

1. TRANSMITTED DATA

1-1 CHANNEL MESSAGES [H]:Hex, [D]:Decimal

Status [Hex]	Second [H] [D]	Third [H] [D]	Description
8n	kk (kk)	vv (vv)	Note Off vv=0~127
9n	kk (kk)	00 (00)	Note Off
9n	kk (kk)	vv (vv)	Note On vv=1~127
Bn	00 (00)	mm (mm)	Program Bank Select(MSB)
Bn	01 (01)	vv (vv)	Pitch Modulation Depth
Bn	02 (02)	vv (vv)	Breath Control Depth
Bn	04 (04)	vv (vv)	Foot Control
Bn	05 (05)	vv (vv)	Portamento Time
Bn	06 (06)	vv (vv)	Data Entry(MSB) [*1]
Bn	07 (07)	vv (vv)	Volume
Bn	09 (09)	vv (vv)	Arpeggio Resolution
Bn	0A (10)	vv (vv)	Panpot
Bn	0B (11)	vv (vv)	Expression
Bn	0E (14)	vv (vv)	Arpeggio Gate
Bn	0F (15)	vv (vv)	Arpeggio Velocity
Bn	10 (16)	vv (vv)	X-Y Pad (X)
Bn	11 (17)	vv (vv)	X-Y Pad (Y)
Bn	12 (18)	vv (vv)	Mono SW
Bn	13 (19)	vv (vv)	Knob1
Bn	14 (20)	vv (vv)	Knob2
Bn	15 (21)	vv (vv)	Knob3
Bn	16 (22)	vv (vv)	Knob4
Bn	17 (23)	vv (vv)	Knob5
Bn	18 (24)	vv (vv)	Filter1 Attack
Bn	19 (25)	vv (vv)	Filter1 Decay
Bn	1A (26)	vv (vv)	Filter1 Sustain
Bn	1B (27)	vv (vv)	Filter1 Release
Bn	1C (28)	vv (vv)	Filter2 Attack
Bn	1D (29)	vv (vv)	Filter2 Decay
Bn	1E (30)	vv (vv)	Filter2 Sustain
Bn	1F (31)	vv (vv)	Filter2 Release
Bn	20 (32)	bb (bb)	Program Bank Select(LSB)
Bn	40 (64)	00/7F (0/127)	Sustain Off/On
Bn	41 (65)	00/7F (0/127)	Portamento Off/On
Bn	42 (66)	00/7F (0/127)	Sostenuto Off/On
Bn	4B (75)	vv (vv)	Unison SW
Bn	4C (76)	vv (vv)	Amp Attack
Bn	4D (77)	vv (vv)	Amp Decay
Bn	4E (78)	vv (vv)	Amp Sustain
Bn	4F (79)	vv (vv)	Amp Release
Bn	50 (80)	00/7F (0/127)	SW1 Off/On
Bn	51 (81)	00/7F (0/127)	SW2 Off/On
Bn	52 (82)	00/7F (0/127)	FootSW Off/On
Bn	53 (83)	vv (vv)	MixerSW [*2]
Bn	55 (85)	vv (vv)	Filter1 Cutoff
Bn	56 (86)	vv (vv)	Filter1 Resonance
Bn	57 (87)	vv (vv)	Filter1 EG Int.
Bn	58 (88)	vv (vv)	Filter2 Cutoff
Bn	59 (89)	vv (vv)	Filter2 Resonance
Bn	5A (90)	vv (vv)	Filter2 EG Int.
Bn	5B (91)	vv (vv)	Effect Send
Bn	5C (92)	00/7F (0/127)	MasterFx Off/On
Bn	5E (94)	00/7F (0/127)	Effect1 Off/On
Bn	5F (95)	00/7F (0/127)	Effect2 Off/On
Bn	62 (98)	vv (vv)	NRPN LSB [*1]
Bn	63 (99)	vv (vv)	NRPN MSB [*1]
Bn	cc (cc)	vv (vv)	Control Change cc=00~95
Cn	pp (pp)	-- --	Program Change
Dn	vv (vv)	-- --	Channel Pressure (After Touch)
En	bb (bb)	bb (bb)	Pitch Bender Change

n : MIDI Channel (0~15)

vv: Value

[*1]:Non Registered Parameter Number

MSB [H]	LSB [H]	Parameter	Data Entry(MSB) Value
00	01	Arpeggio Pattern Select	00~13: Int.Pat, 20h~33h: Card Pat
00	02	Arpeggio On/Off	00: OFF, 7Fh: ON
00	03	Arpeggio Octaves	00~03: 1~4 Oct.
00	04	Arpeggiator Latch On/Off	00: OFF, 7Fh: ON
00	05	Arpeggiator Key Sync On/Off	00: OFF, 7Fh: ON
00	06	Arpeggio KBD On/Off	00: OFF, 7Fh: ON

[*2]:MixerSW

vv	Description
0--- x---	OSC1 SW
0--x ----	OSC2 SW

0-x- ----	Sub OSC SW
0x-- ----	Noise Generator SW

1-2 SYSTEM REALTIME MESSAGES

Status[H]	Description
F8	Timing Clock [*1]
FE	Active Sensing

[*1]:This message is transmitted when the "Clock Source" is set to "INTERNAL".

1-3 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES

DEVICE INQUIRY REPLY

Byte[H]	Description
F0	Exclusive Status
7E	Non Realtime Message
0g	MIDI GLOBAL CHANNEL (Device ID)
06	INQUIRY MESSAGE
02	IDENTITY REPLY
42	KORG ID (Manufacturers ID)
46	Z1 Series ID (Family ID (LSB))
00	(Family ID (MSB))
01	(Member ID (LSB))
00	(Member ID (MSB))
xx	(Minor Ver. (LSB))
xx	(Minor Ver. (MSB))
xx	(Major Ver. (LSB))
xx	(Major Ver. (MSB))
F7	END OF EXCLUSIVE

This message is transmitted whenever a INQUIRY MESSAGE REQUEST is received.

1-4 SYSTEM EXCLUSIVE MESSAGES

Function ID [Hex]	Description
40	CURRENT PROGRAM DATA DUMP [*1]
4C	PROGRAM DATA DUMP
49	CURRENT MULTI SETUP DATA DUMP [*1]
4D	MULTI SETUP DATA DUMP
6B	CURRENT ARPEGGIO PATTERN DATA DUMP
69	ARPEGGIO PATTERN DATA DUMP
51	GLOBAL/MIDI DATA DUMP
50	ALL DATA (PROGRAM, MULTI, PATTERN, GLOBAL, MIDI) DUMP
41	PARAMETER CHANGE [*2]
26	DATA FORMAT ERROR
23	DATA LOAD COMPLETED
24	DATA LOAD ERROR
21	WRITE COMPLETED
22	WRITE ERROR

[*1]:When the "SysEx Transmit" parameter is set to "ON", the message is transmitted whenever a Program Change occurs.

[*2]:When the "SysEx Transmit" parameter is set to "ON", the message is transmitted whenever a parameter is changed.

2.RECOGNIZED RECEIVE DATA

2-1 CHANNEL MESSAGES

Status [Hex]	Second [H] [D]	Third [H] [D]	Description
8n	kk (kk)	vv (vv)	Note Off vv=0~127
9n	kk (kk)	00 (00)	Note Off
9n	kk (kk)	vv (vv)	Note On vv=1~127
Bn	00 (00)	mm (mm)	Program Bank Select(MSB)
Bn	01 (01)	vv (vv)	Pitch Modulation Depth
Bn	02 (02)	vv (vv)	Breath Control Depth
Bn	04 (04)	vv (vv)	Foot Control
Bn	05 (05)	vv (vv)	Portamento Time
Bn	06 (06)	vv (vv)	Data Entry(MSB) [*1]
Bn	07 (07)	vv (vv)	Volume
Bn	09 (09)	vv (vv)	Arpeggio Resolution
Bn	0A (10)	vv (vv)	Panpot
Bn	0B (11)	vv (vv)	Expression
Bn	0E (14)	vv (vv)	Arpeggio Gate
Bn	0F (15)	vv (vv)	Arpeggio Velocity

Bn	10 (16)	vv	(vv)	X-Y Pad (X)	
Bn	11 (17)	vv	(vv)	X-Y Pad (Y)	
Bn	13 (18)	vv	(vv)	Mono SW	
Bn	13 (19)	vv	(vv)	Knob1	
Bn	14 (20)	vv	(vv)	Knob2	
Bn	15 (21)	vv	(vv)	Knob3	
Bn	16 (22)	vv	(vv)	Knob4	
Bn	17 (23)	vv	(vv)	Knob5	
Bn	18 (24)	vv	(vv)	Filter1 Attack	
Bn	19 (25)	vv	(vv)	Filter1 Decay	
Bn	1A (26)	vv	(vv)	Filter1 Sustain	
Bn	1B (27)	vv	(vv)	Filter1 Release	
Bn	1C (28)	vv	(vv)	Filter2 Attack	
Bn	1D (29)	vv	(vv)	Filter2 Decay	
Bn	1E (30)	vv	(vv)	Filter2 Sustain	
Bn	1F (31)	vv	(vv)	Filter2 Release	
Bn	20 (32)	bb	(bb)	Program Bank Select(LSB)	
Bn	40 (64)	vv	(vv)	Sustain Off/On	
Bn	41 (65)	vv	(vv)	Portamento Off/On	
Bn	42 (66)	vv	(vv)	Sostenuto Off/On	
Bn	4C (75)	vv	(vv)	Unison SW	
Bn	4C (76)	vv	(vv)	Amp Attack	
Bn	4D (77)	vv	(vv)	Amp Decay	
Bn	4E (78)	vv	(vv)	Amp Sustain	
Bn	4F (79)	vv	(vv)	Amp Release	
Bn	50 (80)	vv	(vv)	SW1 Off/On	
Bn	51 (81)	vv	(vv)	SW2 Off/On	
Bn	52 (82)	vv	(vv)	FootSW Off/On	
Bn	53 (83)	vv	(vv)	MixerSW	[*2]
Bn	55 (85)	vv	(vv)	Filter1 Cutoff	
Bn	56 (86)	vv	(vv)	Filter1 Resonance	
Bn	57 (87)	vv	(vv)	Filter1 EG Int.	
Bn	58 (88)	vv	(vv)	Filter2 Cutoff	
Bn	59 (89)	vv	(vv)	Filter2 Resonance	
Bn	5A (90)	vv	(vv)	Filter2 EG Int.	
Bn	5B (91)	vv	(vv)	Effect Send	
Bn	5C (92)	vv	(vv)	MasterFx Off/On	
Bn	5E (94)	vv	(vv)	Effect1 Off/On	
Bn	5F (95)	vv	(vv)	Effect2 Off/On	
Bn	60 (96)	xx	(xx)	Data Increment	[*1]
Bn	61 (97)	xx	(xx)	Data Decrement	[*1]
Bn	62 (98)	nl	(nl)	NRPN LSB	[*1]
Bn	63 (99)	nm	(nm)	NRPN MSB	[*1]
Bn	78(120)	00	(0)	All Sound Off	
Bn	79(121)	00	(0)	Reset All Controller	
Bn	7A(122)	00/7F (0/127)		Local Control Off/On	
Bn	7B(123)	00	(0)	All Note Off	
Bn	7C(124)	00	(0)	Omni Mode Off	
Bn	7D(125)	00	(0)	Omni Mode On	
Bn	cc (cc)	vv	(vv)	Control Data cc=00~101	
Cn	pp (pp)	--	--	Program Change	
Dn	vv (vv)	--	--	Channel Pressure (After Touch)	
En	bb (bb)	bb	(bb)	Pitch Bender Change	

n : MIDI Channel No.(0~15)

vv: Value

[*1]:Non Registered Parameter Number

MSB	LSB	Parameter	Data Entry(MSB)	Value
[H]	[H]			
00	01	Arpeggio Pattern Select	00~13: Int.Pat,	20h~33h: Card Pat
00	02	Arpeggio On/Off	00~3F: OFF,	40h~7Fh: ON
00	03	Arpeggio Octaves	00~03: 1~4	Oct.
00	04	Arpeggiator Latch On/Off	00~3F: OFF,	40h~7Fh: ON
00	05	Arpeggiator Key Sync On/Off	00~3F: OFF,	40h~7Fh: ON
00	06	Arpeggio KBD On/Off	00~3F: OFF,	40h~7Fh: ON

All these parameters can be changed by "Data Increment" and "Data Decrement".

[*2]:MixerSW

vv	Description
0--- x---	OSC1 SW
0--x ----	OSC2 SW
0-x- ----	Sub OSC SW
0x-- ----	Noise Generator SW

2-2 SYSTEM REALTIME MESSAGES

Status[H]	Description	
F8	Timing Clock	[*1]
FA	Start	[*2]
FB	Continue	[*2]

FC	Stop	[*2]
FE	Active Sensing	

[*1]:This message is recognized when the "Clock Source" is set to "EXTERNAL".

[*2]:These messages are recognized when the "Clock Source" is set to "EXTERNAL" and the "Realtime Command" is set to "ENABLE".

2-3 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE (NON REALTIME)

DEVICE INQUIRY MESSAGE REQUEST

Byte[H]	Description
F0	Exclusive Status
7E	Non Realtime Message
0g	MIDI Channel
06	Inquiry Message
01	Inquiry Request
F7	END OF EXCLUSIVE

2-4 SYSTEM EXCLUSIVE MESSAGE

Function ID [Hex]	Function
10	CURRENT PROGRAM DATA DUMP REQUEST
1C	PROGRAM DATA DUMP REQUEST
19	CURRENT MULTI SETUP DATA DUMP REQUEST
1D	MULTI SETUP DATA DUMP REQUEST
36	CURRENT ARPEGGIO PATTERN DATA DUMP REQUEST
34	ARPEGGIO PATTERN DATA DUMP REQUEST
0E	GLOBAL/MIDI DATA DUMP REQUEST
0F	ALL DATA (PROGRAM, MULTI, PATTERN, GLOBAL, MIDI) DUMP REQUEST
11	PROGRAM WRITE REQUEST
1A	MULTI SETUP WRITE REQUEST
37	ARPEGGIO PATTERN WRITE REQUEST
40	CURRENT PROGRAM DATA DUMP
4C	PROGRAM DATA DUMP
49	CURRENT MULTI SETUP DATA DUMP
4D	MULTI SETUP DATA DUMP
6B	CURRENT ARPEGGIO PATTERN DATA DUMP
69	ARPEGGIO PATTERN DATA DUMP
51	GLOBAL/MIDI DATA DUMP
50	ALL DATA (PROGRAM, MULTI, PATTERN, GLOBAL, MIDI) DUMP
41	PARAMETER CHANGE

When the "SysEx Receive" parameter is set to "ENABLE", these messages are recognized.

MIDI EXCLUSIVE FORMAT (R:Receive, T:Transmit)

(1) CURRENT PROGRAM DATA DUMP REQUEST R

Byte	Description
F0,42,3g,46	EXCLUSIVE HEADER
0001 0000 (10)	CURRENT PROGRAM DATA DUMP REQUEST 10H
0000 0000 (00)	
1111 0111 (F7)	EOX

When this message is received, the CURRENT PROGRAM DUMP(Function:40h) message will be transmitted.

(2) PROGRAM DATA DUMP REQUEST R

Byte	Description
F0,42,3g,46	EXCLUSIVE HEADER
0001 1100 (1C)	PROGRAM DATA DUMP REQUEST 1CH
00uu 000b (ub)	Unit(00:Prog/01:Bank/10:All),Bank(0:A/1:B)
0ppp pppp (pp)	Prog No.(Ignored when Bank or All dump.)
0000 0000 (00)	
1111 0111 (F7)	EOX

When this message is received, the PROGRAM DUMP(Function:4Ch) message will be transmitted.

(3) CURRENT MULTI SETUP DATA DUMP REQUEST R

Byte	Description
F0,42,3g,46	EXCLUSIVE HEADER
0001 1001 (19)	CURRENT MULTI SETUP DATA DUMP REQUEST 19H
0000 0000 (00)	
1111 0111 (F7)	EOX

When this message is received, the CURRENT MULTI SETUP DATA DUMP (Function:49h) message will be transmitted.

(4) MULTI SETUP DATA DUMP REQUEST R

Byte	Description
F0,42,3g,46	EXCLUSIVE HEADER
0001 1101 (1D)	MULTI SETUP DATA DUMP REQUEST 1DH
00uu 000b (ub)	Unit(00:Multi/01:Bank/10:All),Bank(0:A/1:B)
0mmm mmmm (mm)	Multi Setup No.(Ignored when Bank or All dump.)
0000 0000 (00)	
1111 0111 (F7)	EOX

When this message is received, the MULTI SETUP DATA DUMP(Function:4Dh) message will be transmitted.

(5) CURRENT ARPEGGIO PATTERN DUMP REQUEST R

Byte	Description
F0,42,3g,46	EXCLUSIVE HEADER
0011 0110 (36)	CURRENT ARPEGGIO PATTERN DUMP REQUEST 36H
0000 0000 (00)	
1111 0111 (F7)	EOX

When this message is received, the CURRENT ARPEGGIO PATTERN DUMP (Function:6Bh) message will be transmitted.

(6) ARPEGGIO PATTERN DATA DUMP REQUEST R

Byte	Description
F0,42,3g,46	EXCLUSIVE HEADER
0011 0100 (34)	ARPEGGIO PATTERN DATA DUMP REQUEST 34H
000u 0000 (u0)	Unit(0:Pattern/1:All)
0ppp pppp (pp)	Pattern No.(0~19)
1111 0111 (F7)	EOX

When this message is received, the ARPEGGIO PATTERN DUMP(Function:69h) message will be transmitted.

(7) GLOBAL/MIDI DATA DUMP REQUEST R

Byte	Description
F0,42,3g,46	EXCLUSIVE HEADER
0000 1110 (0E)	GLOBAL/MIDI DATA DUMP REQUEST 0EH
0000 000g (0g)	0:Global/1:MIDI
1111 0111 (F7)	EOX

When this message is received, the GLOBALS DATA DUMP(Function:51h) message will be transmitted.

(8) ALL DATA DUMP REQUEST R

Byte	Description
F0,42,3g,46	EXCLUSIVE HEADER
0000 1111 (0F)	ALL DATA DUMP REQ 0FH
0000 0000 (00)	
1111 0111 (F7)	EOX

When this message is received, the ALL DATA DUMP(Function:50h) message will be transmitted.

(9) PROGRAM WRITE REQUEST R

Byte	Description
F0,42,3g,46	EXCLUSIVE HEADER
0001 0001 (11)	PROGRAM WRITE REQUEST 11H

0000 000b (0b)	Destination Program Bank(0:A/1:B)	
0ppp pppp (pp)	Destination Program No.(0~127)	
1111 0111 (F7)	EOX	

When this message is received, a WRITE COMPLETED(Function:21h) message or a WRITE ERROR(Function:22h) message will be transmitted.

(10) MULTI SETUP WRITE REQUEST		R
Byte	Description	
F0,42,3g,46	EXCLUSIVE HEADER	
0001 1010 (1A)	MULTI SETUP WRITE REQUEST	1AH
0000 0000 (00)		
000m mmmm (mm)	Destination Multi No.(0~31)	
1111 0111 (F7)	EOX	

When this message is received, a WRITE COMPLETED(Function:21h) message or a WRITE ERROR(Function:22h) message will be transmitted.

(11) ARPEGGIO PATTERN WRITE REQUEST		R
Byte	Description	
F0,42,3g,46	EXCLUSIVE HEADER	
0011 0111 (37)	ARPEGGIO PATTERN WRITE REQUEST	37H
0000 0000 (00)		
0ppp pppp (pp)	Destination Pattern No.(0~19)	
1111 0111 (F7)	EOX	

When this message is received, a WRITE COMPLETED(Function:21h) message or a WRITE ERROR(Function:22h) message will be transmitted.

(12) CURRENT PROGRAM DATA DUMP		R/T
Byte	Description	
F0,42,3g,46	EXCLUSIVE HEADER	
0100 0000 (40)	CURRENT PROGRAM DATA DUMP	40H
0000 0001 (01)		
0ddd dddd (dd)	Data	[*1]
:	:	
1111 0111 (F7)	EOX	

When this message is received, a DATA LOAD COMPLETED(Function:23h) message or a DATA LOAD ERROR(Function:24h) message will be transmitted.

(13) PROGRAM DATA DUMP		R/T
Byte	Description	
F0,42,3g,46	EXCLUSIVE HEADER	
0100 1100 (4C)	PROGRAM DATA DUMP	4CH
00uu 000b (ub)	Unit(00:Prog/01:Bank/10:All),Bank(0:A/1:B)	
0ppp pppp (pp)	Program No.(Ignored when Bank or All dump.)	
0000 0000 (00)		
0ddd dddd (dd)	Data	[*1]
:	:	
1111 0111 (F7)	EOX	

When this message is received, a DATA LOAD COMPLETED(Function:23h) message or a DATA LOAD ERROR(Function:24h) message will be transmitted.

(14) CURRENT MULTI SETUP DATA DUMP		R/T
Byte	Description	
F0,42,3g,46	EXCLUSIVE HEADER	
0100 1001 (49)	CURRENT MULTI SETUP DATA DUMP	49H
0000 0000 (00)		
0ddd dddd (dd)	Data	[*1]
:	:	
1111 0111 (F7)	EOX	

When this message is received, a DATA LOAD COMPLETED(Function:23h) message or a DATA LOAD ERROR(Function:24h) message will be transmitted.

(15) MULTI SETUP DATA DUMP		R/T
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Byte	Description
F0,42,3g,46	EXCLUSIVE HEADER
0100 1101 (4D)	MULTI SETUP DATA DUMP 4DH
0000 0000 (00)	
00uu 000b (ub)	Unit(00:Multi/01:Bank/10:All),Bank(0:A/1:B)
000m mmmm (mm)	Multi Setup No.(Ignored when Bank or All dump.)
0000 0000 (00)	
0ddd dddd (dd)	Data [*1]
:	:
1111 0111 (F7)	EOX

When this message is received, a DATA LOAD COMPLETED(Function:23h) message or a DATA LOAD ERROR(Function:24h) message will be transmitted.

(16) CURRENT ARPEGGIO PATTERN DUMP R/T

Byte	Description
F0,42,3g,46	EXCLUSIVE HEADER
0110 1011 (6B)	CURRENT ARPEGGIO PATTERN DUMP 6BH
0000 0000 (00)	
0ddd dddd (dd)	Data [*1]
:	:
1111 0111 (F7)	EOX

When this message is received, a DATA LOAD COMPLETED(Function:23h) message or a DATA LOAD ERROR(Function:24h) message will be transmitted.

(17) ARPEGGIO PATTERN DATA DUMP R/T

Byte	Description
F0,42,3g,46	EXCLUSIVE HEADER
0110 1001 (69)	ARPEGGIO PATTERN DATA DUMP 69H
000u 0000 (u0)	Unit(0:Pattern/1:All)
0ppp pppp (pp)	Pattern No.(0~19)
0ddd dddd (dd)	Data [*1]
:	:
1111 0111 (F7)	EOX

When this message is received, a DATA LOAD COMPLETED(Function:23h) message or a DATA LOAD ERROR(Function:24h) message will be transmitted.

(18) GLOBAL/MIDI DATA DUMP R/T

Byte	Description
F0,42,3g,46	EXCLUSIVE HEADER
0101 0001 (51)	GLOBAL/MIDI DATA DUMP 51H
0000 000g (0g)	0:Global/1:MIDI
0ddd dddd (dd)	Data [*1]
:	:
1111 0111 (F7)	EOX

When this message is received, a DATA LOAD COMPLETED(Function:23h) message or a DATA LOAD ERROR(Function:24h) message will be transmitted.

(19) ALL DATA DUMP R/T

Byte	Description
F0,42,3g,46	EXCLUSIVE HEADER
0101 0000 (50)	ALL DATA DUMP 50H
0000 0000 (00)	
0000 0000 (00)	
0ddd dddd (dd)	Data [*1]
:	:
1111 0111 (F7)	EOX

When this message is received, a DATA LOAD COMPLETED(Function:23h) message or a DATA LOAD ERROR(Function:24h) message will be transmitted. The data are combined in the order that Program, Multi, Pattern and Global/MIDI.

(20) PARAMETER CHANGE R/T

Byte	Description
F0,42,3g,46	EXCLUSIVE HEADER
0100 0001 (41)	PARAMETER CHANGE 41H

0000 00mm (0m)	Group(00:Global&MIDI/01:Prog/10:Pat/11:Multi)	
0ppp pppp (pp)	Parameter ID (LSB)	[*2]
0ppp pppp (pp)	Parameter ID (MSB)	[*2]
0vvv vvvv (vv)	Value (LSB bit6~0)	
0vvv vvvv (vv)	Value (MSB bit13~7)	
1111 0111 (F7)	EOX	

When this message is received, a DATA LOAD COMPLETED(Function:23h) message or a DATA LOAD ERROR(Function:24h) message will be transmitted.

(21) DATA FORMAT ERROR T

Byte	Description	
F0,42,3g,46	EXCLUSIVE HEADER	
0010 0110 (26)	DATA FORMAT ERROR	26H
1111 0111 (F7)	EOX	

(22) DATA LOAD COMPLETED T

Byte	Description	
F0,42,3g,46	EXCLUSIVE HEADER	
0010 0011 (23)	DATA LOAD COMPLETED	23H
1111 0111 (F7)	EOX	

(23) DATA LOAD ERROR T

Byte	Description	
F0,42,3g,46	EXCLUSIVE HEADER	
0010 0100 (24)	DATA LOAD ERROR	24H
0000 0000 (00)		
1111 0111 (F7)	EOX	

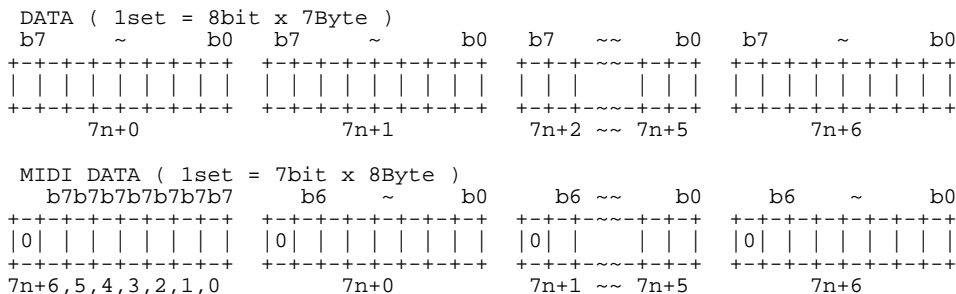
(24) WRITE COMPLETED T

Byte	Description	
F0,42,3g,46	EXCLUSIVE HEADER	
0010 0001 (21)	WRITE COMPLETED	21H
1111 0111 (F7)	EOX	

(25) WRITE ERROR T

Byte	Description	
F0,42,3g,46	EXCLUSIVE HEADER	
0010 0010 (22)	WRITE ERROR	22H
0000 0000 (00)		
1111 0111 (F7)	EOX	

[*1]:The dump data conversion



[*2]:See the parameter lists.

ID	Parameter Name	Display	Value	Size
1	Master Tune	430.0Hz~450.0Hz	-100~+100	1
2	Transpose	-12~+12	-12~+12	1
3	Transpose Position	POST_KBD/PRE_TG	0/1	1
4	Velocity Curve	CURVE1~13	0~12	1(Bit3~7)
5	After Touch Curve	CURVE1~8	0~7	^(Bit0~2)
6	After Touch Sensitivity	0~99	0~99	1
7	Output Mode	Stereo/Monaural	0/1	1
8	reserved			1
9	Damper Polarity	+/-	0~1	1(Bit7)
10	Assignable SW Polarity	+/-	0~1	^(Bit6)
11	Assignable Pedal Polarity	+/-	0~1	^(Bit5)
12	Volume Pedal Polarity	+/-	0~1	^(Bit4)
13	Program Auto Arpeggio Setting	OFF/ON	0~1	^(Bit3)
14	Multi Auto Arpeggio Setting	OFF/ON	0~1	^(Bit2)
15	Master Effect	AVAIL/BYPASS	0~1	^(Bit1)
16	Digital I/F Clock Source	INTERNAL/EXTERNAL	0~1	^(Bit0)
17	Memory Protect	OFF/ON	0~1	1(Bit0)
18	Page Memory	OFF/ON	0~1	^(Bit1)
19	Card Area Select	0~15	0~15	^(Bit4~7)
20~	User Group1 Name		127~32	16
36~	User Group2 Name		127~32	16
50~	User Group3 Name		127~32	16
68~	User Group4 Name		127~32	16
84~	User Group5 Name		127~32	16
100~	User Group6 Name		127~32	16
116~	User Group7 Name		127~32	16
132~	User Group8 Name		127~32	16
148~	User Group9 Name		127~32	16
164~	User Group10 Name		127~32	16
180~	User Group11 Name		127~32	16
196~	User Group12 Name		127~32	16
212~	User Group13 Name		127~32	16
228~	User Group14 Name		127~32	16
244~	User Group15 Name		127~32	16
260~	User Group16 Name		127~32	16
276~	User Scale1	-100~+100cent	-100~+100	12
288~	User Scale2	-100~+100cent	-100~+100	128
416	Volume Pedal Function	Volume/Xpress	0~1	1
	reserved			10
			Total	416

KORG Z1 - MIDI Parameters

417	Global MIDI Channel	1~16	0~15	1(Bit0~3)
418	Local Control	OFF/ON	0~1	^(Bit4)
419	Omni Mode	OFF/ON	0~1	^(Bit5)
420	Clock Source	INT/EXT	0~1	^(Bit6)
421	Realtime Command Receive	DIS/ENA	0~1	^(Bit7)
422	System Exclusive Transmit	OFF/ON	0~1	1(Bit0~3)
423	System Exclusive Receive	DIS/ENA	0~1	^(Bit4~7)
424	Program Change Transmit	OFF/ON	0~1	1(Bit0~3)
425	Program Change Receive	DIS/ENA/PRG	0~2	^(Bit4~7)
	(Program Bank Select Map)			
426	Internal Bank A (MSB)	OFF/0~127	-1~127	1
427	Internal Bank A (LSB)	OFF/0~127	-1~127	1
428	Internal Bank B (MSB)	OFF/0~127	-1~127	1
429	Internal Bank B (LSB)	OFF/0~127	-1~127	1
430	Card Bank A (MSB)	OFF/0~127	-1~127	1
431	Card Bank A (LSB)	OFF/0~127	-1~127	1
432	Card Bank B (MSB)	OFF/0~127	-1~127	1
433	Card Bank B (LSB)	OFF/0~127	-1~127	1
	(Multi Set Bank Select Map)			
434	Internal Bank A (MSB)	OFF/0~127	-1~127	1
435	Internal Bank A (LSB)	OFF/0~127	-1~127	1
436	Internal Bank B (MSB)	OFF/0~127	-1~127	1
437	Internal Bank B (LSB)	OFF/0~127	-1~127	1
438	Card Bank A (MSB)	OFF/0~127	-1~127	1
439	Card Bank A (LSB)	OFF/0~127	-1~127	1
440	Card Bank B (MSB)	OFF/0~127	-1~127	1
441	Card Bank B (LSB)	OFF/0~127	-1~127	1
	(Program Select Map)			
442	A001	0~127	0~127	1
	:			126
569	A128	0~127	0~127	1
570	B001	0~127	0~127	1
	:			126
697	B128	0~127	0~127	1

698	(Multi Set Select Map) A01	0~127	0~127	1
	:			14
713	A16	0~127	0~127	1
714	B01	0~127	0~127	1
	:			14
729	B16	0~127	0~127	1

730	(Pitch Bend Operation) Pitch Bend Transmit	OFF/ON	0/1	1(Bit0)
731	Pitch Bend Receive	DIS/ENA	0/1	^(Bit4)
732	Pitch Bend Translation	[*1]	0~97	1

733	(After Touch Operation) After Touch Transmit	OFF/ON	0/1	1(Bit0)
734	After Touch Receive	DIS/ENA	0/1	^(Bit4)
735	After Touch Translation	[*1]	0~97	1

736	(CC#01:Mod.Whl Operation) Transmit	OFF/ON	0/1	1(Bit0)
737	Receive	DIS/ENA	0/1	^(Bit4)
738	Translation	[*1]	0~97	1

739~	(CC#02:MIDI BC Operation)			2

742~	(CC#04:FootPdl Operation)			2

745~	(CC#05:PrtmTim Operation)			2

748~	(CC#07:MIDI Vol Operation)			2

751~	(CC#10:MIDI Pan Operation)			2

754~	(CC#11:MIDI Exp Operation)			2

757~	(CC#16:Pad X Operation)			2

760~	(CC#17:Pad Y Operation)			2

763~	(CC#19:Knob1 Operation)			2

766~	(CC#20:Knob2 Operation)			2

769~	(CC#21:Knob3 Operation)			2

772~	(CC#22:Knob4 Operation)			2

775~	(CC#23:Knob5 Operation)			2

778~	(CC#64:Damper Operation)			2

781~	(CC#65:PrtmSW Operation)			2

784~	(CC#66:Sostnut Operation)			2

787~	(CC#80:Mod.SW1 Operation)			2

790~	(CC#81:Mod.SW2 Operation)			2

793~	(CC#82:FootSW Operation)			2

796~	(CC#09:Arp.Res Operation)			2

799~	(CC#14:Arp.Gat Operation)			2

802~	(CC#15:Arp.Vel Operation)			2

805~	(CC#85:F1Fc Operation)			2

808~	(CC#86:F1Reso Operation)			2

811~	(CC#87:F1EGInt Operation)			2

814~	(CC#24:FclAtk Operation)			2

817~	(CC#25:FclDcy Operation)			2

820~	(CC#26:FclSus Operation)			2

823~	(CC#27:FclRls Operation)			2

826~	(CC#88:F2Fc Operation)			2

829~	(CC#89:F2Reso Operation)			2

832~	(CC#90:F2EGInt Operation)			2

835~	(CC#28:Fc2Atk Operation)			2

838~	(CC#29:Fc2Dcy Operation)			2

841~	(CC#30:Fc2Sus Operation)			2	
844~	(CC#31:Fc2Rls Operation)			2	
847~	(CC#76:AmpAtk Operation)			2	
850~	(CC#77:AmpDcy Operation)			2	
853~	(CC#78:AmpSus Operation)			2	
856~	(CC#79:AmpRls Operation)			2	
859~	(CC#83:MxOutSW Operation)			2	
862~	(CC#92:M.Fx SW Operation)			2	
865~	(CC#94:Fx1 SW Operation)			2	
868~	(CC#95:Fx2 SW Operation)			2	
871~	(CC#91:FxSend Operation)			2	
874~	(CC#18:Mono SW Operation)			2	
877~	(CC#75:Uison SW Operation)			2	
	reserved			9	
			Total		416

[*1]:PitchBend/AfterTouch/CC#00~CC#95

Multi Set Parameters

Revision 1.0 (1997.9.12)

ID	Parameter Name	Display	Value	Size
1~16	[Common] Multi Set Name		20H~7Fh	16
17	[Timbre 1] (Timbre) Program Bank	A/B	0~1	1(Bit7)
18	Program Number	001~128	0~127	^(Bit0~6)
19	Reserve Voice (Pitch)	OFF/1~12(18)	0~12(18)	1
20	Transpose	-24~+24	-24~+24	1
21	Detune	-50~+50cent	-50~+50	1
22	Scale Select	CMN/PRG	0~1	1(Bit4~7)
23	Arpeggiator (Mixer)	DIS/ENA	0~1	^(Bit0~3)
24	Output Level	0~127/PROG	0~128	1
25	Panpot	0~127/PROG	0~128	1
26	Effect Send (Zone)	0~100/PROG	0~101	1
27	Key Zone Top	C-1~G9	0~127	1
28	Key Zone Bottom	C-1~G9	0~127	1
29	Velocity Zone Top	1~127	1~127	1
30	Velocity Zone Bottom (MIDI)	1~127	1~127	1
31	MIDI Channel	1~16/GLB	0~15/16	1(Bit0~4)
32	Program Change	DIS/ENA	0~1	^(Bit7)
33	Pitch Bend	DIS/CMN/PRG	0~2	1(Bit6~7)
34	After Touch	DIS/ENA	0~1	^(Bit5)
35	Modulation Wheel	DIS/ENA	0~1	^(Bit4)
36	X-Y Pad Controller	DIS/ENA	0~1	^(Bit3)
37	Damper	DIS/ENA	0~1	^(Bit2)
38	Portamento SW	DIS/ENA	0~1	^(Bit1)
39	Realtime Edit	DIS/ENA	0~1	^(Bit0)
40	Performance Edit	DIS/ENA	0~1	1(Bit7)
41	Others	DIS/ENA	0~1	^(Bit6)
42	reserved			^(Bit5)
43	reserved			1
44~	[Timbre 2]			16
71~	[Timbre 3]			16
98~	[Timbre 4]			16
125~	[Timbre 5]			16
152~	[Timbre 6]			16
179	[Effect] (Effect 1) Effect1 Select Effect1 Setting (Effect 2)	OD~R.SPEAKER	[*1] 0~14	1 22
180	Effect2 Select Effect2 Setting (Master Effect)	OD~DELAY	[*1] 0~10	1 22
181	Master Effect Select Master Effect Setting	St.DELAY~REVERB-Room	[*2] 0~2	1 18
182	Master Low EQ Freq	0~49	0~49	1
183	Master Low EQ Gain	-18.0~+18.0dB	-36~+36	1
184	Master High EQ Freq	0~49	0~49	1
185	Master High EQ Gain	-18.0~+18.0dB	-36~+36	1
186	[Common] Pitch Bender Intensity(+)	-60~24	-60~+24	1
187	Pitch Bender Intensity(-)	-60~24	-60~+24	1
188	Pitch Bender Step(+)	0,/8,/4,/2,1~12	0~15	1(Bit0~3)
189	Pitch Bender Step(-)	0,/8,/4,/2,1~12	0~15	^(Bit4~7)
190	Scale Key	C~B	0~11	1(Bit0~3)
191	Scale Type	0~10	0~10	^(Bit4~7)
192	Portamento SW	OFF/ON	0/1	1(Bit0)
193	Unison SW reserved	OFF/ON	0/1	^(Bit1) 10
194	[Controller] SW1 Function	MOD.SW1/MasterFX SW/~	[*3] 0~7	1(Bit0~3)
195	SW1 Mode	LATCH/UNLATCH	0/1	^(Bit4)
196	SW2 Function	MOD.SW1/MasterFX SW/~	[*4] 0~7	1(Bit0~3)
197	SW2 Mode	LATCH/UNLATCH	0/1	^(Bit4)
198	Assignable Foot SW Function	FT.SW/MIDI Damper/~	[*5] 0~12	1(Bit0~3)
199	Assignable Foot SW Mode	LATCH/UNLATCH	0/1	^(Bit4)
200	Assignable Pedal Function	FT.Pedal/MIDI BC/~	[*6] 0~5	1(Bit0~2)
201	Pad Hold	OFF/ON	0/1	^(Bit3)
202	[Link Arpeggio] Pattern	UP~U-35	0~19	1
203	Latch	OFF/ON	0/1	1(Bit0)

204	Key Sync	OFF/ON	0/1	^(Bit1)
205	Octaves	1~4	0~3	^(Bit2~3)
206	Keyboard OFF/ON	OFF/ON	0/1	^(Bit4)
207	Auto Running	OFF/ON	0/1	^(Bit5)
208	Velocity	-127~+127	-127~+127	1
209	Gate	-127~+127	-127~+127	1
210	Resolution	16T/16/8T/8/4T/4	0~5	1
211	Speed	30~285	0~255	1
	reserved			2
			Total	208

[*1]:Effect1&2 Type

ID	Name
0	Overdrive
1	Compressor
2	Parametric EQ
3	Wah
4	Exciter
5	Decimator
6	Chorus
7	Flanger
8	Phaser
9	Rotary Speaker-small
10	Delay-mono
11	Talking Modulator (FX1 only)
12	Multitap Delay (FX1 only)
13	Ensemble (FX1 only)
14	Rotary Speaker-Large (FX1 only)

[*2]:Master Effect Type

ID	Name
0	Stereo Delay
1	Reverb-Hall
2	Reverb-Room

[*3]:Assignable SW1 Function List

Mod.SW1(CC#80)
Master FX OFF/ON(CC#91)
FX1 OFF/ON(CC#92)
FX2 OFF/ON(CC#93)
Octave Up
Octave Down
Mono SW(CC#18)
Unison OFF/ON(CC#75)

[*4]:Assignable SW2 Function List

Mod.SW2(CC#81)
Master FX OFF/ON(CC#91)
FX1 OFF/ON(CC#92)
FX2 OFF/ON(CC#93)
Octave Up
Octave Down
Mono SW(CC#18)
Unison OFF/ON(CC#75)

[*5]:Assignable Foot SW Function List

Foot SW(CC#82)
MIDI Damper(CC#64)
MIDI Portamento SW(CC#65)
MIDI Sostenuato(CC#66)
Master FX OFF/ON(CC#92)
FX1 OFF/ON(CC#94)
FX2 OFF/ON(CC#95)
Octave Up
Octave Down
Mono SW(CC#18)
Unison OFF/ON(CC#75)
Arpeggio OFF/ON
Pad Hold

[*6]:Assignable Pedal Function List

Foot Pedal(CC#4)
MIDI Breath Control(CC#2)
MIDI Portamento Time(CC#5)
MIDI Volume(CC#7)
MIDI Panpot(CC#10)
MIDI Expression(CC#11)

Arpeggio Pattern Parameters

Revision 1.0 (1997.9.12)

ID	Parameter Name	Display	Value	Size
1~16	Pattern Name		20H~7FH	16
17	reserved		5(User)	1
18	reserved			1
19	Sort	OFF/ON	0/1	1
20	Keyboard Scan Zone Top	C-1~G9	0~127	1
21	Keyboard Scan Zone Bottom	C-1~G9	0~127	1
22	Velocity	1~127/KEY/STEP	1~129	1
23	reserved			1
24	reserved			1
25	Gate	0%~100%/STEP	0~101	1
26	reserved			1
27	reserved			1
28	Swing	-50~+50%	-50~+50	1
29	reserved			1
30	Pattern Length(user pat. only)	1~36	1~36	1
31	Arpeggio Type	Type1~Type4 [*1]	0~3	1
32	Octave Motion(user pat. only)	UP/DOWN/BOTH/PARALLEL	0~3	1
	reserved			8
	(Step1)			
33	Tone MSB	[*2]	00H~03H	1
34	Tone LSB	[*2]	00H~FFH	1
35	Pitch Offset	-48~+48	-48~+48	1
36	Flam	-99~+99	-99~+99	1
37	Velocity	1~127/KEY	1~128	1
38	Gate	OFF/1%~100%/LEGART	0~101	1
39~	(Step2)			6
:	:			:
243~	(Step36)			6
			Total	256

[*1]:Arpeggio Type
 Type1:As Played
 Type2:As Played(Fill)
 Type3:Running Up
 Type4:Up & Down

[*2]:Tone
 Tone9, 8, 7, 6, 5, 4, 3, 2, 1, 0
 +-----+-----+-----+-----+-----+-----+-----+-----+-----+
 | 0 | 0 | 0 | 0 | 0 | 0 | 0/1|0/1|0/1|0/1|0/1|0/1|0/1|0/1|0/1|0/1|
 +-----+-----+-----+-----+-----+-----+-----+-----+-----+
 <===== MSB =====>: <===== LSB =====>

Program Parameters

Revision 1.0 (1997.9.12)

ID	Parameter Name	Display	Value	Size
[Program Common]				
1~16	Program Name		20H~7FH	16
17	Program Category	Synth-Hard/Synth-Soft/~ [*1]	0~17	1
18	User Group	GROUP1~GROUP16	0~15	1
19	Hold	OFF/ON	0/1	1(Bit0)
20	Key Priority (Voice Assign/Trigger)	LAST/LOW/HIGH	0~2	^(Bit1~2)
21	Voice Assign Mode	MONO_MULTI/MONO_SINGLE/POLY	0~2	^(Bit3~4)
22	Retrigger Controller (Mod.Source List 2)		0~45	1
23	Retrigger Control Threshold (Unison)	1~127	1~127	1
24	Unison Type	OFF/2/3/6	0~3	1(Bit0~1)
25	Unison SW	OFF/ON	0/1	^(Bit2)
26	Unison Mode	FIXED/DYNAMIC	0/1	^(Bit3)
27	Unison Detune (Scale)	0~99[cent]	0~99	1
28	Scale Key	C~B	0~11	1(Bit0~3)
29	Scale Type	EQUAL_TEMP/PURE_MAJOR/~ [*2]	0~10	^(Bit4~7)
30	Random Pitch Intensity	0~99	0~99	1
			Subtotal	25
[EG1]				
31	Start Level	-99~+99	-99~+99	1
32	Attack Time	0~99	0~99	1
33	Attack Level	-99~+99	-99~+99	1
34	Decay Time	0~99	0~99	1
35	Break Level	-99~+99	-99~+99	1
36	Slope Time	0~99	0~99	1
37	Sustain Level	-99~+99	-99~+99	1
38	Release Time	0~99	0~99	1
39	Release Level	-99~+99	-99~+99	1
40	EG Level Mod Source	(Mod.Source List 1)	0~48	1
41	EG Level Mod Int.	-99~+99	-99~+99	1
42	EG Level Velocity Control	-99~+99	-99~+99	1
43	EG Time Mod Source	(Mod.Source List 1)	0~48	1
44	EG Time Mod Int.	-99~+99	-99~+99	1
45	EG Node Time Mod Source	(Mod.Source List 1)	0~48	1
46	Attack Time Mod Int.	-99~+99	-99~+99	1
47	Decay Time Mod Int.	-99~+99	-99~+99	1
48	Slope Time Mod Int.	-99~+99	-99~+99	1
49	Release Time Mod Int.	-99~+99	-99~+99	1
			Subtotal	19
[EG2]				
50	Start Level	-99~+99	-99~+99	1
51	Attack Time	0~99	0~99	1
52	Attack Level	-99~+99	-99~+99	1
53	Decay Time	0~99	0~99	1
54	Break Level	-99~+99	-99~+99	1
55	Slope Time	0~99	0~99	1
56	Sustain Level	-99~+99	-99~+99	1
57	Release Time	0~99	0~99	1
58	Release Level	-99~+99	-99~+99	1
59	EG Level Mod Source	(Mod.Source List 1)	0~48	1
60	EG Level Mod Int.	-99~+99	-99~+99	1
61	EG Level Velocity Control	-99~+99	-99~+99	1
62	EG Time Mod Source	(Mod.Source List 1)	0~48	1
63	EG Time Mod Int.	-99~+99	-99~+99	1
64	EG Node Time Mod Source	(Mod.Source List 1)	0~48	1
65	Attack Time Mod Int.	-99~+99	-99~+99	1
66	Decay Time Mod Int.	-99~+99	-99~+99	1
67	Slope Time Mod Int.	-99~+99	-99~+99	1
68	Release Time Mod Int.	-99~+99	-99~+99	1
			Subtotal	19
[EG3]				
69	Start Level	-99~+99	-99~+99	1
70	Attack Time	0~99	0~99	1
71	Attack Level	-99~+99	-99~+99	1
72	Decay Time	0~99	0~99	1
73	Break Level	-99~+99	-99~+99	1
74	Slope Time	0~99	0~99	1
75	Sustain Level	-99~+99	-99~+99	1
76	Release Time	0~99	0~99	1
77	Release Level	-99~+99	-99~+99	1
78	EG Level Mod Source	(Mod.Source List 1)	0~48	1
79	EG Level Mod Int.	-99~+99	-99~+99	1
80	EG Level Velocity Control	-99~+99	-99~+99	1
81	EG Time Mod Source	(Mod.Source List 1)	0~48	1
82	EG Time Mod Int.	-99~+99	-99~+99	1
83	EG Node Time Mod Source	(Mod.Source List 1)	0~48	1
84	Attack Time Mod Int.	-99~+99	-99~+99	1
85	Decay Time Mod Int.	-99~+99	-99~+99	1

86	Slope Time Mod Int.	-99~+99	-99~+99	1	
87	Release Time Mod Int.	-99~+99	-99~+99	1	
			Subtotal	19	

[EG4]					
88	Start Level	-99~+99	-99~+99	1	
89	Attack Time	0~99	0~99	1	
90	Attack Level	-99~+99	-99~+99	1	
91	Decay Time	0~99	0~99	1	
92	Break Level	-99~+99	-99~+99	1	
93	Slope Time	0~99	0~99	1	
94	Sustain Level	-99~+99	-99~+99	1	
95	Release Time	0~99	0~99	1	
96	Release Level	-99~+99	-99~+99	1	
97	EG Level Mod Source	(Mod.Source List 1)	0~48	1	
98	EG Level Mod Int.	-99~+99	-99~+99	1	
99	EG Level Velocity Control	-99~+99	-99~+99	1	
100	EG Time Mod Source	(Mod.Source List 1)	0~48	1	
101	EG Time Mod Int.	-99~+99	-99~+99	1	
102	EG Node Time Mod Source	(Mod.Source List 1)	0~48	1	
103	Attack Time Mod Int.	-99~+99	-99~+99	1	
104	Decay Time Mod Int.	-99~+99	-99~+99	1	
105	Slope Time Mod Int.	-99~+99	-99~+99	1	
106	Release Time Mod Int.	-99~+99	-99~+99	1	
			Subtotal	19	
=====					
[LFO1]					
107	Wave Form	Triangle'0/Triangle'90/~[*3]	0~17	1	(Bit0~4)
108	Key Sync SW	OFF/byTIMBRE/byVOICE	0/1/2	1	^(Bit6~7)
109	Frequency	0~199	0~199	1	
110	Frequency Mod1 Source	(Mod.Source List 1)	0~48	1	
111	Frequency Mod1 Int.	-99~+99	-99~+99	1	
112	Frequency Mod2 Source	(Mod.Source List 1)	0~48	1	
113	Frequency Mod2 Int.	-99~+99	-99~+99	1	
114	Fade In	0~99	0~99	1	
115	Amplitude Mod Source	(Mod.Source List 1)	0~48	1	
116	Amplitude Mod Int.	-99~+99	-99~+99	1	
117	Offset	-50~+50	-50~+50	1	
118	MIDI Sync	OFF/ON	0/1	1	(Bit7)
119	MIDI Sync Base	~8T~	0~7	1	^(Bit4~6)
120	MIDI Sync Time	1~16	0~15	1	^(Bit0~3)
			Subtotal	11	

[LFO2]					
121	Wave Form	Triangle'0/Triangle'90/~[*3]	0~17	1	(Bit0~4)
122	Key Sync SW	OFF/byTIMBRE/byVOICE	0/1/2	1	^(Bit6~7)
123	Frequency	0~199	0~199	1	
124	Frequency Mod1 Source	(Mod.Source List 1)	0~48	1	
125	Frequency Mod1 Int.	-99~+99	-99~+99	1	
126	Frequency Mod2 Source	(Mod.Source List 1)	0~48	1	
127	Frequency Mod2 Int.	-99~+99	-99~+99	1	
128	Fade In	0~99	0~99	1	
129	Amplitude Mod Source	(Mod.Source List 1)	0~48	1	
130	Amplitude Mod Int.	-99~+99	-99~+99	1	
131	Offset	-50~+50	-50~+50	1	
132	MIDI Sync	OFF/ON	0/1	1	(Bit7)
133	MIDI Sync Base	~8T~	0~7	1	^(Bit4~6)
134	MIDI Sync Time	1~16	0~15	1	^(Bit0~3)
			Subtotal	11	

[LFO3]					
135	Wave Form	Triangle'0/Triangle'90/~[*3]	0~17	1	(Bit0~4)
136	Key Sync SW	OFF/byTIMBRE/byVOICE	0/1/2	1	^(Bit6~7)
137	Frequency	0~199	0~199	1	
138	Frequency Mod1 Source	(Mod.Source List 1)	0~48	1	
139	Frequency Mod1 Int.	-99~+99	-99~+99	1	
140	Frequency Mod2 Source	(Mod.Source List 1)	0~48	1	
141	Frequency Mod2 Int.	-99~+99	-99~+99	1	
142	Fade In	0~99	0~99	1	
143	Amplitude Mod Source	(Mod.Source List 1)	0~48	1	
144	Amplitude Mod Int.	-99~+99	-99~+99	1	
145	Offset	-50~+50	-50~+50	1	
146	MIDI Sync	OFF/ON	0/1	1	(Bit7)
147	MIDI Sync Base	~8T~	0~7	1	^(Bit4~6)
148	MIDI Sync Time	1~16	0~15	1	^(Bit0~3)
			Subtotal	11	

[LFO4]					
149	Wave Form	Triangle'0/Triangle'90/~[*3]	0~17	1	(Bit0~4)
150	Key Sync SW	OFF/byTIMBRE/byVOICE	0/1/2	1	^(Bit6~7)
151	Frequency	0~199	0~199	1	
152	Frequency Mod1 Source	(Mod.Source List 1)	0~48	1	
153	Frequency Mod1 Int.	-99~+99	-99~+99	1	
154	Frequency Mod2 Source	(Mod.Source List 1)	0~48	1	
155	Frequency Mod2 Int.	-99~+99	-99~+99	1	
156	Fade In	0~99	0~99	1	

157	Amplitude Mod Source	(Mod.Source List 1)	0~48	1
158	Amplitude Mod Int.	-99~+99	-99~+99	1
159	Offset	-50~+50	-50~+50	1
160	MIDI Sync	OFF/ON	0/1	1(Bit7)
161	MIDI Sync Base	~8T~	0~7	^(Bit4~6)
162	MIDI Sync Time	1~16	0~15	^(Bit0~3)
			Subtotal	11
=====				
	[OSC Common]			
	(Pitch Bend)			
163	Intensity(+)	-60~+24	-60~+24	1
164	Intensity(-)	-60~+24	-60~+24	1
165	Step(+)	0,/8,/4,/2,1~12	0~15	1(Bit0~3)
166	Step(-)	0,/8,/4,/2,1~12	0~15	^(Bit4~7)
	(Common Pitch Mod.)			
167	Common Pitch Mod Source	(Mod.Source List 1)	0~48	1
168	Common Pitch Mod Int.	-99~+99	-99~+99	1
	(Portamento)			
169	Portamento SW	OFF/ON	0/1	1(Bit0)
170	Portamento Mode	NORMAL/FINGERED	0/1	^(Bit1)
171	Portamento Time	0~99	0~99	1
172	Portamento Time Mod Source	(Mod.Source List 1)	0~48	1
173	Portamento Time Mod Int.	-99~+99	-99~+99	1
			Subtotal	9
=====				
	[OSC1]			
174	Oscillator Type	Std/Comb/VPM/Reso/~	[*4] 0~12	1
	(Pitch)			
175	Octave	32'~4'	0~3	1
176	Semi Tone	-12~+12	-12~+12	1
177	Fine Tune	-50~+50cent	-50~+50	1
178	Frequency Offset	-10.0~+10.0Hz	-100~+100	1
	(Pitch Slope)			
179	Center Key	C-1~G9	0~127	1
180	Lower Slope	-1.00~+2.00	-50~+100	1
181	Higher Slope	-1.00~+2.00	-50~+100	1
	(Pitch Modulation)			
182	Mod1 Source	(Mod.Source List 1)	0~48	1
183	Mod1 Int.	-99~+99	-99~+99	1
184	Mod1 Int.Controller	(Mod.Source List 1)	0~48	1
185	Mod1 Int.Controller Int.	-99~+99	-99~+99	1
186	Mod2 Source	(Mod.Source List 1)	0~48	1
187	Mod2 Int.	-99~+99	-99~+99	1
	OSC2 Setting			38
			Subtotal	52
=====				
	[OSC2]			
188	Oscillator Type	Std/Comb/VPM/Reso/~	[*4] 0~8	1
	(Pitch)			
189	Octave	32'~4'	0~3	1
190	Semi Tone	-12~+12	-12~+12	1
191	Fine Tune	-50~+50cent	-50~+50	1
192	Frequency Offset	-10.0~+10.0Hz	-100~+100	1
	(Pitch Slope)			
193	Center Key	C-1~G9	0~127	1
194	Lower Slope	-1.00~+2.00	-50~+100	1
195	Higher Slope	-1.00~+2.00	-50~+100	1
	(Pitch Modulation)			
196	Mod1 Source	(Mod.Source List 1)	0~48	1
197	Mod1 Int.	-99~+99	-99~+99	1
198	Mod1 Int.Controller	(Mod.Source List 1)	0~48	1
199	Mod1 Int.Controller Int.	-99~+99	-99~+99	1
200	Mod2 Source	(Mod.Source List 1)	0~48	1
201	Mod2 Int.	-99~+99	-99~+99	1
	OSC2 Setting			38
			Subtotal	52
=====				
	[SUB OSC]			
	(Pitch)			
202	Octave	32'~4'	0~3	1
203	Semi Tone	-12~+12	-12~+12	1
204	Fine Tune	-50~+50cent	-50~+50	1
205	Frequency Offset	-10.0~+10.0Hz	-100~+100	1
	(Pitch Slope)			
206	Center Key	C-1~G9	0~127	1
207	Lower Slope	-1.00~+2.00	-50~+100	1
208	Higher Slope	-1.00~+2.00	-50~+100	1
	(Pitch Modulation)			
209	Mod1 Source	(Mod.Source List 1)	0~48	1
210	Mod1 Int.	-99~+99	-99~+99	1
211	Mod1 Int.Controller	(Mod.Source List 1)	0~48	1
212	Mod1 Int.Controller Int.	-99~+99	-99~+99	1
213	Mod2 Source	(Mod.Source List 1)	0~48	1
214	Mod2 Int.	-99~+99	-99~+99	1
215	Wave Form	SAW/SQU/TRI/SIN	0~3	1
			Subtotal	14

[Noise Generator]				
216	Noise Filter Type	THRU/LPF/HPF/BPF	0~3	1
217	Noise Filter Input Trim	0~99	0~99	1
218	Noise Filter Cutoff	0~99	0~99	1
219	Noise Filter Cutoff Mod1 Source	(Mod.Source List 1)	0~48	1
220	Noise Filter Cutoff Mod1 Int.	-99~+99	-99~+99	1
221	Noise Filter Cutoff Mod2 Source	(Mod.Source List 1)	0~48	1
222	Noise Filter Cutoff Mod2 Int.	-99~+99	-99~+99	1
223	Noise Filter Resonance	0~99	0~99	1
			Subtotal	8
[Mixer]				
(OSC1 Out1)				
224	Level	0~99	0~99	1
225	Level Mod Source	(Mod.Source List 1)	0~48	1
226	Level Mod Int.	-99~+99	-99~+99	1
(OSC1 Out2)				
227	Level	0~99	0~99	1
228	Level Mod Source	(Mod.Source List 1)	0~48	1
229	Level Mod Int.	-99~+99	-99~+99	1
(OSC2 Out1)				
230	Level	0~99	0~99	1
231	Level Mod Source	(Mod.Source List 1)	0~48	1
232	Level Mod Int.	-99~+99	-99~+99	1
(OSC2 Out2)				
233	Level	0~99	0~99	1
234	Level Mod Source	(Mod.Source List 1)	0~48	1
235	Level Mod Int.	-99~+99	-99~+99	1
(SUB OSC Out1)				
236	Level	0~99	0~99	1
237	Level Mod Source	(Mod.Source List 1)	0~48	1
238	Level Mod Int.	-99~+99	-99~+99	1
(SUB OSC Out2)				
239	Level	0~99	0~99	1
240	Level Mod Source	(Mod.Source List 1)	0~48	1
241	Level Mod Int.	-99~+99	-99~+99	1
(NOISE Out1)				
242	Level	0~99	0~99	1
243	Level Mod Source	(Mod.Source List 1)	0~48	1
244	Level Mod Int.	-99~+99	-99~+99	1
(NOISE Out2)				
245	Level	0~99	0~99	1
246	Level Mod Source	(Mod.Source List 1)	0~48	1
247	Level Mod Int.	-99~+99	-99~+99	1
(Feedback Out1)				
248	Level	0~99	0~99	1
249	Level Mod Source	(Mod.Source List 1)	0~48	1
250	Level Mod Int.	-99~+99	-99~+99	1
(Feedback Out2)				
251	Level	0~99	0~99	1
252	Level Mod Source	(Mod.Source List 1)	0~48	1
253	Level Mod Int.	-99~+99	-99~+99	1
(Mixer SW)				
254	OSC1 Mixer Output SW	OFF/ON	0/1	1(Bit0)
255	OSC2 Mixer Output SW	OFF/ON	0/1	^(Bit1)
256	SUB Mixer Output SW	OFF/ON	0/1	^(Bit2)
257	Noise Mixer Output SW	OFF/ON	0/1	^(Bit3)
			Subtotal	31
[Filter]				
258	Filter Routing	SERI1/SERI2/PARA	0/1/2	1(Bit0~1)
259	Filter2 Link Switch	OFF/ON	0/1	^(Bit2)
260	Filter EG Knob's Target	FLT1/FLT2/FLT1&2	1~3	^(Bit4~5)
[Filter 1]				
261	Filter Type	LPF/HPF/BPF/BRF/2BPF	1~5	1
262	Input Trim	0~99	0~99	1
263	Cutoff Frequency	0~99	0~99	1
(Cutoff Keyboard Track)				
264	Low Key	C-1~G9	0~127	1
265	High Key	C-1~G9	0~127	1
266	Lower Intensity	-99~+99	-99~+99	1
267	Higher Intensity	-99~+99	-99~+99	1
(Cutoff Modulation)				
268	Cutoff Frequency Mod EG	EG1~EG4/A.EG	1~5	1
269	Cutoff Frequency Mod EG Int.	-99~+99	-99~+99	1
270	Cutoff Frequency Mod1 Source	(Mod.Source List 1)	0~48	1
271	Cutoff Frequency Mod1 Int.	-99~+99	-99~+99	1
272	Cutoff Frequency Mod2 Source	(Mod.Source List 1)	0~48	1
273	Cutoff Frequency Mod2 Int.	-99~+99	-99~+99	1
(Resonance)				
274	Resonance	0~99	0~99	1
275	Resonance Mod Source	(Mod.Source List 1)	0~48	1
276	Resonance Mod Int.	-99~+99	-99~+99	1
(Filter-B)				
277	Input Trim	0~99	0~99	1
278	Cutoff Frequency	0~99	0~99	1
(Cutoff-B Keyboard Track)				

279	Low Key	C-1~G9	0~127	1
280	High Key	C-1~G9	0~127	1
281	Lower Intensity	-99~+99	-99~+99	1
282	Higher Intensity (Cutoff-B Modulation)	-99~+99	-99~+99	1
283	Cutoff Frequency Mod EG Int.	-99~+99	-99~+99	1
284	Cutoff Frequency Mod1 Int.	-99~+99	-99~+99	1
285	Cutoff Frequency Mod2 Int. (Resonance-B)	-99~+99	-99~+99	1
286	Resonance	0~99	0~99	1
287	Resonance Mod Int.	-99~+99	-99~+99	1

[Filter 2]				
288	Filter Type	LPF/HPF/BPF/BRF/2BPF	1~5	1
289	Input Trim	0~99	0~99	1
290	Cutoff Frequency (Cutoff Keyboard Track)	0~99	0~99	1
291	Low Key	C-1~G9	0~127	1
292	High Key	C-1~G9	0~127	1
293	Lower Intensity	-99~+99	-99~+99	1
294	Higher Intensity (Cutoff Modulation)	-99~+99	-99~+99	1
295	Cutoff Frequency Mod EG	EG1~EG4/A.EG	1~5	1
296	Cutoff Frequency Mod EG Int.	-99~+99	-99~+99	1
297	Cutoff Frequency Mod1 Source	(Mod.Source List 1)	0~48	1
298	Cutoff Frequency Mod1 Int.	-99~+99	-99~+99	1
299	Cutoff Frequency Mod2 Source	(Mod.Source List 1)	0~48	1
300	Cutoff Frequency Mod2 Int. (Resonance)	-99~+99	-99~+99	1
301	Resonance	0~99	0~99	1
302	Resonance Mod Source	(Mod.Source List 1)	0~48	1
303	Resonance Mod Int. (Filter-B)	-99~+99	-99~+99	1
304	Input Trim	0~99	0~99	1
305	Cutoff Frequency (Cutoff-B Keyboard Track)	0~99	0~99	1
306	Low Key	C-1~G9	0~127	1
307	High Key	C-1~G9	0~127	1
308	Lower Intensity	-99~+99	-99~+99	1
309	Higher Intensity (Cutoff-B Modulation)	-99~+99	-99~+99	1
310	Cutoff Frequency Mod EG Int.	-99~+99	-99~+99	1
311	Cutoff Frequency Mod1 Int.	-99~+99	-99~+99	1
312	Cutoff Frequency Mod2 Int. (Resonance-B)	-99~+99	-99~+99	1
313	Resonance	0~99	0~99	1
314	Resonance Mod Int.	-99~+99	-99~+99	1

			Subtotal	55
=====				
[Amplitude]				
[Amp 1]				
315	Amplitude (Amp Keyboard Track)	0~99	0~99	1
316	Low Key	C-1~G9	0~127	1
317	High Key	C-1~G9	0~127	1
318	Lower Int.	-99~+99	-99~+99	1
319	Higher Int. (Amp Modulation)	-99~+99	-99~+99	1
320	Amplitude Mod EG	EG1~EG4/A.EG	1~5	1
321	reserved			1
322	Amplitude Mod Source	(Mod.Source List 1)	0~48	1
323	Amplitude Mod Int.	-99~+99	-99~+99	1

[Amp 2]				
324	Amplitude (Amp Keyboard Track)	0~99	0~99	1
325	Low Key	C-1~G9	0~127	1
326	High Key	C-1~G9	0~127	1
327	Lower Intensity	-99~+99	-99~+99	1
328	Higher Intensity (Amp Modulation)	-99~+99	-99~+99	1
329	Amplitude Mod EG	EG1~EG4/A.EG	1~5	1
330	(Not Use)	-99~+99	-99~+99	1
331	Amplitude Mod Source	(Mod.Source List 1)	0~48	1
332	Amplitude Mod Int.	-99~+99	-99~+99	1

[Amp EG]				
333	reserved	0~99	0~99	1
334	Attack Time	0~99	0~99	1
335	Attack Level	0~99	0~99	1
336	Decay Time	0~99	0~99	1
337	Break Level	0~99	0~99	1
338	Slope Time	0~99	0~99	1
339	Sustain Level	0~99	0~99	1
340	Release Time	0~99	0~99	1
341	reserved			1
342	EG Level Mod Source	(Mod.Source List 1)	0~48	1
343	EG Level Mod Int.	-99~+99	-99~+99	1
344	EG Level Velocity Control	-99~+99	-99~+99	1
345	EG Time Mod Source	(Mod.Source List 1)	0~48	1

346	EG Time Mod Int.	-99~+99		-99~+99	1
347	EG Node Time Mod Source	(Mod.Source List 1)		0~48	1
348	Attack Time Mod Int.	-99~+99		-99~+99	1
349	Decay Time Mod Int.	-99~+99		-99~+99	1
350	Slope Time Mod Int.	-99~+99		-99~+99	1
351	Release Time Mod Int.	-99~+99		-99~+99	1
				Subtotal	37
=====					
[Output]					
352	Panpot	LEFT~CENTER~RIGHT		0^64~127	1
353	Panpot Mod Source	(Mod.Source List 1)		0~48	1
354	Panpot Mod Int.	-99~+99		-99~+99	1
355	Output Level	0~127		0~127	1
				Subtotal	4
=====					
[Effect]					
356	Effect Send	0~100%		0~100	1
357	Effect Send Mod Source	(Mod.Source List 1)		0~48	1
358	Effect Send Mod Int.	-99~+99		-99~+99	1
(Effect 1)					
359	Effect1 Select	OD~R.SPEAKER	[*5]	0~14	1
	Effect1 Setting				22
(Effect 2)					
360	Effect2 Select	OD~DELAY	[*5]	0~10	1
	Effect2 Setting				22
(Master Effect)					
361	Master Effect Select	ST.DELAY~REVERB~ROOM	[*6]	0~2	1
	Master Effect Setting				18
[2 Band EQ]					
362	Low Freq	80.00Hz~2.39kHz		0~49	1
363	Low Gain	-18.0~+18.0dB		-36~+36	1
364	High Freq	400.0~11.9kHz		0~49	1
365	High Gain	-18.0~+18.0dB		-36~+36	1
				Subtotal	72
=====					
[Controller]					
366	SW1 Function	MOD.SW1/MasterFXSW/~	[*7]	0~7	1(Bit0~6)
367	SW1 Mode	LATCH/UNLATCH		0/1	^(Bit7)
368	SW2 Function	MOD.SW2/MasterFXSW/~	[*8]	0~7	1(Bit0~6)
369	SW2 Mode	LATCH/UNLATCH		0/1	^(Bit7)
370	Assignable Foot SW Function	FT.SW/MIDI_Damper/~	[*9]	0~12	1(Bit0~6)
371	Assignable Foot SW Mode	LATCH/UNLATCH		0/1	^(Bit7)
372	Assignable Pedal Function	FT.Pedal/MIDI_BC/~	[*10]	0~5	1(Bit0~2)
373	Pad Hold	OFF/ON		0/1	^(Bit3)
				Subtotal	4
=====					
[Link Arpeggio]					
374	Pattern	UP~U3-5		0~19	1
375	Latch	OFF/ON		0/1	1(Bit0)
376	Key Sync	OFF/ON		0/1	^(Bit1)
377	Octave	1~4		0~3	^(Bit2~3)
378	Keyboard OFF/ON	OFF/ON		0/1	^(Bit4)
379	Auto Run	OFF/ON		0/1	^(Bit5)
380	VelocityControl	-127~127		-127~127	1
381	GateControl	-127~127		-127~127	1
382	Resolution	16T/16/8T/8/4T/4		0~5	1
383	Speed	30~285		0~255	1
				Subtotal	7
				Subtotal	13
=====					
[PE Knob1]					
384	Parameter	OFF~	[*11]	0~230	1
385	Left Value	0~100%		0~100	1
386	Right Value	0~100%		0~100	1
387	Curve	LINE/EXPO/LOG/SW		0/1/2/3	1
388	Parameter	OFF~	[*11]	0~230	1
389	Left Value	0~100%		0~100	1
390	Right Value	0~100%		0~100	1
391	Curve	LINE/EXPO/LOG/SW		0/1/2/3	1
392	Parameter	OFF~	[*11]	0~230	1
393	Left Value	0~100%		0~100	1
394	Right Value	0~100%		0~100	1
395	Curve	LINE/EXPO/LOG/SW		0/1/2/3	1
396	Parameter	OFF~	[*11]	0~230	1
397	Left Value	0~100%		0~100	1
398	Right Value	0~100%		0~100	1
399	Curve	LINE/EXPO/LOG/SW		0/1/2/3	1
[PE Knob2]					
400	Parameter	OFF~	[*11]	0~230	1
401	Left Value	0~100%		0~100	1
402	Right Value	0~100%		0~100	1
403	Curve	LINE/EXPO/LOG/SW		0/1/2/3	1
404	Parameter	OFF~	[*11]	0~230	1
405	Left Value	0~100%		0~100	1
406	Right Value	0~100%		0~100	1
407	Curve	LINE/EXPO/LOG/SW		0/1/2/3	1

408	Parameter	OFF~	[*11]	0~230	1
409	Left Value	0~100%		0~100	1
410	Right Value	0~100%		0~100	1
411	Curve	LINE/EXPO/LOG/SW		0/1/2/3	1
412	Parameter	OFF~	[*11]	0~230	1
413	Left Value	0~100%		0~100	1
414	Right Value	0~100%		0~100	1
415	Curve	LINE/EXPO/LOG/SW		0/1/2/3	1
[PE Knob3]					
416	Parameter	OFF~	[*11]	0~230	1
417	Left Value	0~100%		0~100	1
418	Right Value	0~100%		0~100	1
419	Curve	LINE/EXPO/LOG/SW		0/1/2/3	1
420	Parameter	OFF~	[*11]	0~230	1
421	Left Value	0~100%		0~100	1
422	Right Value	0~100%		0~100	1
423	Curve	LINE/EXPO/LOG/SW		0/1/2/3	1
424	Parameter	OFF~	[*11]	0~230	1
425	Left Value	0~100%		0~100	1
426	Right Value	0~100%		0~100	1
427	Curve	LINE/EXPO/LOG/SW		0/1/2/3	1
428	Parameter	OFF~	[*11]	0~230	1
429	Left Value	0~100%		0~100	1
430	Right Value	0~100%		0~100	1
431	Curve	LINE/EXPO/LOG/SW		0/1/2/3	1
[PE Knob4]					
432	Parameter	OFF~	[*11]	0~230	1
433	Left Value	0~100%		0~100	1
434	Right Value	0~100%		0~100	1
435	Curve	LINE/EXPO/LOG/SW		0/1/2/3	1
436	Parameter	OFF~	[*11]	0~230	1
437	Left Value	0~100%		0~100	1
438	Right Value	0~100%		0~100	1
439	Curve	LINE/EXPO/LOG/SW		0/1/2/3	1
440	Parameter	OFF~	[*11]	0~230	1
441	Left Value	0~100%		0~100	1
442	Right Value	0~100%		0~100	1
443	Curve	LINE/EXPO/LOG/SW		0/1/2/3	1
444	Parameter	OFF~	[*11]	0~230	1
445	Left Value	0~100%		0~100	1
446	Right Value	0~100%		0~100	1
447	Curve	LINE/EXPO/LOG/SW		0/1/2/3	1
[PE Knob5]					
448	Parameter	OFF~	[*11]	0~230	1
449	Left Value	0~100%		0~100	1
450	Right Value	0~100%		0~100	1
451	Curve	LINE/EXPO/LOG/SW		0/1/2/3	1
452	Parameter	OFF~	[*11]	0~230	1
453	Left Value	0~100%		0~100	1
454	Right Value	0~100%		0~100	1
455	Curve	LINE/EXPO/LOG/SW		0/1/2/3	1
456	Parameter	OFF~	[*11]	0~230	1
457	Left Value	0~100%		0~100	1
458	Right Value	0~100%		0~100	1
459	Curve	LINE/EXPO/LOG/SW		0/1/2/3	1
460	Parameter	OFF~	[*11]	0~230	1
461	Left Value	0~100%		0~100	1
462	Right Value	0~100%		0~100	1
463	Curve	LINE/EXPO/LOG/SW		0/1/2/3	1
				Subtotal	80
				Total	576

OSC Parameters

[Standard OSC]					
464	Wave	SAW/PULSE		0/1	1
465	Wave Edge	0~99		0~99	1
466	Wave Level	0~99		0~99	1
467	Triangle Level	0~99		0~99	1
468	Sine Level	0~99		0~99	1
469	Triangle Phase Shift	-99~+99		-99~+99	1
470	Wave Form	-99~+99		-99~+99	1
471	Wave Form Mod LFO	LFO1~LFO4		6~9	1
472	Wave Form Mod LFO Int.	-99~+99		-99~+99	1
473	Wave Form Mod Source	(Mod.Source List 1)		0~48	1
474	Wave Form Mod Int.	-99~+99		-99~+99	1
(Wave Shape)					
475	Wave Shape Input Level	0~99		0~99	1
476	Wave Shape Input Lvl Mod Source	(Mod.Source List 1)		0~48	1
477	Wave Shape Input Lvl Mod Int	-99~+99		-99~+99	1
478	Wave Shape Offset	-99~+99		-99~+99	1
479	Wave Shape Table	CLIP/RESO		0/1	1
480	Wave Shape	0~99		0~99	1
481	Wave Shape Mod Source	(Mod.Source List 1)		0~48	1
482	Wave Shape Mod Int.	-99~+99		-99~+99	1
483	Wave Shape Balance	0~99		0~99	1
484	Wave Shape Balance Mod Source	(Mod.Source List 1)		0~48	1
485	Wave Shape Balance Mod Int.	-99~+99		-99~+99	1

486	[Comb Filter OSC] Input Select	SC1+Noise/SubOSC+Noise/ Filter1+Noise/Filter2+Noise /Pulse Noise/Impulse	0~5	1
487	Input Wave Level	0~99	0~99	1
488	Noise Level	0~99	0~99	1
489	Width	0~99	0~99	1
490	Input Level Mod Source	(Mod.Source List 1)	0~48	1
491	Input Level Mod Int.	-99~+99	-99~+99	1
492	Comb Filter Feedback	0~99	0~99	1
493	Feedback Mod1 Source	(Mod.Source List 1)	0~48	1
494	Feedback Mod1 Int.	-99~+99	-99~+99	1
495	Feedback Mod2 Source	(Mod.Source List 1)	0~48	1
496	Feedback Mod2 Int.	-99~+99	-99~+99	1
497	High Damp	0~99	0~99	1
498	High Damp Mod Source	(Mod.Source List 1)	0~48	1
499	High Damp Mod Int.	-99~+99	-99~+99	1
500	[VPM OSC] (Carrier) Wave	SAW/SQU/TRI/SIN	0/1/2/3	1
501	Level	0~99	0~99	1
502	Level Mod1 Source	(Mod.Source List 1)	0~48	1
503	Level Mod1 Int.	-99~+99	-99~+99	1
504	Level Mod2 Source	(Mod.Source List 1)	0~48	1
505	Level Mod2 Int.	-99~+99	-99~+99	1
506	Wave Shape	0~99	0~99	1
507	Wave Shape Mod1 Source	(Mod.Source List 1)	0~48	1
508	Wave Shape Mod1 Int.	-99~+99	-99~+99	1
509	Wave Shape Mod2 Source	(Mod.Source List 1)	0~48	1
510	Wave Shape Mod2 Int.	-99~+99	-99~+99	1
511	Wave Shape Type	1/2	0/1	1
512	Feedback (Modulator)	0~99	0~99	1
513	Frequency Coarse	0.5/1~16	0~16	1
514	Frequency Fine	-50~+50	-50~+50	1
515	Frequency Mod1 Source	(Mod.Source List 1)	0~48	1
516	Frequency Mod1 Int.	-99~+99	-99~+99	1
517	Frequency Mod2 Source	(Mod.Source List 1)	0~48	1
518	Frequency Mod2 Int.	-99~+99	-99~+99	1
519	Wave	SAW/SQU/TRI/SIN/OSC1(2) /Sub OSC/Filter1/Filter2	0~7	1
520	Level	0~99	0~99	1
521	Level Mod.1 Source	(Mod.Source List 1)	0~48	1
522	Level Mod.1 Intensity	-99~+99	-99~+99	1
523	Level Mod.2 Source	(Mod.Source List 1)	0~48	1
524	Level Mod.2 Intensity	-99~+99	-99~+99	1
525	[Resonance OSC] Input Select	OSC1(2)/Sub OSC/Noise /Filter1/Filter2	0~4	1
526	Input Level	0~99	0~99	1
527	Input Level Mod1 Source	(Mod.Source List 1)	0~48	1
528	Input Level Mod1 Int.	-99~+99	-99~+99	1
529	Input Level Mod2 Source	(Mod.Source List 1)	0~48	1
530	Input Level Mod2 Int. (BPF1)	-99~+99	-99~+99	1
531	Resonance1	0~99	0~99	1
532	Harmonics1	1~16	0~15	1
533	Harmonics1 Mod Source	(Mod.Source List 1)	0~48	1
534	Harmonics1 Mod Int.	-15~+15	-15~+15	1
535	Frequency Fine1	-99~+99	-99~+99	1
536	Level1 (BPF2)	0~99	0~99	1
537	Resonance2	0~99	0~99	1
538	Harmonics2	1~16	0~15	1
539	Harmonics2 Mod Source	(Mod.Source List 1)	0~48	1
540	Harmonics2 Mod Int.	-15~+15	-15~+15	1
541	Frequency Fine2	-99~+99	-99~+99	1
542	Level2 (BPF3)	0~99	0~99	1
543	Resonance3	0~99	0~99	1
544	Harmonics3	1~16	0~15	1
545	Harmonics3 Mod Source	(Mod.Source List 1)	0~48	1
546	Harmonics3 Mod Int.	-15~+15	-15~+15	1
547	Frequency Fine3	-99~+99	-99~+99	1
548	Level3 (BPF4)	0~99	0~99	1
549	Resonance4	0~99	0~99	1
550	Harmonics4	1~16	0~15	1
551	Harmonics4 Mod Source	(Mod.Source List 1)	0~48	1
552	Harmonics4 Mod Int.	-15~+15	-15~+15	1
553	Frequency Fine4	-99~+99	-99~+99	1
554	Level4	0~99	0~99	1
555	Resonance Mod Source	(Mod.Source List 1)	0~48	1
556	Resonance Mod Int.	-99~+99	-99~+99	1
557	[Ring Mod.OSC] Input Select	OSC1(2)/SubOSC/Noise /Filter1/Filter2	0~4	1

558	Carrier Wave	SAW/SQU/TRI/SIN	0~3	1
559	Modulation Depth	0~99	0~99	1
560	Modulation Depth Mod1 Source	(Mod.Source List 1)	0~48	1
561	Modulation Depth Mod1 Int.	-99~+99	-99~+99	1
562	Modulation Depth Mod2 Source	(Mod.Source List 1)	0~48	1
563	Modulation Depth Mod2 Int.	-99~+99	-99~+99	1
564	Type	1/2	0/1	1
565	Wave Edge	0~99	0~99	1

566	[Cross Mod.OSC] Input Select	OSC1(2)/SubOSC/Noise /Filter1/Filter2	0~4	1
567	Carrier Wave	SAW/SQU/TRI/SIN	0~3	1
568	Modulation Depth	0~99	0~99	1
569	Modulation Depth Mod1 Source	(Mod.Source List 1)	0~48	1
570	Modulation Depth Mod1 Int.	-99~+99	-99~+99	1
571	Modulation Depth Mod2 Source	(Mod.Source List 1)	0~48	1
572	Modulation Depth Mod2 Int.	-99~+99	-99~+99	1
573	Wave Edge	0~99	0~99	1

574	[Sync OSC] Input Select	OSC1(2)/SubOSC/Noise /Filter1/Filter2	0~4	1
575	Slave Wave	SAW/SQU/TRI/SIN	0~3	1
576	Wave Edge	0~99	0~99	1

577	[Organ Model] (Drawbar1)			
577	Wave	SIN1/SIN2/SIN3/TRI	0~3	1
578	Harmonics	1~16	0~15	1
579	Fine	-99~+99	-99~+99	1
580	Level	0~99	0~99	1
581	Level Mod Source	(Mod.Source List 1)	0~48	1
582	Level Mod Int.	-99~+99	-99~+99	1
583	Percussion Level (Drawbar2)	0~99	0~99	1
584	Wave	SIN1/SIN2/SIN3/TRI	0~3	1
585	Harmonics	1~16	0~15	1
586	Fine	-99~+99	-99~+99	1
587	Level	0~99	0~99	1
588	Level Mod Source	(Mod.Source List 1)	0~48	1
589	Level Mod Int.	-99~+99	-99~+99	1
590	Percussion Level (Drawbar3)	0~99	0~99	1
591	Wave	SIN1/SIN2/SIN3/TRI	0~3	1
592	Harmonics	1~16	0~15	1
593	Fine	-99~+99	-99~+99	1
594	Level	0~99	0~99	1
595	Level Mod Source	(Mod.Source List 1)	0~48	1
596	Level Mod Int.	-99~+99	-99~+99	1
597	Percussion Level (Percussion)	0~99	0~99	1
598	Trigger Mode	SINGLE/MULTI	0/1	1
599	Decay	0~99	0~99	1
600	Percussion Level Mod Source	(Mod.Source List 1)	0~48	1
601	Percussion Level Mod Int.	-99~+99	-99~+99	1

602	[E. Piano Model] (Hammer)			
602	Force	0~99	0~99	1
603	Force Velocity Curve	OFF/0~99	-1/0~99	1
604	Width	0~99	0~99	1
605	Click Level (Tone Generator)	0~99	0~99	1
606	Decay	0~99	0~99	1
607	Release	0~99	0~99	1
608	Overtone Level	0~99	0~99	1
609	Overtone Freq	0~99	0~99	1
610	Overtone Decay (Pickup)	0~99	0~99	1
611	Pickup Position	0~99	0~99	1
612	Pickup Position Mod Source	(Mod.Source List 1)	0~48	1
613	Pickup Position Mod Int. (Low EQ)	-99~+99	-99~+99	1
614	Low EQ Freq	0~49	0~49	1
615	Low EQ Gain	-18~+18dB	-18~+18	1

616	[Brass Model]			
616	Instrument Type	[*12]	0~5	1
617	Pitch Bend+	Smooth/Jump	0/1	1(Bit0)
618	Pitch Bend-	Smooth/Jump	0/1	^(Bit1)
619	Pressure EG	EG1~EG4/A.EG	1~5	1
620	Pressure EG Intensity	-99~+99	-99~+99	1
621	Pressure Mod1 Source	(Mod.Source List 1)	0~48	1
622	Pressure Mod1 Int.	-99~+99	-99~+99	1
623	Pressure Mod2 Source	(Mod.Source List 1)	0~48	1
624	Pressure Mod2 Int.	-99~+99	-99~+99	1
625	reserved			1
626	Lip Character	0~99	0~99	1
627	Lip Character Mod Source	(Mod.Source List 1)	0~48	1
628	Lip Character Mod Int.	-99~+99	-99~+99	1

629	reserved			1
630	reserved			1
631	reserved			1
632	Bell Tone	0~99	0~99	1
633	Bell Resonance	0~99	0~99	1
634	Noise Level	0~99	0~99	1
635	reserved			1
636	reserved			1
637	reserved			1
638	reserved			1
639	reserved			1
640	reserved			1
641	reserved			1
642	reserved			1
643	reserved			1
644	reserved			1
645	PEQ Freq	0~49	0~49	1
646	PEQ Q	0~29	0~29	1
647	PEQ Gain	-18~+18dB	-18~+18	1
648	Strength	0~99	0~99	1
649	reserved			1
650	reserved			1
651	reserved			1
652	reserved			1
653	reserved			1
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	[Reed Model]			
654	Instrument Type	[*13]	0~16	1
655	Pitch Bend+	Smooth/Jump	0/1	1(Bit0)
656	Pitch Bend-	Smooth/Jump	0/1	^(Bit1)
657	Pressure EG	EG1~EG4/A.EG	1~5	1
658	Pressure EG Int.	-99~+99	-99~+99	1
659	Pressure Mod1 Source	(Mod.Source List 1)	0~48	1
660	Pressure Mod1 Int.	-99~+99	-99~+99	1
661	Pressure Mod2 Source	(Mod.Source List 1)	0~48	1
662	Pressure Mod2 Int.	-99~+99	-99~+99	1
663	reserved			1
664	reserved			1
665	reserved			1
666	reserved			1
667	reserved			1
668	Noise Level	0~99	0~99	1
669	reserved			1
670	reserved			1
671	reserved			1
672	reserved			1
673	reserved			1
674	reserved			1
675	reserved			1
676	reserved			1
677	reserved			1
678	reserved			1
679	reserved			1
680	reserved			1
681	Reed Mod Source	(Mod.Source List 1)	0~48	1
682	Reed Mod Int.	-99~+99	-99~+99	1
683	HPF Fc	0~99	0~99	1
684	HPF Resonance	0~99	0~99	1
685	PEQ Freq	0~49	0~49	1
686	PEQ Q	0~29	0~29	1
687	PEQ Gain	-18~+18dB	-18~+18	1
688	reserved			1
	(Wave Shape)			
689	Offset	-99~+99	-99~+99	1
690	Table	Clip/Reso	0/1	1(Bit7)
691	Shape	0~99	0~99	^(Bit6~0)
692	Shape Mod Source	(Mod.Source List 1)	0~48	1
693	Shape Mod Int.	-99~+99	-99~+99	1
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	[Plucked String Model]			
694	Attack Level	0~99	0~99	1
695	Attack Level Velocity Cntrl	-99~+99	-99~+99	1
696	Attack Curve Up	0~99	0~99	1
697	Attack Curve Up Veloc Cntrl	-99~+99	-99~+99	1
698	Attack Curve Down	0~99	0~99	1
699	Attack Curve Down Veloc Cntrl	-99~+99	-99~+99	1
700	Attack Noise Level	0~99	0~99	1
701	Attack Noise Level Veloc Cntrl	-99~+99	-99~+99	1
702	String Position	0~99	0~99	1
703	String Position Mod Source	(Mod.Source List 1)	0~48	1
704	String Position Mod Int.	-99~+99	-99~+99	1
705	Dispersion	0~99	0~99	1
706	Dispersion Mod Source	(Mod.Source List 1)	0~48	1
707	Dispersion Mod Int.	-99~+99	-99~+99	1
708	Damping	0~99	0~99	1
709	Damping Keyboard Track	-99~+99	-99~+99	1
710	Damping Mod Source	(Mod.Source List 1)	0~48	1
711	Damping Mod Intensity	-99~+99	-99~+99	1
712	Decay	0~99	0~99	1
713	Decay Keyboard Track	-99~+99	-99~+99	1
714	Release	0~99	0~99	1

715	Harmonics Position	0~99	0~99	1
716	Harmonics Mod Source	(Mod.Source List 1)	0~48	1
717	Harmonics Mod Int.	-99~+99	-99~+99	1
718	Pickup Switch	OFF/ON	0/1	1
719	Pickup Position	0~99	0~99	1
720	Pickup Position Mod Source	(Mod.Source List 1)	0~48	1
721	Pickup Position Mod Int.	-99~+99	-99~+99	1
722	Low EQ Freq	0~49	0~49	1
723	Low EQ Gain	-18~+18dB	-18~+18	1
724	Low Boost	0~99	0~99	1

	[Bowed String Model]			
	(Bow Speed)			
725	Bow Speed EG	EG1~EG4/A.EG	1~5	1
726	Bow Speed EG Int.	-99~+99	-99~+99	1
727	Bow Speed Mod1 Source	(Mod.Source List 1)	0~48	1
728	Bow Speed Mod1 Int.	-99~+99	-99~+99	1
729	Bow Speed Mod2 Source	(Mod.Source List 1)	0~48	1
730	Bow Speed Mod2 Int.	-99~+99	-99~+99	1
731	Bow Differential (Pressure)	OFF/ON	0/1	1
732	Pressure EG	EG1~EG4/A.EG	1~5	1
733	Pressure EG Int.	-99~+99	-99~+99	1
734	Pressure Mod Source	(Mod.Source List 1)	0~48	1
735	Pressure Mod Int.	-99~+99	-99~+99	1
736	Rosin Amount (String Position)	0~99	0~99	1
737	String Position	0~99	0~99	1
738	String Position Mod Source	(Mod.Source List 1)	0~48	1
739	String Position Mod Int. (String Character)	-99~+99	-99~+99	1
740	Damping	0~99	0~99	1
741	Damping Keyboard Trk Key	C-1~G9	0~127	1
742	Damping Keyboard Trk Low Int.	-99~+99	-99~+99	1
743	Damping Keyboard Trk High Int.	-99~+99	-99~+99	1
744	Damping Mod Source	(Mod.Source List 1)	0~48	1
745	Damping Mod Int.	-99~+99	-99~+99	1
746	Dispersion	0~99	0~99	1
747	Dispersion Mod Source	(Mod.Source List 1)	0~48	1
748	Dispersion Mod Int. (Reflection)	-99~+99	-99~+99	1
749	Reflection	0~99	0~99	1
750	Reflection Mod Source	(Mod.Source List 1)	0~48	1
751	Reflection Mod Int. (PEQ)	-99~+99	-99~+99	1
752	PEQ Freq	0~49	0~49	1
753	PEQ Q	0~29	0~29	1
754	PEQ Gain	-18dB~+18dB	-18~+18	1

Effect 1&2 Parameters

	[Over Drive]			
800	Mode	OD/DIST	0/1	1
801	Drive	0~99	0~99	1
802	Output Level	0~99	0~99	1
803	Pre Low Cut	0~99	0~99	1
804	Low EQ Freq	20.00~1.40kHz	0~49	1
805	Low EQ Q	0.5~10.0	0~95	1
806	Low EQ Gain	-18.0~+18.0dB	-36~+36	1
807	Mid Low EQ Freq	50.00~14.4kHz	0~49	1
808	Mid Low EQ Q	0.5~10.0	0~95	1
809	Mid Low EQ Gain	-18.0~+18.0dB	-36~+36	1
810	Mid High EQ Freq	200.0~14.0kHz	0~49	1
811	Mid High EQ Q	0.5~10.0	0~95	1
812	Mid High EQ Gain	-18.0~+18.0dB	-36~+36	1
813	High EQ Freq	500.0~21.8kHz	0~49	1
814	High EQ Q	0.5~10.0	0~95	1
815	High EQ Gain	-18.0~+18.0dB	-36~+36	1
816	Effect Balance	0~100%	0~100	1
817	Effect Balance Mod Source	(Mod.Source List 2)	0~45	1
818	Effect Balance Mod Int.	-99~+99	-99~+99	1

	[Compressor]			
819	Sensitivity	1~99	1~99	1
820	Attack	1~99	1~99	1
821	EQ Trim	0~99	0~99	1
822	Pre Low EQ Gain	-18.0~+18.0dB	-36~+36	1
823	Pre High EQ Gain	-18.0~+18.0dB	-36~+36	1
824	Output Level	0~99	0~99	1
825	Effect Balance	0~100%	0~100	1
826	Effect Balance Mod Source	(Mod.Source List 2)	0~45	1
827	Effect Balance Mod Int.	-99~+99	-99~+99	1

	[4 Band PEQ]			
828	Trim	0~99	0~99	1
829	Low EQ Type	PEAKING/SHELVING	0/1	1
830	Low EQ Freq	20.00~1.40kHz	0~49	1
831	Low EQ Q	0.5~10.0	0~95	1
832	Low EQ Gain	-18.0~+18.0dB	-36~+36	1
833	Mid Low EQ Freq	50.00~14.4kHz	0~49	1

834	Mid Low EQ Q	0.5~10.0	0~95	1
835	Mid Low EQ Gain	-18.0~+18.0dB	-36~+36	1
836	Mid Low EQ Gain Mod Source	(Mod.Source List 2)	0~45	1
837	Mid Low EQ Gain Mod Int.	-18.0~+18.0dB	-36~+36	1
838	Mid High EQ Freq	200.0~14.0kHz	0~49	1
839	Mid High EQ Q	0.5~10.0	0~95	1
840	Mid High EQ Gain	-18.0~+18.0dB	-36~+36	1
841	High EQ Type	PEAKING/SHELVING	0/1	1
842	High EQ Freq	500.0~21.8kHz	0~49	1
843	High EQ Q	0.5~10.0	0~95	1
844	High EQ Gain	-18.0~+18.0dB	-36~+36	1
845	Effect Balance	0~100%	0~100	1
846	Effect Balance Mod Source	(Mod.Source List 2)	0~45	1
847	Effect Balance Mod Int.	-99~+99	-99~+99	1

	[Wah]			
848	Frequency Bottom	0~99	0~99	1
849	Frequency Top	0~99	0~99	1
850	Sweep Mode	AUTO/MOD.SOURCE	0/1	1
851	Sweep Source	(Mod.Source List 2)	0~45	1
852	Sweep Response	0~99	0~99	1
853	Envelope Sens	0~99	0~99	1
854	Envelope Shape	-99~+99	-99~+99	1
855	Resonance	0~99	0~99	1
856	Filter Mode	BPF/LPF	0/1	1
857	Effect Balance	0~100%	0~100	1
858	Effect Balance Mod Source	(Mod.Source List 2)	0~45	1
859	Effect Balance Mod Int.	-99~+99	-99~+99	1

	[Exciter]			
860	Blend	-99~+99	-99~+99	1
861	Blend Mod Source	(Mod.Source List 2)	0~45	1
862	Blend Mod Int.	-99~+99	-99~+99	1
863	Emphatic PoInt.	0~99	0~99	1
864	Emphatic PoInt.Mod Source	(Mod.Source List 2)	0~45	1
865	Emphatic PoInt.Mod Int.	-99~+99	-99~+99	1
866	Pre EQ Input Trim	0~99	0~99	1
867	Pre Low EQ Gain	-18.0~+18.0dB	-36~+36	1
868	Pre High EQ Gain	-18.0~+18.0dB	-36~+36	1
869	Effect Balance	0~100%	0~100	1
870	Effect Balance Mod Source	(Mod.Source List 2)	0~45	1
871	Effect Balance Mod Int.	-99~+99	-99~+99	1

	[Decimator]			
872	Pre LPF	OFF/ON	0/1	1
873	Sampling Frequency	1.0k~24.0kHz	5~120	1
874	Sampling Frequency Mod Source	(Mod.Source List 2)	0~45	1
875	Sampling Frequency Mod Int.	-24.0k~+24.0kHz	-120~+120	1
876	Resolution	4bit~24bit	4~24	1
877	High Damp	0~99	0~99	1
878	Output Level	0~99	0~99	1
879	Effect Balance	0~100%	0~100	1
880	Effect Balance Mod Source	(Mod.Source List 2)	0~45	1
881	Effect Balance Mod Int.	-99~+99	-99~+99	1

	[Chorus]			
882	Delay Time	0.0~50.0msec	0~140	1
883	LFO Wave Form	TRI/SIN	0/1	1
884	LFO Frequency	00.04~20.00Hz	1~115	1
885	LFO Frequency Mod Source	(Mod.Source List 2)	0~45	1
886	LFO Frequency Mod Int.	-20.00~+20.00Hz	-115~+115	1
887	MIDI Sync	OFF/ON	0/1	1(Bit7)
888	MIDI Sync Base	~8T~	0~7	^(Bit4~6)
889	MIDI Sync Time	1~16	0~15	^(Bit0~3)
890	Depth	0~99	0~99	1
891	Depth Mod Source	(Mod.Source List 2)	0~45	1
892	Depth Mod Int.	-99~+99	-99~+99	1
893	Pre EQ Input Trim	0~99	0~99	1
894	Pre Low EQ Gain	-18.0~+18.0dB	-36~+36	1
895	Pre High EQ Gain	-18.0~+18.0dB	-36~+36	1
896	Chorus Output Phase	+/-/+	0/1/2	1
897	Effect Balance	0~100%	0~100	1
898	Effect Balance Mod Source	(Mod.Source List 2)	0~45	1
899	Effect Balance Mod Int.	-99~+99	-99~+99	1

	[Flanger]			
900	Delay Time	0.0~50.0msec	0~140	1
901	LFO Wave Form	TRI/SIN	0/1	1
902	LFO Shape	-99~+99	-99~+99	1
903	LFO Frequency	00.04~20.00Hz	1~115	1
904	LFO Frequency Mod Source	(Mod.Source List 2)	0~45	1
905	LFO Frequency Mod Int.	-20.00~+20.00Hz	-115~+115	1
906	MIDI Sync	OFF/ON	0/1	1(Bit7)
907	MIDI Sync Base	~8T~	0~7	^(Bit4~6)
908	MIDI Sync Time	1~16	0~15	^(Bit0~3)
909	Depth	0~99	0~99	1
910	Feedback	-99~+99	-99~+99	1
911	High Damp	0~99	0~99	1
912	Flanger Output Phase	+/-/+	0/1/2	1
913	Effect Balance	0~100%	0~100	1
914	Effect Balance Mod Source	(Mod.Source List 2)	0~45	1

915	Effect Balance Mod Int.	-99~+99	-99~+99	1

	[Phaser]			
916	LFO Wave Form	TRI/SIN	0/1	1
917	LFO Shape	-99~+99	-99~+99	1
918	LFO Frequency	00.04~20.00Hz	1~115	1
919	LFO Frequency Mod Source	(Mod.Source List 2)	0~45	1
920	LFO Frequency Mod Int.	-20.00~+20.00Hz	-115~+115	1
921	MIDI Sync	OFF/ON	0/1	1(Bit7)
922	MIDI Sync Base	~8T~	0~7	^(Bit4~6)
923	MIDI Sync Time	1~16	0~15	^(Bit0~3)
924	Manual	0~99	0~99	1
925	Depth	0~99	0~99	1
926	Resonance	-99~+99	-99~+99	1
927	High Damp	0~99	0~99	1
928	Phaser Output Phase	+/-/+	0/1/2	1
929	Effect Balance	0~100%	0~100	1
930	Effect Balance Mod Source	(Mod.Source List 2)	0~45	1
931	Effect Balance Mod Int.	-99~+99	-99~+99	1

	[Small Rotary SP]			
932	Speed	SLOW/FAST	0/1	1
933	Speed SW	(Mod.Source List 2)	0~45	1
934	Horn Acceleration	0~99	0~99	1
935	Horn Rate	0~99	0~99	1
936	Mic Distance	0~99	0~99	1
937	Horn/Rotor Balance	0~99	0~99	1
938	Effect Balance	0~100%	0~100	1
939	Effect Balance Mod Source	(Mod.Source List 2)	0~45	1
940	Effect Balance Mod Int.	-99~+99	-99~+99	1

	[Delay]			
941	Input Level Mod Source	(Mod.Source List 2)	0~45	1
942	Input Level Mod Int.	-99~+99	-99~+99	1
943	Delay Time	0~680msec	0~251	1
944	Feedback	-99~+99	-99~+99	1
945	Feedback Mod Source	(Mod.Source List 2)	0~45	1
946	Feedback Mod Int.	-99~+99	-99~+99	1
947	Low Damp	0~99	0~99	1
948	High Damp	0~99	0~99	1
949	Effect Balance	0~100%	0~100	1
950	Effect Balance Mod Source	(Mod.Source List 2)	0~45	1
951	Effect Balance Mod Int.	-99~+99	-99~+99	1

	[Talking Modulator]			
952	Control Mode	Manual/MOD.SOURCE	0/1	1
953	Manual Control	0~99	0~99	1
954	Control Source	(Mod.Source List 2)	0~45	1
955	Voice Top	A/I/U/E/O	0~4	1
956	Voice Center	A/I/U/E/O	0~4	1
957	Voice Bottom	A/I/U/E/O	0~4	1
958	Formant Shift	-99~+99	-99~+99	1
959	Resonance	0~99	0~99	1
960	Effect Balance	0~100%	0~100	1
961	Effect Balance Mod Source	(Mod.Source List 2)	0~45	1
962	Effect Balance Mod Int.	-99~+99	-99~+99	1

	[Multitap Delay]			
963	Type	Normal/Cross1/Cross2/Pan1/Pan2	0~4	1
964	Input Level Mod Source	(Mod.Source List 2)	0~45	1
965	Input Level Mod Int.	-99~+99	-99~+99	1
966	Tap1 Time	0~680msec	0~251	1
967	Tap1 Level	0~99	0~99	1
968	Tap2 Time	0~680msec	0~251	1
969	Feedback	-99~+99	-99~+99	1
970	Feedback Mod Source	(Mod.Source List 2)	0~45	1
971	Feedback Mod Int.	-99~+99	-99~+99	1
972	Low Damp	0~99	0~99	1
973	High Damp	0~99	0~99	1
974	Spread	-99~+99	-99~+99	1
975	Spread Mod Source	(Mod.Source List 2)	0~45	1
976	Spread Mod Int.	-99~+99	-99~+99	1
977	Effect Balance	0~100%	0~100	1
978	Effect Balance Mod Source	(Mod.Source List 2)	0~45	1
979	Effect Balance Mod Int.	-99~+99	-99~+99	1

	[Ensemble]			
980	Speed	0~99	0~99	1
981	Speed Mod Source	(Mod.Source List 2)	0~45	1
982	Speed Mod Int.	-99~+99	-99~+99	1
983	Shimmer	0~99	0~99	1
984	Depth	0~99	0~99	1
985	Depth Mod Source	(Mod.Source List 2)	0~45	1
986	Depth Mod Int.	-99~+99	-99~+99	1
987	Effect Balance	0~100%	0~100	1
988	Effect Balance Mod Source	(Mod.Source List 2)	0~45	1
989	Effect Balance Mod Int.	-99~+99	-99~+99	1

	[Rotary Speaker]			
990	Speed	SLOW/FAST	0/1	1

991	Speed SW	(Mod.Source List 2)	0~45	1
992	Mode	ROTATE/STOP	0/1	1
993	Mode SW	(Mod.Source List 2)	0~45	1
994	Rotor Acceleration	0~99	0~99	1
995	Rotor Rate	0~99	0~99	1
996	Horn Acceleration	0~99	0~99	1
997	Horn Rate	0~99	0~99	1
998	Mic Distance	0~99	0~99	1
999	Mic Spread	0~99	0~99	1
1000	Horn/Rotor Balance	0~99	0~99	1
1001	Effect Balance	0~100%	0~100	1
1002	Effect Balance Mod Source	(Mod.Source List 2)	0~45	1
1003	Effect Balance Mod Int.	-99~+99	-99~+99	1

Master Effect Parameters

[Stereo Delay]				
1004	Type	Stereo/Cross	0/1	1
1005	Input Level Mod Source	(Mod.Source List 2)	0~45	1
1006	Input Level Mod Int.	-99~+99	-99~+99	1
1007	Left Delay Time	0~680msec	0~251	1
1008	Right Delay Time	0~680msec	0~251	1
1009	Feedback(L)	-99~+99	-99~+99	1
1010	Feedback(R)	-99~+99	-99~+99	1
1011	Feedback Mod Source	(Mod.Source List 2)	0~45	1
1012	Feedback Mod Int.	-99~+99	-99~+99	1
1013	Low Damp	0~99	0~99	1
1014	High Damp	0~99	0~99	1
1015	Effect Balance	0~100%	0~100	1
1016	Effect Balance Mod Source	(Mod.Source List 2)	0~45	1
1017	Effect Balance Mod Int.	-99~+99	-99~+99	1

[Reverb-Hall]				
1018	Reverb Time	0.1~10.0sec	1~100	1
1019	Pre Delay	0~200msec	0~200	1
1020	Pre Delay Thru Level	0~99	0~99	1
1021	High Damp	0~99	0~99	1
1022	Pre EQ Trim	0~99	0~99	1
1023	Pre Low EQ Gain	-18.0~+18.0dB	-36~+36	1
1024	Pre High EQ Gain	-18.0~+18.0dB	-36~+36	1
1025	Effect Balance	0~100%	0~100	1
1026	Effect Balance Mod Source	(Mod.Source List 2)	0~45	1
1027	Effect Balance Mod Int.	-99~+99	-99~+99	1

[Reverb-Room]				
1028	Reverb Time	0.1~3.0sec	1~30	1
1029	Pre Delay	0~200msec	0~200	1
1030	Pre Delay Thru Level	0~99	0~99	1
1031	High Damp	0~99	0~99	1
1032	ER. Level	0~99	0~99	1
1033	Reverb Level	0~99	0~99	1
1034	Pre EQ Trim	0~99	0~99	1
1035	Pre Low EQ Gain	-18.0~+18.0dB	-36~+36	1
1036	Pre High EQ Gain	-18.0~+18.0dB	-36~+36	1
1037	Effect Balance	0~100%	0~100	1
1038	Effect Balance Mod Source	(Mod.Source List 2)	0~45	1
1039	Effect Balance Mod Int.	-99~+99	-99~+99	1

* The format of a program parameter ID for the Parameter Change Message.

```

+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
| E | E | E | I | I | I | I | I | I | I | I | I | I | I |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
<== ExID ==>:<===== Parameter ID =====>

```

ExID	
0	(Identified by the Paramter ID only)
1	OSC1 setting
2	OSC2 setting
3	Effect1 setting
4	Effect2 setting
5	Master Effect setting

[*1]:Program Category

ID	Name
0	Synth-Hard
1	Synth-Soft
2	Synth-Lead
3	Synth-Motion
4	Synth-Bass
5	E.Piano
6	Organ
7	Keyboard
8	Bell

[*2]:Scale Type

ID	Name
0	Equal Temperament
1	Pure Major Temperament
2	Pure Minor Temperament
3	Arabic Temperament
4	Pythagorean
5	Werckmeister
6	Kirnberger
7	Slendro
8	Pellog

9	Strings
10	Bad/Choir
11	Brass
12	Reed/Wind
13	Guitar/Plucked
14	Bass
15	Percussive
16	Arpeggio
17	SFX/Other

9	User Scale1
10	User Scale2
10	User Scale2

[*3]:LFO Wave Form

ID	Name
0	Triangle '0
1	Triangle '90
2	Tri Random
3	Sine
4	Saw Up '0
5	Saw Up '180
6	Saw Down '0
7	Saw Down '180
8	Square
9	Random(S/H)
10	Random(Vector)
11	Step Tri 4
12	Step Tri 6
13	Step Saw 4
14	Step Saw 6
15	Exp Tri
16	Exp Saw Up
17	Exp Saw Down

[*4]:Oscillator Type

ID	Name
0	Standard OSC
1	Comb Filter OSC
2	VPM OSC
3	Resonance OSC
4	Ring Modulation OSC
5	Cross Modulation OSC
6	Sync OSC
7	Organ Model
8	Electric Piano Model
9	Brass Model
10	Reed Model
11	Plucked String Model
12	Bowed String Model

[*5]:Effect1&2 Type

ID	Name
0	Overdrive
1	Compressor
2	Parametric EQ
3	Wah
4	Exciter
5	Decimator
6	Chorus
7	Flanger
8	Phaser
9	Rotary Speaker-small
10	Delay-mono
11	Talking Modulator (FX1 only)
12	Multitap Delay (FX1 only)
13	Ensemble (FX1 only)
14	Rotary Speaker-Large (FX1 only)

[*6]:Master Effect Type

ID	Name
0	Stereo Delay
1	Reverb-Hall
2	Reverb-Room

[*7]:Assignable SW1 Function List

ID	Name
0	Mod.SW1(CC#80)
1	Master FX OFF/ON(CC#92)
2	FX1 OFF/ON(CC#94)
3	FX2 OFF/ON(CC#95)
4	Octave Up
5	Octave Down
6	Mono SW(CC#18)
7	Unison OFF/ON(CC#75)

[*8]:Assignable SW2 Function List

ID	Name
0	Mod.SW2(CC#81)
1	Master FX OFF/ON(CC#92)
2	FX1 OFF/ON(CC#94)
3	FX2 OFF/ON(CC#95)
4	Oct Up
5	Oct Down
6	Mono SW(CC#18)
7	Unison OFF/ON(CC#75)

[*9]:Assignable F.SW Function List

ID	Name
0	Foot SW(CC#82)
1	MIDI Damper(CC#64)
2	MIDI Portamento SW(CC#65)
3	MIDI Sostenuato(CC#66)
4	Master FX OFF/ON(CC#92)
5	FX1 OFF/ON(CC#94)
6	FX2 OFF/ON(CC#95)
7	Oct Up
8	Oct Down
9	Mono SW(CC#18)
10	Unison OFF/ON(CC#75)
11	Arpeggio OFF/ON
12	Pad Hold

[*10]:Assignable Pedal Function List

ID	Name
0	t Pedal(CC#4)
1	I Breath Control(CC#2)
2	I Portamento Time(CC#5)
3	I Volume(CC#7)
4	I Panpot(CC#10)
5	I Expression(CC#11)

[*11]:See the PE(Performanced Editor) List.

[*12]:Brass Model Instulment Types

ID	Name
0	Brass 1
1	Brass 2
2	Brass 3
3	Horn 1
4	Horn 2
5	ReedBrass

[*13]:Reed Model Instulment Types

ID	Name
0	Hard Sax 1
1	Hard Sax 2
2	Hard Sax 3
3	Soft Sax 1
4	Soft Sax 2
5	DoubleReed 1
6	DoubleReed 2
7	Bassoon
8	Clarinet
9	Flute 1
10	Flute 2
11	PanFlute
12	Ocarina
13	Shakuhachi
14	Harmonica 1
15	Harmonica 2
16	ReedSynth

Modulation Source List 1

ID	Modulation Sources
0	Off
1	EG1
2	EG2
3	EG3
4	EG4
5	Amp EG
6	LFO1
7	LFO2
8	LFO3
9	LFO4
10	Portamento
11	Note[Linear]
12	Note[Exp]
13	Note Split[High]
14	Note Split[Low]
15	Velocity[Soft]
16	Velocity[Medium]
17	Velocity[Hard]
18	Pitch Bend
19	After Touch
20	Modulation Wheel(CC#1)
21	ATouch+Mod.Wheel
22	ATHalf+Mod.Wheel
23	X[+/-](CC#16)
24	X[+](CC#16)
25	X[-](CC#16)
26	Y[+/-](CC#17)
27	Y[+](CC#17)
28	Y[-](CC#17)
29	Knob1(CC#19)
30	Knob2(CC#20)
31	Knob3(CC#21)
32	Knob4(CC#22)
33	Knob5(CC#23)
34	Mod.SW1(CC#80)
35	Mod.SW2(CC#81)
36	Foot SW(CC#82)
37	Foot Pedal(CC#4)
38	Damper(CC#64)
39	Sostenuto(CC#66)
40	MIDI Breath Control(CC#2)
41	MIDI Volume(CC#7)
42	MIDI Panpot(CC#10)
43	MIDI Expression(CC#11)
44	MIDI Portamento Time(CC#5)
45	MIDI Portamento SW(CC#65)
46	Master FX OFF/ON(CC#92)
47	FX1 OFF/ON(CC#94)
48	FX2 OFF/ON(CC#95)

Modulation Source List 2

ID	Modulation Sources
0	Off
11	Note[Linear]
12	Note[Exp]
13	Note Split[High]
14	Note Split[Low]
15	Velocity[Soft]
16	Velocity[Medium]
17	Velocity[Hard]
18	Pitch Bend
19	After Touch
20	Modulation Wheel(CC#1)
21	ATouch+Mod.Wheel
22	ATHalf+Mod.Wheel
23	X[+/-](CC#16)
24	X[+](CC#16)
25	X[-](CC#16)
26	Y[+/-](CC#17)
27	Y[+](CC#17)
28	Y[-](CC#17)
29	Knob1(CC#19)
30	Knob2(CC#20)
31	Knob3(CC#21)
32	Knob4(CC#22)
33	Knob5(CC#23)
34	Mod.SW1(CC#80)
35	Mod.SW2(CC#81)
36	Foot SW(CC#82)
37	Foot Pedal(CC#4)
38	Damper(CC#64)
39	Sostenuto(CC#66)
40	MIDI Breath Control(CC#2)
41	MIDI Volume(CC#7)
42	MIDI Panpot(CC#10)
43	MIDI Expression(CC#11)
44	MIDI Portamento Time(CC#5)
45	MIDI Portamento SW(CC#65)