TONEWORKS AX3000G MIDI IMPLEMENTATION Version 1.0
(March 15, 2005)

1.TRANSMITTED DATA

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

Status [Hex]	Second [H] [D]	Third [H] [D]	Description	ENA (Transmitted by)
Bn	cc (cc)	vv (vv)	Control Change cc=00~5F(00~95) (Pedal Control)	C
Cn	pp (pp)	-- --	Program Change pp=00~5F(00~95) (Program Change)	P

n : MIDI Channel (0~F)
vv : Value

ENA = C : Enabled when "CCHG I/O" Global Parameter is "On".
P : Enabled when "PCHG OUT" Global Parameter is "On".

1-2 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE

DEVICE INQUIRY REPLY

Byte [Hex]	Description	
F0	Exclusive Status	
7E	Non Realtime Message	
0n	Device ID (MIDI Channel)	
06	Inquiry Message	
02	Identity reply	
42	KORG ID	(Manufacturers ID)
73	ToneWorks Series ID	(Family ID (LSB))
00		(Family ID (MSB))
00	AX3000G ID	(Member ID (LSB))
00		(Member ID (MSB))
vv	00~	(Minor Ver. (LSB))
00		(Minor Ver. (MSB))
vv	01~	(Major Ver. (LSB))
00		(Major Ver. (MSB))
F7	End of Exclusive	

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

1-3 KORG SYSTEM EXCLUSIVE MESSAGE

Byte [Hex]	Description
F0	Exclusive Status
42	KORG ID
3n	Format ID (n: MIDI Channel)
73	ToneWorks Series ID
00	AX3000G ID
ff	Function Code
(dd)	Data
F7	End of Exclusive

See 3.KORG SYSTEM EXCLUSIVE MESSAGE FORMAT for more info.

2. RECOGNIZED RECEIVE DATA

2-1 CHANNEL MESSAGES [H]:Hex, [D]:Decimal

Status [Hex]	Second [H] [D]	Third [H] [D]	Description	(Used .....) ENA
Bn	cc (cc)	vv (vv)	Control Change cc=00~5F(00~95)	(as the same as PdC) C
Cn	pp (pp)	-- --	Program Change pp=00~5F(00~95)	(for Prog Change)

n : MIDI Channel (0~F)
vv : Value

PdC : Pedal Control

ENA = C : Enabled when "CCHG I/O" Global Parameter is "On".

2-2 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE

DEVICE INQUIRY MESSAGE REQUEST

Byte [Hex]	Description
F0	Exclusive Status
7E	Non Realtime Message
nn	Device ID
06	Inquiry Message
01	Inquiry Request
F7	End of Exclusive

nn = 00 ~ 0F :MIDI Channel
= 7F :Any Channel

2-3 KORG SYSTEM EXCLUSIVE MESSAGE

Byte [Hex]	Description
F0	Exclusive Status
42	KORG ID
3n	Format ID (n: MIDI Channel)
73	ToneWorks Series ID
00	AX3000G ID
ff	Function Code
(dd)	Data
F7	End of Exclusive

See 3.KORG SYSTEM EXCLUSIVE MESSAGE FORMAT for more info.

3.KORG SYSTEM EXCLUSIVE MESSAGE FORMAT

Function Code List (R:Receive, T:Transmit)

Func [Hex]	Description	R	T (*1)	T (*2)
12	MODE REQUEST	o		
10	CURRENT PROGRAM PARAMETER DUMP REQUEST	o		
1C	PROGRAM PARAMETER DUMP REQUEST	o		
0E	GLOBAL DATA DUMP REQUEST	o		
0F	ALL DATA (PROGRAM,GLOBAL) DUMP REQUEST	o		
11	PROGRAM WRITE REQUEST	o		
40	CURRENT PROGRAM PARAMETER DUMP	o	r,D	
4C	PROGRAM PARAMETER DUMP	o	r	
51	GLOBAL DATA DUMP	o	r	
50	ALL DATA (PROGRAM,GLOBAL) DUMP	o	r,D	
4E	MODE CHANGE	o		M
41	PARAMETER CHANGE	o		C
42	MODE DATA		r	
26	DATA FORMAT ERROR		E	
23	DATA LOAD COMPLETED		E	
24	DATA LOAD ERROR		E	
21	WRITE COMPLETED		E	W
22	WRITE ERROR		E	

*1 : Transmitted when
r : Request message is received.
E : Exclusive message is received.
D : DATA DUMP is executed by Switch.

*2 : Transmitted when "SYEX OUT" Global Parameter is "On" and
M : Mode or Program is changed by Switch.
C : Parameter is changed by Switch or Knob.
W : DATA WRITE by Switch is completed.

(1) MODE REQUEST R

Byte	Description
F0,42,3n,73,00	Exclusive Header
12	Function Code
F7	End of Exclusive

Receives this message, and transmits Func=42 or Func=24 message.

(2) CURRENT PROGRAM PARAMETER DUMP REQUEST R

Byte	Description
F0,42,3n,73,00	Exclusive Header
10	Function Code
F7	End of Exclusive

Receives this message, and transmits Func=40 or Func=24 message.

(3) PROGRAM PARAMETER DUMP REQUEST R

Byte	Description
F0,42,3n,73,00	Exclusive Header
1C	Function Code
00k0 0000	Kind (NOTE 7)
0ppp pppp	Program No.
F7	End of Exclusive

Receives this message, and transmits Func=4C or Func=24 message.

(4) GLOBAL DATA DUMP REQUEST R

Byte	Description
F0,42,3n,73,00	Exclusive Header
0E	Function Code
F7	End of Exclusive

Receives this message, and transmits Func=51 or Func=24 message.

(5) ALL DATA (PROGRAM,GLOBAL) DUMP REQUEST R

Byte	Description
F0,42,3n,73,00	Exclusive Header
0F	Function Code

F7	End of Exclusive

Receives this message, and transmits Func=50 or Func=24 message.

(6) PROGRAM WRITE REQUEST R

Byte	Description
F0,42,3n,73,00	Exclusive Header
11	Function Code
00	(Reserved)
0ppp pppp	Destination Program No.
F7	End of Exclusive

Receives this message, write the data and transmits Func=21 or Func=22 or Func=24 message.

(7) CURRENT PROGRAM PARAMETER DUMP R , T

Byte	Description
F0,42,3n,73,00	Exclusive Header
40	Function Code
0ddd dddd	Data (NOTE 1,8)
:	:
F7	End of Exclusive

Receives this message & data, saves them to Current Buffer and transmits Func=23 or Func=24 message.
Receives Func=10 message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.

(8) PROGRAM PARAMETER DUMP R , T

Byte	Description
F0,42,3n,73,00	Exclusive Header
4C	Function Code
00k0 0000	Kind (NOTE 7)
0ppp pppp	Program No.
0ddd dddd	Data (NOTE 2,3,8)
:	:
F7	End of Exclusive

Receives this message & data, saves them to Internal Memory and transmits Func=23 or Func=24 message.
Receives Func=1C message, and transmits this message & data.

(9) GLOBAL DATA DUMP R , T

Byte	Description
F0,42,3n,73,00	Exclusive Header
51	Function Code

0ddd dddd	Data	(NOTE 4,8)
:	:	
F7	End of Exclusive	

Receives this message & data, saves them to Internal Memory and transmits Func=23 or Func=24 message.
Receives Func=0E message, and transmits this message & data.

(10) ALL DATA (PROGRAM,GLOBAL) DUMP R , T

Byte	Description	
F0,42,3n,73,00	Exclusive Header	
50	Function Code	
0ddd dddd	Data	(NOTE 5,8)
:	:	
F7	End of Exclusive	

Receives this message & data, saves them to Internal Memory and transmits Func=23 or Func=24 message.
Receives Func=0F message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.

(11) MODE CHANGE R , T

Byte	Description	
F0,42,3n,73,00	Exclusive Header	
4E	Function Code	
0moo 0000	Mode and Option	(NOTE 6)
0ppp pppp	Program No.	
F7	End of Exclusive	

Receives this message & data, changes the Mode and transmits Func=23 or Func=24 message.
When the Mode or Program is changed by Switch, transmits this message & data.

(12) PARAMETER CHANGE R , T

Byte	Description	
F0,42,3n,73,00	Exclusive Header	
41	Function Code	
0ppp ppp	Parameter ID	(TABLE 1)
0sss sss	Parameter SUB ID	(TABLE 1)
0vvv vvv	Value (MSB bit13~7)	
0vvv vvv	Value (LSB bit 6~0)	
F7	End of Exclusive	

Receives this message & data, changes a Parameter and transmits Func=23 or Func=24 message.
When the Parameter is changed by Switch & Knob, transmits this message & data.

(13) MODE DATA T

Byte	Description	
F0,42,3n,73,00	Exclusive Header	
42	Function Code	
0m00 0000	Mode	(NOTE 6)
0ppp pppp	Program No.	
F7	End of Exclusive	

Receives Func=12 message, and transmits this message & data.

(14) DATA FORMAT ERROR T

Byte	Description
F0,42,3n,73,00	Exclusive Header
26	Function Code
F7	End of Exclusive

Transmits this message when there is an error in the MIDI IN message.

(15) DATA LOAD COMPLETED (ACK) T

Byte	Description
F0,42,3n,73,00	Exclusive Header
23	Function Code
F7	End of Exclusive

Transmits this message when DATA LOAD, PROCESSING have been completed.

(16) DATA LOAD ERROR (NAK) T

Byte	Description
F0,42,3n,73,00	Exclusive Header
24	Function Code
F7	End of Exclusive

Transmits this message when DATA LOAD, PROCESSING have not been completed.

(17) WRITE COMPLETED T

Byte	Description
F0,42,3n,73,00	Exclusive Header
21	Function Code
00	(Reserved)
0ppp pppp	Destination Program No.
F7	End of Exclusive

Transmits this message when DATA WRITE has been completed.

(18) WRITE ERROR T

Byte	Description
F0,42,3n,73,00	Exclusive Header
22	Function Code
00	(Reserved)
0ppp pppp	Destination Program No.
F7	End of Exclusive

Transmits this message when DATA WRITE MIDI has not been completed.

NOTE 1: CURRENT PROGRAM PARAMETER (in Current Buffer) DUMP FORMAT
92Bytes = 7*13+1 -> 8*13+(1+1) => 106Bytes
(TABLE 1)

NOTE 2: PROGRAM PARAMETER (in Internal Memory) DUMP FORMAT (1 Program)
Same as CURRENT PROGRAM PARAMTER DUMP FORMAT.

NOTE 3: PROGRAM PARAMETER (in Internal Memory) DUMP FORMAT (All Program)
[Prog 1-1(92Bytes)],....,[Prog 24-4(92Bytes)]
92*96Bytes = 7*1261+5 -> 8*1261+(1+5) => 10094Bytes

NOTE 4: GLOBAL DATA (in Internal Memory) DUMP FORMAT
16Bytes = 7*2+2 -> 8*2+(1+2) => 19Bytes
(TABLE 2)

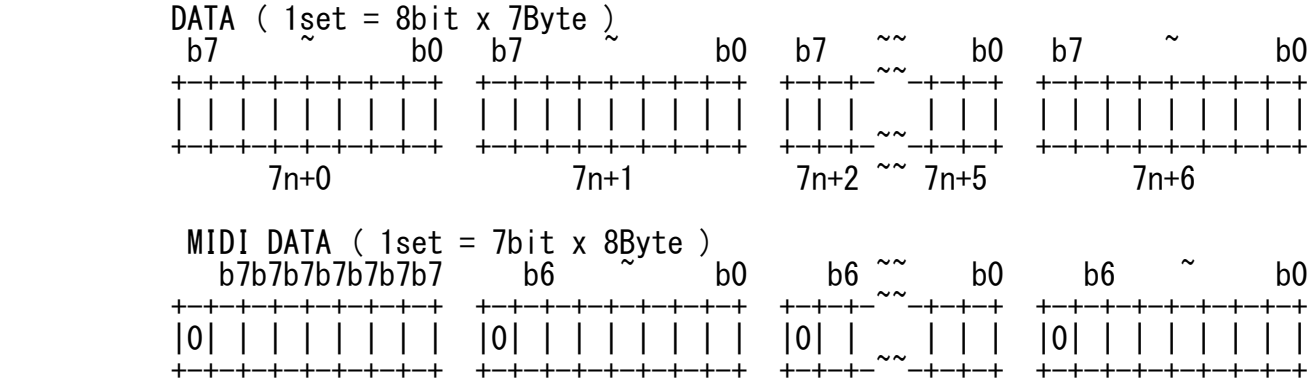
NOTE 5: ALL DATA (in Internal Memory) DUMP FORMAT
[Prog 1-1(92Bytes)],....,[Prog 24-4(92Bytes)],[dummy(92bytes)],[Global Data].
92*97+16Bytes = 7*1277+1 -> 8*1277+(1+1) => 10218Bytes

NOTE 6: oo = 00 : Mode and Program Change (Use m,p)
01 : Mode Change Only (Use m)
10 : Program Change Only (Use p)

m = 0 : Program Select Mode
1 : Individual Mode

NOTE 7: k = 0 : All Program
1 : 1 Program (Use p)

NOTE 8: DUMP DATA CONVERSION



7n+6,5,4,3,2,1,0　　7n+0　　7n+1 ~~ 7n+5　　7n+6

[TABLE 1] PROGRAM PARAMETERS

No.　　: Address in the PROGRAM DUMP DATA.
PARA No.　: Parameter ID, SUB ID for PARAMETER CHANGE.

No. [Dec]	PARAMETER	DATA [Hex]	VALUE	PARA No. [Hex]
00	Program Name (1st)			00,00
:	:	20~5F	ASCII code ' ' ~ '_'	:
07	Program Name (8th)			00,07
08	PROG LVL	00~64	0.0~10.0	01,00
09	NR SENS	0,1~32	OFF,0.2~10.0 (0.2 step)	01,01
Effect Status				
10 b0	PRE FX	00,01	Off,On	02,00
b1	MODULATION	00,01	Off,On	02,01
b2	DELAY	00,01	Off,On	02,02
b3	REVERB	00,01	Off,On	02,03
b4	DRIVE/AMP	00,01	Off,On	02,04

	b5	CABINET	00,01	Off,On	02,05
	b6	EXP STEP SEQ	00,01	Off,On	02,06
	b7	INSERT	00,01	Off,On	02,07
PRE FX					
11		Type	00~0A	COMP ~ (TABLE 1-1)	03,00
12					04,??
:		Parameter Structure (TABLE 1-1)			:
16					04,??
MODULATION					
17		Type	00~0A	CLASSIC CHORUS ~ (TABLE 1-2)	03,01
18					05,??
:		Parameter Structure (TABLE 1-2)			:
22					05,??
DELAY					
23		Type	00~0A	ECHO PLUS ~ (TABLE 1-3)	03,02
24					

06,??				
:	Parameter Structure (TABLE 1-3)			
:				
29				
06,??				
REVERB				
30	Type	00~0A	SLAP ~	(TABLE 1-4)
03,03				
31				
07,??				
:	Parameter Structure (TABLE 1-4)			
:				
35				
07,??				
DRIVE/AMP				
36	Type	00~0F	TUBE OD ~	(TABLE 1-5)
03,04				
37				
08,??				
:	Parameter Structure (TABLE 1-5)			
:				
41				
08,??				
CABINET				
42	Type	00~0A	TWEED 1x8 ~	(TABLE 1-6)
03,05				
EXPRESSION				
43 b0~5	EXP TARGET			(TABLE 1-1~1-4,1-7)
0C,00				
b6,7	(Reserved)			

44~45	EXP MIN		(TABLE 1-1~1-4,1-7)	0C,01
46~47	EXP MAX		(TABLE 1-1~1-4,1-7)	0C,02
	CONTROL			
48 b0~5	CTL TARGET	00~10	(TABLE 1-8)	0E,00
b6,7	(Reserved)			
	EXP STEP SEQ			
49	LAST STEP - MODE	00~30	(TABLE 1-9)	0F,00
50	SPEED	22,23~8B	PEdL,0.50~100 (*3)	0F,01
51	MIN SPEED	23~8B	0.50~100 (*3)	0F,02
52	MAX SPEED	23~8B	0.50~100 (*3)	0F,03
53	SMOOTH	00~64	0.0~10.0	0F,04
54~55	STEP 1		(TABLE 1-1~1-4,1-7)	0F,10
56~57	STEP 2		(TABLE 1-1~1-4,1-7)	0F,11
58~59	STEP 3		(TABLE 1-1~1-4,1-7)	0F,12

60~61	STEP 4		(TABLE 1-1~1-4,1-7)	0F,13
62~63	STEP 5		(TABLE 1-1~1-4,1-7)	0F,14
64~65	STEP 6		(TABLE 1-1~1-4,1-7)	0F,15
66~67	STEP 7		(TABLE 1-1~1-4,1-7)	0F,16
68~69	STEP 8		(TABLE 1-1~1-4,1-7)	0F,17
70~91	(Reserved)			

[TABLE 1-1] PRE FX Parameter Structure

Expression Target							
Offset [Dec]	PARAMETER	DATA [Hex]	VALUE	PARA No. [Hex]		DATA VALUE [BIN]	
Type = 00 : COMP							
00	SENS	00~5A	1.0~10.0	04,00		001000	P/SENS
04	LEVEL	00~64	0.0~10.0	04,04		001001	P/LEVEL
Type = 01 : PICKUP							

00	SENS	00~64	0.0~10.0	04,00	
001000	P/SENS				
01	PHASE	00~5A	1.0~10.0	04,01	
001001	P/PHASE				
02	PHASEMIX	00~64	-10.0~10.0 (0.2 step)	04,02	
001010	P/PHSMIX				
03	TYPE	00~02	OFF,H-S,S-H	04,03	
04	LEVEL	00~64	0.0~10.0	04,04	
001011	P/LEVEL				

Type = 02 : ACOUSTIC

00	BODY	00~5A	1.0~10.0	04,00	
001000	P/BODY				
01	TOP	00~5A	1.0~10.0	04,01	
001001	P/TOP				
03	TYPE	00~03	1~4	04,03	
04	MIX	00~64	0.0~10.0	04,04	
001010	P/MIX				

Type = 03 : VOX WAH

00	CLOSE	00~5A	1.0~10.0	04,00	
01	OPEN	00~5A	1.0~10.0	04,01	
02	MANUAL	00~5A	1.0~10.0	04,02	
001000	P/MANUAL				
03	TYPE	00,01	847,848	04,03	
04	ORDER	00,01	PrE,PoS	04,04	

Type = 04 : AUTO WAH

00	SENS/POL	00~65	0.0u~10.0u,0.0d~10.0d	04,00	
01	ATTACK	00~5A	1.0~10.0	04,01	
001000	P/ATTACK				

03	TYPE	00,01	847,848		04,03	
04	ORDER	00,01	PrE,PoS		04,04	

Type = 05 : U-VIBE/PHASE

00	DEPTH	00~64	0.0~10.0		04,00	
001000	P/DEPTH					
01	SPEED	00~64	0.100~10.0 [Hz]	(*4)	04,01	
001001	P/SPEED					
02	MANUAL	00~5A	1.0~10.0		04,02	
001010	P/MANUAL					
03	TYPE	00~03	U-1,U-2,Or,bL		04,03	
04	ORDER	00,01	PrE,PoS		04,04	

Type = 06 : CHORUS/FLANGER

00	DEPTH	00~64	0.0~10.0		04,00	
001000	P/DEPTH					
01	SPEED	00~64	0.100~10.0 [Hz]	(*4)	04,01	
001001	P/SPEED					
02	MANUAL	00~5A	1.0~10.0		04,02	
001010	P/MANUAL					
03	RESO	00~64	0.0~10.0		04,03	
001011	P/RESO					

Type = 07 : OCTAVE

03	DIRECT	00~64	0.0~10.0		04,03	
001000	P/DIRECT					
04	EFFECT	00~64	0.0~10.0		04,04	
001001	P/EFFECT					

Type = 08 : RING MOD					
01 001000	FILTER P/FILTER	00~5A	1.0~10.0	04,01	
02 001001	OSCFREQ P/OSCFRQ	00~64	0.0~10.0	04,02	
03 001010	DIRECT P/DIRECT	00~64	0.0~10.0	04,03	
04 001011	EFFECT P/EFFECT	00~64	0.0~10.0	04,04	

Type = 09 : DRONE					
02	KEY	00~0B	A~G#	04,02	
03 001000	RESO P/RESO	00~5A	1.0~10.0	04,03	
04 001001	MIX P/MIX	00~64	0.0~10.0	04,04	

Type = 0A : SYNTH					
00 001000	SENS P/SENS	00~5A	1.0~10.0	04,00	
01 001001	ATCK/REL P/ATCK	00~64	0.0~10.0	04,01	
02	OCT/WAVE	00~0E	-2A~2A,-2b~2b,-2C~2C	04,02	
03 001010	PORTAMNT P/PORTMT	00~64	0.0~10.0	04,03	
04 001011	MIX P/MIX	00~64	0.0~10.0	04,04	

[TABLE 1-2] MODULATION Parameter Structure

Expression Target

Offset [Dec]	PARAMETER	DATA [Hex]	VALUE	PARA No. [Hex]	DATA [BIN]	VALUE
Type = 00 : CLASSIC CHORUS						
00	DEPTH	00~64	0.0~10.0	05,00	010000	M/DEPTH
01	SPEED	00~64	0.100~10.0 [Hz] (*4)	05,01	010001	M/SPEED
02	MANUAL	00~5A	1.0~10.0	05,02	010010	M/MANUAL
04	MODE	00~02	1,2,3	05,04		
Type = 01 : MULTI TAP CHORUS						
00	DEPTH	00~64	0.0~10.0	05,00	010000	M/DEPTH
01	SPEED	00~64	0.100~10.0 [Hz] (*4)	05,01	010001	M/SPEED
02	TIME	00~64	0.0~10.0	05,02		
04	MIX	00~64	0.0~10.0	05,04	010010	M/MIX
Type = 02 : CLASSIC FLANGER						
00	DEPTH	00~64	0.0~10.0	05,00	010000	M/DEPTH
01	SPEED	00~64	0.100~10.0 [Hz] (*4)	05,01	010001	M/SPEED
02	MANUAL	00~5A	1.0~10.0	05,02	010010	M/MANUAL
03	RESO	00~64	0.0~10.0	05,03	010011	M/RESO
04	MIX	00~64	0.0~10.0	05,04		

010100	M/MIX					
Type = 03 : BI CHORUS						
00	DEPTH	00~64	0.0~10.0		05,00	
010000	M/DEPTH					
01	SPEED 1	00~64	0.100~10.0 [Hz]	(*4)	05,01	
010001	M/SPEED1					
02	SPEED 2	00~64	0.100~10.0 [Hz]	(*4)	05,02	
010010	M/SPEED2					
03	RESO	00~64	0.0~10.0		05,03	
010011	M/RESO					
04	MODE	00~03	S,P1,P2,P3		05,04	
Type = 04 : DUO PHASE						
00	DEPTH	00~64	0.0~10.0		05,00	
010000	M/DEPTH					
01	SPEED 1	00~64	0.100~10.0 [Hz]	(*4)	05,01	
010001	M/SPEED1					
02	SPEED 2	00~64	0.100~10.0 [Hz]	(*4)	05,02	
010010	M/SPEED2					
03	RESO	00~64	0.0~10.0		05,03	
010011	M/RESO					
04	MODE	00~04	S1,S2,P1,P2,P3		05,04	
Type = 05 : TEXTREM						
00	DEPTH	00~64	0.0~10.0		05,00	
010000	M/DEPTH					
01	SPEED	32~64	1.00~10.0 [Hz]	(*4)	05,01	
010001	M/SPEED					
03	SPREAD	00~64	0.0~10.0		05,03	
04	LEVEL	00~5A	1.0~10.0		05,04	
010010	P/LEVEL					

Type = 06 : ROTARY					
00	DEPTH	00~64	0.0~10.0	05,00	
010000	M/DEPTH				
01	SPEED 1	00~64	0.100~10.0 [Hz] (*4)	05,01	
010001	M/SPEED1				
02	SPEED 2	00~64	0.100~10.0 [Hz] (*4)	05,02	
010010	M/SPEED2				
04	ACCEL	00~5A	1.0~10.0	05,04	
010011	M/ACCEL				

Type = 07 : PITCH SHIFTER					
00	PITCH	00~30	-24~24 [x100cent]	05,00	
010000	M/PITCH				
01	FINE	00~64	-50~50 [cent]	05,01	
010001	M/FINE				
02	TRACKING	05~4B	10~150 [ms] (2ms step)	05,02	
03	DIRECT	00~64	0.0~10.0	05,03	
010010	M/DIRECT				
04	EFFECT	00~64	0.0~10.0	05,04	
010011	M/EFFECT				

Type = 08 : RANDOM STEP FILTER					
00	DEPTH	00~64	0.0~10.0	05,00	
010000	M/DEPTH				
01	SPEED	00~64	0.100~10.0 [Hz] (*4)	05,01	
010001	M/SPEED				
02	MANUAL	00~5A	1.0~10.0	05,02	
010010	M/MANUAL				
03	RESO	00~64	0.0~10.0	05,03	
010011	M/RESO				
04	MIX	00~64	0.0~10.0	05,04	
010100	M/MIX				

Type = 09 : FILTRON					

00	DEPTH	00~64	0.0~10.0	05,00		010000
01	ATTACK	00~5A	1.0~10.0	05,01		010001
02	MANUAL	00~5A	1.0~10.0	05,02		010010
03	RESO	00~64	0.0~10.0	05,03		010011
04	SENS/POL	00~65	0.0u~10.0u,0.0d~10.0d	05,04		

Type = 0A : TALK MOD						
00	DEPTH	00~64	0.0~10.0	05,00		010000
01	ATTACK	00~5A	1.0~10.0	05,01		010001
02	MANUAL	00~5A	1.0~10.0	05,02		010010
03	TYPE	00~09	A-E~0-U	05,03		
04	SENS/POL	00~65	0.0u~10.0u,0.0d~10.0d	05,04		

[TABLE 1-3] DELAY Parameter Structure

Offset [Dec]	PARAMETER	DATA [Hex]	VALUE	PARA No. [Hex]		DATA [BIN]	VALUE
Type = 00 : ECHO PLUS							
00~01	TIME	1A~A8C	26~2700 [ms]	06,00		011001	D/TIME
02	FEEDBACK	00~64	0.0~10.0	06,01		011010	D/FBACK
03	TONE	00~5A	1.0~10.0	06,02		011011	D/TONE

04	LO DAMP	00~64	0.0~10.0	06,03	
011100	D/LODAMP				
05	MIX	00~64	0.0~10.0	06,04	
011101	D/MIX				

Type = 01 : MULTI HEAD

00~01	TIME	01~A8C	1~2700 [ms]	06,00	
02	FEEDBACK	00~64	0.0~10.0	06,01	
011001	D/FBACK				
03	TONE	00~5A	1.0~10.0	06,02	
011010	D/TONE				
04	MODE	00~04	1,2,3,4,5	06,03	
05	MIX	00~64	0.0~10.0	06,04	
011011	D/MIX				

Type = 02 : ANALOG DELAY

00~01	TIME	01~A8C	1~2700 [ms]	06,00	
011001	D/TIME				
02	FEEDBACK	00~64	0.0~10.0	06,01	
011010	D/FBACK				
03	TONE	00~5A	1.0~10.0	06,02	
011011	D/TONE				
05	MIX	00~64	0.0~10.0	06,04	
011100	D/MIX				

Type = 03 : MOD DELAY

00~01	TIME	03~A8C	3~2700 [ms]	06,00	
011001	D/TIME				
02	FEEDBACK	00~64	0.0~10.0	06,01	
011010	D/FBACK				
03	TONE	00~5A	1.0~10.0	06,02	
011011	D/TONE				
04	SPEED	00~64	0.100~10.0 [Hz] (*4)	06,03	
011100	D/SPEED				
05	MIX	00~64	0.0~10.0	06,04	
011101	D/MIX				

Type = 04 : SWEEP DELAY					
00~01 011001	TIME D/TIME	1A~A8C	26~2700 [ms]	06,00	
02 011010	FEEDBACK D/FBACK	00~64	0.0~10.0	06,01	
03 011011	TONE D/TONE	00~5A	1.0~10.0	06,02	
04 011100	SENS D/SENS	00~64	0.0~10.0	06,03	
05 011101	MIX D/MIX	00~64	0.0~10.0	06,04	
Type = 05 : 2 TAP DELAY					
00~01	TIME	01~A8C	1~2700 [ms]	06,00	
02 011001	FEEDBACK D/FBACK	00~64	0.0~10.0	06,01	
03 011010	TONE D/TONE	00~5A	1.0~10.0	06,02	
04	TAP TIME	00~64	0.0~10.0	06,03	
05 011011	MIX D/MIX	00~64	0.0~10.0	06,04	
Type = 06 : CROSS DELAY					
00~01	TIME	01~546	1~1350 [ms]	06,00	
02 011001	FEEDBACK D/FBACK	00~64	0.0~10.0	06,01	
03 011010	TONE D/TONE	00~5A	1.0~10.0	06,02	
04 011011	DUCKING D/DUCK	00~64	0.0~10.0	06,03	
05 011100	MIX D/MIX	00~64	0.0~10.0	06,04	

Type = 07 : RHYTHM DELAY					
00~01	TIME	01~A8C	1~2700 [ms]	06,00	
02	FEEDBACK	00~64	0.0~10.0	06,01	
011001	D/FBACK				
03	TONE	00~5A	1.0~10.0	06,02	
011010	D/TONE				
04	RHYTHM	00~0A	1~11	06,03	
05	MIX	00~64	0.0~10.0	06,04	
011011	D/MIX				

Type = 08 : HOLD DELAY					
00~01	TIME	01~A8C	1~2700 [ms]	06,00	
02	FEEDBACK	00~64	0.0~10.0	06,01	
011001	D/FBACK				
03	TONE	00~5A	1.0~10.0	06,02	
011010	D/TONE				
05	MIX	00~64	0.0~10.0	06,04	
011011	D/MIX				

Type = 09 : REVERSE DELAY					
00~01	TIME	1A~A8C	26~2700 [ms]	06,00	
02	FEEDBACK	00~64	0.0~10.0	06,01	
011001	D/FBACK				
03	TONE	00~5A	1.0~10.0	06,02	
011010	D/TONE				
05	MIX	00~64	0.0~10.0	06,04	

Type = 0A : FREEZ					

00~01	TIME	01~A8C	1~2700 [ms]	06,00	
05	MIX	00~64	0.0~10.0	06,04	011001 D/MIX

[TABLE 1-4] REVERB Parameter Structure

Offset [Dec]	PARAMETER	DATA [Hex]	VALUE	PARA No. [Hex]	DATA VALUE [BIN]
	Type = 00 : SLAP				
	Type = 01 : SPRING				
	Type = 02 : BOUNCE				
	Type = 03 : PLATE				
	Type = 04 : GARAGE				
	Type = 05 : CHAMBER				
	Type = 06 : CANYON				
	Type = 07 : ROOM				
	Type = 08 : STUDIO				
	Type = 09 : HALL				
	Type = 0A : ARENA				
00	TIME	00~5A	1.0~10.0	07,00	100001 R/TIME
01	LO DAMP	00~64	0.0~10.0	07,01	100010 R/LODAMP
02	HI DAMP	00~64	0.0~10.0	07,02	100011 R/HIDAMP
03	PRE DLY	00~46	0~70 [ms]	07,03	
04	MIX	00~64	0.0~10.0	07,04	

100100 | R/MIX |

[TABLE 1-5] DRIVE/AMP Parameter Structure

Expression Target

Offset [Dec]	PARAMETER	DATA [Hex]	VALUE	PARA No. [Hex]	DATA VALUE [BIN]
	Type = 00 : TUBE OD				
	Type = 01 : BOUTIQUE OD				
	Type = 02 : FAT DIST				
	Type = 03 : ORANGE DIST				
	Type = 06 : FUZZ				
	Type = 07 : OCTAFUZZ				
00 101000	GAIN A/GAIN	00~5A	1.0~10.0	08,00	
01 101001	VOLUME A/VOLUME	00~64	0.0~10.0	08,01	
02 101010	TONE A/TONE	00~32	0.0~10.0 (0.2 step)	08,02	
	Type = 04 : METAL DIST				
	Type = 05 : SHRED DIST				
00 101000	GAIN A/GAIN	00~5A	1.0~10.0	08,00	
01 101001	VOLUME A/VOLUME	00~64	0.0~10.0	08,01	
02 101010	TREBLE A/TREBLE	00~32	0.0~10.0 (0.2 step)	08,02	
03	MIDDLE	00~32	0.0~10.0 (0.2 step)	08,03	

04	BASS	00~32	0.0~10.0 (0.2 step)	08,04	

Type = 08	BOUTIQUE CL
Type = 09	BLACK 2x12
Type = 0A	AC15
Type = 0B	AC30TB
Type = 0C	UK 68P
Type = 0D	UK '80S
Type = 0E	UK MODERN
Type = 0F	US MODERN

00	GAIN	00~64	0.0~10.0	08,00	101000 A/GAIN
01	VOLUME	00~64	0.0~10.0	08,01	101001 A/VOLUME
02	TREBLE	00~32	0.0~10.0 (0.2 step)	08,02	101010 A/TREBLE
03	MIDDLE	00~32	0.0~10.0 (0.2 step)	08,03	
04	BASS	00~32	0.0~10.0 (0.2 step)	08,04	

[TABLE 1-6] CABINET Type List

DATA [Hex]	CABINET Type
00	TWEED 1x8
01	TWEED 1x12
02	TWEED 4x10
03	BLACK 2x10
04	BLACK 2x12
05	VOX AC15TBX
06	VOX AC30TBX
07	VOX AD120VTX
08	UK H30 4x12
09	UK T75 4x12
0A	US V30 4x12

[TABLE 1-7] EXPRESSION Target List

DATA [Bin]	Target		TARGET RANGE DATA[Hex] : VALUE
000000	--OFF--	No Target	
000001	VOLUME	Volume Pedal	00~64 : 0.0~10.0
001nnn	P/??????	PRE FX Parameter (TABLE 1-1)	Same as Parameter Value Range
010nnn	M/??????	MODULATION Parameter (TABLE 1-2)	Same as Parameter Value Range
011000	D/INPUT	DELAY Input Level	00~64 : 0.0~10.0
011nnn	D/??????	DELAY Parameter (TABLE 1-3)	Same as Parameter Value Range
100000	R/INPUT	REVERB Input Level	00~64 : 0.0~10.0
100nnn	R/??????	REVERB Parameter (TABLE 1-4)	Same as Parameter Value Range
101nnn	A/??????	DRIVE/AMP Parameter (TABLE 1-5)	Same as Parameter Value Range

[TABLE 1-8] CONTROL Target List

DATA [Hex]	Target	
00	I/ON OFF	INSERT On/Off

01	P/ON OFF	PRE FX On/Off
02	A/ON OFF	DRIVE/AMP On/Off
03	M/ON OFF	MODULATION On/Off
04	D/ON OFF	DELAY On/Off
05	R/ON OFF	REVERB On/Off
06	MOD TAP	MODULATION TAP (SPEED)
07	DLY TAP	DELAY TAP (TIME)
08	FLN TRIG	FLANGER Trigger
09	ROT SPD	ROTARY SPEED Switch
0A	HOLD DLY	HOLD DELAY (Hold On/Off)
0B	FREEZ	FREEZ (Freezing On/Off)
0C	ESS CTL1	ESS Control 1
0D	ESS CTL2	ESS Control 2
0E	ESS TAP1	ESS TAP 1
0F	ESS TAP2	ESS TAP 2
10	ESS TRIG	ESS Trigger

[TABLE 1-9] EXP STEP SEQ MODE List

DATA [Hex]	LAST STEP - MODE	
00~06	2-F ~ 8-F	2~8step Forward
07~0D	2-A ~ 8-A	2~8step Alternate
0E~14	2-A. ~ 8-A.	2~8step Alternate2
15~1B	2-r ~ 8-r	2~8step Random
1C~22	2-F1 ~ 8-F1	2~8step Forward, 1shot
23~29	2-A1 ~ 8-A1	2~8step Alternate, 1shot
2A~30	2-A.1~ 8-A.1	2~8step Alternate2, 1shot

*3 : EXP STEP SEQ Speed

DATA[Hex]	VALUE			
22	PEdL			
23~27	0.50	~	0.58	(0.02 step)
28~31	0.60	~	0.96	(0.04 step)
32~3B	1.00	~	1.45	(0.05 step)
3C~4A	1.5	~	2.9	(0.1 step)
4B~59	3.0	~	5.8	(0.2 step)
5A~63	6.0	~	9.6	(0.4 step)
64~6D	10.0	~	14.5	(0.5 step)
6E~7C	15	~	29	(1 step)
7D~86	30	~	57	(3 step)
87~8A	60	~	90	(10 step)
8B	100			

*4 : Modulation Speed

DATA[Hex]	VALUE[Hz]
00~09	0.100 ~ 0.145 (0.005 step)
0A~18	0.15 ~ 0.29 (0.01 step)
19~27	0.30 ~ 0.58 (0.02 step)
28~31	0.60 ~ 0.96 (0.04 step)
32~3B	1.00 ~ 1.45 (0.05 step)
3C~4A	1.5 ~ 2.9 (0.1 step)
4B~59	3.0 ~ 5.8 (0.2 step)
5A~63	6.0 ~ 9.6 (0.4 step)
64	10.0

[TABLE 2] GLOBAL PARAMETERS

No. : Address in the GLOBAL DUMP DATA.
PARA No. : Parameter ID, SUB ID for PARAMETER CHANGE.

No. PARA No. [Dec] [Hex]	PARAMETER	DATA [Hex]	VALUE
MIDI Settings			
00 b0~3 40,00	MIDI CH	0~F	1~16
b4~7	(Reserved)		
01 b0 41,00	PCHG OUT	00,01	OFF, On
b1 41,01	CCHG I/O	00,01	OFF, On
b2 41,02	SYEX OUT	00,01	OFF, On
b3~7	(Reserved)		

	MIDI CC# for Controllers		
02 42,00	EXP PDL	00,1~60	OFF, CC00~CC95
03 42,01	CTL PDL	00,1~60	OFF, CC00~CC95
04 42,02	PRE FX	00,1~60	OFF, CC00~CC95
05 42,03	D/AMP FX	00,1~60	OFF, CC00~CC95
06 42,04	MOD FX	00,1~60	OFF, CC00~CC95
07 42,05	DELAY FX	00,1~60	OFF, CC00~CC95
08 42,06	REVRB FX	00,1~60	OFF, CC00~CC95
	OUTPUT Settings		
09 43,00	AMP/LINE	00~03	AP1,AP2,AP3,Ln
10 43,01	DOUT LVL	00~04	-12,-6,0,6,12 [dB]
11~15	(Reserved)		