KORG ESX-1 MIDI IMPLEMENTATION Version 1.1 (Sep.09.'03)

1.TRANSMITTED DATA

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

Status [H]	Second [H] [D]	Third [H] [D]	Description	ENA
8n	kk (kk)	40 (64)	Note Off	N
9n	kk (kk)	vv (vv)	Note On vv=1~127	N
Bn	00 (00)	mm (mm)	Program Bank Select(MSB) [NOTE1]	P
Bn	06 (06)	dm (dm)	Data Entry(MSB) [TABLE1]	C
Bn	20 (32)	bb (bb)	Program Bank Select(LSB) [NOTE1]	P
Bn	26 (38)	dl (dl)	Data Entry(LSB) [TABLE1]	C
Bn	62 (98)	nl (nl)	NRPN LSB [TABLE1]	C
Bn	63 (99)	nm (nm)	NRPN MSB [TABLE1]	C
Bn	cc (cc)	vv (vv)	Panel Control [TABLE2]	C
Cn	pp (pp)	-- --	Program Change [NOTE1]	P

n : MIDI Channel (0~15)
vv : Value
cc : Control Number 01~05,07~31,33~37,39~95

ENA = P : Enabled when Program MIDI Filter is "o"
C : Enabled when Control MIDI Filter is "o"
E : Enabled when Exclusive MIDI Filter is "o"
N : Enabled when Note MIDI Filter is "o"

1-2 SYSTEM COMMON MESSAGES

Status [H]	Second [H]	Third [H]	Description
F2	pp	pp	Song Position Pointer *1,*2
F3	ss	--	Song Select ss : Song No. = 0~63 *3

*1 This message is transmitted when in Song mode and the "Clock" is set to "INT".
*2 This message isn't transmitted when Song Position exceeds the range of Song Position Pointer.
*3 This message is transmitted when in Song mode.

1-3 SYSTEM REALTIME MESSAGES

Status [H]	Description	
F8	Timing Clock	*
FA	Start	*
FB	Continue	*
FC	Stop	*
FE	Active Sensing	

* :Transmitted when
the "Clock" is set to "INT".
the "Clock" is set to "AUTO" and Timeing Clock Message isn't received.

1-4 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES

(1) DEVICE INQUIRY REPLY

Byte [H]	Description		
F0	Exclusive Status		
7E	Non Realtime Message		
0g	Global MIDI Channel	(Device ID)	*
06	Inquiry Message		
02	Identity reply		
42	KORG ID	(Manufacturers ID)	
71	ESX-1 ID	(Family ID (LSB))	
00		(Family ID (MSB))	
00		(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.

* 0g : Global MIDI Channel = Keyboard Part1 MIDI Channel

1-5 SYSTEM EXCLUSIVE MESSAGES

Function ID [H]		R	D	E
40	CURRENT PATTERN DATA DUMP	o		
58	CURRENT SONG DATA DUMP	o		
4C	PATTERN DATA DUMP	o	o	
57	ALL SONG DATA DUMP	o	o	
51	GLOBAL DATA DUMP	o	o	
26	DATA FORMAT ERROR			o
23	DATA LOAD COMPLETED			o
24	DATA LOAD ERROR			o
21	WRITE COMPLETED			o
22	WRITE ERROR			o

Transmitted when
R : Request message is received
D : Data dump from MIDI dump page
E : Exclusive message is received

All messages can always be transmitted when in MIDI dump page.
(It doesn't respond to "MIDI Filter E" parameter.)

2.RECOGNIZED RECEIVE DATA

2-1 CHANNEL MESSAGES

Status [H]	Second [H] [D]	Third [H] [D]	Description	ENA
8n	kk (kk)	vv (vv)	Note Off vv=0~127	N
9n	kk (kk)	00 (00)	Note Off	N
9n	kk (kk)	vv (vv)	Note On vv=1~127	N
Bn	00 (00)	mm (mm)	Program Bank Select(MSB) [NOTE1]	P
Bn	06 (06)	dm (dm)	Data Entry(MSB) [TABLE1]	C
Bn	20 (32)	bb (bb)	Program Bank Select(LSB) [NOTE1]	P
Bn	26 (38)	dl (dl)	Data Entry(LSB) [TABLE1]	C
Bn	62 (98)	nl (nl)	NRPN LSB [TABLE1]	C
Bn	63 (99)	nm (nm)	NRPN MSB [TABLE1]	C
Bn	79 (121)	00 (00)	Reset All Controllers	A
Bn	7B (123)	00 (00)	All Note Off *1	A
Bn	cc (cc)	vv (vv)	Panel Control *2 [TABLE2]	C
Cn	pp (pp)	-- --	Program Change [NOTE1]	P
En	bb (bb)	bb (bb)	Pitch Bender Change	C

n : MIDI Channel No.(0~15)

*1 : This message is effective only in Keyboard Part, and isn't effective in Drum Part.
*2 : cc = Control Number 01~05,07~31,33~37,39~95

ENA = A : Always Enabled
P : Enabled when Program MIDI Filter is "o"
C : Enabled when Control MIDI Filter is "o"
E : Enabled when Exclusive MIDI Filter is "o"
N : Enabled when Note MIDI Filter is "o"

2-2 SYSTEM REALTIME MESSAGES

Status [H]	Description	
F8	Timing Clock	*
FA	Start	*
FB	Continue	*
FC	Stop	*
FE	Active Sensing	

* :This message is recognized when the "Clock" is set to "EXT" or "Auto".

2-3 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE (NON REALTIME)

(1) DEVICE INQUIRY MESSAGE REQUEST

Byte [H]	Description
F0	Exclusive Status
7E	Non Realtime Message
cc	MIDI Channel
06	Inquiry Message
01	Inquiry Request
F7	End of Exclusive

When receive this message and transmits Inquiry Reply Message.
cc = 00 ~ 0F : Global Channel
7F : Any Channel

This message can always be received when in MIDI dump page.
(It doesn't respond to "MIDI Filter E" parameter.)

2-4 SYSTEM EXCLUSIVE MESSAGE

Function ID [H]	Function
10	CURRENT PATTERN DATA DUMP REQUEST
1C	PATTERN DATA DUMP REQUEST
0A	CURRENT SONG DATA DUMP REQUEST
0B	ALL SONG DATA DUMP REQUEST
0E	GLOBAL DATA DUMP REQUEST
11	PATTERN WRITE REQUEST
1A	SONG WRITE REQUEST
40	CURRENT PATTERN DATA DUMP
4C	PATTERN DATA DUMP
51	GLOBAL DATA DUMP
58	CURRENT SONG DATA DUMP
57	ALL SONG DATA DUMP

All messages are received when Sequencer is not running.

All messages can always be received when in MIDI dump page.
(It doesn't respond to "MIDI Filter E" parameter.)

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

(1) CURRENT PATTERN DATA DUMP REQUEST R

Byte	Description	
F0,42,3g,71	EXCLUSIVE HEADER	
0001 0000 (10)	CURRENT PATTERN DATA DUMP REQUEST	10H
1111 0111 (F7)	EOX	

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

(2) PATTERN DATA DUMP REQUEST R

Byte	Description	
F0,42,3g,71	EXCLUSIVE HEADER	
0001 1100 (1C)	PATTERN DATA DUMP REQUEST	1CH
0000 00bb (0b)	BANK(0:A/1:B/2:C/3:D)	
1111 0111 (F7)	EOX	

Pattern BANK is 64patterns block.
0:A01~A64, 1:B01~B64, 2:C01~C64, 3:D01~D64

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

(3) CURRENT SONG DATA DUMP REQUEST R

Byte	Description	
F0,42,3g,71	EXCLUSIVE HEADER	
0000 1010 (0A)	CURRENT SONG DATA DUMP REQUEST	0AH
1111 0111 (F7)	EOX	

When this message is received, the CURRENT SONG DATA DUMP (Function:58h) message will be transmitted.

(4) ALL SONG DATA DUMP REQUEST R

Byte	Description	
F0,42,3g,71	EXCLUSIVE HEADER	
0000 1011 (0B)	ALL SONG DATA DUMP REQUEST	0BH
1111 0111 (F7)	EOX	

When this message is received, the ALL SONG DATA DUMP(Function:57h) message will be transmitted.

(5) GLOBAL DATA DUMP REQUEST R

Byte	Description	
F0,42,3g,71	EXCLUSIVE HEADER	
0000 1111 (0E)	GLOBAL DATA DUMP REQUEST	0EH
1111 0111 (F7)	EOX	

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

(6) PATTERN WRITE REQUEST R

Byte	Description	
F0,42,3g,71	EXCLUSIVE HEADER	
0001 0001 (11)	PATTERN WRITE REQUEST	11H
0000 000b (0b)	Destination Pattern Number(0:A01~B64,1:C01~D64)	
0ppp pppp (pp)	Destination Pattern Number	
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.

(7) SONG WRITE REQUEST R

Byte	Description	
F0,42,3g,71	EXCLUSIVE HEADER	
0001 1010 (1A)	SONG WRITE REQUEST	1AH
00ss ssss (ss)	Destination Song No(0~63)	
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.

(8) CURRENT PATTERN DATA DUMP R/T

Byte	Description	
F0,42,3g,71	EXCLUSIVE HEADER	
0100 0000 (40)	CURRENT PATTERN DATA DUMP	40H
0ddd dddd (dd)	Data	[NOTE2][TABLE4]
:	:	
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.

(9) PATTERN DATA DUMP R/T

Byte	Description	
F0,42,3g,71	EXCLUSIVE HEADER	
0100 1100 (4C)	PATTERN DATA DUMP	4CH
0000 00bb (0b)	BANK(0:A/1:B/2:C/3:D)	
0ddd dddd (dd)	Data	[NOTE2][TABLE3]
:	:	
1111 0111 (F7)	EOX	

Pattern BANK is 64patterns block.
0:A01~A64, 1:B01~B64, 2:C01~C64, 3:D01~D64

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

(10) GLOBAL DATA DUMP R/T

Byte	Description	
F0,42,3g,71	EXCLUSIVE HEADER	
0101 0001 (51)	GLOBAL DATA DUMP	51H
0ddd dddd (dd)	Data	[NOTE2][TABLE13]
:	:	
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.

(11) CURRENT SONG DATA DUMP R/T

Byte	Description	
F0,42,3g,71	EXCLUSIVE HEADER	
0101 1000 (58)	CURRENT SONG DATA DUMP	58H
0ddd dddd (dd)	Data	[NOTE2][TABLE14]
:	:	
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.

(12) ALL SONG DATA DUMP R/T

Byte	Description	
F0,42,3g,71	EXCLUSIVE HEADER	
0101 0111 (57)	ALL SONG DATA DUMP	57H
0ddd dddd (dd)	Data	[NOTE2][TABLE15]
:	:	
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) DATA FORMAT ERROR T

Byte	Description	
F0,42,3g,71	EXCLUSIVE HEADER	
0010 0110 (26)	DATA FORMAT ERROR	26H
1111 0111 (F7)	EOX	

(14) DATA LOAD COMPLETED T

Byte	Description	
F0,42,3g,71	EXCLUSIVE HEADER	
0010 0011 (23)	DATA LOAD COMPLETED	23H
1111 0111 (F7)	EOX	

(15) DATA LOAD ERROR T

Byte	Description	
F0,42,3g,71	EXCLUSIVE HEADER	
0010 0100 (24)	DATA LOAD ERROR	24H
1111 0111 (F7)	EOX	

(16) WRITE COMPLETED T

Byte	Description	
F0,42,3g,71	EXCLUSIVE HEADER	
0010 0001 (21)	WRITE COMPLETED	21H
1111 0111 (F7)	EOX	

(17) WRITE ERROR T

Byte	Description	
F0,42,3g,71	EXCLUSIVE HEADER	
0010 0010 (22)	WRITE ERROR	22H
1111 0111 (F7)	EOX	

NOTE1 : Pattern number
mm,bb,pp = 00,00,00~3F : A01~64
00,00,40~7F : B01~64
00,01,00~3F : C01~64
00,01,40~7F : D01~64

NOTE2 : The dump data conversion

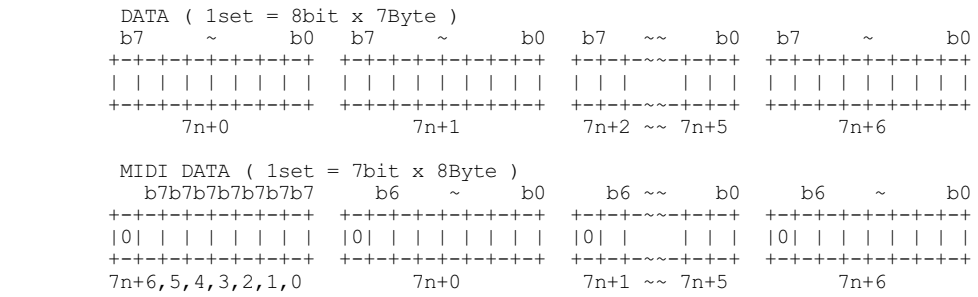

TABLE1 : NON REGISTERED PARAMETER NUMBER (NRPN)

nm [H]	nl [H]	Parameter	MIDI Ch	Data Entry	dd (Data Entry Value) [D]
0C	00	Drum1 Sample	Drum	MSB,LSB	16383 : Sample OFF (*T1-1)
0C	02	Drum1 Slice No.	Drum	MSB,LSB	16383 : ALL (*T1-1)
0C	04	Drum1 Pitch	Drum	MSB	0~127 (64=equal pitch)
0C	05	Drum1 Filter Type	Drum	MSB	*T1-2
0C	06	Drum1 Filter Cutoff	Drum	MSB	0~127
0C	07	Drum1 Filter Resonance	Drum	MSB	0~127
0C	08	Drum1 Filter EG Int	Drum	MSB	0~64~127 : -63~0~63
0C	09	Drum1 Start Point	Drum	MSB	0~127
0C	0A	Drum1 Level	Drum	MSB	0~127
0C	0B	Drum1 Pan	Drum	MSB	0~127 (64=center)
0C	0C	Drum1 EG Time	Drum	MSB	0~127
0C	0D	Drum1 Amp EG	Drum	MSB	0~63/64~127 : Off/On
0C	0E	Drum1 Roll	Drum	MSB	0~63/64~127 : Off/On
0C	0F	Drum1 Reverse	Drum	MSB	0~63/64~127 : Off/On
0C	10	Drum1 Effect Send	Drum	MSB	0~63/64~127 : Off/On
0C	11	Drum1 Effect Select	Drum	MSB	*T1-3
0C	12	Drum1 Modulation Type	Drum	MSB	*T1-4
0C	13	Drum1 Modulation Depth	Drum	MSB	0~64~127 : -63~0~63
0C	14	Drum1 Modulation Speed	Drum	MSB	0~127
0C	15	Drum1 Modulation Destination	Drum	MSB	*T1-5
0C	16	Drum1 Modulation BPM Sync	Drum	MSB	0~63/64~127 : Off/On
0C	17	Drum1 Motion Seq Type	Drum	MSB	*T1-6
0C	20	Drum2 Sample	Drum	MSB,LSB	16383 : Sample OFF (*T1-1)
0C	22	Drum2 Slice No.	Drum	MSB,LSB	16383 : ALL (*T1-1)
0C	24	Drum2 Pitch	Drum	MSB	0~127 (64=equal pitch)
0C	25	Drum2 Filter Type	Drum	MSB	*T1-2
0C	26	Drum2 Filter Cutoff	Drum	MSB	0~127
0C	27	Drum2 Filter Resonance	Drum	MSB	0~127
0C	28	Drum2 Filter EG Int	Drum	MSB	0~64~127 : -63~0~63
0C	29	Drum2 Start Point	Drum	MSB	0~127
0C	2A	Drum2 Level	Drum	MSB	0~127

0C	2B	Drum2 Pan	Drum	MSB	0~127 (64=center)
0C	2C	Drum2 EG Time	Drum	MSB	0~127
0C	2D	Drum2 Amp EG	Drum	MSB	0~63/64~127 : Off/On
0C	2E	Drum2 Roll	Drum	MSB	0~63/64~127 : Off/On
0C	2F	Drum2 Reverse	Drum	MSB	0~63/64~127 : Off/On
0C	30	Drum2 Effect Send	Drum	MSB	0~63/64~127 : Off/On
0C	31	Drum2 Effect Select	Drum	MSB	*T1-3
0C	32	Drum2 Modulation Type	Drum	MSB	*T1-4
0C	33	Drum2 Modulation Depth	Drum	MSB	0~64~127 : -63~0~63
0C	34	Drum2 Modulation Speed	Drum	MSB	0~127
0C	35	Drum2 Modulation Destination	Drum	MSB	*T1-5
0C	36	Drum2 Modulation BPM Sync	Drum	MSB	0~63/64~127 : Off/On
0C	37	Drum2 Motion Seq Type	Drum	MSB	*T1-6
0C	40	Drum3 Sample	Drum	MSB,LSB	16383 : Sample OFF (*T1-1)
0C	42	Drum3 Slice No.	Drum	MSB,LSB	16383 : ALL (*T1-1)
0C	44	Drum3 Pitch	Drum	MSB	0~127 (64=equal pitch)
0C	45	Drum3 Filter Type	Drum	MSB	*T1-2
0C	46	Drum3 Filter Cutoff	Drum	MSB	0~127
0C	47	Drum3 Filter Resonance	Drum	MSB	0~127
0C	48	Drum3 Filter EG Int	Drum	MSB	0~64~127 : -63~0~63
0C	49	Drum3 Start Point	Drum	MSB	0~127
0C	4A	Drum3 Level	Drum	MSB	0~127
0C	4B	Drum3 Pan	Drum	MSB	0~127 (64=center)
0C	4C	Drum3 EG Time	Drum	MSB	0~127
0C	4D	Drum3 Amp EG	Drum	MSB	0~63/64~127 : Off/On
0C	4E	Drum3 Roll	Drum	MSB	0~63/64~127 : Off/On
0C	4F	Drum3 Reverse	Drum	MSB	0~63/64~127 : Off/On
0C	50	Drum3 Effect Send	Drum	MSB	0~63/64~127 : Off/On
0C	51	Drum3 Effect Select	Drum	MSB	*T1-3
0C	52	Drum3 Modulation Type	Drum	MSB	*T1-4
0C	53	Drum3 Modulation Depth	Drum	MSB	0~64~127 : -63~0~63
0C	54	Drum3 Modulation Speed	Drum	MSB	0~127
0C	55	Drum3 Modulation Destination	Drum	MSB	*T1-5
0C	56	Drum3 Modulation BPM Sync	Drum	MSB	0~63/64~127 : Off/On
0C	57	Drum3 Motion Seq Type	Drum	MSB	*T1-6
0C	60	Drum4 Sample	Drum	MSB,LSB	16383 : Sample OFF (*T1-1)
0C	62	Drum4 Slice No.	Drum	MSB,LSB	16383 : ALL (*T1-1)
0C	64	Drum4 Pitch	Drum	MSB	0~127 (64=equal pitch)
0C	65	Drum4 Filter Type	Drum	MSB	*T1-2
0C	66	Drum4 Filter Cutoff	Drum	MSB	0~127
0C	67	Drum4 Filter Resonance	Drum	MSB	0~127
0C	68	Drum4 Filter EG Int	Drum	MSB	0~64~127 : -63~0~63
0C	69	Drum4 Start Point	Drum	MSB	0~127
0C	6A	Drum4 Level	Drum	MSB	0~127
0C	6B	Drum4 Pan	Drum	MSB	0~127 (64=center)
0C	6C	Drum4 EG Time	Drum	MSB	0~127
0C	6D	Drum4 Amp EG	Drum	MSB	0~63/64~127 : Off/On
0C	6E	Drum4 Roll	Drum	MSB	0~63/64~127 : Off/On
0C	6F	Drum4 Reverse	Drum	MSB	0~63/64~127 : Off/On
0C	70	Drum4 Effect Send	Drum	MSB	0~63/64~127 : Off/On
0C	71	Drum4 Effect Select	Drum	MSB	*T1-3
0C	72	Drum4 Modulation Type	Drum	MSB	*T1-4
0C	73	Drum4 Modulation Depth	Drum	MSB	0~64~127 : -63~0~63
0C	74	Drum4 Modulation Speed	Drum	MSB	0~127
0C	75	Drum4 Modulation Destination	Drum	MSB	*T1-5
0C	76	Drum4 Modulation BPM Sync	Drum	MSB	0~63/64~127 : Off/On
0C	77	Drum4 Motion Seq Type	Drum	MSB	*T1-6
0D	00	Drum5 Sample	Drum	MSB,LSB	16383 : Sample OFF (*T1-1)
0D	02	Drum5 Slice No.	Drum	MSB,LSB	16383 : ALL (*T1-1)
0D	04	Drum5 Pitch	Drum	MSB	0~127 (64=equal pitch)
0D	05	Drum5 Filter Type	Drum	MSB	*T1-2
0D	06	Drum5 Filter Cutoff	Drum	MSB	0~127
0D	07	Drum5 Filter Resonance	Drum	MSB	0~127
0D	08	Drum5 Filter EG Int	Drum	MSB	0~64~127 : -63~0~63
0D	09	Drum5 Start Point	Drum	MSB	0~127
0D	0A	Drum5 Level	Drum	MSB	0~127
0D	0B	Drum5 Pan	Drum	MSB	0~127 (64=center)
0D	0C	Drum5 EG Time	Drum	MSB	0~127
0D	0D	Drum5 Amp EG	Drum	MSB	0~63/64~127 : Off/On
0D	0E	Drum5 Roll	Drum	MSB	0~63/64~127 : Off/On
0D	0F	Drum5 Reverse	Drum	MSB	0~63/64~127 : Off/On
0D	10	Drum5 Effect Send	Drum	MSB	0~63/64~127 : Off/On
0D	11	Drum5 Effect Select	Drum	MSB	*T1-3
0D	12	Drum5 Modulation Type	Drum	MSB	*T1-4
0D	13	Drum5 Modulation Depth	Drum	MSB	0~64~127 : -63~0~63
0D	14	Drum5 Modulation Speed	Drum	MSB	0~127
0D	15	Drum5 Modulation Destination	Drum	MSB	*T1-5
0D	16	Drum5 Modulation BPM Sync	Drum	MSB	0~63/64~127 : Off/On
0D	17	Drum5 Motion Seq Type	Drum	MSB	*T1-6
0D	20	Drum6A Sample	Drum	MSB,LSB	16383 : Sample OFF (*T1-1)
0D	22	Drum6A Slice No.	Drum	MSB,LSB	16383 : ALL (*T1-1)
0D	24	Drum6A Pitch	Drum	MSB	0~127 (64=equal pitch)
0D	25	Drum6A Filter Type	Drum	MSB	*T1-2
0D	26	Drum6A Filter Cutoff	Drum	MSB	0~127
0D	27	Drum6A Filter Resonance	Drum	MSB	0~127
0D	28	Drum6A Filter EG Int	Drum	MSB	0~64~127 : -63~0~63
0D	29	Drum6A Start Point	Drum	MSB	0~127

0D	2A	Drum6A Level	Drum	MSB	0~127
0D	2B	Drum6A Pan	Drum	MSB	0~127 (64=center)
0D	2C	Drum6A EG Time	Drum	MSB	0~127
0D	2D	Drum6A Amp EG	Drum	MSB	0~63/64~127 : Off/On
0D	2E	Drum6A Roll	Drum	MSB	0~63/64~127 : Off/On
0D	2F	Drum6A Reverse	Drum	MSB	0~63/64~127 : Off/On
0D	30	Drum6A Effect Send	Drum	MSB	0~63/64~127 : Off/On
0D	31	Drum6A Effect Select	Drum	MSB	*T1-3
0D	32	Drum6A Modulation Type	Drum	MSB	*T1-4
0D	33	Drum6A Modulation Depth	Drum	MSB	0~64~127 : -63~0~63
0D	34	Drum6A Modulation Speed	Drum	MSB	0~127
0D	35	Drum6A Modulation Destination	Drum	MSB	*T1-5
0D	36	Drum6A Modulation BPM Sync	Drum	MSB	0~63/64~127 : Off/On
0D	37	Drum6A Motion Seq Type	Drum	MSB	*T1-6
0D	40	Drum6B Sample	Drum	MSB,LSB	16383 : Sample OFF (*T1-1)
0D	42	Drum6B Slice No.	Drum	MSB,LSB	16383 : ALL (*T1-1)
0D	44	Drum6B Pitch	Drum	MSB	0~127 (64=equal pitch)
0D	45	Drum6B Filter Type	Drum	MSB	*T1-2
0D	46	Drum6B Filter Cutoff	Drum	MSB	0~127
0D	47	Drum6B Filter Resonance	Drum	MSB	0~127
0D	48	Drum6B Filter EG Int	Drum	MSB	0~64~127 : -63~0~63
0D	49	Drum6B Start Point	Drum	MSB	0~127
0D	4A	Drum6B Level	Drum	MSB	0~127
0D	4B	Drum6B Pan	Drum	MSB	0~127 (64=center)
0D	4C	Drum6B EG Time	Drum	MSB	0~127
0D	4D	Drum6B Amp EG	Drum	MSB	0~63/64~127 : Off/On
0D	4E	Drum6B Roll	Drum	MSB	0~63/64~127 : Off/On
0D	4F	Drum6B Reverse	Drum	MSB	0~63/64~127 : Off/On
0D	50	Drum6B Effect Send	Drum	MSB	0~63/64~127 : Off/On
0D	51	Drum6B Effect Select	Drum	MSB	*T1-3
0D	52	Drum6B Modulation Type	Drum	MSB	*T1-4
0D	53	Drum6B Modulation Depth	Drum	MSB	0~64~127 : -63~0~63
0D	54	Drum6B Modulation Speed	Drum	MSB	0~127
0D	55	Drum6B Modulation Destination	Drum	MSB	*T1-5
0D	56	Drum6B Modulation BPM Sync	Drum	MSB	0~63/64~127 : Off/On
0D	57	Drum6B Motion Seq Type	Drum	MSB	*T1-6
0D	60	Drum7A Sample	Drum	MSB,LSB	16383 : Sample OFF (*T1-1)
0D	62	Drum7A Slice No.	Drum	MSB,LSB	16383 : ALL (*T1-1)
0D	64	Drum7A Pitch	Drum	MSB	0~127 (64=equal pitch)
0D	65	Drum7A Filter Type	Drum	MSB	*T1-2
0D	66	Drum7A Filter Cutoff	Drum	MSB	0~127
0D	67	Drum7A Filter Resonance	Drum	MSB	0~127
0D	68	Drum7A Filter EG Int	Drum	MSB	0~64~127 : -63~0~63
0D	69	Drum7A Start Point	Drum	MSB	0~127
0D	6A	Drum7A Level	Drum	MSB	0~127
0D	6B	Drum7A Pan	Drum	MSB	0~127 (64=center)
0D	6C	Drum7A EG Time	Drum	MSB	0~127
0D	6D	Drum7A Amp EG	Drum	MSB	0~63/64~127 : Off/On
0D	6E	Drum7A Roll	Drum	MSB	0~63/64~127 : Off/On
0D	6F	Drum7A Reverse	Drum	MSB	0~63/64~127 : Off/On
0D	70	Drum7A Effect Send	Drum	MSB	0~63/64~127 : Off/On
0D	71	Drum7A Effect Select	Drum	MSB	*T1-3
0D	72	Drum7A Modulation Type	Drum	MSB	*T1-4
0D	73	Drum7A Modulation Depth	Drum	MSB	0~64~127 : -63~0~63
0D	74	Drum7A Modulation Speed	Drum	MSB	0~127
0D	75	Drum7A Modulation Destination	Drum	MSB	*T1-5
0D	76	Drum7A Modulation BPM Sync	Drum	MSB	0~63/64~127 : Off/On
0D	77	Drum7A Motion Seq Type	Drum	MSB	*T1-6
0E	00	Drum7B Sample	Drum	MSB,LSB	16383 : Sample OFF (*T1-1)
0E	02	Drum7B Slice No.	Drum	MSB,LSB	16383 : ALL (*T1-1)
0E	04	Drum7B Pitch	Drum	MSB	0~127 (64=equal pitch)
0E	05	Drum7B Filter Type	Drum	MSB	*T1-2
0E	06	Drum7B Filter Cutoff	Drum	MSB	0~127
0E	07	Drum7B Filter Resonance	Drum	MSB	0~127
0E	08	Drum7B Filter EG Int	Drum	MSB	0~64~127 : -63~0~63
0E	09	Drum7B Start Point	Drum	MSB	0~127
0E	0A	Drum7B Level	Drum	MSB	0~127
0E	0B	Drum7B Pan	Drum	MSB	0~127 (64=center)
0E	0C	Drum7B EG Time	Drum	MSB	0~127
0E	0D	Drum7B Amp EG	Drum	MSB	0~63/64~127 : Off/On
0E	0E	Drum7B Roll	Drum	MSB	0~63/64~127 : Off/On
0E	0F	Drum7B Reverse	Drum	MSB	0~63/64~127 : Off/On
0E	10	Drum7B Effect Send	Drum	MSB	0~63/64~127 : Off/On
0E	11	Drum7B Effect Select	Drum	MSB	*T1-3
0E	12	Drum7B Modulation Type	Drum	MSB	*T1-4
0E	13	Drum7B Modulation Depth	Drum	MSB	0~64~127 : -63~0~63
0E	14	Drum7B Modulation Speed	Drum	MSB	0~127
0E	15	Drum7B Modulation Destination	Drum	MSB	*T1-5
0E	16	Drum7B Modulation BPM Sync	Drum	MSB	0~63/64~127 : Off/On
0E	17	Drum7B Motion Seq Type	Drum	MSB	*T1-6
0E	20	Keyboard Sample	Keyboard	MSB,LSB	16383 : Sample OFF (*T1-1)
0E	22	Keyboard Slice No .	Keyboard	MSB,LSB	16383 : ALL (*T1-1)
0E	60	Stretch1 Sample	Drum	MSB,LSB	16383 : Sample OFF (*T1-1)
0E	64	Stretch1 Pitch	Drum	MSB	0~127 (64=equal pitch)
0E	65	Stretch1 Filter Type	Drum	MSB	*T1-2
0E	66	Stretch1 Filter Cutoff	Drum	MSB	0~127

0E	67	Stretch1 Filter Resonance	Drum	MSB	0~127
0E	68	Stretch1 Filter EG Int	Drum	MSB	0~64~127 : -63~0~63
0E	69	Stretch1 Start Point	Drum	MSB	0~127
0E	6A	Stretch1 Level	Drum	MSB	0~127
0E	6B	Stretch1 Pan	Drum	MSB	0~127 (64=center)
0E	6C	Stretch1 EG Time	Drum	MSB	0~127
0E	6D	Stretch1 Amp EG	Drum	MSB	0~63/64~127 : Off/On
0E	6E	Stretch1 Roll	Drum	MSB	0~63/64~127 : Off/On
0E	6F	Stretch1 Reverse	Drum	MSB	0~63/64~127 : Off/On
0E	70	Stretch1 Effect Send	Drum	MSB	0~63/64~127 : Off/On
0E	71	Stretch1 Effect Select	Drum	MSB	*T1-3
0E	72	Stretch1 Modulation Type	Drum	MSB	*T1-4
0E	73	Stretch1 Modulation Depth	Drum	MSB	0~64~127 : -63~0~63
0E	74	Stretch1 Modulation Speed	Drum	MSB	0~127
0E	75	Stretch1 Modulation Destination	Drum	MSB	*T1-5
0E	76	Stretch1 Modulation BPM Sync	Drum	MSB	0~63/64~127 : Off/On
0E	77	Stretch1 Motion Seq Type	Drum	MSB	*T1-6
0F	00	Stretch2 Sample	Drum	MSB,LSB	16383 : Sample OFF (*T1-1)
0F	04	Stretch2 Pitch	Drum	MSB	0~127 (64=equal pitch)
0F	05	Stretch2 Filter Type	Drum	MSB	*T1-2
0F	06	Stretch2 Filter Cutoff	Drum	MSB	0~127
0F	07	Stretch2 Filter Resonance	Drum	MSB	0~127
0F	08	Stretch2 Filter EG Int	Drum	MSB	0~64~127 : -63~0~63
0F	09	Stretch2 Start Point	Drum	MSB	0~127
0F	0A	Stretch2 Level	Drum	MSB	0~127
0F	0B	Stretch2 Pan	Drum	MSB	0~127 (64=center)
0F	0C	Stretch2 EG Time	Drum	MSB	0~127
0F	0D	Stretch2 Amp EG	Drum	MSB	0~63/64~127 : Off/On
0F	0E	Stretch2 Roll	Drum	MSB	0~63/64~127 : Off/On
0F	0F	Stretch2 Reverse	Drum	MSB	0~63/64~127 : Off/On
0F	10	Stretch2 Effect Send	Drum	MSB	0~63/64~127 : Off/On
0F	11	Stretch2 Effect Select	Drum	MSB	*T1-3
0F	12	Stretch2 Modulation Type	Drum	MSB	*T1-4
0F	13	Stretch2 Modulation Depth	Drum	MSB	0~64~127 : -63~0~63
0F	14	Stretch2 Modulation Speed	Drum	MSB	0~127
0F	15	Stretch2 Modulation Destination	Drum	MSB	*T1-5
0F	16	Stretch2 Modulation BPM Sync	Drum	MSB	0~63/64~127 : Off/On
0F	17	Stretch2 Motion Seq Type	Drum	MSB	*T1-6
0F	20	Slice Sample	Drum	MSB,LSB	16383 : Sample OFF (*T1-1)
0F	24	Slice Pitch	Drum	MSB	0~127 (64=equal pitch)
0F	25	Slice Filter Type	Drum	MSB	*T1-2
0F	26	Slice Filter Cutoff	Drum	MSB	0~127
0F	27	Slice Filter Resonance	Drum	MSB	0~127
0F	28	Slice Filter EG Int	Drum	MSB	0~64~127 : -63~0~63
0F	29	Slice Start Point	Drum	MSB	0~127
0F	2A	Slice Level	Drum	MSB	0~127
0F	2B	Slice Pan	Drum	MSB	0~127 (64=center)
0F	2C	Slice EG Time	Drum	MSB	0~127
0F	2D	Slice Amp EG	Drum	MSB	0~63/64~127 : Off/On
0F	2E	Slice Roll	Drum	MSB	0~63/64~127 : Off/On
0F	2F	Slice Reverse	Drum	MSB	0~63/64~127 : Off/On
0F	30	Slice Effect Send	Drum	MSB	0~63/64~127 : Off/On
0F	31	Slice Effect Select	Drum	MSB	*T1-3
0F	32	Slice Modulation Type	Drum	MSB	*T1-4
0F	33	Slice Modulation Depth	Drum	MSB	0~64~127 : -63~0~63
0F	34	Slice Modulation Speed	Drum	MSB	0~127
0F	35	Slice Modulation Destination	Drum	MSB	*T1-5
0F	36	Slice Modulation BPM Sync	Drum	MSB	0~63/64~127 : Off/On
0F	37	Slice Motion Seq Type	Drum	MSB	*T1-6
0F	45	AudioIn Filter Type	Drum	MSB	*T1-2
0F	46	AudioIn Filter Cutoff	Drum	MSB	0~127
0F	47	AudioIn Filter Resonance	Drum	MSB	0~127
0F	48	AudioIn Filter EG Int	Drum	MSB	0~64~127 : -63~0~63
0F	4A	AudioIn Level	Drum	MSB	0~127
0F	4B	AudioIn Pan	Drum	MSB	0~127 (64=center)
0F	4C	AudioIn EG Time	Drum	MSB	0~127
0F	4D	AudioIn Amp EG	Drum	MSB	0~63/64~127 : Off/On
0F	4E	AudioIn Roll	Drum	MSB	0~63/64~127 : Off/On
0F	50	AudioIn Effect Send	Drum	MSB	0~63/64~127 : Off/On
0F	51	AudioIn Effect Select	Drum	MSB	*T1-3
0F	52	AudioIn Modulation Type	Drum	MSB	*T1-4
0F	53	AudioIn Modulation Depth	Drum	MSB	0~64~127 : -63~0~63
0F	54	AudioIn Modulation Speed	Drum	MSB	0~127
0F	55	AudioIn Modulation Destination	Drum	MSB	*T1-7
0F	56	AudioIn Modulation BPM Sync	Drum	MSB	0~63/64~127 : Off/On
0F	57	AudioIn Motion Seq Type	Drum	MSB	*T1-6
0F	60	Accent Level	Global	MSB	0~127
0F	61	Accent Motion Seq SW	Global	MSB	0~42/43~127 : Off/Trig Hold
0F	70	Swing	Global	MSB	*T1-8
0F	71	RollType	Global	MSB	*T1-9
0F	76	Mute 1	Global	MSB,LSB	*T1-10
0F	77	Mute 2	Global	MSB,LSB	*T1-11

*T1-1 : Data Entry Conversion

MIDI Data

MSB : 0MMMMMM (0~7F), LSB : 0LLLLLL (0~7F)

Data

00MMMMMMLLLLLL (0~3FFF)

```
*T1-2 : 00~1F : LPF
        20~3F : HPF
        40~5F : BPF
        60~7F : BPF+

*T1-3 : 00~2A : FX1
        2B~55 : FX2
        56~7F : FX3

*T1-4 : 00~0F : Saw
        10~1F : Squ
        20~2F : Tri
        30~3F : S&H
        40~7F : EG

*T1-5 : 00~1F : PITCH
        20~3F : CUTOFF
        40~5F : AMP
        60~7F : PAN

*T1-6 : 00~2A : Off
        2B~55 : Smooth
        56~7F : Trig Hold

*T1-7 : 00~3F : CUTOFF
        40~5F : AMP
        60~7F : PAN

*T1-8 : 00~07 :  50, 50, 50, 50, 50, 51, 51, 51
        08~0F :  51, 51, 52, 52, 52, 52, 52, 53
        10~17 :  53, 53, 53, 53, 54, 54, 54, 54
        18~1F :  54, 55, 55, 55, 55, 55, 56, 56
        20~27 :  56, 56, 56, 57, 57, 57, 57, 57
        28~2F :  58, 58, 58, 58, 58, 59, 59, 59
        30~37 :  59, 59, 60, 60, 60, 60, 60, 61
        38~3F :  61, 61, 61, 61, 62, 62, 62, 62
        40~47 :  62, 63, 63, 63, 63, 63, 64, 64
        48~4F :  64, 64, 64, 65, 65, 65, 65, 65
        50~57 :  66, 66, 66, 66, 66, 67, 67, 67
        58~5F :  67, 67, 68, 68, 68, 68, 68, 69
        60~67 :  69, 69, 69, 69, 70, 70, 70, 70
        68~6F :  70, 71, 71, 71, 71, 71, 72, 72
        70~77 :  72, 72, 72, 73, 73, 73, 73, 73
        78~7F :  74, 74, 74, 74, 74, 75, 75, 75

*T1-9 : 00~2A : 2
        2B~55 : 3
        56~7F : 4

*T1-10 : MSB   : Bit0=1 SoloSts
         LSB   : Bit5(AudioIn)=1       : Mute
                 Bit4(Slice)=1         : Mute
                 Bit3~2(Stretch2~1)=1  : Mute
                 Bit1~0(Keyboard2~1)=1 : Mute

*T1-11 : MSB   : Bit1~0(P7B~P7A)=1     : Mute
         LSB   : Bit6~0(P6B~P1)=1      : Mute
```

TABLE2 : Panel Knob & Switch Control (assignable)

	Parameter	Value [D]	Default CC No. [D]
MODULATION	Speed	0~127	89
	Depth	0~64~127 : -63~0~63	90
	Type	*T1-4	87
	Dest	*T1-5	88
	BPM Sync	0~63/64~127 : Off/On	82
FILTER	Cutoff	0~127	74
	Resonance	0~127	71
	EG Int	0~64~127 : -63~0~63	79
	Type	*T1-2	83
Part Common	Glide	0~127 : Off,1~127	5
	Pan	0~127 (64=center)	10
	EG Time	0~127	75
	Level	0~127	7
	Start Point	0~127	18
	Amp EG	0~63/64~127 : Off/On	86
	Roll	0~63/64~127 : Off/On	85
	Reverse	0~63/64~127 : Off/On	19
	Fx Send	0~63/64~127 : Off/On	91
	Fx Select	*T1-3	81
	Motion Seq Sw	*T1-6	80
FX1	Type	*T2-1	12
	Edit1	0~127	92
	Edit2	0~127	93
	Motion Seq Sw	0~63/64~127 : Off/On	20

FX2	Type	*T2-1	13	
	Edit1	0~127	94	
	Edit2	0~127	95	
	Motion Seq Sw	0~63/64~127 : Off/On	21	
FX3	Type	*T2-1	24	
	Edit1	0~127	25	
	Edit2	0~127	26	
	Motion Seq Sw	0~63/64~127 : Off/On	22	
FX	Chain	*T2-2	23	

*T2-1 : 00~07 : REVERB
08~0F : BPM SYNC DELAY
10~17 : SHORT DELAY
18~1F : MOD DELAY
20~27 : GRAIN SHIFTER
28~2F : CHO/FLG
30~37 : PHASER
38~3F : RING MOD
40~47 : TALKING MOD
48~4F : PITCH SHIFTER
50~57 : COMPRESSOR
58~5F : DISTORTION
60~67 : DECIMATOR
68~6F : EQ
70~77 : LPF
78~7F : HPF

*T2-2 : 00~1F : none
20~3F : FX1-FX2
40~5F : FX2-FX3
60~7F : FX1-FX2-FX3

TABLE3 : PATTERN BANK PARAMETERS (273920 bytes)

0~4279	pattern parameter (1st)	(4280bytes)	[TABLE4]
4280~8559	pattern parameter (2nd)		
:			
269640~273919	pattern parameter (64th)		

TABLE4 : PATTERN PARAMETERS (4280 bytes)

0~23	Pattern Common Parameters	(24bytes)	[TABLE5]
24~57	Part Drum1 Parameters	(34bytes)	[TABLE6]
58~91	Part Drum2 Parameters	(34bytes)	[TABLE6]
92~125	Part Drum3 Parameters	(34bytes)	[TABLE6]
126~159	Part Drum4 Parameters	(34bytes)	[TABLE6]
160~193	Part Drum5 Parameters	(34bytes)	[TABLE6]
194~227	Part Drum6A Parameters	(34bytes)	[TABLE6]
228~261	Part Drum6B Parameters	(34bytes)	[TABLE6]
262~295	Part Drum7A Parameters	(34bytes)	[TABLE6]
296~329	Part Drum7B Parameters	(34bytes)	[TABLE6]
330~603	Part Keyboard1 Parameters	(274bytes)	[TABLE7]
604~877	Part Keyboard2 Parameters	(274bytes)	[TABLE7]
878~909	Part Stretch1 Parameters	(32bytes)	[TABLE8]
910~941	Part Stretch2 Parameters	(32bytes)	[TABLE8]
942~973	Part Slice Parameters	(32bytes)	[TABLE8]
974~1129	Part AudioIn Parameters	(156bytes)	[TABLE9]
1130~1147	Accent Parameters	(18bytes)	[TABLE10]
1148~1151	Fx1 Parameters	(4bytes)	[TABLE11]
1152~1155	Fx2 Parameters	(4bytes)	[TABLE11]
1156~1159	Fx3 Parameters	(4bytes)	[TABLE11]
1160~1289	Motion Parameters (1st)	(130bytes)	[TABLE12]
1290~1419	Motion Parameters (2nd)		
:			
4150~4279	Motion Parameters (24th)		

TABLE5 : PATTERN COMMON PARAMETERS (24 bytes)

0~7	Pattern Name	
8	Tempo (MSB)	20.0~300.0 iiiiiiiii 20~300
9	Tempo (LSB)	iiiiiiiii00ffff ffff 0~9
10	Swing	0~25 : 50~75%
b2~0	Pattern Length	0~7 : 1~8
11 b5,4	Beat	0~3 : 16th,32nd,tri,tr2
b7,6	RollType	0~2 : 2~4
12	Fx Chain	0~3 : xx,ox,xo,oo (FX1-FX2,FX2-FX3)
13	Last Step	0~15 : 1~16
b4~0	Arpeggiator Scale	0~30 : 1~31
14 b7~5	(reserve)	
15	Arpeggiator CenterNote	0~127 : C-1~G9
16~17	Part Mute/Solo Status	b15 = 0 : Mute 0/1 : Mute Off/Mute On [TABLE22] b15 = 1 : Solo 0/1 : Solo On/Solo Off [TABLE22]
18~19	Part Swing Status	0/1 : Off/On [TABLE22]
20~21	Part OutputBus Status	0/1 : 3/4 / L/R [TABLE22]
22~23	Part Accent Status	0/1 : Off/On [TABLE22]

TABLE6 : DRUM PART PARAMETERS (34 bytes)

0	Sample (MSB)	MSB="1" : OFF
1	Sample (LSB)	
2	Slice No.	MSB="1" : ALL
3	(reserve)	
4	Filter Type	0~3 : LPF/HPF/BPF/BPF+
5	Cut Off	0~127
6	Resonance	0~127
7	EG Intensity	0~64~127 : -63~0~+63
8	Pitch	0~127 (64=equal pitch)
9	Level	0~127
10	Panpot	0~127 (64=center)
11	EG Time	0~127
12	Start Point	0~127
b1,0	Fx Select	0~2 : FX1/FX2/FX3
b2	Fx Send	0/1 : Off/On
13 b3	Roll	0/1 : Off/On
b4	Amp EG	0/1 : Gate/EG
b5	Reverse	0/1 : Off/On
b2~0	Mod Dest	0~3 : Pitch/Cutoff/Amp/Pan
14 b6~4	Mod Type	0~4 : Saw/Squ/Tri/S&H/EG
b7	BPM Sync	0/1 : Off/On
15	Mod Speed	0~127
16	Mod Depth	0~64~127 : -63~0~+63
17	Motion Sequence Status	0~2 : Off/Smooth/TrigHold
18~33	Sequence Data	[TABLE23]

TABLE7 : KEYBOARD PART PARAMETERS (274 bytes)

0	Sample (MSB)	MSB="1" : OFF
1	Sample (LSB)	
2	Slice No.	MSB="1" : ALL
3	(reserve)	
4	Glide	0~127 : Off,1~127
5	Filter Type	0~3 : LPF/HPF/BPF/BPF+
6	Cut Off	0~127
7	Resonance	0~127
8	EG Intensity	0~64~127 : -63~0~+63
9	Level	0~127
10	Panpot	0~127 (64=center)
11	EG Time	0~127
12	Start Point	0~127
b1,0	Fx Select	0~2 : FX1/FX2/FX3
b2	Fx Send	0/1 : Off/On
13 b3	Roll	0/1 : Off/On
b4	Amp EG	0/1 : Gate/EG
b5	Reverse	0/1 : Off/On
b2~0	Mod Dest	0~3 : Pitch/CutOff/Amp/Pan
14 b6~4	Mde Type	0~4 : Saw/Squ/Tri/S&H/EG
b7	BPM Sync	0/1 : Off/On
15	Mod Speed	0~127
16	Mod Depth	0~64~127 : -63~0~+63
17	Motion Sequence Status	0~2 : Off/Smooth/TrigHold
18	Sequence Data Note (Step1)	
:	:	0~127 : C-1~G9 (MSB="1" : Off)
145	Sequence Data Note (Step128)	
146	Sequence Data Gate (Step1)	
:	:	0~255 : 0.25~128.0 (*T7-1)
273	Sequence Data Gate (Step128)	

*T7-1 :

00~07 :	0.25,	0.50,	0.75,	1.00,	1.25,	1.50,	1.75,	2.00
08~0F :	2.25,	2.50,	2.75,	3.00,	3.25,	3.50,	3.75,	4.00
10~17 :	4.25,	4.50,	4.75,	5.00,	5.25,	5.50,	5.75,	6.00
18~1F :	6.25,	6.50,	6.75,	7.00,	7.25,	7.50,	7.75,	8.00
20~27 :	8.25,	8.50,	8.75,	9.00,	9.25,	9.50,	9.75,	10.00
28~2F :	10.25,	10.50,	10.75,	11.00,	11.25,	11.50,	11.75,	12.00
30~37 :	12.25,	12.50,	12.75,	13.00,	13.25,	13.50,	13.75,	14.00
38~3F :	14.25,	14.50,	14.75,	15.00,	15.25,	15.50,	15.75,	16.00
40~47 :	16.25,	16.50,	16.75,	17.00,	17.25,	17.50,	17.75,	18.00
48~4F :	18.25,	18.50,	18.75,	19.00,	19.25,	19.50,	19.75,	20.00
50~57 :	20.25,	20.50,	20.75,	21.00,	21.25,	21.50,	21.75,	22.00
58~5F :	22.25,	22.50,	22.75,	23.00,	23.25,	23.50,	23.75,	24.00
60~67 :	24.25,	24.50,	24.75,	25.00,	25.25,	25.50,	25.75,	26.00
68~6F :	26.25,	26.50,	26.75,	27.00,	27.25,	27.50,	27.75,	28.00
70~77 :	28.25,	28.50,	28.75,	29.00,	29.25,	29.50,	29.75,	30.00
78~7F :	30.25,	30.50,	30.75,	31.00,	31.25,	31.50,	31.75,	32.00
80~87 :	32.50,	33.00,	33.50,	34.00,	34.50,	35.00,	35.50,	36.00
88~8F :	36.50,	37.00,	37.50,	38.00,	38.50,	39.00,	39.50,	40.00
90~97 :	40.50,	41.00,	41.50,	42.00,	42.50,	43.00,	43.50,	44.00
98~9F :	44.50,	45.00,	45.50,	46.00,	46.50,	47.00,	47.50,	48.00
A0~A7 :	48.50,	49.00,	49.50,	50.00,	50.50,	51.00,	51.50,	52.00
A8~AF :	52.50,	53.00,	53.50,	54.00,	54.50,	55.00,	55.50,	56.00
B0~B7 :	56.50,	57.00,	57.50,	58.00,	58.50,	59.00,	59.50,	60.00
B8~BF :	60.50,	61.00,	61.50,	62.00,	62.50,	63.00,	63.50,	64.00
C0~C7 :	65.00,	66.00,	67.00,	68.00,	69.00,	70.00,	71.00,	72.00
C8~CF :	73.00,	74.00,	75.00,	76.00,	77.00,	78.00,	79.00,	80.00
D0~D7 :	81.00,	82.00,	83.00,	84.00,	85.00,	86.00,	87.00,	88.00
D8~DF :	89.00,	90.00,	91.00,	92.00,	93.00,	94.00,	95.00,	96.00
E0~E7 :	97.00,	98.00,	99.00,	100.00,	101.00,	102.00,	103.00,	104.00
E8~EF :	105.00,	106.00,	107.00,	108.00,	109.00,	110.00,	111.00,	112.00
F0~F7 :	113.00,	114.00,	115.00,	116.00,	117.00,	118.00,	119.00,	120.00
F8~FF :	121.00,	122.00,	123.00,	124.00,	125.00,	126.00,	127.00,	128.00

TABLE8 : STRETCH / SLICE PART PARAMETERS (32 bytes)

0	Sample (MSB)	MSB="1" : OFF
1	Sample (LSB)	
2	Filter Type	0~3 : LPF/HPF/BPF/BPF+
3	Cut Off	0~127
4	Resonance	0~127
5	EG Intensity	0~64~127 : -63~0~+63
6	Pitch	0~127 (64=equal pitch)
7	Level	0~127
8	Panpot	0~127 (64=center)
9	EG Time	0~127
10	Start Point	0~127
b1,0	Fx Select	0~2 : FX1/FX2/FX3
b2	Fx Send	0/1 : Off/On
11		
b3	Roll	0/1 : Off/On
b4	Amp EG	0/1 : Gate/EG
b5	Reverse	0/1 : Off/On
b2~0	Mod Dest	0~3 : Pitch/Cutoff/Amp/Pan
12		
b6~4	Mod Type	0~4 : Saw/Squ/Tri/S&H/EG
b7	BPM Sync	0/1 : Off/On
13	Mod Speed	0~127
14	Mod Depth	0~64~127 : -63~0~+63
15	Motion Sequence Status	0~2 : Off/Smooth/TrigHold
16~31	Sequence Data	[TABLE23]

TABLE9 : AUDIOIN PART PARAMETERS (156 bytes)

0	Filter Type	0~3 : LPF/HPF/BPF/BPF+
1	Cut Off	0~127
2	Resonance	0~127
3	EG Intensity	0~64~127 : -63~0~+63
4	Level	0~127
5	Panpot	0~127 (64=center)
6	EG Time	0~127
b1,0	Fx Select	0~2 : FX1/FX2/FX3
b2	Fx Send	0/1 : Off/On
7		
b3	Roll	0/1 : Off/On
b4	Amp EG	0/1 : Gate/EG
b2~0	Mod Dest	1~3 : Cutoff/Amp/Pan
b6~4	Mod Type	0~4 : Saw/Squ/Tri/S&H/EG
8		
b7	BPM Sync	0/1 : Off/On
9	Mod Speed	0~127
10	Mod Depth	0~64~127 : -63~0~+63
11	Motion Sequence Status	0~2 : Off/Smooth/TrigHold
12~27	Sequence Data Step	[TABLE23]
28	Sequence Data Gate (Step1)	
:	:	0~255 : 0.25~128.0 (*T7-1)
155	Sequence Data Gate (Step128)	

TABLE10 : ACCENT PART PARAMTERS (18 bytes)

0	Level	0~127
1	Motion Sequence Status	0/2 : Off/TrigHold
2~17	Sequence Data	[TABLE23]

TABLE11 : FX PARAMETERS (4 bytes)

0	Effect Type	0~15 : 1~16 [TABLE24]
1	Edit1	0~127 [TABLE24]
2	Edit2	0~127 [TABLE24]
3	Motion Sequence Status	0/1 : Off/On

TABLE12 : MOTION SEQUENCE PARAMETERS (130 bytes)

0~1	Operation No.	[TABLE25]
2~129	Value	(MSB="1" : Off) [TABLE25]

TABLE13 : GLOBAL PARAMETERS (192 bytes)

0	Memory Protect	0/1 : Protect Off/On
1	(reserve)	
2	Arp Control	0/1 : Normal/Reverse
3	Audio In Mode	0/1 : L/Mono / Stereo
4	MIDI Clock	0~2 : Int/Ext/Auto
b0	Note Message Enable Flag	0/1 : Dis/Ena
b1	System Ex. Enable Flag	0/1 : Dis/Ena
5 b2	Control Change Enable Flag	0/1 : Dis/Ena
b3	Program Change Enable Flag	0/1 : Dis/Ena
6	Pitch Bend Range	0~12~24 : -12~0~12
7~9	MIDI Channel	0~15 : 1ch~16ch [TABLE26]
10~22	Drum Note Number	0~127 : C-1~G9 [TABLE27]
23~55	MIDI Control Change Assign	(33bytes) [TABLE28] CC# = 01~05,07~31,33~37,39~95
56~63	(reserve)	
64~191	Pattern Set Parameters	0~255 : A01~D64

TABLE14 : CURRENT SONG PARAMETER

0~527	Song Parameter	(528bytes) [TABLE16]
Song Event Data		
528~535	event data (1st)	(8bytes) [TABLE17] or [TABLE18]
536~543	event data (2nd)	or [TABLE19] or [TABLE20]
:		or [TABLE21]
160520~160527 (max)	event data (20000th(max))	

TABLE15 : ALL SONG DATA

0~527	Song Parameter (1st)	(528bytes) [TABLE16]
528~1055	Song Parameter (2nd)	
:		
33264~33791	Song Parameter (64th)	
Song Event Data		
(Event Size is total number of event of All Songs.)		
33792~33799	event data (1st)	(8bytes) [TABLE17] or [TABLE18]

33800~33807	event data (2nd)	or [TABLE19]	or [TABLE20]
:	:	or [TABLE21]	
193784~193791 (max)	event data (20000th(max))		

TABLE16 : SONG PARAMETER (528 bytes)

0~7	Song Name	
8	Tempo (MSB)	20.0~300.0 iiiiiiiii 20~300
9	Tempo (LSB)	iiiiiiiii00ffff ffff .0~.9
10	Tempo Lock	0/1 : Off/On
11	Length	0~255 : 1~256
12	Mute Hold	0/1 : Off/On
13	Next Song	0~64 : Off,song1~song64
14~15	Num of Events	0~19999
16	Pattern Number (1st)	0~255 : A01~D64
:	:	
271	Pattern Number (256th)	
272	Note Offset (1st)	-24~+24
:	:	
527	Note Offset (256th)	

TABLE17 : SONG EVENT DATA (Control Type) (8byte)

0	Position Number	0~255 : 1~256	
1 b7~4	Measure	0~7 : 1~8	
b3~0	Step	0~15 : 1~16	
2~3	Operation No.		[TABLE25]
4	(reserve)		
5	Value		[TABLE25]
6~7	(reserve)	AAAA [H] (fixed)	

TABLE18 : SONG EVENT DATA (Drum Note Type) (8byte)

0	Position Number	0~255 : 1~256	
1 b7~4	Measure	0~7 : 1~8	
b3~0	Step	0~15 : 1~16	
2~3	(reserve)	4000 [H] (fixed)	
4	Part	0~15 : drum1~7B,accent,keyboard1~2,stretch1~2,slice,audio in	
5~7	(reserve)		

TABLE19 : SONG EVENT DATA (Keyboard Note Type) (8byte)

0	Position Number	0~255 : 1~256	
1 b7~4	Measure	0~7 : 1~8	
b3~0	Step	0~15 : 1~16	
2~3	(reserve)	4000 [H] (fixed)	
4	Part	0~15 : drum1~7B,accent,keyboard1~2,stretch1~2,slice,audio in	
5	Note No.	0~127 : C-1~G9	
6~7	Length	0~32767 : 0.25~8192.00 (per 0.25)	
		32768~49151 : 8192.50~12288.00 (per 0.5)	
		49152~65535 : 12289.00~16384.00 (per 1.0)	

TABLE20 : SONG EVENT DATA (Tempo Type) (8byte)

0	Position Number	0~255 : 1~256	
1	b7~4 Measure	0~7 : 1~8	
	b3~0 Step	0~15 : 1~16	
2~3	Operation No.	515 (fixed)	
4~5	(reserve)		
6~7	Tempo	20.0~300.0	iiiiiiiii = 20~300
		0iiiiiiiiiffffff	ffffff = 0~63 : .0~.9

TABLE21 : SONG EVENT DATA (Mute/Solo Type) (8byte)

0	Position Number	0~255 : 1~256	
1	b7~4 Measure	0~7 : 1~8	
	b3~0 Step	0~15 : 1~16	
2~3	Operation No.	503 (fixed)	
4~5	(reserve)		
6~7	Part Mute/Solo Status	b15 = 0 : Mute	
		0/1 : Mute Off/Mute On	[TABLE22]
		b15 = 1 : Solo	
		0/1 : Solo On/Solo Off	[TABLE22]

TABLE22 : PART STATUS PARAMETERS (2 bytes)

b6	Part AudioIn Status	0/1
b5	Part Slice Status	0/1
b4	Part Stretch2 Status	0/1
b3	Part Stretch1 Status	0/1
0[MSB] b2	Part Keyboard2 Status	0/1
b1	Part Keyboard1 Status	0/1
b0	Part Drum7B Status	0/1
b7	Part Drum7A Status	0/1
b6	Part Drum6B Status	0/1
b5	Part Drum6A Status	0/1
b4	Part Drum5 Status	0/1
1[LSB] b3	Part Drum4 Status	0/1
b2	Part Drum3 Status	0/1
b1	Part Drum2 Status	0/1
b0	Part Drum1 Status	0/1

TABLE23 : DRUM / STRETCH / SLICE / AUDIOIN / ACCENT PART STEP SEQUECNCE DATA (16 bytes)

Offset	bit pattern	value (on Accent Part)
0	Bit0~7 (Step1 ~8)	0/1 : Off(Soft)/On(hard)
1	Bit0~7 (Step9 ~16)	0/1 : Off(Soft)/On(hard)
2	Bit0~7 (Step17~24)	0/1 : Off(Soft)/On(hard)
3	Bit0~7 (Step25~32)	0/1 : Off(Soft)/On(hard)
4	Bit0~7 (Step33~40)	0/1 : Off(Soft)/On(hard)
5	Bit0~7 (Step41~48)	0/1 : Off(Soft)/On(hard)
6	Bit0~7 (Step49~56)	0/1 : Off(Soft)/On(hard)
7	Bit0~7 (Step57~64)	0/1 : Off(Soft)/On(hard)
8	Bit0~7 (Step65~72)	0/1 : Off(Soft)/On(hard)

9	Bit0~7 (Step73~80)	0/1 : Off(Soft)/On(hard)
10	Bit0~7 (Step81~88)	0/1 : Off(Soft)/On(hard)
11	Bit0~7 (Step89~96)	0/1 : Off(Soft)/On(hard)
12	Bit0~7 (Step97~104)	0/1 : Off(Soft)/On(hard)
13	Bit0~7 (Step105~112)	0/1 : Off(Soft)/On(hard)
14	Bit0~7 (Step113~120)	0/1 : Off(Soft)/On(hard)
15	Bit0~7 (Step121~128)	0/1 : Off(Soft)/On(hard)

TABLE24 : Effect List

	NAME	EDIT1	PARAMETER [D]	EDIT2	PARAMETER [D]
1	Reverb	Time	0~127	Level	0~127
2	BPM Sync Delay	Time	*T24-1	Depth	0~127
3	Short Delay	Time	0~127	Depth	0~127
4	Mod Delay	Time	*T24-1	Depth	0~127
5	Grain Shifter	Speed	0~127	Depth	0~127
6	Cho/Flg	LFO Rate	0~127	Depth	0~127
7	Phaser	LFO Rate	0~127	Depth	0~127
8	Ring Mod	Frequency	0~127	Balance	0~127
9	Talking Mod	Formant	0~127	Offset	-63~+63
10	Pitch Shifter	Pitch	0~127	Balance	0~127
11	Compressor	Sensitivity	-2400~+2400	Attack	0~127
12	Distortion	Gain	0~127	Level	0~127
13	Decimator	Sampling Freq	0~127	Sampling Bit	0~127
14	EQ	Low Gain (80Hz)	-63~+63	High Gain (12kHz)	-63~+63
15	LPF	Cutoff Freq	0~127	Resonance	0~127
16	HPF	Cutoff Freq	0~127	Resonance	0~127

*T24-1 : 1/64,1/32,1/24,1/16,1/12,1/8,1/6,3/16,1/4,1/3,3/8,1/2,3/4,1/1

TABLE25 : Opration No. & Value

No. [H]	Parameter	Value [D]	Motion Seq	Song Event
004	Drum1 Pitch	0~127 (64=equal pitch)	O	O
005	Drum1 Filter Type	*T1-2	O	O
006	Drum1 Filter Cutoff	0~127	O	O
007	Drum1 Filter Resonance	0~127	O	O
008	Drum1 Filter EG Int	0~64~127 : -63~0~63	O	O
009	Drum1 Start Point	0~127	O	O
00A	Drum1 Level	0~127	O	O
00B	Drum1 Pan	0~127 (64=center)	O	O
00C	Drum1 EG Time	0~127	O	O
00D	Drum1 Amp EG	0~63/64~127 : Off/On	O	O
00E	Drum1 Roll	0~63/64~127 : Off/On	O	O
00F	Drum1 Reverse	0~63/64~127 : Off/On	O	O
010	Drum1 Effect Send	0~63/64~127 : Off/On	O	O
011	Drum1 Effect Select	*T1-3	O	O
012	Drum1 Modulation Type	*T1-4	O	O
013	Drum1 Modulation Depth	0~64~127 : -63~0~63	O	O
014	Drum1 Modulation Speed	0~127	O	O
015	Drum1 Modulation Destination	*T1-5	O	O
016	Drum1 Modulation BPM Sync	0~63/64~127 : Off/On	O	O
017	Drum1 Motion Seq Type	*T1-6	X	O
024	Drum2 Pitch	0~127 (64=equal pitch)	O	O
025	Drum2 Filter Type	*T1-2	O	O
026	Drum2 Filter Cutoff	0~127	O	O
027	Drum2 Filter Resonance	0~127	O	O
028	Drum2 Filter EG Int	0~64~127 : -63~0~63	O	O
029	Drum2 Start Point	0~127	O	O
02A	Drum2 Level	0~127	O	O
02B	Drum2 Pan	0~127 (64=center)	O	O

02C	Drum2 EG Time	0~127	O	O	
02D	Drum2 Amp EG	0~63/64~127 : Off/On	O	O	
02E	Drum2 Roll	0~63/64~127 : Off/On	O	O	
02F	Drum2 Reverse	0~63/64~127 : Off/On	O	O	
030	Drum2 Effect Send	0~63/64~127 : Off/On	O	O	
031	Drum2 Effect Select	*T1-3	O	O	
032	Drum2 Modulation Type	*T1-4	O	O	
033	Drum2 Modulation Depth	0~64~127 : -63~0~63	O	O	
034	Drum2 Modulation Speed	0~127	O	O	
035	Drum2 Modulation Destination	*T1-5	O	O	
036	Drum2 Modulation BPM Sync	0~63/64~127 : Off/On	O	O	
037	Drum2 Motion Seq Type	*T1-6	X	O	
044	Drum3 Pitch	0~127 (64=equal pitch)	O	O	
045	Drum3 Filter Type	*T1-2	O	O	
046	Drum3 Filter Cutoff	0~127	O	O	
047	Drum3 Filter Resonance	0~127	O	O	
048	Drum3 Filter EG Int	0~64~127 : -63~0~63	O	O	
049	Drum3 Start Point	0~127	O	O	
04A	Drum3 Level	0~127	O	O	
04B	Drum3 Pan	0~127 (64=center)	O	O	
04C	Drum3 EG Time	0~127	O	O	
04D	Drum3 Amp EG	0~63/64~127 : Off/On	O	O	
04E	Drum3 Roll	0~63/64~127 : Off/On	O	O	
04F	Drum3 Reverse	0~63/64~127 : Off/On	O	O	
050	Drum3 Effect Send	0~63/64~127 : Off/On	O	O	
051	Drum3 Effect Select	*T1-3	O	O	
052	Drum3 Modulation Type	*T1-4	O	O	
053	Drum3 Modulation Depth	0~64~127 : -63~0~63	O	O	
054	Drum3 Modulation Speed	0~127	O	O	
055	Drum3 Modulation Destination	*T1-5	O	O	
056	Drum3 Modulation BPM Sync	0~63/64~127 : Off/On	O	O	
057	Drum3 Motion Seq Type	*T1-6	X	O	
064	Drum4 Pitch	0~127 (64=equal pitch)	O	O	
065	Drum4 Filter Type	*T1-2	O	O	
066	Drum4 Filter Cutoff	0~127	O	O	
067	Drum4 Filter Resonance	0~127	O	O	
068	Drum4 Filter EG Int	0~64~127 : -63~0~63	O	O	
069	Drum4 Start Point	0~127	O	O	
06A	Drum4 Level	0~127	O	O	
06B	Drum4 Pan	0~127 (64=center)	O	O	
06C	Drum4 EG Time	0~127	O	O	
06D	Drum4 Amp EG	0~63/64~127 : Off/On	O	O	
06E	Drum4 Roll	0~63/64~127 : Off/On	O	O	
06F	Drum4 Reverse	0~63/64~127 : Off/On	O	O	
070	Drum4 Effect Send	0~63/64~127 : Off/On	O	O	
071	Drum4 Effect Select	*T1-3	O	O	
072	Drum4 Modulation Type	*T1-4	O	O	
073	Drum4 Modulation Depth	0~64~127 : -63~0~63	O	O	
074	Drum4 Modulation Speed	0~127	O	O	
075	Drum4 Modulation Destination	*T1-5	O	O	
076	Drum4 Modulation BPM Sync	0~63/64~127 : Off/On	O	O	
077	Drum4 Motion Seq Type	*T1-6	X	O	
084	Drum5 Pitch	0~127 (64=equal pitch)	O	O	
085	Drum5 Filter Type	*T1-2	O	O	
086	Drum5 Filter Cutoff	0~127	O	O	
087	Drum5 Filter Resonance	0~127	O	O	
088	Drum5 Filter EG Int	0~64~127 : -63~0~63	O	O	
089	Drum5 Start Point	0~127	O	O	
08A	Drum5 Level	0~127	O	O	
08B	Drum5 Pan	0~127 (64=center)	O	O	
08C	Drum5 EG Time	0~127	O	O	
08D	Drum5 Amp EG	0~63/64~127 : Off/On	O	O	
08E	Drum5 Roll	0~63/64~127 : Off/On	O	O	
08F	Drum5 Reverse	0~63/64~127 : Off/On	O	O	
090	Drum5 Effect Send	0~63/64~127 : Off/On	O	O	
091	Drum5 Effect Select	*T1-3	O	O	
092	Drum5 Modulation Type	*T1-4	O	O	
093	Drum5 Modulation Depth	0~64~127 : -63~0~63	O	O	
094	Drum5 Modulation Speed	0~127	O	O	
095	Drum5 Modulation Destination	*T1-5	O	O	
096	Drum5 Modulation BPM Sync	0~63/64~127 : Off/On	O	O	
097	Drum5 Motion Seq Type	*T1-6	X	O	
0A4	Drum6A Pitch	0~127 (64=equal pitch)	O	O	
0A5	Drum6A Filter Type	*T1-2	O	O	
0A6	Drum6A Filter Cutoff	0~127	O	O	
0A7	Drum6A Filter Resonance	0~127	O	O	
0A8	Drum6A Filter EG Int	0~64~127 : -63~0~63	O	O	
0A9	Drum6A Start Point	0~127	O	O	
0AA	Drum6A Level	0~127	O	O	
0AB	Drum6A Pan	0~127 (64=center)	O	O	
0AC	Drum6A EG Time	0~127	O	O	
0AD	Drum6A Amp EG	0~63/64~127 : Off/On	O	O	
0AE	Drum6A Roll	0~63/64~127 : Off/On	O	O	
0AF	Drum6A Reverse	0~63/64~127 : Off/On	O	O	
0B0	Drum6A Effect Send	0~63/64~127 : Off/On	O	O	
0B1	Drum6A Effect Select	*T1-3	O	O	
0B2	Drum6A Modulation Type	*T1-4	O	O	

0B3	Drum6A Modulation Depth	0~64~127 : -63~0~63	O	O	
0B4	Drum6A Modulation Speed	0~127	O	O	
0B5	Drum6A Modulation Destination	*T1-5	O	O	
0B6	Drum6A Modulation BPM Sync	0~63/64~127 : Off/On	O	O	
0B7	Drum6A Motion Seq Type	*T1-6	X	O	
0C4	Drum6B Pitch	0~127 (64=equal pitch)	O	O	
0C5	Drum6B Filter Type	*T1-2	O	O	
0C6	Drum6B Filter Cutoff	0~127	O	O	
0C7	Drum6B Filter Resonance	0~127	O	O	
0C8	Drum6B Filter EG Int	0~64~127 : -63~0~63	O	O	
0C9	Drum6B Start Point	0~127	O	O	
0CA	Drum6B Level	0~127	O	O	
0CB	Drum6B Pan	0~127 (64=center)	O	O	
0CC	Drum6B EG Time	0~127	O	O	
0CD	Drum6B Amp EG	0~63/64~127 : Off/On	O	O	
0CE	Drum6B Roll	0~63/64~127 : Off/On	O	O	
0CF	Drum6B Reverse	0~63/64~127 : Off/On	O	O	
0D0	Drum6B Effect Send	0~63/64~127 : Off/On	O	O	
0D1	Drum6B Effect Select	*T1-3	O	O	
0D2	Drum6B Modulation Type	*T1-4	O	O	
0D3	Drum6B Modulation Depth	0~64~127 : -63~0~63	O	O	
0D4	Drum6B Modulation Speed	0~127	O	O	
0D5	Drum6B Modulation Destination	*T1-5	O	O	
0D6	Drum6B Modulation BPM Sync	0~63/64~127 : Off/On	O	O	
0D7	Drum6B Motion Seq Type	*T1-6	X	O	
0E4	Drum7A Pitch	0~127 (64=equal pitch)	O	O	
0E5	Drum7A Filter Type	*T1-2	O	O	
0E6	Drum7A Filter Cutoff	0~127	O	O	
0E7	Drum7A Filter Resonance	0~127	O	O	
0E8	Drum7A Filter EG Int	0~64~127 : -63~0~63	O	O	
0E9	Drum7A Start Point	0~127	O	O	
0EA	Drum7A Level	0~127	O	O	
0EB	Drum7A Pan	0~127 (64=center)	O	O	
0EC	Drum7A EG Time	0~127	O	O	
0ED	Drum7A Amp EG	0~63/64~127 : Off/On	O	O	
0EE	Drum7A Roll	0~63/64~127 : Off/On	O	O	
0EF	Drum7A Reverse	0~63/64~127 : Off/On	O	O	
0F0	Drum7A Effect Send	0~63/64~127 : Off/On	O	O	
0F1	Drum7A Effect Select	*T1-3	O	O	
0F2	Drum7A Modulation Type	*T1-4	O	O	
0F3	Drum7A Modulation Depth	0~64~127 : -63~0~63	O	O	
0F4	Drum7A Modulation Speed	0~127	O	O	
0F5	Drum7A Modulation Destination	*T1-5	O	O	
0F6	Drum7A Modulation BPM Sync	0~63/64~127 : Off/On	O	O	
0F7	Drum7A Motion Seq Type	*T1-6	X	O	
104	Drum7B Pitch	0~127 (64=equal pitch)	O	O	
105	Drum7B Filter Type	*T1-2	O	O	
106	Drum7B Filter Cutoff	0~127	O	O	
107	Drum7B Filter Resonance	0~127	O	O	
108	Drum7B Filter EG Int	0~64~127 : -63~0~63	O	O	
109	Drum7B Start Point	0~127	O	O	
10A	Drum7B Level	0~127	O	O	
10B	Drum7B Pan	0~127 (64=center)	O	O	
10C	Drum7B EG Time	0~127	O	O	
10D	Drum7B Amp EG	0~63/64~127 : Off/On	O	O	
10E	Drum7B Roll	0~63/64~127 : Off/On	O	O	
10F	Drum7B Reverse	0~63/64~127 : Off/On	O	O	
110	Drum7B Effect Send	0~63/64~127 : Off/On	O	O	
111	Drum7B Effect Select	*T1-3	O	O	
112	Drum7B Modulation Type	*T1-4	O	O	
113	Drum7B Modulation Depth	0~64~127 : -63~0~63	O	O	
114	Drum7B Modulation Speed	0~127	O	O	
115	Drum7B Modulation Destination	*T1-5	O	O	
116	Drum7B Modulation BPM Sync	0~63/64~127 : Off/On	O	O	
117	Drum7B Motion Seq Type	*T1-6	X	O	
123	Keyboard1 Glide	0~127 : Off,1~127	O	O	
125	Keyboard1 Filter Type	*T1-2	O	O	
126	Keyboard1 Filter Cutoff	0~127	O	O	
127	Keyboard1 Filter Resonance	0~127	O	O	
128	Keyboard1 Filter EG Int	0~64~127 : -63~0~63	O	O	
129	Keyboard1 Start Point	0~127	O	O	
12A	Keyboard1 Level	0~127	O	O	
12B	Keyboard1 Pan	0~127 (64=center)	O	O	
12C	Keyboard1 EG Time	0~127	O	O	
12D	Keyboard1 Amp EG	0~63/64~127 : Off/On	O	O	
12E	Keyboard1 Roll	0~63/64~127 : Off/On	O	O	
12F	Keyboard1 Reverse	0~63/64~127 : Off/On	O	O	
130	Keyboard1 Effect Send	0~63/64~127 : Off/On	O	O	
131	Keyboard1 Effect Select	*T1-3	O	O	
132	Keyboard1 Modulation Type	*T1-4	O	O	
133	Keyboard1 Modulation Depth	0~64~127 : -63~0~63	O	O	
134	Keyboard1 Modulation Speed	0~127	O	O	
135	Keyboard1 Modulation Destination	*T1-5	O	O	
136	Keyboard1 Modulation BPM Sync	0~63/64~127 : Off/On	O	O	
137	Keyboard1 Motion Seq Type	*T1-6	X	O	
143	Keyboard2 Glide	0~127 : Off,1~127	O	O	

145	Keyboard2 Filter Type	*T1-2	O	O	
146	Keyboard2 Filter Cutoff	0~127	O	O	
147	Keyboard2 Filter Resonance	0~127	O	O	
148	Keyboard2 Filter EG Int	0~64~127 : -63~0~63	O	O	
149	Keyboard2 Start Point	0~127	O	O	
14A	Keyboard2 Level	0~127	O	O	
14B	Keyboard2 Pan	0~127 (64=center)	O	O	
14C	Keyboard2 EG Time	0~127	O	O	
14D	Keyboard2 Amp EG	0~63/64~127 : Off/On	O	O	
14E	Keyboard2 Roll	0~63/64~127 : Off/On	O	O	
14F	Keyboard2 Reverse	0~63/64~127 : Off/On	O	O	
150	Keyboard2 Effect Send	0~63/64~127 : Off/On	O	O	
151	Keyboard2 Effect Select	*T1-3	O	O	
152	Keyboard2 Modulation Type	*T1-4	O	O	
153	Keyboard2 Modulation Depth	0~64~127 : -63~0~63	O	O	
154	Keyboard2 Modulation Speed	0~127	O	O	
155	Keyboard2 Modulation Destination	*T1-5	O	O	
156	Keyboard2 Modulation BPM Sync	0~63/64~127 : Off/On	O	O	
157	Keyboard2 Motion Seq Type	*T1-6	X	O	
164	Stretch1 Pitch	0~127 (64=equal pitch)	O	O	
165	Stretch1 Filter Type	*T1-2	O	O	
166	Stretch1 Filter Cutoff	0~127	O	O	
167	Stretch1 Filter Resonance	0~127	O	O	
168	Stretch1 Filter EG Int	0~64~127 : -63~0~63	O	O	
169	Stretch1 Start Point	0~127	O	O	
16A	Stretch1 Level	0~127	O	O	
16B	Stretch1 Pan	0~127 (64=center)	O	O	
16C	Stretch1 EG Time	0~127	O	O	
16D	Stretch1 Amp EG	0~63/64~127 : Off/On	O	O	
16E	Stretch1 Roll	0~63/64~127 : Off/On	O	O	
16F	Stretch1 Reverse	0~63/64~127 : Off/On	O	O	
170	Stretch1 Effect Send	0~63/64~127 : Off/On	O	O	
171	Stretch1 Effect Select	*T1-3	O	O	
172	Stretch1 Modulation Type	*T1-4	O	O	
173	Stretch1 Modulation Depth	0~64~127 : -63~0~63	O	O	
174	Stretch1 Modulation Speed	0~127	O	O	
175	Stretch1 Modulation Destination	*T1-5	O	O	
176	Stretch1 Modulation BPM Sync	0~63/64~127 : Off/On	O	O	
177	Stretch1 Motion Seq Type	*T1-6	X	O	
184	Stretch2 Pitch	0~127 (64=equal pitch)	O	O	
185	Stretch2 Filter Type	*T1-2	O	O	
186	Stretch2 Filter Cutoff	0~127	O	O	
187	Stretch2 Filter Resonance	0~127	O	O	
188	Stretch2 Filter EG Int	0~64~127 : -63~0~63	O	O	
189	Stretch2 Start Point	0~127	O	O	
18A	Stretch2 Level	0~127	O	O	
18B	Stretch2 Pan	0~127 (64=center)	O	O	
18C	Stretch2 EG Time	0~127	O	O	
18D	Stretch2 Amp EG	0~63/64~127 : Off/On	O	O	
18E	Stretch2 Roll	0~63/64~127 : Off/On	O	O	
18F	Stretch2 Reverse	0~63/64~127 : Off/On	O	O	
190	Stretch2 Effect Send	0~63/64~127 : Off/On	O	O	
191	Stretch2 Effect Select	*T1-3	O	O	
192	Stretch2 Modulation Type	*T1-4	O	O	
193	Stretch2 Modulation Depth	0~64~127 : -63~0~63	O	O	
194	Stretch2 Modulation Speed	0~127	O	O	
195	Stretch2 Modulation Destination	*T1-5	O	O	
196	Stretch2 Modulation BPM Sync	0~63/64~127 : Off/On	O	O	
197	Stretch2 Motion Seq Type	*T1-6	X	O	
1A4	Slice Pitch	0~127 (64=equal pitch)	O	O	
1A5	Slice Filter Type	*T1-2	O	O	
1A6	Slice Filter Cutoff	0~127	O	O	
1A7	Slice Filter Resonance	0~127	O	O	
1A8	Slice Filter EG Int	0~64~127 : -63~0~63	O	O	
1A9	Slice Start Point	0~127	O	O	
1AA	Slice Level	0~127	O	O	
1AB	Slice Pan	0~127 (64=center)	O	O	
1AC	Slice EG Time	0~127	O	O	
1AD	Slice Amp EG	0~63/64~127 : Off/On	O	O	
1AE	Slice Roll	0~63/64~127 : Off/On	O	O	
1AF	Slice Reverse	0~63/64~127 : Off/On	O	O	
1B0	Slice Effect Send	0~63/64~127 : Off/On	O	O	
1B1	Slice Effect Select	*T1-3	O	O	
1B2	Slice Modulation Type	*T1-4	O	O	
1B3	Slice Modulation Depth	0~64~127 : -63~0~63	O	O	
1B4	Slice Modulation Speed	0~127	O	O	
1B5	Slice Modulation Destination	*T1-5	O	O	
1B6	Slice Modulation BPM Sync	0~63/64~127 : Off/On	O	O	
1B7	Slice Motion Seq Type	*T1-6	X	O	
1C5	AudioIn Filter Type	*T1-2	O	O	
1C6	AudioIn Filter Cutoff	0~127	O	O	
1C7	AudioIn Filter Resonance	0~127	O	O	
1C8	AudioIn Filter EG Int	0~64~127 : -63~0~63	O	O	
1CA	AudioIn Level	0~127	O	O	
1CB	AudioIn Pan	0~127 (64=center)	O	O	
1CC	AudioIn EG Time	0~127	O	O	
1CD	AudioIn Amp EG	0~63/64~127 : Off/On	O	O	

1CE	AudioIn Roll	0~63/64~127 : Off/On	O	O	
1D0	AudioIn Effect Send	0~63/64~127 : Off/On	O	O	
1D1	AudioIn Effect Select	*T1-3	O	O	
1D2	AudioIn Modulation Type	*T1-4	O	O	
1D3	AudioIn Modulation Depth	0~64~127 : -63~0~63	O	O	
1D4	AudioIn Modulation Speed	0~127	O	O	
1D5	AudioIn Modulation Destination	*T1-7	O	O	
1D6	AudioIn Modulation BPM Sync	0~63/64~127 : Off/On	O	O	
1D7	AudioIn Motion Seq Type	*T1-6	X	O	
1E0	Accent Level	0~127	O	O	
1E1	Accent Motion Seq SW	0~42/43~127 : Off/Trig Hold	X	O	
1E4	FX1 Type	*T2-1	X	O	
1E5	FX1 Edit1	0~127	O	O	
1E6	FX1 Edit2	0~127	O	O	
1E7	FX1 Motion Seq SW	0~63/64~127 : Off/On	X	O	
1E8	FX2 Type	*T2-1	X	O	
1E9	FX2 Edit1	0~127	O	O	
1EA	FX2 Edit2	0~127	O	O	
1EB	FX2 Motion Seq SW	0~63/64~127 : Off/On	X	O	
1EC	FX3 Type	*T2-1	X	O	
1ED	FX3 Edit1	0~127	O	O	
1EE	FX3 Edit2	0~127	O	O	
1EF	FX3 Motion Seq SW	0~63/64~127 : Off/On	X	O	
1F5	FX Chain	*T2-2	X	O	

TABLE26 : MIDI Channel (3byte)

Offset	Part	Default MIDI Ch
0	Keyboard1	01
1	Keyboard2	02
2	Drum/Stretch/Slice/AudioIn	10

TABLE27 : Drum Note Number (13byte)

Offset	Part	Default Note No.[H] (Note)
0	Drum1	24 (C2)
1	Drum2	26 (D2)
2	Drum3	28 (E2)
3	Drum4	29 (F2)
4	Drum5	2B (G2)
5	Drum6A	2A (F#2)
6	Drum6B	2E (A#2)
7	Drum7A	31 (C#3)
8	Drum7B	33 (D#3)
9	Stretch1	09 (A-1)
10	Stretch2	0A (A#-1)
11	Slice	0B (B-1)
12	AudioIn	0C (C0)

TABLE28 : Control Change Assign Map (33 bytes)

Offset	Control	(default)
0	MOD SPEED	CC #89
1	MOD DEPTH	CC #90
2	MOD TYPE	CC #87
3	MOD DEST	CC #88
4	MOD BPMSYNC	CC #82
5	FILTER CUTOFF	CC #74
6	FILTER RESONANCE	CC #71

7	FILTER EGINT	CC #79
8	FILTER TYPE	CC #83
9	GLIDE	CC #5
10	PAN	CC #10
11	EG TIME	CC #75
12	LEVEL	CC #7
13	START POINT	CC #18
14	AMP EG	CC #86
15	ROLL	CC #85
16	REVERSE	CC #19
17	EFFECT SEND	CC #91
18	EFFECT SELECT	CC #81
19	PART MOTION SEQ	CC #80
20	FX1 TYPE	CC #12
21	FX1 EDIT1	CC #92
22	FX1 EDIT2	CC #93
23	FX1 MOTION SEQ	CC #20
24	FX2 TYPE	CC #13
25	FX2 EDIT1	CC #94
26	FX2 EDIT2	CC #95
27	FX2 MOTION SEQ	CC #21
28	FX3 TYPE	CC #24
29	FX3 EDIT1	CC #25
30	FX3 EDIT2	CC #26
31	FX3 MOTION SEQ	CC #22
32	FX CHAIN	CC #23

-Revision History-

Rev	Date	Description
1.0	July.15.'03	Initial Release.
1.1	Sep.09.'03	Fix some mistakes