1.TRANSMITTED DATA

1-1 CHANNEL MESSAGES

[H] :Hex, [D] :Decimal

Status [Hex]	Second [H] [D]	Third [H]	Third [D]	Description (Transmitted by ....)		ENA
8n	kk (kk)	40	(64)	Note Off	(Key Off)	*1	A
9n	kk (kk)	vv	(vv)	Note On (vv)=1-127	(Key On)	*1	A
An	kk (kk)	vv	(vv)	Poly Key Pressure	(Seq. recorded data)		T,Q
Bn	00 (00)	mm	(mm)	Bank Select(MSB)	(BANK keys, Prog/Combi change)	*2	PB
Bn	01 (01)	vv	(vv)	Modulation1	(Joy Stick +Y)		C
Bn	02 (02)	vv	(vv)	Modulation2	(Joy Stick -Y)		C
Bn	04 (04)	vv	(vv)	Foot Pedal	(A.Pdl/Knob-B = Foot Pedal)		C
Bn	05 (05)	vv	(vv)	Portamento Time	(A.Pdl/Knob-B = Porta.Time,S Chg)		C
Bn	06 (06)	vv	(vv)	Data Entry (MSB)	(ARP ON/OFF, GATE, VELOCITY)	*3	C
Bn	07 (07)	vv	(vv)	Volume	(A.Pdl/Knob-B = Volume, S/C Chg)		C
Bn	08 (08)	vv	(vv)	Post IFX Panpot	(A.Pdl/Knob-B = PostIFXPan,S Chg)		C
Bn	0A (10)	vv	(vv)	Panpot	(A.Pdl/Knob-B = Pan,S Chg)		C
Bn	0B (11)	vv	(vv)	Expression	(A.Pdl/Knob-B = Expression)		C
Bn	0C (12)	vv	(vv)	Effect Control 1	(A.Pdl/Knob-B = FX Control1)		C
Bn	0D (13)	vv	(vv)	Effect Control 2	(A.Pdl/Knob-B = FX Control2)		C
Bn	10 (16)	vv	(vv)	Multi Purpose Ctrl1	(Ribbon Controller)		C
Bn	11 (17)	vv	(vv)	Multi Purpose Ctrl2	(Knob-B = Knob Mod1)		C
Bn	12 (18)	vv	(vv)	Multi Purpose Ctrl3	(Value Slider)		C
Bn	13 (19)	vv	(vv)	Multi Purpose Ctrl4	(Knob-B = Knob Mod2)		C
Bn	14 (20)	vv	(vv)		(Knob-B = Knob Mod3)		C
Bn	15 (21)	vv	(vv)		(Knob-B = Knob Mod4)		C
Bn	20 (32)	bb	(bb)	Bank Select(LSB)	(BANK keys, Prog/Combi change)	*2	PB
Bn	40 (64)	vv	(vv)	Hold1	(Damper)		C
Bn	41 (65)	00/7F	(00/127)	Portamento Off/On	(SW1/SW2/A.SW = Porta.SW, S Chg)		C
Bn	42 (66)	00/7F	(00/127)	Sostenuto Off/On	(A.SW =Porta.SW)		C
Bn	43 (67)	vv	(vv)	Soft Pedal	(A.SW =Porta.SW)		C
Bn	46 (70)	vv	(vv)	Sound Controller 1	(Knob-B = F/A Sustain)		C
Bn	47 (71)	vv	(vv)	Sound Controller 2	(Knob-1A, Knob-B = Resonance/HPF)		C
Bn	48 (72)	vv	(vv)	Sound Controller 3	(Knob-1A, Knob-B = F/A Release)		C
Bn	49 (73)	vv	(vv)	Sound Controller 4	(Knob-B = F/A Attack)		C
Bn	4A (74)	vv	(vv)	Sound Controller 5	(Knob-1A, Knob-B = LPF Cutoff)		C
Bn	4B (75)	vv	(vv)	Sound Controller 6	(Knob-B = F/A Decay)		C
Bn	4C (76)	vv	(vv)	Sound Controller 7	(Knob-B = Pitch LFO1 Spd)		C
Bn	4D (77)	vv	(vv)	Sound Controller 8	(Knob-B = Pitch LFO1 Dep)		C
Bn	4E (78)	vv	(vv)	Sound Controller 9	(Knob-B = Pitch LFO1 Dly)		C
Bn	4F (79)	vv	(vv)	Sound Controller 10	(Knob-1A, Knob-B = Filter EG Int)		C
Bn	50 (80)	00/7F	(00/127)	Multi Purpose Ctrl5	(SW1)		C
Bn	51 (81)	00/7F	(00/127)	Multi Purpose Ctrl6	(SW2)		C
Bn	52 (82)	00/7F	(00/127)	Multi Purpose Ctrl7	(Foot SW)		C
Bn	5B (91)	vv	(vv)	Effect 1 Depth	(A.Pdl = MFX Send2, S Chg)		C
Bg	5C (92)	00/7F	(00/127)	Effect 2 Depth	(All Insert FX Off/On)		C
Bn	5D (93)	vv	(vv)	Effect 3 Depth	(A.Pdl = MFX Send1, S Chg)		C
Bg	5E (94)	00/7F	(00/127)	Effect 4 Depth	(Master FX1 Off/On)		C
Bg	5F (95)	00/7F	(00/127)	Effect 5 Depth	(Master FX2 Off/On)		C
Bn	cc (cc)	vv	(vv)	Control (cc)=0-95	(Knob-B = MIDI CC#00-95)		C
Bn	62 (98)	ss	(ss)	NRPN Param No.(LSB)	(ARP ON/OFF, GATE, VELOCITY)	*3	C
Bn	63 (99)	tt	(tt)	NRPN Param No.(MSB)	(ARP ON/OFF, GATE, VELOCITY)	*3	C
Bn	cc (cc)	vv	(vv)	Control (cc)=0-101	(Seq. recorded data)		Q
Cn	pp (pp)	--	--	Program Change	(Prog/Combi change)	*2	P
Dn	vv (vv)	--	--	Channel Pressure	(After Touch)		T
En	bb (bb)	bb	(bb)	Bender Change	(Joy Stick X		C

A.Pdl : Assignable Pedal
A.SW : Assignable Switch
S Chg : Transmitted when change a Song No.(Seq. mode). (Status = EXT,EX2,BTH)
C/S Chg : Transmitted when change a Combination or Song No.(Seq. mode). (Status = EXT,EX2,BTH)

n : MIDI Channel No. (0 - 15) ..... Usually Global Channel.
When in Combination/Sequencer/Song Play mode, each timbre's/track's channel.(Status = EXT,EX2 or BTH)
g : Always Global Channel No. (0 - 15)

ENA = A : Always Enabled
C : Enabled when Enable Control Change in Global mode is checked
P : Enabled when Enable Program Change in Global mode is checked
PB: Enabled when Enable Program and Bank Change in Global mode is checked
T : Enabled when Enable After Touch in Global mode is checked
Q : Enabled when Sequencer is playing(transmit), recording(receive)

*1 : kk = 24 - 108 : TRITON (61keys + Transpose)
= 16 - 115 : TRITON pro (76keys + Transpose)
= 09 - 120 : TRITON proX (88keys + Transpose)
= 00 - 127 : Sequencer and Arpeggiator

*2 : Program Combination MIDI Out[Hex] (Bank Map is KORG) (Bank Map is GM(2))

Program		Combination		MIDI Out[Hex]	(Bank Map is KORG)		(Bank Map is GM(2))	
BankA	000 - 127	BankA	000 - 127	mm,bb,pp	= 00,00,	00 - 7F	= 3F,00,	00 - 7F
B	000 - 127	B	000 - 127		00,01,	00 - 7F	3F,01,	00 - 7F
C	000 - 127	C	000 - 127		00,02,	00 - 7F	3F,02,	00 - 7F
D	000 - 127	D	000 - 127		00,03,	00 - 7F	3F,03,	00 - 7F
E	000 - 127				00,04,	00 - 7F	3F,04,	00 - 7F
F	000 - 127				00,05,	00 - 7F	3F,05,	00 - 7F
G	001 - 128				79,00,	00 - 7F	79,00,	00 - 7F
g(1)-(9)	001 - 128				79,01-09,	00 - 7F	79,01-09,	00 - 7F
g(d)	001 - 128				78,00,	00 - 7F	78,00,	00 - 7F

```
*3 : ARPEGGIATOR ON/OFF        :[ Bn,63,00,Bn,62,02,Bn,06,mm] mm = 00(Off),7F(On)
     ARPEGGIATOR GATE Knob     :[ Bn,63,00,Bn,62,0A,Bn,06,mm] mm = 00-7F
     ARPEGGIATOR VELOCITY Knob :[ Bn,63,00,Bn,62,0B,Bn,06,mm] mm = 00-7F

     When in Program/Combination mode, Global channel.
     When in Sequencer/Song Play mode, current selected track's channel.
```

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

Status [Hex]	Second [H] [D]	Third [H] [D]	Description (Transmitted when)	
F2	ss (ss)	tt (tt)	Song Position Pointer ss : Least significant [LSB] tt : Most significant [MSB]	 *4 *4
F3	ss (ss)		Song Select (Song or Cue List is selected) ss : Song(0-127)/Cue List(0-19) No.	

Transmits Song Position Pointer message when in Sequencer and Song Play mode (Internal Clock)
Transmits Song Select message when in Sequencer mode (Internal Clock)

```
*4 : For example, if time signature is 4/4 or 8/8, tt,ss = 00,10 means one measure.
```

1-3 SYSTEM REALTIME MESSAGES

Status[Hex]	Description (Transmitted when ...)
F8	Timing Clock (Always in Prog/Combi/Seq/Song Play mode)
FA	Start (START in Seq/Song Play mode)
FB	Continue (Continue START in Seq/Song Play mode)
FC	Stop (STOP in Seq/Song Play mode)
FE	Active Sensing (Always)

Transmits these message when MIDI Clock in Global mode is Internal.

1-4 SYSTEM EXCLUSIVE

1-4-1 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE (NON REALTIME)

DEVICE INQUlRY REPLY (Transmits when received a INQUIRY MESSAGE REQUEST)

[F0,7E,0g,06,02,42,50,00,mm,00,nn,00,vv,00,F7]

```
 3rd byte  g : Global Channel
 6th byte 42 : KORG ID
 7th byte 50 : TRITON series ID
 9th byte mm : TRITON      mm = 05
               TRITON pro  mm = 0E
               TRITON proX mm = 17
11th byte nn : System No.      ( 01 -  )
13th byte vv : System Version  ( 01 -  )
```

1-4-2 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES (REALTIME)

Master Volume

[F0,7F,0g,04,01,vv,mm,F7]

```
3rd byte   g : Global Channel
6th byte  vv : Value(LSB)
7th byte  mm : Value(MSB)
          mm,vv = 00,00 - 7F,7F : Min - Max
```

2.RECOGNIZED RECEIVE DATA

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

Status [Hex]	Second [H] [D]	Third [H] [D]	Description (Use .....)		ENA
8n	kk (kk)	xx (xx)	Note Off		A
9n	kk (kk)	00 (00)	Note Off		A
9n	kk (kk)	vv (vv)	Note On (vv)=1-127		A
An	kk (kk)	vv (vv)	Poly Key Pressure (as AMS)		T,Q
Bn	00 (00)	mm (mm)	Bank Select(MSB) (for Prog/Combi change)	*1	P
Bn	01 (01)	vv (vv)	Modulation1 (as Joy Stick +Y)		C
Bn	02 (02)	vv (vv)	Modulation2 (as Joy Stick -Y)		C
Bn	04 (04)	vv (vv)	Foot Pedal (as AMS & FX Dmod Src =Pedal)		C
Bn	05 (05)	vv (vv)	Portamento Time		C
Bn	06 (06)	vv (vv)	Data Entry (MSB) (for RPC edit)		C
Bn	07 (07)	vv (vv)	Volume		C
Bn	08 (08)	vv (vv)	Balance Control (for Post IFX Panpot control)	*2	C
Bn	0A (10)	vv (vv)	Panpot		C
Bn	0B (11)	vv (vv)	Expression		C
Bn	0C (12)	vv (vv)	Effect Control 1 (as FX Dmod Src)		C
Bn	0D (13)	vv (vv)	Effect Control 2 (as FX Dmod Src)		C
Bn	10 (16)	vv (vv)	Multi Purpose Ctrl1 (as Ribbon Controller)		C
Bn	11 (17)	vv (vv)	Multi Purpose Ctrl2 (as AMS & FX Dmod Src =KnobMod1)		C
Bn	12 (18)	vv (vv)	Multi Purpose Ctrl3 (as Value Slider)		C
Bn	13 (19)	vv (vv)	Multi Purpose Ctrl4 (as AMS & FX Dmod Src =KnobMod2)		C
Bn	14 (20)	vv (vv)	(as AMS & FX Dmod Src =KnobMod3)		C

Bn	15 (21)	vv	(vv)	(as AMS & FX Dmod Src =KnobMod4)		C
Bn	20 (32)	bb	(bb)	Bank Select(LSB)	(for Prog / Combi change)	*1 P
Bn	26 (38)	vv	(vv)	Data Entry (LSB)	(for RPC edit)	C
Bn	40 (64)	vv	(vv)	Hold1	(as Damper)	C
Bn	41 (65)	dd	(dd)	Portamento Off/On		*3 C
Bn	42 (66)	dd	(dd)	Sostenuto Off/On		*3 C
Bn	43 (67)	vv	(vv)	Soft Pedal		C
Bn	46 (70)	vv	(vv)	Sound Controller 1	(for Sustain Level control)	C
Bn	47 (71)	vv	(vv)	Sound Controller 2	(for Resonance/HPF Cutoff ctrl)	C
Bn	48 (72)	vv	(vv)	Sound Controller 3	(for Release Time control)	C
Bn	49 (73)	vv	(vv)	Sound Controller 4	(for Attack Time control)	C
Bn	4A (74)	vv	(vv)	Sound Controller 5	(for LPF Cutoff control)	C
Bn	4B (75)	vv	(vv)	Sound Controller 6	(for Decay Time control)	C
Bn	4C (76)	vv	(vv)	Sound Controller 7	(for LFO1 Speed control)	C
Bn	4D (77)	vv	(vv)	Sound Controller 8	(for LFO1 Pitch Depth control)	C
Bn	4E (78)	vv	(vv)	Sound Controller 9	(for LFO1 Delay control)	C
Bn	4F (79)	vv	(vv)	Sound Controller 10	(for Filter EG Intencity ctrl)	C
Bn	50 (80)	vv	(vv)	Multi Purpose Ctrl5	(as AMS & FX Dmod Src =SW 1)	C
Bn	51 (81)	vv	(vv)	Multi Purpose Ctrl6	(as AMS & FX Dmod Src =SW 2)	C
Bn	52 (82)	vv	(vv)	Multi Purpose Ctrl7	(as AMS & FX Dmod Src =Foot SW)	C
Bn	53 (83)	vv	(vv)	Multi Purpose Ctrl8	(as AMS & FX Dmod Src)	C
Bn	5B (91)	vv	(vv)	Effect 1 Depth	(for Send 2 Level control)	C
Bg	5C (92)	ee	(ee)	Effect 2 Depth	(for All Insert FX Off/On)	*4 C
Bn	5D (93)	vv	(vv)	Effect 3 Depth	(for Send 1 Level control)	C
Bg	5E (94)	ee	(ee)	Effect 4 Depth	(for Master FX1 Off/On)	*4 C
Bg	5F (95)	ee	(ee)	Effect 5 Depth	(for Master FX2 Off/On)	*4 C
Bn	60 (96)	00	(00)	Data Increment	(for RPC edit)	C
Bn	61 (97)	00	(00)	Data Decrement	(for RPC edit)	C
Bn	62 (98)	ss	(ss)	NRPN Param No.(LSB)	(for NRPN select)	*5 C
Bn	63 (99)	tt	(tt)	NRPN Param No.(MSB)	(for NRPN select)	*5 C
Bn	64(100)	0r	(0r)	RPN Param No. (LSB)	(for RPN select)	*6 C
Bn	65(101)	00	(00)	RPN Param No. (MSB)	(for RPN select)	*6 C
Bn	cc (cc)	vv	(vv)	Control data	(for Seq. recording (cc)=0-101)	C,Q
Bn	78(120)	00	(00)	All Sound Off		C
Bn	79(121)	00	(00)	Reset All Controllers		C
Bn	79(121)	00/7F	(00/127)	Local Control Off/On		A
Bn	7B(123)	00	(00)	All Notes Off		A
Bn	7C(124)	00	(00)	Omni Mode Off	(as All Notes Off)	A
Bn	7D(125)	00	(00)	Omni Mode On	(as All Notes Off)	A
Bn	7E(126)	00 - 10	(00 - 16)	Mono Mode On	(as All Notes Off)	A
Bn	7F(127)	00	(00)	Poly mode On	(as All Notes Off)	A
Cn	pp (pp)	--	--	Program Change	(for Prog/Combi change)	*1 P
Dn	vv (vv)	--	--	Channel Pressure	(as After Touch)	T
En	bb (bb)	bb	(bb)	Bender Change		C

AMS : Alternate Modulation Source
FX Dmod Src: Effect Dynamic Modulation Source

n : MIDI Channel No. (0 - 15) ..... Usually Global Channel.
When in Combination/Sequencer/Song Play mode, each timbre's/track's channel.(Status is INT or BTH)
g : Always Global Channel No. (0 - 15)
x : Random
ENA : Same as Transmitted data

*1 : When Bank Map in Global mode is KORG;

MIDI In [Hex]		Program		Combination
mm,bb,pp = 00,00,	00 - 7F :	Bank A	000 - 127 :	Bank A 000 - 127
00,01,	00 - 7F :	B	000 - 127 :	B 000 - 127
00,02,	00 - 7F :	C	000 - 127 :	C 000 - 127
00,03,	00 - 7F :	D	000 - 127 :	D 000 - 127
00,04,	00 - 7F :	E	000 - 127	
00,05,	00 - 7F :	F	000 - 127	
79,00,	00 - 7F :	G	001 - 128	
79,01-09,	00 - 7F :	g(1)-g(9)	001 - 128	
78,00,	00 - 7F :	g(d)	001 - 128	
38,00,	00 - 7F :	G	001 - 128	
3E,00,	00 - 7F :	g(d)	001 - 128	

When Bank Map in Global mode is GM(2);

MIDI In [Hex]		Program		Combination
mm,bb,pp = 3F,00,	00 - 7F :	Bank A	000 - 127 :	Bank A 000 - 127
3F,01,	00 - 7F :	B	000 - 127 :	B 000 - 127
3F,02,	00 - 7F :	C	000 - 127 :	C 000 - 127
3F,03,	00 - 7F :	D	000 - 127 :	D 000 - 127
3F,04,	00 - 7F :	E	000 - 127	
3F,05,	00 - 7F :	F	000 - 127	
79,00,	00 - 7F :	G	001 - 128	
79,01-09,	00 - 7F :	g(1)-g(9)	001 - 128	
78,00,	00 - 7F :	g(d)	001 - 128	
00,00,	00 - 7F :	G	001 - 128	
38,00,	00 - 7F :	G	001 - 128	
3E,00,	00 - 7F :	g(d)	001 - 128	
3F,7F,	00 - 7F :	Mute (KORG MUTE)		
(XG) 00,01 -	:	Assign correspond program in G, g(1) - g(9)		
(GS) 01,00 -	:	Assign correspond program in G, g(1) - g(9)		

*2 : When in Program/Sampling mode, Global channel
When in Combination/Sequencer/Song Play mode, each IFX's channel.

```
*3 : dd = 00 - 3F : Off
          40 - 7F : On

*4 : ee = 00      : Off
          01 - 7F : On

*5 : tt,ss = 00,02 : Arpeggiator Off/On
           = 00,0A : Arpeggiator Gate control
           = 00,0B : Arpeggiator Velocity control

     When in Program/Combination mode, Global channel message is valid.
     When in Sequencer/Song Play mode, current selected track's channel message is valid.
     Data Entry LSB value has no effect.

     tt,ss = 01,08 : Vibrato Rate
     tt,ss = 01,09 : Vibrato Depth
     tt,ss = 01,0A : Vibrato Delay
     tt,ss = 01,20 : Filter Cutoff
     tt,ss = 01,21 : Filter Resonance
     tt,ss = 01,63 : EG Attack Time
     tt,ss = 01,64 : EG Decay Time
     tt,ss = 01,66 : EG Release Time
     tt,ss = 14,kk : Drum Filter Cutoff    *
     tt,ss = 15,kk : Drum Filter Resonance *
     tt,ss = 16,kk : Drum EG Attack Time   *
     tt,ss = 17,kk : Drum EG Decay Time    *
     tt,ss = 18,kk : Drum Coarse Tune      *
     tt,ss = 19,kk : Drum Fine Tune        *
     tt,ss = 1A,kk : Drum Volume           *
     tt,ss = 1C,kk : Drum Panpot           *
     tt,ss = 1D,kk : Drum Rev Send(Send2)  *
     tt,ss = 1E,kk : Drum Cho Send(Send1)  *

     * Only valid when Part Mode is Drum, MDrm1 - Mdrm4.
     kk: Drum Inst No. (0C - 6C = C0 - C8)
     Data Entry LSB value has no effect.

*6 : r = 0 : Pitch Bend Sensitivity ( Bend Range ).
       = 1 : Fine Tune             ( Detune )
       = 2 : Coarse Tune            ( Transpose )
     For drum program, both of Fine Tune and Coase Tune affect to Detune.
     Data Entry LSB value has no effect.
```

2-2 SYSTEM COMMON MESSAGES [H] :Hex, [D] :Decimal

Status [Hex]	Second [H] [D]	Third [H] [D]	Description (Use for .....)
F2	ss (ss)	tt (tt)	Song Position Pointer (Location) *7 ss : Least significant [LSB] tt : Most significant [MSB]
F3	ss (ss)		Song Select (Song or Cue List select) *7 ss : Song(0-127)/Cue List(0-19) No.

Receive when in Sequencer mode (External Clock)

*7 : When in the Cue List page (Sequencer mode P1), respond to Location and No. of Cue List.

2-3 SYSTEM REALTIME MESSAGES

Status[Hex]	Description (Use for.....)
F8	Timing Clock (Tempo, AMS. & FX Dmod Src)
FA	Start (Seq Start & Arpeggiator Control)
FB	Continue (Seq Continue start & Arpeggiator Control)
FC	Stop (Seq Stop & Arpeggiator Control)
FE	Active Sensing (MIDI Connect check)

Receive when MIDI Clock in Global mode is External MIDI or External PCI/F.

2-4 SYSTEM EXCLUSIVE

2-4-1 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE (NON REALTIME)

```
       DEVICE INQUlRY ( When received this message, transmits INQUlRY MESSAGE REPLY )
       [ F0,7E,nn,06,01,F7 ]                  3rd byte  nn : Channel = 0 - F : Global Channel
                                                             = 7F    : Any Channel
       GM System On ( Receive when in Song Play mode )
       [ F0,7E,nn,09,01,F7 ]                  3rd byte  nn : Channel = 0 - F : Global Channel
                                                             = 7F    : Any Channel
```

2-4-2 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES (REALTIME)

```
       Master Volume
       [ F0,7F,0g,04,01,vv,mm,F7 ]            3rd byte   g : Global Channel
                                              6th byte  vv : Value(LSB)
                                              7th byte  mm : Value(MSB)
                                                        mm,vv = 00,00 - 7F,7F : Min - Max
       Master Balance
       [ F0,7F,0g,04,02,vv,mm,F7 ]            3rd byte   g : Global Channel
```

```
                                                6th byte  vv : Value(LSB)
                                                7th byte  mm : Value(MSB)
                                                          mm,vv = 00,00:Left, 40,00:Center,
7F,7F:Right
        Master Fine Tune ( Control Master Tune(cent) in Global )
        [ F0,7F,0g,04,03,vv,mm,F7 ]             3rd byte   g : Global Channel
                                                6th byte  vv : Value(LSB)
                                                7th byte  mm : Value(MSB)
                                                          mm,vv = 20,00:-50, 40,00:+00, 60,00:+50
        Master Coarse Tune ( Control Transpose (chromatic step) in Global )
        [ F0,7F,0g,04,04,vv,mm,F7 ]             3rd byte   g : Global Channel
                                                6th byte  vv : Value(LSB)
                                                7th byte  mm : Value(MSB)
                                                          mm,vv = 34,00:-12, 40,00:+00, 4C,00:+12
```

3.KORG System Exclusive Message Received Function Code List (5th byte of Exclusive message) List

Func	Description
12	MODE REQUEST
10	CURRENT PROGRAM PARAMETER DUMP REQUEST
1C	PROGRAM PARAMETER DUMP REQUEST
19	CURRENT COMBINATION PARAMETER DUMP REQUEST
1D	COMBINATION PARAMETER DUMP REQUEST
18	SEQUENCE DATA DUMP REQUEST
0E	GLOBAL DATA DUMP REQUEST
0D	DRUMKIT DATA DUMP REQUEST
34	ARPEGGIO PATTERN DATA DUMP REQUEST
0F	ALL DATA(PROG,COMBI,GLOBAL,DRUMS,ARPPAT,SEQ)DUMP REQUEST
11	PROGRAM WRITE REQUEST
1A	COMBINATION WRITE REQUEST
40	CURRENT PROGRAM PARAMETER DUMP
4C	PROGRAM PARAMETER DUMP
49	CURRENT COMBINATION PARAMETER DUMP
4D	COMBINATION PARAMETER DUMP
48	SEQUENCE DATA DUMP
51	GLOBAL DATA DUMP
52	DRUMKIT DATA DUMP
69	ARPEGGIO PATTERN DATA DUMP
50	ALL DATA(PROG,COMBI,GLOBAL,DRUMS,ARPPAT,SEQ)DUMP
4E	MODE CHANGE
41	PARAMETER CHANGE
53	DRUMKIT PARAMETER CHANGE
6D	ARPEGGIO PATTERN PARAMETER CHANGE

```
(1) MODE REQUEST                                                        R
        F0, 42, 3g, 50          Excl Header
        12                      Function
        F7                      End of Excl
(Receives this message, and transmits Func=42 message)


(2) CURRENT PROGRAM PARAMETER DUMP REQUEST                              R
        F0, 42, 3b, 50          Excl Header
        10                      Function
        00                      Reserved
        F7                      End of Excl
(Receives this message, and transmits Func=40 or Func=24 message)


(3) PROGRAM PARAMETER DUMP REQUEST                                      R
        F0, 42, 3g, 50          Excl Header
        1C                      Function
        00kk 0bbb               Kind and Bank   (*1)
        0ppp pppp               Program No.
        00                      Reserved
        F7                      End of Excl
(Receives this message, and transmits Func=4C or Func=24 message)


(4) CURRENT COMBINATION PARAMETER DUMP REQUEST                          R
        F0, 42, 3g, 50          Excl Header
        19                      Function
        00                      Reserved
        F7                      End of Excl
(Receives this message, and transmits Func=49 or Func=24 message)


(5) COMBINATION PARAMETER DUMP REQUEST                                  R
        F0, 42, 3g, 50          Excl Header
        1D                      Function
        00kk 00bb               Kind and Bank   (*2)
        0ccc cccc               Combination No.
        00                      Reserved
        F7                      End of Excl
```

(Receives this message, and transmits Func=4D or Func=24 message)

(6) SEQUENCE DATA (In Memory) DUMP REQUEST R

F0, 42, 3g, 50	Excl Header	
18	Function	
00	Reserved	
F7	End of Excl	

(Receives this message, and transmits Func=48 or Func=24 message)

(7) GLOBAL DATA DUMP REQUEST R

F0, 42, 3g, 50	Excl Header	
0E	Function	
00	Reserved	
F7	End of Excl	

(Receives this message, and transmits Func=51 or Func=24 message)

(8) DRUMKIT DATA (In Memory) DUMP REQUEST R

F0, 42, 3g, 50	Excl Header	
0D	Function	
0000 000k	Kind	(*3-1)
0ddd dddd	Drumkit No.	(*3-1)
00	Reserved	
F7	End of Excl	

(Receives this message, and transmits Func=52 or Func=24 message)

(9) ARPEGGIO PATTERN DATA DUMP REQUEST R

F0, 42, 3g, 50	Excl Header	
34	Function	
0k00 0000	Kind	(*3-2)
0000 000a	ARPPAT No. MSB	(*3-2)
0aaa aaaa	ARPPAT No. LSB	(*3-2)
F7	End of Excl	

(Receives this message, and transmits Func=52 or Func=24 message)

(10) ALL DATA(PROG,COMBI,GLOBAL,DRUMS,ARPPAT,SEQ)DUMP REQUEST R

F0, 42, 3g, 50	Excl Header	
0F	Function	
00	Reserved	
F7	End of Excl	

(Receives this message, and transmits Func=50 or Func=24 message)

(11) PROGRAM WRITE REQUEST R

F0, 42, 3g, 50	Excl Header	
11	Function	
0000 0bbb	Write Program Bank	(*4)
0ppp pppp	Write Program No.	
F7	End of Excl	

(Receives this message, write the data and transmits Func=21 or Func=22 message)

(12) COMBINATION WRITE REQUEST R

F0, 42, 3g, 50	Excl Header	
1A	Function	
0000 0bbb	Write Combination Bank	(*4)
0ccc cccc	Write Combination No.	
F7	End of Excl	

(Receives this message, write the data and transmits Func=21 or Func=22 message)

(13) CURRENT PROGRAM PARAMETER DUMP R , T

F0, 42, 3g, 50	Excl Header	
40	Function	
0000 000t	Program Type (t = 0 : PCM, 1 : MOSS)	
0ddd dddd	Data	(*5,*6, TABLE1,2)
F7	End of Excl	

(Receives this message & data, and transmits Func=23 or Func=24 message)
Receives Func=10 message, and transmits this message & data.
When Enter the EDIT PROGRAM Page or Edit the PEEERFORMANCE EDIT by SW, transmits this message & data.

(14) PROGRAM PARAMETER DUMP R , T

F0, 42, 3g, 50	Excl Header	
4C	Function	
0000 000v	Available Bank	(*7)
00kk 0bbb	Kind and Bank	(*7)
0ppp pppp	Program No.	
0ddd dddd	Data	(*5,*8, TABLE1,2)
F7	End of Excl	

(Receives this message & data, and transmits Func=23 or Func=24 message)
Receives Func=1C message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.

(15) CURRENT COMBINATION PARAMETER DUMP R , T

```
        F0, 42, 3g, 50          Excl Header
        49                      Function
        00                      Reserved
        0ddd dddd               Data                    (*5,*9, TABLE3)
        F7                      End of Excl
(Receives this message & data, and transmits Func=23 or Func=24 message)
Receives Func=19 message, and transmits this message & data.
When the Combi No. is changed by SW, transmits this message & data.


(16) COMBINATION PARAMETER DUMP                                         R , T
        F0, 42, 3g, 50          Excl Header
        4D                      Function
        00                      Reserved
        00kk 00bb               Kind and Bank           (*10)
        0ppp pppp               Combination No.
        0ddd dddd               Data                    (*5,*11, TABLE3)
        F7                      End of Excl
(Receives this message & data, and transmits Func=23 or Func=24 message)
Receives Func=1C message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.


(17) SEQUENCE DATA (In Memory) DUMP                                     R , T
        F0, 42, 3g, 50          Excl Header
        48                      Function
        00                      Reserved
        0sss ssss               Seq. data Size        [4Bytes]  (*12-1)
            :                           :
        0mmm mmmm               Song Data Adress                (*5,*12-2, TABLE10)
            :                           :
        0ccc cccc               CueLists Data                   (*5,*12-3, TABLE11)
            :                           :
        0ddd dddd               Sequence Data                   (*5,*12-4, TABLE12)
        F7                      End of Excl
(Receives this message & data, and transmits Func=23 or Func=24 message)
Receives Func=18 message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.


(18) GLOBAL DATA DUMP                                                   R , T
        F0, 42, 3g, 50          Excl Header
        51                      Function
        00                      Reserved
        0ddd dddd               Data                    (*5,*13, TABLE4)
            :
        F7                      End of Excl
(Receives this message & data, and transmits Func=23 or Func=24 message)
Receives Func=0E message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.


(19) DRUMKIT DATA DUMP                                                  R , T
        F0, 42, 3g, 50          Excl Header
        52                      Function
        0000 000k               Kind                    (*14-1)
        0ddd dddd               Drumkit No.             (*14-1)
        00                      Reserved
        0ddd dddd               Data                    (*5,*15, TABLE7)
            :
        F7                      End of Excl
(Receives this message & data, and transmits Func=23 or Func=24 message)
Receives Func=0E message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.


(20) ARPEGGIO PATTERN DATA DUMP                                         R , T
        F0, 42, 3g, 50          Excl Header
        69                      Function
        0k00 0000               Kind                    (*14-2)
        0000 000a               ARPPAT No. MSB          (*14-2)
        0aaa aaaa               ARPPAT No. LSB          (*14-2)
        0ddd dddd               Data                    (*5,*15, TABLE8)
            :
        F7                      End of Excl
(Receives this message & data, and transmits Func=23 or Func=24 message)
Receives Func=34 message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.


(21) ALL DATA (PROG,COMBI,GLOBAL,DRUMS,ARPPAT,SEQ) DUMP                 R , T
        F0, 42, 3g, 50          Excl Header
        50                      Function
        0000 00vv               Available Bank          (*16)
        00                      Reserved
        0sss ssss               Seq. data Size  [4Bytes](*12-1)
            :                           :
        0ddd dddd               Data                    (*5,*17, TABLE1,2,3,4,7,8,10,11,12)
        F7                      End of Excl
(Receives this message & data, and transmits Func=23 or Func=24 message)
Receives Func=34 message, and transmits this message & data.
```

Transmits this message & data when DATA DUMP is executed.

(22) MODE CHANGE R , T

F0, 42, 3g, 50	Excl Header	
4E	Function	
0000 mmmm	Mode	(*18)
F7	End of Excl	

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

(23) PARAMETER CHANGE R , T

F0, 42, 3g, 50	Excl Header	
41	Function	
0000 mmmm	Mode	(*18)
0000 0000	Parameter ID (MSB)	
0ppp pppp	Parameter ID (LSB)	(TABLE 1,2,3,5,6,9)
0000 0000	Parameter SUB ID (MSB)	
0qqq qqqq	Parameter SUB ID (LSB)	(TABLE 1,2,3,5,6,9)
0vvv vvvv	Value (MSB bit7-18)	(*19)
0vvv vvvv	Value (LSB bit0-6)	(*19)
F7	End of Excl	

(Receives this message & data, and transmits Func=23 or Func=24 messages)
When the Parameter No. is changed by SW, transmits this message & data.

(24) DRUMKIT PARAMETER CHANGE R , T

F0, 42, 3g, 50	Excl Header	
53	Function	
0kkk kkkk	Drumkit No.	kk = 00-3F (: 00-63)
0sss ssss	Index No.	ss = 00-7F (: C-1-G9)
0ppp pppp	Parameter No. (MSB)	(TABLE 7)
0000 0000	Parameter No. (LSB)	(TABLE 7)
0vvv vvvv	Value (MSB bit7~18)	(*19)
0vvv vvvv	Value (LSB bit0~6)	(*19)
F7	End of Excl	

(Receives this message & data, and transmits Func=23 or Func=24 messages)

(25) ARPEGGIO PATTERN PARAMETER CHANGE R , T

F0, 42, 3g, 50	Excl Header	
6D	Function	
0000 000b	Arppegio AorB	b = 0 : Arppegio A 1 : Arppegio B
0000 000a	Pattern No. MSB (bit 7)	
0aaa aaaa	Pattern No. LSB (bit 6-0)	a = 00-E7 (: 00-231)
0sss ssss	Step No.	ss = 00-2F (: 00-47)
0ttt tttt	Tone No.	tt = 00-0B (: 00-11)
0ppp pppp	Parameter No. (MSB)	(TABLE 8)
0000 0000	Parameter No. (LSB)	(TABLE 8)
0vvv vvvv	Value (MSB bit7~18)	(*19)
0vvv vvvv	Value (LSB bit0~6)	(*19)
F7	End of Excl	

(Receives this message & data, and transmits Func=23 or Func=24 messages)

(26) MODE DATA T

F0, 42, 3g, 50	Excl Header	
42	Function	
0000 mmmm	Mode	(*18)
0ooo oooo	Option	(*20)
0sss ssss	Setuped data1	(*20)
0ddd dddd	Setuped data2	(*20)
00	Reserved	
F7	End of Excl	

(Receives FUNC=12 message, and transmits this message & data.)

(27) MIDI IN DATA FORMAT ERROR T

F0, 42, 3g, 50	Excl Header	
26	MIDI IN DATA FORMAT ERROR	
0ccc cccc	Error Code	(*21)
F7	End of Excl	

(Transmits this message when there is an error in the MIDI IN message (ex.data length).)

(28) DATA LOAD COMPLETED (ACK) T

F0, 42, 3g, 50	Excl Header	
23	DATA LOAD COMPLETED	
F7	End of Excl	

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

(29) DATA LOAD ERROR (NAC) T

F0, 42, 3g, 50	Excl Header	
24	DATA LOAD ERROR	
0ccc cccc	Error Code	(*22)
F7	End of Excl	

(Transmits this message when DATA LOAD,PROCESSING have not been completed (ex. protected).)

```
(30) WRITE COMPLETED                                                    T
        F0, 42, 3g, 50          Excl Header
        21                      WRITE COMPLETED
        F7                      End of Excl
(Transmits this message when DATA WRITE MIDI have been completed.)


(31) WRITE ERROR                                                        T
        F0, 42, 3g, 50          Excl Header
        22                      WRITE ERROR
        0ccc cccc               Error Code              (*23)
        F7                      End of Excl
(Transmits this message when DATA WRITE MIDI have not been completed.)


//////// * The each bank's value is same as value of the internal bank
*1
        k = 0 : All Programs
            1 : 1 Bank Programs (Use b)
            2 : 1 Program       (Use b & pp)

        b = 0-4 : Bank A-E
              5 : Bank F

*2
        k = 0 : All Combinations
            1 : 1 Bank Combinations     (Use b)
            2 : 1 Combination           (Use b & cc)

        b = 0-3 : Bank A-D

*3
    3-1
        k = 0 : All Drumkits
            1 : 1 Drumkit               (Use d)

        d = 0-3F : Drumkit 0-63

    3-2
        k = 0 : All Arpeggio Patterns
            1 : 1 Arpeggio Pattern      (Use p)

        a = 0-E7 : Arpeggio Pattern 0-231

*4 PROGRAM,COMBINATION BANK
        b = 0-3 : Bank A-D
            4-5 : Bank E-F      (Only for Program)

*5 DUMP DATA CONVERT
        Convert 8 to 7
        Convert 7 to 8

*6 PROGRAM PARAMETER (IN CURRENT BUFFER) DUMP FORMAT
        *PCM
        *MOSS

*7
        v = 0 : Bank A-E
            1 : Bank A-F

        k = 0 : All Bank Program        (Use v)
            1 : 1 Bank Program          (Use v & b)
            2 : 1 Program               (Use b & pp)

        b = 0-5 : Bank A-F

*8 PROGRAM PARAMETER (IN INTERNAL MEMORY) DUMP FORMAT

*9 COMBINATION PARAMETER (IN CURRENT BUFFER) DUMP FORMAT

*10
        k = 0 : All Bank Combination    (Use v)
            1 : 1 Bank Combination      (Use b)
            2 : 1 Combination           (Use b & cc)

        b = 0-3 : Bank A-D

*11 COMBINATION PARAMETER (IN INTERNAL MEMORY) DUMP FORMAT

*12 SEQUENCE DATA'S OFFSET,SIZE,ADDRESS FORMAT
        12-1 : Sequence Data Size (4Bytes)
               'Seq Data Size' is a all song data's length. A unit is Byte.
                [Data Size (bit21~27)],
                [Data Size (bit14~20)],
                [Data Size (bit 7~13)],
                [Data SIze (bit 0~ 6)]

        12-2 : Song Data Adress

        12-3 : CueLists Data
```

```
        12-4 : Sequence Data

*13 GLOBAL DATA (IN INTERNAL MEMORY) DUMP FORMAT

*14 ARPEGGIO PATTERN DATA (IN INTERNAL MEMORY) DUMP FORMAT

*14
     14-1
        k = 0 : All Drumkits
            1 : 1 Drumkit              (Use d)

        d = 0-3F : Drumkit 0-63

     14-2
        k = 0 : All Arpeggio Patterns
            1 : 1 Arpeggio Pattern     (Use a)

        a = 0-E7 : Arpeggio Pattern 0-231

*15 DRUMS DATA (IN INTERNAL MEMORY) DUMP FORMAT

*16
                Program
        v = 0 : Bank A-E
            1 : Bank A-F

*17 All DATA (PROG,COMBI,GLOBAL,DRUMS,ARPPAT,SEQ) DUMP FORMAT
        [Global Data],
        [Drums Data],
        [Arpeggio Pattern DATA],
        [All Combination Parameter Data],
        [All Program Parameter Data],
        [Song Data Adress],
        [CueLists Data],
        [Sequence Data]

*18
        mmm = 0 : COMBI PLAY
              1 : COMBI EDIT
              2 : PROG PLAY
              3 : PROG EDIT
              4 : SEQUENCER
              5 : SONGPLAY
              6 : SANPLING
              7 : GLOBAL
              8 : DISK

*19 VALUE DATA FORMAT (Use at PARAMETER CHANGE, DRUM KIT PARAMETER CHANGE)

*20
        oo : bit 0   = 0 : No MOSS Synthesizer,         = 1 : MOSS Synthesizer is loaded

        ss : bit 0,1 = 0 : Note Receive is EVEN,        = 1 : ODD,      = 2 : ALL
             bit 3,4 = 0 : Seq Clock is internal,       = 1 : External  = 2 : External
PC-I/F

        dd : bit 0   = 0 : Prog Mem is not protected,   = 1 : protected
             bit 1   = 0 : Combi Mem is not protected,  = 1 : protected
             bit 2   = 0 : Seq Mem is not protected,    = 1 : protected
             bit 3   = 0 : Drums Mem is not protected,  = 1 : protected
             bit 4   = 0 : ArpPat Mem is not protected, = 1 : ptotected

*21
        cc =  0 : Received Data Length is wrong
              1 : Received Function code is not registered
             40 : Another type error

*22
        cc =  0 : Dest Memory is protected
              1 : Dest Bank/Prog/Param is not exist
              2 : The mode is wrong
              3 : Memory over flow
             40 : Another type error

*23
        cc =   0 : Dest Memory is protected
               1 : Dest Bank/Prog is not exist
               2 : The mode is wrong
              40 : Another type error

 [ TABLE 1 ]           PROGRAM PARAMETERS (for PCM Synth)                              1999.05.11
```

No. : No. in the PROGRAM DUMP DATA.
PARA No. : Parameter ID & SUB ID [Hex] for PARAMETER CHANGE.
Left side of ',' is Parameter ID, and right side is SUB ID.

No.	(bit)	PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	PARA No.
00		PROGRAM NAME (Head)			
:		:	20~~7F		----
15		PROGRAM NAME (Tail)			
		INSERT EFFECT PARAMETERS			
16					1E,00
:		FX1~~5 (24Bytes * 5)			:
135		(120 Bytes)			23,??
		MASTER EFFECT PARAMETERS			
136					24,00
:		FX1~~2 (20Bytes * 2)			:
:		Return, Chain & Master EQ (16 Bytes)			:
191		(56 Bytes)			27,??
		ARPEGGIATOR PARAMETERS			
192		TEMPO	28~~F0 : 40~~240		1C,00
193		SWITCH	0:OFF, 1:ON		1C,01
194		PATTERN NO.	00~~EC : 0~~237		1D,00
195	b0~~1	OCTAVE	00~~03 : 0~~4		1D,02
	b2~~4	RESOLUTION	0:16T, 1:16, 2:8T, 3:8, 4:4T, 5:4		1D,01
196		GATE	00~~64 : 0~~100[%], 65:Step		1D,03
197		VELOCITY	01~~7F : 1~~127, 80:Key, 81:Step		1D,04
198		SWING	9C~~64 : -100~~100		1D,05
199	bit0	SORT	0:OFF, 1:ON		1D,06
	bit1	LATCH	0:OFF, 1:ON		1D,07
	bit2	KEY SYNC.	0:OFF, 1:ON		1D,08
	bit3	KEYBOARD	0:OFF, 1:ON		1D,09
200		TOP KEY	00~~7F : C-1~~G9		1D,0A
201		BOTTOM KEY	00~~7F : C-1~~G9		1D,0B
202		TOP VELOCITY	01~~7F : 1~~127		1D,0C
203		BOTTOM VELOCITY	01~~7F : 1~~127		1D,0D
		COMMON PARAMETERS			
204	b0~~1	OSCILLATOR MODE	0:Single, 1:Double, 2:Drums		00,01
	bit2	KEY ASSIGN	0:Poly, 1:Mono		00,02
	bit3	LEGATO	0:OFF, 1:ON		00,03
	b4~~5	PRIORITY	0:Low, 1:High, 2:Last		00,04
	bit6	SINGLE TRIGGER	0:OFF, 1:ON		00,05
	bit7	HOLD	0:OFF, 1:ON		00,06
205	b0~~6	BUS SELECT	00:L/R,01~~05:IFX1~~5,06~~09:1~~4,0A:1/2,0B:3/4,0C:Off		00,07
	bit7	USE DKIT SETTING	0:OFF, 1:ON		00,08
206		CATEGORY	00~~0F : 0~~15		00,00
207		SCALE TYPE	00~~1A : **1-1		00,09
208		SCALE KEY	00~~0C : C~~B		00,0A
209		RANDOM INTENSITY	00~~07 : 0~~7		00,0B
210	b0~~5	SW 1 ASSIGN TYPE	00~~0C : **1-2		00,0C
	bit6	SW1 TOGGLE/MOMENTARY	0:Toggle, 1:Momentary		00,10
	bit7	SW 1 ON/OFF	0:OFF, 1:ON		00,1E
	b0~~5	SW 2 ASSIGN TYPE	00~~0C : **1-2		00,0D

211	bit6	SW2 TOGGLE/MOMENTARY	0:Toggle, 1:Momentary		00,11
	bit7	SW 2 ON/OFF	0:OFF, 1:ON		00,0F
	b0~~6	KNOB 1 ASSIGN TYPE	00~~7C : **1-3		00,12
212	bit7	REALTIME CONTROLS	0:A, 1:B		00,16
213		KNOB 2 ASSIGN	00~~7C : **1-3		00,13
214		KNOB 3 ASSIGN	00~~7C : **1-3		00,14
215		KNOB 4 ASSIGN	00~~7C : **1-3		00,15
PITCH EG					
216		START LEVEL	9D~~63 : -99~~99		01,00
217		ATTACK TIME	00~~63 : 00~~99		01,01
218		ATTACK LEVEL	9D~~63 : -99~~99		01,02
219		DECAY TIME	00~~63 : 00~~99		01,03
220		RELEASE TIME	00~~63 : 00~~99		01,04
221		RELEASE LEVEL	9D~~63 : -99~~99		01,05
222		A.M.SOURCE (LEVEL1)	00~~2A : **1-4	Alternate Modulation	01,08
223		INT BY A.M.(LEVEL1)	9D~~63 : -99~~99		01,09
224		A.M.SOURCE (LEVEL2)	00~~2A : **1-4	Alternate Modulation	01,0A
225		INT BY A.M.(LEVEL2)	9D~~63 : -99~~99		01,0B
226		A.M.SOURCE (TIME)	00~~2A : **1-4	Alternate Modulation	01,06
227		INT BY A.M.(TIME)	9D~~63 : -99~~99		01,07
	b0~~1	START (A.M.LEVEL1)	FF:-, 0:OFF, 1:+		01,0E
	b2~~3	ATTACK (A.M.LEVEL1)	FF:-, 0:OFF, 1:+		01,0F
228	b4~~5	START (A.M.LEVEL2)	FF:-, 0:OFF, 1:+		01,10
	b6~~7	ATTACK (A.M.LEVEL2)	FF:-, 0:OFF, 1:+		01,11
	b0~~1	ATTACK (A.M.TIME)	FF:-, 0:OFF, 1:+		01,0C
229	b2~~3	DECAY (A.M.TIME)	FF:-, 0:OFF, 1:+		01,0D
OSCILLATOR 1					
	bit7	HI START OFFSET	0:OFF, 1:ON		02,02
230	bit6	HI REVERSE	0:OFF, 1:ON		02,03
	b0~~6	HI SAMPLE NO.(MSB)	00~~03E7 : 00~~999		02,01
231		HI SAMPLE NO.(LSB)			
232		HI BANK	0:ROM, 1:RAM, ~~???	??? is depend on PCM option.	02,00
233		HI LEVEL	00~~7F : 00~~127		02,04
	bit7	LOW START OFFSET	0:OFF, 1:ON		02,07
234	bit6	LOW REVERSE	0:OFF, 1:ON		02,08
	b0~~6	LOW SAMPLE NO.(MSB)	00~~03E7 : 00~~999		02,06
235		LOW SAMPLE NO.(LSB)			
236		LOW BANK	0:ROM, 1:RAM, ~~???	??? is depend on PCM option.	02,05
237		LOW LEVEL	00~~7F : 00~~127		02,09
238		DELAY START	00~~60,61 : **1-5		02,0A
239		VEL M.SAMPLE SW	01~~7F : 01~~127	(For Vel Split)	02,0B
240		VEL ZONE BOTTOM	01~~7F : 01~~127		02,0C
241		VEL ZONE TOP	01~~7F : 01~~127		02,0D
OSCILLATOR 1 LFO 1					
	b0~~4	WAVEFORM	0~~14 : **1-6		03,00
242	bit7	KEY SYNC.	0:OFF, 1:ON		03,01

243	FREQUENCY	00~~63 : 00~~99		03,02
244	OFFSET	9D~~63 : -99~~99		03,03
245	DELAY	00~~63 : 00~~99		03,04
246	FADE	00~~63 : 00~~99		03,05
bit7	MIDI/TEMPO SYNC.	0:OFF, 1:ON		03,0A
247 b6~~4	SYNC BASE NOTE	0:16,1:8T,2:8,3:4T,4:4,5:2T,6:2,7:1		03,0B
bit7	TIMES	00~~0F : 00~~16		03,0C
248	A.M.SOURCE (TIME1)	00~~2A : **1-4	Alternate Modulation	03,06
249	INT BY A.M.(TIME1)	9D~~63 : -99~~99		03,07
250	A.M.SOURCE (TIME2)	00~~2A : **1-4	Alternate Modulation	03,08
251	INT BY A.M.(TIME2)	9D~~63 : -99~~99		03,09
OSCILLATOR 1 LFO 2				
252 : 261	Same as OSCILLATOR 1 LFO 1 (242~~251) (10 Bytes)			04,00 : 04,0C
OSCILLATOR 1 PITCH				
262	OCTAVE	FE~~01 : 32~~4 [']		05,00
263	TRANSPOSE	F4~~0C : -12~~12		05,01
264	TUNE (MSB)	FB50~~04B0 : -1200~~1200		05,02
265	TUNE (LSB)	[Cent]		
266	A.M.SOURCE (PITCH)	00~~2A : **1-4	Alternate Modulation	05,03
267	INT BY A.M.(PITCH)	8D~~73 : **1-7		05,04
268	PITCH SLOPE	F6~~14 : -1.0~~2.0		05,05
269	INT BY PITCH EG	8D~~73 : **1-7		05,06
270	A.M.SOURCE (P.EG)	00~~2A : **1-4	Alternate Modulation	05,07
271	INT BY A.M.(P.EG)	8D~~73 : **1-7		05,08
272	INT BY OSC-1 LFO 1	8D~~73 : **1-7		05,09
273	INT BY OSC-1 LFO 2	8D~~73 : **1-7		05,0A
bit0	PORTAMENTO	0:DIS, 1:ENA		05,0B
274 bit1	PORTAMENTO FINGERED	0:OFF, 1:ON		05,0C
275	PORTAMENTO TIME	00~~7F : 00~~127		05,0D
276	PITCH BY JS(+X)	C4~~0C : -60~~12		05,0E
277	PITCH BY JS(-X)	C4~~0C : -60~~12		05,0F
278	PITCH BY RIBBON(X)	F4~~0C : -12~~12		05,10
279	(RESERVED)			----
280	LFO1 INT BY JS(+Y)	8D~~73 : **1-7		05,11
281	LFO2 INT BY JS(+Y)	8D~~73 : **1-7		05,12
282	A.M.SOURCE(LFO1INT)	00~~2A : **1-4	Alternate Modulation	05,13
283	INT BY A.M.(LFO1INT)	8D~~73 : **1-7		05,14
284	A.M.SOURCE(LFO2INT)	00~~2A : **1-4	Alternate Modulation	05,15
285	INT BY A.M.(LFO2INT)	8D~~73 : **1-7		05,16
OSCILLATOR 1 FILTER				
286	TYPE	0:LPF+RESO, 1:LPF+HPF		06,00
287	TRIM	00~~63 : 00~~99		06,01
288	RESONANCE	00~~63 : 00~~99		06,02
289	A.M.SOURCE(RESO.)	00~~2A : **1-4	Alternate Modulation	06,03

290	INT BY A.M.(RESO.)	9D~~63 : -99~~99		06,04
291	A.M.SOURCE(EG)	00~~2A : **1-4	Alternate Modulation	06,05
292	A.M.SOURCE(LFO1)	00~~2A : **1-4	Alternate Modulation	06,06
293	A.M.SOURCE(LFO2)	00~~2A : **1-4	Alternate Modulation	06,07
	OSCILLATOR 1 FILTER A			
294	FREQUENCY	00~~63 : 00~~99		07,00
295	KBD TRACK INTENSITY	9D~~63 : -99~~99		07,01
296	A.M.SOURCE(MOD1)	00~~2A : **1-4	Alternate Modulation	07,02
297	INT BY A.M.(MOD1)	9D~~63 : -99~~99		07,03
298	A.M.SOURCE(MOD2)	00~~2A : **1-4	Alternate Modulation	07,04
299	INT BY A.M.(MOD2)	9D~~63 : -99~~99		07,05
300	EG INTENSITY	9D~~63 : -99~~99		07,06
301	EG VELOCITY	9D~~63 : -99~~99		07,07
302	INT BY LFO 1	9D~~63 : -99~~99		07,08
303	INT BY LFO 2	9D~~63 : -99~~99		07,09
304	LFO 1 BY JS(-Y)	9D~~63 : -99~~99		07,0A
305	LFO 2 BY JS(-Y)	9D~~63 : -99~~99		07,0B
306	INT BY A.M.(EG)	9D~~63 : -99~~99	Alternate Modulation	07,0C
307	INT BY A.M.(LFO1)	9D~~63 : -99~~99	Alternate Modulation	07,0D
308	INT BY A.M.(LFO2)	9D~~63 : -99~~99	Alternate Modulation	07,0E
	OSCILLATOR 1 FILTER B			
309 : 323	Same as OSCILLATOR 1 FILTER B (294~~308) (15 Bytes)			08,00 : 08,0E
	OSCILLATOR 1 FILTER EG			
324	START LEVEL	9D~~63 : -99~~99		09,00
325	ATTACK TIME	00~~63 : 00~~99		09,01
326	ATTACK LEVEL	9D~~63 : -99~~99		09,02
327	DECAY TIME	00~~63 : 00~~99		09,03
328	BREAK POINT LEVEL	9D~~63 : -99~~99		09,04
329	SLOPE TIME	00~~63 : 00~~99		09,05
330	SUSTAIN LEVEL	9D~~63 : -99~~99		09,06
331	RELEASE TIME	00~~63 : 00~~99		09,07
332	RELEASE LEVEL	9D~~63 : -99~~99		09,08
b7~~b6	RELEASE (A.M.TIME1)	FF:-, 0:OFF, 1:+		09,12
b5~~b4	SLOPE (A.M.TIME1)	FF:-, 0:OFF, 1:+		09,11
333 b3~~b2	DECAY (A.M.TIME1)	FF:-, 0:OFF, 1:+		09,10
b1~~b0	ATTACK (A.M.TIME1)	FF:-, 0:OFF, 1:+		09,0F
b7~~b6	RELEASE (A.M.TIME2)	FF:-, 0:OFF, 1:+		09,16
b5~~b4	SLOPE (A.M.TIME2)	FF:-, 0:OFF, 1:+		09,15
334 b3~~b2	DECAY (A.M.TIME2)	FF:-, 0:OFF, 1:+		09,14
b1~~b0	ATTACK (A.M.TIME2)	FF:-, 0:OFF, 1:+		09,13
b5~~b4	BREAK (A.M.LEVEL)	FF:-, 0:OFF, 1:+		09,19
335 b3~~b2	ATTACK (A.M.LEVEL)	FF:-, 0:OFF, 1:+		09,18
b1~~b0	START (A.M.LEVEL)	FF:-, 0:OFF, 1:+		09,17
336	A.M.SOURCE(TIME1)	00~~2A : **1-4	Alternate Modulation	09,09
337	INT BY A.M.(TIME1)	9D~~63 : -99~~99		09,0A

338	A.M.SOURCE(TIME2)	00~~2A : **1-4	Alternate Modulation	09,0B
339	INT BY A.M.(TIME2)	9D~~63 : -99~~99		09,0C
340	A.M.SOURCE(LEVEL)	00~~2A : **1-4	Alternate Modulation	09,0D
241	INT BY A.M.(LEVEL)	9D~~63 : -99~~99		09,0E
	OSCILLATOR 1 FILTER KEYBOARD TRACK			
342	KEY LOW	00~~7F : C-1~~G9		0A,00
343	RAMP LOW	9D~~63 : -99~~99		0A,01
344	KEY HIGH	00~~7F : C-1~~G9		0A,02
345	RAMP HIGH	9D~~63 : -99~~99		0A,03
	OSCILLATOR 1 AMPLIFIER			
346	LEVEL	00~~7F : 00~~127		0B,00
347	INT BY VELOCITY	9D~~63 : -99~~99		0B,01
348	A.M.SOURCE	00~~2A : **1-4	Alternate Modulation	0B,02
349	INT BY A.M.	9D~~63 : -99~~99		0B,03
350	INT BY LFO 1	9D~~63 : -99~~99		0B,04
351	INT BY LFO 2	9D~~63 : -99~~99		0B,05
352	A.M.SOURCE(LFO1)	00~~2A : **1-4	Alternate Modulation	0B,06
353	INT BY A.M.(LFO1)	9D~~63 : -99~~99		0B,07
354	A.M.SOURCE(LFO2)	00~~2A : **1-4	Alternate Modulation	0B,08
355	INT BY A.M.(LFO2)	9D~~63 : -99~~99		0B,09
	OSCILLATOR 1 AMPLIFIER EG			
356	START LEVEL	00~~63 : 00~~99		0C,00
357	ATTACK TIME	00~~63 : 00~~99		0C,01
358	ATTACK LEVEL	00~~63 : 00~~99		0C,02
359	DECAY TIME	00~~63 : 00~~99		0C,03
360	BREAK POINT LEVEL	00~~63 : 00~~99		0C,04
361	SLOPE TIME	00~~63 : 00~~99		0C,05
362	SUSTAIN LEVEL	00~~63 : 00~~99		0C,06
363	RELEASE TIME	00~~63 : 00~~99		0C,07
364	A.M.SOURCE(TIME1)	00~~2A : **1-4	Alternate Modulation	0C,08
365	INT BY A.M.(TIME1)	9D~~63 : -99~~99		0C,09
366	A.M.SOURCE(TIME2)	00~~2A : **1-4	Alternate Modulation	0C,0A
367	INT BY A.M.(TIME2)	9D~~63 : -99~~99		0C,0B
368	A.M.SOURCE(LEVEL)	00~~2A : **1-4	Alternate Modulation	0C,0C
369	INT BY A.M.(LEVEL)	9D~~63 : -99~~99		0C,0D
370 b0~~1	ATTACK (A.M.TIME1)	FF:-, 0:OFF, 1:+		0C,0E
370 b2~~3	DECAY (A.M.TIME1)	FF:-, 0:OFF, 1:+		0C,0F
370 b4~~5	SLOPE (A.M.TIME1)	FF:-, 0:OFF, 1:+		0C,10
370 b6~~7	RELEASE (A.M.TIME1)	FF:-, 0:OFF, 1:+		0C,11
371 b0~~1	ATTACK (A.M.TIME2)	FF:-, 0:OFF, 1:+		0C,12
371 b2~~3	DECAY (A.M.TIME2)	FF:-, 0:OFF, 1:+		0C,13
371 b4~~5	SLOPE (A.M.TIME2)	FF:-, 0:OFF, 1:+		0C,14
371 b6~~7	RELEASE (A.M.TIME2)	FF:-, 0:OFF, 1:+		0C,15
372 b0~~1	START (A.M.LEVEL)	FF:-, 0:OFF, 1:+		0C,16
372 b2~~3	ATTACK (A.M.LEVEL)	FF:-, 0:OFF, 1:+		0C,17

	b4~~5 | BREAK (A.M.LEVEL)	FF:-, 0:OFF, 1:+		0C,18
273	(RESERVED)			----
	OSCILLATOR 1 AMPLIFIER KEYBOARD TRACK			
374	KEY LOW	00~~7F : C-1~~G9		0D,00
375	RAMP LOW	9D~~63 : -99~~99		0D,01
376	KEY HIGH	00~~7F : C-1~~G9		0D,02
377	RAMP HIGH	9D~~63 : -99~~99		0D,03
	OSCILLATOR 1 OUTPUT			
278	(RESERVED)			----
379	PAN	00:RND, 01~~7F : L001~~R127		0E,00
380	A.M.SOURCE(PAN)	00~~2A : **1-4	Alternate Modulation	0E,01
381	INT BY A.M.(PAN)	9D~~63 : -99~~99		0E,02
382	SEND1 (TO MFX1)	00~~7F: 00~~127		0E,03
383	SEND2 (TO MFX2)	00~~7F: 00~~127		0E,04
	OSCILLATOR 2			
384 : 537	Same as OSCILLATOR 1 (230~~383) (154 Bytes)			0F,00 : 1B,0E
538 : 539	(RESERVED)			----

**1-1 :
0 : Equal Temperament 1 : Pure Major 2 : Pure Minor
3 : Arabic 4 : Pythagoras 5 : Werkmeister
6 : Kirnberger 7 : Slendro 8 : Pelog
9 : Stretch A : User All Notes Scale
B~~1A : User Octave Scale 00 ~~15

**1-2 :
0 : OFF 1 : SW 1/2 Mod:CC#80/CC#81 2 : Porta SW 3 : Octave Down
4 : Octave Up 5 : JS X Lock 6 : JS+Y Lock 7 : JS-Y Lock
8 : Ribbon Lock 9 : JS X & Ribbon Lock A : JS+Y & Ribbon Lock B : JS-Y & Ribbon Lock
C : After Touch Lock

**1-3 :
0:Off 1:Knob Mod.1:CC#17 2:Knob Mod.2:CC#19 3:Knob Mod.3:CC#20
4:Knob Mod.4:CC#21 5:Master Volume 6:Portamento Time:CC#05 7:Volume:CC#07
8:Post IFX Pan:CC#08 9:Pan:CC#10 A:Expression:CC#11 B:FX Control 1:CC#12
C:FX Control 2:CC#13 D:LPFCutoff:CC#74 E:Resonance/HPF:CC#71 F:Filter EG Int.:CC#79
10:F/A Attack:CC#73 11:F/A Decay:CC#75 12:F/A Sustain:CC#70 13:F/A Release:CC#72
14:Pitch LFO1 Spd:CC#76 15:Pitch LFO1 Dep:CC#77 16:Pitch LFO1 Dly:CC#78 17:SW 1 Mod.:CC#80
18:SW 2 Mod.:CC#81 19:Foot Switch:CC#82 1A:MIDI CC#83 1B:MFX Send 1:CC#93
1C:MFX Send 2:CC#91 1D~~7C:MIDI CC#00~~MIDI CC#95

**1-4 :
0 : Off 1 : Pitch EG 2 : Filter EG 3 : Amp EG
4 : LFO 1 5 : LFO 2 6 : Flt KTrk +/+ 7 : Flt KTrk +/-
8 : Flt KTrk 0/+ 9 : Flt KTrk +/0 A : Amp KTrk +/+ B : Amp KTrk +/-
C : Amp KTrk 0/+ D : Amp KTrk +/0 E : Note Number F : Velocity
10 : Poly After 11 : After Touch 12 : JS X 13 : JS+Y:CC#01
14 : JS-Y:CC#02 15 : JS+Y & AT/2 16 : JS-Y & AT/2 17 : Pedal:CC#04
18 : Ribbon:CC#16 19 : Slider:CC#18 1A : KnobMod1:#17 1B : KnobMod2:#19
1C : KnobMod3:#20 1D : KnobMod4:#21 1E : KnobMod1 [+] 1F : KnobMod2 [+]
20 : KnobMod3 [+] 21 : KnobMod4 [+] 22 : Damper:#64 23 : Porta.SW:#65
24 : Sostenuto:#66 25 : Soft:CC#67 26 : SW 1:CC#80 27 : SW 2:CC#81
28 : Foot SW:#82 29 : MIDI:CC#83 2A : Tempo

**1-5 :

Data	Time[mSec]	Step
00~~19 :	00~~ 50	(2mSec)
1A~~28 :	60~~ 200	(10mSec)
29~~38 :	250~~1000	(50mSec)
39~~60 :	1100~~5000	(100mSec)
61 :	KeyOff	

**1-6 :
0 : Triangle 0 1 : Triangle 90 2 : Triangle Random 3 : Saw 0
4 : Saw 180 5 : Square 6 : Sine 7 : Guitar
8 : Exponential Triangle 9 : Exponential Saw Down A : Exponential Saw Up B : Step Triangle-4
C : Step Triangle-6 D : Step Saw-4 E : Step Saw-6 F : Random1 (S/H)
10 : Random2 (S/H) 11 : Random3 (S/H) 12 : Random4 (Vector) 13 : Random5 (Vector)
14 : Random6 (Vector)

**1-7 :

8D~~C3 :	-12.00~~ -1.20	(0.20 Step)
C4~~CD :	-1.00~~ -0.55	(0.05 Step)
CE~~32 :	-0.50~~ +0.50	(0.01 Step)
33~~3C :	+0.55~~ +1.00	(0.05 Step)
3D~~73 :	+1.20~~+12.00	(0.20 Step)

[TABLE 2-1] MOSS PROGRAM PARAMETERS (for Optional EXB-MOSS)

No. : No. in the PROGRAM DUMP DATA.
PARA No. : Parameter ID & SUB ID [Hex] for PARAMETER CHANGE.
Left side of ',' is Parameter ID, and right side is SUB ID.

No. (bit)	PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	PARA No.
00	PROGRAM NAME (Head)			
	:	20~~7F		----
15	PROGRAM NAME (Tail)			
	INSERT EFFECT PARAMETERS			
16				1E,00
:	FX1~~5 (24Bytes * 5)			:
135	(120 Bytes)			4D,??
	MASTER EFFECT PARAMETERS			
136				24,00
:	FX1~~2 (20Bytes * 2)			:
:	Return, Chain & EQ (16 bytes)			:
191	(56 Bytes)			4E,??
	ARPEGGIATOR PARAMETERS			
192				4B,00
	Same as PROGRAM [TABLE 1] ARPEGGIATOR (192~~213)			:
203	(12 Bytes)			4C,0D
	COMMON PARAMETERS			
b0~~1	(OSCILLATOR MODE)	3	3 Fixed (Means MOSS)	-----
b2~~3	VOICE ASSIGN	0:Mono Multi, 1:Mono Single, 2:Poly		28,03
204 b4~~5	KEY PRIORITY	0:Low, 1:High, 2:Last	Available when MONO	28,02
bit6	(Ignore)			
bit7	HOLD	0:OFF, 1:ON		28,01
205	BUS SELECT	00:L/R,01~~05:IFX1~~5,06~~09:1~~4,0A:1/2,0B:3/4,0C:Off		28,09
206	CATEGORY	00~~0F : 01~~16		28,00
207	SCALE TYPE	00~~1A : **1-1		28,0A
208	SCALE KEY	00~~0B : C ~~ B		28,0B
209	RANDOM INTENSITY	00~~63 : 0~~99		28,0C
210	SW 1			
b0~~5	ASSIGN	00~~0C : **1-2		28,0D
bit6	MODE	0:Toggle, 1:Momentary		28,11
bit7	SW	0:OFF, 1:ON		28,0E
211	SW 2 (Same as SW 1 (210))			28,10~~12
b0~~6	KNOB 1 ASSIGN TYPE	00~~7C : **1-3		28,13
212 bit7	REALTIME CONTROLS	0:A, 1:B		28,17
213	KNOB 2 ASSIGN	00~~7C : **1-3		28,14
214	KNOB 3 ASSIGN	00~~7C : **1-3		28,15
215	KNOB 4 ASSIGN	00~~7C : **1-3		28,16
	RETRIGGER CONTROL			
216	RETRIGGER CONTROLLER	00,0B~~29 : *2-1		28,04
217	THRESHOLD VELOCITY	01~~7F : 1~~127		28,05
	UNISON			
b0~~1	UNISON TYPE	0:OFF, 1:2voices, 2:3voices, 3:6voices		28,06
218 bit2	(UNISON SW)	1	1 Fixed (Means Enable)	-----
bit3	UNISON MODE	0:Fixed, 1:Dynamic		28,07
219	UNISON DETUNE	00~~63 : 0~~99		28,08
	EG1			
220	START LEVEL	9D~~63 : -99~~99		36,00

221	ATTACK TIME	00~~63 : 0~~99		36,01
222	ATTACK LEVEL	9D~~63 : -99~~99		36,02
223	DECAY TIME	00~~63 : 0~~99		36,03
224	BREAK LEVEL	9D~~63 : -99~~99		36,04
225	SLOPE TIME	00~~63 : 0~~99		36,05
226	SUSTAIN LEVEL	9D~~63 : -99~~99		36,06
227	RELEASE TIME	00~~63 : 0~~99		36,07
228	RELEASE LEVEL	9D~~63 : -99~~99		36,08
229	LEVEL AMS	00~~29 : *2-1	Alternate Modulation	36,09
230	INTENSITY	9D~~63 : -99~~99		36,0A
231	VELOCITY CONTROL	9D~~63 : -99~~99		36,0B
232	TIME AMS 1	00~~29 : *2-1	Alternate Modulation	36,0C
233	INTENSITY	9D~~63 : -99~~99		36,0D
234	TIME AMS 2	00~~29 : *2-1	Alternate Modulation	36,0E
235	ATTACK INTENSITY	9D~~63 : -99~~99		36,0F
236	DECAY INTENSITY	9D~~63 : -99~~99		36,10
237	SLOPE INTENSITY	9D~~63 : -99~~99		36,11
238	RELEASE INTENSITY	9D~~63 : -99~~99		36,12
EG 2 ~~ 4				
239 : 257	EG 2 (Same as EG 1 (220 ~~ 238)) (19 Bytes)			See above 18 parameters. ParamID = 37
258 : 276	EG 3 (Same as EG 1 (220 ~~ 238)) (19 Bytes)			See above 18 parameters. ParamID = 38
277 : 295	EG 4 (Same as EG 1 (220 ~~ 238)) (19 Bytes)			See above 18 parameters. ParamID = 39
LFO 1				
b0~~5	WAVEFORM	00:Triangle 0, 01:Triangle 90, 02:Triangle Random, 03:Sine, 04:Saw Up 0, 05:Saw Up 180, 06:Saw Down 0, 07:Saw Down 180, 08:Square, 09:Random-S/H, 0A:Random-Vector, 0B:Step Triangle-4, 0C:Step Triangle-6, 0D:Step Saw-4, 0E:Step Saw-6, 0F:Exponential Triangle, 10:Exponential Saw Up, 11:Exponential Saw Down		3A,00
296 b6~~7	KEY SYNC.	0:Off, 1:byTimbre, 2:byVoice		3A,01
297	FREQUENCY	00~~C7 : 0~~199		3A,02
298	FREQUENCY AMS 1	00~~29 : *2-1	Alternate Modulation	3A,03
299	INTENSITY	9D~~63 : -99~~99		3A,04
300	FREQUENCY AMS 2	00~~29 : *2-1	Alternate Modulation	3A,05
301	INTENSITY	9D~~63 : -99~~99		3A,06
302	FADE IN	00~~63 : 0~~99		3A,07
303	AMPLITUDE AMS	00~~29 : *2-1	Alternate Modulation	3A,08
304	INTENSITY	9D~~63 : -99~~99		3A,09
305	OFFSET	CE~~32 : -50~~50		3A,0A
b0~~3	MIDI/TEMPO SYNC. TIMES	00~~0F : 1~~16		3A,0D
306 b4~~6	BASE NOTE	0:16,1:8T,2:8,3:4T,4:4,5:2T,6:2,7:1		3A,0C
bit7	SYNC. SW	0:OFF, 1:ON		3A,0B
LFO 2 ~~ 4				
307				See above 14

:	LFO 2 (Same as LFO 1 (296 ~~ 306))			parameters.
317	(11 Bytes)			ParamID = 3B
318				See above 14
:	LFO 3 (Same as LFO 1 (296 ~~ 306))			parameters.
328	(11 Bytes)			ParamID = 3C
329				See above 14
:	LFO 4 (Same as LFO 1 (296 ~~ 306))			parameters.
339	(11 Bytes)			ParamID = 3D
OSC COMMON PITCH MODULATION				
340	JS(+X) INTENSITY	C4~~18 : -60~~24		29,04
341	JS(-X) INTENSITY	C4~~18 : -60~~24		29,05
342 b0~~3	PITCH BEND STEP JS(+X)	00:Continuous, 01:1/8, 02:1/4, 03:1/2, 05~~0F:01~~12		29,06
b4~~7	JS(-X)			29,07
343	COMMON PITCH AMS	00~~29 : *2-1	Alternate Modulation	29,02
344	INTENSITY	9D~~63 : -99~~99		29,03
PORTAMENTO				
bit0	ENABLE SW	0:OFF, 1:ON		29,08
345 bit1	FINGERED MODE SW	0:OFF, 1:ON		29,09
346	PORTAMENTO TIME	00~~63 : 0~~99		29,0A
347	TIME AMS	00~~29 : *2-1	Alternate Modulation	29,0B
348	INTENSITY	9D~~63 : -99~~99		29,0C
OSC 1				
349	OSC TYPE	(Single Size) 00:Standard, 01:Comb Filter, 02:VPM, 03:Resonance, 04:Ring Mod, 05:Cross Mod, 06:Sync Mod, 07:Organ Model, 08:E.Piano Model, (Double Size) 09:Brass Model, 0A:Reed Model, 0B:Plucked String Model, 0C:Bowed String Model		29,00
350	OCTAVE	00:-2[32'], 01:-1[16'], 02:0[8'], 03:1[4']		2A,00
351	TRANSPOSE	F4~~0C : -12~~12		2A,01
352	TUNE	CE~~32 : -50~~50 [cent]		2A,02
353	FREQUENCY OFFSET	9C~~64 : -10.0~~10.0 [Hz]		2A,03
	PITCH SLOPE			
354	CENTER KEY	00~~7F : C-1~~G9		2A,04
355	RAMP LOW	CE~~64 : -1.00~~2.00	0.01 by step.	2A,05
356	RAMP HIGH	CE~~64 : -1.00~~2.00		2A,06
357	PITCH AMS 1	00~~29 : *2-1	Alternate Modulation	2A,07
358	INTENSITY	9D~~63 : -99~~99		2A,08
359	AMS 1 INTENSITY AMS	00~~29 : *2-1	Alternate Modulation	2A,09
360	INTENSITY	9D~~63 : -99~~99		2A,0A
361	PITCH AMS 2	00~~29 : *2-1	Alternate Modulation	2A,0B
362	INTENSITY	9D~~63 : -99~~99		2A,0C
363				
:	OSC SET 38 bytes (Parameters are determined by OSC TYPE. See [Table 2-2].)			
400				
OSC 2				
401	OSC TYPE	(SingleSize Only) 00:Standard, 01:Comb Filter, 02:VPM, 03:Resonance, 04:Ring Mod, 05:Cross Mod, 06:Sync Mod, 07:Organ Model, 08:E.Piano Model		29,01
402	OSC 2			See above 51
:	(Much the same as OSC 1 (350 ~~ 400), except OSC TYPE.)			parameters.
452	(51 Bytes)			ParamID = 2B
SUB OSC				
453	OCTAVE	00:-2[32'], 01:-1[16'], 02:0[8'], 03:1[4']		2C,00

454	TRANSPOSE	F4~~0C : -12~~12		2C,01
455	TUNE	CE~~32 : -50~~50 [cent]		2C,02
456	FREQUENCY OFFSET	9C~~64 : -10.0~~10.0 [Hz]		2C,03
457	PITCH SLOPE CENTER KEY	00~~7F : C-1~~G9		2C,04
458	RAMP LOW	CE~~64 : -1.00~~2.00	0.01 by step.	2C,05
459	RAMP HIGH	CE~~64 : -1.00~~2.00		2C,06
460	PITCH AMS 1	00~~29 : *2-1	Alternate Modulation	2C,07
461	INTENSITY	9D~~63 : -99~~99		2C,08
462	AMS 1 INTENSITY AMS	00~~29 : *2-1	Alternate Modulation	2C,09
463	INTENSITY	9D~~63 : -99~~99		2C,0A
464	PITCH AMS 2	00~~29 : *2-1	Alternate Modulation	2C,0B
465	INTENSITY	9D~~63 : -99~~99		2C,0C
466	WAVEFORM	0:Saw, 1:Square, 2:Triangle, 3:Sine		2D,00
NOISE GENERATOR				
467	NOISE FILTER TYPE	0:THRU, 1:LPF, 2:HPF, 3:BPF		2D,01
468	FILTER INPUT TRIM	00~~63 : 00~~99		2D,02
469	FILTER FREQUENCY	00~~63 : 00~~99		2D,03
460	FREQUENCY AMS 1	00~~29 : *2-1	Alternate Modulation	2D,04
471	INTENSITY	9D~~63 : -99~~99		2D,05
472	FREQUENCY AMS 2	00~~29 : *2-1	Alternate Modulation	2D,06
473	INTENSITY	9D~~63 : -99~~99		2D,07
474	FILTER RESONANCE	00~~63 : 00~~99		2D,08
OSC MIXER				
475	OSC 1 -> Mixer1 LEVEL	00~~63 : 00~~99		2E,00
476	LEVEL AMS	00~~29 : *2-1	Alternate Modulation	2E,01
477	INTENSITY	9D~~63 : -99~~99		2E,02
478 : 480	OSC 1 -> Mixer2	(Same as OSC 1 -> Mixer1 (475 ~~ 477))	See above 3 parameters.	SUB ID = 03~~05
481 : 483	OSC 2 -> Mixer1	(Same as OSC 1 -> Mixer1 (475 ~~ 477))	See above 3 parameters.	SUB ID = 06~~08
484 : 486	OSC 2 -> Mixer2	(Same as OSC 1 -> Mixer1 (475 ~~ 477))	See above 3 parameters.	SUB ID = 09~~0B
487 : 489	SUB OSC -> Mixer1	(Same as OSC 1 -> Mixer1 (475 ~~ 477))	See above 3 parameters.	SUB ID = 0C~~0E
490 : 492	SUB OSC -> Mixer2	(Same as OSC 1 -> Mixer1 (475 ~~ 477))	See above 3 parameters.	SUB ID = 0F~~11
493 : 495	Noise -> Mixer1	(Same as OSC 1 -> Mixer1 (475 ~~ 477))	See above 3 parameters.	SUB ID = 12~~14
496 : 498	Noise -> Mixer2	(Same as OSC 1 -> Mixer1 (475 ~~ 477))	See above 3 parameters.	SUB ID = 15~~17
499 : 501	Feedback -> Mixer1	(Same as OSC 1 -> Mixer1 (475 ~~ 477))	See above 3 parameters.	SUB ID = 18~~1A
502 : 504	Feedback -> Mixer2	(Same as OSC 1 -> Mixer1 (475 ~~ 477))	See above 3 parameters.	SUB ID = 1B~~1D
	(INPUT SW)			

	bit0	OSC 1	1	1 Fixed (Means Enable)	-----
	bit1	OSC 2	1	1 Fixed (Means Enable)	-----
505	bit2	SUB OSC	1	1 Fixed (Means Enable)	-----
	bit3	Noise	1	1 Fixed (Means Enable)	-----
	FILTER ROUTING				
	b0~~1	ROUTING	0:Serial 1, 1:Serial 2, 2:Parallel		2F,OO
506	bit2	LINK SW	0:OFF, 1:ON		2F,01
	FILTER 1				
507		FILTER TYPE	0:LPF(A), 1:HPF(A), 2:BPF(A), 3:BRF(A), 4:DualBP(A/B)		30,00
508		INPUT TRIM	00~~63 : 00~~99		30,01
509		FILTER FREQUENCY	00~~63 : 00~~99		30,02
510		FREQUENCY KBD TRACK KEY LOW	00~~7F : C-1~~G9		30,03
511		KEY HIGH	00~~7F : C-1~~G9		30,04
512		RAMP LOW	9D~~63 : -99~~99		30,05
513		RAMP HIGH	9D~~63 : -99~~99		30,06
514		FREQUENCY MOD.EG	00~~04 : EG1~~4, AmpEG	Alternate Modulation	30,07
515		INTENSITY	9D~~63 : -99~~99		30,08
516		FILTER AMS 1	00~~29 : *2-1	Alternate Modulation	30,09
517		INTENSITY	9D~~63 : -99~~99		30,0A
518		FILTER AMS 2	00~~29 : *2-1	Alternate Modulation	30,0B
519		INTENSITY	9D~~63 : -99~~99		30,0C
520		FILTER RESONANCE	00~~63 : 00~~99		30,0D
521		RESONANCE AMS	00~~29 : *2-1	Alternate Modulation	30,0E
522		INTENSITY	9D~~63 : -99~~99		30,0F
523		B:INPUT TRIM	00~~63 : 00~~99		32,00
524		B:FILTER FREQUENCY	00~~63 : 00~~99		32,01
525		B:FREQ. KBD TRACK KEY LOW	00~~7F : C-1~~G9		32,02
526		KEY HIGH	00~~7F : C-1~~G9		32,03
527		RAMP LOW	9D~~63 : -99~~99		32,04
528		RAMP HIGH	9D~~63 : -99~~99		32,05
529		B:FREQ. EG INTENSITY	9D~~63 : -99~~99	Alternate Modulation	32,06
530		B:FREQ. AMS 1 INT.	9D~~63 : -99~~99	Alternate Modulation	32,07
531		B:FREQ. AMS 2 INT.	9D~~63 : -99~~99	Alternate Modulation	32,08
532		B:FILTER RESONANCE	00~~63 : 00~~99		32,09
533		B:RESONANCE INT.	9D~~63 : -99~~99	Alternate Modulation	32,0a
534 : 560		FILTER 2 (Same as FILTER 1 (507 ~~ 533)) (27 Bytes)		See above 27 parameters. ParamID = 31 or (B:) 33	
	AMPLIFIER 1				
561		AMP LEVEL	00~~63 : 00~~99		34,00
562		KEYBOARD TRACK KEY LOW	00~~7F : C-1~~G9		34,01
563		KEY HIGH	00~~7F : C-1~~G9		34,02
564		RAMP LOW	9D~~63 : -99~~99		34,03
565		RAMP HIGH	9D~~63 : -99~~99		34,04
566		MOD.EG	00~~04 : EG1~~4, AmpEG		34,05

567	(Reserved)	99	99 Fixed	-----
568	AMS	00~~29 : *2-1	Alternate Modulation	34,06
569	INTENSITY	9D~~63 : -99~~99		34,07
570 : 578	AMPLIFIER 2 (Same as AMPLIFIER 1 (561 ~~ 569)) (9 Bytes)		See above 8 parameters. PARA No. :34,08~~34,0F	
AMP EG				
579	(Reserved)	0	0 Fixed	-----
580	ATTACK TIME	00~~63 : 0~~99		35,00
581	ATTACK LEVEL	00~~63 : 0~~99		35,01
582	DECAY TIME	00~~63 : 0~~99		35,02
583	BREAK LEVEL	00~~63 : 0~~99		35,03
584	SLOPE TIME	00~~63 : 0~~99		35,04
585	SUSTAIN LEVEL	00~~63 : 0~~99		35,05
586	RELEASE TIME	00~~63 : 0~~99		35,06
587	(Reserved)	0	0 Fixed	-----
588	LEVEL AMS	00~~29 : *2-1	Alternate Modulation	35,07
589	INTENSITY	9D~~63 : -99~~99		35,08
590	VELOCITY CONTROL	9D~~63 : -99~~99		35,09
591	TIME AMS 1	00~~29 : *2-1	Alternate Modulation	35,0A
592	INTENSITY	9D~~63 : -99~~99		35,0B
593	TIME AMS 2	00~~29 : *2-1	Alternate Modulation	35,0C
594	ATTACK INTENSITY	9D~~63 : -99~~99		35,0D
595	DECAY INTENSITY	9D~~63 : -99~~99		35,0E
596	SLOPE INTENSITY	9D~~63 : -99~~99		35,0F
597	RELEASE INTENSITY	9D~~63 : -99~~99		35,10
OUTPUT LEVEL/PAN				
598	PAN	00~~7F : L000~~R127		34,10
599	PAN AMS	00~~29 : *2-1	Alternate Modulation	34,11
600	INTENSITY	9D~~63 : -99~~99		34,12
601	OUTPUT LEVEL	00~~7F : 0~~127		34,13
602	SEND 1	00~~7F : 0~~127		34,14
603	SEND 2	00~~7F : 0~~127		34,15

[TABLE 2-2] MULTI OSCILLATOR PARAMETERS (for Optional EXB-MOSS)

1999.05.07

No. : No. in the OSC SET (38 bytes).
SUB ID : Right side of '/' is SUB ID for OSC 2.

No. (bit)	PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	SUB ID
MULTI OSCILLATOR PARAMETERS 38 Bytes				
0:Standard			ParamID = 3E	
	WAVE			
00	WAVE	0:Saw, 1:Pulse		00/16
01	WAVE EDGE	00~~63 : 0~~99		01/17
02	LEVEL	00~~63 : 0~~99		02/18
03	TRIANGLE LEVEL	00~~63 : 0~~99		03/19
04	SINE LEVEL	00~~63 : 0~~99		04/1A
05	PHASE SHIFT	9D~~63 : -99~~99		05/1B

	WAVEFORM			
06	WAVEFORM	9D~~63 : -99~~99		06/1C
07	MOD. LFO	00~~03 : LFO 1 ~~ 4	Alternate Modulation	07/1D
08	INTENSITY	9D~~63 : -99~~99		08/1E
09	AMS	00~~29 : *2-1	Alternate Modulation	09/1F
10	INTENSITY	9D~~63 : -99~~99		0A/20
	WAVE SHAPE			
11	INPUT LEVEL	00~~63 : 0~~99		0B/21
12	INPUT LEVEL AMS	00~~29 : *2-1	Alternate Modulation	0C/22
13	INTENSITY	9D~~63 : -99~~99		0D/23
14	OFFSET	9D~~63 : -99~~99		0E/24
15	TYPE	0:Clip, 1:Reso		0F/25
16	SHAPE	00~~63 : 0~~99		10/26
17	SHAPE AMS	00~~29 : *2-1	Alternate Modulation	11/27
18	INTENSITY	9D~~63 : -99~~99		12/28
19	BALANCE	00~~63 : 0~~99		13/29
20	BALANCE AMS	00~~29 : *2-1	Alternate Modulation	14/2A
21	INTENSITY	9D~~63 : -99~~99		15/2B
22~~37	(Reserved)	0	0 Fixed	-----
1:Comb Filter				ParamID = 3F
	INPUT			
00	INPUT WAVE	0:OSC2(1)+Noise, 1:Sub OSC+Noise, 2:Filter1+Noise, 3:Filter2+Noise, 4:Pulse Noise, 5:Impulse		00/0E
01	INPUT WAVE LEVEL	00~~63 : 0~~99		01/0F
02	NOISE LEVEL	00~~63 : 0~~99		02/10
03	PULSE WIDTH	00~~63 : 0~~99		03/11
04	INPUT LEVEL AMS	00~~29 : *2-1	Alternate Modulation	04/12
05	INTENSITY	9D~~63 : -99~~99		05/13
	FEEDBACK			
06	FEEDBACK	00~~63 : 0~~99		06/14
07	AMS 1	00~~29 : *2-1	Alternate Modulation	07/15
08	INTENSITY	9D~~63 : -99~~99		08/16
09	AMS 2	00~~29 : *2-1	Alternate Modulation	09/17
10	INTENSITY	9D~~63 : -99~~99		0A/18
	HIGH DAMP			
11	HIGH DAMP	00~~63 : 0~~99		0B/19
12	AMS	00~~29 : *2-1	Alternate Modulation	0C/1A
13	INTENSITY	9D~~63 : -99~~99		0D/1B
14~~37	(Reserved)	0	0 Fixed	-----
2:VPM				ParamID = 40
	CARRIER			
00	WAVE	0:Saw, 1:Square, 2:Triangle, 3:Sine		00/19
01	WAVE LEVEL	00~~63 : 0~~99		01/1A
02	LEVEL AMS 1	00~~29 : *2-1	Alternate Modulation	02/1B
03	INTENSITY	9D~~63 : -99~~99		03/1C
04	LEVEL AMS 2	00~~29 : *2-1	Alternate Modulation	04/1D
05	INTENSITY	9D~~63 : -99~~99		05/1E
06	WAVE SHAPE	00~~63 : 0~~99		06/1F
07	SHAPE AMS 1	00~~29 : *2-1	Alternate Modulation	07/20

08	INTENSITY	9D~~63 : -99~~99		08/21
09	SHAPE AMS 2	00~~29 : *2-1	Alternate Modulation	09/22
10	INTENSITY	9D~~63 : -99~~99		0A/23
11	WAVE SHAPE TYPE	00~~01 : 1~~2		0B/24
12	FEEDBACK	00~~63 : 0~~99		0C/25
	MODULATOR			
13	FREQUENCY COARSE	00~~10 : 0.5~~16		0D/26
14	FREQUENCY FINE	CE~~32 : -50~~50		0E/27
15	FREQUENCY AMS 1	00~~29 : *2-1	Alternate Modulation	0F/28
16	INTENSITY	9D~~63 : -99~~99		10/29
17	FREQUENCY AMS 2	00~~29 : *2-1	Alternate Modulation	11/2A
18	INTENSITY	9D~~63 : -99~~99		12/2B
19	WAVE	0:Saw, 1:Square, 2:Triangle, 3:Sine 4:OSC2(1), 5:Sub OSC, 6:Filter1, 7:Filter2		13/2C
20	WAVE LEVEL	00~~63 : 0~~99		14/2D
21	LEVEL AMS 1	00~~29 : *2-1	Alternate Modulation	15/2E
22	INTENSITY	9D~~63 : -99~~99		16/2F
23	LEVEL AMS 2	00~~29 : *2-1	Alternate Modulation	17/30
24	INTENSITY	9D~~63 : -99~~99		18/31
25~~37	(Reserved)	0	0 Fixed	-----

3:Resonance				ParamID = 41
	INPUT			
00	INPUT WAVE	0:OSC2(1), 1:Sub OSC, 2:Noise, 3:Filter1, 4:Filter2		00/20
01	INPUT WAVE LEVEL	00~~63 : 0~~99		01/21
02	LEVEL AMS 1	00~~29 : *2-1	Alternate Modulation	02/22
03	INTENSITY	9D~~63 : -99~~99		03/23
04	LEVEL AMS 2	00~~29 : *2-1	Alternate Modulation	04/24
05	INTENSITY	9D~~63 : -99~~99		05/25
	BPF 1			
06	RESONANCE	00~~63 : 0~~99		06/26
07	FREQUENCY COARSE	00~~0F : 01~~16		07/27
08	FREQUENCY AMS	00~~29 : *2-1	Alternate Modulation	08/28
09	INTENSITY	F1~~0F : -15~~15		09/29
10	FREQUENCY FINE	9D~~63 : -99~~99		0A/2A
11	LEVEL	00~~63 : 0~~99		0B/2B
	BPF 2			
12	RESONANCE	00~~63 : 0~~99		0C/2C
13	FREQUENCY COARSE	00~~0F : 01~~16		0D/2D
14	FREQUENCY AMS	00~~29 : *2-1	Alternate Modulation	0E/2E
15	INTENSITY	F1~~0F : -15~~15		0F/2F
16	FREQUENCY FINE	9D~~63 : -99~~99		10/30
17	LEVEL	00~~63 : 0~~99		11/31
	BPF 3			
18	RESONANCE	00~~63 : 0~~99		12/32
19	FREQUENCY COARSE	00~~0F : 01~~16		13/33
20	FREQUENCY AMS	00~~29 : *2-1	Alternate Modulation	14/34
21	INTENSITY	F1~~0F : -15~~15		15/35
22	FREQUENCY FINE	9D~~63 : -99~~99		16/36
23	LEVEL	00~~63 : 0~~99		17/37

	BPF 4			
24	RESONANCE	00~~63 : 0~~99		18/38
25	FREQUENCY COARSE	00~~0F : 01~~16		19/39
26	FREQUENCY AMS	00~~29 : *2-1	Alternate Modulation	1A/3A
27	INTENSITY	F1~~0F : -15~~15		1B/3B
28	FREQUENCY FINE	9D~~63 : -99~~99		1C/3C
29	LEVEL	00~~63 : 0~~99		1D/3D
	RESONANCE MODULATION			
30	AMS	00~~29 : *2-1	Alternate Modulation	1E/3E
31	INTENSITY	9D~~63 : -99~~99		1F/3F
32~~37	(Reserved)	0	0 Fixed	-----
4:Ring Modulation				ParamID = 42
	WAVE			
00	INPUT WAVE	0:OSC2(1), 1:Sub OSC, 2:Noise, 3:Filter1, 4:Filter2		00/09
01	CARRIER WAVE	0:Saw, 1:Square, 2:Triangle, 3:Sine		01/0A
	MODULATION DEPTH			
02	DEPTH	00~~63 : 0~~99		02/0B
03	DEPTH AMS 1	00~~29 : *2-1	Alternate Modulation	03/0C
04	INTENSITY	9D~~63 : -99~~99		04/0D
05	DEPTH AMS 2	00~~29 : *2-1	Alternate Modulation	05/0E
06	INTENSITY	9D~~63 : -99~~99		06/0F
07	TYPE	00~~01 : 1~~2		07/10
08	WAVE EDGE	00~~63 : 0~~99		08/11
09~~37	(Reserved)	0	0 Fixed	-----
5:Cross Modulation				ParamID = 43
	WAVE			
00	INPUT WAVE	0:OSC2(1), 1:Sub OSC, 2:Noise, 3:Filter1, 4:Filter2		00/08
01	CARRIER WAVE	0:Saw, 1:Square, 2:Triangle, 3:Sine		01/09
	MODULATION DEPTH			
02	DEPTH	00~~63 : 0~~99		02/0A
03	DEPTH AMS 1	00~~29 : *2-1	Alternate Modulation	03/0B
04	INTENSITY	9D~~63 : -99~~99		04/0C
05	DEPTH AMS 2	00~~29 : *2-1	Alternate Modulation	05/0D
06	INTENSITY	9D~~63 : -99~~99		06/0E
07	WAVE EDGE	00~~63 : 0~~99		07/0F
08~~37	(Reserved)	0	0 Fixed	-----
6:Sync Modulation				ParamID = 44
	WAVE			
00	INPUT WAVE	0:OSC2(1), 1:Sub OSC, 2:Noise, 3:Filter1, 4:Filter2		00/03
01	SLAVE WAVE	0:Saw, 1:Square, 2:Triangle, 3:Sine		01/04
02	WAVE EDGE	00~~63 : 0~~99		02/05
03~~37	(Reserved)	0	0 Fixed	-----
7:Organ Model				ParamID = 45
	DRAWBAR 1			
00	WAVE	0:Sine1, 1:Sine2, 2:Sine3, 3:Triangle		00/19
01	HARMONICS COARSE	00~~0F: 1('16)~~16('1)		01/1A
02	HARMONICS FINE	9D~~63 : -99~~99		02/1B
03	LEVEL	00~~63 : 0~~99		03/1C
04	LEVEL AMS	00~~29 : *2-1	Alternate Modulation	04/1D

05	INTENSITY	9D~~63 : -99~~99		05/1E
06	PERCUSSION LEVEL	00~~63 : 0~~99		06/1F
	DRAWBAR 2			
07	WAVE	0:Sine1, 1:Sine2, 2:Sine3, 3:Triangle		07/20
08	HARMONICS COARSE	00~~0F: 1('16)~~16('1)		08/21
09	HARMONICS FINE	9D~~63 : -99~~99		09/22
10	LEVEL	00~~63 : 0~~99		0A/23
11	LEVEL AMS	00~~29 : *2-1	Alternate Modulation	0B/24
12	INTENSITY	9D~~63 : -99~~99		0C/25
13	PERCUSSION LEVEL	00~~63 : 0~~99		0D/26
	DRAWBAR 3			
14	WAVE	0:Sine1, 1:Sine2, 2:Sine3, 3:Triangle		0E/27
15	HARMONICS COARSE	00~~0F: 1('16)~~16('1)		0F/28
16	HARMONICS FINE	9D~~63 : -99~~99		10/29
17	LEVEL	00~~63 : 0~~99		11/2A
18	LEVEL AMS	00~~29 : *2-1	Alternate Modulation	12/2B
19	INTENSITY	9D~~63 : -99~~99		13/2C
20	PERCUSSION LEVEL	00~~63 : 0~~99		14/2D
	PERCUSSION GENERATOR			
21	TRIGGER MODE	0:Single, 1:Multi		15/2E
22	DECAY	00~~63 : 0~~99		16/2F
23	LEVEL AMS	00~~29 : *2-1	Alternate Modulation	17/30
24	INTENSITY	9D~~63 : -99~~99		18/31
25~~37	(Reserved)	0	0 Fixed	-----
8:E.Piano Model				ParamID = 46
	HAMMER			
00	FORCE	00~~63 : 0~~99		00/0E
01	VELOCITY CURVE	FF:Off, 0~~63 : 0~~99		01/0F
02	WIDTH	00~~63 : 0~~99		02/10
03	CLICK NOISE LEVEL	00~~63 : 0~~99		03/11
	TONE GENERATOR			
04	DECAY	00~~63 : 0~~99		04/12
05	RELEASE	00~~63 : 0~~99		05/13
	OVERTONE			
06	LEVEL	00~~63 : 0~~99		06/14
07	FREQUENCY	00~~63 : 0~~99		07/15
08	DECAY	00~~63 : 0~~99		08/16
	PICKUP			
09	LOCATION	00~~63 : 0~~99		09/17
10	LOCATION AMS	00~~29 : *2-1	Alternate Modulation	0A/18
11	INTENSITY	9D~~63 : -99~~99		0B/19
	LOW EQ			
12	FREQUENCY	00~~31 : 0~~49		0C/1A
13	GAIN	EE~~12 : -18~~18 [dB]		0D/1B
14~~37	(Reserved)	0	0 Fixed	-----
9:Brass Model				ParamID = 47
00	INSTRUMENT TYPE	00~~02:Brass1~~3, 03~~04:Horn1~~2, 05:Reed Brass		00
	JUMP BEND SW			
bit0	JS(+X)	0:OFF, 1:ON		01
01				
bit1	JS(-X)	0:OFF, 1:ON		02

	BREATH PRESSURE			
02	MOD. EG	00~~04 : EG 1~~4, AmpEG	Alternate Modulation	03
03	INTENSITY	9D~~63 : -99~~99		04
04	AMS 1	00~~29 : *2-1	Alternate Modulation	05
05	INTENSITY	9D~~63 : -99~~99		06
06	AMS 2	00~~29 : *2-1	Alternate Modulation	07
07	INTENSITY	9D~~63 : -99~~99		08
08	(Reserved)	0	0 Fixed	-----
	LIP CHARACTER			
09	LIP	00~~63 : 0~~99		09
10	AMS	00~~29 : *2-1	Alternate Modulation	0A
11	INTENSITY	9D~~63 : -99~~99		0B
12~~14	(Reserved)			-----
	BELL CHARACTER			
15	TONE	00~~63 : 0~~99		0C
16	RESONANCE	00~~63 : 0~~99		0D
17	BREATH NOISE	00~~63 : 0~~99		0E
18~~27	(Reserved)			-----
	PEAKING EQ			
28	FREQUENCY	00~~31 : 0~~49		0F
29	Q	00~~1D : 0~~29		10
30	GAIN	EE~~12 : -18~~18 [dB]		11
31	STRENGTH	00~~63 : 0~~99		12
32~~37	(Reserved)			-----

10:Reed Model			ParamID = 48
00	INSTRUMENT TYPE	00~~02:Hard Sax 1~~3, 03~~04:Soft Sax 1~~2, 05~~06:Double Reed 1~~2, 07:Bassoon, 08:Clarinet, 09~~0A:Flute 1~~2, 0B:Pan Flute, 0C:Ocarina, 0D:Shakuhachi, 0E~~0F:Harmonica 1~~2, 10:Reed Synth	00
	JUMP BEND SW		
bit0	JS(+X)	0:OFF, 1:ON	01
01			
bit1	JS(-X)	0:OFF, 1:ON	02
	BREATH PRESSURE		
02	MOD. EG	00~~04 : EG 1~~4, AmpEG	Alternate Modulation	03
03	INTENSITY	9D~~63 : -99~~99		04
04	AMS 1	00~~29 : *2-1	Alternate Modulation	05
05	INTENSITY	9D~~63 : -99~~99		06
06	AMS 2	00~~29 : *2-1	Alternate Modulation	07
07	INTENSITY	9D~~63 : -99~~99		08
08~~12	(Reserved)			-----
13	BREATH NOISE	00~~63 : 0~~99		09
14~~25	(Reserved)			-----
	REED CHARACTER			
26	AMS	00~~29 : *2-1	Alternate Modulation	0A
27	INTENSITY	9D~~63 : -99~~99		0B
	BELL CHARACTER			
28	TONE	00~~63 : 0~~99		0C
29	RESONANCE	00~~63 : 0~~99		0D
	PEAKING EQ			
30	FREQUENCY	00~~31 : 0~~49		0E
31	Q	00~~1D : 0~~29		0F
32	GAIN	EE~~12 : -18~~18 [dB]		10

33	(Reserved)			-----
	WAVE SHAPE			
34	OFFSET	9D~~63 : -99~~99		11
b0~~6	SHAPE	00~~63 : 0~~99		12
35				
bit7	TYPE	0:Clip, 1:Reso		13
36	SHAPE AMS	00~~29 : *2-1	Alternate Modulation	14
37	INTENSITY	9D~~63 : -99~~99		15
11:Plucked String Model				ParamID = 49
	ATTACK			
00	LEVEL	00~~63 : 0~~99		00
01	VELOCITY CTRL	9D~~63 : -99~~99		01
02	CURVE UP	00~~63 : 0~~99		02
03	VELOCITY CTRL	9D~~63 : -99~~99		03
04	CURVE DOWN	00~~63 : 0~~99		04
05	VELOCITY CTRL	9D~~63 : -99~~99		05
06	NOISE LEVEL	00~~63 : 0~~99		06
07	VELOCITY CTRL	9D~~63 : -99~~99		07
	STRING			
08	PICKING POINT	00~~63 : 0~~99		08
09	POINT AMS	00~~29 : *2-1	Alternate Modulation	09
10	INTENSITY	9D~~63 : -99~~99		0A
11	DISPERSION	00~~63 : 0~~99		0B
12	DISPERSION AMS	00~~29 : *2-1	Alternate Modulation	0C
13	INTENSITY	9D~~63 : -99~~99		0D
14	DAMP	00~~63 : 0~~99		0E
15	DAMP KBD TRACK	9D~~63 : -99~~99		0F
16	DAMP AMS	00~~29 : *2-1	Alternate Modulation	10
17	INTENSITY	9D~~63 : -99~~99		11
18	DECAY	00~~63 : 0~~99		12
19	DECAY KBD TRACK	9D~~63 : -99~~99		13
20	RELEASE	00~~63 : 0~~99		14
	HARMONICS			
21	HARMONICS POINT	00~~63 : 0~~99		15
22	HARMONICS CTRL	00~~29 : *2-1		16
23	INTENSITY	9D~~63 : -99~~99		17
	PICKUP			
24	SW	0:OFF, 1:ON		18
25	LOCATION	00~~63 : 0~~99		19
26	LOCATION AMS	00~~29 : *2-1	Alternate Modulation	1A
27	INTENSITY	9D~~63 : -99~~99		1B
	LOW EQ			
28	FREQUENCY	00~~31 : 0~~49		1C
29	GAIN	EE~~12 : -18~~18 [dB]		1D
30	LOW BOOST	00~~63 : 0~~99		1E
31~~37	(Reserved)	0	0 Fixed	-----
12:Bowed String Model				ParamID = 4A
	BOW SPEED			
00	MOD. EG	00~~04 : EG 1~~4, AmpEG	Alternate Modulation	00
01	INTENSITY	9D~~63 : -99~~99		01

02	AMS 1	00~~29 : *2-1	Alternate Modulation	02
03	INTENSITY	9D~~63 : -99~~99		03
04	AMS 2	00~~29 : *2-1	Alternate Modulation	04
05	INTENSITY	9D~~63 : -99~~99		05
06	DIFFERENTIAL	0:OFF, 1:ON		06
07	BOW PRESSURE MOD. EG	00~~04 : EG 1~~4, AmpEG	Alternate Modulation	07
08	INTENSITY	9D~~63 : -99~~99		08
09	AMS	00~~29 : *2-1	Alternate Modulation	09
10	INTENSITY	9D~~63 : -99~~99		0A
11	ROSIN	00~~63 : 0~~99		0B
12	STRING BOWING POINT	00~~63 : 0~~99		0C
13	POINT AMS	00~~29 : *2-1	Alternate Modulation	0D
14	INTENSITY	9D~~63 : -99~~99		0E
15	DAMP	00~~63 : 0~~99		0F
16	DAMP KBD TRACK KEY	00~~7F : C-1~~G9		10
17	RAMP LOW	9D~~63 : -99~~99		11
18	RAMP HIGH	9D~~63 : -99~~99		12
19	DAMP AMS	00~~29 : *2-1	Alternate Modulation	13
20	INTENSITY	9D~~63 : -99~~99		14
21	DISPERSION	00~~63 : 0~~99		15
22	DISPERSION AMS	00~~29 : *2-1	Alternate Modulation	16
23	INTENSITY	9D~~63 : -99~~99		17
24	REFLECTION	00~~63 : 0~~99		18
25	REFLECTION AMS	00~~29 : *2-1	Alternate Modulation	19
26	INTENSITY	9D~~63 : -99~~99		1A
27	PEAKING EQ FREQUENCY	00~~31 : 0~~49		1B
28	Q	00~~1D : 0~~29		1C
29	GAIN	EE~~12 : -18~~18 [dB]		1D
30~~37	(Reserved)			-----

*2-1 : Alternate Modulation Source for MOSS

00 : Off,	01 : EG 1,	02 : EG 2,	03 : EG 3,
04 : EG 4,	05 : Amp EG,	06 : LFO 1,	07 : LFO 2,
08 : LFO 3,	09 : LFO 4,	0A : Portamento,	0B : Note No. Linear,
0C : Note No. Exp.,	0D : Note Split High,	0E : Note Split Low,	0F : Velocity Soft,
10 : Velocity Med.,	11 : Velocity Hard,	12 : After Touch,	13 : JS X,
14 : JS +Y:CC#01,	15 : JS -Y:CC#02,	16 : JS +Y & AT/2,	17 : JS -Y & AT/2,
18 : Pedal:CC#04,	19 : Ribbon:CC#16,	1A : Ribbon +X,	1B : Ribbon -X,
1C : Slider:CC#18,	1D : KnobMod1:#17,	1E : KnobMod2:#19,	1F : KnobMod3:#20,
20 : KnobMod4:#21,	21 : KnobMod1 [+],	22 : KnobMod2 [+],	23 : KnobMod3 [+],
24 : KnobMod4 [+],	25 : Damper:#64,	26 : SW 1:CC#80,	27 : SW 2:CC#81,
28 : Foot SW:#82,	29 : MIDI:CC#83		

[TABLE 3] 1 COMBINATION PARAMETERS 1999.05.11

PARA No. : Parameter ID & SUB ID [HEX] for PARAMETER CHANGE. n : Timbre No.(1~~8:T1~~T8)

No. (bit)	PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	PARA No.
00	COMBI. NAME (Head)			
:	:	20~~7F		----
15	COMBI. NAME (Tail)			
	INSERT EFFECT PARAMETERS			
16				0C,00
:	FX1~~5 (24Bytes * 5)			:
135	(120 Bytes)			11,??
	MASTER EFFECT PARAMETERS			
136				12,00
:	FX1~~2 (20Bytes * 2)			:
:	Return, Chain & EQ (16 Bytes)			:
191	(56 Bytes)			15,??
	ARPEGGIATOR PARAMETERS			
192	TEMPO	28~~F0 : 40~~240		09,00
bit0	SWITCH	0:OFF, 1:ON		09,01
193 bit1	ARPEGGIATOR RUN A	0:OFF, 1:ON		09,02
bit2	ARPEGGIATOR RUN B	0:OFF, 1:ON		09,03
	ARPEGGIATOR A			
194	PATTERN NO.	00~~EC : 0~~237		0A,00
b0~~1	OCTAVE	00~~03 : 1~~4		0A,02
195 b2~~4	RESOLUTION	0:16T, 1:16, 2:8T, 3:8, 4:4T, 5:4		0A,01
196	GATE	00~~64 : 0~~100[%], 65:Step		0A,03
197	VELOCITY	01~~7F : 1~~127, 80:Key, 81:Step		0A,04
198	SWING	9C~~64 : -100~~100		0A,05
bit0	SORT	0:OFF, 1:ON		0A,06
bit1	LATCH	0:OFF, 1:ON		0A,07
199 bit2	KEY SYNC.	0:OFF, 1:ON		0A,08
bit3	KEYBOARD	0:OFF, 1:ON		0A,09
200	TOP KEY	00~~7F : C-1~~G9		0A,0A
201	BOTTOM KEY	00~~7F : C-1~~G9		0A,0B
202	TOP VELOCITY	01~~7F : 1~~127		0A,0C
203	BOTTOM VELOCITY	01~~7F : 1~~127		0A,0D
	ARPEGGIATOR B			
204				0B,00
:	Same as ARPEGGIATOR A (194~~203)			:
213	(10 Bytes)			0B,0D
	COMMON PARAMETERS			
b0~~3	CATEGORY	00~~0F : 0~~15		00,00
214 b4~~7	MOSS BUS SELECT	00~~07 : TIMBRE1~~8		00,0F
215	SCALE TYPE	00~~1A : **1-1		00,01
216	SCALE KEY	00~~0B : C~~B		00,02
217	RANDOM INTENSITY	00~~07 : 0~~7	Normal = 0	00,03
b0~~5	SW 1 ASSIGN TYPE	00~~0C : **1-2		00,04
218 bit6	SW1 TOGGLE/MOMENTARY	0:Toggle, 1:Momentary		00,08
bit7	SW 1 ON/OFF	0:OFF, 1:ON		00,06
b0~~5	SW 2 ASSIGN TYPE	00~~0C : **1-2		00,05
219 bit6	SW2 TOGGLE/MOMENTARY	0:Toggle, 1:Momentary		00,09
bit7	SW 2 ON/OFF	0:OFF, 1:ON		00,07

	b0~~6	KNOB 1 ASSIGN TYPE	00~~7C : **1-3		00,0A
220	bit7	REALTIME CONTROLS	0:A, 1:B		00,0E
221		KNOB 2 ASSIGN TYPE	00~~7C : **1-3		00,0B
222		KNOB 3 ASSIGN TYPE	00~~7C : **1-3		00,0C
223		KNOB 4 ASSIGN TYPE	00~~7C : **1-3		00,0D
TIMBRE 1 PARAMETER					
224		PROGRAM NO.	00~~7F : 00~~127		n,00
225		PROGRAM BANK	00~~10 : Bank A~~g(d)		n,00
226	b0~~b4	MIDI CHANNEL	00~~0F : MIDI Channel 1~~16, 10:Global Channel		n,04
	b5~~b7	STATUS	0:INT, 1:Off, 2:EXT, 3:EX2		n,03
227		BANK SELECT MSB	00~~7F : 00~~127	Available only when status is EXT2.	n,05
228		BANK SELECT LSB	00~~7F : 00~~127		n,06
229		VOLUME	00~~7F : 00~~127		n,02
230		PITCH BEND RANGE	E7:PROG, E8~~18 : -24~~24		n,0C
231		TRANSPOSE	E8~~18 : -24~~24		n,0A
232		DETUNE MSB	FB50~~4B0: -1200~~1200		n,0B
233		DETUNE LSB			
234		DELAY START	00~~60,61 : **1-5		n,0D
235		PAN	00:RND, 01~~7F : L001~~R127		n,01
236		SEND 1 LEVEL	00~~7F : 00~~127		n,29
237		SEND 2 LEVEL	00~~7F : 00~~127		n,2A
238	b0~~ 2	DRUMKIT IFX4 Patch			n,2E
	b3~~ 5	DRUMKIT IFX5 Patch			n,2F
239	b0~~ 2	DRUMKIT IFX1 Patch	0:IFX1, 1:IFX2, 2:IFX3, 3:IFX4, 4:IFX5, 5:L/R		n,2B
	b3~~ 5	DRUMKIT IFX2 Patch			n,2C
	b6~~ 8	DRUMKIT IFX3 Patch			n,2D
240		BUS SELECT	0:DKit,1:L/R,2~~6:IFX1~~5,7~~A:1~~4,B:1/2,C:3/4,D:Off		n,28
241	bit0	PROGRAM CHANGE FILT	0:DIS, 1:ENA		n,0F
	bit1	AFTER TOUCH FILTER	0:DIS, 1:ENA		n,10
	bit2	DAMPER FILTER	0:DIS, 1:ENA		n,11
	bit3	PORTAMENTO FILTER	0:DIS, 1:ENA		n,12
	bit4	JS(X) AS AMS FILTER	0:DIS, 1:ENA		n,13
	bit5	JS(Y+) FILTER	0:DIS, 1:ENA		n,14
	bit6	JS(Y-) FILTER	0:DIS, 1:ENA		n,15
	bit7	RIBBON FILTER	0:DIS, 1:ENA		n,16
	bit0	ASSIGN KNOB 1 FILTER	0:DIS, 1:ENA		n,17
	bit1	ASSIGN KNOB 2 FILTER	0:DIS, 1:ENA		n,18
	bit2	ASSIGN KNOB 3 FILTER	0:DIS, 1:ENA		n,19
242	bit3	ASSIGN KNOB 4 FILTER	0:DIS, 1:ENA		n,1A
	bit4	ASSIGN SW 1 FILTER	0:DIS, 1:ENA		n,1B
	bit5	ASSIGN SW 2 FILTER	0:DIS, 1:ENA		n,1C
	bit6	FOOT PEDAL/SW FILTER	0:DIS, 1:ENA		n,1D
	bit7	OTHER CONTROL FILTER	0:DIS, 1:ENA		n,1E
	b0,1	FORCE OSC MODE	0:Program, 1:Poly, 2:Mono, 3:Mono Legate		n,07
	b2,3	OSC SELECT	0:BOTH, 1:OSC1, 2:OSC2		n,08
243	b4,5	ARPEGGIATOR ASSIGN	0:OFF, 1:A, 2:B		n,27

	bit6	USE PROGRAM'S SCALE	0:DIS, 1:ENA	n,0E
244		PORTAMENT TIME	FF:PRG, 00:Off, 01~~7F : 1~~127	n,09
245		KEY Z TOP	00~~7F : C-1~~G9	n,1F
246		KEY Z BOTTOM	00~~7F : C-1~~G9	n,22
	b0~~3	KEY Z TOP SLOPE	0~~F: **3-1	n,20
247	b4~~7	KEY Z BOTTOM SLOPE	0~~F: **3-1	n,21
248		VEL Z TOP	01~~7F : 1~~127	n,23
249		VEL Z BOTTOM	01~~7F : 1~~127	n,26
	b0~~3	VEL Z TOP SLOPE		n,24
250	b4~~7	VEL Z BOTTOM SLOPE	0~~F : 0~~120 (Vel fade slope = Para value * 8)	n,25
251		MOSS VOICE	00~~06: 0~~6	n,30
	TIMBRE 2~~8 PARAMETERS			
252				n,00
:		Same as TIMBRE 1 (224~~251)		:
447		(28 * 7 = 196 Bytes)		n,30

**3-1 : 0 : 0 1 : 1 (Semi tone) 2 : 2 3 : 3
4 : 4 5 : 6 (0.5 Oct) 6 : 8 7 : 10
8 : 12 (1 Oct) 9 : 18 (1.5 Oct) A : 24 (2 Oct) B : 30 (2.5 Oct)
C : 36 (3 Oct) D : 48 (4 Oct) E : 60 (5 Oct) F : 72 (6 Oct)

[TABLE 4] GLOBAL PARAMETERS 1999.05.11
No. : No. in the GLOBAL DUMP DATA.

No. (bit)	PARAMETER	DATA(Hex) : VALUE	DESCRIPTION
GLOBAL PARAMETER			
00	MASTER TUNE	CE~~32 : -50~~50[Cent]	
01	KEY TRANSPOSE	F4~~0C : -12~~12	
02	VELOCITY CURVE	0~~7 : 1~~8	
03	AFTER TOUCH CURVE	0~~7 : 1~~8	
	bit0	FOOT SW POLARITY	0:-, 1:+
	bit1	DAMPER POLARITY	0:-, 1:+
04	bit2	CONVERT POSITION	0:PreMIDI, 1:PostMIDI
	bit3	PROG AUTO ARP	0:OFF, 1:ON
	bit4	COMBI AUTO ARP	0:OFF, 1:ON
05		FOOT SW ASSIGN	00~~0A : **4-1
06		FOOT PEDAL ASSIGN	00~~0B : **4-2
07		(RESERVED)	
08		USER SCALE (Octave)	9D~~63 : -99~~99 [Cent]
:			
199		(12*16 Bytes)	
200		USER SCALE (All Notes)	9D~~63 : -99~~99 [Cent]
:			
327		(128 Bytes)	
328		PROG CATEGORY NAME	20~~7F [ASCII CODE]
:			
583		(16*16 Bytes)	
584		COMBI CATEGORY NAME	20~~7F [ASCII CODE]
:			
839		(16*16 Bytes)	
AUDIO INPUT 1			
840		LEVEL	00~~7F : 00~~127
841		PAN	00~~7F : L000~~R127
842		SEND 1 LEVEL	00~~7F : 00~~127

843	SEND 2 LEVEL	00~~7F : 00~~127	
844	BUS SELECT	00:L/R,01~~05:IFX1~~5,06~~09:1~~4,0A:1/2,0B:3/4,0C:Off	
AUDIO INPUT 2			
845 : 849	Same as AUDIO INPUT 1 (840~~844) (5 Bytes)		

**4-1 : 0 : OFF 1 : FOOT SW:CC#82 2 : PORTAMENTO SW:CC#65 3 : SOSTENUTO:CC#66
4 : SOFT:CC#67 5 : ARPEGGIO SW 6 : PROGRAM UP 7 : PROGRAM DOWN
8 : SONG START/STOP 9 : SONG PUNCH IN/OUT A : CUE REPEAT CONTROL

**4-2 : 0 : OFF 1 : MASTER VOLUME 2 : FOOT PEDAL:CC#04 3 : PORTAMENTO TIME:CC#05
4 : VOLUME:CC#07 5 : POST IFX PAN:CC#08 6 : PAN:CC#10 7 : EXPRESSION:CC#11
8 : FX CONTROL 1:CC#12 9 : FX CONTROL 2:CC#13 A : MFX SEND 1:CC#93 B : MFX SEND 2:CC#91

[TABLE 5] Parameter No. at COMBINATION PLAY mode
n(=0~~7) : Timbre 1~~8

PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	PARA No.
TIMBRE PARAMETER			
BANK/PROGRAM	00~~87F : A000~~g(d)128		n,00
PAN	00:RND, 01~~7F : L001~~R127		n,01
VOLUME	00~~7F : 0~~127		n,02
STATUS	0:INT, 1:Off, 2:EXT, 3:EX2		n,03
ARPEGGIO PARAMETER			
TEMPO	28~~F0 : 40~~240		08,00
SWITCH	0:OFF, 1:ON		08,01
ARPEGGIATOR RUN A	0:OFF, 1:ON		08,02
ARPEGGIATOR RUN B	0:OFF, 1:ON		08,03
GATE	C0~~3F : -64~~63	Arpeggiator gate knob parameter	08,04
VELOCITY	C0~~3F : -64~~63	Arpeggiator velocity knob parameter	08,05
ARPEGGIATOR-A PARAMETER			
PATTERN NO.	00~~EC : 0~~236		09,00
RESOLUTION	0:16T, 1:16, 2:8T, 3:8, 4:4T, 5:4		09,01
OCTAVE	00~~03 : 1~~4		09,02
SORT	0:OFF, 1:ON		09,06
LATCH	0:OFF, 1:ON		09,07
KEY SYNC.	0:OFF, 1:ON		09,08
KEYBOARD	0:OFF, 1:ON		09,09
ARPEGGIATOR-B PARAMETER			
Same as ARPEGGIATOR-A PARAMETER			0A,00~~09
SWITCH PARAMETER			
SW 1 ON/OFF	0:OFF, 1:ON		0B,00
SW 2 ON/OFF	0:OFF, 1:ON		0B,01
REALTIME CONTROLS	0:A, 1:B		0B,02

[TABLE 6] Parameter No. at PROGRAM PLAY mode

PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	PARA No.
PERFORMANCE EDITOR			
OCTAVE	FD~~03 : -3~~3		00,00
PITCH STRETCH	F4~~0C : -12~~12	Only for PCM program	00,01
OSC BALANCE	F6~~0A : -10~~10		00,02

AMP LEVEL	F6~~0A : -10~~10		00,03
ATTACK TIME	F6~~0A : -10~~10		00,04
DECAY TIME	F6~~0A : -10~~10		00,05
IFX BALANCE	F6~~0A : -10~~10		00,06
MFX BALANCE	F6~~0A : -10~~10		00,07
ARPEGGIATOR PARAMETER	Under Parameter's right side of '/' is Parameter ID of EXB-MOSS.		
TEMPO	28~~F0 : 40~~240		01/03,00
SWITCH	0:OFF, 1:ON		01/03,01
GATE	C0~~3F : -64~~63	Arpeggiator gate knob parameter	01/03,02
VELOCITY	C0~~3F : -64~~63	Arpeggiator velocity knob parameter	01/03,03
PATTERN NO.	00~~EC : 0~~236		02/04,00
RESOLUTION	0:16T, 1:16, 2:8T, 3:8, 4:4T, 5:4		02/04,01
OCTAVE	00~~03 : 1~~4		02/04,02
SORT	0:OFF, 1:ON		02/04,06
LATCH	0:OFF, 1:ON		02/04,07
KEY SYNC.	0:OFF, 1:ON		02/04,08
KEYBOARD	0:OFF, 1:ON		02/04,09
SWITCH PARAMETER	Under Parameter's right side of '/' is Parameter ID of EXB-MOSS.		
SW 1 ON/OFF	0:OFF, 1:ON		05/06,00
SW 2 ON/OFF	0:OFF, 1:ON		05/06,01
REALTIME CONTROLS	0:A, 1:B		05/06,02

[TABLE 7] 1 DRUMKIT PARAMETERS 1999.05.11

No. : No. in the DRUMKIT DUMP DATA.

No. (bit)	PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	PARA No.
00 : 15	DRUMKIT NAME (Head) : DRUMKIT NAME (Tail)	20~~7F		----
KEY=C-1 PARAMETERS				
16	HIGHER BANK	0:ROM, 1:RAM, ~~???	??? is depend on PCM option.	00/0B
bit0 17 bit1	HIGHER START OFFSET HIGHER REVERSE	0:OFF, 1:ON 0:OFF, 1:ON		02/0D 03/0E
18 19	HIGH SAMPLE NO(MSB) HIGH SAMPLE NO(LSB)	00~~19C : 00~~412	Higher Vel's Drumsample	01/0C
20	HIGHER LEVEL	9D~~63 : -99~~99		04/0F
21	HIGHER TRANSPOSE	C0~~3F : -64~~63		05/10
22	HIGHER TUNE	9D~~63 : -99~~99		06/11
23	HIGHER ATTACK LEVEL	C0~~3F : -64~~63		07/12
24	HIGHER DECAY LEVEL	C0~~3F : -64~~63		08/13
25	HIGHER CUTOFF LEVEL	C0~~3F : -64~~63		09/14
26	HIGH RESONANCE LEVEL	C0~~3F : -64~~63		0A/15
27	(RESERVED)			----
28 : 39	LOWER Same as HIGHER (16~~27) (12 Bytes)	(Above Parameter's right side of '/' is PARA No. of LOWER.)		
40	PAN	00:RND, 01~~7F : L001~~R127		16
41	BUS SELECT	00:L/R,01~~05:IFX1~~5,06~~09:1~~4,0A:1/2,0B:3/4,0C:Off		17
42	SEND 1 LEVEL	00~~7F: 00~~127		18

43	SEND 2 LEVEL	00~~7F: 00~~127		19
44	EXCLUSIVE GROUP	00:Off, 01~~7F : 001~~127		1A
bit0	VOICE ASSIGN	0:OFF, 1:ON		1B
bit1	SINGLE TRIGGER	0:OFF, 1:ON		1C
45 bit2	RECEIVE NOTE ON	0:DIS, 1:ENA		1D
bit3	RECEIVE NOTE OFF	0:DIS, 1:ENA		1E
46	VEL SAMPLE SW	01~~7F : 01~~127	For DRUMSAMPLE SELECT by Vel	1F
47	(RESERVED)			----
KEY=C#-1~~G9 PARAMETERS				
48 : 4111	Same as KEY=C-1 (16~~47) (127 * 32 = 4064 Bytes)			00 : 1F

[TABLE 8] 1 ARPEGGIO PATTERN PARAMETERS 1999.05.11

No. : No. in the ARPEGGIO PATTERN DUMP DATA.

No. (bit)	PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	PARA No.
00 : 15	ARP. NAME (Head) : ARP. NAME (Tail)	20~~7F		----
b0~~1	OCTAVE MOTION	0:Up, 1:Down, 2:Both, 3:Parallel		01
b2~~3	TYPE	0:As Played,1:As Played(Fill),2:Running Up,3:Up&Down		00
16 bit4	TONE MODE	0:Normal, 1:Fixed Note		03
bit5	FIXED NOTE MODE	0:As Played, 1:All Tones		04
17	LENGTH	01~~30 : 1~~48		02
18	(RESERVED)			----
19	(RESERVED)			----
20	TONE 00 NOTE NO	00~~7F : C-1~~G9		05
21 : 31	TONE 01~~11 NOTE NO Same as TONE 00 NOTE NO (11 Bytes)			05 : 05
STEP 01 PARAMETERS				
32	PITCH OFFSET	D0~~30 : -48~~48		06
33	GATE	0:Off, 01~~64 : 1~~100[%], 65:Legato		07
34	VELOCITY	01~~7F : 1~~127, 80:Key		08
35	FLAM	9D~~63 : -99~~99		09
36 b0~~3	TONE9~~12	0:DIS, 1:ENA		0A
37 b0~~7	TONE1~~8	0:DIS, 1:ENA		: 15
STEP 02~~48 PARAMETERS				
38 : 319	Same as STEP 01 (32~~37) (6 * 47 = 282 Bytes)			06 : 15
----	ARPEGGIATOR SELECT	0:A, 1:B	It's not dump data.	16

[TABLE 9] Arpegiator Parameter No. at GLOBAL

PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	PARA No.
PATTERN NO.	00~~EC : 0~~236		68,00
RESOLUTION	0:16T, 1:16, 2:8T, 3:8, 4:4T, 5:4		68,01
OCTAVE	00~~03 : 1~~4		68,02
SORT	0:OFF, 1:ON		68,06
LATCH	0:OFF, 1:ON		68,07
KEY SYNC.	0:OFF, 1:ON		68,08

KEYBOARD	0:OFF, 1:ON		68,09

[TABLE 10] SEQUENCE DATA PARAMETERS 1999.05.12

00	EVENT DATA START ADRESS(MSB)	
:	: (4 Bytes)	
03	EVENT DATA START ADRESS(LSB)	
04	EVENT DATA FREE AREA START ADRESS(MSB)	
:	: (4 Bytes)	
07	EVENT DATA FREE AREA START ADRESS(LSB)	
08	SONG 00 EVENT DATA ADRESS(MSB)	
:	: (4 Bytes)	
11	SONG 00 EVENT DATA ADRESS(LSB)	
12	SONG 001~~199, EVENT DATA ADRESS	
:	Same as SONG 00 EVENT (08~~11)	
807	(4 * 199 = 796 Bytes)	
808	CURRENT SONG NO.	00~~C7 : 00~~199
809	CURRENT PAT NO.	00~~95 : 00~~149
810	CURRENT FX SONG NO.	00~~C7 : 00~~199
811	VALID SONG	00~~C8 : 00~~200
812	VALID SONG NO.	
:		00~~C7 : 00~~199
1011	(200 Bytes)	

[TABLE 11] 1 CUE LIST DATA 1999.05.13

CUE LIST		
00	CUE LIST NAME (Head)	
:	:	20~~7F
15	CUE LIST NAME (Tail)	
16	TEMPO	28~~F0 : 40~~240
17	TEMPO MODE	0:AUTO, 1:MANUAL
18	(RESERVED)	
19	(RESERVED)	
STEP 01		
20	SONG NO.	0~~C7 : S000~~S199 FE : Continue to step01 FF : End
21 b0~~6	REPEAT	00~~3F:1~~64, 7F:FS
21 bit7	Load FX	0:OFF, 1:ON
STEP 02~~100		
22		
:	Same as STEP 01 (20~~21)	
219	(2 * 99 = 198 Bytes)	

[TABLE 12] 1 SONG SEQUENCE DATA 1999.05.12

SONG		
00	SONG NAME (Head)	
:	:	20~~7F
15	SONG NAME (Tail)	
INSERT EFFECT PARAMETERS		
16		
:	FX1~~5 (24Bytes * 5)	
135	(120 Bytes)	
MASTER EFFECT PARAMETERS		
136		
:	FX1~~2 (20Bytes * 2)	
:	Return, Chain & EQ (16 Bytes)	
191	(56 Bytes)	
ARPEGGIATOR PARAMETERS		

192 : 213	Same as COMBI.ARPEGGIATOR (192~~213) (22 Bytes)	
COMMON PARAMETERS		
214 : 223	Same as COMBI.COMMON PARAMETER (214~~223) (9 Bytes)	
TRACK 1~~16 PARAMETERS		
224 : 671	Same as TIMBRE 1 (224~~251) (28 * 16 = 448 Bytes)	
SONG CONTROL DATA		
672	RPPR ON/OFF	0:OFF, 1:ON
673	TRACK SELECT	0~~F,10:TRK01~~15,MASTER
674	(RESERVED)	
675	(RESERVED)	
676	METER	**12-1
677	TEMPO	28~~F0 : 40~~240
678	METRONOME LEVEL	00~~7F : 00~~127
679	METRONOME BUS SELECT	0:L/R,1:L,2:R,3~~6:1~~4, 7:1/2,8:3/4
680	METRONOME PRECOUNT	00~~02 : 0~~2
681	TEMPO MODE	0:AUTO, 1:MANUAL, 2:REC
682	TRACK1~~8 MODE	0:PLAY, 1:MUTE
683	TRACK9~~16 MODE	0:PLAY, 1:MUTE
684 : 699	TRACK 1 NAME (Head) : TRACK 1 NAME (Tail)	20~~7F
700 : 939	TRACK 2~~16 NAME Same as TRACK 1 NAME (684~~699) (16 * 15 = 240 Bytes)	
940 : 943	TR1 EVENT ADRS (MSB) : TR1 EVENT ADRS (LSB)	(4 Bytes)
944 : 1007	TRACK 2~~16, MASTER TRACK EVENT ADDRESS Same as TRACK 1 EVENT (940~~943) (4 * 16 = 64 Bytes)	
1008 : 1011	(RESERVED) : :	(4 Bytes)
PATTERN 0		
1012 : : 1027	NAME (Head) : : NAME (Tail)	20~~7F [ASCII CODE]
1028	LENGTH	01~~63 : 00~~99
1029	METER	**12-1
1030	(RESERVED)	
1031	(RESERVED)	
1032 : 1035	EVENT DATA ADRS(MSB) : EVENT DATA ADRS(LSB)	(4 Bytes)
1036 : 3411	PATTERN 1~~99 Same as PATTERN 0 (1012~~1035) (24 * 99 = 2376 Bytes)	
3412	TRACK1~~8 INT	0:OFF, 1:ON
3413	TRACK9~~16 INT	0:OFF, 1:ON
3414	TRACK1~~8 EXT	0:OFF, 1:ON

3415	TRACK9~~16 EXT	0:OFF, 1:ON
TRACK 1 PLAY LOOP		
bit7	ASSIGN	0:OFF, 1:ON
3416 b0~~6	START MEASURE (MSB)	01~~3E7 : 001~~999
3417	START MEASURE (LSB)	
3418	END MEASURE (MSB)	01~~3E7 : 001~~999
3419	END MEASURE (LSB)	
3420	TRACK 2~~16	
:	Same as TRACK 1 PLAY LOOP (3416~~3419)	
3479	(4 * 15 = 60 Bytes)	
KEY=C-1 RPPR		
		00~~63 : U00~~U99
3480	PATTERN	00~~95 : P00~~P149
b0~~3	TRACK	00~~0F : 01~~16
3481 b4~~7	SYNC	0:Off, 1:Beat, 2:Measure, 3:SEQ
b0~~3	MODE	0:Once, 1:Manual, 2:Endless
3482 b4~~7	STATUS	0:NOTE,1:PAT,2:SHUTDOWN
3483	SHIFT NOTE	F4~~11 : -12~~12
3484	KEY=C#-1~~G9 RPPR	
:	Same as KEY=C-1 RPPR (3480~~3483)	
3991	(4 * 127 = 508 Bytes)	

**12-1 : 10~~1F : 1/4~~ 16/4
20~~2F : 1/8~~ 16/8
30~~3F : 1/16~~16/16

-Revision History-

1.0	Apr. 2.'99	Initial Release.
1.1	Nov.30.'99	Delete an extra reserved byte in 'COMBINATION PARAMETER DUMP'.
1.2	May.17.'00	Add 'CHANNEL MESSAGES', 'SYSTEM COMMON MESSAGES', 'SYSTEM REALTIME MESSAGES' and 'SYSTEM EXCLUSIVE'.