

KORG ER-1 MIDI IMPLEMENTATION

1. TRANSMITTED DATA

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

Status	Second	Third	Description
[H]	[H] [D]	[H]	
8n	kk (kk)	vv	Note Off vv=0~127
9n	kk (kk)	vv	Note On vv=1~127
Bn	00 (00)	mm	Program Bank Select(MSB) [NOTE1]
Bn	06 (06)	dd	Data Entry(MSB) [TABLE1]
Bn	20 (32)	bb	Program Bank Select(LSB) [NOTE1]
Bn	62 (98)	nl	NRPN LSB [TABLE1]
Bn	63 (99)	nm	NRPN MSB [TABLE1]
Cn	pp (pp)	--	Program Change [NOTE1]

n : MIDI Channel (0~15)

1-2 SYSTEM COMMON MESSAGES

Status	Second	Third	Description
[H]	[H]	[H]	
F2	pp	pp	Song Position Pointer
F3	ss	--	Song Select ss : Song No. = 0~15

This message is transmitted when in Song mode and the "Clock" is set to "INT".

1-3 SYSTEM REALTIME MESSAGES

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

\* :This message is transmitted when the "Clock" is set to "INT".

1-4 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES

DEVICE INQUIRY REPLY

Byte[H]	Description
F0	Exclusive Status
7E	Non Realtime Message
0c	MIDI Channel ( Device ID )
06	Inquiry Message
02	Identity reply
42	KORG ID ( Manufacturers ID )
51	ER-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.

1-5 SYSTEM EXCLUSIVE MESSAGES

Function ID [Hex]		R	D	E
40	CURRENT PATTERN DATA DUMP	o		
58	CURRENT SONG DATA DUMP	o		
4C	ALL PATTERN DATA DUMP	o	o	
57	ALL SONG DATA DUMP	o	o	
50	ALL DATA(GLOBAL,PATTERN,SONG) 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  
(Doesn't respond to "MIDI Filter E(Exclusive Enable)" parameter)
- E : Exclusive message is received

## 2.RECOGNIZED RECEIVE DATA

### 2-1 CHANNEL MESSAGES

Status [Hex]	Second [H] [D]	Third [H]	Description	
8n	kk (kk)	vv	Note Off	vv=0~127
9n	kk (kk)	00	Note Off	
9n	kk (kk)	vv	Note On	vv=1~127
Bn	00 (00)	mm	Program Bank Select(MSB)	[NOTE1]
Bn	06 (06)	dd	Data Entry(MSB)	[TABLE1]
Bn	20 (32)	bb	Program Bank Select(LSB)	[NOTE1]
Bn	62 (98)	nl	NRPN LSB	[TABLE1]
Bn	63 (99)	nm	NRPN MSB	[TABLE1]
Bn	7A(122)	00/7F	Local Control Off/On	*
Bn	7B(123)	00	All Note Off	
Bn	7C(124)	00	Omni Mode Off	*
Bn	7D(125)	00	Omni Mode On	*
Cn	pp (pp)	--	Program Change	[NOTE1]

n : MIDI Channel No.(0~15)

\* : Receive as All Note Off.

### 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".

### 2-3 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE (NON REALTIME)

#### DEVICE INQUIRY MESSAGE REQUEST

Byte[H]	Description
F0	Exclusive Status
7E	Non Realtime Message
0c	MIDI Channel
06	Inquiry Message
01	Inquiry Request
F7	End of Exclusive

2-4 SYSTEM EXCLUSIVE MESSAGE

Function ID [Hex]	Function	D	A
10	CURRENT PATTERN DATA DUMP REQUEST		o
1C	ALL PATTERN DATA DUMP REQUEST		o
0A	CURRENT SONG DATA DUMP REQUEST		o
0B	ALL SONG DATA DUMP REQUEST		o
0F	ALL DATA(GLOBAL,PATTERN,SONG) DUMP REQUEST		o
11	PATTERN WRITE REQUEST		o
1A	SONG WRITE REQUEST		o
40	CURRENT PATTERN DATA DUMP	o	o
4C	ALL PATTERN DATA DUMP	o	o
58	CURRENT SONG DATA DUMP	o	o
57	ALL SONG DATA DUMP	o	o
50	ALL DATA(GLOBAL,PATTERN,SONG) DUMP	o	o

Received when in

D : in MIDI Dump page

(Does not respond to "MIDI Filter E(Exclusive Enable)" parameter on MIDI Dump page)

A :any other mode

Received when Sequencer is not running.

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

(1) CURRENT PATTERN DATA DUMP REQUEST R

Byte	Description
F0,42,3c,51	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) ALL PATTERN DATA DUMP REQUEST R

Byte	Description
F0,42,3c,51	EXCLUSIVE HEADER
0001 1100 (1C)	ALL PATTERN DATA DUMP REQUEST 1CH
1111 0111 (F7)	EOX

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

(3) CURRENT SONG DATA DUMP REQUEST R

Byte	Description
F0,42,3c,51	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
F0,42,3c,51	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) ALL DATA DUMP REQUEST R

Byte	Description
F0,42,3c,51	EXCLUSIVE HEADER
0000 1111 (0F)	ALL DATA DUMP REQUEST 0FH
1111 0111 (F7)	EOX

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

(6) PATTERN WRITE REQUEST R

Byte	Description
F0,42,3c,51	EXCLUSIVE HEADER
0001 0001 (11)	PATTERN WRITE REQUEST 11H
0000 000b (0b)	Destination Program Number(0:A01~B64,1:C01~D64)
0ppp pppp (pp)	Destination Program 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
F0,42,3c,51	EXCLUSIVE HEADER
0001 1010 (1A)	SONG WRITE REQUEST 1AH
0000 ssss (0s)	Destination Song No(0~15)
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
F0,42,3c,51	EXCLUSIVE HEADER
0100 0000 (40)	CURRENT PATTERN DATA DUMP 40H
0ddd dddd (dd)	Data [NOTE2][TABLE2]
:	:
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) ALL PATTERN DATA DUMP R/T

Byte	Description
F0,42,3c,51	EXCLUSIVE HEADER
0100 1100 (4C)	ALL PATTERN DATA DUMP 4CH
0ddd dddd (dd)	Data [NOTE2][TABLE2]
:	:
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.

(10) CURRENT SONG DATA DUMP R/T

Byte	Description
F0,42,3c,51	EXCLUSIVE HEADER
0101 1000 (58)	CURRENT SONG DATA DUMP 58H
0ddd dddd (dd)	Data [NOTE2][TABLE8]
:	:
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) ALL SONG DATA DUMP R/T

Byte	Description
F0,42,3c,51	EXCLUSIVE HEADER
0101 0111 (57)	ALL SONG DATA DUMP 57H
0ddd dddd (dd)	Data [NOTE2][TABLE9]
:	:
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 DATA DUMP R/T

Byte	Description
F0,42,3c,51	EXCLUSIVE HEADER
0101 0000 (50)	ALL DATA DUMP 50H
0ddd dddd (dd)	Data [NOTE2][TABLE12]
:	:
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
F0,42,3c,51	EXCLUSIVE HEADER
0010 0110 (26)	DATA FORMAT ERROR 26H
1111 0111 (F7)	EOX

(14) DATA LOAD COMPLETED T

Byte	Description
F0,42,3c,51	EXCLUSIVE HEADER
0010 0011 (23)	DATA LOAD COMPLETED 23H
1111 0111 (F7)	EOX

(15) DATA LOAD ERROR T

Byte	Description	
F0,42,3c,51	EXCLUSIVE HEADER	
0010 0100 (24)	DATA LOAD ERROR	24H
1111 0111 (F7)	EOX	

(16) WRITE COMPLETED T

Byte	Description	
F0,42,3c,51	EXCLUSIVE HEADER	
0010 0001 (21)	WRITE COMPLETED	21H
1111 0111 (F7)	EOX	

(17) WRITE ERROR T

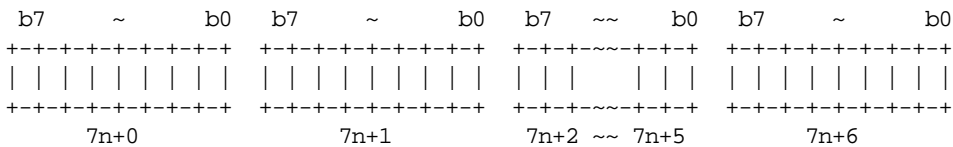
Byte	Description	
F0,42,3c,51	EXCLUSIVE HEADER	
0010 0010 (22)	WRITE ERROR	22H
1111 0111 (F7)	EOX	

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

DATA ( 1set = 8bit x 7Byte )



MIDI DATA ( 1set = 7bit x 8Byte )

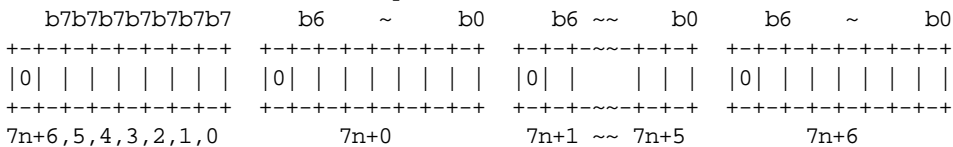


TABLE1 : NON REGISTERED PARAMETER NUMBER (NRPN)  
MOTION SEQUENCE/SONG EVENT DESTINATION PARAMETER NUMBER

nm	nl	Parameter	dd (Data Entry(MSB) Value) (Decimal)	ds
[H]	[H]			[H]
02	00	Synth1 Low Boost	0~127	01
02	01	Synth1 Pan	0~127	02
02	02	Synth1 Pitch	0~127	04
02	03	Synth1 Wave	0~63/64~127 : Sin/Tri	05
02	04	Synth1 Mod Type	0~5 : Saw/Squ/Tri/S&H/Noise/Env	06
02	05	Synth1 Mod Speed	0~127	07
02	06	Synth1 Mod Depth	0~127	08
02	07	Synth1 Level	0~127	00
02	08	Synth1 Decay	0~127	03
02	09	Synth1 Motion Seq Type	0~2 : Off/Smooth/TrigHold	
02	0A	Synth2 Low Boost	0~127	0B
02	0B	Synth2 Pan	0~127	0C
02	0C	Synth2 Pitch	0~127	0E
02	0D	Synth2 Wave	0~63/64~127 : Sin/Tri	0F
02	0E	Synth2 Mod Type	0~5 : Saw/Squ/Tri/S&H/Noise/Env	10
02	0F	Synth2 Mod Speed	0~127	11
02	10	Synth2 Mod Depth	0~127	12
02	11	Synth2 Level	0~127	0A
02	12	Synth2 Decay	0~127	0D
02	13	Synth2 Motion Seq Type	0~2 : Off/Smooth/TrigHold	
02	14	Synth3 Low Boost	0~127	15
02	15	Synth3 Pan	0~127	16
02	16	Synth3 Pitch	0~127	18
02	17	Synth3 Wave	0~63/64~127 : Sin/Tri	19
02	18	Synth3 Mod Type	0~5 : Saw/Squ/Tri/S&H/Noise/Env	1A
02	19	Synth3 Mod Speed	0~127	1B
02	1A	Synth3 Mod Depth	0~127	1C
02	1B	Synth3 Level	0~127	14
02	1C	Synth3 Decay	0~127	17
02	1D	Synth3 Motion Seq Type	0~2 : Off/Smooth/TrigHold	
02	1E	Synth4 Low Boost	0~127	1F
02	1F	Synth4 Pan	0~127	20
02	20	Synth4 Pitch	0~127	22
02	21	Synth4 Wave	0~63/64~127 : Sin/Tri	23
02	22	Synth4 Mod Type	0~5 : Saw/Squ/Tri/S&H/Noise/Env	24
02	23	Synth4 Mod Speed	0~127	25
02	24	Synth4 Mod Depth	0~127	26
02	25	Synth4 Level	0~127	1E
02	26	Synth4 Decay	0~127	21
02	27	Synth4 Motion Seq Type	0~2 : Off/Smooth/TrigHold	
02	28	Close Hi-Hat Low Boost	0~127	29
02	29	Close Hi-Hat Pan	0~127	2A
02	2A	Close Hi-Hat Pitch	0~127	2C
02	2F	Close Hi-Hat Level	0~127	28
02	30	Close Hi-Hat Decay	0~127	2B
02	31	Close Hi-Hat Motion Seq Type	0~2 : Off/Smooth/TrigHold	
02	32	Open Hi-Hat Low Boost	0~127	33

02	33	Open Hi-Hat Pan	0~127	34
02	34	Open Hi-Hat Pitch	0~127	36
02	39	Open Hi-Hat Level	0~127	32
02	3A	Open Hi-Hat Decay	0~127	35
02	3B	Open Hi-Hat Motion Seq Type	0~2 : Off/Smooth/TrigHold	
02	3C	Crash Low Boost	0~127	3D
02	3D	Crash Pan	0~127	3E
02	3E	Crash Pitch	0~127	40
02	43	Crash Level	0~127	3C
02	44	Crash Decay	0~127	3F
02	45	Crash Motion Seq Type	0~2 : Off/Smooth/TrigHold	
02	46	H.Clap Low Boost	0~127	47
02	47	H.Clap Pan	0~127	48
02	48	H.Clap Pitch	0~127	4A
02	4D	H.Clap Level	0~127	46
02	4E	H.Clap Decay	0~127	49
02	4F	H.Clap Motion Seq Type	0~2 : Off/Smooth/TrigHold	
02	50	Audio In 1 Low Boost	0~127	51
02	51	Audio In 1 Pan	0~127	52
02	57	Audio In 1 Level	0~127	50
02	58	Audio In 1 Decay	0~63	53
02	59	Audio In 1 Motion Seq Type	0~2 : Off/Smooth/TrigHold	
02	5A	Audio In 2 Low Boost	0~127	5B
02	5B	Audio In 2 Pan	0~127	5C
02	61	Audio In 2 Level	0~127	5A
02	62	Audio In 2 Decay	0~63	5D
02	63	Audio In 2 Motion Seq Type	0~2 : Off/Smooth/TrigHold	
02	64	Delay Depth	0~127	64
02	65	Delay Time	0~127	65
02	66	Ring (Synth1 & Synth2)	0~63/64~127 : Off/On	66
02	67	Ring (Synth4 & Audio In)	0~63/64~127 : Off/On	67
02	68	Input Gain 1	0~100	68
02	69	Input Gain 2	0~100	69
02	6A	Accent Level	0~127	6A
02	6B	Delay Type	0~2 : Off/MotionSeq/TempoDelay	6B
02	6C	Mute 1	Bit6 : 0/1=Mute/Solo Bit3~0(S4~S1)=1 : Mute *	6D
02	6D	Mute 2	Bit6 : 0/1=Mute/Solo Bit5~0(A2,A1,P4~P1)=1 : Mute *	6E
		Tempo	(song event only)	6C

\* S4~S1 : Synth4 ~ Synth1  
 A2,A1 : Audio In2,1  
 P4 : H.Clap  
 P3 : Crash  
 P2 : Open Hi-Hat  
 P1 : Close Hi-Hat

TABLE2 : PATTERN PARAMETERS

0	Tempo (MSB)	20~300	
1	Tempo (LSB)		
b5,4	Scale/Beat	0~2 : 16th note, 32nd note, triplet	
2			
b1,0	Pattern Length	0~3 : 1~4	
b7~2	Swing	0~25 : 50~75%	
3	b1	Ring (Synth4 & Audio In)	0/1 : Off/On
	b0	Ring (Synth1 & Synth2)	0/1 : Off/On
4	Delay Depth	0~127	
5	Delay Time	0~127	
6	Delay Mseq Type	0~2 : Off/Smooth/TrigHold	
7	Accent Level	0~127	
Synth Parameters			
8~15	Synth 1 Parameters	(8bytes)	[TABLE3]
16~23	Synth 2 Parameters	(8bytes)	[TABLE3]
24~31	Synth 3 Parameters	(8bytes)	[TABLE3]
32~39	Synth 4 Parameters	(8bytes)	[TABLE3]
PCM Parameters			
40~44	Close Hi-Hat Paramters	(5bytes)	[TABLE4]
45~49	Open Hi-Hat Paramters	(5bytes)	[TABLE4]
50~54	Crash Parameters	(5bytes)	[TABLE4]
55~59	H.Clap Parameters	(5bytes)	[TABLE4]
Audio In Parameters			
60~63	Audio In 1 Parameters	(4bytes)	[TABLE5]
64~67	Audio In 2 Parameters	(4bytes)	[TABLE5]
Step Sequence Data (10 Parts)			
68~75	Synth 1	(64bits)	[TABLE6]
76~83	Synth 2	(64bits)	[TABLE6]
84~91	Synth 3	(64bits)	[TABLE6]
92~99	Syntrh4	(64bits)	[TABLE6]

100~107	Close Hi-Hat	(64bits)	[TABLE6]
108~115	Open Hi-Hat	(64bits)	[TABLE6]
116~123	Crash	(64bits)	[TABLE6]
124~131	H.Clap	(64bits)	[TABLE6]
132~139	Audio In 1	(64bits)	[TABLE6]
140~147	Audio In 2	(64bits)	[TABLE6]
Accent Step Data			
148~155	Accent	(64bits)	[TABLE6]
Motion Sequence Data (10 Parts)			
156~221	Synth 1	(66bytes)	[TABLE7]
222~287	Synth 2	(66bytes)	[TABLE7]
288~353	Synth 3	(66bytes)	[TABLE7]
354~419	Synth 4	(66bytes)	[TABLE7]
420~485	Close Hi-Hat	(66bytes)	[TABLE7]
486~551	Open Hi-Hat	(66bytes)	[TABLE7]
552~617	Crash	(66bytes)	[TABLE7]
618~683	H.Clap	(66bytes)	[TABLE7]
684~749	Audio In 1	(66bytes)	[TABLE7]
750~815	Audio In 2	(66bytes)	[TABLE7]
Delay Motion Sequence Data			
816	Delay Depth (Step1)	0~127 (MSB="1" : Off)	
:	:		
879	Delay Depth (Step64)		
880	Delay Time (Step1)	0~127 (MSB="1" : Off)	
:	:		
943	Delay Time (Step64)		

TABLE3 : PERCUSSION SYNTHESIZER PART PARAMETERS

0	Level	0~127
1	Low Boost	0~127
2	Panpot	0~127(63=center)
3	Decay	0~127
4	Pitch	0~127
b7	Osc Wave	0/1 : Sin/Tri
5	Osc Mod Type	0~5 : Saw/Squ/Tri/S&H/Noise/Env
b2~0	Osc Mod Speed	0~127
6	Osc Mod Type	0~127

TABLE4 : PCM PART PARAMETERS

0	Level	0~127
1	Low Boost	0~127
2	Panpot	0~127 (63=center)
3	Decay	0~127
4	Pitch	0~127

TABLE5 : AUDIO IN PARAMETERS

0	Level	0~127
1	Low Boost	0~127
2	Panpot	0~127 (63=center)
3	Decay	0~63

TABLE6 : STEP SEQUENCE DATA/ACCENT STEP DATA

offset	type	value
;		
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)

TABLE7 : MOTION SEQUENCE DATA

0	value (step1)	0~127 (MSB="1" : Off)
:	:	
63	value (step64)	
64	Type	0~2 : Off/Smooth/TrigHold
65	Destination (ds)	[TABLE1]

TABLE8 : CURRENT SONG PARAMETER

0~517	Song Parameters	(518bytes)	[TABLE10]
Song Event Data			
518~521	event data (1st)		[TABLE11]
522~525	event data (2nd)		
:	:		
143314	event data (35700th(max))		
~143317			
(max)			

TABLE9 : ALL SONG DATA

0~ 517	Song 1 parameter	(518bytes)	[TABLE10]
518~1035	Song 2 parameter	(518bytes)	[TABLE10]
1036~1553	Song 3 parameter	(518bytes)	[TABLE10]
1554~2071	Song 4 parameter	(518bytes)	[TABLE10]
2072~2589	Song 5 parameter	(518bytes)	[TABLE10]
2590~3107	Song 6 parameter	(518bytes)	[TABLE10]
3108~3625	Song 7 parameter	(518bytes)	[TABLE10]
3626~4143	Song 8 parameter	(518bytes)	[TABLE10]
4144~4661	Song 9 parameter	(518bytes)	[TABLE10]
4662~5179	Song 10 parameter	(518bytes)	[TABLE10]
5180~5697	Song 11 parameter	(518bytes)	[TABLE10]
5698~6215	Song 12 parameter	(518bytes)	[TABLE10]
6216~6733	Song 13 parameter	(518bytes)	[TABLE10]
6734~7251	Song 14 parameter	(518bytes)	[TABLE10]
7252~7769	Song 15 parameter	(518bytes)	[TABLE10]
7770~8287	Song 16 parameter	(518bytes)	[TABLE10]
Song Event Data			
(Event Size is total number of event of All Songs.)			
8288~8291	event data (1st)		[TABLE11]
8292~8295	event data (2nd)		
:			
151084	event data (35700th(max))		
~151087			
(max)			

TABLE10 : SONG PARAMETERS

0	Tempo (MSB)	20~300
1	Tempo (LSB)	
2	step end data	0~255=1stPosition~256thPosition
3	(dummy)	
4	number of event (MSB)	0~35700
5	number of event (LSB)	
Position Data		
6	Pattern Number (1st)	0~255 = A01 ~ D64
:	:	
261	Pattern Number (256th)	
262	dummy	
:	:	
516	dummy	

TABLE11 : SONG EVENT DATA

0	Position Number	0~255
b7	Enable Data	0/1 : Enable/Disable
1	b5,4   Measure Number	0~3 : 1~4
b3~0	Step Number	0~15 : 1~16
b6	if "Control/Note" is Control	
	if "Destination" is Tempo	
	Tempo value (b8)	*2
	if "Destination" is not Tempo	
	not use	
	if "Control/Note" is Note	
	not use	
2	b7   Control/Note	0/1 : Control / Note
	if "Control/Note" is Control	
b6~0	Destination (ds)	[TABLE1]
	if "Control/Note" is Note	
b6~4	not used	

b3~0	Part Number	0~9	*1
3	if "Control/Note" is Control		
	if "Destination" is Tempo		
	Tempo Value (b7~0)	20~300(with Tempo value b8 *2)	
	if "Destination" is not Tempo		
	Value	0~127	
	if "Control/Note" is Note		
	not used		

\*1 0~3 : Synth1~4  
4 : Close Hi-Hat  
5 : Open Hi-Hat  
6 : Crash  
7 : H.Clap  
8,9 : Audio In2,1

TABLE12 : ALL DATA

0~127	Global Parameters	[TABLE13]
128 ~241791	All Pattern Parameters	[TABLE2]
241792 ~392879 (max)	All Song Parameters	[TABLE9]

TABLE13 : GLOBAL PARAMETERS

0	dummy	
1	Input Gain 1	0~100
2	Metronome	0~4 : Off/r-0/r-1/r-2/On
3	dummy	
4	Synth 1 Note Number	0~127 : C-1~G9
5	Synth 2 Note Number	0~127 : C-1~G9
6	Synth 3 Note Number	0~127 : C-1~G9
7	Synth 4 Note Number	0~127 : C-1~G9
8	Close Hi-Hat Note Number	0~127 : C-1~G9
9	Open Hi-Hat Note Number	0~127 : C-1~G9
10	Crash Note Number	0~127 : C-1~G9
11	H.Clap Note Number	0~127 : C-1~G9
12	Audio In 1 Note Number	0~127 : C-1~G9
13	Audio In 2 Note Number	0~127 : C-1~G9
14	Intput Gain 2	0~100
15	Clock	0/1 : Int/Ext
16~63	dummy	
64~127	Pattern Set Parameters	0~255 : A01~D64