from fast to slow (or
		slow to fast) speed.
Hi Level	0–127	Volume of the high frequency
		rotor
Separation #1	0–127	Spatial dispersion of the sound
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15- +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15- +15 dB	Gain of the high range

26: Tremolo/Auto Pan

This is a stereo tremolo or auto-pan effect. Tremolo cyclically modulates the volume to add tremolo effect to the sound. The Auto Pan effect cyclically modulates the stereo location of the sound.



Parameter	Value	Description
Mode	TREMOLO,	Selects whether to use tremolo
	AUTO PAN	or auto pan.
Waveform	TRI, SAWUP,	Selects the type of modulation.
	SAWDN, SQR,	TRI: Triangle wave
	SIN	SAWUP/SAWDN: Sawtooth
		Wave
		SQR: Square wave
		SIN: Sine wave
	SAWUP	SAWDN
	$ \mathcal{M} $	1 NN
Rate #1	0.05–10.0 Hz,	Frequency of modulation
	note	
Depth #2	0–127	Depth of modulation
Balance	DRY100:0WET-	Volume balance between the di-
	DRY0:100WET	rect sound (DRY) and the effect
		sound (WET)
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

27: Stereo Pitch Shifter

This effect features two pitch shifters arranged in parallel, making it stereo compatible. It can shift the pitch of the input signal up to one octave up or down.



Parameter	Value	Description
Input Mode	MONO, STE-	Selects either stereo input or
	REO	monaural input.
Grade	1–5	Sets the grade of the effect
		sound.
		The higher the value is set, the
		more natural-sounding can be
		obtained; however, this increas-
		es the delay from the source
	10 10 1	sound as well.
Coarse Pitch A/	-12– +12 sem1-	Specifies the pitch shift amount
B #1/#2	tone	in semitones for pitch shift A or
	100 100 1	B.
Fine Pitch A/B	-100 - +100 cent	Adjusts the pitch shift amount in
		2-cent units (1 cent = $1/100$ of a
	0.500	semitone) for pitch shift A or B.
Pre Delay A/B	0–500 ms	Adjusts the delay time from the
		A or B cound is board
Langl A /D	0 107	A or b sound is neard.
Level A/ b	0-127	sound
Dam A /P	I (2 (2D	Dan of the nitch shift A or P
Fall A/D	L03-03K	ran of the pitch shift A of B
Direct Lovel	0.127	Volume of the direct cound
Easthack #2	0-127	A diverse the properties of the
reeuback #5	-90- +90 /0	nitch shift sound that is fed back
		into the effect Negative (-) set-
		tings will invert the phase
Low Damp Freq	50-4000 Hz	Adjusts the frequency below
2011 Dump Freq	00 1000 112	which sound fed back to the ef-
		fect will be cut.
		The lower range is attenuated
		earlier than other ranges (low-
		damp effect).
Low Damp	-36–0 dB	Degree of Low Damp
Gain		
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above
		which sound fed back to the ef-
		fect will be cut.
		The upper range is attenuated
		earlier than other ranges (high-
LUD C:	26.0.15	damp ettect).
Hi Damp Gain	-36–0 dB	Degree of High Damp
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

28: OD/DS->Cho/Flg (Overdrive/ Distortion->Chorus/Flanger)

This effect connects either Overdrive or Distortion and either Chorus or Flanger.



Parameter	Value	Description
Drive Mode	OD, DS	Selects whether to use overdrive
		(OD) or distortion (DS).
Drive #1	0–127	Degree of distortion
Amp Sim Sw	OFF, ON	Turns the amp simulator on/off.
Атр Туре	SMALL,	Type of guitar amp
	BUILT-IN, 2-	SMALL: small amp
	STACK, 3-	BUILT-IN: single-unit type amp
	STACK	2-STACK: large double stack
		amp
	0.105	3-STACK: large triple stack amp
Distortion Level	0-127	Volume of the overdrive or dis-
NC 1NC 1	CHODUS	tortion sound.
Mod Mode	CHOKUS,	Selects whether to use chorus or
(Chorus /	FLANGER	nanger.
Mad Rata #2	0.05 10.0 Hz	A divists the speed of modulation
WIOU Kate #2	0.03-10.0112,	for the chorus or flanger
Mod Dopth	0.127	A diusts the depth of modulation
Mou Depui	0-127	for the chorus or flanger
Mod Phase	0–180 deg	Sets how the chorus or flanger
Wiba I Hase	0 100 405	sound is spread.
Mod Pre Delav	0–50.0 ms	Adjusts the delay time from the
literation	0 0010 110	direct sound until the chorus or
		flanger sound is heard.
Mod Feedback	-98- +98%	Adjusts the proportion of the ef-
		fect sound that is fed back into
		the effect. Negative (-) settings
		will invert the phase.
Xover LowFreq	50–4000 Hz	Attenuates the effect in the
		range below the specified fre-
		quency.
Xover Low Gain	-36–0 dB	Specifies how greatly the low
		range will be attenuated.
Xover HiFreq	2000–20000 Hz	Attenuates the effect in the
		range above the specified fre-
V II C I	2(0 ID	quency.
Xover Hi Gain	-36-0 dB	Specifies how greatly the high
M IT I	0.107	range will be attenuated.
woa Level	0-12/	volume of the chorus or flanger
Do Louy Error	50 4000 H-	Eroquoney of the law report
I S LOW Freq		Cain of the low range
rs Low Gain	-10- +10 db	Gain of the low range
Pa Lli Cain	2000-20000 HZ	Crime of the high manage
Ps Hi Gain	-15– +15 dB	Gain of the high range

29: OD/DS->Delay (Overdrive/Distortion->Delay)

This effect connects either Overdrive or Distortion and Delay in series.



Parameter	Value	Description
Drive Mode	OD, DS	Selects whether to use overdrive
		(OD) or distortion (DS).
Drive #1	0–127	Degree of distortion
Amp Sim Sw	OFF, ON	Turns the amp simulator on/off.
Атр Туре	SMALL,	Type of guitar amp
	BUILT-IN, 2-	SMALL: small amp
	STACK, 3-	BUILT-IN: single-unit type amp
	STACK	2-STACK: large double stack
		amp
		3-STACK: large triple stack amp
Distortion Level	0–127	Volume of the overdrive or dis-
		tortion sound.
Delay Time	0–1300 ms, note	Adjusts the delay time from the
		direct sound until the delay
		sound is heard.
Delay Feedback	-98-+98%	Adjusts the proportion of the de-
#2		lay sound that is fed back into
		the effect. Negative (-) settings
		will invert the phase.
Low Damp Freq	50–4000 Hz	Adjusts the frequency below
		which sound fed back to the ef-
		fect will be cut.
		The lower range is attenuated
		damp effect)
Low Damp	-36.0.dB	Dograe of Low Damp
Gain	-50-0 ub	Degree of Low Dality
Hi Damp Fred	2000-20000 Hz	Adjusts the frequency above
Th Dump Tree	2000 20000 112	which sound fed back to the ef-
		fect will be cut.
		High Damp, by attenuating the
		higher frequencies first, makes
		the delay sound more natural.
Hi Damp Gain	-36-0 dB	Degree of High Damp
Delay Level	0–127	Volume of the delay sound.
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

30: Cho/Flg->Delay (Chorus/Flanger->Delay)

This effect connects either Chorus or Flanger and Delay in series.



Parameter	Value	Description
Mod Mode	CHORUS,	Selects whether to use chorus or
(Chorus / Flanger)	FLANGER	flanger.
Mod Rate #1	0.05–10.0 Hz,	Adjusts the speed of modulation
	note	for the chorus or flanger.
Mod Depth	0–127	Adjusts the depth of modulation
		for the chorus or flanger.
Mod Phase	0–180 deg	Sets how the chorus or flanger sound is spread.
Mod Pre Delay	0–50.0 ms	Adjusts the delay time from the
		direct sound until the chorus or
		flanger sound is heard.
Mod Feedback	-98- +98%	Adjusts the proportion of the ef-
		fect sound that is fed back into
		will invert the phase.
Xover LowFrea	50–4000 Hz	Attenuates the effect in the range
1		below the specified frequency.
Xover Low Gain	-36–0 dB	Specifies how greatly the low
		range will be attenuated.
Xover HiFreq	2000–20000 Hz	Attenuates the effect in the range
		above the specified frequency.
Xover Hi Gain	-36–0 dB	Specifies how greatly the high
		range will be attenuated.
Mod Level	0–127	Volume of the chorus or flanger
		sound.
Delay Time	0–1300 ms, note	Adjusts the delay time from the
		direct sound until the delay
Dolary Foodback	00 1000/	A divists the propertien of the de
Delay reeuback	-90-+90%	law sound that is fed back into
		the effect. Negative (-) settings
		will invert the phase.
Low Damp Freq	50–4000 Hz	Adjusts the frequency below
1 1		which sound fed back to the ef-
		fect will be cut.
		The lower range is attenuated
		earlier than other ranges (low-
		damp effect).
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above
		which sound fed back to the ef-
		High Domp, by attonuating the
		higher frequencies first makes
		the delay sound more natural.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Delay Level	0–127	Volume of the delay sound.
Ps Low Frea	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

31: Enh->Cho/Flg (Enhancer->Chorus/Flanger)

This effect connects Enhancer and either Chorus or Flanger in series.



Daramotor	Value	Description
Falameter		
Enhan Sens #1	0-127	Sensitivity of the enhancer
Enhan Frequen-	0-127	Sets the lower limit of the fre-
cy		quencies to which the enhance-
		ment effect is added.
Enhan Mix Lev-	0–127	Level of the overtones generated
el		by the enhancer
Enhan Level	0–127	Volume of the enhancer sound
Mod Mode	CHORUS,	Selects whether to use chorus or
(Chorus /	FLANGER	flanger.
Flanger)		
Mod Rate #2	0.05–10.0 Hz,	Adjusts the speed of modulation
	note	for the chorus or flanger.
Mod Depth	0–127	Adjusts the depth of modulation
		for the chorus or flanger.
Mod Phase	0–180 deg	Sets how the chorus or flanger
		sound is spread.
Mod Pre Delay	0–50.0 ms	Adjusts the delay time from the
		direct sound until the chorus or
		flanger sound is heard.
Mod Feedback	-98-+98%	Adjusts the proportion of the ef-
		fect sound that is fed back into
		the effect. Negative (-) settings
		will invert the phase.
Xover LowFreq	50–4000 Hz	Attenuates the effect in the
		range below the specified fre-
		quency.
Xover Low Gain	-36–0 dB	Specifies how greatly the low
		range will be attenuated.
Xover HiFreq	2000–20000 Hz	Attenuates the effect in the
		range above the specified fre-
		quency.
Xover Hi Gain	-36–0 dB	Specifies how greatly the high
		range will be attenuated.
Mod Level	0–127	Volume of the chorus or flanger
		sound.
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

32: Enh->Delay (Enhancer->Delay)

This effect connects an Enhancer and a Delay in series.



Parameter	Value	Description
Enhan Sens #1	0–127	Sensitivity of the enhancer
Enhan Frequen-	0–127	Sets the lower limit of the fre-
cy		quencies to which the enhance-
		ment effect is added.
Enhan Mix Lev-	0–127	Level of the overtones generated
el		by the enhancer
Enhan Level	0–127	Volume of the enhancer sound
Delay Time	0–1300 ms, note	Adjusts the delay time from the
		direct sound until the delay
		sound is heard.
Delay Feedback	-98- +98%	Adjusts the proportion of the de-
#2		lay sound that is fed back into
		the effect. Negative (-) settings
		will invert the phase.
Low Damp Freq	50–4000 Hz	Adjusts the frequency below
		which sound fed back to the ef-
		fect will be cut.
		The lower range is attenuated
		earlier than other ranges (low-
		damp effect).
Low Damp	-36–0 dB	Degree of Low Damp
Gain		
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above
		which sound fed back to the ef-
		fect will be cut.
		High Damp, by attenuating the
		higher frequencies first, makes
		the delay sound more natural.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Delay Level	0–127	Volume of the delay sound.
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

33: Vocal Multi

A limiter/de-esser, enhancer, 3-band equalizer, and delay are connected in series.

A limiter holds down high signal levels to prevent distortion. A de-esser cuts the sibilant sounds of a voice, producing a gentler tone.



Parameter	Value	Description
Limtr Mode	LIMITER, DE-	Selects whether the effect will
	ESSER	function as a limiter or as a de-
		esser.
		* If the Limtr Mode is DE-
		ESSER, the limiter settings
		are ignored. Conversely, if the
		Limit Nioue is Livii i ER, the
Limtr Throch	60.0.4B	A diusts the loval (Threshold
old	-00-0 uD	I evel) at which the limiter will
old		begin to operate.
Limtr Release	0–127	Adjusts the time until when the
#1	· · · · ·	limiter will turn off after the in-
		put level falls below the thresh-
		old level.
Limtr Gain	-60– +12 dB	Adjusts the gain of the sound
		that passes through the limiter.
DE Sens	0–127	Adjusts the sensitivity relative
		to the input volume, which con-
		trols how the effect is applied.
DE Frequency	1000–10000 Hz	Adjusts the frequency at which
		the de-esser effect will apply.
Enhan Sens	0-127	Sensitivity of the enhancer
Enhan Frequen-	0-127	Sets the lower limit of the fre-
cy		quencies to which the enhance-
Enhan Mix Lov-	0.127	I aval of the overtones generated
el	0-127	by the enhancer
Enhan Level	0–127	Volume of the enhancer sound
EQ Low Freq	50–4000 Hz	Frequency of the low range
EQ Low Gain	-15– +15 dB	Gain of the low range
EQ Mid Freq	50–20000 Hz	Frequency of the middle range
EQ Mid Q	0.5, 0.7, 1.0, 2.0,	Gain of the middle range
	4.0, 8.0	Set a higher value for Q to nar-
		row the range to be affected.
EQ Mid Gain	-15– +15 dB	Gain of the middle range
EQ Hi Freq	2000–20000 Hz	Frequency of the high range
EQ Hi Gain	-15– +15 dB	Gain of the high range
Delay Time	0–1300 ms, note	Adjusts the delay time from the
		direct sound until the delay
Delay Foodback	08 1080/	A diusts the propertien of the de
Delay reeuback	-90-+90/0	lay sound that is fed back into
		the effect. Negative (-) settings
		will invert the phase.
Low Damp Fred	50–4000 Hz	Adjusts the frequency below
1 1		which sound fed back to the ef-
		fect will be cut.
		The lower range is attenuated
		earlier than other ranges (low-
		damp effect).

Parameter	Value	Description
Low Damp	-36–0 dB	Degree of Low Damp
Gain		
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above
		which sound fed back to the ef-
		fect will be cut.
		High Damp, by attenuating the
		higher frequencies first, makes
		the delay sound more natural.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Delay Level	0–127	Volume of the delay sound.

34: Guitar Multi

Guitar Multi provides Comp/Limiter, Overdrive or Distortion, Chorus or Flanger, and Delay effects connected in series.





Parameter	Value	Description
Comp Sw	OFF, ON	Turns the comp/limiter on/off.
Comp Thresh-	-60–0 dB	Sets the volume level at which
old		the compression begins.
Comp Attack	0–127	Sets the time after the sound vol-
		ume is crossed the compressor
		threshold until compression be-
		gins.
Comp Release	0–127	Specifies the time from when the
		volume drops below the com-
		pressor threshold until com-
		pression is no longer applied.
Comp Ratio	1.5:1, 2:1, 4:1,	Sets the "source sound:output
	100:1	sound" compression ratio.
Comp Gain	-60– +12 dB	Adjusts the output gain.
Distortion Sw	OFF, ON	Selects whether to use overdrive
		or distortion.
Drive Mode	OD, DS	Selects whether to use overdrive
		(OD) or distortion (DS).
Drive	0–127	Degree of distortion
Amp Sim Sw	OFF, ON	Turns the amp simulator on/off.
Атр Туре	SMALL,	Type of guitar amp
	BUILT-IN, 2-	SMALL: small amp
	STACK, 3-	BUILT-IN: single-unit type amp
	STACK	2-STACK: large double stack
		amp
		3-STACK: large triple stack amp
Distortion Level	0–127	Volume of the overdrive or dis-
		tortion sound.
Mod Mode	CHORUS,	Selects whether to use chorus or
(Chorus /	FLANGER	flanger.
Flanger)		
Mod Rate	0.05–10.0 Hz,	Adjusts the speed of modulation
	note	for the chorus or flanger.
Mod Depth	0–127	Adjusts the depth of modulation
		for the chorus or flanger.

Parameter	Value	Description
Mod Phase	0–180 deg	Sets how the chorus or flanger sound is spread.
Mod Pre Delay	0–50.0 ms	Adjusts the delay time from the direct sound until the chorus or flanger sound is heard.
Mod Feedback	-98- +98%	Adjusts the proportion of the effect sound that is fed back into the effect. Negative (-) settings will invert the phase.
Mod XoverLPF	500–15000 Hz, THRU	Adjusts the cutoff frequency of the low pass filter. (THRU: no filter is used)
Mod XoverHPF	THRU, 50–800 Hz	Adjusts the cutoff frequency of the high pass filter. (THRU: no filter is used)
Mod Level	0–127	Volume of the chorus or flanger sound.
Delay Time	0–1300 ms, note	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay Feedback	-98- +98%	Adjusts the proportion of the de- lay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Hi Damp Freq	500–15000 Hz, THRU	Adjusts the frequency above which sound fed back to the ef- fect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Delay Level	0–127	Volume of the delay sound.

35: Bass Multi

Bass Multi provides Comp/Limiter, Overdrive or Distortion, 3-band equalizer, and Chorus or Flanger effects connected in series. This algorithm is a multi-effects for bass.



Comp SwOFF, ONTurns the comp/limiter on/off.Comp Thresh- old #1-60-0 dBSets the volume level at which the compression begins.Comp Attack0-127Sets the time after the sound vol- ume is crossed the compressor threshold until compression be- gins.Comp Release0-127Specifies the time from when the volume drops below the com- pressor threshold until com- pression is no longer applied.Comp Ratio1.5:1, 2:1, 4:1, 100:1Sets the "source sound:output sound" compression ratio.Comp Gain-60-+12 dBAdjusts the output gain.Distortion SwOFF, ONSelects whether to use overdrive or distortion.Drive ModeOD, DSSelects whether to use overdrive (OD) or distortion (DS).Drive0-127Degree of distortionAmp TypeSMALL, STACK, 3- STACK, 3- STACK.Turns the amp simulator on/off.Amp TypeSMALL, STACK i large double stack amp -STACK: large triple stack amp -STACK.Turns the overdrive or dis- tortion sound.EQ Low Freq50-4000 HzFrequency of the low rangeEQ Mid Q0.5, 0.7, 1.0, 2.0, 4.0, 8.0Gain of the middle range Set a higher value for Q to nar- row the range to be affected.EQ Mid Gain-15-+15 dBGain of the middle range Set a higher value for Q to nar- row the range to be affected.EQ Mid Gain-15-+15 dBGain of the middle range Set a higher value for Q to nar- row the range to be affected.EQ Mid Gain-15-+15 dBGain of the middle range Set a higher value for Q to nar- row the choru	Parameter	Value	Description
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Mod Phase 0–180 deg Sets how the chorus or flanger sound is spread. Mod Pre Delay 0–50.0 ms Adjusts the delay time from the direct sound until the chorus or flanger sound is heard. Mod Feedback -98– +98% Adjusts the proportion of the effect sound that is fed back into the effect. Negative (-) settings will invert the phase.	Mod Depth	0-127	Adjusts the depth of modulation
Mod Freedback -98-+98% Adjusts the proportion of the effect. Negative (-) settings will invert the phase.	Mod Phase	0.180 dog	Sets how the shores or flanger
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Mod Feedback -98-+98% Adjusts the delay linke from the direct sound until the chorus or flanger sound is heard. Mod Feedback -98-+98% Adjusts the proportion of the effect sound that is fed back into the effect. Negative (-) settings will invert the phase.	Mod Pro Dolay	0-50.0 ms	A direct the delay time from the
Mod Feedback -98- +98% Adjusts the proportion of the effect sound that is fed back into the effect. Negative (-) settings will invert the phase.	wide i te Delay	0-50.0 ms	direct sound until the chorus or
Mod Feedback -98- +98% Adjusts the proportion of the effect sound that is fed back into the effect. Negative (-) settings will invert the phase.			flanger sound is heard.
fect sound that is fed back into the effect. Negative (-) settings will invert the phase.	Mod Feedback	-98-+98%	Adjusts the proportion of the ef-
the effect. Negative (-) settings will invert the phase.			fect sound that is fed back into
will invert the phase.			the effect. Negative (-) settings
			will invert the phase.

Parameter	Value	Description
Mod XoverLPF	500–15000 Hz,	Adjusts the cutoff frequency of
	THRU	the low pass filter. (THRU: no
		filter is used)
Mod XoverHPF	THRU, 50-800	Adjusts the cutoff frequency of
	Hz	the high pass filter. (THRU: no
		filter is used)
Mod Level	0–127	Volume of the chorus or flanger
		sound.

36: EP Multi

Enhancer, Phaser, Chorus or Flanger, and Tremolo or Auto-pan are connected in series. This effect is used for electric piano.



Parameter	Value	Description
Enhan Sw	OFF, ON	Turns the enhancer effect on/
		off.
Enhan Sens	0–127	Sensitivity of the enhancer
Enhan Frequen-	0–127	Sets the lower limit of the fre-
cy		quencies to which the enhance-
		ment effect is added.
Enhan Mix Lev-	0–127	Level of the overtones generated
el		by the enhancer
Enhan Level	0–127	Volume of the enhancer sound
Phaser Manual	0–127	Specifies the center frequency at
		which the sound is modulated.
Phaser Rate	0.05–10.0 Hz,	Specifies the frequency of mod-
	note	ulation.
Phaser Depth	0–127	Specifies the depth of modula-
		tion.
Phaser Reso-	0–127	Specifies the amount of feed-
nance		back for the phaser.
		Higher settings will give the
		sound a stronger character.
Phaser Mix Lev-	0–127	Specifies the volume of the
el		phase-shifted sound, relative to
		the direct sound.
Mod Mode	CHORUS,	Selects whether to use chorus or
(Chorus /	FLANGER	flanger.
Flanger)		
Mod Rate	0.05–10.0 Hz,	Adjusts the speed of modulation
	note	for the chorus or flanger.
Mod Depth	0–127	Adjusts the depth of modulation
		for the chorus or flanger.
Mod Phase	0–180 deg	Sets how the chorus or flanger
		sound is spread.
Mod Pre Delay	0–50.0 ms	Adjusts the delay time from the
		direct sound until the chorus or
		flanger sound is heard.
Mod Feedback	-98- +98%	Adjusts the proportion of the ef-
		fect sound that is fed back into
		the effect. Negative (-) settings
	F00 15000 II	will invert the phase.
Mod XoverLPF	500–15000 Hz,	Adjusts the cutoff frequency of
	THKU	the low pass filter. (THKU: no
M. IV. UPT	TUDU FO 000	A directer the sector (((
Mod XoverHPF	тпкU, 50-800 На	the high pass filter (TUPU) as
	112	filter is used)
		muer is used)

Parameter	Value	Description
Mod Level	0–127	Volume of the chorus or flanger
		sound.
Trem/Pan Sw	OFF, ON	Turns the tremolo/auto pan ef-
		fect on/off.
Trem Mode	TREMOLO,	Selects whether to use tremolo
	AUTO PAN	or auto pan.
Trem Wave-	TRI, SAWUP,	Selects the type of modulation.
form	SAWDN, SQR,	TRI: Triangle wave
	SIN	SAWUP/SAWDN: Sawtooth
		Wave
		SQR: Square wave
		SIN: Sine wave
	SAWUP	SAWDN
	$ \wedge \rangle$	1 NN
Trem Rate	0.05–10.0 Hz,	Frequency of modulation
	note	
Trem Depth	0–127	Depth of modulation

37: Keyboard Multi

A ring modulator, 3-band equalizer, pitch shifter, phaser, and delay are connected in series.

Ring Modulator is an effect which applies ring modulation using an internal oscillator to the input signal, producing bell-like sounds.



Parameter	Value	Description
Ring Freq	0–127	Frequency at which modulation
		will be applied
Ring Balance #1	DRY100:0WET-	Volume balance between the di-
	DRY0:100WET	rect sound (DRY) and the ring
		modulated sound (WET)
EQ Low Freq	50–4000 Hz	Frequency of the low range
EQ Low Gain	-15– +15 dB	Gain of the low range
EQ Mid Freq	50–20000 Hz	Frequency of the middle range
EQ Mid Q	0.5, 0.7, 1.0, 2.0,	Gain of the middle range
	4.0, 8.0	Set a higher value for Q to nar-
		row the range to be affected.
EQ Mid Gain	-15– +15 dB	Gain of the middle range
EQ Hi Freq	2000–20000 Hz	Frequency of the high range
EQ Hi Gain	-15– +15 dB	Gain of the high range
PS Grade	1–5	Sets the grade of the effect
		sound.
		The higher the value is set, the
		more natural-sounding can be
		obtained; however, this increas-
		es the delay from the source
DG G	12 12 1	sound as well.
PS Coarse	-12-+12 semi-	Specifies the pitch shift amount
DO D'	tone	in semitone steps.
PS Fine	-100 - +100 cent	Adjusts the pitch shift amount in 2 contractors (1 contractor) $= 1/(100 \text{ of } c)$
		2-cent steps (1 cent = $1/100$ of a
DC Palanco	DDV100.0WET	Volume balance between the di
r 5 Dalance	DRI 100:0WEI-	volume balance between the di-
	DRI0.100WE1	sound (WFT)
Phaser Manual	0_127	Specifies the center frequency at
	0-127	which the sound is modulated
Phaser Rate	0.05-10.0 Hz	Specifies the frequency of mod-
1 Haser Rate	note	ulation
Phaser Depth	0-127	Specifies the depth of modula-
r naber Dep ar	· · · · ·	tion.
Phaser Reso-	0–127	Specifies the amount of feed-
nance		back for the phaser.
		Higher settings will give the
		sound a stronger character.
Phaser Mix Lev-	0–127	Specifies the volume of the
el		phase-shifted sound, relative to
		the direct sound.

Parameter	Value	Description
Delay Time	0–650 ms, note	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay Feedback	-98- +98%	Adjusts the proportion of the de- lay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Low Damp Freq	50-4000 Hz	Adjusts the frequency below which sound fed back to the ef- fect will be cut. The lower range is attenuated earlier than other ranges (low- damp effect).
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the ef- fect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Delay Level	0–127	Volume of the delay sound.

38: Phonograph

This effect reproduces the sound of an analog record played on a record player. This includes the various noises with the characteristic of records and the uneven rotation of older turntables.



Parameter	Value	Description
Input Mode	MONO, STE-	Use this setting to select either a
	REO	stereo or monaural record play-
		er for the effect.
Signal Dist	0–127	Degree of distortion
Frequency	0–127	Sets the frequency response of
Range		the record player.
_		Lowering the value degrades
		the frequency characteristics,
		making the sound resemble that
		from an older system.
Disk Type	LP, EP, SP	Sets the turntable rotation
		speed.
		LP: 33 1/3 r.p.m.
		EP: 45 r.p.m.
		SP: 78 r.p.m.
Total Noise #1	0–127	Total noise level.
Scratch	0–127	Scratches on the record.
Dust	0–127	Dust on the record.
Hiss	0–127	Continuous hissing noise.
* These settings add the typical record's noise. The noises increase as		

* These settings add the typical record's noise. The noises increase as the values are raised. Set each of the Scratch, Dust, and Hiss noise levels to get a balance, the adjust the overall amount of noise with the Total Noise Level control.

Total Wow/	0–127	Total wow and flutter.
Flutter #2		
Wow	0–127	Wow, long cycle rotational ir-
		regularity.
Flutter	0–127	Flutter, short cycle rotational ir-
		regularity.
Random	0–127	Random rotational irregularity.
These settings determine the rotational irregularities of the record		
player. Set each o	of the Wow, Flutte	r, and Random levels to get a bal-
ance, the adjust	the overall depth of	of the effect with the Total Wow/
Flutter control.		
Balance	DRY100:0WET-	Volume balance between the di-
	DRY0:100WET	rect sound (DRY) and the effect
		sound (WET)

39: Radio Tuning

This effect reproduces the sound of an AM radio playing.



Parameter	Value	Description
Tuning #1	-50-+50	Adjusts the degree of noise that
		occurs when tuning a radio.
Noise Level #2	0–127	Sets the noise level.
Frequency	0–127	Sets the frequency response of
Range #3		the radio.
		Lowering the value worsens the
		frequency characteristics, mak-
		ing the sound appear to be com-
		ing from a tiny radio speaker.
Balance	DRY100:0WET-	Volume balance between the di-
	DRY0:100WET	rect sound (DRY) and the effect
		sound (WET)

40: Bit Rate Converter

By changing the bit count and sample rate, this effect recreates the Lo-Fi (Low-Fidelity) sounds of the early digital samplers and similar machines. After the Lo-Fi processor, a filter to change the tone is arranged in series.



Parameter	Value	Description
Pre Filter Sw	OFF, ON	This is the switch of the filter placed before the Lo-Fi process- ing
Sample Rate	1/1, 1/2, 1/4, 1/8, 1/16, 1/32	Sets the fraction of current sam- pling rates to be used for pro- cessing.
Bit Down	0–15	This setting is for reducing the bit count.
Post Filter Sw	OFF, ON	This is the switch of the filter placed after the Lo-Fi process- ing.
Balance	DRY100:0WET- DRY0:100WET	Volume balance between the di- rect sound (DRY) and the effect sound (WET)
Filter Type	THRU, LPF, BPF, HPF, NOTCH	Type of filter THRU: no filter is used LPF: Passes frequencies below the Cutoff. BPF: Passes frequencies near the Cutoff. HPF: Passes frequencies above the Cutoff. NOTCH: Passes frequencies other than those near the Cutoff. Interval Interval Int
Filter Slope	-12, -24 dB/O	Filter's attenuation slope -24 dB per octave: steep -12 dB per octave: gentle
Filter Cutoff	0–127	Cutoff frequency of the filter The closer to zero it is set, the lower the cutoff frequency be- comes; set it closer to 127, and the cutoff frequency becomes higher.
Filter Reso- nance	0–127	Resonance level of the filter Raising the setting increases res- onance near the cutoff frequen- cy, giving the sound a special characteristic.

Parameter	Value	Description
Filter Gain	0– +24 dB	Compensates for the volume dropped in the cut frequency range with some filters. The level of compensation in- creases as the value is increased, and raise the volume.

41: Pseudo Stereo

Spreads the components of the monaural input sound to left and right, creating an artificial sense of stereo output.



Parameter	Value	Description
Depth #1	0–15	Spaciousness of the sound field

Chorus Parameters

The functions of Chorus parameters are explained.

Chorus Type

01: Chorus 1

This conventional chorus effect adds spaciousness and depth to the sound. Slow modulation frequency with less depth.

02:Chorus 2

This conventional chorus effect adds spaciousness and depth to the sound. Rapid modulation frequency with less depth.

03: Chorus 3

This conventional chorus effect adds spaciousness and depth to the sound. Slow modulation frequency with more depth.

04: Chorus 4

This conventional chorus effect adds spaciousness and depth to the sound. Rapid modulation frequency with more depth.

05: Feedback Chorus

This chorus offers a flanger-like effect, creating a soft sound.

06: Flanger

This effect sounds somewhat like a jet airplane taking off and landing.

07: Short Delay

This is a delay with a short delay time.

08: Fbk Short Delay

This is a short delay with many repeats.

Chorus Parameters

Parameter	Value	Description
Pre Low Freq	500–15000 Hz,	Frequency of the low range
_	THRU	(THRU: no filter is used)
Pre Hi Freq	THRU, 50-800 Hz	Frequency of the high
_		range (THRU: no filter is
		used)
Pre Dly Time	0–50.0 ms	Adjusts the delay time from
		the direct sound until the
		chorus sound is heard.
Co LPF Freq	500–15000 Hz,	Adjusts the cutoff frequen-
	THRU	cy of the low pass filter.
		(THRU: no filter is used)
		The effect will be applied to
		the frequency range below
		the cutoff frequency.
Co HPF Freq	THRU, 50-800 Hz	Adjusts the cutoff frequen-
		cy of the high pass filter.
		(THRU: no filter is used)
		The effect will be applied to
		the frequency range above
		the cutoff frequency.
Rate	0.05–10.0 Hz, note	Sets the cycle for the chorus
		or flanger sound undula-
		tions.
Depth	0–127	Adjusts the depth of modu-
		lation for the chorus or
		flanger.
Feedback	-98-+98%	Adjusts the proportion of
		the effect sound that is fed
		back into the effect. Nega-
		tive (-) settings will invert
		the phase.
Cho/Flg Sw	CHORUS,	Selects either chorus or
	FLANGER	flanger.

Reverb Parameters

The functions of Reverb parameters are explained.

ß

Explanations for each Reverb Type are given on the following
pages.

Pugeo.	
01: Room 1	(p. 32)
02: Room 2	(p. 33)
03: Room 3	(p. 33)
04: Hall 1	(p. 34)
05: Hall 2	(p. 34)
06: Hall 3	(p. 35)
07: Garage	(p. 35)
08: Plate	(p. 36)
09: Non-Linear	(p. 36)
10: Delay	(p. 37)
11: VP Studio	(p. 37)
12: VP Hall	(p. 37)
13: VP Church	(p. 38)

01: Room 1

Reverb which simulates the reverberation within a room. It is standard room reverb.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15- +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle
1		range
Pre Mid Q	0.5, 0.7, 1.0, 2.0,	Gain of the middle range
	4.0, 8.0	Set a higher value for Q to
		narrow the range to be af-
		fected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high
		range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Low Rev Time	0.06–32.0 sec	Duration (time) of the re-
		verb for the low frequency
LUD T	0.0(.00.0	band
Hi Kev Time	0.06–32.0 sec	Duration (time) of the re-
		band
Vouer Frog	160, 15000 Hz	The reverberation enorified
Xover meq	THRU	by the Low Rev Time will
	line	be applied to the range be-
		low this frequency, and by
		the Hi Rev Time to the
		range above this frequency.
Pre Dly Time	0–200.0 ms	Adjusts the delay time from
-		the direct sound until the
		delay sound is heard.
Density	0–99	Density of the reverb
Room Size	5.6–32.6 m	Size of the room which is
		simulated
Early Ref Level	0–99	Volume level of the initial
		reflected sound
Release Density	0-99	Density of the sound that
		reaches the listener after
	F0 4000 II	many repeated reflections
Low Damp Freq	50–4000 Hz	Adjusts the frequency be-
		to the effect will be cut
		The lower range is attenu-
		ated earlier than other
		ranges (low-damp effect).
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency
		above which sound fed
		back to the effect will be
		cut.
		The upper range is attenu-
		ated earlier than other
		ranges (high-damp effect).
Hi Damp Gain	-36–0 dB	Degree of High Damp
Post HC Freq	160–15000 Hz,	Frequency at which the
	IHKU	high cut filter will begin to
		is used)
1	1	15 useu)

02: Room 2

This simulates the reverberation of a room. It is suitable for simulating a fairly small room, and produces a clear reverberation.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle
_		range
Pre Mid Q	0.5, 0.7, 1.0, 2.0,	Gain of the middle range
	4.0, 8.0	Set a higher value for Q to
		narrow the range to be af-
		fected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high
		range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Reverb Time	0.06–32.0 sec	Duration (time) of the re-
		verb
Pre Dly Time	0–200.0 ms	Adjusts the delay time from
		the direct sound until the
		delay sound is heard.
Density	0-99	Density of the reverb
Room Size	1-10	Size of the room which is
	0.00	simulated
Early Ref Level	0-99	Volume level of the initial
I D F	FO 4000 II	reflected sound
Low Damp Freq	50-4000 HZ	Adjusts the frequency be-
		to the effect will be gut
		The lower range is attenu-
		ated earlier than other
		ranges (low-damp effect).
Low Damp Gain	-36-0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency
		above which sound fed
		back to the effect will be
		cut.
		The upper range is attenu-
		ated earlier than other
		ranges (high-damp effect).
Hi Damp Gain	-36-0 dB	Degree of High Damp
Post HC Freq	160–15000 Hz,	Frequency at which the
	THRU	high cut filter will begin to
		take effect (THRU: no filter
		is used)

03: Room 3

Reverb which simulates the reverberation within a room. This is suitable for simulating a fairly large room, and produces reverberation with a strong mid and low range.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle
-		range
Pre Mid Q	0.5, 0.7, 1.0, 2.0,	Gain of the middle range
	4.0, 8.0	Set a higher value for Q to
		narrow the range to be af-
		fected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high
		range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Reverb Time	0.06-32.0 sec	Duration (time) of the re-
		verb
Pre Dly Time	0–200.0 ms	Adjusts the delay time from
		the direct sound until the
		delay sound is heard.
Density	0–99	Density of the reverb
Room Size	1-8	Size of the room which is
		simulated
Early Ref Level	0-99	Volume level of the initial
		reflected sound
Release Density	0-99	Density of the sound that
		reaches the listener after
		many repeated reflections
Low Damp Freq	50–4000 Hz	Adjusts the frequency be-
		low which sound fed back
		to the effect will be cut.
		The lower range is attenu-
		ranges (low-damp effect)
Low Damp Cain	-36.0.dB	Degree of Low Damp
Low Damp Gam	2000 20000 Hz	A diusta the frequency
Th Damp Fleq	2000-20000112	above which sound fed
		back to the effect will be
		cut
		The upper range is attenu-
		ated earlier than other
		ranges (high-damp effect).
Hi Damp Gain	-36-0 dB	Degree of High Damp
Post HC Freq	160–15000 Hz,	Frequency at which the
1	THRU	high cut filter will begin to
		take effect (THRU: no filter
		is used)

04: Hall 1

This simulates the reverberation of a concert hall. It is a conventional hall reverb. You can also apply a chorus effect to the reverberation to adjust the sense of spaciousness or to create a special effect.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15- +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle
1		range
Pre Mid O	0.5, 0.7, 1.0, 2.0,	Gain of the middle range
~	4.0, 8.0	Set a higher value for Q to
	,	narrow the range to be af-
		fected.
Pre Mid Gain	-15- +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15- +15 dB	Gain of the high range
Low Rev Time	0.06-64.0 sec	Duration (time) of the re-
		verb for the low frequency
		band.
Hi Rev Time	0.06-64.0 sec	Duration (time) of the re-
		verb for the high frequency
		band
Xover Freq	160–15000 Hz,	The reverberation specified
1	THRU	by the Low Rev Time will
		be applied to the range be-
		low this frequency, and by
		the Hi Rev Time to the
		range above this frequency.
Pre Dly Time	0–200.0 ms	Adjusts the delay time from
-		the direct sound until the
		delay sound is heard.
Density	0–99	Density of the reverb
Room Size	5.6–32.6 m	Size of the room which is
		simulated
Early Ref Level	0–99	Volume level of the initial
-		reflected sound
Release Density	0–99	Density of the sound that
		reaches the listener after
		many repeated reflections
Low Damp Freq	50–4000 Hz	Adjusts the frequency be-
		low which sound fed back
		to the effect will be cut.
		The lower range is attenu-
		ated earlier than other
		ranges (low-damp effect).
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency
		above which sound fed
		back to the effect will be
		Cut.
		ated earlier than -there
		aled earlier than other
Hi Damp Cain	26.0.dB	Degree of High Demm
	-30-0 UD	Eroquency of sub-1 the
FOST HC Freq	100-1000 HZ,	high gut filter will begin to
		take effect (THRU no filter
		is used)
Chorus Pata	0.127	Rate of modulation for the
Chorus Kate	0-12/	reverb
Chorus Donth	0.127	Dopth of modulation for
Chorus Depui	0-12/	the reverb
		uic 16veib

05: Hall 2

Simulates the reverberation in a concert hall. This is suitable for simulating a smaller room, and produces a clear reverberation.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle
		range
Pre Mid Q	0.5, 0.7, 1.0, 2.0,	Gain of the middle range
	4.0, 8.0	Set a higher value for Q to
		narrow the range to be af-
		fected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high
		range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Reverb Time	0.06–64.0 sec	Duration (time) of the re-
		verb
Pre Dly Time	0–200.0 ms	Adjusts the delay time from
		the direct sound until the
D ''	0.00	delay sound is heard.
Density	0-99	Density of the reverb
Koom Size	1-10	Size of the room which is
Faulty Dof Lovel	0.00	Volume lovel of the initial
Larry Ker Lever	0-99	roflacted sound
Low Damp Frog	50,4000 Hz	Adjusts the frequency be-
Low Damp Treq	50-4000 T12	low which sound fed back
		to the effect will be cut.
		The lower range is attenu-
		ated earlier than other
		ranges (low-damp effect).
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency
		above which sound fed
		back to the effect will be
		cut.
		The upper range is attenu-
		ated earlier than other
		ranges (high-damp effect).
Hi Damp Gain	-36–0 dB	Degree of High Damp
Post HC Freq	160–15000 Hz,	Frequency at which the
	THRU	high cut filter will begin to
		take effect (1HKU: no filter
		is used)

06: Hall 3

Simulates the reverberation in a concert hall. This is suitable for simulating a fairly large room, and produces reverberation with a strong mid and low range.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle
		range
Pre Mid Q	0.5, 0.7, 1.0, 2.0,	Gain of the middle range
	4.0, 8.0	Set a higher value for Q to
		narrow the range to be af-
D Milai		fected.
Pre Mid Gain	-15-+15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Reverb Time	0.06–64.0 sec	Duration (time) of the re- verb
Pre Dly Time	0–200.0 ms	Adjusts the delay time from
		the direct sound until the
		delay sound is heard.
Density	0–99	Density of the reverb
Room Size	1-8	Size of the room which is
		simulated
Early Ref Level	0–99	Volume level of the initial
		reflected sound
Release Density	0–99	Density of the sound that
		reaches the listener atter
	F0 4000 II	many repeated reflections
Low Damp Freq	50–4000 Hz	Adjusts the frequency be-
		to the effect will be cut
		The lower range is attenu-
		ated earlier than other
		ranges (low-damp effect).
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency
		above which sound fed
		back to the effect will be
		cut.
		The upper range is attenu-
		ated earlier than other
Hi Dama Cair	26 0 JP	ranges (nign-damp effect).
	-30-U db	Degree of High Damp
Post HC Freq	160–15000 HZ,	Frequency at which the
	11110	take effect (THRU: no filter
		is used)
Release Density Low Damp Freq Low Damp Gain Hi Damp Freq Hi Damp Gain Post HC Freq	0-99 50-4000 Hz -36-0 dB 2000-20000 Hz -36-0 dB 160-15000 Hz, THRU	Density of the sound that reaches the listener after many repeated reflections Adjusts the frequency be- low which sound fed back to the effect will be cut. The lower range is attenu- ated earlier than other ranges (low-damp effect). Degree of Low Damp Adjusts the frequency above which sound fed back to the effect will be cut. The upper range is attenu- ated earlier than other ranges (high-damp effect). Degree of High Damp Frequency at which the high cut filter will begin to take effect (THRU: no filter is used)

07: Garage

This simulates the reverberation of a garage. It produces the reverberation of a room surrounded by hard-surfaced walls with many reflections.

Parameter	Value	Description
Pre Low Freq	50-4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle
		range
Pre Mid Q	0.5, 0.7, 1.0, 2.0,	Gain of the middle range
	4.0, 8.0	Set a higher value for Q to
		narrow the range to be af-
D. Miller	45 45 10	fected.
Pre Mid Gain	-15-+15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high
D. II'C I	45 45 10	range
Pre Hi Gain	-15-+15 dB	Gain of the high range
Reverb Time	0.06–32.0 sec	Duration (time) of the re- verb
Pre Dly Time	0–200.0 ms	Adjusts the delay time from
		the direct sound until the
		delay sound is heard.
Density	0–99	Density of the reverb
Room Size	1-8	Size of the room which is
		simulated
Early Ref Level	0–99	Volume level of the initial
		reflected sound
Release Density	0–99	Density of the sound that
		reaches the listener after
		many repeated reflections
Low Damp Freq	50–4000 Hz	Adjusts the frequency be-
		low which sound fed back
		to the effect will be cut.
		ated earlier than other
		ranges (low-damp effect)
Low Damp Gain	-36-0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency
In Dump Freq	2000 20000 112	above which sound fed
		back to the effect will be
		cut.
		The upper range is attenu-
		ated earlier than other
		ranges (high-damp effect).
Hi Damp Gain	-36–0 dB	Degree of High Damp
Post HC Freq	160–15000 Hz,	Frequency at which the
	THRU	high cut filter will begin to
		take effect (THRU: no filter
		is used)

08: PLATE

Simulates plate reverberation (a reverb unit that uses the vibration of a metallic plate).

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle
		range
Pre Mid Q	0.5, 0.7, 1.0, 2.0,	Gain of the middle range
	4.0, 8.0	Set a higher value for Q to
		narrow the range to be af-
		fected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high
		range
Pre Hi Gain	-15-+15 dB	Gain of the high range
Low Rev Time	0.06–32.0 sec	Duration (time) of the re-
		verb for the low frequency
LI'D T	0.06.22.0	band.
Hi Kev Time	0.06–32.0 sec	Duration (time) of the re-
		band
Yoyor Frog	160 15000 Hz	The reverboration specified
Xover meq	THRU	by the Low Rev Time will
	linco	be applied to the range be-
		low this frequency, and by
		the Hi Rev Time to the
		range above this frequency.
Pre Dly Time	0–200.0 ms	Adjusts the delay time from
		the direct sound until the
		delay sound is heard.
Density	0–99	Density of the reverb
Room Size	5.6–34.7 m	Size of the room which is
		simulated
Early Ref Level	0–99	Volume level of the initial
		reflected sound
Release Density	0–99	Density of the sound that
		reaches the listener after
Law Dawn Eng	E0 4000 LL-	many repeated reflections
Low Damp Freq	50-4000 HZ	Adjusts the frequency be-
		to the effect will be cut
		The lower range is attenu-
		ated earlier than other
		ranges (low-damp effect).
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency
		above which sound fed
		back to the effect will be
		cut.
		The upper range is attenu-
		ated earlier than other
		ranges (high-damp effect).
Hi Damp Gain	-36–0 dB	Degree of High Damp
Post HC Freq	160–15000 Hz,	Frequency at which the
	IHKU	high cut filter will begin to
		take effect (THKU: no filter
		is usea)

09: Non-Linear

This uses digital processing to create an artificial reverberation that is quite different than naturally occurring reverberation.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15- +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle
		range
Pre Mid Q	0.5, 0.7, 1.0, 2.0,	Gain of the middle range
	4.0, 8.0	Set a higher value for Q to
		narrow the range to be at-
Dro Mid Cain		fected.
Pro Li Erog	-13-+13 dB	Gain of the model range
rie ni rieq	2000–20000 Hz	range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Pre Dly Time	0–200.0 ms	Adjusts the delay time from
		the direct sound until the
		delay sound is heard.
Density	0–99	Density of the reverb
Early Ref Level	0–99	Volume level of the initial
NUDT		reflected sound
NLK Type	$\downarrow L \rightarrow K, NOKMAL, \downarrow L \neq P$	Method of output panning
	L	$L \rightarrow K$: Fan from the L chan-
		NORMAL: Output without
		panning
		$L \leftarrow R$: Pan from the R chan-
		nel to the L channel
Env Time Ratio	10-120%	The overall time will be ex-
		panded or contracted while
		preserving the time ratios
		of the various envelope
Encolous T1 T4	0.1.1000	times.
Envelope 11–14	0.1–1000 ms	Time until each point (11– T4) is reached
Envelope L1–L3	0-100	Output level for each point
-		(L1–L3)
		* If the total length of
		Envelope times
		(T1+T2+T3+T4) exceeds
		1000 ms, the sound of the
		herond this will be cut
		ocyona inis wii oc cai.
Level		
▲		
	1	
<i>/-</i> :\		L ³
		i)
 /¦-	-1-2	$\{ \setminus $
		$\left\{ \right\}$
Т1 Т	2 T3	T4
Feedback Time	0.1–1000 ms	Delay time for the feedback
Foodback Lavel	0.99%	sound
Post HC Frog	U-ツッ /0 160 15000 ロッ	Froquency at which the
r ost ric rieq	THRU	high cut filter will begin to
		take effect (THRU: no filter
		is used)
L		· ·

10: Delay

This is a stereo delay. Depending on the length of the delay you set, you can get long echoes, thick sounds, or spatial sounds.

Parameter	Value	Description
Mode	MONO, STE-	Switches stereo, monaural, or al-
	REO, ALTER-	ternate.
	NATE	MONO: This is a single-input, dual-
		output delay. Stereo sound (left and
		right) are mixed before being input.
		STEREO: This is a dual-input, dual-
		output delay. The delay sound out-
		put features the same stereo place-
		A I TERN A TE: The left and right
		delay sound output alternately
		(Alternate delay)
Delay Time	0–1300 ms	Adjusts the delay time from the
Delay Time	(MONO), 0-650	direct sound until the delay
	ms (STEREO, AL-	sound is heard.
	TERNATE), note	
L-R Shift	0–650 ms, note	Of the left and right delay
	,	sounds, the delay time will be
		increased for only one side.
		If the L-R order is $L \rightarrow R$, the R
		sound will be later. In the case of
		$R \rightarrow L$, the L sound will be later.
		* When the mode is set to
		MONO or ALTERNATE, this
1.2.2.1		setting will be ignored.
L-R Order	$L \rightarrow R, R \rightarrow L$	In STEREO or ALTERNATE
		mode, this setting determines
		which of the left or right sides has
		$I \rightarrow R$. The left side is expressed first
		$R \rightarrow I$: The right side is expressed inst
		first
		* In MONO mode, this setting
		will be ignored.
Feedback	-98-+98%	Adjusts the proportion of the de-
		lay sound that is fed back into
		the effect. Negative (-) settings
		will invert the phase.
Low Damp Freq	50–4000 Hz	Adjusts the frequency below
		which sound fed back to the ef-
		tect will be cut.
		arlier than other renges (lass
		damp effect)
Low Damp Cain	-36-0 dB	Degree of Low Damp
Hi Damp Fred	2000_20000 H-7	Adjusts the frequency above
In Damp Fied	2000-20000 I IZ	which sound fed back to the ef-
		fect will be cut.
		High Damp, by attenuating the
		higher frequencies first. makes
		the delay sound more natural.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Balance	DRY100:0WET-	Volume balance between the di-
	DRY0:100WET	rect sound (DRY) and the delay
		sound (WET)
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range
		5 0

11: VP Studio

This is a reverb used in the VP-550. Simulates the reverberation of a studio.

Parameter	Value	Description
Reverb Time	10–5000 ms	Duration (time) of the re-
		verb
Pre Delay Time	0–150 ms	Adjusts the delay time from
		the direct sound until the
		delay sound is heard.
HF Damp	1-100%	Adjusts the amount of
		damping for the high-fre-
		quency content of the re-
		verb sound.
		The upper range is attenu-
		ated earlier than other
		ranges (high-damp effect).
LF Damp	1-100%	Adjusts the amount of
		damping for the low-fre-
		quency content of the re-
		verb sound.
		The lower range is attenu-
		ated earlier than other
		ranges (low-damp effect).

12: VP Hall

This is a reverb used in the VP-550. Simulates the reverberation of a large hall.

Parameter	Value	Description
Reverb Time	10–5000 ms	Duration (time) of the re- verb
Pre Delay Time	0–150 ms	Adjusts the delay time from the direct sound until the delay sound is heard.
HF Damp	1–100%	Adjusts the amount of damping for the high-fre- quency content of the re- verb sound. The upper range is attenu- ated earlier than other ranges (high-damp effect).
LF Damp	1–100%	Adjusts the amount of damping for the low-fre- quency content of the re- verb sound. The lower range is attenu- ated earlier than other ranges (low-damp effect).

13: VP Church

This is a reverb used in the VP-550. Simulates the reverberation of a church.

Parameter	Value	Description
Reverb Time	10–5000 ms	Duration (time) of the re-
		verb
Pre Delay Time	0–150 ms	Adjusts the delay time from
		the direct sound until the
		delay sound is heard.
HF Damp	1-100%	Adjusts the amount of
		damping for the high-fre-
		quency content of the re-
		verb sound.
		The upper range is attenu-
		ated earlier than other
		ranges (high-damp effect).
LF Damp	1-100%	Adjusts the amount of
		damping for the low-fre-
		quency content of the re-
		verb sound.
		The lower range is attenu-
		ated earlier than other
		ranges (low-damp effect).

* In the interest of product improvement, the specifications and/or contents of this package are subject to change without prior notice.