



# Magicstomp

## EFFECT LIST

**ver. 2.10**

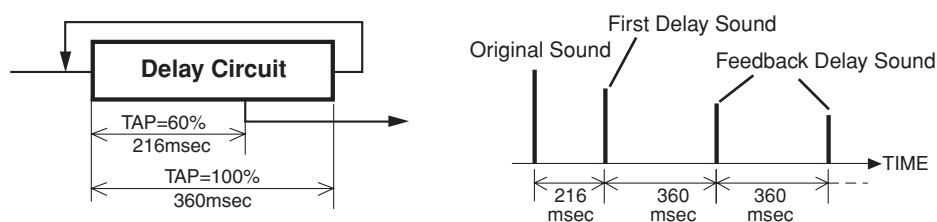
# Effect Type List

EFFECT TYPE	Display	Description
Distortion	Distortion	Advanced distortion. Mainly used for direct connection to guitar amp's front input.
Digital Distortion	DigiDistortion	Distortion effect. Mainly used for direct connection to guitar amp's front input.
Amp Simulator	AmpSimulator	DG Series amp sound. Mainly used for direct connection to power amp. Speaker simulator allows direct recording.
Chorus	Chorus	Chorus effect.
Symphonic	Symphonic	Symphonic effect.
Flange	Flange	Flange effect.
Vintage Flange	VintageFlanger	Flanger produced by utilizing VCM (Virtual Circuitry Modeling) technology.
Phaser	Phaser	Maximum 16-stage phaser.
Mono Vintage Phaser	MonoVintagePhaser	Monaural phaser produced by utilizing VCM (Virtual Circuitry Modeling) technology.
Stereo Vintage Phaser	StereoVintagePhaser	Stereo phaser produced by utilizing VCM (Virtual Circuitry Modeling) technology.
Tremolo	Tremolo	Tremolo effect.
Auto Pan	Auto Pan	Autopanner.
Rotary	Rotary	Rotary speaker simulator.
Ring Mod.	RingMod.	Ring modulator.
Mod. Filter	Mod.Filter	Modulation filter.
Compressor	Compressor	Compressor.
M.Band Dyna.	MultiBandDyna.	3-band dynamics processor.
Dyna. Filter	Dyna.Filter	Filter effect. The effect changes according to input level.
Dyna. Flange	Dyna.Flange	Flanger effect. The effect changes according to input level.
Dyna. Phaser	Dyna.Phaser	Phaser effect. The effect changes according to input level.
Tape Echo	TapeEcho	Vintage tape echo.
Mono Delay	MonoDelay	Basic monaural delay.
Stereo Delay	StereoDelay	Basic stereo delay.
Mod. Delay	Mod.Delay	Basic repeat delay with modulation.
Delay LCR	DelayLCR	3-tap delay (left, center, right).
Echo	Echo	Stereo delay with crossed feedback loop.
8 Band Parallel Delay	8BandParaDelay	8-band modulation delay connected in parallel.
8 Band Series Delay	8BandSeriesDelay	8-band modulation delay connected in series.
4 Band 2 Tap Mod. Delay	4Band2TapModDelay	4-band delay connected in parallel w/2 multi-tap modulation delays.
2 Band 4 Tap Mod. Delay	2Band4TapModDelay	2-band delay connected in parallel w/4 multi-tap modulation delay.
8 Multi Tap Mod. Delay	8MultiTapModDelay	8 Multi tap modulation delay.
2 Band Long + 4 Short Mod. Delay	2Long4ShortModDelay	2 band parallel 2 multi tap + 4 band short modulation delay.
Short + Medium + Long Mod. Delay	S.M.L.ModDelay	3 band multi tap delay w/3 delay times.
Reverb	Reverb	Hall, room, stage, and plate reverb simulations, all with gates.
Early Ref.	Early Ref.	Early reflections.
Gate Reverb	Gate Reverb	Early reflections with gate.
Reverse Gate	Reverse Gate	Early reflections with reverse gate.
Spring Reverb	Spring Reverb	Spring reverb simulation.
HQ. Pitch	HQ. Pitch	High-quality pitch shifter.
Dual Pitch	DualPitch	Pitch shifter.
3 Band Parametric EQ	3BandParamEQ	3-band parametric equalizer.

EFFECT TYPE	Display	Description
Multi Filter	MultiFilter	3-band multi-filter (24 dB/octave).
Reverb+Chorus	Reverb+Chorus	Reverb and chorus effects in parallel.
Reverb->Chorus	Reverb->Chorus	Reverb and chorus effects in series.
Reverb+Flange	Reverb+Flange	Reverb and flanger effects in parallel.
Reverb->Flange	Reverb->Flange	Reverb and flanger effects in series.
Reverb+Symphonic	Reverb+Sympho	Reverb and symphonic effects in parallel.
Reverb->Symphonic	Reverb->Sympho	Reverb and symphonic effects in series.
Reverb->Pan	Reverb->Pan	Reverb and autopan effects in series.
Delay+Early Ref.	Delay+E.Ref.	Delay and early reflections effects in parallel.
Delay->Early Ref.	Delay->E.Ref.	Delay and early reflections effects in series.
Delay+Reverb	Delay+Reverb	Delay and reverb effects in parallel.
Delay->Reverb	Delay->Reverb	Delay and reverb effects in series.
Distortion->Delay	Dist->Delay	Distortion and delay effects in series. Mainly used for direct connection to guitar amp's front input.
Amp Multi (Chorus)	AmpMulti(Cho)	Multi effect consisting of Comp + Amp Simulator + Chorus + Delay + Reverb. Mainly used for direct connection to power amp. Speaker simulator allows direct recording.
Amp Multi (Flange)	AmpMulti(Flng)	Multi effect consisting of Comp + Amp Simulator + Flanger + Delay + Reverb. Mainly used for direct connection to power amp. Speaker simulator allows direct recording.
Amp Multi (Tremolo)	AmpMulti(Trem)	Multi effect consisting of Comp + Amp Simulator + Tremolo + Delay + Reverb. Mainly used for direct connection to power amp. Speaker simulator allows direct recording.
Amp Multi (Phaser)	AmpMulti(Phas)	Multi effect consisting of Comp + Amp Simulator + Phaser + Delay + Reverb. Mainly used for direct connection to power amp. Speaker simulator allows direct recording.
Distortion Multi (Chorus)	DistMulti (Cho)	Multi effect consisting of Comp + Distortion + Chorus + Delay + Reverb. Mainly used for direct connection to guitar amp's front input.
Distortion Multi (Flange)	DistMulti(Flng)	Multi effect consisting of Comp + Distortion + Flanger + Delay + Reverb. Mainly used for direct connection to guitar amp's front input.
Distortion Multi (Tremolo)	DistMulti(Trem)	Multi effect consisting of Comp + Distortion + Tremolo + Delay + Reverb. Mainly used for direct connection to guitar amp's front input.
Distortion Multi (Phaser)	DistMulti(Phas)	Multi effect consisting of Comp + Distortion + Phaser + Delay + Reverb. Mainly used for direct connection to guitar amp's front input.
Acoustic Multi	AcousticMulti	Multi effect for electric-acoustic guitar.
Bass Preamp	BassPreamp	Pre-amplifier designed for use with bass guitars.

## What is TAP?

The "Tap" parameter found in delay effects is the timing at which the delay sound is taken out of the delay loop. To illustrate this function, the delay shown below is using a delay time setting of 360msec. However, with the "Tap" parameter set to 60, the first delay sound will be heard at 216msec. This happens for the first delay sound only. If the Feedback (FB.) level is increased, all subsequent delay sounds will be heard at 360msec. intervals.



# Effect Parameters

## Distortion

Advanced distortion. Mainly used for direct connection to guitar amp's front input.

Parameter	Display	Range	Description
Type	TYPE	Lead1, Lead2, Drive1, Drive2, Crunch1, Crunch2, Fuzz1, Fuzz2, Distortion1, Distortion2, Overdrive1, Overdrive2, Tube, Solidstate	Distortion type
Gain	GAIN	0.0 to 10.0	Adjusts the amount of distortion
Master	MSTR	0.0 to 10.0	Adjusts the volume
Tone	TONE	0.0 to 10.0	Adjusts the tone
EQ 1 Freq.	EQ1F	50.0 to 400 Hz	Specifies the post effect EQ1 frequency
EQ 1 Gain	EQ1G	-12.0 to 12.0 dB	Specifies the post effect EQ1 gain
EQ 1 Q	EQ1Q	0.100 to 20.0	Specifies the post effect EQ1 Q (bandwidth)
EQ 2 Freq.	EQ2F	200 to 1.60 kHz	Specifies the post effect EQ2 frequency
EQ 2 Gain	EQ2G	-12.0 to 12.0 dB	Specifies the post effect EQ2 gain
EQ 2 Q	EQ2Q	0.100 to 20.0	Specifies the post effect EQ2 Q (bandwidth)
EQ 3 Freq.	EQ3F	600 to 4.80 kHz	Specifies the post effect EQ3 frequency
EQ 3 Gain	EQ3G	-12.0 to 12.0 dB	Specifies the post effect EQ3 gain
EQ 3 Q	EQ3Q	0.100 to 20.0	Specifies the post effect EQ3 Q (bandwidth)
EQ 4 Freq.	EQ4F	2.00 k to 16.0 kHz	Specifies the post effect EQ4 frequency
EQ 4 Gain	EQ4G	-12.0 to 12.0 dB	Specifies the post effect EQ4 gain
EQ 4 Q	EQ4Q	0.100 to 20.0	Specifies the post effect EQ4 Q (bandwidth)
Pre EQ Level	PELV	0.0 to 10.0	Specifies the pre effect EQ level
Pre EQ 1 Freq.	PE1F	50.0 to 500 Hz	Specifies the pre effect EQ1 frequency
Pre EQ 1 Gain	PE1G	-12.0 to 12.0 dB	Specifies the pre effect EQ1 gain
Pre EQ 1 Q	PE1Q	0.100 to 20.0	Specifies the pre effect EQ1 Q (bandwidth)
Pre EQ 2 Freq.	PE2F	200 to 2.00 kHz	Specifies the pre effect EQ2 frequency
Pre EQ 2 Gain	PE2G	-12.0 to 12.0 dB	Specifies the pre effect EQ2 gain
Pre EQ 2 Q	PE2Q	0.100 to 20.0	Specifies the pre effect EQ2 Q (bandwidth)
Pre EQ 3 Freq.	PE3F	1.00 k to 10 kHz	Specifies the pre effect EQ3 frequency
Pre EQ 3 Gain	PE3G	-12.0 to 12.0 dB	Specifies the pre effect EQ3 gain
Pre EQ 3 Q	PE3Q	0.100 to 20.0	Specifies the pre effect EQ3 Q (bandwidth)
N. G. Threshold	NGTH	0.0 to 10.0	Level at which the noise gate activates
N. G. Attack	NGAT	0 to 120 ms	Time required for the noise gate to open after signal exceeds threshold
N. G. Hold	NGHL	0.02 to 2040 ms	Time noise gate stays open
N. G. Decay	NGDC	6 to 44500 ms	Time required for the noise gate to close after signal goes below threshold

## Digital Distortion

Distortion effect. Mainly used for direct connection to guitar amp's front input.

Parameter	Display	Range	Description
Type	TYPE	Distortion1, Distortion2, Overdrive1, Overdrive2, Crunch	Distortion type
Drive	DRV	0 to 100	Distortion drive
Master	MSTR	0 to 100	Master volume
Tone	TONE	-10 to +10	Tone
Noise Gate	NG	0 to 20	Noise reduction

## Amp Simulator

DG Series amp sound. Mainly used for direct connection to power amp.

Speaker simulator allows direct recording.

Parameter	Display	Range	Description
Amp Type	AMP	Heavy1, Heavy2, Lead1, Lead2, Drive1, Drive2, Crunch1, Crunch2, Clean1, Clean2, Solid	Amp type
Gain	GAIN	0.0 to 10.0	Adjusts the amount of distortion
Master	MSTR	0.0 to 10.0	Adjusts the volume
Tone	TONE	0.0 to 10.0	Adjusts the tone
Treble	TRE	0.0 to 10.0	Adjusts level of high range frequencies
High Middle	HMID	0.0 to 10.0	Adjusts level of upper mid frequencies
Low Middle	LMID	0.0 to 10.0	Adjusts level of lower mid frequencies
Bass	BASS	0.0 to 10.0	Adjusts level of low frequencies
Presence	PRE	0.0 to 10.0	Adjusts level of extremely high frequencies
Speaker Simulator	SP	Off, American 412, British 412, Modern 412, YAMAHA 412, Hybrid 412, American 212, British 212, Modern 212, YAMAHA 212, Hybrid 212, American 112, Modern 112, YAMAHA 112, Hybrid 112, 410, 210	When using a line connection to connect directly to a mixer, this can be used to simulate the natural characteristics of a speaker giving the tone a more natural sound
N. G. Threshold	NGTH	0.0 to 10.0	Level at which the noise gate activates
N. G. Attack	NGAT	0 to 120 ms	Time required for the noise gate to open after signal exceeds threshold
N. G. Hold	NGHL	0.02 to 2040 ms	Time noise gate stays open
N. G. Decay	NGDC	6 to 44500 ms	Time required for the noise gate to close after signal goes below threshold

## Chorus

Chorus effect.

Parameter	Display	Range	Description
Wave	WAVE	Sine, Triangle	Modulation waveform
Freq.	FREQ	0.05 to 40.00 Hz	Modulation speed
AM Depth	AMDP	0 to 100%	Amplitude modulation depth
PM Depth	PMDP	0 to 100%	Pitch modulation depth
Mod. Delay	MDT	0.0 to 500.0 ms	Modulation delay time
LSH Freq.	LSHF	21.2 Hz to 8.00 kHz	Low shelving filter frequency
LSH Gain	LSHG	-12.0 to +12.0 dB	Low shelving filter gain
EQ Freq.	EQ.F	100 Hz to 8.00 kHz	EQ (peaking type) frequency
EQ Gain	EQ.G	-12.0 to +12.0 dB	EQ (peaking type) gain
EQ Q	EQ.Q	10.0 to 0.10	EQ (peaking type) bandwidth
HSH Freq.	HSHF	50.0 Hz to 16.0 kHz	High shelving filter frequency
HSH Gain	HSHG	-12.0 to +12.0 dB	High shelving filter gain
Mix	MIX	0 to 100%	Mix level

## Symphonic

Symphonic effect.

Parameter	Display	Range	Description
Wave	WAVE	Sine, Triangle	Modulation waveform
Freq.	FREQ	0.05 to 40.00 Hz	Modulation speed
Depth	DPT	0 to 100%	Modulation depth
Mod. Delay	MDT	0.0 to 500.0 ms	Modulation delay time
LSH Freq.	LSHF	21.2 Hz to 8.00 kHz	Low shelving filter frequency
LSH Gain	LSHG	-12.0 to +12.0 dB	Low shelving filter gain
EQ Freq.	EQ.F	100 Hz to 8.00 kHz	EQ (peaking type) frequency
EQ Gain	EQ.G	-12.0 to +12.0 dB	EQ (peaking type) gain
EQ Q	EQ.Q	10.0 to 0.10	EQ (peaking type) bandwidth
HSH Freq.	HSHF	50.0 Hz to 16.0 kHz	High shelving filter frequency
HSH Gain	HSHG	-12.0 to +12.0 dB	High shelving filter gain
Mix	MIX	0 to 100%	Mix level

## Flange

Flange effect.

Parameter	Display	Range	Description
Wave	WAVE	Sine, Triangle	Modulation waveform
Freq.	FREQ	0.05 to 40.00 Hz	Modulation speed
Depth	DPT	0 to 100%	Modulation depth
FB. Gain	FB	-99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
Mod. Delay	MDT	0.0 to 500.0 ms	Modulation delay time
LSH Freq.	LSHF	21.2 Hz to 8.00 kHz	Low shelving filter frequency
LSH Gain	LSHG	-12.0 to +12.0 dB	Low shelving filter gain
EQ Freq.	EQ.F	100 Hz to 8.00 kHz	EQ (peaking type) frequency
EQ Gain	EQ.G	-12.0 to +12.0 dB	EQ (peaking type) gain
EQ Q	EQ.Q	10.0 to 0.10	EQ (peaking type) bandwidth
HSH Freq.	HSHF	50.0 Hz to 16.0 kHz	High shelving filter frequency
HSH Gain	HSHG	-12.0 to +12.0 dB	High shelving filter gain
Mix	MIX	0 to 100%	Mix level

## Vintage Flange

Flanger produced by utilizing VCM (Virtual Circuitry Modeling) technology.

Parameter	Display	Range	Description
Type	TYPE	1, 2, 3	Flanger type
Speed	SPD	0.0 to 10.0	Modulation speed
Depth	DPTH	0.0 to 10.0	Modulation depth
Manual	MANU	0.0 to 10.0	Adjusts flanger's delay time
Feedback	FB	0.0 to 10.0	Feedback gain
Spread	SPRD	0.0 to 10.0	Left and right flange spread (diffusion)
Mix	MIX	0.0 to 10.0	Mix level

## Phaser

Maximum 16-stage phaser.

Parameter	Display	Range	Description
Stage	STAG	2, 4, 6, 8, 10, 12, 14, 16	Number of phase shift stages
Freq.	FREQ	0.05 to 40.00 Hz	Modulation speed
Depth	DPT	0 to 100%	Modulation depth
FB. Gain	FB	-99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
Offset	OFST	0 to 100	Lowest phase-shifted frequency offset
Phase	PHAS	0.00 to 354.38 degrees	Left and right modulation phase balance
LSH Freq.	LSHF	21.2 Hz to 8.00 kHz	Low shelving filter frequency
LSH Gain	LSHG	-12.0 to +12.0 dB	Low shelving filter gain
HSH Freq.	HSHF	50.0 Hz to 16.0 kHz	High shelving filter frequency
HSH Gain	HSHG	-12.0 to +12.0 dB	High shelving filter gain
Mix	MIX	0 to 100%	Mix level

## Mono Vintage Phaser

Monaural phaser produced by utilizing VCM (Virtual Circuitry Modeling) technology.

Parameter	Display	Range	Description
Stage	STAG	4, 6, 8, 10, 12, 16	Number of phase shift stages
Mode	MODE	1, 2	Phaser type
Speed	SPD	0.0 to 10.0	Modulation speed
Depth	DPTH	0.0 to 10.0	Modulation depth
Manual	MANU	0.0 to 10.0	Sets the manner in which the phaser acts
Feedback	FB	0.0 to 10.0	Feedback gain
Color	CLOR	0.0 to 10.0	Sets the phaser's tone

## Stereo Vintage Phaser

Stereo phaser produced by utilizing VCM (Virtual Circuitry Modeling) technology.

Parameter	Display	Range	Description
Stage	STAG	4, 6, 8, 10	Number of phase shift stages
Mode	MODE	1, 2	Phaser type
Speed	SPD	0.0 to 10.0	Modulation speed
Depth	DPTH	0.0 to 10.0	Modulation depth
Manual	MANU	0.0 to 10.0	Sets the manner in which the phaser acts
Feedback	FB	0.0 to 10.0	Feedback gain
Color	CLOR	0.0 to 10.0	Sets the phaser's tone
Spread	SPRD	0.0 to 10.0	Left and right phaser spread (diffusion)

## Tremolo

Tremolo effect.

Parameter	Display	Range	Description
Wave	WAVE	Sine, Triangle, Square	Modulation waveform
Freq.	FREQ	0.05 to 40.00 Hz	Modulation speed
Depth	DPTH	0 to 100%	Modulation depth
LSH Freq.	LSHF	21.2 Hz to 8.00 kHz	Low shelving filter frequency
LSH Gain	LSHG	-12.0 to +12.0 dB	Low shelving filter gain
EQ Freq.	EQ.F	100 Hz to 8.00 kHz	EQ (peaking type) frequency
EQ Gain	EQ.G	-12.0 to +12.0 dB	EQ (peaking type) gain
EQ Q	EQ.Q	10.0 to 0.10	EQ (peaking type) bandwidth
HSH Freq.	HSHF	50.0 Hz to 16.0 kHz	High shelving filter frequency
HSH Gain	HSHG	-12.0 to +12.0 dB	High shelving filter gain

## Auto Pan

Autopanner.

Parameter	Display	Range	Description
Wave	WAVE	Sine, Triangle, Square	Modulation waveform
Freq.	FREQ	0.05 to 40.00 Hz	Modulation speed
Depth	DPTH	0 to 100%	Modulation depth
Direction	DIR	L<->R, L->R, L<-R, Turn L, Turn R	Panning direction
LSH Freq.	LSHF	21.2 Hz to 8.00 kHz	Low shelving filter frequency
LSH Gain	LSHG	-12.0 to +12.0 dB	Low shelving filter gain
EQ Freq.	EQ.F	100 Hz to 8.00 kHz	EQ (peaking type) frequency
EQ Gain	EQ.G	-12.0 to +12.0 dB	EQ (peaking type) gain
EQ Q	EQ.Q	10.0 to 0.10	EQ (peaking type) bandwidth
HSH Freq.	HSHF	50.0 Hz to 16.0 kHz	High shelving filter frequency
HSH Gain	HSHG	-12.0 to +12.0 dB	High shelving filter gain

## Rotary

Rotary speaker simulator.

Parameter	Display	Range	Description
Rotate	ROT	Stop, Start	Rotation stop, start
Slow	SLOW	0.05 to 10.00 Hz	Slow rotation speed
Fast	FAST	0.05 to 10.00 Hz	Fast rotation speed
Speed	SPD	Slow, Fast	Rotation speed (see Slow and Fast parameters)
Drive	DRV	0 to 100	Overdrive level
Accel	ACCL	0 to 10	Acceleration at speed changes
Low	LOW	0 to 100	Low-frequency filter
High	HIGH	0 to 100	High-frequency filter
Mix	MIX	0 to 100%	Mix level

## Ring Mod.

Ring modulator.

Parameter	Display	Range	Description
Source	SRC	OSC, SELF	Modulation source: oscillator or input signal
OSC Freq.	OSC	0.0 to 5000.0 Hz	Oscillator frequency
FM Freq.	FM.F	0.05 to 40.00 Hz	Oscillator frequency modulation speed
FM Depth	FM.D	0 to 100%	Oscillator frequency modulation depth
Mix	MIX	0 to 100%	Mix level

## Mod. Filter

Modulation filter.

Parameter	Display	Range	Description
Type	TYPE	Low Pass Filter, High Pass Filter, Band Pass Filter	Filter type: low pass, high pass, band pass
Freq.	FREQ	0.05 to 40.00 Hz	Modulation speed
Depth	DPTH	0 to 100%	Modulation depth
Phase	PHAS	0.00 to 354.38 degrees	Left-channel modulation and right-channel modulation phase difference
Offset	OFST	0 to 100	Filter frequency offset
Resonance	RESO	0 to 20	Filter resonance
Level	LEVL	0 to 100	Output level
Mix	MIX	0 to 100%	Mix level

## Compressor

Compressor.

Parameter	Display	Range	Description
Comp. Threshold	THRE	-54.0 to 0.0 dB	Level at which compressor activates
Comp. Ratio	RATI	1:1 to ∞:1	Compression ratio
Comp. Attack	ATAK	0 to 120 ms	Time required for compressor to peak after exceeding threshold
Comp. Release	RELE	6 to 11500 ms	Time required for compressor to terminate after going below threshold
Comp. Knee	KNEE	Hard, 1 to 5	Adjusts the width of the gain curve just above the threshold
Comp. Gain	GAIN	0.0 to 18.0 dB	Output level



## M.Band Dyna.

3-band dynamics processor, with individual solo and gain reduction metering for each band.

Parameter	Display	Range	Description
Slope	SLOP	-6, -12 dB	Filter slope
Low Gain	LO.G	-96.0 to +12.0 dB	Low band level
Mid Gain	MI.G	-96.0 to +12.0 dB	Mid band level
High Gain	HI.G	-96.0 to +12.0 dB	High band level
Lookup	LKUP	0.0 to 100.0 ms	Lookup delay
Ceiling	CEIL	-6.0 to 0.0 dB, Off	Specifies the maximum output level
L-M Xover	L-MX	21.2 Hz to 8.00 kHz	Low/mid crossover frequency
M-H Xover	M-HX	21.2 Hz to 8.00 kHz	Mid/high crossover frequency
Presence	PRE	-10 to +10	For positive values, the threshold of the high band is lowered and the threshold of the low band is increased. For negative values, the opposite will occur. When set to 0, all three bands are affected the same.
Comp. Bypass	COMP	Off, On	Compressor bypass
Comp. Threshold	CMPT	-24.0 to 0.0 dB	Compressor threshold
Comp. Ratio	CRAT	1:1 to 20:1	Compressor ratio
Comp. Attack	CATA	0 to 120 ms	Compressor attack
Comp. Release	CREL	6 to 11500 ms	Compressor release time
Comp. Knee	CKNE	0 to 5	Adjusts the width of the gain curve just above the compressor's threshold
Exp. Bypass	EXP	Off, On	Expander bypass
Exp. Threshold	EXPT	-54.0 to -24.0 dB	Expander threshold
Exp. Ratio	ERAT	1:1 to ∞:1	Expander ratio
Exp. Release	EREL	6 to 11500 ms	Expander release time
Lim. Bypass	LIM	Off, On	Limiter bypass
Lim. Threshold	LIMT	-12.0 to 0.0 dB	Limiter threshold
Lim. Attack	LATA	0 to 120 ms	Limiter attack
Lim. Release	LREL	6 to 11500 ms	Limiter release time
Lim. Knee	LKNE	0 to 5	Adjusts the width of the gain curve just above the limiter's threshold

## Dyna. Filter

Filter effect. The effect changes according to input level.

Parameter	Display	Range	Description
Type	TYPE	Low Pass Filter, High Pass Filter, Band Pass Filter	Filter type
Decay	DCY	6 to 46000 ms	Filter frequency change decay speed
Direction	DIR	Up, Down	Upward or downward frequency change
Sense	SENS	0 to 100	Sensitivity
Offset	OFST	0 to 100	Filter frequency offset
Resonance	RESO	0 to 20	Filter resonance
Level	LVL	0 to 100	Output level
Mix	MIX	0 to 100%	Mix level

## Dyna. Flange

Flanger effect. The effect changes according to input level.

Parameter	Display	Range	Description
Decay	DCY	6 to 46000 ms	Decay speed
FB. Gain	FB	-99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
Direction	DIR	Up, Down	Upward or downward frequency change
Sense	SENS	0 to 100	Sensitivity
Offset	OFST	0 to 100	Delay time offset
LSH Freq.	LSHF	21.2 Hz to 8.00 kHz	Low shelving filter frequency
LSH Gain	LSHG	-12.0 to +12.0 dB	Low shelving filter gain
EQ Freq.	EQ.F	100 Hz to 8.00 kHz	EQ (peaking type) frequency
EQ Gain	EQ.G	-12.0 to +12.0 dB	EQ (peaking type) gain
EQ Q	EQ.Q	10.0 to 0.10	EQ (peaking type) bandwidth
HSH Freq.	HSHF	50.0 Hz to 16.0 kHz	High shelving filter frequency
HSH Gain	HSHG	-12.0 to +12.0 dB	High shelving filter gain
Mix	MIX	0 to 100%	Mix level

## Dyna. Phaser

Phaser effect. The effect changes according to input level.

Parameter	Display	Range	Description
Decay	DCY	6 to 46000 ms	Decay speed
FB. Gain	FB	-99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
Direction	DIR	Up, Down	Upward or downward frequency change
Sense	SENS	0 to 100	Sensitivity
Offset	OFST	0 to 100	Lowest phase-shifted frequency offset
Stage	STAG	2, 4, 6, 8, 10, 12, 14, 16	Number of phase shift stages
LSH Freq.	LSHF	21.2 Hz to 8.00 kHz	Low shelving filter frequency
LSH Gain	LSHG	-12.0 to +12.0 dB	Low shelving filter gain
HSH Freq.	HSHF	50.0 Hz to 16.0 kHz	High shelving filter frequency
HSH Gain	HSHG	-12.0 to +12.0 dB	High shelving filter gain
Mix	MIX	0 to 100%	Mix level

## Tape Echo

Vintage tape echo.

Parameter	Display	Range	Description
Time	DT	0.0 to 10.0	Delay time
Feedback	FB	0.0 to 10.0	Delay feedback level
Level	LEVL	0.0 to 10.0	Delay level

## Mono Delay

Basic repeat delay.

Parameter	Display	Range	Description
Delay	TIME	0.0 to 2730.0 ms	Delay time
FB. Gain	FB	-99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
High Ratio	HRAT	0.1 to 1.0	High-frequency feedback ratio
High Pass Filter	HPF	Thru, 21.2 Hz to 8.00 kHz	High-pass filter cutoff frequency
Low Pass Filter	LPF	50.0 Hz to 16.0 kHz, Thru	Low-pass filter cutoff frequency
Mix	MIX	0 to 100%	Mix level

## Stereo Delay

Basic stereo delay.

Parameter	Display	Range	Description
Delay L	DT.L	0.0 to 1350.0 ms	Left channel delay time
Delay R	DT.R	0.0 to 1350.0 ms	Right channel delay time
FB. Gain L	FB.L	-99 to +99%	Left channel feedback (plus values for normal-phase feedback, minus values for reverse-phase feedback)
FB. Gain R	FB.R	-99 to +99%	Right channel feedback (plus values for normal-phase feedback, minus values for reverse-phase feedback)
High Ratio	HRAT	0.1 to 1.0	High-frequency feedback ratio
High Pass Filter	HPF	Thru, 21.2 Hz to 8.00 kHz	High-pass filter cutoff frequency
Low Pass Filter	LPF	50.0 Hz to 16.0 kHz, Thru	Low-pass filter cutoff frequency
Mix	MIX	0 to 100%	Mix level

## Mod. Delay

Basic repeat delay with modulation.

Parameter	Display	Range	Description
Wave	WAVE	Sine, Triangle	Modulation waveform
Delay	TIME	0.0 to 2725.0 ms	Delay time
FB. Gain	FB	-99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
Freq.	FREQ	0.05 to 40.00 Hz	Modulation speed
High Pass Filter	HPF	Thru, 21.2 Hz to 8.00 kHz	High-pass filter cutoff frequency
Low Pass Filter	LPF	50.0 Hz to 16.0 kHz, Thru	Low-pass filter cutoff frequency
High Ratio	HRAT	0.1 to 1.0	High-frequency feedback ratio
Depth	DPT	0 to 100%	Modulation depth
Mix	MIX	0 to 100%	Mix level

## Delay LCR

3-tap delay (left, center, right).

Parameter	Display	Range	Description
Delay L	DT.L	0.0 to 2730.0 ms	Left channel delay time
Delay C	DT.C	0.0 to 2730.0 ms	Center channel delay time
Delay R	DT.R	0.0 to 2730.0 ms	Right channel delay time
Delay FB.	DTFB	0.0 to 2730.0 ms	Feedback delay time
Level L	LV.L	-100 to +100%	Left channel delay level
Level C	LV.C	-100 to +100%	Center channel delay level
Level R	LV.R	-100 to +100%	Right channel delay level
FB. Gain	FB	-99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
High Ratio	HRAT	0.1 to 1.0	High-frequency feedback ratio
High Pass Filter	HPF	Thru, 21.2 Hz to 8.00 kHz	High-pass filter cutoff frequency
Low Pass Filter	LPF	50.0 Hz to 16.0 kHz, Thru	Low-pass filter cutoff frequency
Mix	MIX	0 to 100%	Mix level

## Echo

Stereo delay with crossed feedback loop.

Parameter	Display	Range	Description
Delay L	DT.L	0.0 to 1350.0 ms	Left channel delay time
Delay R	DT.R	0.0 to 1350.0 ms	Right channel delay time
FB. Delay L	DTF.L	0.0 to 1350.0 ms	Left channel feedback delay time
FB. Delay R	DTF.R	0.0 to 1350.0 ms	Right channel feedback delay time
FB. Gain L	FB.L	-99 to +99%	Left channel feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
FB. Gain R	FB.R	-99 to +99%	Right channel feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
L->R FB. Gain	L->R	-99 to +99%	Left to right channel feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
R->L FB. Gain	R->L	-99 to +99%	Right to left channel feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
High Ratio	HRAT	0.1 to 1.0	High-frequency feedback ratio
High Pass Filter	HPF	Thru, 21.2 Hz to 8.00 kHz	High-pass filter cutoff frequency
Low Pass Filter	LPF	50.0 Hz to 16.0 kHz, Thru	Low-pass filter cutoff frequency
Mix	MIX	0 to 100%	Mix level

## 8 Band Parallel Delay

8-band modulation delay connected in parallel.

Parameter	Display	Range	Description
Wave Form	W.F.	Triangle, Saw Up, Saw Down	Selects the modulation waveform used for "other" in the Wave Parameter below.
Effect Level	ELVL	0.0 to 10.0	Effect level
Direct Level	DLVL	0.0 to 10.0	Level of direct sound
Direct Pan	DPAN	L10.0 to R10.0	Pan for direct sound
<b>* Edit window page no. corresponds to delay band no.</b>			
Time	DTn	0.1 to 696.0 ms	Delay time
Low Cut Filter	LCFn	Off to 10.0	Filter cuts low frequencies
High Cut Filter	HCFn	Off to 10.0	Filter cuts high frequencies
Feedback	FBn	0.0 to 10.0	Delay's feedback level
Wave	WAVn	Sine, Other	Modulation waveform. Sine wave or other ("other" is the wave selected in the Wave Form Parameter above).
Phase	PHSn	Normal, Reverse	Phase of the delay
Tap	TAPn	0 to 100 %	The output time of the delay sound in regard to the time of the delay loop (see <a href="#">page 3</a> )
Speed	SPDn	0.0 to 10.0	Modulation speed (modulation phase if the band is synchronized with another band)
Depth	DPTn	0.0 to 10.0	Modulation depth
Pan	PANn	L10.0 to R10.0	Position in the stereo field of the delay sound.
Level	LVLn	0.0 to 10.0	Delay level
Sync	SYNn	1 to 8	Setting to synchronize the modulation of different bands (set to any number other than the band number of the current band, it will synchronize with that band. If set to the same number as the current band, it will not synchronize.)

\*n = delay band no.

## 8 Band Series Delay

8-band modulation delay connected in series.

Parameter	Display	Range	Description
Wave Form	W.F.	Triangle, Saw Up, Saw Down	Selects the modulation waveform used for "other" in the Wave Parameter below.
Effect Level	ELVL	0.0 to 10.0	Effect level
Direct Level	DLVL	0.0 to 10.0	Level of direct sound
Direct Pan	DPAN	L10.0 to R10.0	Pan for direct sound
<b>* Edit window page no. corresponds to delay band no.</b>			
Time	DTn	0.1 to 696.0 ms	Delay time
Low Cut Filter	LCFn	Off to 10.0	Filter cuts low frequencies
High Cut Filter	HCFn	Off to 10.0	Filter cuts high frequencies
Feedback	FBn	0.0 to 10.0	Delay's feedback level
Wave	WAVn	Sine, Other	Modulation waveform. Sine wave or other ("other" is the wave selected in the Wave Form Parameter above).
Phase	PHSn	Normal, Reverse	Phase of the delay
Tap	TAPn	0 to 100 %	The output time of the delay sound in regard to the time of the delay loop (see <a href="#">page 3</a> )
Speed	SPDn	0.0 to 10.0	Modulation speed (modulation phase if the band is synchronized with another band)
Depth	DPTn	0.0 to 10.0	Modulation depth
Pan	PANn	L10.0 to R10.0	Position in the stereo field of the delay sound.
Level	LVLn	0.0 to 10.0	Delay level
Sync	SYNn	1 to 8	Setting to synchronize the modulation of different bands (set to any number other than the band number of the current band, it will synchronize with that band. If set to the same number as the current band, it will not synchronize.)

\*n = delay band no.

## 4 Band 2 Tap Mod. Delay

4-band delay connected in parallel w/2 multi-tap modulation delays.

Parameter	Display	Range	Description
Wave Form	W.F.	Triangle, Saw Up, Saw Down	Selects the modulation waveform used for "other" in the Wave Parameter below.
Effect Level	ELVL	0.0 to 10.0	Effect level
Direct Level	DLVL	0.0 to 10.0	Level of direct sound
Direct Pan	DPAN	L10.0 to R10.0	Pan for direct sound
<b>* Edit window no. corresponds to delay band no. and tap no.</b> Page1:Band1 Tap1, Page2:Band1 Tap2, Page3:Band2 Tap1, Page4:Band2 Tap2, Page5:Band3 Tap1, Page6:Band3 Tap2, Page7:Band4 Tap1, Page8:Band4 Tap2			
Time	DTn	0.1 to 1430.0 ms	Delay time (Page1, Page3, Page5, Page7)
Low Cut Filter	LCFn	Off to 10.0	Filter cuts low frequencies (Page1, Page3, Page5, Page7)
High Cut Filter	HCFn	Off to 10.0	Filter cuts high frequencies (Page1, Page3, Page5, Page7)
Feedback	FBn	0.0 to 10.0	Delay's feedback level (Page1, Page3, Page5, Page7)
Wave	WAVn	Sine, Other	Modulation waveform. Sine wave or other ("other" is the wave selected in the Wave Form Parameter above).
Phase	PHSn	Normal, Reverse	Phase of the delay
Tap	TAPn	0 to 100 %	The output time of the delay sound in regard to the time of the delay loop (see <a href="#">page 3</a> )
Speed	SPDn	0.0 to 10.0	Modulation speed (modulation phase if the band is synchronized with another band)
Depth	DPTn	0.0 to 10.0	Modulation depth
Pan	PANn	L10.0 to R10.0	Position in the stereo field of the delay sound.
Level	LVLn	0.0 to 10.0	Delay level
Sync	SYNn	1 to 8	Setting to synchronize the modulation of different bands (set to any number other than the band number of the current band, it will synchronize with that band. If set to the same number as the current band, it will not synchronize.)

\*n = delay band no.

## 2 Band 4 Tap Mod. Delay

2-band delay connected in parallel w/4 multi-tap modulation delay.

Parameter	Display	Range	Description
Wave Form	W.F.	Triangle, Saw Up, Saw Down	Selects the modulation waveform used for "other" in the Wave Parameter below.
Effect Level	ELVL	0.0 to 10.0	Effect level
Direct Level	DLVL	0.0 to 10.0	Level of direct sound
Direct Pan	DPAN	L10.0 to R10.0	Pan for direct sound
<b>* Edit window no. corresponds to delay band no. and tap no.</b> Page1:Band1 Tap1, Page2:Band1 Tap2, Page3:Band1 Tap3, Page4:Band1 Tap4, Page5:Band2 Tap1, Page6:Band2 Tap2, Page7:Band2 Tap3, Page8:Band2 Tap4			
Time	DTn	0.2 to 2920.0 ms	Delay time (Page1, Page5 only)
Low Cut Filter	LCFn	Off to 10.0	Filter cuts low frequencies (Page1, Page5 only)
High Cut Filter	HCFn	Off to 10.0	Filter cuts high frequencies (Page1, Page5 only)
Feedback	FBn	0.0 to 10.0	Delay's feedback level (Page1, Page5 only)
Wave	WAVn	Sine, Other	Modulation waveform. Sine wave or other ("other" is the wave selected in the Wave Form Parameter above).
Phase	PHSn	Normal, Reverse	Phase of the delay
Tap	TAPn	0 to 100 %	The output time of the delay sound in regard to the time of the delay loop (see <a href="#">page 3</a> )
Speed	SPDn	0.0 to 10.0	Modulation speed (modulation phase if the band is synchronized with another band)
Depth	DPTn	0.0 to 10.0	Modulation depth
Pan	PANn	L10.0 to R10.0	Position in the stereo field of the delay sound.
Level	LVLn	0.0 to 10.0	Delay level
Sync	SYNn	1 to 8	Setting to synchronize the modulation of different bands (set to any number other than the band number of the current band, it will synchronize with that band. If set to the same number as the current band, it will not synchronize.)

\*n = delay band no.

## 8 Multi Tap Mod. Delay

8 Multi tap modulation delay.

Parameter	Display	Range	Description
Wave Form	W.F.	Triangle, Saw Up, Saw Down	Selects the modulation waveform used for "other" in the Wave Parameter below.
Effect Level	ELVL	0.0 to 10.0	Effect level
Direct Level	DLVL	0.0 to 10.0	Level of direct sound
Direct Pan	DPAN	L10.0 to R10.0	Pan for direct sound
<b>* Edit window page no. corresponds to tap no.</b>			
Page1:Tap1, Page2:Tap2, Page3:Tap3, Page4:Tap4, Page5:Tap5, Page6:Tap6, Page7:Tap7, Page8:Tap8			
Time	DTn	0.5 to 5890.0 ms	Delay time (Page1 only)
Low Cut Filter	LCFn	Off to 10.0	Filter cuts low frequencies (Page1 only)
High Cut Filter	HCFn	Off to 10.0	Filter cuts high frequencies (Page1 only)
Feedback	FBn	0.0 to 10.0	Delay's feedback level (Page1 only)
Wave	WAVn	Sine, Other	Modulation waveform. Sine wave or other ("other" is the wave selected in the Wave Form Parameter above).
Phase	PHSn	Normal, Reverse	Phase of the delay
Tap	TAPn	0 to 100 %	The output time of the delay sound in regard to the time of the delay loop (see <a href="#">page 3</a> )
Speed	SPDn	0.0 to 10.0	Modulation speed (modulation phase if the band is synchronized with another band)
Depth	DPTn	0.0 to 10.0	Modulation depth
Pan	PANn	L10.0 to R10.0	Position in the stereo field of the delay sound.
Level	LVLn	0.0 to 10.0	Delay level
Sync	SYNn	1 to 8	Setting to synchronize the modulation of different bands (set to any number other than the band number of the current band, it will synchronize with that band. If set to the same number as the current band, it will not synchronize.)

\*n = delay band no.

## 2 Band Long + 4 Short Mod. Delay

2 band parallel 2 multi tap + 4 band short modulation delay.

Parameter	Display	Range	Description
Wave Form	W.F.	Triangle, Saw Up, Saw Down	Selects the modulation waveform used for "other" in the Wave Parameter below.
Effect Level	ELVL	0.0 to 10.0	Effect level
Direct Level	DLVL	0.0 to 10.0	Level of direct sound
Direct Pan	DPAN	L10.0 to R10.0	Pan for direct sound
<b>* Edit window no. corresponds to delay band no. and tap no.</b>			
Page1:Band1 Tap1, Page2:Band1 Tap2, Page3:Band2 Tap1, Page4:Band2 Tap2, Page5:Band3, Page6:Band4, Page7:Band5, Page8:Band6			
Time	DTn	Band1, Band2: 0.1 to 1430.0 ms, Band3, Band4, Band5, Band6: 0.1 to 696.0 ms	Delay time (Page1, Page3, Page5 to Page8)
Low Cut Filter	LCFn	Off to 10.0	Filter cuts low frequencies (Page1, Page3, Page5 to Page8)
High Cut Filter	HCFn	Off to 10.0	Filter cuts high frequencies (Page1, Page3, Page5 to Page8)
Feedback	FBn	0.0 to 10.0	Delay's feedback level (Page1, Page3, Page5 to Page8)
Wave	WAVn	Sine, Other	Modulation waveform. Sine wave or other ("other" is the wave selected in the Wave Form Parameter above).
Phase	PHSn	Normal, Reverse	Phase of the delay
Tap	TAPn	0 to 100 %	The output time of the delay sound in regard to the time of the delay loop (see <a href="#">page 3</a> )
Speed	SPDn	0.0 to 10.0	Modulation speed (modulation phase if the band is synchronized with another band)
Depth	DPTn	0.0 to 10.0	Modulation depth
Pan	PANn	L10.0 to R10.0	Position in the stereo field of the delay sound.
Level	LVLn	0.0 to 10.0	Delay level
Sync	SYNn	1 to 8	Setting to synchronize the modulation of different bands (set to any number other than the band number of the current band, it will synchronize with that band. If set to the same number as the current band, it will not synchronize.)

\*n = delay band no.

## Short + Medium + Long Mod. Delay

3 band multi tap delay w/3 delay times.

Parameter	Display	Range	Description
Wave Form	W.F.	Triangle, Saw Up, Saw Down	Selects the modulation waveform used for "other" in the Wave Parameter below.
Effect Level	ELVL	0.0 to 10.0	Effect level
Direct Level	DLVL	0.0 to 10.0	Level of direct sound
Direct Pan	DPAN	L10.0 to R10.0	Pan for direct sound
<b>* Edit window no. corresponds to delay band no. and tap no.</b> Page1:Band1 Tap1, Page2:Band2 Tap1, Page3:Band2 Tap2, Page4:Band2 Tap3, Page5:Band3 Tap1, Page6:Band3 Tap2, Page7:Band3 Tap3, Page8:Band3 Tap4			
Time	DTn	Band1:0.1 to 696.0 ms, Band2:0.2 to 2180.0 ms, Band3:0.2 to 2920.0 ms	Delay time (Page1, Page2, Page5 only)
Low Cut Filter	LCFn	Off to 10.0	Filter cuts low frequencies (Page1, Page2, Page5 only)
High Cut Filter	HCFn	Off to 10.0	Filter cuts high frequencies (Page1, Page2, Page5 only)
Feedback	FBn	0.0 to 10.0	Delay's feedback level (Page1, Page2, Page5 only)
Wave	WAVn	Sine, Other	Modulation waveform. Sine wave or other ("other" is the wave selected in the Wave Form Parameter above).
Phase	PHSn	Normal, Reverse	Phase of the delay
Tap	TAPn	0 to 100 %	The output time of the delay sound in regard to the time of the delay loop (see <a href="#">page 3</a> )
Speed	SPDn	0.0 to 10.0	Modulation speed (modulation phase if the band is synchronized with another band)
Depth	DPTn	0.0 to 10.0	Modulation depth
Pan	PANn	L10.0 to R10.0	Position in the stereo field of the delay sound.
Level	LVLn	0.0 to 10.0	Delay level
Sync	SYNn	1 to 8	Setting to synchronize the modulation of different bands (set to any number other than the band number of the current band, it will synchronize with that band. If set to the same number as the current band, it will not synchronize.)

\*n = delay band no.

## Reverb

Hall, room, stage, and plate reverb simulations, all with gates.

Parameter	Display	Range	Description
Reverb Type	TYPE	Hall, Room, Stage, Plate	Reverb type
Initial Delay	IDLY	0.0 to 500.0 ms	Initial delay before reverb begins
ER/Rev Delay	ERDL	0.0 to 100.0 ms	Delay between early reflections and reverb
Reverb Time	TIME	0.3 to 99.0 s	Reverb time
High Ratio	HRAT	0.1 to 1.0	High-frequency reverb time ratio
Low Ratio	LRAT	0.1 to 2.4	Low-frequency reverb time ratio
Diffusion	DIFF	0 to 10	Reverb diffusion (left-right reverb spread)
Density	DNST	0 to 100%	Reverb density
ER/Rev Balance	ERBL	0 to 100%	Balance of early reflections and reverb (0% = all reverb, 100% = all early reflections)
High Pass Filter	HPF	Thru, 21.2 Hz to 8.00 kHz	High-pass filter cutoff frequency
Low Pass Filter	LPF	50.0 Hz to 16.0 kHz, Thru	Low-pass filter cutoff frequency
Gate Level	GATE	Off, -60 to 0 dB	Level at which gate kicks in
Attack	ATCK	0 to 120 ms	Gate opening speed
Hold	HOLD	0.02 to 2040 ms	Gate open time
Decay	DCAY	6 to 44500 ms	Gate closing speed
Mix	MIX	0 to 100%	Mix level

## Early Ref.

Early reflections.

Parameter	Display	Range	Description
Type	TYPE	Small Hall, Large Hall, Random, Reverse, Plate, Spring	Type of early reflection simulation
Initial Delay	IDLY	0.0 to 500.0 ms	Initial delay before reverb begins
FB. Gain	FB	-99 to +99%	Feedback gain
Room Size	SIZE	0.1 to 20.0	Reflection spacing
Liveness	LIVE	0 to 10	Early reflections decay characteristics (0 = dead, 10 = live)
Diffusion	DIFF	0 to 10	Reflection diffusion (left-right reflection spread)
Density	DNST	0 to 100%	Reflection density
ER Number	ERNO	1 to 19	Number of early reflections
High Ratio	HRAT	0.1 to 1.0	High-frequency feedback ratio
High Pass Filter	HPF	Thru, 21.2 Hz to 8.00 kHz	High-pass filter cutoff frequency
Low Pass Filter	LPF	50.0 Hz to 16.0 kHz, Thru	Low-pass filter cutoff frequency
Mix	MIX	0 to 100%	Mix level

## Gate Reverb

Early reflections with gate.

Parameter	Display	Range	Description
Type	TYPE	Type-A, Type-B	Type of early reflection simulation
Initial Delay	IDLY	0.0 to 500.0 ms	Initial delay before reverb begins
FB. Gain	FB	-99 to +99%	Feedback gain
Room Size	SIZE	0.1 to 20.0	Reflection spacing
Liveness	LIVE	0 to 10	Early reflections decay characteristics (0 = dead, 10 = live)
Diffusion	DIFF	0 to 10	Reflection diffusion (left-right reflection spread)
Density	DNST	0 to 100%	Reflection density
ER Number	ERNO	1 to 19	Number of early reflections
High Ratio	HRAT	0.1 to 1.0	High-frequency feedback ratio
High Pass Filter	HPF	Thru, 21.2 Hz to 8.00 kHz	High-pass filter cutoff frequency
Low Pass Filter	LPF	50.0 Hz to 16.0 kHz, Thru	Low-pass filter cutoff frequency
Mix	MIX	0 to 100%	Mix level

## Reverse Gate

Early reflections with reverse gate.

Parameter	Display	Range	Description
Type	TYPE	Type-A, Type-B	Type of early reflection simulation
Initial Delay	IDLY	0.0 to 500.0 ms	Initial delay before reverb begins
FB. Gain	FB	-99 to +99%	Feedback gain
Room Size	SIZE	0.1 to 20.0	Reflection spacing
Liveness	LIVE	0 to 10	Early reflections decay characteristics (0 = dead, 10 = live)
Diffusion	DIFF	0 to 10	Reflection diffusion (left-right reflection spread)
Density	DNST	0 to 100%	Reflection density
ER Number	ERNO	1 to 19	Number of early reflections
High Ratio	HRAT	0.1 to 1.0	High-frequency feedback ratio
High Pass Filter	HPF	Thru, 21.2 Hz to 8.00 kHz	High-pass filter cutoff frequency
Low Pass Filter	LPF	50.0 Hz to 16.0 kHz, Thru	Low-pass filter cutoff frequency
Mix	MIX	0 to 100%	Mix level



## Spring Reverb

Spring reverb simulation.

Parameter	Display	Range	Description
Reverb	REV	0.0 to 10.0	Reverb level

## HQ. Pitch

High-quality pitch shifter.

Parameter	Display	Range	Description
Mode	MODE	1 to 10	Pitch shift precision
Delay	DT	0.0 to 1000.0 ms	Delay time
FB. Gain	FB	-99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
Pitch	PIT	-12 to +12 semitones	Pitch shift
Fine	FINE	-50 to +50 cents	Pitch shift fine
Mix	MIX	0 to 100%	Mix level

## Dual Pitch

Pitch shifter.

Parameter	Display	Range	Description
Mode	MODE	1 to 10	Pitch shift precision
Delay 1	DT1	0.0 to 1000.0 ms	Channel #1 delay time
FB. Gain 1	FB1	-99 to +99%	Channel #1 feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
Delay 2	DT2	0.0 to 1000.0 ms	Channel #2 delay time
FB. Gain 2	FB2	-99 to +99%	Channel #2 feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
Pitch 1	PIT1	-24 to +24 semitones	Channel #1 pitch shift
Fine 1	FIN1	-50 to +50 cents	Channel #1 pitch shift fine
Level 1	LVL1	-100 to +100%	Channel #1 level (plus values for normal phase, minus values for reverse phase)
Pan 1	PAN1	L63 to R63	Channel #1 pan
Pitch 2	PIT2	-24 to +24 semitones	Channel #2 pitch shift
Fine 2	FIN2	-50 to +50 cents	Channel #2 pitch shift fine
Level 2	LVL2	-100 to +100%	Channel #2 level (plus values for normal phase, minus values for reverse phase)
Pan 2	PAN2	L63 to R63	Channel #2 pan
Mix	MIX	0 to 100%	Mix level

## 3 Band Parametric EQ

3-band parametric equalizer.

Parameter	Display	Range	Description
EQ1 Freq.	EQ1F	20.0 Hz to 20.0 kHz	EQ1 frequency
EQ2 Freq.	EQ2F	20.0 Hz to 20.0 kHz	EQ2 frequency
EQ3 Freq.	EQ3F	20.0 Hz to 20.0 kHz	EQ3 frequency
EQ Level	LEVL	0.0 to 10.0	Overall level
EQ1 Gain	EQ1G	-12.0 to 12.0 dB	EQ1 gain
EQ2 Gain	EQ2G	-12.0 to 12.0 dB	EQ2 gain
EQ3 Gain	EQ3G	-12.0 to 12.0 dB	EQ3 gain
EQ1 Q	EQ1Q	0.100 to 20.0	EQ1 Q (bandwidth)
EQ2 Q	EQ2Q	0.100 to 20.0	EQ2 Q (bandwidth)
EQ3 Q	EQ3Q	0.100 to 20.0	EQ3 Q (bandwidth)

## Multi Filter

3-band multi-filter (24 dB/octave).

Parameter	Display	Range	Description
Type 1	TYP1	Low Pass Filter, High Pass Filter, Band Pass Filter	Filter 1 type: high pass, low pass, band pass
Freq. 1	FRQ1	28.0 Hz to 16.0 kHz	Filter 1 frequency
Level 1	LVL1	0 to 100	Filter 1 level
Resonance 1	RES1	0 to 20	Filter 1 resonance
Mix	MIX	0 to 100%	Mix level
Type 2	TYP2	Low Pass Filter, High Pass Filter, Band Pass Filter	Filter 2 type: high pass, low pass, band pass
Freq. 2	FRQ2	28.0 Hz to 16.0 kHz	Filter 2 frequency
Level 2	LVL2	0 to 100	Filter 2 level
Resonance 2	RES2	0 to 20	Filter 2 resonance
Type 3	TYP3	Low Pass Filter, High Pass Filter, Band Pass Filter	Filter 3 type: high pass, low pass, band pass
Freq. 3	FRQ3	28.0 Hz to 16.0 kHz	Filter 3 frequency
Level 3	LVL3	0 to 100	Filter 3 level
Resonance 3	RES3	0 to 20	Filter 3 resonance

## Reverb+Chorus

Reverb and chorus effects in parallel.

Parameter	Display	Range	Description
Wave	WAVE	Sine, Triangle	Modulation waveform
Initial Delay	IDLY	0.0 to 500.0 ms	Initial delay before reverb begins
Freq.	FREQ	0.05 to 40.00 Hz	Modulation speed
Mod. Delay	MDT	0.0 to 500.0 ms	Modulation delay time
Reverb Time	RT	0.3 to 99.0 s	Reverb time
High Ratio	HRAT	0.1 to 1.0	High-frequency reverb time ratio
Diffusion	DIFF	0 to 10	Left and right reverb spread
Density	DNST	0 to 100%	Reverb density
High Pass Filter	HPF	Thru, 21.2 Hz to 8.00 kHz	High-pass filter cutoff frequency
Low Pass Filter	LPF	50.0 Hz to 16.0 kHz, Thru	Low-pass filter cutoff frequency
Reverb/Chorus	BAL	0 to 100%	Reverb and chorus balance (0% = all reverb, 100% = all chorus)
AM Depth	AMDP	0 to 100%	Amplitude modulation depth
PM Depth	PMDP	0 to 100%	Pitch modulation depth
Mix	MIX	0 to 100%	Mix level

## Reverb->Chorus

Reverb and chorus effects in series.

Parameter	Display	Range	Description
Wave	WAVE	Sine, Triangle	Modulation waveform
Initial Delay	IDLY	0.0 to 500.0 ms	Initial delay before reverb begins
Freq.	FREQ	0.05 to 40.00 Hz	Modulation speed
Mod. Delay	MDT	0.0 to 500.0 ms	Modulation delay time
Reverb Time	RT	0.3 to 99.0 s	Reverb time
High Ratio	HRAT	0.1 to 1.0	High-frequency reverb time ratio
Diffusion	DIFF	0 to 10	Left and right reverb spread
Density	DNST	0 to 100%	Reverb density
High Pass Filter	HPF	Thru, 21.2 Hz to 8.00 kHz	High-pass filter cutoff frequency
Low Pass Filter	LPF	50.0 Hz to 16.0 kHz, Thru	Low-pass filter cutoff frequency
Reverb Balance	BAL	0 to 100%	Reverb and chorused reverb balance (0% = all chorused reverb, 100% = all reverb)
AM Depth	AMDP	0 to 100%	Amplitude modulation depth
PM Depth	PMDP	0 to 100%	Pitch modulation depth
Mix	MIX	0 to 100%	Mix level

## Reverb+Flange

Reverb and flanger effects in parallel.

Parameter	Display	Range	Description
Wave	WAVE	Sine, Triangle	Modulation waveform
Initial Delay	IDLY	0.0 to 500.0 ms	Initial delay before reverb begins
Freq.	FREQ	0.05 to 40.00 Hz	Modulation speed
Mod. Delay	MDT	0.0 to 500.0 ms	Modulation delay time
FB. Gain	FB	-99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
Reverb Time	RT	0.3 to 99.0 s	Reverb time
High Ratio	HRAT	0.1 to 1.0	High-frequency reverb time ratio
Diffusion	DIFF	0 to 10	Left and right reverb spread
Density	DNST	0 to 100%	Reverb density
High Pass Filter	HPF	Thru, 21.2 Hz to 8.00 kHz	High-pass filter cutoff frequency
Low Pass Filter	LPF	50.0 Hz to 16.0 kHz, Thru	Low-pass filter cutoff frequency
Reverb/Flange	BAL	0 to 100%	Reverb and flange balance (0% = all reverb, 100% = all flange)
Depth	DPTH	0 to 100%	Modulation depth
Mix	MIX	0 to 100%	Mix level

## Reverb->Flange

Reverb and flanger effects in series.

Parameter	Display	Range	Description
Wave	WAVE	Sine, Triangle	Modulation waveform
Initial Delay	IDLY	0.0 to 500.0 ms	Initial delay before reverb begins
Freq.	FREQ	0.05 to 40.00 Hz	Modulation speed
Mod. Delay	MDT	0.0 to 500.0 ms	Modulation delay time
FB. Gain	FB	-99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
Reverb Time	RT	0.3 to 99.0 s	Reverb time
High Ratio	HRAT	0.1 to 1.0	High-frequency reverb time ratio
Diffusion	DIFF	0 to 10	Left and right reverb spread
Density	DNST	0 to 100%	Reverb density
High Pass Filter	HPF	Thru, 21.2 Hz to 8.00 kHz	High-pass filter cutoff frequency
Low Pass Filter	LPF	50.0 Hz to 16.0 kHz, Thru	Low-pass filter cutoff frequency
Reverb Balance	BAL	0 to 100%	Reverb and flanged reverb balance (0% = all flanged reverb, 100% = all reverb)
Depth	DPTH	0 to 100%	Modulation depth
Mix	MIX	0 to 100%	Mix level

## Reverb+Symphonic

Reverb and symphonic effects in parallel.

Parameter	Display	Range	Description
Wave	WAVE	Sine, Triangle	Modulation waveform
Initial Delay	IDLY	0.0 to 500.0 ms	Initial delay before reverb begins
Freq.	FREQ	0.05 to 40.00 Hz	Modulation speed
Mod. Delay	MDT	0.0 to 500.0 ms	Modulation delay time
Reverb Time	RT	0.3 to 99.0 s	Reverb time
High Ratio	HRAT	0.1 to 1.0	High-frequency reverb time ratio
Diffusion	DIFF	0 to 10	Left and right reverb spread
Density	DNST	0 to 100%	Reverb density
High Pass Filter	HPF	Thru, 21.2 Hz to 8.00 kHz	High-pass filter cutoff frequency
Low Pass Filter	LPF	50.0 Hz to 16.0 kHz, Thru	Low-pass filter cutoff frequency
Reverb/Symphonic	BAL	0 to 100%	Reverb and symphonic balance (0% = all reverb, 100% = all symphonic)
Depth	DPTH	0 to 100%	Modulation depth
Mix	MIX	0 to 100%	Mix level

## Reverb->Symphonic

Reverb and symphonic effects in series.

Parameter	Display	Range	Description
Wave	WAVE	Sine, Triangle	Modulation waveform
Initial Delay	IDLY	0.0 to 500.0 ms	Initial delay before reverb begins
Freq.	FREQ	0.05 to 40.00 Hz	Modulation speed
Mod. Delay	MDT	0.0 to 500.0 ms	Modulation delay time
Reverb Time	RT	0.3 to 99.0 s	Reverb time
High Ratio	HRAT	0.1 to 1.0	High-frequency reverb time ratio
Diffusion	DIFF	0 to 10	Left and right reverb spread
Density	DNST	0 to 100%	Reverb density
High Pass Filter	HPF	Thru, 21.2 Hz to 8.00 kHz	High-pass filter cutoff frequency
Low Pass Filter	LPF	50.0 Hz to 16.0 kHz, Thru	Low-pass filter cutoff frequency
Reverb Balance	BAL	0 to 100%	Reverb and symphonic reverb balance (0% = all symphonic reverb, 100% = all reverb)
Depth	DPTH	0 to 100%	Modulation depth
Mix	MIX	0 to 100%	Mix level

## Reverb->Pan

Reverb and autopan effects in series.

Parameter	Display	Range	Description
Wave	WAVE	Sine, Triangle, Square	Modulation waveform
Initial Delay	IDLY	0.0 to 500.0 ms	Initial delay before reverb begins
Freq.	FREQ	0.05 to 40.00 Hz	Modulation speed
Reverb Time	RT	0.3 to 99.0 s	Reverb time
High Ratio	HRAT	0.1 to 1.0	High-frequency reverb time ratio
Diffusion	DIFF	0 to 10	Left and right reverb spread
Density	DNST	0 to 100%	Reverb density
High Pass Filter	HPF	Thru, 21.2 Hz to 8.00 kHz	High-pass filter cutoff frequency
Low Pass Filter	LPF	50.0 Hz to 16.0 kHz, Thru	Low-pass filter cutoff frequency
Reverb Balance	BAL	0 to 100%	Reverb and panned reverb balance (0% = all panned reverb, 100% = all reverb)
Depth	DPTH	0 to 100%	Modulation depth
Direction	DIR	L<->R, L->R, L<-R, Turn L, Turn R	Panning direction
Mix	MIX	0 to 100%	Mix level

## Delay+Early Ref.

Delay and early reflections effects in parallel.

Parameter	Display	Range	Description
Delay L	DT.L	0.0 to 1000.0 ms	Left channel delay time
Delay R	DT.R	0.0 to 1000.0 ms	Right channel delay time
FB. Delay	DTFB	0.0 to 1000.0 ms	Feedback delay time
FB. Gain	FB	-99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
High Ratio	HRAT	0.1 to 1.0	High-frequency feedback ratio
High Pass Filter	HPF	Thru, 21.2 Hz to 8.00 kHz	High-pass filter cutoff frequency
Low Pass Filter	LPF	50.0 Hz to 16.0 kHz, Thru	Low-pass filter cutoff frequency
Delay/ER	BAL	0 to 100%	Delay and early reflections balance (0% = all delay, 100% = all early reflections)
Mix	MIX	0 to 100%	Mix level
Type	TYPE	Small Hall, Large Hall, Random, Reverse, Plate, Spring	Type of early reflection simulation
Initial Delay	IDLY	0.0 to 500.0 ms	Initial delay before reverb begins
Room Size	SIZE	0.2 to 20.0	Reflection spacing
Liveness	LIVE	0 to 10	Early reflections decay characteristics (0 = dead, 10 = live)
Diffusion	DIFF	0 to 10	Left and right early reflections spread
Density	DNST	0 to 100%	Reverb density
ER Number	ERNO	1 to 19	Number of early reflections

## Delay->Early Ref.

Delay and early reflections effects in series.

Parameter	Display	Range	Description
Delay L	DT.L	0.0 to 1000.0 ms	Left channel delay time
Delay R	DT.R	0.0 to 1000.0 ms	Right channel delay time
FB. Delay	DTFB	0.0 to 1000.0 ms	Feedback delay time
FB. Gain	FB	-99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
High Ratio	HRAT	0.1 to 1.0	High-frequency feedback ratio
High Pass Filter	HPF	Thru, 21.2 Hz to 8.00 kHz	High-pass filter cutoff frequency
Low Pass Filter	LPF	50.0 Hz to 16.0 kHz, Thru	Low-pass filter cutoff frequency
Delay Balance	BAL	0 to 100%	Delay and early reflected delay balance (0% = all early reflected delay, 100% = all delay)
Mix	MIX	0 to 100%	Mix level
Type	TYPE	Small Hall, Large Hall, Random, Reverse, Plate, Spring	Type of early reflection simulation
Initial Delay	IDLY	0.0 to 500.0 ms	Initial delay before reverb begins
Room Size	SIZE	0.2 to 20.0	Reflection spacing
Liveness	LIVE	0 to 10	Early reflections decay characteristics (0 = dead, 10 = live)
Diffusion	DIFF	0 to 10	Left and right early reflections spread
Density	DNST	0 to 100%	Reverb density
ER Number	ERNO	1 to 19	Number of early reflections

## Delay+Reverb

Delay and reverb effects in parallel.

Parameter	Display	Range	Description
Delay L	DT.L	0.0 to 1000.0 ms	Left channel delay time
Delay R	DT.R	0.0 to 1000.0 ms	Right channel delay time
FB. Delay	DTFB	0.0 to 1000.0 ms	Feedback delay time
FB. Gain	FB	-99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
Delay High	HRAT	0.1 to 1.0	Delay high-frequency feedback ratio
High Pass Filter	HPF	Thru, 21.2 Hz to 8.00 kHz	High-pass filter cutoff frequency
Low Pass Filter	LPF	50.0 Hz to 16.0 kHz, Thru	Low-pass filter cutoff frequency
Delay/Reverb	BAL	0 to 100%	Delay and reverb balance (0% = all delay, 100% = all reverb)
Mix	MIX	0 to 100%	Mix level
Initial Delay	IDLY	0.0 to 500.0 ms	Initial delay before reverb begins
Reverb Time	RT	0.3 to 99.0 s	Reverb time
Reverb High	R.HI	0.1 to 1.0	High-frequency reverb time ratio
Diffusion	DIFF	0 to 10	Left and right reverb spread
Density	DNST	0 to 100%	Reverb density

## Delay->Reverb

Delay and reverb effects in series.

Parameter	Display	Range	Description
Delay L	DT.L	0.0 to 1000.0 ms	Left channel delay time
Delay R	DT.R	0.0 to 1000.0 ms	Right channel delay time
FB. Delay	DTFB	0.0 to 1000.0 ms	Feedback delay time
FB. Gain	FB	-99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
Delay High	HRAT	0.1 to 1.0	Delay high-frequency feedback ratio
High Pass Filter	HPF	Thru, 21.2 Hz to 8.00 kHz	High-pass filter cutoff frequency
Low Pass Filter	LPF	50.0 Hz to 16.0 kHz, Thru	Low-pass filter cutoff frequency
Delay Balance	BAL	0 to 100%	Delay and delayed reverb balance (0% = all delayed reverb, 100% = all delay)
Mix	MIX	0 to 100%	Mix level
Initial Delay	IDLY	0.0 to 500.0 ms	Initial delay before reverb begins
Reverb Time	RT	0.3 to 99.0 s	Reverb time
Reverb High	R.HI	0.1 to 1.0	High-frequency reverb time ratio
Diffusion	DIFF	0 to 10	Left and right reverb spread
Density	DNST	0 to 100%	Reverb density

## Distortion->Delay

Distortion and delay effects in series. Mainly used for direct connection to guitar amp's front input.

Parameter	Display	Range	Description
Type	TYPE	Distortion1, Distortion2, Overdrive1, Overdrive2, Crunch	Distortion type
Delay	DT	0.0 to 2725.0 ms	Delay time
FB. Gain	FB	-99 to +99%	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
Freq.	FREQ	0.05 to 40.00 Hz	Modulation speed
Drive	DRV	0 to 100	Distortion drive
Master	MSTR	0 to 100	Master volume
Tone	TONE	-10 to +10	Tone control
Noise Gate	NG	0 to 20	Noise reduction
High Ratio	HRAT	0.1 to 1.0	High-frequency feedback ratio
Depth	DPTH	0 to 100%	Modulation depth
Delay Balance	BAL	0 to 100%	Distortion and delay balance (0% = all distortion, 100% = all delayed distortion)

## Amp Multi (Chorus)

Multi effect consisting of Comp + Amp Simulator + Chorus + Delay + Reverb. Mainly used for direct connection to power amp. Speaker simulator allows direct recording.

Parameter	Display	Range	Description
<b>Amp Type</b>	TYPE	Heavy1, Heavy2, Lead1, Lead2, Drive1, Drive2, Crunch1, Crunch2, Clean1, Clean2, Solid	Amp type
<b>Gain</b>	GAIN	0.0 to 10.0	Adjusts the amount of distortion
<b>Master</b>	MSTR	0.0 to 10.0	Adjusts the volume
<b>Tone</b>	STONE	0.0 to 10.0	Adjusts the tone
<b>Treble</b>	TRE	0.0 to 10.0	Adjusts level of high range frequencies
<b>High Middle</b>	HMID	0.0 to 10.0	Adjusts level of upper mid frequencies
<b>Low Middle</b>	LMID	0.0 to 10.0	Adjusts level of lower mid frequencies
<b>Bass</b>	BASS	0.0 to 10.0	Adjusts level of low frequencies
<b>Presence</b>	PRE	0.0 to 10.0	Adjusts level of extremely high frequencies
<b>Speaker Simulator</b>	SP	Off, American 412, British 412, Modern 412, YAMAHA 412, Hybrid 412, American 212, British 212, Modern 212, YAMAHA 212, Hybrid 212, American 112, Modern 112, YAMAHA 112, Hybrid 112, 410, 210	When using a line connection to connect directly to a mixer, this can be used to simulate the natural characteristics of a speaker giving the tone a more natural sound
<b>N. G. Threshold</b>	NGTH	0.0 to 10.0	Level at which the noise gate activates
<b>N. G. Attack</b>	NGAT	0.0 to 120 ms	Time required for the noise gate to open after signal exceeds threshold
<b>N. G. Hold</b>	NGHL	0.02 to 2040 ms	Time noise gate stays open
<b>N. G. Decay</b>	NGDC	6 to 44500 ms	Time required for the noise gate to close after signal goes below threshold
<b>Comp. Threshold</b>	CTHR	-54.0 to 0.0 dB	Level at which compressor activates
<b>Comp. Ratio</b>	CRAT	1:1 to ∞:1	Compression ratio
<b>Comp. Attack</b>	CATT	0 to 120 ms	Time required for compressor to peak after exceeding threshold
<b>Comp. Release</b>	CREL	6 to 11500 ms	Time required for compressor to terminate after going below threshold
<b>Comp. Knee</b>	CKNE	Hard, 1 to 5	Adjusts the width of the gain curve just above the threshold
<b>Comp. Gain</b>	CGAI	0.0 to 18.0 dB	Output level
<b>Wave</b>	WAVE	Sine, Triangle	Chorus modulation waveform
<b>Chorus Delay</b>	CHDT	0.0 to 30.0 ms	Chorus delay time
<b>Chorus Speed</b>	CHSP	0.0 to 10.0	Chorus speed
<b>Chorus Depth</b>	CHDP	0.0 to 10.0	Modulation depth
<b>Chorus Level</b>	CHLV	0.0 to 10.0	Chorus level
<b>FB. Delay</b>	DTFB	0.0 to 1000.0 ms	Loop delay time
<b>Tap L</b>	DT.L	0 to 100 %	Left channel delay output time (see <a href="#">page 3</a> )
<b>Tap R</b>	DT.R	0 to 100 %	Right channel delay output time (see <a href="#">page 3</a> )
<b>Delay FB. Gain</b>	D.FB	-99 to 99	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
<b>Delay High</b>	D.HI	0.1 to 1.0	Delay high-frequency feedback ratio
<b>Delay Level</b>	DLVL	0.0 to 10.0	Delay level
<b>High Pass Filter</b>	DHPF	Thru to 8.00 kHz	High-pass filter cutoff frequency. For delay, reverb
<b>Low Pass Filter</b>	DLPF	50.0 Hz to Thru	Low-pass filter cutoff frequency. For delay, reverb
<b>Reverb Ini. Delay</b>	RIDL	0.0 to 500.0 ms	Initial delay before reverb begins
<b>Reverb Time</b>	RT	0.3 to 99.0 s	Reverb time
<b>Reverb High</b>	R.HI	0.1 to 1.0 ms	High-frequency reverb time ratio
<b>Reverb Diffusion</b>	RDIF	0 to 10	Left and right reverb spread
<b>Reverb Density</b>	RDNS	0 to 100	Reverb density
<b>Reverb Level</b>	RLVL	0.0 to 10.0	Reverb level

## Amp Multi (Flange)

Multi effect consisting of Comp + Amp Simulator + Flange + Delay + Reverb. Mainly used for direct connection to power amp. Speaker simulator allows direct recording.

Parameter	Display	Range	Description
<b>Amp Type</b>	TYPE	Heavy1, Heavy2, Lead1, Lead2, Drive1, Drive2, Crunch1, Crunch2, Clean1, Clean2, Solid	Amp type
<b>Gain</b>	GAIN	0.0 to 10.0	Adjusts the amount of distortion
<b>Master</b>	MSTR	0.0 to 10.0	Adjusts the volume
<b>Tone</b>	STONE	0.0 to 10.0	Adjusts the tone
<b>Treble</b>	TRE	0.0 to 10.0	Adjusts level of high range frequencies
<b>High Middle</b>	HMID	0.0 to 10.0	Adjusts level of upper mid frequencies
<b>Low Middle</b>	LMID	0.0 to 10.0	Adjusts level of lower mid frequencies
<b>Bass</b>	BASS	0.0 to 10.0	Adjusts level of low frequencies
<b>Presence</b>	PRE	0.0 to 10.0	Adjusts level of extremely high frequencies
<b>Speaker Simulator</b>	SP	Off, American 412, British 412, Modern 412, YAMAHA 412, Hybrid 412, American 212, British 212, Modern 212, YAMAHA 212, Hybrid 212, American 112, Modern 112, YAMAHA 112, Hybrid 112, 410, 210	When using a line connection to connect directly to a mixer, this can be used to simulate the natural characteristics of a speaker giving the tone a more natural sound
<b>N. G. Threshold</b>	NGTH	0.0 to 10.0	Level at which the noise gate activates
<b>N. G. Attack</b>	NGAT	0.0 to 120 ms	Time required for the noise gate to open after signal exceeds threshold
<b>N. G. Hold</b>	NGHL	0.02 to 2040 ms	Time noise gate stays open
<b>N. G. Decay</b>	NGDC	6 to 44500 ms	Time required for the noise gate to close after signal goes below threshold
<b>Comp. Threshold</b>	CTHR	-54.0 to 0.0 dB	Level at which compressor activates
<b>Comp. Ratio</b>	CRAT	1:1 to ∞:1	Compression ratio
<b>Comp. Attack</b>	CATT	0 to 120 ms	Time required for compressor to peak after exceeding threshold
<b>Comp. Release</b>	CREL	6 to 11500 ms	Time required for compressor to terminate after going below threshold
<b>Comp. Knee</b>	CKNE	Hard, 1 to 5	Adjusts the width of the gain curve just above the threshold
<b>Comp. Gain</b>	CGAI	0.0 to 18.0 dB	Output level
<b>Wave</b>	WAVE	Sine, Triangle	Modulation waveform
<b>Flanger Delay</b>	FLDT	0.0 to 10.0 ms	Flanger delay time
<b>Flanger Speed</b>	FLSP	0.0 to 10.0	Modulation speed
<b>Flanger Depth</b>	FLDP	0.0 to 10.0	Modulation depth
<b>Flanger Feedback</b>	FLFB	-99 to 99	Flanger feedback
<b>Flanger Level</b>	FLVL	0.0 to 10.0	Flanger level
<b>FB. Delay</b>	DTFB	0.0 to 1000.0 ms	Loop delay time
<b>Tap L</b>	DT.L	0 to 100 %	Left channel delay output time (see <a href="#">page 3</a> )
<b>Tap R</b>	DT.R	0 to 100 %	Right channel delay output time (see <a href="#">page 3</a> )
<b>Delay FB. Gain</b>	D.FB	-99 to 99	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
<b>Delay High</b>	D.HI	0.1 to 1.0	Delay high-frequency feedback ratio
<b>Delay Level</b>	DLVL	0.0 to 10.0	Delay level
<b>High Pass Filter</b>	DHPF	Thru to 8.00 kHz	High-pass filter cutoff frequency. For delay, reverb
<b>Low Pass Filter</b>	DLPF	50.0 Hz to Thru	Low-pass filter cutoff frequency. For delay, reverb
<b>Reverb Ini. Delay</b>	RIDL	0.0 to 500.0 ms	Initial delay before reverb begins
<b>Reverb Time</b>	RT	0.3 to 99.0 s	Reverb time
<b>Reverb High</b>	R.HI	0.1 to 1.0 ms	High-frequency reverb time ratio
<b>Reverb Diffusion</b>	RDIF	0 to 10	Left and right reverb spread
<b>Reverb Density</b>	RDNS	0 to 100	Reverb density
<b>Reverb Level</b>	RLVL	0.0 to 10.0	Reverb level



## Amp Multi (Tremolo)

Multi effect consisting of Comp + Amp Simulator + Tremolo + Delay + Reverb. Mainly used for direct connection to power amp. Speaker simulator allows direct recording.

Parameter	Display	Range	Description
<b>Amp Type</b>	TYPE	Heavy1, Heavy2, Lead1, Lead2, Drive1, Drive2, Crunch1, Crunch2, Clean1, Clean2, Solid	Amp type
<b>Gain</b>	GAIN	0.0 to 10.0	Adjusts the amount of distortion
<b>Master</b>	MSTR	0.0 to 10.0	Adjusts the volume
<b>Tone</b>	TONE	0.0 to 10.0	Adjusts the tone
<b>Treble</b>	TRE	0.0 to 10.0	Adjusts level of high range frequencies
<b>High Middle</b>	HMID	0.0 to 10.0	Adjusts level of upper mid frequencies
<b>Low Middle</b>	LMID	0.0 to 10.0	Adjusts level of lower mid frequencies
<b>Bass</b>	BASS	0.0 to 10.0	Adjusts level of low frequencies
<b>Presence</b>	PRE	0.0 to 10.0	Adjusts level of extremely high frequencies
<b>Speaker Simulator</b>	SP	Off, American 412, British 412, Modern 412, YAMAHA 412, Hybrid 412, American 212, British 212, Modern 212, YAMAHA 212, Hybrid 212, American 112, Modern 112, YAMAHA 112, Hybrid 112, 410, 210	When using a line connection to connect directly to a mixer, this can be used to simulate the natural characteristics of a speaker giving the tone a more natural sound
<b>N. G. Threshold</b>	NGTH	0.0 to 10.0	Level at which the noise gate activates
<b>N. G. Attack</b>	NGAT	0.0 to 120 ms	Time required for the noise gate to open after signal exceeds threshold
<b>N. G. Hold</b>	NGHL	0.02 to 2040 ms	Time noise gate stays open
<b>N. G. Decay</b>	NGDC	6 to 44500 ms	Time required for the noise gate to close after signal goes below threshold
<b>Comp. Threshold</b>	CTHR	-54.0 to 0.0 dB	Level at which compressor activates
<b>Comp. Ratio</b>	CRAT	1:1 to ∞:1	Compression ratio
<b>Comp. Attack</b>	CATT	0 to 120 ms	Time required for compressor to peak after exceeding threshold
<b>Comp. Release</b>	CREL	6 to 11500 ms	Time required for compressor to terminate after going below threshold
<b>Comp. Knee</b>	CKNE	Hard, 1 to 5	Adjusts the width of the gain curve just above the threshold
<b>Comp. Gain</b>	CGAI	0.0 to 18.0 dB	Output level
<b>Wave</b>	WAVE	Sine, Triangle, Square	Modulation waveform
<b>Tremolo Speed</b>	TRSP	0.0 to 10.0	Tremolo speed
<b>Tremolo Depth</b>	TRDP	0.0 to 10.0	Tremolo depth
<b>FB. Delay</b>	DTFB	0.0 to 1000.0 ms	Loop delay time
<b>Tap L</b>	DT.L	0 to 100 %	Left channel delay output time (see <a href="#">page 3</a> )
<b>Tap R</b>	DT.R	0 to 100 %	Right channel delay output time (see <a href="#">page 3</a> )
<b>Delay FB. Gain</b>	D.FB	-99 to 99	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
<b>Delay High</b>	D.HI	0.1 to 1.0	Delay high-frequency feedback ratio
<b>Delay Level</b>	DLVL	0.0 to 10.0	Delay level
<b>High Pass Filter</b>	DHPF	Thru to 8.00 kHz	High-pass filter cutoff frequency. For delay, reverb
<b>Low Pass Filter</b>	DLPF	50.0 Hz to Thru	Low-pass filter cutoff frequency. For delay, reverb
<b>Reverb Ini. Delay</b>	RIDL	0.0 to 500.0 ms	Initial delay before reverb begins
<b>Reverb Time</b>	RT	0.3 to 99.0 s	Reverb time
<b>Reverb High</b>	R.HI	0.1 to 1.0 ms	High-frequency reverb time ratio
<b>Reverb Diffusion</b>	RDIF	0 to 10	Left and right reverb spread
<b>Reverb Density</b>	RDNS	0 to 100	Reverb density
<b>Reverb Level</b>	RLVL	0.0 to 10.0	Reverb level

## Amp Multi (Phaser)

Multi effect consisting of Comp + Amp Simulator + Phaser + Delay + Reverb. Mainly used for direct connection to power amp. Speaker simulator allows direct recording.

Parameter	Display	Range	Description
<b>Amp Type</b>	TYPE	Heavy1, Heavy2, Lead1, Lead2, Drive1, Drive2, Crunch1, Crunch2, Clean1, Clean2, Solid	Amp type
<b>Gain</b>	GAIN	0.0 to 10.0	Adjusts the amount of distortion
<b>Master</b>	MSTR	0.0 to 10.0	Adjusts the volume
<b>Tone</b>	STONE	0.0 to 10.0	Adjusts the tone
<b>Treble</b>	TRE	0.0 to 10.0	Adjusts level of high range frequencies
<b>High Middle</b>	HMID	0.0 to 10.0	Adjusts level of upper mid frequencies
<b>Low Middle</b>	LMID	0.0 to 10.0	Adjusts level of lower mid frequencies
<b>Bass</b>	BASS	0.0 to 10.0	Adjusts level of low frequencies
<b>Presence</b>	PRE	0.0 to 10.0	Adjusts level of extremely high frequencies
<b>Speaker Simulator</b>	SP	Off, American 412, British 412, Modern 412, YAMAHA 412, Hybrid 412, American 212, British 212, Modern 212, YAMAHA 212, Hybrid 212, American 112, Modern 112, YAMAHA 112, Hybrid 112, 410, 210	When using a line connection to connect directly to a mixer, this can be used to simulate the natural characteristics of a speaker giving the tone a more natural sound
<b>N. G. Threshold</b>	NGTH	0.0 to 10.0	Level at which the noise gate activates
<b>N. G. Attack</b>	NGAT	0.0 to 120 ms	Time required for the noise gate to open after signal exceeds threshold
<b>N. G. Hold</b>	NGHL	0.02 to 2040 ms	Time noise gate stays open
<b>N. G. Decay</b>	NGDC	6 to 44500 ms	Time required for the noise gate to close after signal goes below threshold
<b>Comp. Threshold</b>	CTHR	-54.0 to 0.0 dB	Level at which compressor activates
<b>Comp. Ratio</b>	CRAT	1:1 to ∞:1	Compression ratio
<b>Comp. Attack</b>	CATT	0 to 120 ms	Time required for compressor to peak after exceeding threshold
<b>Comp. Release</b>	CREL	6 to 11500 ms	Time required for compressor to terminate after going below threshold
<b>Comp. Knee</b>	CKNE	Hard, 1 to 5	Adjusts the width of the gain curve just above the threshold
<b>Comp. Gain</b>	CGAI	0.0 to 18.0 dB	Output level
<b>Wave</b>	WAVE	Sine, Triangle	Modulation waveform
<b>Phaser Speed</b>	PHSP	0.0 to 10.0	Modulation speed
<b>Phaser Depth</b>	PHDP	0.0 to 10.0	Modulation depth
<b>Phaser Feedback</b>	PHFB	-99 to 99	Phaser feedback
<b>Phaser Level</b>	PHLV	0.0 to 10.0	Phaser level
<b>FB. Delay</b>	DTFB	0.0 to 1000.0 ms	Loop delay time
<b>Tap L</b>	DT.L	0 to 100 %	Left channel delay output time (see <a href="#">page 3</a> )
<b>Tap R</b>	DT.R	0 to 100 %	Right channel delay output time (see <a href="#">page 3</a> )
<b>Delay FB. Gain</b>	D.FB	-99 to 99	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
<b>Delay High</b>	D.HI	0.1 to 1.0	Delay high-frequency feedback ratio
<b>Delay Level</b>	DLVL	0.0 to 10.0	Delay level
<b>High Pass Filter</b>	DHPF	Thru to 8.00 kHz	High-pass filter cutoff frequency. For delay, reverb
<b>Low Pass Filter</b>	DLPF	50.0 Hz to Thru	Low-pass filter cutoff frequency. For delay, reverb
<b>Reverb Ini. Delay</b>	RIDL	0.0 to 500.0 ms	Initial delay before reverb begins
<b>Reverb Time</b>	RT	0.3 to 99.0 s	Reverb time
<b>Reverb High</b>	R.HI	0.1 to 1.0 ms	High-frequency reverb time ratio
<b>Reverb Diffusion</b>	RDIF	0 to 10	Left and right reverb spread
<b>Reverb Density</b>	RDNS	0 to 100	Reverb density
<b>Reverb Level</b>	RLVL	0.0 to 10.0	Reverb level

## Distortion Multi (Chorus)

Multi effect consisting of Comp + Distortion + Chorus + Delay + Reverb. Mainly used for direct connection to guitar amp's front input.

Parameter	Display	Range	Description
Type	TYPE	Lead1, Lead2, Drive1, Drive2, Crunch1, Crunch2, Fuzz1, Fuzz2, Distortion1, Distortion2, Overdrive1, Overdrive2, Tube, Solidstate, Bypass	Distortion type
Gain	GAIN	0.0 to 10.0	Adjusts the amount of distortion
Master	MSTR	0.0 to 10.0	Adjusts the volume
Tone	TONE	0.0 to 10.0	Adjusts the tone
EQ 1 Freq.	EQ1F	50.0 to 400 Hz	Specifies the post effect EQ1 frequency
EQ 1 Gain	EQ1G	-12.0 to 12.0 dB	Specifies the post effect EQ1 gain
EQ 1 Q	EQ1Q	0.100 to 20.0	Specifies the post effect EQ1 Q (bandwidth)
EQ 2 Freq.	EQ2F	200 to 1.6 kHz	Specifies the post effect EQ2 frequency
EQ 2 Gain	EQ2G	-12.0 to 12.0 dB	Specifies the post effect EQ2 gain
EQ 2 Q	EQ2Q	0.100 to 20.0	Specifies the post effect EQ2 Q (bandwidth)
EQ 3 Freq.	EQ3F	600 to 4.80 kHz	Specifies the post effect EQ3 frequency
EQ 3 Gain	EQ3G	-12.0 to 12.0 dB	Specifies the post effect EQ3 gain
EQ 3 Q	EQ3Q	0.100 to 20.0	Specifies the post effect EQ3 Q (bandwidth)
EQ 4 Freq.	EQ4F	2.00 k to 16.0 kHz	Specifies the post effect EQ4 frequency
EQ 4 Gain	EQ4G	-12.0 to 12.0 dB	Specifies the post effect EQ4 gain
EQ 4 Q	EQ4Q	0.100 to 20.0	Specifies the post effect EQ4 Q (bandwidth)
Pre EQ Level	PELV	0.0 to 10.0	Specifies the pre effect EQ level
Pre EQ 1 Freq.	PE1F	50.0 to 500 Hz	Specifies the pre effect EQ1 frequency
Pre EQ 1 Gain	PE1G	-12.0 to 12.0 dB	Specifies the pre effect EQ1 gain
Pre EQ 1 Q	PE1Q	0.100 to 20.0	Specifies the pre effect EQ1 Q (bandwidth)
Pre EQ 2 Freq.	PE2F	200 to 2.00 kHz	Specifies the pre effect EQ2 frequency
Pre EQ 2 Gain	PE2G	-12.0 to 12.0 dB	Specifies the pre effect EQ2 gain
Pre EQ 2 Q	PE2Q	0.100 to 20.0	Specifies the pre effect EQ2 Q (bandwidth)
Pre EQ 3 Freq.	PE3F	1.00 k to 10.0 kHz	Specifies the pre effect EQ3 frequency
Pre EQ 3 Gain	PE3G	-12.0 to 12.0 dB	Specifies the pre effect EQ3 gain
Pre EQ 3 Q	PE3Q	0.100 to 20.0	Specifies the pre effect EQ3 Q (bandwidth)
Comp. Threshold	CTHR	-54.0 to 0.0 dB	Level at which compressor activates
Comp. Ratio	CRAT	1:1 to ∞:1	Compression ratio
Comp. Attack	CATT	0 to 120 ms	Time required for compressor to peak after exceeding threshold
Comp. Release	CREL	6 to 11500 ms	Time required for compressor to terminate after going below threshold
Comp. Knee	CKNE	Hard, 1 to 5	Adjusts the width of the gain curve just above the compressor's threshold
Comp. Gain	CGAI	0.0 to 18.0 dB	Output level
N. G. Threshold	NGTH	0.0 to 10.0	Level at which the noise gate activates
N. G. Attack	NGAT	0.0 to 120 ms	Time required for the noise gate to open after signal exceeds threshold
N. G. Hold	NGHL	0.02 to 2040 ms	Time noise gate stays open
N. G. Decay	NGDC	6 to 44500 ms	Time required for the noise gate to close after signal goes below threshold
Wave	WAVE	Sine, Triangle	Chorus modulation waveform
Chorus Delay	CHDT	0.0 to 30.0 ms	Chorus delay time
Chorus Speed	CHSP	0.0 to 10.0	Chorus speed
Chorus Depth	CHDP	0.0 to 10.0	Modulation depth
Chorus Level	CHLV	0.0 to 10.0	Chorus level
FB. Delay	DTFB	0.0 to 1000.0 ms	Loop delay time
Tap L	DT.L	0 to 100 %	Left channel delay output time (see <a href="#">page 3</a> )
Tap R	DT.R	0 to 100 %	Right channel delay output time (see <a href="#">page 3</a> )
Delay FB. Gain	D.FB	-99 to 99	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
Delay High	D.HI	0.1 to 1.0	Delay high-frequency feedback ratio
Delay Level	DLVL	0.0 to 10.0	Delay level
High Pass Filter	DHPF	Thru to 8.00 kHz	High-pass filter cutoff frequency. For delay, reverb
Low Pass Filter	DLPF	50.0 Hz to Thru	Low-pass filter cutoff frequency. For delay, reverb
Reverb Ini. Delay	RIDL	0.0 to 500.0 ms	Initial delay before reverb begins
Reverb Time	RT	0.3 to 99.0 s	Reverb time
Reverb High	R.HI	0.1 to 1.0 ms	High-frequency reverb time ratio
Reverb Diffusion	RDIF	0 to 10	Left and right reverb spread
Reverb Density	RDNS	0 to 100	Reverb density
Reverb Level	RLVL	0.0 to 10.0	Reverb level

## Distortion Multi (Flange)

Multi effect consisting of Comp + Distortion + Flange+ Delay + Reverb. Mainly used for direct connection to guitar amp's front input.

Parameter	Display	Range	Description
Type	TYPE	Lead1, Lead2, Drive1, Drive2, Crunch1, Crunch2, Fuzz1, Fuzz2, Distortion1, Distortion2, Overdrive1, Overdrive2, Tube, Solidstate, Bypass	Distortion type
Gain	GAIN	0.0 to 10.0	Adjusts the amount of distortion
Master	MSTR	0.0 to 10.0	Adjusts the volume
Tone	TONE	0.0 to 10.0	Adjusts the tone
EQ 1 Freq.	EQ1F	50.0 to 400 Hz	Specifies the post effect EQ1 frequency
EQ 1 Gain	EQ1G	-12.0 to 12.0 dB	Specifies the post effect EQ1 gain
EQ 1 Q	EQ1Q	0.100 to 20.0	Specifies the post effect EQ1 Q (bandwidth)
EQ 2 Freq.	EQ2F	200 to 1.6 kHz	Specifies the post effect EQ2 frequency
EQ 2 Gain	EQ2G	-12.0 to 12.0 dB	Specifies the post effect EQ2 gain
EQ 2 Q	EQ2Q	0.100 to 20.0	Specifies the post effect EQ2 Q (bandwidth)
EQ 3 Freq.	EQ3F	600 to 4.80 kHz	Specifies the post effect EQ3 frequency
EQ 3 Gain	EQ3G	-12.0 to 12.0 dB	Specifies the post effect EQ3 gain
EQ 3 Q	EQ3Q	0.100 to 20.0	Specifies the post effect EQ3 Q (bandwidth)
EQ 4 Freq.	EQ4F	2.00 k to 16.0 kHz	Specifies the post effect EQ4 frequency
EQ 4 Gain	EQ4G	-12.0 to 12.0 dB	Specifies the post effect EQ4 gain
EQ 4 Q	EQ4Q	0.100 to 20.0	Specifies the post effect EQ4 Q (bandwidth)
Pre EQ Level	PELV	0.0 to 10.0	Specifies the pre effect EQ level
Pre EQ 1 Freq.	PE1F	50.0 to 500 Hz	Specifies the pre effect EQ1 frequency
Pre EQ 1 Gain	PE1G	-12.0 to 12.0 dB	Specifies the pre effect EQ1 gain
Pre EQ 1 Q	PE1Q	0.100 to 20.0	Specifies the pre effect EQ1 Q (bandwidth)
Pre EQ 2 Freq.	PE2F	200 to 2.00 kHz	Specifies the pre effect EQ2 frequency
Pre EQ 2 Gain	PE2G	-12.0 to 12.0 dB	Specifies the pre effect EQ2 gain
Pre EQ 2 Q	PE2Q	0.100 to 20.0	Specifies the pre effect EQ2 Q (bandwidth)
Pre EQ 3 Freq.	PE3F	1.00 k to 10.0 kHz	Specifies the pre effect EQ3 frequency
Pre EQ 3 Gain	PE3G	-12.0 to 12.0 dB	Specifies the pre effect EQ3 gain
Pre EQ 3 Q	PE3Q	0.100 to 20.0	Specifies the pre effect EQ3 Q (bandwidth)
Comp. Threshold	CTHR	-54.0 to 0.0 dB	Level at which compressor activates
Comp. Ratio	CRAT	1:1 to ∞:1	Compression ratio
Comp. Attack	CATT	0 to 120 ms	Time required for compressor to peak after exceeding threshold
Comp. Release	CREL	6 to 11500 ms	Time required for compressor to terminate after going below threshold
Comp. Knee	CKNE	Hard, 1 to 5	Adjusts the width of the gain curve just above the threshold
Comp. Gain	CGAI	0.0 to 18.0 dB	Output level
N. G. Threshold	NGTH	0.0 to 10.0	Level at which the noise gate activates
N. G. Attack	NGAT	0.0 to 120 ms	Time required for the noise gate to open after signal exceeds threshold
N. G. Hold	NGHL	0.02 to 2040 ms	Time noise gate stays open
N. G. Decay	NGDC	6 to 44500 ms	Time required for the noise gate to close after signal goes below threshold
Wave	WAVE	Sine, Triangle	Modulation waveform
Flanger Delay	FLDT	0.0 to 10.0 ms	Flanger delay time
Flanger Speed	FLSP	0.0 to 10.0	Modulation speed
Flanger Depth	FLDP	0.0 to 10.0	Modulation depth
Flanger Feedback	FLFB	-99 to 99	Flanger feedback
Flanger Level	FLLV	0.0 to 10.0	Flanger level
FB. Delay	DTFB	0.0 to 1000.0 ms	Loop delay time
Tap L	DT.L	0 to 100 %	Left channel delay output time (see <a href="#">page 3</a> )
Tap R	DT.R	0 to 100 %	Right channel delay output time (see <a href="#">page 3</a> )
Delay FB. Gain	D.FB	-99 to 99	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
Delay High	D.HI	0.1 to 1.0	Delay high-frequency feedback ratio
Delay Level	DLVL	0.0 to 10.0	Delay level
High Pass Filter	DHPF	Thru to 8.00 kHz	High-pass filter cutoff frequency. For delay, reverb
Low Pass Filter	DLPF	50.0 Hz to Thru	Low-pass filter cutoff frequency. For delay, reverb
Reverb Ini. Delay	RIDL	0.0 to 500.0 ms	Initial delay before reverb begins
Reverb Time	RT	0.3 to 99.0 s	Reverb time
Reverb High	R.HI	0.1 to 1.0 ms	High-frequency reverb time ratio
Reverb Diffusion	RDIF	0 to 10	Left and right reverb spread
Reverb Density	RDNS	0 to 100	Reverb density
Reverb Level	RLVL	0.0 to 10.0	Reverb level

## Distortion Multi (Tremolo)

Multi effect consisting of Comp + Distortion + Tremolo + Delay + Reverb. Mainly used for direct connection to guitar amp's front input.

Parameter	Display	Range	Description
Type	TYPE	Lead1, Lead2, Drive1, Drive2, Crunch1, Crunch2, Fuzz1, Fuzz2, Distortion1, Distortion2, Overdrive1, Overdrive2, Tube, Solidstate, Bypass	Distortion type
Gain	GAIN	0.0 to 10.0	Adjusts the amount of distortion
Master	MSTR	0.0 to 10.0	Adjusts the volume
Tone	TONE	0.0 to 10.0	Adjusts the tone
EQ 1 Freq.	EQ1F	50.0 to 400 Hz	Specifies the post effect EQ1 frequency
EQ 1 Gain	EQ1G	-12.0 to 12.0 dB	Specifies the post effect EQ1 gain
EQ 1 Q	EQ1Q	0.100 to 20.0	Specifies the post effect EQ1 Q (bandwidth)
EQ 2 Freq.	EQ2F	200 to 1.6 kHz	Specifies the post effect EQ2 frequency
EQ 2 Gain	EQ2G	-12.0 to 12.0 dB	Specifies the post effect EQ2 gain
EQ 2 Q	EQ2Q	0.100 to 20.0	Specifies the post effect EQ2 Q (bandwidth)
EQ 3 Freq.	EQ3F	600 to 4.80 kHz	Specifies the post effect EQ3 frequency
EQ 3 Gain	EQ3G	-12.0 to 12.0 dB	Specifies the post effect EQ3 gain
EQ 3 Q	EQ3Q	0.100 to 20.0	Specifies the post effect EQ3 Q (bandwidth)
EQ 4 Freq.	EQ4F	2.00 k to 16.0 kHz	Specifies the post effect EQ4 frequency
EQ 4 Gain	EQ4G	-12.0 to 12.0 dB	Specifies the post effect EQ4 gain
EQ 4 Q	EQ4Q	0.100 to 20.0	Specifies the post effect EQ4 Q (bandwidth)
Pre EQ Level	PELV	0.0 to 10.0	Specifies the pre effect EQ level
Pre EQ 1 Freq.	PE1F	50.0 to 500 Hz	Specifies the pre effect EQ1 frequency
Pre EQ 1 Gain	PE1G	-12.0 to 12.0 dB	Specifies the pre effect EQ1 gain
Pre EQ 1 Q	PE1Q	0.100 to 20.0	Specifies the pre effect EQ1 Q (bandwidth)
Pre EQ 2 Freq.	PE2F	200 to 2.00 kHz	Specifies the pre effect EQ2 frequency
Pre EQ 2 Gain	PE2G	-12.0 to 12.0 dB	Specifies the pre effect EQ2 gain
Pre EQ 2 Q	PE2Q	0.100 to 20.0	Specifies the pre effect EQ2 Q (bandwidth)
Pre EQ 3 Freq.	PE3F	1.00 k to 10.0 kHz	Specifies the pre effect EQ3 frequency
Pre EQ 3 Gain	PE3G	-12.0 to 12.0 dB	Specifies the pre effect EQ3 gain
Pre EQ 3 Q	PE3Q	0.100 to 20.0	Specifies the pre effect EQ3 Q (bandwidth)
Comp. Threshold	CTHR	-54.0 to 0.0 dB	Level at which compressor activates
Comp. Ratio	CRAT	1:1 to ∞:1	Compression ratio
Comp. Attack	CATT	0 to 120 ms	Time required for compressor to peak after exceeding threshold
Comp. Release	CREL	6 to 11500 ms	Time required for compressor to terminate after going below threshold
Comp. Knee	CKNE	Hard, 1 to 5	Adjusts the width of the gain curve just above the threshold
Comp. Gain	CGAI	0.0 to 18.0 dB	Output level
N. G. Threshold	NGTH	0.0 to 10.0	Level at which the noise gate activates
N. G. Attack	NGAT	0.0 to 120 ms	Time required for the noise gate to open after signal exceeds threshold
N. G. Hold	NGHL	0.02 to 2040 ms	Time noise gate stays open
N. G. Decay	NGDC	6 to 44500 ms	Time required for the noise gate to close after signal goes below threshold
Wave	WAVE	Sine, Triangle, Squire	Modulation waveform
Tremolo Speed	TRSP	0.0 to 10.0	Tremolo speed
Tremolo Depth	TRDP	0.0 to 10.0	Tremolo depth
FB. Delay	DTFB	0.0 to 1000.0 ms	Loop delay time
Tap L	DT.L	0 to 100 %	Left channel delay output time (see <a href="#">page 3</a> )
Tap R	DT.R	0 to 100 %	Right channel delay output time (see <a href="#">page 3</a> )
Delay FB. Gain	D.FB	-99 to 99	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
Delay High	D.HI	0.1 to 1.0	Delay high-frequency feedback ratio
Delay Level	DLVL	0.0 to 10.0	Delay level
High Pass Filter	DHPF	Thru to 8.00 kHz	High-pass filter cutoff frequency. For delay, reverb
Low Pass Filter	DLPF	50.0 Hz to Thru	Low-pass filter cutoff frequency. For delay, reverb
Reverb Ini. Delay	RIDL	0.0 to 500.0 ms	Initial delay before reverb begins
Reverb Time	RT	0.3 to 99.0 s	Reverb time
Reverb High	R.HI	0.1 to 1.0 ms	High-frequency reverb time ratio
Reverb Diffusion	RDIF	0 to 10	Left and right reverb spread
Reverb Density	RDNS	0 to 100	Reverb density
Reverb Level	RLVL	0.0 to 10.0	Reverb level

## Distortion Multi (Phaser)

Multi effect consisting of Comp + Distortion + Phaser + Delay + Reverb. Mainly used for direct connection to guitar amp's front input.

Parameter	Display	Range	Description
Type	TYPE	Lead1, Lead2, Drive1, Drive2, Crunch1, Crunch2, Fuzz1, Fuzz2, Distortion1, Distortion2, Overdrive1, Overdrive2, Tube, Solidstate, Bypass	Distortion type
Gain	GAIN	0.0 to 10.0	Adjusts the amount of distortion
Master	MSTR	0.0 to 10.0	Adjusts the volume
Tone	TONE	0.0 to 10.0	Adjusts the tone
EQ 1 Freq.	EQ1F	50.0 to 400 Hz	Specifies the post effect EQ1 frequency
EQ 1 Gain	EQ1G	-12.0 to 12.0 dB	Specifies the post effect EQ1 gain
EQ 1 Q	EQ1Q	0.100 to 20.0	Specifies the post effect EQ1 Q (bandwidth)
EQ 2 Freq.	EQ2F	200 to 1.6 kHz	Specifies the post effect EQ2 frequency
EQ 2 Gain	EQ2G	-12.0 to 12.0 dB	Specifies the post effect EQ2 gain
EQ 2 Q	EQ2Q	0.100 to 20.0	Specifies the post effect EQ2 Q (bandwidth)
EQ 3 Freq.	EQ3F	600 to 4.80 kHz	Specifies the post effect EQ3 frequency
EQ 3 Gain	EQ3G	-12.0 to 12.0 dB	Specifies the post effect EQ3 gain
EQ 3 Q	EQ3Q	0.100 to 20.0	Specifies the post effect EQ3 Q (bandwidth)
EQ 4 Freq.	EQ4F	2.00 k to 16.0 kHz	Specifies the post effect EQ4 frequency
EQ 4 Gain	EQ4G	-12.0 to 12.0 dB	Specifies the post effect EQ4 gain
EQ 4 Q	EQ4Q	0.100 to 20.0	Specifies the post effect EQ4 Q (bandwidth)
Pre EQ Level	PELV	0.0 to 10.0	Specifies the pre effect EQ level
Pre EQ 1 Freq.	PE1F	50.0 to 500 Hz	Specifies the pre effect EQ1 frequency
Pre EQ 1 Gain	PE1G	-12.0 to 12.0 dB	Specifies the pre effect EQ1 gain
Pre EQ 1 Q	PE1Q	0.100 to 20.0	Specifies the pre effect EQ1 Q (bandwidth)
Pre EQ 2 Freq.	PE2F	200 to 2.00 kHz	Specifies the pre effect EQ2 frequency
Pre EQ 2 Gain	PE2G	-12.0 to 12.0 dB	Specifies the pre effect EQ2 gain
Pre EQ 2 Q	PE2Q	0.100 to 20.0	Specifies the pre effect EQ2 Q (bandwidth)
Pre EQ 3 Freq.	PE3F	1.00 k to 10.0 kHz	Specifies the pre effect EQ3 frequency
Pre EQ 3 Gain	PE3G	-12.0 to 12.0 dB	Specifies the pre effect EQ3 gain
Pre EQ 3 Q	PE3Q	0.100 to 20.0	Specifies the pre effect EQ3 Q (bandwidth)
Comp. Threshold	CTHR	-54.0 to 0.0 dB	Level at which compressor activates
Comp. Ratio	CRAT	1:1 to ∞:1	Compression ratio
Comp. Attack	CATT	0 to 120 ms	Time required for compressor to peak after exceeding threshold
Comp. Release	CREL	6 to 11500 ms	Time required for compressor to terminate after going below threshold
Comp. Knee	CKNE	Hard, 1 to 5	Adjusts the width of the gain curve just above the threshold
Comp. Gain	CGAI	0.0 to 18.0 dB	Output level
N. G. Threshold	NGTH	0.0 to 10.0	Level at which the noise gate activates
N. G. Attack	NGAT	0.0 to 120 ms	Time required for the noise gate to open after signal exceeds threshold
N. G. Hold	NGHL	0.02 to 2040 ms	Time noise gate stays open
N. G. Decay	NGDC	6 to 44500 ms	Time required for the noise gate to close after signal goes below threshold
Wave	WAVE	Sine, Triangle	Modulation waveform
Phaser Speed	PHSP	0.0 to 10.0	Modulation speed
Phaser Depth	PHDP	0.0 to 10.0	Modulation depth
Phaser Feedback	PHFB	-99 to 99	Phaser feedback
Phaser Level	PHLV	0.0 to 10.0	Phaser level
FB. Delay	DTFB	0.0 to 1000.0 ms	Loop delay time
Tap L	DT.L	0 to 100 %	Left channel delay output time (see <a href="#">page 3</a> )
Tap R	DT.R	0 to 100 %	Right channel delay output time (see <a href="#">page 3</a> )
Delay FB. Gain	D.FB	-99 to 99	Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback)
Delay High	D.HI	0.1 to 1.0	Delay high-frequency feedback ratio
Delay Level	D.LVL	0.0 to 10.0	Delay level
High Pass Filter	DHPF	Thru to 8.00 kHz	High-pass filter cutoff frequency. For delay, reverb
Low Pass Filter	DLPF	50.0 Hz to Thru	Low-pass filter cutoff frequency. For delay, reverb
Reverb Ini. Delay	RIDL	0.0 to 500.0 ms	Initial delay before reverb begins
Reverb Time	RT	0.3 to 99.0 s	Reverb time
Reverb High	R.HI	0.1 to 1.0 ms	High-frequency reverb time ratio
Reverb Diffusion	RDIF	0 to 10	Left and right reverb spread
Reverb Density	RDNS	0 to 100	Reverb density
Reverb Level	RLVL	0.0 to 10.0	Reverb level

## Acoustic Multi

Multi effect for electric-acoustic guitar.

Parameter	Display	Range	Description
<b>Mic Type</b>	TYPE	Condenser1, Condenser2, Dynamic1, Dynamic2, Tube1, Tube2, Nylon String1, Nylon String2	Microphone simulator type
<b>Blend</b>	BLND	0.0 to 10.0	Balance between mic simulator and direct sounds
<b>Bass</b>	BASS	-12.0 to 12.0 dB	Low frequency level
<b>Middle</b>	MID	-12.0 to 12.0 dB	Mid frequency level
<b>Treble</b>	TRE	-12.0 to 12.0 dB	High frequency level
<b>Presence</b>	PRE	-12.0 to 12.0 dB	Extremely high frequency level
<b>Volume</b>	VOL	0.0 to 10.0	Volume
<b>Stereo</b>	STE	0.0 to 10.0	Setting for stereo mic effect
<b>Bass Freq.</b>	BASF	50 Hz to 400 Hz	Frequency for low frequency EQ
<b>Middle Freq.</b>	MIDF	200 Hz to 1.60 kHz	Frequency for mid frequency EQ
<b>Treble Freq.</b>	TREF	600 Hz to 4.80 kHz	Frequency for high frequency EQ
<b>Presence Freq.</b>	PREF	2.00 k to 16.0 kHz	Frequency for extremely high frequency EQ
<b>Limiter</b>	LMSW	Off, On	Limiter switch
<b>Chorus/Delay</b>	ETYP	Off, Chorus, Delay	Effect type
<b>Reverb Type</b>	RTYP	Off, Hall, Room, Plate	Reverb type
<b>Limiter Level</b>	LIM	0.0 to 10.0	Limiter level
<b>Speed/Time</b>	SP/T	0.0 to 10.0	Chorus effect speed/delay time
<b>Depth/FB.</b>	D/FB	0.0 to 10.0	Chorus effect depth/delay feedback
<b>Effect Level</b>	ELVL	0.0 to 10.0	Effect level
<b>Reverb</b>	RLVL	0.0 to 10.0	Reverb level

## Bass Preamp

Pre-amplifier designed for use with bass guitars.

Parameter	Display	Range	Description
Sound Type	TYPE	FLAT, TUBE, SOLID, R&B, VINTAGE, MODERN, CLASSIC, HEAVY, DRIVE, DIST, FUZZ	Basic pre-amplifier sound types
Gain	GAIN	0.0 to 10.0	Adjusts the amount of distortion
Master	MSTR	0.0 to 10.0	Adjusts the volume
Bass	BASS	-15.0 to 15.0 dB	Adjusts level of low frequencies
Low Middle	LMID	-15.0 to 15.0 dB	Adjusts level of lower mid frequencies
Middle	MID	-15.0 to 15.0 dB	Adjusts level of mid frequencies
High Middle	HMID	-15.0 to 15.0 dB	Adjusts level of upper mid frequencies
Treble	TRE	-15.0 to 15.0 dB	Adjusts level of high range frequencies
Bass Freq.	BASF	20.0 Hz to 320 Hz	Bass EQ (peaking type) frequency
Low Mid Freq.	LMDF	80.0 Hz to 1.28 kHz	Low Mid EQ (peaking type) frequency
Middle Freq.	MIDF	250 Hz to 4.00 kHz	Middle EQ (peaking type) frequency
High Mid Freq.	HMDF	500 Hz to 8.00 kHz	High Mid EQ (peaking type) frequency
Treble Freq.	TREF	1.25 kHz to 20.0 kHz	Treble EQ cutoff frequency
Parametric EQ Freq.	PEQF	20.0 Hz to 20.0 kHz	Parametric EQ frequency
Parametric EQ Q	PEQQ	0.100 to 20.0	Parametric EQ bandwidth
Parametric EQ Gain	PEQG	-15.0 to 15.0 dB	Parametric EQ gain
Gate	NGAT	OFF, -53.0 to 0 dB	Level at which the noise gate activates
SP SIM SW	SPSW	Off, R On, LR On	Speaker Simulator ON/OFF. (OFF: Inactive. R On: Only activated on the right channel. LR On: Active on both channels.)
Output Limiter	OLIM	OFF, ON	Output Limiter ON/OFF
Comp. Ratio	CRAT	1:1 to ∞:1	Compression ratio. Automatically adjusts the output level according to the Comp. Gain setting.
Comp. Threshold	CTHR	-54 to 0 dB	Level at which compressor activates
Comp. Attack	CATT	0 to 120 ms	Time required for compressor to peak after exceeding threshold
Comp. Release	CREL	6 to 11500 ms	Time required for compressor to terminate after going below threshold
Comp. Gain	CGAI	0.0 to 18.0 dB	Compressor's output gain when the COMP. Ratio is set to ∞:1. If set so that the volume level stays the same when the Comp. Ratio is 1:1 and ∞:1, it is possible to adjust the amount of compression and keep the volume level stable. This parameter is not effective when the Comp. Ratio is set to 1:1.
Comp. Knee	CKNE	Hard, 1 to 5	Adjusts the width of the gain curve just above the threshold