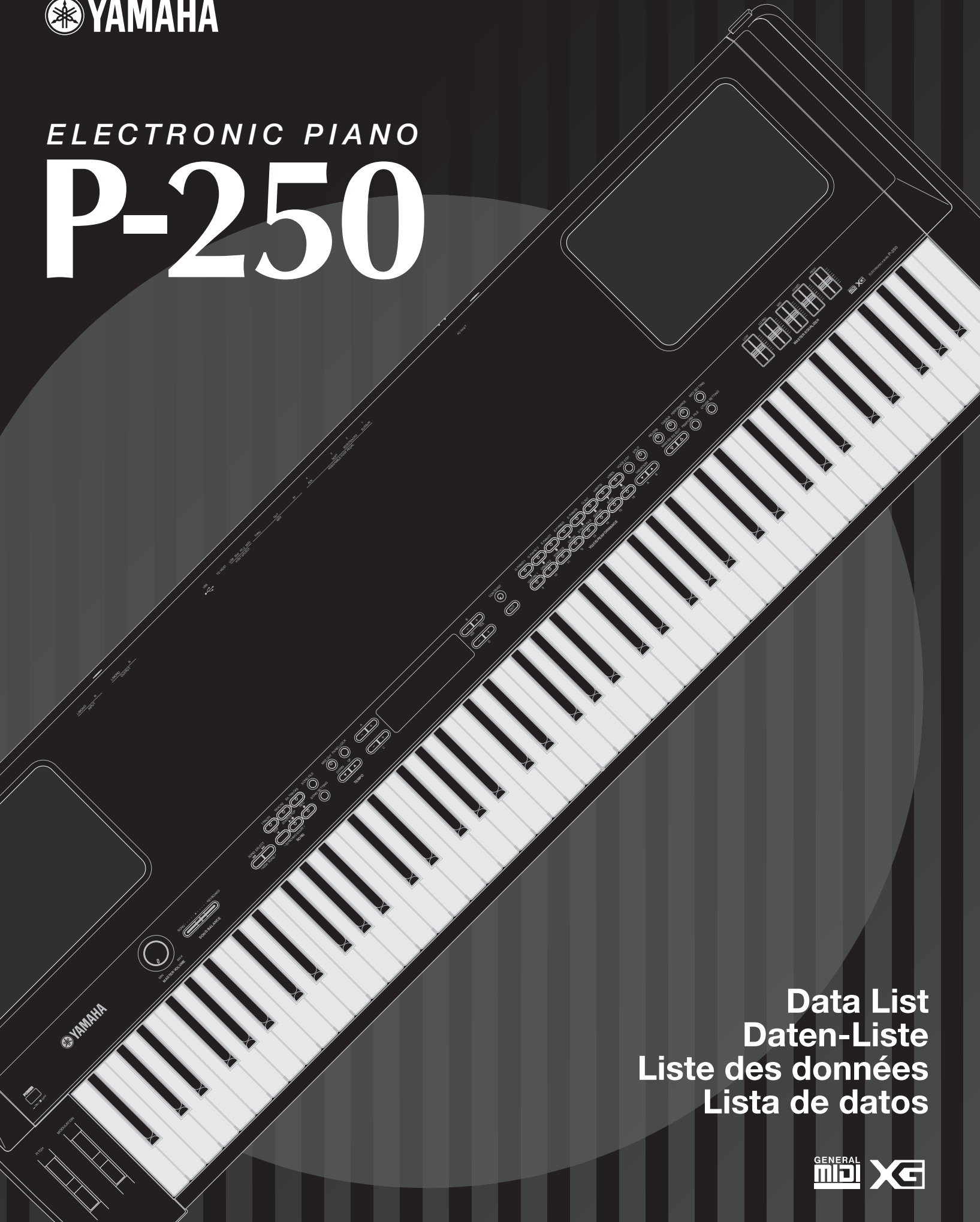




ELECTRONIC PIANO

P-250



Data List
Daten-Liste
Liste des données
Lista de datos



Table of contents / Inhaltsverzeichnis / Table des matières / Índice de contenido

<i>Table of contents / Inhaltsverzeichnis / Table des matières / Índice de contenido</i>	2
<i>Normal (Default) Setting List / Liste der Grundeinstellungen (Default) / Liste des réglages normaux (par défaut) / Lista de ajustes normales (predeterminados)</i>	3
<i>XG Voice List / XG Voice-Liste / Liste des voix XG / Lista de sonidos XG</i>	6
<i>XG Drum Kit List / Liste der Drum Kits (Schlagzeug-Sets) / Liste des kits de percussion XG / Lista del kit de batería XG</i>	10
<i>XG Effect Type List / Liste der XG-Effekttypen / Liste des types d'effets XG / Lista de tipos de efectos XG</i>	12
<i>Effect Parameter List / Liste der Effektparameter / Liste des paramètres d'effets / Lista de parámetros de efectos</i>	13
<i>Effect Data Assign Table / Effektdaten-Zuordnungstabelle / Tableau d'assignation des données d'effets / Tabla de asignación de datos para efectos</i>	20
<i>MIDI Data Format / MIDI-Datenformat / Format des données MIDI / Formato de datos MIDI</i>	22
<i>MIDI Implementation Chart / MIDI Implementierungstabelle / Tableau d'implémentation MIDI / Gráfico de implementación MIDI</i>	32
<i>Specifications / Technische Daten / Spécifications / Especificaciones</i>	33

Normal (Default) Setting List / Liste der Grundeinstellungen (Default) / Liste des réglages normaux (par défaut) / Lista de ajustes normales (predeterminados)

Function	Value	Reference page in the Owner's Manual
Voice selection	Grand Piano 1	34
Split mode	Off	36
Reverb On/Off	ON	37
Tempo	120	25, 51
Song select	Preset song [NewSong]	25, 47, 51
Song balance	127:127	49
Recording mode	Extra track channel: 3	47
	Start: Normal	47
	End: Replace	47
Character code	International	55

■ Settings for Song Recording and Playback [SONG SETTING]

Function	Value	Reference page in the Owner's Manual
Correcting note timing [Quantize]	Off	62
Swing rate [SwingRate]	50%	
Specifying whether playback starts immediately along with the first voicing [QuickPlay]	On	62
Auditioning channel [ChannelListen]	–	63
Deleting data from a channel [ChannelClear]	–	63
Specifying the range and playing back repeatedly [FromToRepeat]	RepeatOff	63
Specifying a phrase for playback by phrase number [PhraseMark]	RepeatOff	63
Playing back a song repeatedly [SongRepeat]	Off	64
Setting the click time signature [TimeSignature]	4/4	64
Setting the click volume [ClickVolume]	100	64
Turning the click on/off [ClickOnOff]	Off	64

■ Editing a Voice in Detail [VOICE EDIT]

Function	Value	Reference page in the Owner's Manual
Setting the octave [Octave]	*1	65
Setting the volume level [Volume]	*1	65
Setting the position of the right and left channels [Pan]	*1	66
Adjusting fine pitch offset between two voices in Dual mode [Detune]	*1	66
Selecting the reverb type [ReverbType]	*1	66
Setting the reverb depth [ReverbSend]	*1	66
Setting the chorus type [ChorusType]	*1	66
Setting the chorus depth [ChorusSend]	*1	67
Turning the chorus on/off [ChorusOnOff]	*1	67
Selecting the insertion effect type [Ins.Type(Ins)]	*1	67
Setting the speed of the vibraphone vibrato effect [VibeRotorSpeed(RotorSpeed)]	*1	67
Turning the Vibraphone vibrato on/off [VibeRotorOnOff (RotorOnOff)]	*1	67
Adjusting the speed of the rotary speaker [RotarySpeed (Rot.Speed)]	*1	67
Adjusting the insertion effect depth [Dry/WetBalance(Dry/Wet)]	*1	68
Adjusting the brightness of the sound [Brightness]	*1	68
Adjusting the resonance effect [HarmonicContent (Harmonic)]	*1	68
Adjusting the low-range frequency of the part EQ [EQ LowFreq.(EQ L.Freq)]	*1	68
Adjusting the high-range frequency of the part EQ [EQ HighFreq.(EQ H.Freq)]	*1	68
Adjusting the low-range gain (amount of boost/cut) of the part EQ [EQLowGain]	*1	68
Adjusting the high-range gain (amount of boost/cut) of the part EQ [EQHighGain]	*1	68
Setting the touch sensitivity [TouchSense]	*1	68
Assigning the Pedal 1 function [Pedal 1]	*1	69
Assigning the Pedal 2 function [Pedal 2]	*1	69
Assigning the Pedal 3 function [Pedal 3]	*1	69
Assigning the Pedal 4 function [Pedal 4]	*1	69
Assigning the modulation wheel function [Modulation]	*1	69
Setting the MSB of the Send Bank Select message [SendBankMSB(SendMSB)]	*1	70
Setting the LSB of the Send Bank Select message [SendBankLSB(SendLSB)]	*1	70
Setting the Program Change message [SendPG#]	*1	70
Turning the Internal tone generator on/off [InternalTG]	*1	70

*1 Each voice and each combination of voices includes the setting.

■ Adjusting the Master Equalizer [MASTER EQ EDIT]

Function	Value	Reference page in the Owner's Manual
Setting the Master Equalizer type	Edit	71
Adjusting the low range gain of the Master Equalizer [LowGain]	0dB	71
Adjusting the low-middle range gain of the Master Equalizer [LowMidGain]	0dB	71
Adjusting the middle range gain of the Master Equalizer [MidGain]	0dB	71
Adjusting the high-middle range gain of the Master Equalizer [HighMidGain]	0dB	71
Adjusting the high range gain of the Master Equalizer [HighGain]	0dB	71
Adjusting the low frequency of the Master Equalizer [LowFreq.]	90 Hz	71
Adjusting the low-middle frequency of the Master Equalizer [LowMidFreq.]	315 Hz	71
Adjusting the middle frequency of the Master Equalizer [MidFreq.]	1.1 kHz	71
Adjusting the high-middle frequency of the Master Equalizer [HighMidFreq.]	2.5 kHz	71
Adjusting the high frequency of the Master Equalizer [HighFreq.]	4.0 kHz	71
Adjusting the low range resonance of the Master Equalizer [LowQ]	0.7	72
Adjusting the low-middle range resonance of the Master Equalizer [LowMidQ]	2.4	72
Adjusting the middle range resonance of the Master Equalizer [MidQ]	2.8	72
Adjusting the high-middle range resonance of the Master Equalizer [HighMidQ]	1.8	72
Adjusting the high range resonance of the Master Equalizer [HighQ]	0.7	72

■ MIDI [MIDI SETTING]

Function	Value	Reference page in the Owner's Manual
Setting the MIDI transmit channel [MidiOutChannel]	Main:Ch1, Left:Ch2, Layer:Ch3, LeftLayer:Ch4	74
Setting the MIDI receive channel [MidiInChannel]	Ch1–16: Song, Ch17: Keyboard, Ch18: Main, Ch19: Left, Ch20: Layer, Ch21: LeftLayer, Others: Off	74
Turning the Local Control On/Off [LocalControl]	On	74
Specifying keyboard performance or song data to be transmitted via MIDI [MidiOutSelect]	Keyboard	74
Specifying the type of data received via MIDI [Receive-Parameter]	All data: On	75
Specifying the type of data transmitted via MIDI [TransmitParameter]	All data: On	75
Transmitting the initial settings on the panel [InitialSetup]	–	75
Executing Voice Data Bulk Dump [VoiceBulkDump]	–	75

■ Other settings [OTHER SETTING]

Function	Value	Reference page in the Owner's Manual
Selecting a touch response [TouchResponse] Fixed volume	Medium	76
	64	
Fine-tuning of the pitch [Tune]	A3=440.0Hz	76
Selecting a tuning curve for a piano voice [PianoTuningCurve]	Stretch	76
Selecting a scale [Scale] Root note	Equal	77
	C	
Setting the Split Point [SplitPoint]	F#2	77
Setting the key [Transpose] Transposition amount	Master	77
	0	
Specifying the depth of the soft pedal [SoftPedalDepth]	5	77
Specifying the depth of string resonance [StringResonanceDepth]	5	77
Specifying the depth of sustain sampling for the damper pedal [SustainSamplingDepth]	5	78
Specifying the volume of the key-off sound [KeyOffSamplingDepth]	5	78
Selecting a pedal function for vibraphone [VibraphonePedalMode]	PianoLike	78
Assigning the START/STOP function to a pedal [PedalStart/Stop]	All pedals : Off	78
Selecting a type of pedal [Pedal Type]	Make(Pedal 1–3), Break(Pedal 4)	78
Setting the point at which the pedal starts to affect the sound [HalfPedalPoint]	0	78
Setting the pitch bend range [PitchBendRange]	2	79
Assigning a function to the [SONG BALANCE] slider [SongBalanceAssign]	SongBalance	79
Switching the speaker on/off [Speaker]	Normal [Head-phoneSW]	79
Locking the Master Equalizer settings [EqualizerLock]	On	79
Selecting items saved at shutdown [MemoryBackUp]	Transpose:Off	79
	Main/LeftVoice:Off	
	OtherSetting:Off	
	Others:On	
Restoring the normal (default) settings [FactorySet]	MemoryFileExcluded	79

XG Drum Kit List / Liste der Drum Kits (Schlagzeug-Sets) / Liste des kits de percussion XG / Lista del kit de batería XG

- Key Off: Keys marked "O" stop sounding the instant they are released.
- Alternate Group: Playing any instrument within a numbered group will immediately stop the sound of any other instrument in the same group of the same number

Same as Standard Kit 1
 No Sound

Bank Select MSB (0-127)			127	127	127	127	127	127	127
Bank Select LSB (0-127)			0	0	0	0	0	0	0
Program Change (1-128)			1	2	9	17	25	26	28
MIDI	Key	Alternate	Standard Kit1	Standard Kit2	Room Kit	Rock Kit	Electro Kit	Analog Kit	Dance Kit
Notes#	Note	Group							
13	C#-1	3	Surdo Mute						
14	D-1	3	Surdo Open						
15	D#-1		Hi Q						
16	E-1		Whip Slap						
17	F-1	4	Scratch H						
18	F#-1	4	Scratch L						
19	G-1		Finger Snap						
20	G#-1		Click Noise						
21	A-1		Metronome Click						
22	A#-1		Metronome Bell						
23	B-1		Seq Click L						
24	C0		Seq Click H						
25	C#0		Brush Tap						
26	D0	O	Brush Swirl						
27	D#0		Brush Slap						
28	E0	O	Brush Tap Swirl				Reverse Cymbal	Reverse Cymbal	Reverse Cymbal
29	F0	O	Snare Roll						
30	F#0		Castanet				Hi Q 2	Hi Q 2	Hi Q 2
31	G0		Snare Soft	Snare Soft 2		Snare Noisy	Snare Snappy Electro	Snare Noisy 4	Snare Techno
32	G#0		Sticks						
33	A0		Kick Soft				Kick 3	Kick 3	Kick Techno Q
34	A#0		Open Rim Shot	Open Rim Shot H Short					Rim Gate
35	B0		Kick Tight			Kick 2	Kick Gate	Kick Analog Short	Kick Techno L
36	C1		Kick	Kick Short		Kick Gate	Kick Gate Heavy	Kick Analog	Kick Techno
37	C#1		Side Stick	Side Stick Light				Side Stick Analog	Side Stick Analog
38	D1		Snare	Snare Short	Snare Snappy	Snare Rock	Snare Noisy 2	Snare Analog	Snare Clap
39	D#1		Hand Clap						
40	E1		Snare Tight	Snare Tight H	Snare Tight Snappy	Snare Rock Tight	Snare Noisy 3	Snare Analog 2	Snare Dry
41	F1		Floor Tom L		Tom Room 1	Tom Rock 1	Tom Electro 1	Tom Analog 1	Tom Analog 1
42	F#1	1	Hi-Hat Closed					Hi-Hat Closed Analog	Hi-Hat Closed 3
43	G1		Floor Tom H		Tom Room 2	Tom Rock 2	Tom Electro 2	Tom Analog 2	Tom Analog 2
44	G#1	1	Hi-Hat Pedal					Hi-Hat Closed Analog 2	Hi-Hat Closed Analog 3
45	A1		Low Tom		Tom Room 3	Tom Rock 3	Tom Electro 3	Tom Analog 3	Tom Analog 3
46	A#1	1	Hi-Hat Open					Hi-Hat Open Analog	Hi-Hat Open 3
47	B1		Mid Tom L		Tom Room 4	Tom Rock 4	Tom Electro 4	Tom Analog 4	Tom Analog 4
48	C2		Mid Tom H		Tom Room 5	Tom Rock 5	Tom Electro 5	Tom Analog 5	Tom Analog 5
49	C#2		Crash Cymbal 1					Crash Analog	Crash Analog
50	D2		High Tom		Tom Room 6	Tom Rock 6	Tom Electro 6	Tom Analog 6	Tom Analog 6
51	D#2		Ride Cymbal 1						
52	E2		Chinese Cymbal						
53	F2		Ride Cymbal Cup						
54	F#2		Tambourine						
55	G2		Splash Cymbal						
56	G#2		Cowbell					Cowbell Analog	Cowbell Analog
57	A2		Crash Cymbal 2						
58	A#2		Vibraslap						
59	B2		Ride Cymbal 2						
60	C3		Bongo H						
61	C#3		Bongo L						
62	D3		Conga H Mute					Conga Analog H	Conga Analog H
63	D#3		Conga H Open					Conga Analog M	Conga Analog M
64	E3		Conga L					Conga Analog L	Conga Analog L
65	F3		Timbale H						
66	F#3		Timbale L						
67	G3		Agogo H						
68	G#3		Agogo L						
69	A3		Cabasa						
70	A#3		Maracas					Maracas 2	Maracas 2
71	B3	O	Samba Whistle H						
72	C4	O	Samba Whistle L						
73	C#4		Guiro Short						
74	D4	O	Guiro Long						
75	D#4		Claves					Claves 2	Claves 2
76	E4		Wood Block H						
77	F4		Wood Block L						
78	F#4		Cuica Mute				Scratch H 2	Scratch H 2	Scratch H 2
79	G4		Cuica Open				Scratch L 2	Scratch L 2	Scratch L 2
80	G#4	2	Triangle Mute						
81	A4	2	Triangle Open						
82	A#4		Shaker						
83	B4		Jingle Bells						
84	C5		Bell Tree						
85	C#5								
86	D5								
87	D#5								
88	E5								
89	F5								
90	F#5								
91	G5								

Bank Select MSB (0-127)			127	127	127	126	126
Bank Select LSB (0-127)			0	0	0	0	0
Program Change (1-128)			33	41	49	1	2
MIDI Note#	Key Off	Alternate Group	Jazz Kit	Brush Kit	Symphony Kit	SFX Kit1	SFX Kit2
13	C#-1	3					
14	D-1	3					
15	D#-1						
16	E-1						
17	F-1	4					
18	F#-1	4					
19	G-1						
20	G#-1						
21	A-1						
22	A#-1						
23	B-1						
24	C0						
25	C#0						
26	D0	O					
27	D#0						
28	E0	O					
29	F0	O					
30	F#0						
31	G0		Snare Jazz H	Brush Slap 2			
32	G#0						
33	A0				Kick Soft 2		
34	A#0			Open Rim Shot Light			
35	B0				Gran Cassa		
36	C1		Kick Jazz	Kick Jazz	Gran Cassa Mute	Cutting Noise	Phone Call
37	C#1		Side Stick Light	Side Stick Light		Cutting Noise 2	Door Squeak
38	D1		Snare Jazz L	Brush Slap 3	Band Snare		Door Slam
39	D#1					String Slap	Scratch Cut
40	E1		Snare Jazz M	Brush Tap 2	Band Snare 2		Scratch H 3
41	F1			Tom Brush 1			Wind Chime
42	F#1	1					Telephone Ring 2
43	G1			Tom Brush 2			
44	G#1						
45	A1			Tom Brush 3			
46	A#1	1					
47	B1			Tom Brush 4			
48	C2			Tom Brush 5			
49	C#2				Hand Cymbal		
50	D2			Tom Brush 6			
51	D#2				Hand Cymbal Short		
52	E2					Flute Key Click	Car Engine Ignition
53	F2						Car Tires Squeal
54	F#2						Car Passing
55	G2						Car Crash
56	G#2						Siren
57	A2				Hand Cymbal 2		Train
58	A#2						Jet Plane
59	B2				Hand Cymbal 2 Short		Starship
60	C3						Burst
61	C#3						Roller Coaster
62	D3						Submarine
63	D#3						
64	E3						
65	F3						
66	F#3						
67	G3						
68	G#3					Shower	Laugh
69	A3					Thunder	Scream
70	A#3					Wind	Punch
71	B3	O				Stream	Heart Beat
72	C4	O				Bubble	Foot Steps
73	C#4					Feed	
74	D4	O					
75	D#4						
76	E4						
77	F4						
78	F#4						
79	G4						
80	G#4	2					
81	A4	2					
82	A#4						
83	B4						
84	C5					Dog	Machine Gun
85	C#5					Horse	Laser Gun
86	D5					Bird Tweet 2	Explosion
87	D#5						Firework
88	E5						
89	F5						
90	F#5					Ghost	
91	G5					Maou	

XG Effect Type List / Liste der XG-Effekttypen / Liste des types d'effets XG / Lista de tipos de efectos XG

■ Reverb

Reverb types that can be selected by panel operation

Type MSB	Type LSB	Effect Name
2	17	Room
1	19	Hall1
1	17	Hall2
3	17	Stage
4	16	Plate

All reverb types

Type MSB	Type LSB	Effect Name
0	0	No Effect
1	0	Hall 1
1	1	Hall 2
1	6	Hall M
1	7	Hall L
1	17	(Hall 2)
1	19	(Hall 1)
2	0	Room 1
2	1	Room 2
2	2	Room 3
2	5	Room S
2	6	Room M
2	7	Room L
2	17	(Room)
3	0	Stage 1
3	1	Stage 2
3	17	(Stage)
3	18	(Sound Board)
4	0	Plate
4	7	GM Plate
4	16	(Plate)
16	0	White Room
17	0	Tunnel
18	0	Canyon
19	0	Basement

■ Chorus

Chorus types that can be selected by panel operation

Type MSB	Type LSB	Effect Name
65	8	Chorus
66	8	Celeste
67	1	Flanger

All chorus types

Type MSB	Type LSB	Effect Name
0	0	No Effect
65	0	Chorus 1
65	1	Chorus 2
65	2	Chorus 3
65	3	GM Chorus 1
65	4	GM Chorus 2
65	5	GM Chorus 3
65	6	GM Chorus 4
65	7	FB Chorus
65	8	Chorus 4
66	0	Celeste 1
66	1	Celeste 2
66	2	Celeste 3
66	8	Celeste 4
66	18	(RotarySpeaker)
67	0	Flanger 1
67	1	Flanger 2
67	7	GM Flanger
67	8	Flanger 3
68	0	Symphonic

■ Variation/Insertion

Insertion effects that can be selected by panel operation

Type MSB	Type LSB	Effect Name
5	16	Delay LCR
6	0	Delay LR
7	0	Echo
8	0	Cross Delay
68	16	Symphonic
66	18	RotarySpeaker
70	22	Tremolo
119	0	VibeRotor
71	27	AutoPan
72	20	Phaser
78	21	Auto Wah
3	18	Sound Board
75	26	AmpSimulator

All variation/insertion effects

Type MSB	Type LSB	Effect Name
0	0	No Effect
1	0	Hall 1
1	1	Hall 2
1	6	Hall M
1	7	Hall L
1	17	(Hall)
1	19	(Hall)
2	0	Room 1
2	1	Room 2
2	2	Room 3
2	5	Room S
2	6	Room M
2	7	Room L
2	17	(Room)
3	0	Stage 1
3	1	Stage 2
3	17	(Stage)
3	18	(Sound Board)
4	0	Plate
4	7	GM Plate
4	16	(Plate)
5	0	Delay L,C,R
5	16	(Delay LCR)
6	0	Delay L,R
7	0	Echo
8	0	Cross Delay
9	0	ER1
9	1	ER2
10	0	Gate Reverb
11	0	Reverse Gate
16	0	White Room
17	0	Tunnel
18	0	Canyon
19	0	Basement
20	0	Karaoke 1
20	1	Karaoke 2
20	2	Karaoke 3
21	0	Tempo Delay
21	8	Tempo Echo
22	0	Tempo Cross
64	0	THRU
65	0	Chorus1
65	1	Chorus2
65	2	Chorus3
65	3	GM Chorus 1
65	4	GM Chorus 2
65	5	GM Chorus 3
65	6	GM Chorus 4
65	7	FB Chorus
65	8	Chorus 4
66	0	Celeste 1
66	1	Celeste 2
66	2	Celeste 3
66	8	Celeste 4
66	18	(RotarySpeaker)
67	0	Flanger 1

Type MSB	Type LSB	Effect Name
67	1	Flanger 2
67	7	GM Flanger
67	8	Flanger 3
68	0	Symphonic
68	16	(Symphonic)
69	0	Rotary SP
69	1	DIST+ROT SP
69	2	OD+ROT SP
69	3	AMP SIM+ROT SP
70	0	Tremoro
70	22	(Tremolo)
71	0	Auto Pan
71	19	(Tremoro)
71	26	(Auto Pan)
72	0	Phaser1
72	8	Phaser 2
72	19	(Phaser)
73	0	Distortion
73	1	COMP+DIST
73	8	STEREO DIST
74	0	Over Drive
74	8	STEREO OD
75	0	AMP SIM.
75	8	STEREO A SIM
75	26	(AmpSimulator)
76	0	3BAND EQ
77	0	2BAND EQ
78	0	AUTO WAH
78	1	AUTO WAH+DIST
78	2	AUTO WAH+OD
78	21	(AUTO WAH)
80	0	PITCH CHANGE
80	1	PITCH CHANGE2
81	0	HRM ENH
82	0	TOUCH WAH1
82	1	TOUCH WAH+DIST
82	2	TOUCH WAH+OD
82	8	TOUCH WAH 2
83	0	COMPRESSOR
84	0	NOISE GATE
85	0	VOICE CANCEL
86	0	2WAY ROT SP
86	1	DIST+2ROTSP.
86	2	OD + 2ROT SP
86	3	A SIM + 2ROT SP
87	0	ENS DETUNE
88	0	AMBIENCE
93	0	TALK MOD
94	0	LO-FI
95	0	DIST+DELAY
95	1	OD+DELAY
96	0	CMP+DIST+DLY
96	1	CMP+OD+DLY
97	0	WAH+DIST+DLY
97	1	WAH+OD+DLY
98	0	V DIST HARD
98	1	V DIST H+DLY
98	2	V DIST SOFT
98	3	V DIST S+DLY
99	0	DUAL ROTSP1
99	1	DUAL ROTSP2
100	0	DIST+T DELAY
100	1	OD+T DELAY
101	0	CMP+DIST+TDLY
101	1	CMP+OD+T DLY
102	0	WAH+DIST+TDLY
102	1	WAH+OD+T DLY
103	0	V DIST H+TDLY
103	1	V DIST S+T DLY
119	0	VIBE VIBRATE

Effect Parameter List / Liste der Effektparameter / Liste des paramètres d'effets / Lista de parámetros de efectos

Items with a dot indicator (●) in the Control column are parameters that can be controlled via assignable controllers.

• Note that this is applicable to the Variation effects (while Insertion is selected) and to the Insertion effects.

HALL1, HALL2
ROOM1, ROOM2, ROOM3
STAGE1, STAGE2
PLATE (reverb, variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Reverb Time	0.3-30.0s	0-69	table#4	
2	Diffusion	0-10	0-10		
3	Initial Delay	0.1mS-99.3ms	0-63	table#5	
4	HPF Cutoff	Thru-8.0kHz	0-52	table#3	
5	LPF Cutoff	1.0k-Thru	34-60	table#3	
6					
7					
8					
9					
10	Dry/Wet	D63>W - D=W - D<W63	1-127		●
11	Rev Delay	0.1mS-99.3mS	0-63	table#5	
12	Density	0-4 (reverb, variation block) 0-2 (insertion block)	0-4 0-2		
13	Er/Rev Balance	E63>R - E=R - E<R63	1-127		
14	High Damp	0.1-1.0	1-10		
15	Feedback Level	-63+63	1-127		
16					

DELAY L, C, R (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Lch Delay	0.1-1638.3ms	1-16383		
2	Rch Delay	0.1-1638.3ms	1-16383		
3	Cch Delay	0.1-1638.3ms	1-16383		
4	Feedback Delay	0.1-1638.3ms	1-16383		
5	Feedback Level	-63+63	1-127		
6	Cch Level	0-127	0-127		
7	High Damp	0.1-1.0	1-10		
8					
9					
10	Dry/Wet	D63>W - D=W - D<W63	1-127		●
11					
12					
13	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
14	EQ Low Gain	-12+12dB	52-76		
15	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
16	EQ High Gain	-12+12dB	52-76		

DELAY L, R (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Lch Delay	0.1-1638.3ms	1-16383		
2	Rch Delay	0.1-1638.3ms	1-16383		
3	Feedback Delay 1	0.1-1638.3ms	1-16383		
4	Feedback Delay 2	0.1-1638.3ms	1-16383		
5	Feedback Level	-63+63	1-127		
6	High Damp	0.1-1.0	1-10		
7					
8					
9					
10	Dry/Wet	D63>W - D=W - D<W63	1-127		●
11					
12					
13	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
14	EQ Low Gain	-12+12dB	52-76		
15	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
16	EQ High Gain	-12+12dB	52-76		

ECHO (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Lch Delay1	0.1-1486.0ms	1-14860		
2	Lch Feedback Level	-63+63	1-127		
3	Rch Delay1	0.1-1486.0ms	1-14860		
4	Rch Feedback Level	-63+63	1-127		
5	High Damp	0.1-1.0	1-10		
6	Lch Delay2	0.1-1486.0ms	1-14860		
7	Rch Delay2	0.1-1486.0ms	1-14860		
8	Delay2 Level	0-127	0-127		
9					
10	Dry/Wet	D63>W - D=W - D<W63	1-127		●
11					
12					
13	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
14	EQ Low Gain	-12+12dB	52-76		
15	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
16	EQ High Gain	-12+12dB	52-76		

CROSS DELAY (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	L->R Delay	0.1-1486.0ms	1-14860		
2	R->L Delay	0.1-1486.0ms	1-14860		
3	Feedback Level	-63+63	1-127		
4	Input Select	L, R, L&R	0-2		
5	High Damp	0.1-1.0	1-10		
6					
7					
8					
9					
10	Dry/Wet	D63>W - D=W - D<W63	1-127		●
11					
12					
13	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
14	EQ Low Gain	-12+12dB	52-76		
15	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
16	EQ High Gain	-12+12dB	52-76		

EARLY REF1, EARLY REF2 (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Type	S-H, L-H, Rdm, Rvs, Plt, Spr	0-5		
2	Room Size	0.1-7.0	0-44	table#6	
3	Diffusion	0-10	0-10		
4	Initial Delay	0.1mS-200.0ms	0-127	table#5	
5	Feedback Level	-63+63	1-127		
6	HPF Cutoff	Thru-8.0kHz	0-52	table#3	
7	LPF Cutoff	1.0k-Thru	34-60	table#3	
8					
9					
10	Dry/Wet	D63>W - D=W - D<W63	1-127		●
11	Liveness	0-10	0-10		
12	Density	0-3	0-3		
13	High Damp	0.1-1.0	1-10		
14					
15					
16					

GATE REVERB

REVERSE GATE (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Type	TypeA, TypeB	0-1		
2	Room Size	0.1-7.0	0-44	table#6	
3	Diffusion	0-10	0-10		
4	Initial Delay	0.1mS-200.0ms	0-127	table#5	
5	Feedback Level	-63+63	1-127		
6	HPF Cutoff	Thru-8.0kHz	0-52	table#3	
7	LPF Cutoff	1.0k-Thru	34-60	table#3	
8					
9					
10	Dry/Wet	D63>W - D=W - D<W63	1-127		●
11	Liveness	0-10	0-10		
12	Density	0-3	0-3		
13	High Damp	0.1-1.0	1-10		
14					
15					
16					

WHITE ROOM

TUNNEL

CANYON

BASEMENT (reverb, variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Reverb Time	0.3-30.0s	0-69	table#4	
2	Diffusion	0-10	0-10		
3	Initial Delay	0.1mS-99.3ms	0-63	table#5	
4	HPF Cutoff	Thru-8.0kHz	0-52	table#3	
5	LPF Cutoff	1.0k-Thru	34-60	table#3	
6	Width	0.5-10.2m	0-37	table#11	
7	Height	0.5-20.2m	0-73	table#11	
8	Depth	0.5-30.2m	0-104	table#11	
9	Wall Vary	0-30	0-30		
10	Dry/Wet	D63>W - D=W - D<W63	1-127		●
11	Rev Delay	0.1mS-99.3mS	0-63	table#5	
12	Density	0-4	0-4		
13	Er/Rev Balance	E63>R - E=R - E<R63	1-127		
14	High Damp	0.1-1.0	1-10		
15	Feedback Level	-63+63	1-127		
16					

KARAOKE1, 2, 3 (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Delay Time	0.1ms-400.0ms	0-127	table#7	
2	Feedback Level	-63+63	1-127		
3	HPF Cutoff	Thru-8.0kHz	0-52	table#3	
4	LPF Cutoff	1.0k-Thru	34-60	table#3	
5					
6					
7					
8					
9					
10	Dry/Wet	D63>W - D=W - D<W63	1-127		●
11					
12					
13					
14					
15					
16					

TEMPO DELAY

TEMPO ECHO (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Delay Time	64th/3-4thx6	0-19	table#14	
2	Feedback Level	-63+63	1-127		
3	Feedback High Dump	0-1.0	0-10		
4	L/R Diffusion	1(-63ms)-64(0ms)-127(63ms)	1-127		
5	Lag	1(-63ms)-64(0ms)-127(63ms)	1-127		
6					
7					
8					
9					
10	Dry/Wet	D63>W-D=W-D<W63	1-127		●
11					
12					
13	EQ Low Frequency	32Hz-2.0kHz	4-40		
14	EQ Low Gain	-12+12dB	52-76		
15	EQ High Frequency	500Hz-16.0kHz	28-58		
16	EQ High Gain	-12+12dB	52-76		

TEMPO CROSS (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Delay Time L>R	64th/3-4thx6	0-19	table#14	
2	Delay Time R>L	64th/3-4thx6	0-19	table#14	
3	Feedback Level	-63+63	1-127		
4	Input Select	L, R, L&R	0-2		
5	Feedback High Dump	0-1.0	0-10		
6	Lag	1(-63ms)-64(0ms)-127(63ms)	1-127		
7					
8					
9					
10	Dry/Wet	D63>W-D=W-D<W63	1-127		●
11					
12					
13	EQ Low Frequency	32Hz-2.0kHz	4-40		
14	EQ Low Gain	-12+12dB	52-76		
15	EQ High Frequency	500Hz-16.0kHz	28-58		
16	EQ High Gain	-12+12dB	52-76		

CHORUS1, 2, 3, 4

CELESTE1, 2, 3, 4 (chorus, variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	LFO Frequency	0.00Hz-39.7Hz	0-127	table#1	
2	LFO Depth	0-127	0-127		
3	Feedback Level	-63+63	1-127		
4	Delay Offset	0.0ms-50ms	0-127	table#2	
5					
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
7	EQ Low Gain	-12+12dB	52-76		
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
9	EQ High Gain	-12+12dB	52-76		
10	Dry/Wet	D63>W - D=W - D<W63	1-127		●
11	EQ Mid Frequency (variation block)	100Hz-10.0kHz	14-54	table#3	
12	EQ Mid Gain (variation block)	-12+12dB	52-76		
13	EQ Mid Width (variation block)	1.0-12.0	10-120		
14					
15	Input Mode	mono/stereo	0-1		
16					

FLANGER1, 2, 3 (chorus, variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	LFO Frequency	0.00Hz-39.7Hz	0-127	table#1	
2	LFO Depth	0-127	0-127		
3	Feedback Level	-63+63	1-127		
4	Delay Offset	0.0ms-50ms	0-127	table#2	
5					
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
7	EQ Low Gain	-12+12dB	52-76		
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
9	EQ High Gain	-12+12dB	52-76		
10	Dry/Wet	D63>W - D=W - D<W63	1-127		●
11	EQ Mid Frequency (variation block)	100Hz-10.0kHz	14-54	table#3	
12	EQ Mid Gain (variation block)	-12+12dB	52-76		
13	EQ Mid Width (variation block)	1.0-12.0	10-120		
14	LFO Phase Difference	-180+180deg(resolution=3deg.)	4-124		
15					
16					

SYMPHONIC (chorus, variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	LFO Frequency	0.00Hz-39.7Hz	0-127	table#1	
2	LFO Depth	0-127	0-127		
3	Delay Offset	0.0ms-50ms	0-127	table#2	
4					
5					
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
7	EQ Low Gain	-12+12dB	52-76		
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
9	EQ High Gain	-12+12dB	52-76		
10	Dry/Wet	D63>W - D=W - D<W63	1-127		●
11	EQ Mid Frequency (variation block)	100Hz-10.0kHz	14-54	table#3	
12	EQ Mid Gain (variation block)	-12+12dB	52-76		
13	EQ Mid Width (variation block)	1.0-12.0	10-120		
14					
15					
16					

ROTARY SPEAKER (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	LFO Frequency	0.00Hz-39.7Hz	0-127	table#1	●
2	LFO Depth	0-127	0-127		
3					
4					
5					
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
7	EQ Low Gain	-12+12dB	52-76		
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
9	EQ High Gain	-12+12dB	52-76		
10	Dry/Wet	D63>W - D=W - D<W63	1-127		
11	EQ Mid Frequency (variation block)	100Hz-10.0kHz	14-54	table#3	
12	EQ Mid Gain (variation block)	-12+12dB	52-76		
13	EQ Mid Width (variation block)	1.0-12.0	10-120		
14					
15					
16					

DISTORTION+ROTARY SPEAKER

OVERDRIVE+ROTARY SPEAKER (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	LFO Frequency	0.0-39.7Hz	0-127		●
2	LFO Depth	0-127	0-127		
3					
4					
5					
6	EQ Low Frequency	32Hz-2.0kHz	4-40		
7	EQ Low Gain	-12+12dB	52-76		
8	EQ High Frequency	500Hz-16.0kHz	28-58		
9	EQ High Gain	-12+12dB	52-76		
10	Dry/Wet	D63>W-D=W-D<W63	1-127		
11					
12					
13					
14	Drive	0-127	0-127		
15	LPF Cutoff	1kHz-Thru	34-60		
16	Output Level	0-127	0-127		

AMP SIM.+ROTARY SPEAKER (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	LFO Freqent	0.0-39.7Hz	0-127		●
2	LFO Depth	0-127	0-127		
3	AMP Type	Off, Stack, Combo, Tube	0-3		
4					
5					
6	EQ Low Frequency	32Hz-2.0kHz	4-40		
7	EQ Low Gain	-12+12dB	52-76		
8	EQ High Frequency	500Hz-16.0kHz	28-58		
9	EQ High Gain	-12+12dB	52-76		
10	Dry/Wet	D63>W-D=W-D<W63	1-127		
11					
12					
13					
14	Drive	0-127	0-127		
15	LPF Cutoff	1kHz-Thru	34-60		
16	Output Level	0-127	0-127		

TREMOLO (variation insertion block)

No.	Parameter	Display	Value	See Table	Control
1	LFO Frequency	0.00Hz-39.7Hz	0-127	table#1	●
2	AM Depth	0-127	0-127		
3	PM Depth	0-127	0-127		
4					
5					
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
7	EQ Low Gain	-12+12dB	52-76		
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
9	EQ High Gain	-12+12dB	52-76		
10					
11	EQ Mid Frequency (variation block)	100Hz-10.0kHz	14-54	table#3	
12	EQ Mid Gain (variation block)	-12+12dB	52-76		
13	EQ Mid Width (variation block)	1.0-12.0	10-120		
14	LFO Phase Difference	-180+180deg(resolution=3deg.)	4-124		
15	Input Mode	mono/stereo	0-1		
16					

AUTO PAN (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	LFO Frequency	0.00Hz-39.7Hz	0-127	table#1	●
2	L/R Depth	0-127	0-127		
3	F/R Depth	0-127	0-127		
4	PAN Direction	L<>R, L>R, L<-R, Lturn, Rturn, L/R	0-5		
5					
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
7	EQ Low Gain	-12+12dB	52-76		
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
9	EQ High Gain	-12+12dB	52-76		
10					
11	EQ Mid Frequency (variation block)	100Hz-10.0kHz	14-54	table#3	
12	EQ Mid Gain (variation block)	-12+12dB	52-76		
13	EQ Mid Width (variation block)	1.0-12.0	10-120		
14					
15					
16					

PHASER 1 (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	LFO Frequency	0.00Hz-39.7Hz	0-127	table#1	
2	LFO Depth	0-127	0-127		
3	Phase Shift Offset	0-127	0-127		
4	Feedback Level	-63+63	1-127		
5					
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
7	EQ Low Gain	-12+12dB	52-76		
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
9	EQ High Gain	-12+12dB	52-76		
10	Dry/Wet	D63>W - D=W - D<W63	1-127		●
11	Stage	4-22 (chorus, variation block)	4-22		
		4-12 (insertion block)	4-12		
12	Diffusion	mono/stereo	0-1		
13					
14					
15					
16					

PHASER 2 (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	LFO Frequency	0.00Hz-39.7Hz	0-127	table#1	
2	LFO Depth	0-127	0-127		
3	Phase Shift Offset	0-127	0-127		
4	Feedback Level	-63+63	1-127		
5					
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
7	EQ Low Gain	-12+12dB	52-76		
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
9	EQ High Gain	-12+12dB	52-76		
10	Dry/Wet	D63>W - D=W - D<W63	1-127		●
11	Stage	3-11	3-6		
12					
13	LFO Phase Difference	-180deg+180deg(resolution=3deg.)	4-124		
14					
15					
16					

DISTORTION**OVERDRIVE (variation, insertion block)**

No.	Parameter	Display	Value	See Table	Control
1	Drive	0-127	0-127		●
2	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
3	EQ Low Gain	-12+12dB	52-76		
4	LPF Cutoff	1.0k-Thru	34-60	table#3	
5	Output Level	0-127	0-127		
6					
7	EQ Mid Frequency	100Hz-10.0kHz	14-54	table#3	
8	EQ Mid Gain	-12+12dB	52-76		
9	EQ Mid Width	1.0-12.0	10-120		
10	Dry/Wet	D63>W - D=W - D<W63	1-127		
11	Edge(Clip Curve)	0-127	0-127		mild-sharp
12					
13					
14					
15					
16					

COMP+DIST (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Drive	0-127	0-127		●
2	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
3	EQ Low Gain	-12+12dB	52-76		
4	LPF Cutoff	1.0k-Thru	34-60	table#3	
5	Output Level	0-127	0-127		
6					
7	EQ Mid Frequency	100Hz-10.0kHz	14-54	table#3	
8	EQ Mid Gain	-12+12dB	52-76		
9	EQ Mid Width	1.0-12.0	10-120		
10	Dry/Wet	D63>W - D=W - D<W63	1-127		
11	Edge(Clip Curve)	0-127	0-127		mild-sharp
12	Attack	1ms-40ms	0-19	table#8	
13	Release	10ms-680ms	0-15	table#9	
14	Threshold	-48dB- -6dB	79-121		
15	Ratio	1.0-20.0	0-7	table#10	
16					

STEREO DISTORTION**STEREO OVER DRIVE (variation, insertion block)**

No.	Parameter	Display	Value	See Table	Control
1	Drive	0-127	0-127		●
2	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
3	EQ Low Gain	-12+12dB	52-76		
4	LPF Cutoff	1kHz-Thru	34-60		
5	Output Level	0-127	0-127		
6					
7	EQ Mid Frequency	100Hz-10.0kHz	14-54	table#3	
8	EQ Mid Gain	-12+12dB	52-76		
9	EQ Mid Width	1-12	10-120		
10	Dry/Wet	D63>W - D=W - D<W63	1-127		
11	Edge(Clip Curve)	0-127	0-127		
12					
13					
14					
15					
16					

AMP SIMULATOR (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Drive	0-127	0-127		●
2	AMP Type	Off, Stack, Combo, Tube	0-3		
3	LPF Cutoff	1.0k-Thru	34-60	table#3	
4	Output Level	0-127	0-127		
5					
6					
7					
8					
9					
10	Dry/Wet	D63>W - D=W - D<W63	1-127		
11	Edge(Clip Curve)	0-127	0-127	mild-sharp	
12					
13					
14					
15					
16					

STEREO AMP SIMULATOR (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Drive	0-127	0-127		●
2	AMP Type	Off, Stack, Combo, Tube	0-3		
3	LPF Cutoff	1kHz-Thru	34-60		
4	Output Level	0-127	0-127		
5					
6					
7					
8					
9					
10	Dry/Wet	D63>W - D=W - D<W63	1-127		
11	Edge(Clip Curve)	0-127	0-127		
12					
13					
14					
15					
16					

3BAND EQ(MONO) (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	EQ Low Gain	-12+12dB	52-76		
2	EQ Mid Frequency	100Hz-10.0kHz	14-54	table#3	
3	EQ Mid Gain	-12+12dB	52-76		
4	EQ Mid Width	1.0-12.0	10-120		
5	EQ High Gain	-12+12dB	52-76		
6	EQ Low Frequency	50Hz-2.0kHz	8-40	table#3	
7	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
8					
9					
10					
11					
12					
13					
14					
15	Input Mode	mono/stereo	0-1		
16					

2BAND EQ(STEREO) (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
2	EQ Low Gain	-12+12dB	52-76		
3	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
4	EQ High Gain	-12+12dB	52-76		
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

AUTO WAH (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	LFO Frequency	0.00Hz-39.7Hz	0-127	table#1	
2	LFO Depth	0-127	0-127		
3	Cutoff Frequency Offset	0-127	0-127		●
4	Resonance	1.0-12.0	10-120		
5					
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
7	EQ Low Gain	-12+12dB	52-76		
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
9	EQ High Gain	-12+12dB	52-76		
10	Dry/Wet	D63>W - D=W - D<W63	1-127		

No.	Parameter	Display	Value	See Table	Control
11	Drive (variation block)	0-127	0-127		
12					
13					
14					
15					
16					

AUTO WAH+DIST

AUTO WHA+ODRV (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	LFO Frequency	0.00Hz-39.7Hz	0-127	table#1	
2	LFO Depth	0-127	0-127		
3	Cutoff Frequency Offset	0-127	0-127		●
4	Resonance	1.0-12.0	10-120		
5					
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
7	EQ Low Gain	-12+12dB	52-76		
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
9	EQ High Gain	-12+12dB	52-76		
10	Dry/Wet	D63>W - D=W - D<W63	1-127		
11	Drive	0-127	0-127		
12	EQ Low Gain(distortion)	-12+12dB	52-76		
13	EQ Mid Gain(distortion)	-12+12dB	52-76		
14	LPF Cutoff	1.0kHz-thru	34-60	table#3	
15	Output Level	0-127	0-127		
16					

PITCH CHANGE 1 (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Pitch	-24+24	40-88		
2	Initial Delay	0.1ms-400.0ms	0-127	table#7	
3	Fine 1	-50+50	14-114		
4	Fine 2	-50+50	14-114		
5	Feedback Level	-63+63	1-127		
6					
7					
8					
9					
10	Dry/Wet	D63>W - D=W - D<W63	1-127		●
11	Pan 1	L63-R63	1-127		
12	Output Level 1	0-127	0-127		
13	Pan 2	L63-R63	1-127		
14	Output Level 2	0-127	0-127		
15					
16					

PITCH CHANGE 2 (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Pitch	-24+24	40-88		
2	Initial Delay	0.1ms-400.0ms	0-127	table#7	
3	Fine 1	-50+50cent	14-114		
4	Fine 2	-50+50cent	14-114		
5	Feedback Level	-63+63	1-127		
6					
7					
8					
9					
10	Dry/Wet	D63>W - D=W - D<W63	1-127		●
11	Pan 1	L63-R63	1-127		
12	Output Level 1	0-127	0-127		
13	Pan 2	L63-R63	1-127		
14	Output Level 2	0-127	0-127		
15					
16					

HARMONIC ENHANCER (variation block)

No.	Parameter	Display	Value	See Table	Control
1	HPF Cutoff	500Hz-16.0kHz	28-58		
2	Drive	0-127	0-127		
3	Mix Level	0-127	0-127		
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

TOUCH WAH 1

TOUCH WAH+DIST (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Sensitive	0-127	0-127		
2	Cutoff Frequency Offset	0-127	0-127		●
3	Resonance	1.0-12.0	10-120		
4					
5					
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
7	EQ Low Gain	-12+12dB	52-76		
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
9	EQ High Gain	-12+12dB	52-76		
10	Dry/Wet	D63>W - D=W - D<W63	1-127		
11	Drive (variation block)	0-127	0-127		
12					
13					
14					
15					
16					

TOUCH WAH 2

TOUCH WAH+ODRV (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Sensitive	0-127	0-127		●
2	Cutoff Frequency Offset	0-127	0-127		
3	Resonance	1.0-12.0	10-120		
4					
5					
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
7	EQ Low Gain	-12+12dB	52-76		
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
9	EQ High Gain	-12+12dB	52-76		
10	Dry/Wet	D63>W - D=W - D<W63	1-127		
11	Drive (variation block)	0-127	0-127		
12	EQ Low Gain (variation block) (distortion)	-12+12dB	52-76		
13	EQ Mid Gain (variation block) (distortion)	-12+12dB	52-76		
14	LPF Cutoff (variation block)	1.0kHz-thru	34-60	table#3	
15	Output Level (variation block)	0-127	0-127		
16	Release (variation block)	10-680ms	52-67	table#12	

COMPRESSOR (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Attack	1-40ms	0-19	table#8	
2	Release	10-680ms	0-15	table#9	
3	Threshold	-48 -6dB	79-121		
4	Ratio	1.0-20.0	0-7	table#10	
5	Output Level	0-127	0-127		
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

NOISE GATE (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Attack	1-40ms	0-19	table#8	
2	Release	10-680ms	0-15	table#9	
3	Threshold	-72 -30dB	55-97		
4	Output Level	0-127	0-127		
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

VOICE CANCEL (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11	Low Adjust	0-26	0-26		
12	High Adjust	0-26	0-26		
13					
14					
15					
16					

2WAY ROTARY SPEAKER (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Rotor Speed	0.0Hz-39.7Hz	0-127	table#1	●
2	Drive Low	0-127	0-127		
3	Drive High	0-127	0-127		
4	Low/High	L63>H - L=H - L<H63	1-127		
5					
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
7	EQ Low Gain	-12+12dB	52-76		
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
9	EQ High Gain	-12+12dB	52-76		
10					
11	Crossover Frequency	100Hz-10.0kHz	14-54	table#3	
12	Mic L-R Angle	0deg-180deg(resolution=3deg.)	0-60		
13					
14					
15					
16					

DIST+2WAY ROTARY SPEAKER

OD+2WAY ROTARY SPEAKER (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Rotor Speed	0.0-39.7Hz	0-127		●
2	Drive Low	0-127	0-127		
3	Drive High	0-127	0-127		
4	Low/High Balance	L63>H-L=H-L<H63	1-127		
5					
6	EQ Low Frequency	32Hz-2.0kHz	4-40		
7	EQ Low Gain	-12+12dB	52-76		
8	EQ High Frequency	500Hz-16.0kHz	28-58		
9	EQ High Gain	-12+12dB	52-76		
10					
11	Crossover Frequency	100Hz-10.0kHz	14-54		
12	Mic L-R Angle	0-180deg	0-60		
13					
14	Drive		0-127		
15	LPF Cutoff	1kHz-Thru	34-60		
16	Output Level		0-127		

AMP SIM.+2WAY ROTARY SP (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Rotor Speed	0.0-39.7Hz	0-127		●
2	Drive Low	0-127	0-127		
3	Drive High	0-127	0-127		
4	Low/High Balance	L63>H-L=H-L<H63	1-127		
5					
6	EQ Low Frequency	32Hz-2.0kHz	4-40		
7	EQ Low Gain	-12+12dB	52-76		
8	EQ High Frequency	500Hz-16.0kHz	28-58		
9	EQ High Gain	-12+12dB	52-76		
10					
11	Crossover Frequency	100Hz-10.0kHz	14-54		
12	Mic L-R Angle	0-180deg	0-60		
13	AMP Type	Off, Stack, Combo, Tube(AMP SIM only)	0-3		
14	Drive		0-127		
15	LPF Cutoff	1kHz-Thru	34-60		
16	Output Level		0-127		

ENSEMBLE DETUNE (chorus, variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Detune	-50+50cent	14-114		
2	Lch Init Delay	0.0ms-50ms	0-127	table#2	
3	Rch Init Delay	0.0ms-50ms	0-127	table#2	
4					
5					
6					
7					
8					
9					
10	Dry/Wet	D63>W - D=W - D<W63	1-127		●
11	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
12	EQ Low Gain	-12+12dB	52-76		
13	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
14	EQ High Gain	-12+12dB	52-76		
15					
16					

AMBIENCE (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Delay Time	0.0ms-50ms	0-127	table#2	
2	Output Phase	normal/invers	0-1		
3					
4					
5					
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
7	EQ Low Gain	-12+12dB	52-76		
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
9	EQ High Gain	-12+12dB	52-76		
10	Dry/Wet	D63>W - D=W - D<W63	1-127		●
11					
12					
13					
14					
15					
16					

TALKING MODULATION (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Vowel	a, i, u, e, o	0-4		●
2	Move speed	1-62	1-62		
3	Drive	0-127	0-127		
4	Output Level	0-127	0-127		
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

LO-FI (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Sampling Freq Control	44.1kHz-345Hz	0-127	table#13	
2	Word Length	1-127	1-127		
3	Output Gain	-6+12dB	0-18		
4	LPF Cutoff	63Hz-Thru	10-60	table#3	
5	Filter Type	Thru, PowerBass, Radio, Tel, Clean, Low	0-5		
6	LPF Resonance	1.0-12.0	10-120		
7	Bit Assign	0-6	0-6		
8	Emphasis	Off/On	0-1		
9					
10	Dry/Wet	D63>W - D=W - D<W63	1-127		●
11					
12					
13					
14					
15	Input Mode	mono/stereo			
16					

DIST+DELAT OVERDRIVE+DELAT (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Lch Delay Time	0.1-1638.3ms	1-16383		
2	Rch Delay Time	0.1-1638.3ms	1-16383		
3	Delay Feedback Time	0.1-1638.3ms	1-16383		
4	Delay Feedback Level	-63+63	1-127		
5	Delay Mix	0-127	0-127		
6	Dist Drive	0-127	0-127		
7	Dist Output Level	0-127	0-127		
8	Dist EQ Low Gain	-12+12dB	52-76		
9	Dist EQ Mid Gain	-12+12dB	52-76		
10	Dry/Wet	D63>W - D=W - D<W63	1-127		●
11					
12					
13					
14					
15					
16					

COMP+DIST+DELAT COMP+OVERDRIVE+DELAT (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Delay Time	0.1-1638.3ms	1-16383		
2	Delay Feedback Level	-63+63	1-127		
3	Delay Mix	0-127	0-127		
4	Dist Drive	0-127	0-127		
5	Dist Output Level	0-127	0-127		
6	Dist EQ Low Gain	-12+12dB	52-76		
7	Dist EQ Mid Gain	-12+12dB	52-76		
8					
9					
10	Dry/Wet	D63>W - D=W - D<W63	1-127		●
11	Comp. Attack	1ms-40ms	0-19	table#8	
12	Comp. Release	10ms-680ms	0-15	table#9	
13	Comp. Threshold	-48dB -6dB	79-121		
14	Comp. Ratio	1.0-20.0	0-7	table#10	
15					
16					

WAH+DIST+DELAT WAH+OVERDRIVE+DELAT (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Delay Time	0.1-1638.3ms	1-16383		
2	Delay Feedback Level	-63+63	1-127		
3	Delay Mix	0-127	0-127		
4	Dist Drive	0-127	0-127		
5	Dist Output Level	0-127	0-127		
6	Dist EQ Low Gain	-12+12dB	52-76		
7	Dist EQ Mid Gain	-12+12dB	52-76		
8					
9					
10	Dry/Wet	D63>W - D=W - D<W63	1-127		●
11	Wah Sensitive	0-127	0-127		
12	Wah Cutoff Freq Offset	0-127	0-127		
13	Wah Resonance	1.0-12.0	10-120		
14	Wah Release	10-680ms	52-67	table#12	
15					
16					

V DISTORTION HARD V DISTORTION SOFT (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Overdrive	0-100%	0-100		
2	Device	Transister/Vintage Tube/ Dist1/Dist2/Fuzz	0-4		
3	Speaker	Flat/Stack/Combo/Twin/ Radio/Megaphone	0-5		
4	Presence	0-20	0-20		
5	Output Level	0-100%	0-100		
6					
7					
8					
9					
10	Dry/Wet Balance	D63>W-D=W-D<W63	1-127		●
11					
12					
13					
14					
15					
16					

V DISTORTION HARD+DELAY
V DISTORTION SOFT+DELAY (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Overdrive	0-100%	0-100		
2	Device	Transister/Vintage Tube/ Dist1/Dist2/Fuzz	0-4		
3	Speaker	Flat/Stack/Combo/Twin/ Radio/Megaphone	0-5		
4	Presence	0-20	0-20		
5	Output Level	0-100%	0-100		
6	Delay Time L	0.1ms-1486.0ms	1-14860		
7	Delay Time R	0.1ms-1486.0ms	1-14860		
8	Delay Feedback Time	0.1ms-1486.0ms	1-14860		
9	Delay Feedback Level	-63+63	1-127		
10	Dry/Wet Balance	D63>W-D=W-D<W63	1-127		●
11	Delay Mix	0-127	0-127		
12					
13					
14					
15					
16					

DUAL ROTOR SPEAKER1, 2 (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Rotor Speed Slow	0.0-2.65Hz	0-63	table#1	
2	Horn Speed Slow	0.0-2.65Hz	0-63	table#1	
3	Rotor Speed Fast	2.69-39.7Hz	64-127	table#1	
4	Horn Speed Fast	2.69-39.7Hz	64-127	table#1	
5	Slow-Fast Time of R	0-127	0-127		
6	Slow-Fast Time of H	0-127	0-127		
7	Drive Low	0-127	0-127		
8	Drive High	0-127	0-127		
9	Low/High Balance	L63>H-L=H-L<H=63	1-127		
10					
11	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
12	EQ Low Gain	-12+12dB	52-76		
13	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
14	EQ High Gain	-12+12dB	52-76		
15	Mic L-R Angle	0-180deg	0-60		
16	Speed Control	Slow/Fast	0/1		●

DIST+TEMPO DELAY
OVERDRIVE+TEMPO DELAY (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Delay Time	64th/3-4thx6	0-19	table#14	
2	Delay Feedback Level	-63+63	1-127		
3	Delay Mix	0-127	0-127		
4	Dist Drive	0-127	0-127		
5	Dist Output Level	0-127	0-127		
6	Dist EQ Low Gain	-12+12dB	52-76		
7	Dist EQ High Gain	-12+12dB	52-76		
8	L/R Diffusion	1(-63ms)-64(0ms)- 127(63ms)	1-127		
9	Lag	1(-63ms)-64(0ms)- 127(63ms)	1-127		
10	Dry/Wet	D63>W-D=W-D<W63	1-127		●
11					
12					
13					
14					
15					
16					

COMP+DIST+TEMPO DELAY
COMP+OD+TEMPO DELAY (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Delay Time	64th/3-4thx6	0-19	table#14	
2	Delay Feedback Level	-63+63	1-127		
3	Delay Mix	0-127	0-127		
4	Dist Drive	0-127	0-127		
5	Dist Output Level	0-127	0-127		
6	Dist EQ Low Gain	-12+12dB	52-76		
7	Dist EQ High Gain	-12+12dB	52-76		
8	L/R Diffusion	1(-63ms)-64(0ms)- 127(63ms)	1-127		
9	Lag	1(-63ms)-64(0ms)- 127(63ms)	1-127		
10	Dry/Wet	D63>W-D=W-D<W63	1-127		●
11	Comp. Attack	1ms-40ms	0-19		
12	Comp. Release	10ms-680ms	0-15		
13	Comp. Threshold	-48dB -6dB	79-121		
14	Comp. Ratio	1.0-20.0	0-7		
15					
16					

WAH+DIST+TEMPO DELAY
WAH+OD+TEMPO DELAY (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Delay Time	64th/3-4thx6	0-19	table#14	
2	Delay Feedback Level	-63+63	1-127		
3	Delay Mix	0-127	0-127		
4	Dist Drive	0-127	0-127		
5	Dist Output Level	0-127	0-127		
6	Dist EQ Low Gain	-12+12dB	52-76		
7	Dist EQ High Gain	-12+12dB	52-76		
8	L/R Diffusion	1(-63ms)-64(0ms)- 127(63ms)	1-127		
9	Lag	1(-63ms)-64(0ms)- 127(63ms)	1-127		
10	Dry/Wet	D63>W-D=W-D<W63	1-127		●
11	Wah Sensitive	0-127	0-127		
12	Wah Cutoff Freq Offset	0-127	0-127		
13	Wah Resonance	1.0-12.0	10-120		
14	Wah Release	10-680ms	52-67		
15					
16					

V DIST HARD+TEMPO DELAY
V DIST SOFT+TEMPO DELAY (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Overdrive	0-100%	0-100		
2	Device	Transister/Vintage Tube/ Dist1/Dist2/Fuzz	0-4		
3	Speaker	Flat/Stack/Combo/Twin/ Radio/Megaphone	0-5		
4	Presence	0-20	0-20		
5	Output Level	0-100%	0-100		
6	Delay Time	64th/3-4thx6	0-19	table#14	
7	Delay Feedback Level	-63+63	1-127		
8	L/R Diffusion	1(-63ms)-64(0ms)- 127(63ms)	1-127		
9	Lag	1(-63ms)-64(0ms)- 127(63ms)	1-127		
10	Dry/Wet Balance	D63>W-D=W-D<W63	1-127		●
11	Delay Mix	0-127	0-127		
12					
13					
14					
15					
16					

VIBE VIBRATE (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1	Vibrate Speed	0.00Hz-39.7Hz	0-127	table#1	
2	Vibrate Depth(AM)	0-127	0-127		
3	Vibrate Depth(PM)	0-127	0-127		
4					
5					
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	
7	EQ Low Gain	-12+12dB	52-76		
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3	
9	EQ High Gain	-12+12dB	52-76		
10	Dry/Wet Balance	D63>W-D=W-D<W63	1-127		
11					
12					
13					
14	LFO Phase Differ- ence	-180+180deg(resolu- tion=3deg.)	4-124		
15	Input Mode	mono/stereo	0-1		
16	Vibrate SW	OFF, ON	0-1		●

NO EFFECT (reverb, chorus, variation, insertion block)
THRU (variation, insertion block)

No.	Parameter	Display	Value	See Table	Control
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

* Parameter 10 Dry/Wet only affects insertion type effects.

Effect Data Assign Table / Effektdaten-Zuordnungstabelle / Tableau d'assignation des données d'effets / Tabla de asignación de datos para efectos

Table#1
LFO Frequency

Data	Value	Data	Value
0	0.00	64	2.69
1	0.04	65	2.78
2	0.08	66	2.86
3	0.13	67	2.94
4	0.17	68	3.03
5	0.21	69	3.11
6	0.25	70	3.20
7	0.29	71	3.28
8	0.34	72	3.37
9	0.38	73	3.45
10	0.42	74	3.53
11	0.46	75	3.62
12	0.51	76	3.70
13	0.55	77	3.87
14	0.59	78	4.04
15	0.63	79	4.21
16	0.67	80	4.37
17	0.72	81	4.54
18	0.76	82	4.71
19	0.80	83	4.88
20	0.84	84	5.05
21	0.88	85	5.22
22	0.93	86	5.38
23	0.97	87	5.55
24	1.01	88	5.72
25	1.05	89	6.06
26	1.09	90	6.39
27	1.14	91	6.73
28	1.18	92	7.07
29	1.22	93	7.40
30	1.26	94	7.74
31	1.30	95	8.08
32	1.35	96	8.41
33	1.39	97	8.75
34	1.43	98	9.08
35	1.47	99	9.42
36	1.51	100	9.76
37	1.56	101	10.1
38	1.60	102	10.8
39	1.64	103	11.4
40	1.68	104	12.1
41	1.72	105	12.8
42	1.77	106	13.5
43	1.81	107	14.1
44	1.85	108	14.8
45	1.89	109	15.5
46	1.94	110	16.2
47	1.98	111	16.8
48	2.02	112	17.5
49	2.06	113	18.2
50	2.10	114	19.5
51	2.15	115	20.9
52	2.19	116	22.2
53	2.23	117	23.6
54	2.27	118	24.9
55	2.31	119	26.2
56	2.36	120	27.6
57	2.40	121	28.9
58	2.44	122	30.3
59	2.48	123	31.6
60	2.52	124	33.0
61	2.57	125	34.3
62	2.61	126	37.0
63	2.65	127	39.7

Table#2
Modulation Delay Offset

Data	Value	Data	Value
0	0.0	64	6.4
1	0.1	65	6.5
2	0.2	66	6.6
3	0.3	67	6.7
4	0.4	68	6.8
5	0.5	69	6.9
6	0.6	70	7.0
7	0.7	71	7.1
8	0.8	72	7.2
9	0.9	73	7.3
10	1.0	74	7.4
11	1.1	75	7.5
12	1.2	76	7.6
13	1.3	77	7.7
14	1.4	78	7.8
15	1.5	79	7.9
16	1.6	80	8.0
17	1.7	81	8.1
18	1.8	82	8.2
19	1.9	83	8.3
20	2.0	84	8.4
21	2.1	85	8.5
22	2.2	86	8.6
23	2.3	87	8.7
24	2.4	88	8.8
25	2.5	89	8.9
26	2.6	90	9.0
27	2.7	91	9.1
28	2.8	92	9.2
29	2.9	93	9.3
30	3.0	94	9.4
31	3.1	95	9.5
32	3.2	96	9.6
33	3.3	97	9.7
34	3.4	98	9.8
35	3.5	99	9.9
36	3.6	100	10.0
37	3.7	101	11.1
38	3.8	102	12.2
39	3.9	103	13.3
40	4.0	104	14.4
41	4.1	105	15.5
42	4.2	106	17.1
43	4.3	107	18.6
44	4.4	108	20.2
45	4.5	109	21.8
46	4.6	110	23.3
47	4.7	111	24.9
48	4.8	112	26.5
49	4.9	113	28.0
50	5.0	114	29.6
51	5.1	115	31.2
52	5.2	116	32.8
53	5.3	117	34.3
54	5.4	118	35.9
55	5.5	119	37.5
56	5.6	120	39.0
57	5.7	121	40.6
58	5.8	122	42.2
59	5.9	123	43.7
60	6.0	124	45.3
61	6.1	125	46.9
62	6.2	126	48.4
63	6.3	127	50.0

Table#3
EQ Frequency

Data	Value
0	THRU (0)
1	22
2	25
3	28
4	32
5	36
6	40
7	45
8	50
9	56
10	63
11	70
12	80
13	90
14	100
15	110
16	125
17	140
18	160
19	180
20	200
21	225
22	250
23	280
24	315
25	355
26	400
27	450
28	500
29	560
30	630
31	700
32	800
33	900
34	1.0k
35	1.1k
36	1.2k
37	1.4k
38	1.6k
39	1.8k
40	2.0k
41	2.2k
42	2.5k
43	2.8k
44	3.2k
45	3.6k
46	4.0k
47	4.5k
48	5.0k
49	5.6k
50	6.3k
51	7.0k
52	8.0k
53	9.0k
54	10.0k
55	11.0k
56	12.0k
57	14.0k
58	16.0k
59	18.0k
60	THRU(20.0k)

Table#4
Reverb time

Data	Value	Data	Value
0	0.3	64	17.0
1	0.4	65	18.0
2	0.5	66	19.0
3	0.6	67	20.0
4	0.7	68	25.0
5	0.8	69	30.0
6	0.9		
7	1.0		
8	1.1		
9	1.2		
10	1.3		
11	1.4		
12	1.5		
13	1.6		
14	1.7		
15	1.8		
16	1.9		
17	2.0		
18	2.1		
19	2.2		
20	2.3		
21	2.4		
22	2.5		
23	2.6		
24	2.7		
25	2.8		
26	2.9		
27	3.0		
28	3.1		
29	3.2		
30	3.3		
31	3.4		
32	3.5		
33	3.6		
34	3.7		
35	3.8		
36	3.9		
37	4.0		
38	4.1		
39	4.2		
40	4.3		
41	4.4		
42	4.5		
43	4.6		
44	4.7		
45	4.8		
46	4.9		
47	5.0		
48	5.5		
49	6.0		
50	6.5		
51	7.0		
52	7.5		
53	8.0		
54	8.5		
55	9.0		
56	9.5		
57	10.0		
58	11.0		
59	12.0		
60	13.0		
61	14.0		
62	15.0		
63	16.0		

Table#5
Delay Time(200.0ms)

Data	Value	Data	Value
0	0.1	64	100.8
1	1.7	65	102.4
2	3.2	66	104.0
3	4.8	67	105.6
4	6.4	68	107.1
5	8.0	69	108.7
6	9.5	70	110.3
7	11.1	71	111.9
8	12.7	72	113.4
9	14.3	73	115.0
10	15.8	74	116.6
11	17.4	75	118.2
12	19.0	76	119.7
13	20.6	77	121.3
14	22.1	78	122.9
15	23.7	79	124.4
16	25.3	80	126.0
17	26.9	81	127.6
18	28.4	82	129.2
19	30.0	83	130.7
20	31.6	84	132.3
21	33.2	85	133.9
22	34.7	86	135.5
23	36.3	87	137.0
24	37.9	88	138.6
25	39.5	89	140.2
26	41.0	90	141.8
27	42.6	91	143.3
28	44.2	92	144.9
29	45.7	93	146.5
30	47.3	94	148.1
31	48.9	95	149.6
32	50.5	96	151.2
33	52.0	97	152.8
34	53.6	98	154.4
35	55.2	99	155.9
36	56.8	100	157.5
37	58.3	101	159.1
38	59.9	102	160.6
39	61.5	103	162.2
40	63.1	104	163.8
41	64.6	105	165.4
42	66.2	106	166.9
43	67.8	107	168.5
44	69.4	108	170.1
45	70.9	109	171.7
46	72.5	110	173.2
47	74.1	111	174.8
48	75.7	112	176.4
49	77.2	113	178.0
50	78.8	114	179.5
51	80.4	115	181.1
52	81.9	116	182.7
53	83.5	117	184.3
54	85.1	118	185.8
55	86.7	119	187.4
56	88.2	120	189.0
57	89.8	121	190.6
58	91.4	122	192.1
59	93.0	123	193.7
60	94.5	124	195.3
61	96.1	125	196.9
62	97.7	126	198.4
63	99.3	127	200.0

Table#6
Room Size

Data	Value	Data	Value
0	0.1	64	10.1
1	0.3	65	10.3
2	0.4	66	10.4
3	0.6	67	10.6
4	0.7	68	10.8
5	0.9	69	10.9
6	1.0	70	11.1
7	1.2	71	11.2
8	1.4	72	11.4
9	1.5	73	11.5
10	1.7	74	11.7
11	1.8	75	11.9
12	2.0	76	12.0
13	2.1	77	12.2
14	2.3	78	12.3
15	2.5	79	12.5
16	2.6	80	12.6
17	2.8	81	12.8
18	2.9	82	12.9
19	3.1	83	13.1
20	3.2	84	13.3
21	3.4	85	13.4
22	3.5	86	13.6
23	3.7	87	13.7
24	3.9	88	13.9
25	4.0	89	14.0
26	4.2	90	14.2
27	4.3	91	14.4
28	4.5	92	14.5
29	4.6	93	14.7
30	4.8	94	14.8
31	5.0	95	15.0
32	5.1	96	15.1
33	5.3	97	15.3
34	5.4	98	15.5
35	5.6	99	15.6
36	5.7	100	15.8
37	5.9	101	15.9
38	6.1	102	16.1
39	6.2	103	16.2
40	6.4	104	16.4
41	6.5	105	16.6
42	6.7	106	16.7
43	6.8	107	16.9
44	7.0	108	17.0
45	7.2	109	17.2
46	7.3	110	17.3
47	7.5	111	17.5
48	7.6	112	17.6
49	7.8	113	17.8
50	7.9	114	18.0
51	8.1	115	18.1
52	8.2	116	18.3
53	8.4	117	18.4
54	8.6	118	18.6
55	8.7	119	18.7
56	8.9	120	18.9
57	9.0	121	19.1
58	9.2	122	19.2
59	9.3	123	19.4
60	9.5	124	19.5
61	9.7	125	19.7
62	9.8	126	19.8
63	10.0	127	20.0

Table#7
Delay Time(400.0ms)

Data	Value	Data	Value
0	0.1	64	201.6
1	3.2	65	204.8
2	6.4	66	207.9
3	9.5	67	211.1
4	12.7	68	214.2
5	15.8	69	217.4
6	19.0	70	220.5
7	22.1	71	223.7
8	25.3	72	226.8
9	28.4	73	230.0
10	31.6	74	233.1
11	34.7	75	236.3
12	37.9	76	239.4
13	41.0	77	242.6
14	44.2	78	245.7
15	47.3	79	248.9
16	50.5	80	252.0
17	53.6	81	255.2
18	56.8	82	258.3
19	59.9	83	261.5
20	63.1	84	264.6
21	66.2	85	267.7
22	69.4	86	270.9
23	72.5	87	274.0
24	75.7	88	277.2
25	78.8	89	280.3
26	82.0	90	283.5
27	85.1	91	286.6
28	88.3	92	289.8
29	91.4	93	292.9
30	94.6	94	296.1
31	97.7	95	299.2
32	100.9	96	302.4
33	104.0	97	305.5
34	107.2	98	308.7
35	110.3	99	311.8
36	113.5	100	315.0
37	116.6	101	318.1
38	119.8	102	321.3
39	122.9	103	324.4
40	126.1	104	327.6
41	129.2	105	330.7
42	132.4	106	333.9
43	135.5	107	337.0
44	138.6	108	340.2
45	141.8	109	343.3
46	144.9	110	346.5
47	148.1	111	349.6
48	151.2	112	352.8
49	154.4	113	355.9
50	157.5	114	359.1
51	160.7	115	362.2
52	163.8	116	365.4
53	167.0	117	368.5
54	170.1	118	371.7
55	173.3	119	374.8
56	176.4	120	378.0
57	179.6	121	381.1
58	182.7	122	384.3
59	185.9	123	387.4
60	189.0	124	390.6
61	192.2	125	393.7
62	195.3	126	396.9
63	198.5	127	400.0

Table#9
Compressor Release Time

Data	Value	Data	Value
0	10	8	85
1	15	9	100
2	25	10	115
3	35	11	140
4	45	12	170
5	55	13	230
6	65	14	340
7	75	15	680

Table#10
Compressor Ratio

Data	Value	Data	Value
0	1.0	4	5.0
1	1.5	5	7.0
2	2.0	6	10.0
3	3.0	7	20.0

Table#11
Reverb Width;Depth;Height

Data	Value	Data	Value
0	0.5	64	17.6
1	0.8	65	17.9
2	1.0	66	18.2
3	1.3	67	18.5
4	1.5	68	18.8
5	1.8	69	19.1
6	2.0	70	19.4
7	2.3	71	19.7
8	2.6	72	20.0
9	2.8	73	20.2
10	3.1	74	20.5
11	3.3	75	20.8
12	3.6	76	21.1
13	3.9	77	21.4
14	4.1	78	21.7
15	4.4	79	22.0
16	4.6	80	22.4
17	4.9	81	22.7
18	5.2	82	23.0
19	5.4	83	23.3
20	5.7	84	23.6
21	5.9	85	23.9
22	6.2	86	24.2
23	6.5	87	24.5
24	6.7	88	24.9
25	7.0	89	25.2
26	7.2	90	25.5
27	7.5	91	25.8
28	7.8	92	26.1
29	8.0	93	26.5
30	8.3	94	26.8
31	8.6	95	27.1
32	8.8	96	27.5
33	9.1	97	27.8
34	9.4	98	28.1
35	9.6	99	28.5
36	9.9	100	28.8
37	10.2	101	29.2
38	10.4	102	29.5
39	10.7	103	29.9
40	11.0	104	30.2
41	11.2		
42	11.5		
43	11.8		
44	12.1		
45	12.3		
46	12.6		
47	12.9		
48	13.1		
49	13.4		
50	13.7		
51	14.0		
52	14.2		
53	14.5		
54	14.8		
55	15.1		
56	15.4		
57	15.6		
58	15.9		
59	16.2		
60	16.5		
61	16.8		
62	17.1		
63	17.3		

Table#12
Wah Release Time

Data	Value
52	10.0
53	15.0
54	25.0
55	35.0
56	45.0
57	55.0
58	65.0
59	75.0
60	85.0
61	100.0
62	115.0
63	140.0
64	170.0
65	230.0
66	340.0
67	680.0

Table#13
Sampling Freq Control

Data	Value	Data	Value
0	44.1K	64	678.0
1	22.1K	65	668.0
2	14.7K	66	658.0
3	11.0K	67	649.0
4	8.8K	68	639.0
5	7.4K	69	630.0
6	6.3K	70	621.0
7	5.5K	71	613.0
8	4.9K	72	604.0
9	4.5K	73	596.0
10	4.0K	74	588.0
11	3.7K	75	580.0
12	3.4K	76	573.0
13	3.2K	77	565.0
14	2.9K	78	558.0
15	2.8K	79	551.0
16	2.6K	80	544.0
17	2.5K	81	538.0
18	2.3K	82	531.0
19	2.2K	83	525.0
20	2.1K	84	519.0
21	2.0K	85	513.0
22	1.92K	86	507.0
23	1.84K	87	501.0
24	1.76K	88	496.0
25	1.70K	89	490.0
26	1.63K	90	485.0
27	1.58K	91	479.0
28	1.52K	92	474.0
29	1.47K	93	469.0
30	1.42K	94	464.0
31	1.38K	95	459.0
32	1.34K	96	455.0
33	1.30K	97	450.0
34	1.26K	98	445.0
35	1.23K	99	441.0
36	1.19K	100	437.0
37	1.16K	101	432.0
38	1.13K	102	428.0
39	1.10K	103	424.0
40	1.08K	104	420.0
41	1.05K	105	416.0
42	1.03K	106	412.0
43	1.00K	107	408.0
44	980.0	108	405.0
45	959.0	109	401.0
46	938.0	110	397.0
47	919.0	111	394.0
48	900.0	112	390.0
49	882.0	113	387.0
50	865.0	114	383.0
51	848.0	115	380.0
52	832.0	116	377.0
53	817.0	117	374.0
54	802.0	118	371.0
55	788.0	119	368.0
56	774.0	120	364.0
57	760.0	121	361.0
58	747.0	122	359.0
59	735.0	123	356.0
60	723.0	124	353.0
61	711.0	125	350.0
62	700.0	126	347.0
63	689.0	127	345.0

Table#14
Tempo Delay

Data	Value	Data	Value
0	64th/3	64	4thX51
1	64th.	65	4thX52
2	32th	66	4thX53
3	32th/3	67	4thX54
4	32th.	68	4thX55
5	16th	69	4thX56
6	16th/3	70	4thX57
7	16th.	71	4thX58
8	8th	72	4thX59
9	8th/3	73	4thX60
10	8th.	74	4thX61
11	4th	75	4thX62
12	4th/3	76	4thX63
13	4th.	77	4thX64
14	2nd		
15	2nd/3		
16	2nd.		
17	4thX4		
18	4thX5		
19	4thX6		
20	4thX7		
21	4thX8		
22	4thX9		
23	4thX10		
24	4thX11		
25	4thX12		
26	4thX13		
27	4thX14		
28	4thX15		
29	4thX16		
30	4thX17		
31	4thX18		
32	4th		

MIDI Data Format / MIDI-Datenformat / Format des données MIDI / Formato de datos MIDI

Many MIDI messages listed in the MIDI Data Format are expressed in decimal numbers, binary numbers and hexadecimal numbers. Hexadecimal numbers may include the letter “H” as a suffix.

Also, “n” can freely be defined as any whole number. To enter data/values, refer to the table below.

decimal	hexadecimal	binary
0	00	0000 0000
1	01	0000 0001
2	02	0000 0010
3	03	0000 0011
4	04	0000 0100
5	05	0000 0101
6	06	0000 0110
7	07	0000 0111
8	08	0000 1000
9	09	0000 1001
10	0A	0000 1010
11	0B	0000 1011
12	0C	0000 1100
13	0D	0000 1101
14	0E	0000 1110
15	0F	0000 1111
16	10	0001 0000
17	11	0001 0001
18	12	0001 0010
19	13	0001 0011
20	14	0001 0100
21	15	0001 0101
22	16	0001 0110
23	17	0001 0111
24	18	0001 1000
25	19	0001 1001
26	1A	0001 1010
27	1B	0001 1011
28	1C	0001 1100
29	1D	0001 1101
30	1E	0001 1110
31	1F	0001 1111

decimal	hexadecimal	binary
32	20	0010 0000
33	21	0010 0001
34	22	0010 0010
35	23	0010 0011
36	24	0010 0100
37	25	0010 0101
38	26	0010 0110
39	27	0010 0111
40	28	0010 1000
41	29	0010 1001
42	2A	0010 1010
43	2B	0010 1011
44	2C	0010 1100
45	2D	0010 1101
46	2E	0010 1110
47	2F	0010 1111
48	30	0011 0000
49	31	0011 0001
50	32	0011 0010
51	33	0011 0011
52	34	0011 0100
53	35	0011 0101
54	36	0011 0110
55	37	0011 0111
56	38	0011 1000
57	39	0011 1001
58	3A	0011 1010
59	3B	0011 1011
60	3C	0011 1100
61	3D	0011 1101
62	3E	0011 1110
63	3F	0011 1111

decimal	hexadecimal	binary
64	40	0100 0000
65	41	0100 0001
66	42	0100 0010
67	43	0100 0011
68	44	0100 0100
69	45	0100 0101
70	46	0100 0110
71	47	0100 0111
72	48	0100 1000
73	49	0100 1001
74	4A	0100 1010
75	4B	0100 1011
76	4C	0100 1100
77	4D	0100 1101
78	4E	0100 1110
79	4F	0100 1111
80	50	0101 0000
81	51	0101 0001
82	52	0101 0010
83	53	0101 0011
84	54	0101 0100
85	55	0101 0101
86	56	0101 0110
87	57	0101 0111
88	58	0101 1000
89	59	0101 1001
90	5A	0101 1010
91	5B	0101 1011
92	5C	0101 1100
93	5D	0101 1101
94	5E	0101 1110
95	5F	0101 1111

decimal	hexadecimal	binary
96	60	0110 0000
97	61	0110 0001
98	62	0110 0010
99	63	0110 0011
100	64	0110 0100
101	65	0110 0101
102	66	0110 0110
103	67	0110 0111
104	68	0110 1000
105	69	0110 1001
106	6A	0110 1010
107	6B	0110 1011
108	6C	0110 1100
109	6D	0110 1101
110	6E	0110 1110
111	6F	0110 1111
112	70	0111 0000
113	71	0111 0001
114	72	0111 0010
115	73	0111 0011
116	74	0111 0100
117	75	0111 0101
118	76	0111 0110
119	77	0111 0111
120	78	0111 1000
121	79	0111 1001
122	7A	0111 1010
123	7B	0111 1011
124	7C	0111 1100
125	7D	0111 1101
126	7E	0111 1110
127	7F	0111 1111

- Except the table above, for example 144-159(decimal)/9nH/1001 0000-1001 1111(binary) denotes the Note On Message for each channel (1-16). 176-191/BnH/1011 0000-1011 1111 denotes the Control Change Message for each channel (1-16). 192-207/CnH/1100 0000-1100 1111 denotes the Program Change Message for each channel (1-16). 240/FOH/1111 0000 denotes the start of a System Exclusive Message. 247/F7H/1111 0111 denotes the end of a System Exclusive Message.
- aaH (hexidecimal)/0aaaaaaa (binary) denotes the data address. The address contains High, Mid, and Low.
- bbH/0bbbbbbb denotes the byte count.
- ccH/0ccccccc denotes the check sum.
- ddH/0ddddddd denotes the data/value.

MIDI CHANNEL MESSAGE (1)

○: available

MIDI Events	Status byte		1st Data byte		2nd Data byte		MIDI Reception (respond/ignore)			MIDI Transmission (generated data)			PLAY		REC		
	Status	Data (HEX)	Parameter	Data (HEX)	Parameter	Song	Main Layer Left Layer	Keyboard	Panel (main generation method)	Song	Midi	PLAY	REW	Recorded from panel			
Key Off	8nH	(n:Channel Number)	kk	Key no. (0-127)	vv	Velocity(0-127)	○	○	○	×	○	×	○	×	×		
Key On	9nH	(n:Channel Number)	kk	Key no. (0-127)	vv	Key On :vv=1-127 Key Off :vv=0	○	○	○	○ (Keyboard)	○	×	○	×	○		
Control Change	BnH	(n:Channel Number)	0 (00H)	Bank Select MSB	0 (00H) 64 (40H) 126 (7EH) 127 (7FH)	Normal SFX voice SFX kit Drum kit	○	○	×	○ (Voice)	○	×	○	○	○		
			1 (01H)	Modulation	0-127 (00H...7FH)	Data	○	○	○ (All manually played parts)	○ (Modulation Wheel)	○	×	○	○	×		
			5 (05H)	Portamento Time	0-127 (00H...7FH)	Data	○	○	○ (All manually played parts)	×	○	×	○	○	×		
			6 (06H)	Data Entry MSB	0-127 (00H...7FH)	Data	○	○	○ (All manually played parts)	○ (Voice Edit)	○	×	○	○	○		
			7 (07H)	Main Volume	0-127 (00H...7FH)	Data	○	○	○ (All manually played parts)	○ (Voice Edit)	○	×	○	○	○		
			10 (0AH)	Panpot	0-127 (00H...7FH)	L64	○	○	○ (All manually played parts)	○ (Voice Edit)	○	×	○	○	○		
			11 (0BH)	Expression	0-127 (00H...7FH)	Data	○	○	○ (All manually played parts)	○ *2	○	×	○	○	○		
			32 (20H)	Bank Select LSB	0-127 (00H...7FH)	Data	○	○	○	×	○ (Voice)	○	×	○	○	○	
			38 (26H)	Data Entry LSB	0-127 (00H...7FH)	Data	○	○	○	○	○ (Voice Edit)	○	×	○	×	○	
			64 (40H)	Sustain(Damper)	0-127 (00H...7FH)	Data	○	○	○	○	○ *2	○	×	○	○	○	
			65 (41H)	Portamento	0-127 (00H...7FH)	0...63, 64...127 (OFF, ON)	○	○	○	○	○ (All manually played parts)	×	○	×	○	○	×
			66 (42H)	Sostenuto	0-127 (00H...7FH)	0...63, 64...127 (OFF, ON)	○	○	○	○	○ (All manually played parts)	○ *1	○	×	○	○	○
			67 (43H)	Soft Pedal	0-127 (00H...7FH)	0...63, 64...127 (OFF, ON)	○	○	○	○	○ (All manually played parts)	○ *1	○	×	○	○	○
			71 (47H)	Harmonic Content	0-127 (00H...7FH)	-64...0...+63	○	○	○	○	○ (All manually played parts)	○ *3	○	×	○	○	○
			72 (48H)	Release Time	0-127 (00H...7FH)	-64...0...+63	○	○	○	○	○ (All manually played parts)	×	○	×	○	○	×
			73 (49H)	Attack Time	0-127 (00H...7FH)	-64...0...+63	○	○	○	○	○ (All manually played parts)	×	○	×	○	○	×
			74 (4AH)	Brightness	0-127 (00H...7FH)	-64...0...+63	○	○	○	○	○ (All manually played parts)	○ *3	○	×	○	○	○
			84 (54H)	Portamento Control	0-127 (00H...7FH)	Key no. (0-127)	○	○	○	○	×	×	○	×	○	×	×
			91 (5BH)	Effect1 Depth (Reverb Send Level)	0-127 (00H...7FH)	Data	○	○	○	○	○ (All manually played parts)	○ *3	○	×	○	○	○
			93 (5DH)	Effect3 Depth (Chorus Send Level)	0-127 (00H...7FH)	Data	○	○	○	○	○ (All manually played parts)	○ *3	○	×	○	○	○
			94 (5EH)	Effect4 Depth (Variation Send Level)	0-127 (00H...7FH)	Data	○	○	○	○	○ (All manually played parts)	×	○	×	○	○	×
			96 (60H)	RPN Increment	-	-	○	○	○	○	×	×	○	×	○	×	×
			97 (61H)	RPN Decrement	-	-	○	○	○	○	×	×	○	×	○	×	×
			98 (62H)	NRPN LSB	0-127 (00H...7FH)	Data	○	○	○	○	×	×	○	×	○	○	×
			99 (63H)	NRPN MSB	0-127 (00H...7FH)	Data	○	○	○	○	×	×	○	×	○	○	×
			100 (64H)	RPN LSB	0-127 (00H...7FH)	Data	○	○	○	○	○ (All manually played parts)	○ (Voice Edit)	○	×	○	○	○
			101 (65H)	RPN MSB	0-127 (00H...7FH)	Data	○	○	○	○	○ (All manually played parts)	○ (Voice Edit)	○	×	○	○	○
			0-119 (00H...7FH)		0-127 (00H...7FH)	Data	×	×	×	×	×	○ (Pedal 4, Modulation Wheel)	×	×	×	×	×
Mode Message	BnH	(n:Channel Number)	120 (78H)	All Sound Off	0 (00H)	Data	○	○	○ (All manually played parts)	×	○	×	○	×	×		
			121 (79H)	Reset All Controllers	0 (00H)	Data	○	×	×	×	○	×	○	×	×		
			123 (7BH)	All Note Off	0 (00H)	Data	○	○	○	○ (All manually played parts)	×	○	×	○	×	×	
			124 (7CH)	Omni Off	0 (00H)	Data	○	×	×	×	×	×	×	×	×	×	
			125 (7DH)	Omni On	0 (00H)	Data	○	×	×	×	×	×	×	×	×	×	
			126 (7EH)	Mono	0-16 (00H...10H)	Data	○	×	×	×	×	○	×	○	×	×	
			127 (7FH)	Poly	0 (00H)	Data	○	×	×	×	×	○	×	○	×	×	
Program Change	CnH	(n:Channel Number)	pp (00H...7FH)	Voice number (0-127)	-	-	○	○	×	○ (Voice)	○	×	○	○	○		
Channel After Touch	DnH	(n:Channel Number)	vv (00H...7FH)	Data	-	-	○	○	○ (All manually played parts)	○ *4	○	×	○	×	×		
Polyphonic After Touch	AnH	(n:Channel Number)	kk (00H...7FH)	Key no. (0-127)	vv (00H...7FH)	Data	○	×	×	×	○	×	○	×	×		
Pitch Bend Change	EnH	(n:Channel Number)	cc (00H...7FH)	LSB	dd (00H...7FH)	MSB	○	○	○ (All manually played parts)	○ (Pitchbend Wheel)	○	×	○	○	○		
Realtime Message	F8H	MIDI Clock	-	-	-	-	-	-	×	○	-	-	-	×			
	FAH	Start	-	-	-	-	-	-	×	×	-	-	-	×			
	FBH	Continue	-	-	-	-	-	-	×	×	-	-	-	×			
	FCH	Stop	-	-	-	-	-	-	×	×	-	-	-	×			
	FEH	Active Sense	-	-	-	-	-	-	○	○	-	-	-	×			
	FFH	System Reset	-	-	-	-	-	-	×	×	-	-	-	×			

* The data byte is ignored.

*1 Pedal 1-4

*2 Pedal 1-4, Modulation Wheel

*3 Pedal 4, Modulation Wheel, Voice Edit

*4 Pedal 4, Modulation Wheel

MIDI CHANNEL MESSAGE (2)

Parameters controlled by NRPN (Non-Registered Parameter Numbers)

NRPN		Data Entry		Parameter	Data Range	MIDI Reception (respond/ignore)			MIDI Transmission (generated data)			PLAY		REC
MSB	LSB	MSB	LSB			Song	Main Layer Left LeftLayer	Keyboard	Panel (main generation method)	Song	Midi	PLAY	REW	Recorded from panel
01H	08H	mmH	--	Vibrato Rate	mm : 00H-40H-7FH (-64...0...+63)	○	○	×	×	○	×	○	○	×
01H	09H	mmH	--	Vibrato Depth	mm : 00H-40H-7FH (-64...0...+63)	○	○	×	×	○	×	○	○	×
01H	0AH	mmH	--	Vibrato Delay	mm : 00H-40H-7FH (-64...0...+63)	○	○	×	×	○	×	○	○	×
01H	20H	mmH	--	Low Pass Filter Cutoff Frequency	mm : 00H-40H-7FH (-64...0...+63)	○	×	×	×	○	×	○	○	×
01H	21H	mmH	--	Low Pass Filter Resonance	mm : 00H-40H-7FH (-64...0...+63)	○	×	×	×	○	×	○	○	×
01H	30H	mmH	--	EQ BASS	mm : 00H-40H-7FH (-64...0...+63)	○	×	×	×	○	×	○	○	×
01H	31H	mmH	--	EQ TREBLE	mm : 00H-40H-7FH (-64...0...+63)	○	×	×	×	○	×	○	○	×
01H	34H	mmH	--	EQ BASS Frequency	mm : 04H-28H (32...2.0k [Hz])	○	×	×	×	○	×	○	○	×
01H	35H	mmH	--	EQ TREBLE Frequency	mm : 1CH-3AH (500...16.0k [Hz])	○	×	×	×	○	×	○	○	×
01H	63H	mmH	--	EG Attack Time	mm : 00H-40H-7FH (-64...0...+63)	○	×	×	×	○	×	○	○	×
01H	64H	mmH	--	EG Decay Time	mm : 00H-40H-7FH (-64...0...+63)	○	○	×	×	○	×	○	○	×
01H	66H	mmH	--	EG Release	mm : 00H-40H-7FH (-64...0...+63)	○	×	×	×	○	×	○	○	×
14H	rrH	mmH	--	Drum Low Pass Filter Cutoff Frequency	rr : drum instrument note number mm : 00H-40H-7FH (-64...0...+63)	○	×	×	×	○	×	○	×	×
15H	rrH	mmH	--	Drum Low Pass Filter Resonance	rr : drum instrument note number mm : 00H-40H-7FH (-64...0...+63)	○	×	×	×	○	×	○	×	×
16H	rrH	mmH	--	Drum EG Attack Rate	rr : drum instrument note number mm : 00H-40H-7FH (-64...0...+63)	○	×	×	×	○	×	○	×	×
17H	rrH	mmH	--	Drum EG Decay Rate	rr : drum instrument note number mm : 00H-40H-7FH (-64...0...+63)	○	×	×	×	○	×	○	×	×
18H	rrH	mmH	--	Drum Pitch Coarse	rr : drum instrument note number mm : 00H-40H-7FH (-64...0...+63)	○	×	×	×	○	×	○	×	×
19H	rrH	mmH	--	Drum Pitch Fine	rr : drum instrument note number mm : 00H-40H-7FH (-64...0...+63)	○	×	×	×	○	×	○	×	×
1AH	rrH	mmH	--	Drum Level	rr : drum instrument note number mm : 00H-7FH (0...127)	○	×	×	×	○	×	○	×	×
1CH	rrH	mmH	--	Drum Pan	rr : drum instrument note number mm : 00H, 01H-40H-7FH (RND, L63...C...R63)	○	×	×	×	○	×	○	×	×
1DH	rrH	mmH	--	Drum Reverb Send Level	rr : drum instrument note number mm : 00H-7FH (0...127)	○	×	×	×	○	×	○	×	×
1EH	rrH	mmH	--	Drum Chorus Send Level	rr : drum instrument note number mm : 00H-7FH (0...127)	○	×	×	×	○	×	○	×	×
1FH	rrH	mmH	--	Drum Variation Send Level	rr : drum instrument note number mm : 00H-7FH (0...127) (Variation Connection = SYSTEM) mm : 00H, 01H-7FH (OFF, ON) (Variation Connection = INSERTION)	○	×	×	×	○	×	○	×	×

NRPN MSB: 14H-1FH (for drums) message is accepted as long as the channel is set with a drum voice.

Data Entry LSB: Ignored.

Parameters controlled by RPN (Registered Parameter Numbers)

NRPN		Data Entry		Parameter	Data Range	MIDI Reception (respond/ignore)			MIDI Transmission (generated data)			PLAY		REC
MSB	LSB	MSB	LSB			Song	Main Layer Left LeftLayer	Keyboard	Panel (main generation method)	Song	Midi	PLAY	REW	Recorded from panel
00H	00H	mmH	--	Pitch Bend Sensitivity	mm : 00H-18H (0...+24 [semitones])	○	○	○ (All manually played parts)	○ (Other Setting)	○	×	○	○	○
00H	01H	mmH	llH	Fine Tune	mm ll : 00H 00H -100 [cent] ... mm ll : 40H 00H 0 [cent] ... mm ll : 7FH 7FH 100 [cent]	○	○	○ (All manually played parts)	○ (Voice Edit)	○	×	○	○	○
00H	02H	mmH	--	Coarse Tune	mm : 28H-40H-58H (-24...0...+24 [semitones])	○	○	○ (All manually played parts)	×	○	×	○	○	×
7FH	7FH	--	--	Null	-	○	○	○ (All manually played parts)	×	○	×	○	×	×

MIDI PARAMETER CHANGE TABLE

* Not Received when Receive Parameter SysEx is set to off.

* Not transmitted when Transmit Parameter SysEx is set to off.

MIDI Parameter Change table (XG SYSTEM)

○: available

Address (H)	Size (H)	Data (H)	Parameter	Description	XG Default (H)	MIDI Reception (effective or not for each part)			MIDI Transmission (generated data)			PLAY		REC	
						Song	Main Layer Left LeftLayer	Keyboard	Panel (main generation method)	Song	Midi	PLAY	REW	Recorded from panel	
00	00	00-03	4	00-0F 00-0F 00-0F 00-0F	MASTER TUNE	-102.4...0...+102.3 [cent] 1st bit3-0 → bit15-12 2nd bit3-0 → bit11-8 3rd bit3-0 → bit7-4 4th bit3-0 → bit3-0	*	Panel setting value	○	×	×	×	○	×	×
		04	1	00-7F	MASTER VOLUME	0...127	7F	○	×	×	×	○	×	○	×
		05	1	00-7F	MASTER ATTENUATOR	0...127	40	×	×	×	×	×	×	×	×
		06	1	28-58	TRANSPOSE	-24...0...+24 [semitones]	00	○	×	×	×	○	×	○	×
		7D	1	N	DRUM SETUP RESET	N:Drum setup number	-	○	×	×	×	○	×	○	×
		7E	1	00	XG SYSTEM ON	00=XG system ON	-	○	×	×	×	○	×	○	×
		7F	1	00	ALL PARAMETER RESET	00=ON	-	○	×	×	×	○	×	○	×

TOTAL SIZE 07

Address (H)	Size (H)	Data (H)	Parameter	Description	XG Default (H)	MIDI Reception (effective or not for each part)			MIDI Transmission (generated data)			PLAY		REC	
						Song	Main Layer Left LeftLayer	Keyboard	Panel (main generation method)	Song	Midi	PLAY	REW	Recorded from panel	
02	01	40	2	00-7F VARIATION TYPE MSB 00-7F VARIATION TYPE LSB	Refer to Effect Parameter List	05(=DELAY L.C.R) 00		○		×	○	×	○	○	×
		42	2	00-7F VARIATION PARAMETER 1 MSB 00-7F VARIATION PARAMETER 1 LSB	*	Depends on Variation Type	○ (* Depends on Variation Type)		×	○	×	○	○	○	×
		44	2	00-7F VARIATION PARAMETER 2 MSB 00-7F VARIATION PARAMETER 2 LSB	*	Depends on Variation Type	○ (* Depends on Variation Type)		×	○	×	○	○	○	×
		46	2	00-7F VARIATION PARAMETER 3 MSB 00-7F VARIATION PARAMETER 3 LSB	*	Depends on Variation Type	○ (* Depends on Variation Type)		×	○	×	○	○	○	×
		48	2	00-7F VARIATION PARAMETER 4 MSB 00-7F VARIATION PARAMETER 4 LSB	*	Depends on Variation Type	○ (* Depends on Variation Type)		×	○	×	○	○	○	×
		4A	2	00-7F VARIATION PARAMETER 5 MSB 00-7F VARIATION PARAMETER 5 LSB	*	Depends on Variation Type	○ (* Depends on Variation Type)		×	○	×	○	○	○	×
		4C	2	00-7F VARIATION PARAMETER 6 MSB 00-7F VARIATION PARAMETER 6 LSB	*	Depends on Variation Type	○ (* Depends on Variation Type)		×	○	×	○	○	○	×
		4E	2	00-7F VARIATION PARAMETER 7 MSB 00-7F VARIATION PARAMETER 7 LSB	*	Depends on Variation Type	○ (* Depends on Variation Type)		×	○	×	○	○	○	×
		50	2	00-7F VARIATION PARAMETER 8 MSB 00-7F VARIATION PARAMETER 8 LSB	*	Depends on Variation Type	○ (* Depends on Variation Type)		×	○	×	○	○	○	×
		52	2	00-7F VARIATION PARAMETER 9 MSB 00-7F VARIATION PARAMETER 9 LSB	*	Depends on Variation Type	○ (* Depends on Variation Type)		×	○	×	○	○	○	×
		54	2	00-7F VARIATION PARAMETER 10 MSB 00-7F VARIATION PARAMETER 10 LSB	*	Depends on Variation Type	○ (* Depends on Variation Type)		×	○	×	○	○	○	×
		56	1	00-7F VARIATION RETURN	--dB...0dB...+6dB(0...64...127)	40		○		×	○	×	○	○	×
		57	1	01-7F VARIATION PAN	L63...C...R63	40		○		×	○	×	○	○	×
		58	1	00-7F SEND VARIATION TO REVERB	--dB...0dB...+6dB(0...64...127)	00		○		×	○	×	○	○	×
		59	1	00-7F SEND VARIATION TO CHORUS	--dB...0dB...+6dB(0...64...127)	00		○		×	○	×	○	○	×
		5A	1	00-01 VARIATION CONNECTION	INSERTION, SYSTEM	00		○		×	○	×	○	○	×
		5B	1	00-7F VARIATION PART NUMBER	Reception: Part1...16(0...15) Transmission: Part1...16(0...15) OFF(127)	7F		○		×	○	×	○	○	×
		5C	1	MW VARIATION CONTROL DEPTH	-64...0...+63	40		○		×	○	×	○	○	×
		5D	1	BEND VARIATION CONTROL DEPTH	-64...0...+63	40		○		×	○	×	○	○	×
		5E	1	CAT VARIATION CONTROL DEPTH	-64...0...+63	40		○		×	○	×	○	○	×
		5F	1	AC1 VARIATION CONTROL DEPTH	-64...0...+63	40		○		×	○	×	○	○	×
		60	1	AC2 VARIATION CONTROL DEPTH	-64...0...+63	40		○		×	○	×	○	○	×
TOTAL SIZE		21													

02	01	70	1	00-7F VARIATION PARAMETER 11	Refer to Effect Parameter List	Depends on Variation Type	○ (* Depends on Variation Type)		×	○	×	○	○	○	×
		71	1	00-7F VARIATION PARAMETER 12	*	Depends on Variation Type	○ (* Depends on Variation Type)		×	○	×	○	○	○	×
		72	1	00-7F VARIATION PARAMETER 13	*	Depends on Variation Type	○ (* Depends on Variation Type)		×	○	×	○	○	○	×
		73	1	00-7F VARIATION PARAMETER 14	*	Depends on Variation Type	○ (* Depends on Variation Type)		×	○	×	○	○	○	×
		74	1	00-7F VARIATION PARAMETER 15	*	Depends on Variation Type	○ (* Depends on Variation Type)		×	○	×	○	○	○	×
		75	1	00-7F VARIATION PARAMETER 16	*	Depends on Variation Type	○ (* Depends on Variation Type)		×	○	×	○	○	○	×
TOTAL SIZE		06													

MIDI Parameter Change table (EFFECT2)

Address (H)	Size (H)	Data (H)	Parameter	Description	MIDI Reception (effective or not for each part)			MIDI Transmission (generated data)			PLAY		REC		
					Song	Main Layer Left Layer	Keyboard	Panel (main generation method)	Song	Midi	PLAY	REW	Recorded from panel		
03	n	00	2	00-7F 00-7F	INSERTION EFFECT TYPE MSB INSERTION EFFECT TYPE LSB	Refer to Effect Parameter List	○			○ (Voice Edit)	○	×	○	○	○
		02	1	00-7F	INSERTION EFFECT PARAMETER 1	*	○ (* Depends on Insertion Type)			○ (Voice Edit)	○	×	○	○	○
		03	1	00-7F	INSERTION EFFECT PARAMETER 2	*	○ (* Depends on Insertion Type)			×	○	×	○	○	×
		04	1	00-7F	INSERTION EFFECT PARAMETER 3	*	○ (* Depends on Insertion Type)			○ (Voice Edit)	○	×	○	○	○
		05	1	00-7F	INSERTION EFFECT PARAMETER 4	*	○ (* Depends on Insertion Type)			×	○	×	○	○	×
		06	1	00-7F	INSERTION EFFECT PARAMETER 5	*	○ (* Depends on Insertion Type)			×	○	×	○	○	×
		07	1	00-7F	INSERTION EFFECT PARAMETER 6	*	○ (* Depends on Insertion Type)			×	○	×	○	○	×
		08	1	00-7F	INSERTION EFFECT PARAMETER 7	*	○ (* Depends on Insertion Type)			×	○	×	○	○	×
		09	1	00-7F	INSERTION EFFECT PARAMETER 8	*	○ (* Depends on Insertion Type)			×	○	×	○	○	×
		0A	1	00-7F	INSERTION EFFECT PARAMETER 9	*	○ (* Depends on Insertion Type)			×	○	×	○	○	×
		0B	1	00-7F	INSERTION EFFECT PARAMETER 10	*	○ (* Depends on Insertion Type)			○ (Voice Edit)	○	×	○	○	○
		0C	1	00-7F	INSERTION EFFECT PART NUMBER	Reception: Part1...16(0...15) Transmission: Part1...16(0...15) OFF(127)	○			○ (Voice)	○	×	○	○	○
		0D	1	00-7F	MW INSERTION CONTROL DEPTH	-64...0...+63	○			×	○	×	○	○	×
		0E	1	00-7F	BEND INSERTION CONTROL DEPTH	-64...0...+63	○			×	○	×	○	○	×
		0F	1	00-7F	CAT INSERTION CONTROL DEPTH	-64...0...+63	○			×	○	×	○	○	×
		10	1	00-7F	AC1 INSERTION CONTROL DEPTH	-64...0...+63	○			×	○	×	○	○	×
		11	1	00-7F	AC2 INSERTION CONTROL DEPTH	-64...0...+63	○			×	○	×	○	○	×

TOTAL SIZE 12

		20	1	00-7F	INSERTION EFFECT PARAMETER 11	Refer to Effect Parameter List	○ (* Depends on Insertion Type)			×	○	×	○	○	×
		21	1	00-7F	INSERTION EFFECT PARAMETER 12	*	○ (* Depends on Insertion Type)			×	○	×	○	○	×
		22	1	00-7F	INSERTION EFFECT PARAMETER 13	*	○ (* Depends on Insertion Type)			×	○	×	○	○	×
		23	1	00-7F	INSERTION EFFECT PARAMETER 14	*	○ (* Depends on Insertion Type)			×	○	×	○	○	×
		24	1	00-7F	INSERTION EFFECT PARAMETER 15	*	○ (* Depends on Insertion Type)			×	○	×	○	○	×
		25	1	00-7F	INSERTION EFFECT PARAMETER 16	*	○ (* Depends on Insertion Type)			○ (Voice Edit)	○	×	○	○	○

TOTAL SIZE 6

		30	2	00-7F 00-7F	INSERTION EFFECT PARAMETER 1 MSB INSERTION EFFECT PARAMETER 1 LSB	Refer to Effect Parameter List	○ (* Depends on Insertion Type)			×	○	×	○	○	×
		32	2	00-7F 00-7F	INSERTION EFFECT PARAMETER 2 MSB INSERTION EFFECT PARAMETER 2 LSB	*	○ (* Depends on Insertion Type)			×	○	×	○	○	×
		34	2	00-7F 00-7F	INSERTION EFFECT PARAMETER 3 MSB INSERTION EFFECT PARAMETER 3 LSB	*	○ (* Depends on Insertion Type)			×	○	×	○	○	×
		36	2	00-7F 00-7F	INSERTION EFFECT PARAMETER 4 MSB INSERTION EFFECT PARAMETER 4 LSB	*	○ (* Depends on Insertion Type)			×	○	×	○	○	×
		38	2	00-7F 00-7F	INSERTION EFFECT PARAMETER 5 MSB INSERTION EFFECT PARAMETER 5 LSB	*	○ (* Depends on Insertion Type)			×	○	×	○	○	×
		3A	2	00-7F 00-7F	INSERTION EFFECT PARAMETER 6 MSB INSERTION EFFECT PARAMETER 6 LSB	*	○ (* Depends on Insertion Type)			×	○	×	○	○	×
		3C	2	00-7F 00-7F	INSERTION EFFECT PARAMETER 7 MSB INSERTION EFFECT PARAMETER 7 LSB	*	○ (* Depends on Insertion Type)			×	○	×	○	○	×
		3E	2	00-7F 00-7F	INSERTION EFFECT PARAMETER 8 MSB INSERTION EFFECT PARAMETER 8 LSB	*	○ (* Depends on Insertion Type)			×	○	×	○	○	×
		40	2	00-7F 00-7F	INSERTION EFFECT PARAMETER 9 MSB INSERTION EFFECT PARAMETER 9 LSB	*	○ (* Depends on Insertion Type)			×	○	×	○	○	×
		42	2	00-7F 00-7F	INSERTION EFFECT PARAMETER 10 MSB INSERTION EFFECT PARAMETER 10 LSB	*	○ (* Depends on Insertion Type)			○ (Voice Edit)	○	×	○	○	○

TOTAL SIZE 14

The EFFECT2 Parameter cannot be reset to its factory setting with XG SYSTEM ON.

The second byte of the address is considered as an Insertion effect number.

n : insertion effect number

For effect types that do not require MSB, the Parameters for Address 02-0B will be received and the Parameters for Address 30-42 will not be received.

For effect types that require MSB, the Parameters for Address 30-42 will be received and the Parameters for Address 02-0B will not be received.

When Bulk Dumps that include Effect Type data are transmitted, the Parameters for Address 02-0B will always be transmitted. But, effects that require MSB, when the bulk dump is received the Parameters for Address 02-0B will not be received.

MIDI Parameter Change table (MULTI PART)

Address (H)	Size (H)	Data (H)	Parameter	Description	XG Default (H)	MIDI Reception (effective or not for each part)			MIDI Transmission (generated data)			PLAY		REC	
						Song	Main Layer Left Layer	Keyboard	Pannel (main generation method)	Song	Midi	PLAY	REW	Recorded from pannel	
08	nn	00	1	00-20	NOT USED		×	×	×	×	×	×	×	×	
		01	1	00-7F	BANK SELECT MSB	0...127	part10=7F, other parts=00	○	○	×	×	○	○	×	
		02	1	00-7F	BANK SELECT LSB	0...127	00	○	○	×	×	○	○	×	
		03	1	00-7F	PROGRAM NUMBER	1...128	00	○	○	×	×	○	○	×	
		04	1	00-0F, 0F-7F	Rcv CHANNEL	1...16, OFF	Part No.	○	×	×	×	○	×	○	×
		05	1	00-01	MONO/POLY MODE	MONO, POLY	01	○	×	×	×	○	×	○	×
		06	1	00-02	SAME NOTE NUMBER KEY ON ASSIGN	SINGLE, MULTI, INST(for Drum)	01	○	×	×	×	○	×	○	×
		07	1	00-03	PART MODE	NORMAL, DRUM, DRUMS1...2	part10=02, other parts=00	○	×	×	○ (Drum Voice)	○	×	○	×
		08	1	28-58	NOTE SHIFT	-24...0...+24 [semitones]	40	○	○	×	×	○	×	○	×
		09	2	00-0F, 00-0F	DETUNE	-12.8...0...+12.7 [Hz] 1st bit3-0 → bit7-4 2nd bit3-0 → bit3-0	08 00	○	○	×	×	○	×	○	×
		0B	1	00-7F	VOLUME	0...127	64	○	○	×	×	○	×	○	×
		0C	1	00-7F	VELOCITY SENSE DEPTH	0...127	40	○	○	×	○ (Voice Edit)	○	×	○	○
		0D	1	00-7F	VELOCITY SENSE OFFSET	0...127	40	○	○	×	○ (Voice Edit)	○	×	○	○
		0E	1	00-7F	PAN	RND, L63...C...R63	40	○	○	×	×	○	×	○	×
		0F	1	00-7F	NOTE LIMIT LOW	C-2...G8	00	○	○	×	×	○	×	○	×
		10	1	00-7F	NOTE LIMIT HIGH	C-2...G8	7F	○	○	×	×	○	×	○	×
		11	1	00-7F	DRY LEVEL	0...127	7F	○	○	×	×	○	×	○	×
		12	1	00-7F	CHORUS SEND	0...127	00	○	○	×	×	○	×	○	×
		13	1	00-7F	REVERB SEND	0...127	28	○	○	×	×	○	×	○	×
		14	1	00-7F	VARIATION SEND	0...127	00	○	○	×	×	○	×	○	×
		15	1	00-7F	VIBRATO RATE	-64...0...+63	40	○	○	×	×	○	×	○	×
		16	1	00-7F	VIBRATO DEPTH	-64...0...+63	40	○	○	×	×	○	×	○	×
		17	1	00-7F	VIBRATO DELAY	-64...0...+63	40	○	○	×	×	○	×	○	×
		18	1	00-7F	FILTER CUTOFF FREQUENCY	-64...0...+63	40	○	○	×	×	○	×	○	×
		19	1	00-7F	FILTER RESONANCE	-64...0...+63	40	○	○	×	×	○	×	○	×
		1A	1	00-7F	EG ATTACK TIME	-64...0...+63	40	○	○	×	×	○	×	○	×
		1B	1	00-7F	EG DECAY TIME	-64...0...+63	40	○	○	×	×	○	×	○	×
		1C	1	00-7F	EG RELEASE TIME	-64...0...+63	40	○	○	×	×	○	×	○	×
		1D	1	28-58	MW PITCH CONTROL	-24...0...+24 [semitones]	40	○	○	×	×	○	×	○	×
		1E	1	00-7F	MW LOW PASS FILTER CONTROL	-9600...0...+9450 [cent]	40	○	○	×	×	○	×	○	×
		1F	1	00-7F	MW AMPLITUDE CONTROL	-100...0...+100 [%]	40	○	○	×	×	○	×	○	×
		20	1	00-7F	MW LFO PMOD DEPTH	0...127	0A	○	○	×	×	○	×	○	×
		21	1	00-7F	MW LFO FMOD DEPTH	0...127	00	○	○	×	×	○	×	○	×
		22	1	00-7F	MW LFO AMOD DEPTH	0...127	00	○	○	×	×	○	×	○	×
		23	1	28-58	BEND PITCH CONTROL	-24...0...+24 [semitones]	42	○	○	×	×	○	×	○	×
		24	1	00-7F	BEND LOW PASS FILTER CONTROL	-9600...0...+9450 [cent]	40	○	○	×	×	○	×	○	×
		25	1	00-7F	BEND AMPLITUDE CONTROL	-100...0...+100 [%]	40	○	○	×	×	○	×	○	×
		26	1	00-7F	BEND LFO PMOD DEPTH	0...127	00	○	○	×	×	○	×	○	×
		27	1	00-7F	BEND LFO FMOD DEPTH	0...127	00	○	○	×	×	○	×	○	×
		28	1	00-7F	BEND LFO AMOD DEPTH	0...127	00	○	○	×	×	○	×	○	×

TOTAL SIZE 29

		30	1	00-01	Rcv PITCH BEND	OFF, ON	01	○	×	×	×	○	×	○	×	×
		31	1	00-01	Rcv CH AFTER TOUCH(CAT)	OFF, ON	01	○	×	×	×	○	×	○	×	×
		32	1	00-01	Rcv PROGRAM CHANGE	OFF, ON	01	○	×	×	×	○	×	○	×	×
		33	1	00-01	Rcv CONTROL CHANGE	OFF, ON	01	○	×	×	×	○	×	○	×	×
		34	1	00-01	Rcv POLY AFTER TOUCH(PAT)	OFF, ON	01	○	×	×	×	○	×	○	×	×
		35	1	00-01	Rcv NOTE MESSAGE	OFF, ON	01	○	×	×	×	○	×	○	×	×
		36	1	00-01	Rcv RPN	OFF, ON	01	○	×	×	×	○	×	○	×	×
		37	1	00-01	Rcv NRPN	OFF, ON	XGmode=01, GMmode=00	○	×	×	×	○	×	○	×	×
		38	1	00-01	Rcv MODULATION	OFF, ON	01	○	×	×	×	○	×	○	×	×
		39	1	00-01	Rcv VOLUME	OFF, ON	01	○	×	×	×	○	×	○	×	×
		3A	1	00-01	Rcv PAN	OFF, ON	01	○	×	×	×	○	×	○	×	×
		3B	1	00-01	Rcv EXPRESSION	OFF, ON	01	○	×	×	×	○	×	○	×	×
		3C	1	00-01	Rcv HOLD1	OFF, ON	01	○	×	×	×	○	×	○	×	×
		3D	1	00-01	Rcv PORTAMENTO	OFF, ON	01	○	×	×	×	○	×	○	×	×
		3E	1	00-01	Rcv SOSTENUTO	OFF, ON	01	○	×	×	×	○	×	○	×	×
		3F	1	00-01	Rcv SOFT PEDAL	OFF, ON	01	○	×	×	×	○	×	○	×	×
		40	1	00-01	Rcv BANK SELECT	OFF, ON	01	○	×	×	×	○	×	○	×	×
		41	1	00-7F	SCALE TUNING C	-63...0...+63 [cent]	40	○	○	×	○ (Other Setting)	○	×	○	×	○
		42	1	00-7F	SCALE TUNING C#	-63...0...+63 [cent]	40	○	○	×	○ (Other Setting)	○	×	○	×	○
		43	1	00-7F	SCALE TUNING D	-63...0...+63 [cent]	40	○	○	×	○ (Other Setting)	○	×	○	×	○
		44	1	00-7F	SCALE TUNING D#	-63...0...+63 [cent]	40	○	○	×	○ (Other Setting)	○	×	○	×	○
		45	1	00-7F	SCALE TUNING E	-63...0...+63 [cent]	40	○	○	×	○ (Other Setting)	○	×	○	×	○
		46	1	00-7F	SCALE TUNING F	-63...0...+63 [cent]	40	○	○	×	○ (Other Setting)	○	×	○	×	○
		47	1	00-7F	SCALE TUNING F#	-63...0...+63 [cent]	40	○	○	×	○ (Other Setting)	○	×	○	×	○
		48	1	00-7F	SCALE TUNING G	-63...0...+63 [cent]	40	○	○	×	○ (Other Setting)	○	×	○	×	○
		49	1	00-7F	SCALE TUNING G#	-63...0...+63 [cent]	40	○	○	×	○ (Other Setting)	○	×	○	×	○
		4A	1	00-7F	SCALE TUNING A	-63...0...+63 [cent]	40	○	○	×	○ (Other Setting)	○	×	○	×	○
		4B	1	00-7F	SCALE TUNING A#	-63...0...+63 [cent]	40	○	○	×	○ (Other Setting)	○	×	○	×	○
		4C	1	00-7F	SCALE TUNING B	-63...0...+63 [cent]	40	○	○	×	○ (Other Setting)	○	×	○	×	○
		4D	1	28-58	CAT PITCH CONTROL	-24...0...+24 [semitones]	40	○	○	×	×	○	×	○	×	×
		4E	1	00-7F	CAT LOW PASS FILTER CONTROL	-9600...0...+9450 [cent]	40	○	○	×	×	○	×	○	×	×
		4F	1	00-7F	CAT AMPLITUDE CONTROL	-100...0...+100 [%]	40	○	○	×	×	○	×	○	×	×
		50	1	00-7F	CAT LFO PMOD DEPTH	0...127	00	○	○	×	×	○	×	○	×	×
		51	1	00-7F	CAT LFO FMOD DEPTH	0...127	00	○	○	×	×	○	×	○	×	×
		52	1	00-7F	CAT LFO AMOD DEPTH	0...127	00	○	○	×	×	○	×	○	×	×
		53	1	28-58	PAT PITCH CONTROL	-24...0...+24 [semitones]	40	○	×	×	×	○	×	○	×	×
		54	1	00-7F	PAT LOW PASS FILTER CONTROL	-9600...0...+9450 [cent]	40	○	×	×	×	○	×	○	×	×

Address (H)	Size (H)	Data (H)	Parameter	Description	XG Default (H)	MIDI Reception (effective or not for each part)			MIDI Transmission (generated data)			PLAY		REC	
						Song	Main Layer Left Layer	Keyboard	Panel (main generation method)	Song	Midi	PLAY	REW	Recorded from panel	
	55	1	00-7F	PAT AMPLITUDE CONTROL	-100...0...+100 [%]	40	○	×	×	×	○	×	○	×	×
	56	1	00-7F	PAT LFO PMOD DEPTH	0...127	00	○	×	×	×	○	×	○	×	×
	57	1	00-7F	PAT LFO FMOD DEPTH	0...127	00	○	×	×	×	○	×	○	×	×
	58	1	00-7F	PAT LFO AMOD DEPTH	0...127	00	○	×	×	×	○	×	○	×	×
	59	1	00-5F	AC1 CONTROLLER NUMBER	0...95	10	○	×	×	×	○	×	○	×	×
	5A	1	28-58	AC1 PITCH CONTROL	-24...0...+24 [semitones]	40	○	×	×	×	○	×	○	×	×
	5B	1	00-7F	AC1 LOW PASS FILTER CONTROL	-9600...0...+9450 [cent]	40	○	×	×	×	○	×	○	×	×
	5C	1	00-7F	AC1 AMPLITUDE CONTROL	-100...0...+100 [%]	40	○	×	×	×	○	×	○	×	×
	5D	1	00-7F	AC1 LFO PMOD DEPTH	0...127	00	○	×	×	×	○	×	○	×	×
	5E	1	00-7F	AC1 LFO FMOD DEPTH	0...127	00	○	×	×	×	○	×	○	×	×
	5F	1	00-7F	AC1 LFO AMOD DEPTH	0...127	00	○	×	×	×	○	×	○	×	×
	60	1	00-5F	AC2 CONTROLLER NUMBER	0...95	11	○	×	×	×	○	×	○	×	×
	61	1	28-58	AC2 PITCH CONTROL	-24...0...+24 [semitones]	40	○	×	×	×	○	×	○	×	×
	62	1	00-7F	AC2 LOW PASS FILTER CONTROL	-9600...0...+9450 [cent]	40	○	×	×	×	○	×	○	×	×
	63	1	00-7F	AC2 AMPLITUDE CONTROL	-100...0...+100 [%]	40	○	×	×	×	○	×	○	×	×
	64	1	00-7F	AC2 LFO PMOD DEPTH	0...127	00	○	×	×	×	○	×	○	×	×
	65	1	00-7F	AC2 LFO FMOD DEPTH	0...127	00	○	×	×	×	○	×	○	×	×
	66	1	00-7F	AC2 LFO AMOD DEPTH	0...127	00	○	×	×	×	○	×	○	×	×
	67	1	00-01	PORTAMENTO SWITCH	OFF, ON	00	○	○	×	×	○	×	○	○	×
	68	1	00-7F	PORTAMENTO TIME	0...127	00	○	○	×	×	○	×	○	○	×
	69	1	00-7F	PITCH EG INITIAL LEVEL	-64...0...+63	40	○	×	×	×	○	×	○	×	×
	6A	1	00-7F	PITCH EG ATTACK TIME	-64...0...+63	40	○	×	×	×	○	×	○	×	×
	6B	1	00-7F	PITCH EG RELEASE LEVEL	-64...0...+63	40	○	×	×	×	○	×	○	×	×
	6C	1	00-7F	PITCH EG RELEASE TIME	-64...0...+63	40	○	×	×	×	○	×	○	×	×
	6D	1	01-7F	VELOCITY LIMIT LOW	1...127	01	○	×	×	×	○	×	○	×	×
	6E	1	01-7F	VELOCITY LIMIT HIGH	1...127	7F	○	×	×	×	○	×	○	×	×

TOTAL SIZE 3F

	70	1		NOT USED	-	-	-	-	-	-	-	-	-	-	-
	71	1		NOT USED	-	-	-	-	-	-	-	-	-	-	-
	72	1	00-7F	EQ BASS GAIN	-12dB...+12dB	40	○	○	×	○ (Voice Edit)	○	×	○	○	○
	73	1	00-7F	EQ TREBLE GAIN	-12dB...+12dB	40	○	○	×	○ (Voice Edit)	○	×	○	○	○

TOTAL SIZE 04

	74	1		NOT USED	-	-	-	-	-	-	-	-	-	-	-
	75	1		NOT USED	-	-	-	-	-	-	-	-	-	-	-
	76	1	04-28	EQ BASS FREQUENCY	32...2.0k [Hz]	0C	○	○	×	○ (Voice Edit)	○	×	○	○	○
	77	1	1C-3A	EQ TREBLE FREQUENCY	500...16.0k [Hz]	36	○	○	×	○ (Voice Edit)	○	×	○	○	○
	78	1		NOT USED	-	-	-	-	-	-	-	-	-	-	-
	79	1		NOT USED	-	-	-	-	-	-	-	-	-	-	-
	7A	1		NOT USED	-	-	-	-	-	-	-	-	-	-	-
	7B	1		NOT USED	-	-	-	-	-	-	-	-	-	-	-
	7C	1		NOT USED	-	-	-	-	-	-	-	-	-	-	-
	7D	1		NOT USED	-	-	-	-	-	-	-	-	-	-	-
	7E	1		NOT USED	-	-	-	-	-	-	-	-	-	-	-
	7F	1		NOT USED	-	-	-	-	-	-	-	-	-	-	-

TOTAL SIZE 0C

- nn = PART NUMBER
- If there is a Drum Voice assigned to the part, the following parameters are ineffective.
- BANK SELECT LSB
 - MONO/POLY MODE
 - SCALE TUNING
 - PORTAMENTO
 - PITCH EG
 - FILTER MODULATION DEPTH (FMOD DEPTH)
 - AMPLITUDE MODULATION DEPTH (AMOD DEPTH)

MIDI Parameter Change table (DRUM SETUP)

Address (H)	Size (H)	Data (H)	Parameter	Description	XG Default (H)	MIDI Reception (effective or not for each part)			MIDI Transmission (generated data)			PLAY		REC		
						Song	Main Layer Left LeftLayer	Keyboard	Panel (main generation method)	Song	Midi	PLAY	REW	Recorded from panel		
3n	rr	00	1	00-7F	PITCH COARSE	-64...0...+63	40	○	×	×	×	○	×	○	×	×
		01	1	00-7F	PITCH FINE	-64...0...+63 [cent]	40	○	×	×	×	○	×	○	×	×
		02	1	00-7F	LEVEL	0...127	Depends on the note	○	×	×	×	○	×	○	×	×
		03	1	00-7F	ALTERNATE GROUP	OFF, 1...127	Depends on the note	○	×	×	×	○	×	○	×	×
		04	1	00-7F	PAN	RND, L63...C...R63	Depends on the note	○	×	×	×	○	×	○	×	×
		05	1	00-7F	REVERB SEND	0...127	Depends on the note	○	×	×	×	○	×	○	×	×
		06	1	00-7F	CHORUS SEND	0...127	Depends on the note	○	×	×	×	○	×	○	×	×
		07	1	00-7F	VARIATION SEND	0...127	7F	○	×	×	×	○	×	○	×	×
		08	1	00-01	KEY ASSIGN	SINGLE, MULTI	00	○	×	×	×	○	×	○	×	×
		09	1	00-01	Rcv NOTE OFF	OFF, ON	Depends on the note	○	×	×	×	○	×	○	×	×
		0A	1	00-01	Rcv NOTE ON	OFF, ON	01	○	×	×	×	○	×	○	×	×
		0B	1	00-7F	LOW PASS FILTER CUTOFF FREQUENCY	-64...0...+63	40	○	×	×	×	○	×	○	×	×
		0C	1	00-7F	LOW PASS FILTER RESONANCE	-64...0...+63	40	○	×	×	×	○	×	○	×	×
		0D	1	00-7F	EG ATTACK RATE	-64...0...+63	40	○	×	×	×	○	×	○	×	×
		0E	1	00-7F	EG DECAY1 RATE	-64...0...+63	40	○	×	×	×	○	×	○	×	×
		0F	1	00-7F	EG DECAY2 RATE	-64...0...+63	40	○	×	×	×	○	×	○	×	×

TOTAL SIZE 10

		20	1	00-7F	EQ BASS GAIN	-12...+12 [dB]	40	○	×	×	×	○	×	○	×	×
		21	1	00-7F	EQ TREBLE GAIN	-12...+12 [dB]	40	○	×	×	×	○	×	○	×	×
		22	1		NOT USED	-	-	-	-	-	-	-	-	-	-	-
		23	1		NOT USED	-	-	-	-	-	-	-	-	-	-	-
		24	1	04-28	EQ BASS FREQUENCY	32...2.0k [Hz]	0C	○	×	×	×	○	×	○	×	×
		25	1	1C-3A	EQ TREBLE FREQUENCY	500...16.0k [Hz]	36	○	×	×	×	○	×	○	×	×
		26	1		NOT USED	-	-	-	-	-	-	-	-	-	-	-
		27	1		NOT USED	-	-	-	-	-	-	-	-	-	-	-
		28	1		NOT USED	-	-	-	-	-	-	-	-	-	-	-
		29	1		NOT USED	-	-	-	-	-	-	-	-	-	-	-
		2A	1		NOT USED	-	-	-	-	-	-	-	-	-	-	-
		2B	1		NOT USED	-	-	-	-	-	-	-	-	-	-	-
		2C	1		NOT USED	-	-	-	-	-	-	-	-	-	-	-
		2D	1		NOT USED	-	-	-	-	-	-	-	-	-	-	-

TOTAL SIZE 0E

n: Drum Setup Number (0-1)

rr: note number (0D-5B)

In the following cases, the PF-500 will initialize all Drum Setups.

XG SYSTEM ON received

GM SYSTEM ON received

DRUM SETUP RESET received (only when in XG mode)

- When a part to which a Drum Setup is assigned receives a program change, the assigned Drum Setup will be initialized. If the same Drum Setup is assigned to two or more parts, changes in Drum Setup parameters (including program changes) will apply to all parts to which it is assigned.

System Exclusive Messages (1)

* Not Received when Receive Parameter SysEx is set to off.

* Not transmitted when Transmit Parameter SysEx is set to off.

System Exclusive Messages (Universal Realtime messages)

○: available

MIDI Event	Data Format							MIDI Reception (effective or not for each part)			MIDI Reception (affecting the panel)	MIDI Transmission (generated data)			PLAY		REC
								Song	Main Layer Left LeftLayer	Keyboard		Panel (main generation method)	Song	Midi	PLAY	REW	Recorded from panel
Master Volume	F0	7F	XN	04	01	SS	TT	F7									
		11110000				F0				○	×	×	×	○	○	×	×
		01111111				7F											
		0xxxxnnn				XN											
		00001000				04						×	×	○	○	×	×
		00000001				01											
		0sssssss				SS											
	0ttttttt				TT												
	11110111				F7												

System Exclusive Messages (Universal Non Realtime messages)

MIDI Event	Data Format							MIDI Reception (effective or not for each part)			MIDI Reception (affecting the panel)	MIDI Transmission (generated data)			PLAY		REC
								Song	Main Layer Left LeftLayer	Keyboard		Panel (main generation method)	Song	Midi	PLAY	REW	Recorded from panel
GM1 System On	F0	7E	XN	09	01	F7											
		11110000				F0				○	×	×	×	○	×	○	○
		01111110				7E											
		0xxxxnnn				XN											
		00001001				09						×	×	○	×	×	○
		00000001				01											
	11110111				F7												

System Exclusive Messages (2)

- * Not received when the Receive Parameter SysEx is set to off.
- * Not transmitted when the Transmit Parameter SysEx is set to off.

System Exclusive Messages (Preset voice)

MIDI Event	Data Format	MIDI Reception (effective or not for each part)			MIDI Reception (affecting the panel)	MIDI Transmission (generated data)		
		Song	Main Layer Left LeftLayer	Keyboard		Panel (main generation method)	Song	Midi
String Resonance Depth	F0 43 73 01 50 11 0n 02 dd F7							
	11110000 F0 = Exclusive status							
	01000011 43 = YAMAHA ID							
	01110011 73 = Clavinova ID							
	00000001 01 = Model ID (Clavinova common ID)							
	01010000 50 = SubID	○	○	×	○ (Other Setting)	○ (Other Setting)	○	×
	00010001 11 = SubID							
	0000nnnn 0n = Channel (00-0F)							
	00000010 02 = SubID(String Resonance Depth)							
	0ddddddd dd = Depth(00-48)							
11110111 F7 = End of Exclusive								
Sustain Sample Depth	F0 43 73 01 50 11 0n 03 dd F7							
	11110000 F0 = Exclusive status							
	01000011 43 = YAMAHA ID							
	01110011 73 = Clavinova ID							
	00000001 01 = Model ID (Clavinova common ID)							
	01010000 50 = SubID	○	○	×	○ (Other Setting)	○ (Other Setting)	○	×
	00010001 11 = SubID							
	0000nnnn 0n = Channel (00-0F)							
	00000011 03 = SubID(Sustain Sample Depth)							
	0ddddddd dd = Depth(00-48)							
11110111 F7 = End of Exclusive								
Key Off Sampling Depth	F0 43 73 01 50 11 0n 04 dd F7							
	11110000 F0 = Exclusive status							
	01000011 43 = YAMAHA ID							
	01110011 73 = Clavinova ID							
	00000001 01 = Model ID (Clavinova common ID)							
	01010000 50 = SubID	○	○	×	○ (Other Setting)	○ (Other Setting)	○	×
	00010001 11 = SubID							
	0000nnnn 0n = Channel (00-0F)							
	00000100 04 = SubID(Key Off Sampling Depth)							
	0ddddddd dd = Depth(00-50)							
11110111 F7 = End of Exclusive								
Soft Pedal Depth	F0 43 73 01 50 11 0n 05 dd F7							
	11110000 F0 = Exclusive status							
	01000011 43 = YAMAHA ID							
	01110011 73 = Clavinova ID							
	00000001 01 = Model ID (Clavinova common ID)							
	01010000 50 = SubID	○	○	×	○ (Other Setting)	○ (Other Setting)	○	×
	00010001 11 = SubID							
	0000nnnn 0n = Channel (00-0F)							
	00000101 05 = SubID(Soft Pedal Depth)							
	0ddddddd dd = Depth(00-7F)							
11110111 F7 = End of Exclusive								

* For each Depth value, the reset value is 40H = voice parameter.

System Exclusive Messages (Others)

MIDI Event	Data Format	MIDI Reception (effective or not for each part)			MIDI Reception (affecting the panel)	MIDI Transmission (generated data)		
		Song	Main Layer Left LeftLayer	Keyboard		Panel (main generation method)	Song	Midi
MIDI Master Tuning	F0 43 1n 27 30 00 00 0m 0l cc F7							
	11110000 F0 = Exclusive status							
	01000011 43 = YAMAHA ID							
	0001nnnn 1n n= always 0(when transmit), n=0-F(when receive)							
	00100111 27 = Model ID of TG100							
	00110000 30 = Address High		○		○ (Other Setting)	×	○	×
	00000000 00 = Address Mid							
	00000000 00 = Address Low							
	0000mmmm 0m = Master Tune MSB							
	00001111 0l = Master Tune LSB							
0ccccccc cc = don't care								
11110111 F7 = End of Exclusive								

Function		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1-16 1-16	1-16 1-16	
Mode	Default Messages Altered	3 x *****	3 x x	
Note Number:	True voice	0-127 *****	0-127 0-127	
Velocity	Note ON Note OFF	o 9nH , v = 1-127 x 9nH , v = 0	o 9nH , v = 1-127 x	
After Touch	Key's Ch's	x x	x o	
Pitch Bend		o	o0-24 semi	
Control Change	0, 32 1 5 7, 10, 11 6, 38 64, 66, 67 65 71 , 74 72 , 73 84 91, 93 94 96-97 98-99 100-101 1-119 120	o x x o o o x o x x o x x x o o Assignable x	o o o o o o o o o o o o o o o x o	Bank Select Modulation Portament Time Data Entry Portament Sound Controller Sound Controller Portament Control Effect Depth Effect Depth RPN Inc,Dec NRPN LSB,MSB RPN LSB,MSB All Sound Off
Prog Change:	True #	o 0-127 *****	o 0-127	
System Exclusive		o	o	
Common	: Song Pos. : Song Sel. : Tune	x x x	x x x	
System Real Time	: Clock : Commands	o o	x o	
Aux Messages	: Local ON/OFF : All Notes OFF : Active Sense : Reset	x x o x	x o o x	
Notes:				

Mode 1 : OMNI ON , POLY
Mode 3 : OMNI OFF, POLY

Mode 2 : OMNI ON ,MONO
Mode 4 : OMNI OFF,MONO

o : Yes
x : No

Specifications / Technische Daten / Spécifications / Especificaciones

Item		P-250
Keyboard		88 keys (A-1–C7)
Sound Source		AWM Dynamic Stereo Sampling
Polyphony		max. 128 voices
Voice Selection		Panel preset for manual performance: 45 voices, XG voices: 480 voices + 12 drum kits
Performance		32 performances × 135 files (max. ^{*1})
Effect		Reverb ^{*2} , Chorus ^{*2} , Master Equalizer, Variation effect ^{*2} , Insertion effect ^{*2} × 3, Pitchbend wheel, Modulation wheel, Master Equalizer slider
Controller		Master volume, Data entry [-] [+] buttons × 4
Display		24 characters × 2 lines, LCD with back light
Recording/Playback		16 tracks recording / playback, Tempo adjustment, Maximum 224 songs (1.5 MB, 150,000 notes)
Pedal		Damper, Sostenuto, Soft
Jacks/Connectors		MIDI (IN/OUT/THRU), PHONES, INPUT, OUTPUT, TO HOST, PEDAL(1–4), USB, AC INLET
Main Amplifiers		30W × 2
Speakers		13cm × 2
Dimensions (W × D × H) (without music rest)	main unit	1391mm × 460mm × 170mm [54-3/4" × 18-1/8" × 6-11/16"]
Weight (without music rest)	main unit	32.5kg [71lbs., 3oz]
Included Accessories		AC Power Cord, Foot Pedal FC3, Music Rest, Owner's Manual, CD-ROM(TOOLS for P-250), TOOLS for P-250 Installation Guide, Data List

*1: If you use long file names, or store song files, the P-250 will be able to handle fewer performance files.

*2: Refer to page 103 of the Owner's Manual for an explanation of effect types.

* Specifications and descriptions in this owner's manual are for information purposes only. Yamaha Corp. reserves the right to change or modify products or specifications at any time without prior notice. Since specifications, equipment or options may not be the same in every locale, please check with your Yamaha dealer.

* Die technischen Daten und Beschreibungen in dieser Bedienungsanleitung dienen nur der Information. Yamaha Corp. behält sich das Recht vor, Produkte oder deren technische Daten jederzeit ohne vorherige Ankündigung zu verändern oder zu modifizieren. Da die technischen Daten, das Gerät selbst oder Sonderzubehör nicht in jedem Land gleich sind, setzen Sie sich im Zweifel bitte mit Ihrem Yamaha-Händler in Verbindung.

* Les caractéristiques techniques et les descriptions du mode d'emploi ne sont données que pour information. Yamaha Corp. se réserve le droit de changer ou modifier les produits et leurs caractéristiques techniques à tout moment sans aucun avis. Du fait que les caractéristiques techniques, les équipements et les options peuvent différer d'un pays à l'autre, adressez-vous au distributeur Yamaha le plus proche.

* Las especificaciones y descripciones de este manual del propietario tienen sólo el propósito de servir como información. Yamaha Corp. se reserva el derecho a efectuar cambios o modificaciones en los productos o especificaciones en cualquier momento sin previo aviso. Puesto que las especificaciones, equipos u opciones pueden no ser las mismas en todos los mercados, solicite información a su distribuidor Yamaha.



This document is printed on recycled chlorine free (ECF) paper with soy ink.
Auf Recycling-Umweltpapier mit Sojatinte gedruckt.
Ce document a été imprimé sur du papier recyclé non blanchi au chlore avec
de l'encre d'huile de soja.
Este documento se ha impreso reciclado en papel sin cloro alguno, con tinta
de soja.

U.R.G., Pro Audio & Digital Musical Instrument Division, Yamaha Corporation
©2002 Yamaha Corporation

WA45420 309APAP1.3-04B0 Printed in Japan