

# **KORG R3 MIDI Implementation**

**KORG**

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# KORG R3 MIDI Implementation

Revision 1.0 (2006.09.04)

## 1. TRANSMITTED DATA

1-1 CHANNEL MESSAGES

[H]:Hex, [D]:Decimal

Status [Hex]	Second [H] [D]	Third [H] [D]	Description	(Transmitted by ...)	ENA
8n	kk (kk)	40 (64)	Note Off		*1 A
9n	kk (kk)	vv (vv)	Note On vv=1~127		*1 A
Bn	00 (00)	mm (mm)	Bank Select(MSB) (Program)		*6 P
Bn	01 (01)	vv (vv)	Modulation1	(Mod Wheel,A.P=ModWheel)	C
Bn	02 (02)	vv (vv)	Modulation2	(A.P=BrthCtrl)	C
Bn	04 (04)	vv (vv)	Foot Control	(A.P=FootPedal)	C
Bn	06 (06)	vv (vv)	Data Entry (MSB)	(Panel Control)	*2 C
Bn	07 (07)	vv (vv)	Volume	(A.P=Volume)	C
Bn	0A (10)	vv (vv)	Panpot	(A.P=Pan)	C
Bn	0B (11)	vv (vv)	Expression	(A.P=ExpPedal)	C
Bn	20 (32)	bb (bb)	Bank Select(LSB) (Program)		*6 P
Bn	40 (64)	00/7F (0/127)	Sustain Off/On	(A.S=Damper)	C
Bn	41 (65)	00/7F (0/127)	Portamento Off/On	(A.S=PortSw)	C
Bn	52 (82)	00/7F (0/127)	Multi Purpose Ctrl17(as Foot Sw)	(A.S=FootSw)	C
Bn	62 (98)	vv (vv)	NRPN (LSB)	(P.C)	*2 C
Bn	63 (99)	vv (vv)	NRPN (MSB)	(P.C)	*2 C
Bn	cc (cc)	vv (vv)	Control Change cc=00~95,102~119	(P.C)	*3 C
Cn	pp (pp)	-- --	Program Change	(Prog Change)	P
Dn	vv (vv)	-- --	Channel Pressure	(A.P=AftTouch)	C
En	bb (bb)	bb (bb)	Pitch Bender Change	(Bend Wheel)	B

n : MIDI Channel = 0 ~ F  
vv : Value

A.P: Assignable Pedal  
A.S: Assignable Switch  
P.C: Panel Control

ENA = A : Always Enable  
C : Enabled when Global CtrlChg is enabled.  
P : Enabled when Global PROG Chg is enabled.  
B : Enabled when Global PitchBend is enabled.

\*1 : kk = 12 ~ 120 (37Keys + OCT + Transpose)

\*2 : Non Registered Parameter Number (NRPN)

MSB [H]	LSB [H]	Parameter	Data Entry(MSB) Value
00	02	Arpeggio On/Off	00/7F:OFF/ON
00	04	Arpeggio Latch On/Off	00/7F:OFF/ON
00	07	Arpeggio Type	*2-1
00	0A	Arpeggio Gate	*2-2
00	0B	Arpeggio Select	*2-3
04	00	Patch1 Source	*2-4
04	01	Patch2 Source	*2-4
04	02	Patch3 Source	*2-4
04	03	Patch4 Source	*2-4
04	04	Patch5 Source	*2-4
04	05	Patch6 Source	*2-4
04	08	Patch1 Destination	*2-5
04	09	Patch2 Destination	*2-5
04	0A	Patch3 Destination	*2-5
04	0B	Patch4 Destination	*2-5
04	0C	Patch5 Destination	*2-5
04	0D	Patch6 Destination	*2-5
04	10	Mod.SEQ1 Step[01] VALUE	*2-6
04	11	Mod.SEQ1 Step[02] VALUE	*2-6
04	12	Mod.SEQ1 Step[03] VALUE	*2-6
04	13	Mod.SEQ1 Step[04] VALUE	*2-6
04	14	Mod.SEQ1 Step[05] VALUE	*2-6
04	15	Mod.SEQ1 Step[06] VALUE	*2-6
04	16	Mod.SEQ1 Step[07] VALUE	*2-6
04	17	Mod.SEQ1 Step[08] VALUE	*2-6
04	18	Mod.SEQ1 Step[09] VALUE	*2-6
04	19	Mod.SEQ1 Step[10] VALUE	*2-6
04	1A	Mod.SEQ1 Step[11] VALUE	*2-6
04	1B	Mod.SEQ1 Step[12] VALUE	*2-6
04	1C	Mod.SEQ1 Step[13] VALUE	*2-6
04	1D	Mod.SEQ1 Step[14] VALUE	*2-6
04	1E	Mod.SEQ1 Step[15] VALUE	*2-6
04	1F	Mod.SEQ1 Step[16] VALUE	*2-6
04	40	Vocoder Band01 Level	00~7F:0~127
04	41	Vocoder Band02 Level	00~7F:0~127
04	42	Vocoder Band03 Level	00~7F:0~127
04	43	Vocoder Band04 Level	00~7F:0~127
04	44	Vocoder Band05 Level	00~7F:0~127
04	45	Vocoder Band06 Level	00~7F:0~127
04	46	Vocoder Band07 Level	00~7F:0~127
04	47	Vocoder Band08 Level	00~7F:0~127
04	48	Vocoder Band09 Level	00~7F:0~127
04	49	Vocoder Band10 Level	00~7F:0~127

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04	4A	Vocoder Band11 Level	00~7F:0~127
04	4B	Vocoder Band12 Level	00~7F:0~127
04	4C	Vocoder Band13 Level	00~7F:0~127
04	4D	Vocoder Band14 Level	00~7F:0~127
04	4E	Vocoder Band15 Level	00~7F:0~127
04	4F	Vocoder Band16 Level	00~7F:0~127
04	50	Vocoder Band01 Panpot	*2-9
04	51	Vocoder Band02 Panpot	*2-9
04	52	Vocoder Band03 Panpot	*2-9
04	53	Vocoder Band04 Panpot	*2-9
04	54	Vocoder Band05 Panpot	*2-9
04	55	Vocoder Band06 Panpot	*2-9
04	56	Vocoder Band07 Panpot	*2-9
04	57	Vocoder Band08 Panpot	*2-9
04	58	Vocoder Band09 Panpot	*2-9
04	59	Vocoder Band10 Panpot	*2-9
04	5A	Vocoder Band11 Panpot	*2-9
04	5B	Vocoder Band12 Panpot	*2-9
04	5C	Vocoder Band13 Panpot	*2-9
04	5D	Vocoder Band14 Panpot	*2-9
04	5E	Vocoder Band15 Panpot	*2-9
04	5F	Vocoder Band16 Panpot	*2-9
04	60	Vocoder Fc Mod.Source	*2-4
05	00	Voice Mode	*2-12
05	04	Vocoder SW	00/7F:OFF/ON

\*2-1 : 00~14 : Up  
 15~29 : Down  
 2A~3E : Alt1  
 3F~53 : Alt2  
 54~68 : Random  
 69~7F : Trigger

\*2-2 : 00~07 : 0, 1, 1, 2, 3, 4, 5, 5,  
 08~0F : 6, 7, 8, 9, 9, 10, 11, 12,  
 10~17 : 13, 13, 14, 15, 16, 16, 17, 18,  
 18~1F : 19, 20, 20, 21, 22, 23, 24, 24,  
 20~27 : 25, 26, 27, 28, 28, 29, 30, 31,  
 28~2F : 31, 32, 33, 34, 35, 35, 36, 37,  
 30~37 : 38, 39, 39, 40, 41, 42, 43, 43,  
 38~3F : 44, 45, 46, 46, 47, 48, 49, 50,  
 40~47 : 50, 51, 52, 53, 54, 54, 55, 56,  
 48~4F : 57, 57, 58, 59, 60, 61, 61, 62,  
 50~57 : 63, 64, 65, 65, 66, 67, 68, 69,  
 58~5F : 69, 70, 71, 72, 72, 73, 74, 75,  
 60~67 : 76, 76, 77, 78, 79, 80, 80, 81,  
 68~6F : 82, 83, 84, 84, 85, 86, 87, 87,  
 70~77 : 88, 89, 90, 91, 91, 92, 93, 94,  
 78~7F : 95, 95, 96, 97, 98, 99, 99, 100

\*2-3 : 00~2A : Timbre1  
 2B~55 : Timbre2  
 56~7F : Timbre1+2

\*2-4 : 00~0A : EG1  
 0B~14 : EG2  
 15~1F : EG3  
 20~2A : LFO1  
 2B~34 : LFO2  
 35~3F : VELOCITY  
 40~4A : PITCH BEND  
 4B~54 : MOD WHEEL  
 55~5F : KBD TRACK  
 60~6A : MIDI1  
 6B~74 : MIDI2  
 75~7F : MIDI3

\*2-5 : 00~08 : PITCH  
 09~10 : OSC2 PITCH  
 11~19 : OSC1 CTRL  
 1A~21 : OSC1 LEVEL  
 22~2A : OSC2 LEVEL  
 2B~32 : NOISE LEVEL  
 33~3B : FILTER1 TYPE  
 3C~43 : FILTER1 CUTOFF  
 44~4C : FILTER1 RESONANCE  
 4D~54 : FILTER2 CUTOFF  
 55~5E : DRV/WS DEPTH  
 5F~65 : AMP LEVEL  
 66~6E : PANPOT  
 6F~76 : LFO1 FREQ.  
 77~7F : LFO2 FREQ.

\*2-6 : When Knob is "Pitch" or "OSC2 Semi" 00~7F : -24~0~+24 (\*2-7)  
 When Knob is others 00~7F : -63~0~+63 (\*2-8)

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*2-7 : 00~07 : -24,-24,-24,-23,-23,-23,-22,-22
08~0F : -21,-21,-21,-20,-20,-20,-19,-19
10~17 : -18,-18,-18,-17,-17,-16,-16,-16
18~1F : -15,-15,-15,-14,-14,-13,-13,-13
20~27 : -12,-12,-11,-11,-11,-10,-10,-10
28~2F : -9,-9,-8,-8,-8,-7,-7,-7
30~37 : -6,-6,-5,-5,-5,-4,-4,-3
38~3F : -3,-3,-2,-2,-2,-1,-1,0
40~47 : 0,0,+1,+1,+2,+2,+2,+3
48~4F : +3,+3,+4,+4,+5,+5,+5,+6
50~57 : +6,+7,+7,+7,+8,+8,+8,+9
58~5F : +9,+10,+10,+10,+11,+11,+11,+12
60~67 : +12,+13,+13,+13,+14,+14,+15,+15
68~6F : +15,+16,+16,+16,+17,+17,+18,+18
70~77 : +18,+19,+19,+20,+20,+20,+21,+21
78~7F : +21,+22,+22,+23,+23,+23,+24,+24

*2-8 : 00,01~7F = -63,-63~+63
00~07 : -63,-63,-62,-61,-60,-59,-58,-57
08~0F : -56,-55,-54,-53,-52,-51,-50,-49
10~17 : -48,-47,-46,-45,-44,-43,-42,-41
18~1F : -40,-39,-38,-37,-36,-35,-34,-33
20~27 : -32,-31,-30,-29,-28,-27,-26,-25
28~2F : -24,-23,-22,-21,-20,-19,-18,-17
30~37 : -16,-15,-14,-13,-12,-11,-10,-9
38~3F : -8,-7,-6,-5,-4,-3,-2,-1
40~47 : 0,+1,+2,+3,+4,+5,+6,+7
48~4F : +8,+9,+10,+11,+12,+13,+14,+15
50~57 : +16,+17,+18,+19,+20,+21,+22,+23
58~5F : +24,+25,+26,+27,+28,+29,+30,+31
60~67 : +32,+33,+34,+35,+36,+37,+38,+39
68~6F : +40,+41,+42,+43,+44,+45,+46,+47
70~77 : +48,+49,+50,+51,+52,+53,+54,+55
78~7F : +56,+57,+58,+59,+60,+61,+62,+63

*2-9 : 00,01~40~7F = L63,L63~CNT~R63
00~07 : L63,L63,L62,L61,L60,L59,L58,L57
08~0F : L56,L55,L54,L53,L52,L51,L50,L49
10~17 : L48,L47,L46,L45,L44,L43,L42,L41
18~1F : L40,L39,L38,L37,L36,L35,L34,L33
20~27 : L32,L31,L30,L29,L28,L27,L26,L25
28~2F : L24,L23,L22,L21,L20,L19,L18,L17
30~37 : L16,L15,L14,L13,L12,L11,L10,L09
38~3F : L08,L07,L06,L05,L04,L03,L02,L01
40~47 : CNT,R01,R02,R03,R04,R05,R06,R07
48~4F : R08,R09,R10,R11,R12,R13,R14,R15
50~57 : R16,R17,R18,R19,R20,R21,R22,R23
58~5F : R24,R25,R26,R27,R28,R29,R30,R31
60~67 : R32,R33,R34,R35,R36,R37,R38,R39
68~6F : R40,R41,R42,R43,R44,R45,R46,R47
70~77 : R48,R49,R50,R51,R52,R53,R54,R55
78~7F : R56,R57,R58,R59,R60,R61,R62,R63

*2-10: 00,01~40~7F = -2.00~0.00~+2.00
00~07 : -2.00,-2.00,-1.93,-1.86,-1.80,-1.73,-1.66,-1.60,
08~0F : -1.53,-1.46,-1.40,-1.33,-1.26,-1.20,-1.13,-1.06,
10~17 : -1.00,-0.97,-0.95,-0.93,-0.91,-0.89,-0.87,-0.85,
18~1F : -0.83,-0.81,-0.79,-0.77,-0.75,-0.72,-0.70,-0.68,
20~27 : -0.66,-0.64,-0.62,-0.60,-0.58,-0.56,-0.54,-0.52,
28~2F : -0.50,-0.47,-0.45,-0.43,-0.41,-0.39,-0.37,-0.35,
30~37 : -0.33,-0.31,-0.29,-0.27,-0.25,-0.22,-0.20,-0.18,
38~3F : -0.16,-0.14,-0.12,-0.10,-0.08,-0.06,-0.04,-0.02,
40~47 : 0.00,0.02,0.04,0.06,0.08,0.10,0.12,0.14,
48~4F : 0.16,0.18,0.20,0.22,0.25,0.27,0.29,0.31,
50~57 : 0.33,0.35,0.37,0.39,0.41,0.43,0.45,0.47,
58~5F : 0.50,0.52,0.54,0.56,0.58,0.60,0.62,0.64,
60~67 : 0.66,0.68,0.70,0.72,0.75,0.77,0.79,0.81,
68~6F : 0.83,0.85,0.87,0.89,0.91,0.93,0.95,0.97,
70~77 : 1.00,1.06,1.13,1.20,1.26,1.33,1.40,1.46,
78~7F : 1.53,1.60,1.66,1.73,1.80,1.86,1.93,2.00

*2-11:
00~07 : -15.0,-15.0,-15.0,-14.5,-14.5,-14.0,-14.0,-13.5,
08~0F : -13.5,-13.0,-13.0,-12.5,-12.5,-12.0,-12.0,-11.5,
10~17 : -11.5,-11.0,-11.0,-10.5,-10.5,-10.0,-10.0,-10.0,
18~1F : -09.5,-09.5,-09.0,-09.0,-08.5,-08.5,-08.0,-08.0,
20~27 : -07.5,-07.5,-07.0,-07.0,-06.5,-06.5,-06.0,-06.0,
28~2F : -05.5,-05.5,-05.0,-05.0,-05.0,-04.5,-04.5,-04.0,
30~37 : -04.0,-03.5,-03.5,-03.0,-03.0,-02.5,-02.5,-02.0,
38~3F : -02.0,-01.5,-01.5,-01.0,-01.0,-00.5,-00.5,+00.0,
40~47 : +00.0,+00.0,+00.5,+00.5,+01.0,+01.0,+01.5,+01.5,
48~4F : +02.0,+02.0,+02.5,+02.5,+03.0,+03.0,+03.5,+03.5,
50~57 : +04.0,+04.0,+04.5,+04.5,+05.0,+05.0,+05.5,+05.5,
58~5F : +05.5,+06.0,+06.0,+06.5,+06.5,+07.0,+07.0,+07.5,
60~67 : +07.5,+08.0,+08.0,+08.5,+08.5,+09.0,+09.0,+09.5,
68~6F : +09.5,+10.0,+10.0,+10.0,+10.5,+10.5,+11.0,+11.0,
70~77 : +11.5,+11.5,+12.0,+12.0,+12.5,+12.5,+13.0,+13.0,
78~7F : +13.5,+13.5,+14.0,+14.0,+14.5,+14.5,+15.0,+15.0

*2-12: 00~1F : Single
20~3F : Layer
40~5F : Split
60~7F : Multi

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\*3 :Control Change (assignable)

Synth	Value Synth
Portamento	00~7F:0~127
Unison SW	*3-1
OSC1 Wave	*3-2
OSC1 Mod.	*3-3
OSC1 Controll	*3-4
OSC1 Control2	*3-5
OSC2 Wave	*3-6
OSC2 Mod.	*3-7
OSC2 Semitone	*2-7
OSC2 Tune	*2-8
OSC1 Level	00~7F:0~127
OSC2 Level	00~7F:0~127
Noise Level	00~7F:0~127
Filter Routing	*3-8
Filter1 Type Balance	*3-10
Filter1 Cutoff	00~7F:0~127
Filter1 Resonance	00~7F:0~127
Filter1 EG1 Int	*2-8
Filter1 KBD Track	*2-10
Filter2 Type	*3-11
Filter2 Cutoff	00~7F:0~127
Filter2 Resonance	00~7F:0~127
Filter2 EG1 Int	*2-8
Filter2 KBD Track	*2-8
Amp Level	00~7F:0~127
Panpot	*2-9
Drive/WS Depth	00~7F:0~127
EG1 Attack	00~7F:0~127
EG1 Decay	00~7F:0~127
EG1 Sustain	00~7F:0~127
EG1 Release	00~7F:0~127
EG2 Attack	00~7F:0~127
EG2 Decay	00~7F:0~127
EG2 Sustain	00~7F:0~127
EG2 Release	00~7F:0~127
LF01 Wave	*3-14
LF01 Frequency	*3-15
LF02 Wave	*3-16
LF02 Frequency	*3-15
Patch1 Intensity	*2-8
Patch2 Intensity	*2-8
Patch3 Intensity	*2-8
Patch4 Intensity	*2-8
Patch5 Intensity	*2-8
Patch6 Intensity	*2-8
EQ Hi.Gain	*2-11
EQ Low.Gain	*2-11
Mod.Seq. SW	00,7F:OFF,ON
IFx1 Edit1	refer midi_imp_fx
IFx2 Edit1	refer midi_imp_fx
MFx Edit	refer midi_imp_fx
IFx1 Dry/Wet	refer midi_imp_fx
IFx2 Dry/Wet	refer midi_imp_fx
MFx Dry/Wet	refer midi_imp_fx
Vocoder	Value Vocoder
Threshold	00~7F:0~127
HPF Level	00~7F:0~127
HPF Gate	*3-13
Mod.Select	*3-9
Direct Level	00~7F:0~127
Timbre1 Level	00~7F:0~127
Input1 Level	00~7F:0~127
Vocoder Level	00~7F:0~127
Formant Shift	*3-12
FC Offset	*2-8
Resonance	00~7F:0~127
FC Mod.Int	*2-8
E.F.Sens	00~7F:0~127
Formant Motion No.	*3-17

\*3-1 : 00~1F : Unison Off  
 20~3F : 2Voice Unison  
 40~5F : 3Voice Unison  
 60~7F : 4Voice Unison

\*3-2 : 00~0F : Saw  
 10~1F : Square  
 20~2F : Tri  
 30~3F : Sin  
 40~4F : Formant  
 50~5F : Noise  
 60~6F : DWGS  
 70~7F : Audio In

\*3-3 : 00~1F : Waveform  
 20~3F : Cross  
 40~5F : Unison  
 60~7F : VPM

## KORG R3 MIDI Implementation

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*3-4 : When OSC1Wave is "Saw,Pulse,Tri,Sin" and OSC1Mod.Type is Waveform 00~7F : Waveform
      When OSC1Wave is "Saw,Pulse,Tri,Sin" and OSC1Mod.Type is Cross 00~7F : Mod.Depth
      When OSC1Wave is "Saw,Pulse,Tri,Sin" and OSC1Mod.Type is Unison 00~7F : Detune
      When OSC1Wave is "Saw,Pulse,Tri,Sin" and OSC1Mod.Type is VPM 00~7F : Mod.Depth

      When OSC1Wave is "FORMNAT" 00~7F : Formant Width (Formant)
      When OSC1Wave is "NOISE" 00~7F : Resonance
      When OSC1Wave is "DWGS" none
      When OSC1Wave is "Audio In" 00~7F : Gain

*3-5 : When OSC1Wave is "Saw,Tri,Sin" and OSC1Mod.Type is Waveform 00~7F : WFM LFO1 Mod. Int.
      When OSC1Wave is "Saw,Tri,Sin" and OSC1Mod.Type is Waveform 00~7F : PWM LFO1 Mod. Int.
      When OSC1Wave is "Saw,Pulse,Tri,Sin" and OSC1Mod.Type is Cross 00~7F : Mod. Depth LFO1 Mod. Int.
      When OSC1Wave is "Saw,Pulse,Tri,Sin" and OSC1Mod.Type is Unison 00~7F : Unison Phase
      When OSC1Wave is "Saw,Pulse,Tri,Sin" and OSC1Mod.Type is VPM 00~7F : Carrier Harmonics

      When OSC1Wave is "FORMNAT" 00~7F : Formant Shift (Offset)
      When OSC1Wave is "NOISE" 00~7F : LPF/HPF Balance
      When OSC1Wave is "DWGS" 00~7F : Wave Select
      When OSC1Wave is "Audio In" 00~7F : Balance

*3-6 : 00~1F : Saw
      20~3F : Squ
      40~5F : Tri
      60~7F : Sin

*3-7 : 00~1F : OFF
      20~3F : RING
      40~5F : SYNC
      60~7F : RING+SYNC

*3-8 : 00~1F : SINGLE
      20~3F : SERIAL
      40~5F : PARALLEL
      60~7F : INDIVIDUAL

*3-9 : 00 : Audio
      7F : Formant Play

*3-10 00 : LPF24
      01~1E : LPF24~LPF12
      1F~21 : LPF12
      22~3E : LPF12~HPF
      3F~41 : HPF
      42~5E : HPP~BPF
      5F~61 : BPF
      62~7E : BPF~THRU
      7F : THRU

*3-11: 00~1F : LPF
      20~3F : HPF
      40~5F : BPF
      60~7F : COMB

*3-12: 00~1A : -2
      1B~34 : -1
      35~4C : 0
      4D~65 : +1
      66~7F : +2

*3-13: 00~3F : Disable
      40~7F : Enable

*3-14: 00~19 : Saw
      1A~32 : Squ
      33~4C : Tri
      4D~65 : S&H
      66~7F : Random

*3-15: When BPM Sync is "OFF".
      00~07 : 0.01, 0.02, 0.03, 0.04, 0.05, 0.06, 0.07, 0.08,
      08~0F : 0.09, 0.10, 0.11, 0.12, 0.13, 0.14, 0.15, 0.16,
      10~17 : 0.17, 0.18, 0.19, 0.20, 0.21, 0.22, 0.23, 0.24,
      18~1F : 0.25, 0.29, 0.33, 0.42, 0.50, 0.58, 0.67, 0.75,
      20~27 : 0.83, 0.92, 1.00, 1.13, 1.25, 1.38, 1.50, 1.63,
      28~2F : 1.75, 1.88, 2.00, 2.13, 2.25, 2.38, 2.50, 2.63,
      30~37 : 2.75, 2.88, 3.00, 3.13, 3.25, 3.38, 3.50, 3.63,
      38~3F : 3.75, 3.88, 4.00, 4.13, 4.25, 4.38, 4.50, 4.63,
      40~47 : 4.75, 4.88, 5.00, 5.25, 5.50, 5.75, 6.00, 6.25,
      48~4F : 6.50, 6.75, 7.00, 7.25, 7.50, 7.75, 8.00, 8.25,
      50~57 : 8.50, 8.75, 9.00, 9.25, 9.50, 9.75, 10.0, 10.5,
      58~5F : 11.0, 11.5, 12.0, 12.5, 13.0, 13.5, 14.0, 14.5,
      60~67 : 15.0, 16.0, 17.0, 18.0, 19.0, 20.0, 21.5, 23.0,
      68~6F : 24.5, 26.0, 27.5, 29.0, 31.0, 33.0, 35.0, 37.0,
      70~77 : 39.0, 41.0, 44.0, 47.0, 50.0, 53.0, 57.0, 61.0,
      78~7F : 65.0, 70.0, 75.0, 80.0, 85.0, 90.0, 95.0, 100.0

      When BPM Sync is "ON".
      00~07 : 8/1 26~2C : 1/2 4B~52 : 1/6 71~77 : 1/32
      08~0E : 4/1 2D~34 : 3/8 53~59 : 1/8 78~7F : 1/64
      0F~16 : 2/1 35~3B : 1/3 5A~61 : 1/12
      17~1D : 1/1 3C~43 : 1/4 62~68 : 1/16
      1E~25 : 3/4 44~4A : 3/16 69~70 : 1/24

```

- \*3-16: 00~19 : Saw
- 1A~32 : Square+
- 33~4C : Sine
- 4D~65 : S&H
- 66~7F : Random
  
- \*3-17: 00~07 : Formant Data 1
- 08~0F : Formant Data 2
- 10~17 : Formant Data 3
- 18~1F : Formant Data 4
- 20~27 : Formant Data 5
- 28~2F : Formant Data 6
- 30~37 : Formant Data 7
- 38~3F : Formant Data 8
- 40~47 : Formant Data 9
- 48~4F : Formant Data 10
- 50~57 : Formant Data 11
- 58~5F : Formant Data 12
- 60~67 : Formant Data 13
- 68~6F : Formant Data 14
- 70~77 : Formant Data 15
- 78~7F : Formant Data 16

1-2 SYSTEM REALTIME MESSAGES

Status[H]	Description	
F8	Timing Clock	*4
FE	Active Sensing	

\*4 : This message is transmitted when the "Clock" is set to "Internal".

1-3 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES

DEVICE INQUIRY REPLY

Byte[H]	Description
F0	Exclusive Status
7E	Non Realtime Message
0g	MIDI Global Channel ( Device ID )
06	General Information
02	Identity Reply
42	KORG ID ( Manufacturers ID )
7D	R3 Series ID ( Family ID (LSB))
00	( Family ID (MSB))
00	( Member ID (LSB))
00	( Member ID (MSB))
xx	( Minor Ver. (LSB))
xx	( Minor Ver. (MSB))
xx	( Major Ver. (LSB))
xx	( Major Ver. (MSB))
F7	END OF EXCLUSIVE

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

1-4 SYSTEM EXCLUSIVE MESSAGES

Function ID [Hex]	Description/Function	*4
40	CURRENT PROGRAM DATA DUMP	R,D,Me
4C	PROGRAM DATA DUMP (1 PROG)	R
43	CURRENT FORMANT MOTION DATA DUMP	R
48	FORMANT MOTION DATA DUMP	R
51	GLOBAL DATA DUMP	R,D
41	PROGRAM PARAMETER CHANGE	C
26	DATA FORMAT ERROR	E
23	DATA LOAD COMPLETED	E
24	DATA LOAD ERROR	E
21	WRITE COMPLETED	E
22	WRITE ERROR	E

- \*4 : Transmitted when
- R : Request message is received.
- D : Data dump from MIDI dump page.  
      (Doesn't respond to MIDI FILTER "SystemEx" parameter.)
- E : Exclusive message is received.
- C : Parameter is changed by Switch or Knobr.
- Me : Mode is changed to "LCD Edit".





## 2.RECOGNIZED RECEIVE DATA

04	51	Vocoder Band02 Panpot	*2-8
04	52	Vocoder Band03 Panpot	*2-8
04	53	Vocoder Band04 Panpot	*2-8
04	54	Vocoder Band05 Panpot	*2-8
04	55	Vocoder Band06 Panpot	*2-8
04	56	Vocoder Band07 Panpot	*2-8
04	57	Vocoder Band08 Panpot	*2-8
04	58	Vocoder Band09 Panpot	*2-8
04	59	Vocoder Band10 Panpot	*2-8
04	5A	Vocoder Band11 Panpot	*2-8
04	5B	Vocoder Band12 Panpot	*2-8
04	5C	Vocoder Band13 Panpot	*2-8
04	5D	Vocoder Band14 Panpot	*2-8
04	5E	Vocoder Band15 Panpot	*2-8
04	5F	Vocoder Band16 Panpot	*2-8
04	60	Vocoder Fc Mod.Source	*2-4
05	00	Voice Mode	*3-17
05	04	Vocoder SW	00~3F/40~7F:OFF/ON

All these parameters can be changed by "Data Entry(MSB)".

### 2-2 SYSTEM REALTIME MESSAGES

Status[H]	Description	
F8	Timing Clock	*9
FA	Start	*8
FC	Stop (Arpeggiator stop)	*9
FE	Active Sensing	

\*9 :This message is recognized when the "Clock" is set to "Ext-USB" or "Ext-MIDI" or "Auto".

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

#### DEVICE INQUIRY MESSAGE REQUEST

Byte[H]	Description
F0	Exclusive Status
7E	Non Realtime Message
nn	MIDI Channel (Device ID)
06	General Information
01	Identity Request
F7	END OF EXCLUSIVE

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

### 2-4 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE ( REALTIME )

#### (1) MASTER VOLUME

Byte[H]	Description
F0	Exclusive Status
7F	Realtime Message
nn	MIDI Channel (Device ID)
04	Device Control
01	Master Volume
vv	Value (LSB)
mm	Value (MSB)
F7	END OF EXCLUSIVE

nn : MIDI Channel = 0~F : Global Channel  
 = 7F : Any Channel  
 mm,vv : 00,00~7F,7F : Min-Max

#### (2) MASTER FINE TUNE

Byte[H]	Description
F0	Exclusive Status
7F	Realtime Message
nn	MIDI Channel (Device ID)
04	Device Control
03	Master Fine Tune
vv	Value (LSB)
mm	Value (MSB)
F7	END OF EXCLUSIVE

nn : MIDI Channel = 0~F : Global Channel  
 = 7F : Any Channel  
 mm,vv : 00,00~40,00~7F,7F : -100~-+100

## KORG R3 MIDI Implementation

### 2-5 SYSTEM EXCLUSIVE MESSAGE

Function ID [Hex]	Function
10	CURRENT PROGRAM DATA DUMP REQUEST
1C	PROGRAM DATA DUMP REQUEST (1 PROG)
13	CURRENT FORMANT MOTION DATA DUMP REQUEST
18	FORMANT MOTION DATA DUMP REQUEST
0E	GLOBAL DATA DUMP REQUEST
11	PROGRAM WRITE REQUEST
03	FORMANT MOTION DATA WRITE REQUEST
40	CURRENT PROGRAM DATA DUMP
4C	PROGRAM DATA DUMP (1 PROG)
43	CURRENT FORMANT MOTION DATA DUMP
48	FORMANT MOTION DATA DUMP
51	GLOBAL DATA DUMP
41	PARAMETER CHANGE

When the "SystemEx" parameter is set to "ENA", these messages are recognized.

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

(1) CURRENT PROGRAM DATA DUMP REQUEST R

Byte	Description
F0,42,3g,7D	EXCLUSIVE HEADER
0001 0000 (10)	CURRENT PROGRAM DATA DUMP REQUEST 10H
1111 0111 (F7)	EOX

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

(2) PROGRAM DATA DUMP REQUEST (1 PROG) R

Byte	Description
F0,42,3g,7D	EXCLUSIVE HEADER
0001 1100 (1C)	PROGRAM DATA DUMP REQUEST 1CH
0ppp pppp (pp)	Source Program No.(LSB bit 6~0)
0000 000p (0p)	Source Program No.(MSB bit 13~7)
1111 0111 (F7)	EOX

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

(3) CURRENT FORMANT MOTION DATA DUMP REQUEST R

Byte	Description
F0,42,3g,7D	EXCLUSIVE HEADER
0001 0011 (13)	MOTION DATA DUMP REQUEST 13H
1111 0111 (F7)	EOX

Receive this message, and transmits Func=43 or Func=13 message.

(4) FORMANT MOTION DATA DUMP REQUEST R

Byte	Description
F0,42,3g,7D	EXCLUSIVE HEADER
0001 1000 (18)	MOTION DATA DUMP REQUEST 18H
0000 ffff (0f)	FORMANT MOTION No.(0~15)
0000 0000 (00)	
1111 0111 (F7)	EOX

Receive this message, and transmits Func=48 or Func=24 message.

(5) GLOBAL DATA DUMP REQUEST R

Byte	Description
F0,42,3g,7D	EXCLUSIVE HEADER
0000 1110 (0E)	GLOBAL DATA DUMP REQUEST 0EH
1111 0111 (F7)	EOX

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

(6) PROGRAM WRITE REQUEST R

Byte	Description
F0,42,3g,7D	EXCLUSIVE HEADER
0001 0001 (11)	PROGRAM WRITE REQUEST 11H
0ppp pppp (pp)	Destination Program No.(LSB bit 6~0)
0000 000p (0p)	Destination Program No.(MSB bit 13~7)
1111 0111 (F7)	EOX

Receive this message, and transmits Func=21 or Func=22 message.

## 2.RECOGNIZED RECEIVE DATA

(7) FORMANT MOTION DATA WRITE REQUEST R

Byte	Description
F0,42,3g,7D	EXCLUSIVE HEADER
0000 0011 (03)	DRUMKIT WRITE REQUEST 03H
0000 ffff (0f)	Destination Formant Motion No.(0~15)
0000 0000 (00)	
1111 0111 (F7)	EOX

Receive this message, and transmits Func=21 or Func=22 message.

(8) CURRENT PROGRAM DATA DUMP R/T

Byte	Description
F0,42,3g,7D	EXCLUSIVE HEADER
0100 0000 (40)	CURRENT PROGRAM DATA DUMP 40H
0ddd dddd (dd)	Data (NOTE 1,6)
:	:
1111 0111 (F7)	EOX

Receive this message & data, save them to Edit Buffer and transmits Func=23 or Func=24 message.  
Receive Func=10 message, and transmits this message & data from Edit Buffer.  
When Enter the LCD Edit Mode, transmit this message & data from Edit Buffer.

(9) PROGRAM DATA DUMP (1 PROG) R/T

Byte	Description
F0,42,3g,7D	EXCLUSIVE HEADER
0100 1100 (4C)	PROGRAM DATA DUMP 4CH
0ppp pppp (pp)	Program No.(LBS bit 6~0)
0000 000p (0p)	Program No.(MSB bit 13~7)
0ddd dddd (dd)	Data (NOTE 1,6)
:	:
1111 0111 (F7)	EOX

Receive this message & data, save them to Internal Memory and transmits Func=23 or Func=24 message.  
Receive Func=1C message, and transmits this message & data from Internal Memory.  
When DATA DUMP is executed, transmit this message & data from Internal Memory.

(10) CURRENT FORMANT MOTION DATA DUMP R/T

Byte	Description
F0,42,3g,7D	EXCLUSIVE HEADER
0100 0011 (43)	CURRENT FORMANT MOTION DATA DUMP 43H
0000 0000 (00)	
0sss ssss (ss)	FORMANT MOTION DATA SIZE (bit 6~ 0)
0sss ssss (ss)	FORMANT MOTION DATA SIZE (bit 13~ 7)
0000 0000 (00)	
0ddd dddd (dd)	Data (NOTE 4,6)
:	:
1111 0111 (F7)	EOX

Receive this message & data, save them to Internal Memory and transmits Func=23 or Func=24 message.  
Receive Func=13 message, and transmits this message & data from Internal Memory.  
When DATA DUMP is executed, transmit this message & data from Internal Memory.

(11) FORMANT MOTION DATA DUMP R/T

Byte	Description
F0,42,3g,7D	EXCLUSIVE HEADER
0100 1000 (48)	FORMANT MOTION DATA DUMP 48H
0000 ffff (0f)	FORMANT MOTION No.(0~15)
0sss ssss (ss)	FORMANT MOTION DATA SIZE (bit 6~ 0)
0sss ssss (ss)	FORMANT MOTION DATA SIZE (bit 13~ 7)
0000 0000 (00)	
0ddd dddd (dd)	Data (NOTE 4,6)
:	:
1111 0111 (F7)	EOX

Receive this message & data, save them to Internal Memory and transmits Func=23 or Func=24 message.  
Receive Func=18 message, and transmits this message & data from Internal Memory.  
When DATA DUMP is executed, transmit this message & data from Internal Memory.

(12) GLOBAL DATA DUMP R/T

Byte	Description
F0,42,3g,7D	EXCLUSIVE HEADER
0101 0001 (51)	GLOBAL DATA DUMP 51H
0ddd dddd (dd)	Data (NOTE 3,6)
:	:
1111 0111 (F7)	EOX

Receive this message & data, save them to Internal Memory and transmits Func=23 or Func=24 message.  
Receive Func=0E message, and transmits this message & data from Edit Buffer.  
When DATA DUMP is executed, transmit this message & data from Edit Buffer.

# KORG R3 MIDI Implementation

(13) PARAMETER CHANGE R/T

Byte	Description	
F0,42,3g,7D	EXCLUSIVE HEADER	
0100 0001 (41)	PARAMETER CHANGE	41H
0ppp pppp (pp)	Parameter ID (LSB bit 6~0)	(NOTE 6)
0000 pppp (PP)	Parameter ID (MSB bit13~7)	''
0qqq qqqq (qq)	Parameter Sub ID (LSB bit 6~0)	''
0000 qqqq (QQ)	Parameter Sub ID (MSB bit13~7)	''
0vvv vvvv (vv)	Value (LSB bit 6~0)	''
0vvv vvvv (VV)	Value (MSB bit13~7)	''
1111 0111 (F7)	EOX	

Receive this message & data, select & change a Parameter and transmits Func=23 or Func=24 message. When the Parameter is changed by Switch & Knob, transmit this message & data.

(14) RECEIVE DATA FORMAT ERROR T

Byte	Description	
F0,42,3g,7D	EXCLUSIVE HEADER	
0010 0110 (26)	DATA FORMAT ERROR	26H
1111 0111 (F7)	EOX	

When found an error in the received message (ex.data length), transmits this message.

(15) DATA LOAD COMPLETED (ACK) T

Byte	Description	
F0,42,3g,7D	EXCLUSIVE HEADER	
0010 0011 (23)	DATA LOAD COMPLETED	23H
1111 0111 (F7)	EOX	

When DATA LOAD,PROCESSING have been completed, transmits this message.

(16) DATA LOAD ERROR (NAK) T

Byte	Description	
F0,42,3g,7D	EXCLUSIVE HEADER	
0010 0100 (24)	DATA LOAD ERROR	24H
1111 0111 (F7)	EOX	

When DATA LOAD,PROCESSING have not been completed (ex.protect), transmits this message.

(17) WRITE COMPLETED T

Byte	Description	
F0,42,3g,7D	EXCLUSIVE HEADER	
0010 0001 (21)	WRITE COMPLETED	21H
1111 0111 (F7)	EOX	

When DATA WRITE MIDI has been completed, transmits this message.

(18) WRITE ERROR T

Byte	Description	
F0,42,3g,7D	EXCLUSIVE HEADER	
0010 0010 (22)	WRITE ERROR	22H
1111 0111 (F7)	EOX	

When DATA WRITE MIDI has not been completed, transmits this message.

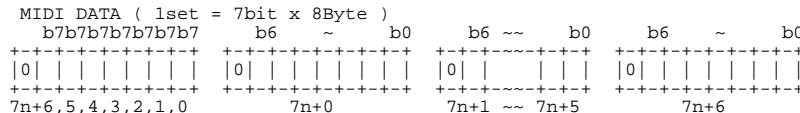
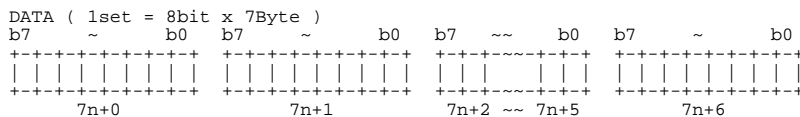
NOTE 1: CURRENT PROGRAM DATA (IN CURRENT BUFFER) DUMP FORMAT & PROGRAM DATA (IN INTERNAL MEMORY) DUMP FORMAT  
 452Bytes = 7\*64+4 -> 8\*64+(4+1) => 517Bytes  
 (TABLE 1)

NOTE 2: GLOBAL DATA (IN INTERNAL MEMORY) DUMP FORMAT  
 256Bytes = 7\*36+4 -> 8\*36+(4+1) => 293Bytes  
 (TABLE 7)

NOTE 3: FORMANT SEQUENCE DATA (IN INTERNAL MEMORY) DUMP FORMAT  
 (SEQ. DATA SIZE)\*32Bytes = 7\*X+Y -> 8\*X+(1+Y) Bytes  
 (TABLE 8)

NOTE 4: m = 0 : PROGRAM PLAY  
 1 : PROGRAM EDIT  
 2 : GLOBAL

NOTE 5: The dump data conversion



NOTE 6: MIDI Parameter Change Message Format  
 F0,42,3n,7D,41,PP,pp,QQ,qq,vv,VV,F7  
 n :Global MIDI Ch.  
 7D :R3 ID

parameter ID :PPpp = 0~3FFF  
 parameter sub ID :QQpp = 0~3FFF  
 parameter value :VVvv = signed value

VV(PP)(QQ):0MMMMMM vv(pp)(qq):0LLLLLLL  
 value(No.):MMMMMM MLLLLLLL

(See the parameter lists. : TABLE 1)

TABLE 1 : PROGRAM PARAMETER ( 1 PROG, CURRENT PROG )  
 No. : No. in the PROGRAM DUMP DATA.  
 Parameter ID & SUB ID [Hex]: for PARAMETER CHANGE.

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
0~7	program name	ASCII code [0]~[7]=Head~Tail		00:00~07
8	B6~7	Voice Mode	0~3=Single/Layer/Split/Multi	00:19
	B4~5	Arp Timb select	0~2=Timb1/Timb2/Timb1+2	00:18
	B0~3	not use	(0,0,0,0)	00:--
9		Vcd Knob1 assign	0~55 = 1~56 *T01-1	00:14
10		Vcd Knob2 assign	0~55 = 1~56 *T01-1	00:15
11		Vcd Knob3 assign	0~55 = 1~56 *T01-1	00:16
12		Vcd Knob4 assign	0~55 = 1~56 *T01-1	00:17
13		Timbre2 MIDI Ch.	0~15,16~=1~16,Gl b	00:1A
14		Center Key	0~127=C-1~G9	00:1B
15	B4~7	Octave SW	8+/-3=0+/-3	00:1D
	B0~3	Category no.	0~15	00:1C
Timbre parameter				
16~179	TIMBRE1 DATA	Timbre parameter [164] (TABLE 2)		1x:00~
180~343	TIMBRE2 DATA	Timbre parameter [164] (TABLE 2)		2x:00~
Vocoder parameter				
344~421	VOCODER DATA	Vocoder parameter [78] (TABLE 3)		4x:00~
Master FX parameter				
422~443	MASTER FX DATA	Master Fx parameter[22] (TABLE 4)		5x:00~
Arpeggio common parameter				
444		tempo (LSB)	200~3000	60:00
445		(MSB)		
446	B7	Arpg On/Off	0,1=Off,On	60:01
	B6	Key Sync	0,1=Off,On	60:02
	B0~5	not use	(0,0,0,0,0,0)	60:--
447		(dummy byte)		
Arpeggio parameter				
448~455	ARPEGGIO DATA	Arpeggio parameter [8] (TABLE 5)		61:00~4F

TABLE 2 : TIMBRE PARAMETER ( 1 TIMBRE )  
 No. : No. in the PROGRAM DUMP DATA.  
 Parameter ID & SUB ID [Hex]: for PARAMETER CHANGE.

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
Timbre Program parameter				
+00~91	PROGRAM DATA	Program Parameter [92] (TABLE 6)		x1~x2:00~
Insert Fx parameter				
+92~143	INSERT FX DATA	Insert Fx Parameter[52] (TABLE 7)		x3:00~
Motion Seq parameter				
+144~163	MOTION SEQ DATA	MotionSeq Parameter[20] (TABLE 8)		x4:00~

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TABLE 3 : VOCODER PARAMETER  
 No. : No. in the PROGRAM DUMP DATA.  
 Parameter ID & SUB ID [Hex]: for PARAMETER CHANGE.

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	B7	SW	0,1=Dis,Ena	40:00
	B6	Source	0,1=AudioInSrc,Formant Rec Data	40:05
	B5	HPF Gate	0,1=Dis,Ena	40:04
	B4	FormantDataPlay	0,1=FreeRun,Trig Reset	40:03
	B2,3	not use	(0,0)	40:--
	B0,1	Select	0,1=Input1,Timb2	40:01
+1		Gate Sens	0~127	40:06
+2		Threshold	0~127	40:07
+3		HPF Level	0~127	40:08
+4		Direct Level	0~127	40:09
+5		Timbrel Level	0~127	40:0A
+6		Input1 Level	0~127	40:0B
+7		Vocoder Level	0~127	40:0C
16 Band parameter				
+8		Band1 Panpot	0,1~64~127=L63,L63~CNT~R63	41:00
+9		Band1 Level	0~127	41:01
+10,11		Band2 parameter	same as Band1	41:02,03
+12,13		Band3 parameter	same as Band1	41:04,05
+14,15		Band4 parameter	same as Band1	41:06,07
+16,17		Band5 parameter	same as Band1	41:08,09
+18,19		Band6 parameter	same as Band1	41:0A,0B
+20,21		Band7 parameter	same as Band1	41:0C,0D
+22,23		Band8 parameter	same as Band1	41:0E,0F
+24,25		Band9 parameter	same as Band1	41:10,11
+26,27		Band10 parameter	same as Band1	41:12,13
+28,29		Band11 parameter	same as Band1	41:14,15
+30,31		Band12 parameter	same as Band1	41:16,17
+32,33		Band13 parameter	same as Band1	41:18,19
+34,35		Band14 parameter	same as Band1	41:1A,1B
+36,37		Band15 parameter	same as Band1	41:1C,1D
+38,39		Band16 parameter	same as Band1	41:1E,1F
FILTER				
+40	B7	not use	(0)	42:--
	B4~6	Shift	4+/-2=0+/-2	42:01
	B0~3	Fc Mod Source	0~11=EG1~MIDI3 *T03-1	42:00
+41	B4~7	not use	(0,0,0,0)	42:--
	B0~3	FM Select	0~15	42:14
+42		Cutoff offset	64+/-63=0+/-63	42:10
+43		Resonance	0~127	42:11
+44		Fc Mod Intencity	64+/-63=0+/-63	42:12
+45		E.F.Sens	0~127	42:13
Formant Hold Data				
+46		Band1 (LSB)	0~321767=0~321767	43:00
+47		(MSB)		
+48,49		Band2 parameter	same as Band1	43:01
+50,51		Band3 parameter	same as Band1	43:02
+52,53		Band4 parameter	same as Band1	43:03
+54,55		Band5 parameter	same as Band1	43:04

## 2.RECOGNIZED RECEIVE DATA

+56,57	Band6 parameter	same as Band1	43:05
+58,59	Band7 parameter	same as Band1	43:06
+60,61	Band8 parameter	same as Band1	43:07
+62,63	Band9 parameter	same as Band1	43:08
+64,65	Band10 parameter	same as Band1	43:09
+66,67	Band11 parameter	same as Band1	43:0A
+68,69	Band12 parameter	same as Band1	43:0B
+70,71	Band13 parameter	same as Band1	43:0C
+72,73	Band14 parameter	same as Band1	43:0D
+74,75	Band15 parameter	same as Band1	43:0E
+76,77	Band16 parameter	same as Band1	43:0F

TABLE 4 : MASTER EFFECT PARAMETER  
 No. : No. in the PROGRAM DUMP DATA.  
 Parameter ID & SUB ID [Hex]: for PARAMETER CHANGE.

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0 B7	not use	(0)		50:--
B0~6	Fx Type	0~30=NoEffect~TalkingMod	*T04-1	50:01
+1 B5~7	not use	(0,0,0)		50:--
B0~4	Knob Assign	0~19=param1~20		50:02
+2	parameter 1		*T04-2	51:00
+3	parameter 2		*T04-2	51:01
+4	parameter 3		*T04-2	51:02
+5	parameter 4		*T04-2	51:03
+6	parameter 5		*T04-2	51:04
+7	parameter 6		*T04-2	51:05
+8	parameter 7		*T04-2	51:06
+9	parameter 8		*T04-2	51:07
+10	parameter 9		*T04-2	51:08
+11	parameter 10		*T04-2	51:09
+12	parameter 11		*T04-2	51:0A
+13	parameter 12		*T04-2	51:0B
+14	parameter 13		*T04-2	51:0C
+15	parameter 14		*T04-2	51:0D
+16	parameter 15		*T04-2	51:0E
+17	parameter 16		*T04-2	51:0F
+18	parameter 17		*T04-2	51:10
+19	parameter 18		*T04-2	51:11
+20	parameter 19		*T04-2	51:12
+21	parameter 20		*T04-2	51:13

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TABLE 5 : ARPEGGIO PARAMETER  
No. : No. in the PROGRAM DUMP DATA.  
Parameter ID & SUB ID [Hex]: for PARAMETER CHANGE.

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	B4~7	Resolution	0~8=1/32~1/1	*T05-1 61:01
	B3	not use	(0)	61:--
	B0~2	Type	0~5=Up-Trigger	*T05-2 61:00
+1	B7	Latch	0,1=Off,On	61:06
	B5,6	Octave Range	0~3=1~4 Octave	61:02
	B0~4	Last step	0~7=1~8 step	61:03
+2		gate time	0~100=0~100[%]	61:04
+3		Swing	64+/-50=0+/-50[%]	61:05
+4	B7	Step1 SW	0,1=Off,On	61:10
	B6	Step2 SW	0,1=Off,On	61:11
	B5	Step3 SW	0,1=Off,On	61:12
	B4	Step4 SW	0,1=Off,On	61:13
	B3	Step5 SW	0,1=Off,On	61:14
	B2	Step6 SW	0,1=Off,On	61:15
	B1	Step7 SW	0,1=Off,On	61:16
	B0	Step8 SW	0,1=Off,On	61:17
+5~+7		(dummy bytes)		61:--

TABLE 6 : TIMBRE PROGRAM PARAMETER  
No. : No. in the PROGRAM DUMP DATA  
Parameter ID & SUB ID [Hex]: for PARAMETER CHANGE.

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
Common				
+0		Knob1 assign	0~55 = 1~56	*T01-1 x0:00
+1		Knob2 assign	0~55 = 1~56	*T01-1 x0:01
+2		Knob3 assign	0~55 = 1~56	*T01-1 x0:02
+3		Knob4 assign	0~55 = 1~56	*T01-1 x0:03
Voice				
+4	B4~7	not use	(0,0,0,0)	+0:--
	B0~3	Unison Voice	0,1~3=OFF,2Voice~4Voice	+0:08
+5		Unison Detune	0~99=0~99[cent]	+0:09
+6		Unison Spread	0~127	+0:0A
+7	B6~7	Voice Assign	0~2=Mono1,Mono2,Poly	+0:0B
	B0~5	not use	(0,0,0,0,0)	+0:--
+8		(dummy byte)		+0:--
Pitch				
+9		Analog Tuning	0~127	+0:13
+10		Transpose	64+/-48=0+/-48[note]	+0:14
+11		Detune	64+/-50=0+/-50[cent]	+0:15
+12		Vibrato Int	64+/-63=0+/-2400	+0:16
+13		Bend Range	64+/-12=0+/-12[note]	+0:10
+14		Portamento Time	0~127	+0:11
+15		(dummy bytes)		+0:--
Osc1				
+16	B6,7	not use	(0,0)	+0:--
	B4,5	Osc Mod	0~3=Waveform,Cross,Unison,VPM	+0:18
	B0~3	Wave Type	0~7=Saw~Audio In	*T06-1 +0:17
+17		Waveform CTRL1	0~127	+0:19
+18		Waveform CTRL2	0~127	+0:1A



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+19	DWGS wave select	0~64 (when Osc1 Wave is "DWGS")	+0:1B	
+20	(dummy byte)		+0:--	
Osc2				
+21	B6,7	not use	(0,0)	+0:--
	B4,5	Mod Select	0~3=Off, Ring, Sync, RingSync	+0:21
	B2,3	not use	(0,0)	+0:--
	B0,1	Wave Type	0~3=Saw, Squ, Tri, Sin	+0:20
+22	Semitone	64+/-24=0+/-24[note]	+0:22	
+23	Tune	64+/-63=0+/-63[note]	+0:23	
Mixer				
+24	Osc1 Level	0~127	+0:28	
+25	Osc2 Level	0~127	+0:29	
+26	Noise Level	0~127	+0:2A	
+27	(dummy byte)		+0:--	
Filter				
+28	B6,7	not use	(0,0)	+0:--
	B4,5	Filter2 Type	0~3=LPF, HPF, BPF, COMB	+0:40
	B2,3	not use	(0,0)	+0:--
	B0,1	Filter Routing	0~3=Single, Serial, Prallel, Indiv	+0:30
+29	Filter1 Balance	0~127	+0:31	
+30	Filter1 Cutoff	0~127	+0:32	
+31	Filter1 Resonance	0~127	+0:33	
+32	F1 EG1 Intensity	64+/-63=0+/-63	+0:34	
+33	F1 Keyboard Track	64+/-63=0+/-2.00	+0:35	
+34	F1 Velocity Sens	64+/-63=0+/-63	+0:36	
+35	Filter2 Cutoff	0~127	+0:42	
+36	Filter2 Resonance	0~127	+0:43	
+37	F2 EG1 Intensity	64+/-63=0+/-63	+0:44	
+38	F2 Keyboard Track	64+/-63=0+/-2.00	+0:45	
+39	F2 Velocity Sens	64+/-63=0+/-63	+0:46	
Amp				
+40	Level	0~127	+0:50	
+41	B6,7	not use	(0,0)	+0:--
	B4,5	Drive/WS position	0~1=Pre Flt1, Pre Amp	+0:52
	B0~3	not use	(0,0,0,0)	+0:--
+42	B4~7	not use	(0,0)	+0:--
	B0~3	WaveShape Type	0~12=Off, Drive, Decimator~LvlBoost	+0:51
+43	Depth	0~127	+0:54	
+44	Panpot	0,1~64~127=L63, L63~CNT~R63	+0:55	
+45	Key Track	64+/-63=0+/-63	+0:56	
+46	Punch Level	0~127	+0:57	
+47	(dummy byte)		+0:--	
EG1				
+48	Attack Time	0~127	+0:60	
+49	Decay Time	0~127	+0:61	
+50	Sustain Level	0~127	+0:62	
+51	Release Time	0~127	+0:63	
+52	LevelVelocitySens	64+/-63=0+/-63	+0:64	
+53	(dummy byte)		+0:--	
EG2				

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+54	Attack Time	0~127	+0:70	
+55	Decay Time	0~127	+0:71	
+56	Sustain Level	0~127	+0:72	
+57	Release Time	0~127	+0:73	
+58	LevelVelocitySens	64+/-63=0+/-63	+0:74	
+59	(dummy byte)		+0:--	
EG3				
+60	Attack Time	0~127	+0:80	
+61	Decay Time	0~127	+0:81	
+62	Sustain Level	0~127	+0:82	
+63	Release Time	0~127	+0:83	
+64	LevelVelocitySens	64+/-63=0+/-63	+0:84	
+65	(dummy byte)		+0:--	
LFO1				
+66	B4~7	not use	(0,0,0,0)	+0:--
	B0~3	Wave	0~4=Saw, Square, Tri, S/H, Random	+0:90
+67		Frequency	0~127=0~127 *T06-3	+0:92
+68	B7	BPM Sync	0,1=Off, On	+0:93
	B5,6	Key Sync	0~2=Off, Timbre, Voice	+0:94
	B0~4	not use	(0,0,0,0,0)	+0:--
+69	B5~7	not use	(0,0,0)	+0:--
	B0~4	Sync Note	0~16=8/1~1/64 *T06-4	+0:96
LFO2				
+70	B4~7	not use	(0,0,0,0)	+0:--
	B0~3	Wave	0~4=Saw, Squ, Sin, S/H, Random	+0:A0
+71		Frequency	0~127	+0:A2
+72	B7	BPM Sync	0,1=Off, On	+0:A3
	B5,6	Key Sync	0~2=Off, Timbre, Voice	+0:A4
	B0~4	not use	(0,0,0,0,0)	+0:--
+73	B5~7	not use	(0,0,0)	+0:--
	B0~4	Sync Note	0~16=8/1~1/64 *T06-4	+0:A6
PATCH				
+74	Patch1 Source	0~11=EG1~MIDI3 *T03-1	+1:00	
+75	Patch1 Destination	0~14=PITCH~LFO2FREQ *T06-2	+1:01	
+76	Patch1 Intensity	64+/-63=0+/-63	+1:02	
+77	Patch2 Source	0~11=EG1~MIDI3 *T03-1	+1:04	
+78	Patch2 Destination	0~14=PITCH~LFO2FREQ *T06-2	+1:05	
+79	Patch2 Intensity	64+/-63=0+/-63	+1:06	
+80	Patch3 Source	0~11=EG1~MIDI3 *T03-1	+1:08	
+81	Patch3 Destination	0~14=PITCH~LFO2FREQ *T06-2	+1:09	
+82	Patch3 Intensity	64+/-63=0+/-63	+1:0A	
+83	Patch4 Source	0~11=EG1~MIDI3 *T03-1	+1:0C	
+84	Patch4 Destination	0~14=PITCH~LFO2FREQ *T06-2	+1:0D	
+85	Patch4 Intensity	64+/-63=0+/-63	+1:0E	
+86	Patch5 Source	0~11=EG1~MIDI3 *T03-1	+1:10	
+87	Patch5 Destination	0~14=PITCH~LFO2FREQ *T06-2	+1:11	
+88	Patch5 Intensity	64+/-63=0+/-63	+1:12	
+89	Patch6 Source	0~11=EG1~MIDI3 *T03-1	+1:14	
+90	Patch6 Destination	0~14=PITCH~LFO2FREQ *T06-2	+1:15	
+91	Patch6 Intensity	64+/-63=0+/-63	+1:16	

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TABLE 7 : INSERT FX PARAMETER  
 No. : No. in the PROGRAM DUMP DATA.  
 Parameter ID & SUB ID [Hex]: for PARAMETER CHANGE.

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
Fx1				
+0	B7	not use	(0)	x3:--
	B0~6	Effect1 Type	0~30=NoEffect~TalkingMod	*T04-1 x3:01
+1		(dummy byte)		x3:--
+2	B5~7	not use	(0,0,0)	x3:--
	B0~4	Knob Assign	0~19=param1~20	x3:02
+3		(dummy byte)		x3:--
+4		Fx1 Int param 1		*T04-2 x3:10
+5		Fx1 Int param 2		*T04-2 x3:11
+6		Fx1 Int param 3		*T04-2 x3:12
+7		Fx1 Int param 4		*T04-2 x3:13
+8		Fx1 Int param 5		*T04-2 x3:14
+9		Fx1 Int param 6		*T04-2 x3:15
+10		Fx1 Int param 7		*T04-2 x3:16
+11		Fx1 Int param 8		*T04-2 x3:17
+12		Fx1 Int param 9		*T04-2 x3:18
+13		Fx1 Int param 10		*T04-2 x3:19
+14		Fx1 Int param 11		*T04-2 x3:1A
+15		Fx1 Int param 12		*T04-2 x3:1B
+16		Fx1 Int param 13		*T04-2 x3:1C
+17		Fx1 Int param 14		*T04-2 x3:1D
+18		Fx1 Int param 15		*T04-2 x3:1E
+19		Fx1 Int param 16		*T04-2 x3:1F
+20		Fx1 Int param 17		*T04-2 x3:20
+21		Fx1 Int param 18		*T04-2 x3:21
+22		Fx1 Int param 19		*T04-2 x3:22
+23		Fx1 Int param 20		*T04-2 x3:23
Fx2				
+24~47	Effect2 parameter	same as Effect1		x3:30~53
EQ				
+48	Low Freq	0~33=20~1000 [Hz]	*T07-1	x3:60
+49	Low Gain	64+/-30=0+/-30		x3:61
+50	Hi Freq	0~25=1.00~20.0 [KHz]	*T07-2	x3:62
+51	Hi Gain	64+/-30=0+/-30		x3:63

TABLE 8 : MOTION SEQ PARAMETER  
 No. : No. in the PROGRAM DUMP DATA.  
 Parameter ID & SUB ID [Hex]: for PARAMETER CHANGE.

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	B7	SEQ On/Off	0,1=Off,On	x4:00
	B6	not use	(0)	x4:--
	B4,5	Seq Type	0~4=Fowrd~OneShot	x4:02
	B0~3	Last Step	0~15=1~16	x4:01
+1	B6,7	not use	(0,0)	x4:--
	B4,5	Key Sync	0~2=OFF,Timbre,Voice	x4:04
	B0~3	Resolution	0~15=1/48~1/1	*T08-1 x4:05
+2 ~19	SEQ1 parameter	SEQ parameter [18]	(TABLE 9)	x5:00~

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TABLE 9: SEQ PARAMETER

No. : No. in the PROGRAM DUMP DATA.

Parameter ID & SUB ID [Hex]: for PARAMETER CHANGE.

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Knob	0~41=None~Patch6Int	*T09-1	x5:10
+1 B7	Motion Type	0,1=Smooth,Step		x5:11
B0~6	not use	(0,0,0,0,0,0,0)		x5:--
+2~17	Step Value [0~15]	64+/-63=0+/-63		x5:00~0F

TABLE 10: GLOBAL PARAMETER

No. : No. in the GLOBAL DUMP DATA.

Parameter ID & SUB ID [Hex]: for PARAMETER CHANGE.

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
0	Master Tune	0+/-100=430~440~450		00:00
1	Transpose	0+/-12		00:01
2 B7	Memory Protect	0,1=Off,On		00:05
B4~6	not use	(0,0,0)		00:--
B3	Knob Mode	0,1=JUMP,CATCH		00:04
B2	Position	0,1=PostKBD,PreTG		00:03
B0,1	Audio In Thru	0,1=Off,Ext1+2		00:02
3 B4~7	not use	(0,0,0,0)		00:--
B0~3	Vel.Curve	0~7,8=1~8,const127		00:06
4 B4~7	not use	(0,0,0,0)		01:--
B0~3	Global MIDI Ch.	0~15=1~16		01:00
5 B7	Local Ctrl	0,1=Off,On		01:03
B6	not use	(0)		01:--
B4,5	System routing	0~2=Both,USB,MIDI		01:01
B2,3	Clock	0~3=Auto,Internal,Ext(U),Ext(M)		01:02
B0,1	not use	(0,0)		01:--
6	MIDI1 Ctrl No.	0~115=P.Bend~CC#119	*T10-1	01:04
7	MIDI2 Ctrl No.	0~115=P.Bend~CC#119	*T10-1	01:05
8	MIDI3 Ctrl No.	0~115=P.Bend~CC#119	*T10-1	01:06
9 B6,7	not use	(0,0)		01:--
B5	SystemEx Filter	0,1=Dis,Ena		01:0A
B4	P.Bend Filter	0,1=Dis,Ena		01:09
B3	CtrlChg Filter	0,1=Dis,Ena		01:08
B1,2	not use	(0,0)		01:--
B0	ProgChg Filter	0,1=Dis,Ena		01:07
10 B4~7	not use	(0,0,0,0)		03:--
B0~3	Ass.Pedal	0~6=Volume~FootPdl	*T10-2	03:00
11 B7	Ass.SW Polarity	0,1= -,+		03:03
B6	Ass.SW Mode	0,1=Unlatch,Latch		03:02
B4,5	not use	(0,0)		03:--
B0~3	Ass.SW	0~9=Damper~FootSW Off/On	*T10-3	03:01
Knob & Switch Ctrl Change No. Map				
12~78	[0]~[66] Ctrl Change No.	-1,0~95,102~119 =OFF,CC#00~95,#102~119	*T10-4	02:xx
79	(dummy byte)			--:--

TABLE 11: FORMANT SEQUENCE DATA  
 No. : No. in the FORMANT SEQUENCE DUMP DATA.

No. (bit)	PARAMETER	VALUE	DESCRIPTION
SEQ. STEP[1] Formant parameter (when SEQ. DATA SIZE > 0)			
0	Band[1] Data	0~FFh	Formant data
1	Band[2] Data	same as Band[1]	
2	Band[3] Data	same as Band[1]	
3	Band[4] Data	same as Band[1]	
4	Band[5] Data	same as Band[1]	
5	Band[6] Data	same as Band[1]	
6	Band[7] Data	same as Band[1]	
7	Band[8] Data	same as Band[1]	
8	Band[9] Data	same as Band[1]	
9	Band[10] Data	same as Band[1]	
10	Band[11] Data	same as Band[1]	
11	Band[12] Data	same as Band[1]	
12	Band[13] Data	same as Band[1]	
13	Band[14] Data	same as Band[1]	
14	Band[15] Data	same as Band[1]	
15	Band[16] Data	same as Band[1]	
SEQ. STEP[2]~[16] Formant parameter			
16 ~	SEQ. STEP [2] Band[1]~	same as SEQ. STEP[1] (when SEQ. DATA SIZE > 1)	

\*T01-1 :

1: Off	11: Flt1Type	21: DecayF	31: LF1Freq,LF1SyNot	41: MFxKnob	51: VocdrLvl
2: Pitch	12: Cutoff1	22: SustainF	32: LF2Freq,LF2SyNot	42: ArpGate	52: FrmmtSft
3: Prtmento	13: Resol	23: ReleaseF	33: VPtclInt	43: BassLvl	53: FcOffset
4: OSC1Ctr1	14: EGlnt1	24: Level	34: VPtcl2Int	44: DrumLvl	54: Resonanc
5: OSC1Ctr2	15: KeyTrkF1	25: Pan	35: VPtcl3Int	45: VocThre	55: FcModInt
6: Semitone	16: Cutoff2	26: DepthA	36: VPtcl4Int	46: HPF Gate	56: E.F.Sens
7: OSC2Tune	17: Reso2	27: AttackA	37: LoEqGain	47: HPF Lvl	
8: OSC1 Lvl	18: EGlnt2	28: DecayA	38: HiEqFreq	48: DirectLv	
9: OSC2 Lvl	19: KeyTrkF2	29: SustainA	39: IFx1Knob	49: InputLvl	
10: NoiseLvl	20: AttackF	30: ReleaseA	40: IFx2Knob	50: TimblLvl	

\*T01-2 :

0: OFF  
 1: Mod.Seq.  
 2: Mod.Seq.&D.Kit  
 3: Arp./Step Seq.

\*T03-1 : Fc Mod Source, Patch1~6 Source

0: EG1	4: LFO2	8: Key Track
1: EG2	5: Velocity	9: MIDI1
2: EG3	6: Pitch Bend	10: MIDI2
3: LFO1	7: Mod Wheel	11: MIDI3

\*T04-1 : Fx Type

0: No Effect  
 1: St.Compressor  
 2: St.Limiter  
 3: St.Gate  
 4: St.Filter  
 5: St.Wah  
 6: St.BandEQ  
 7: Distortion  
 8: CabinetSimltr  
 9: TubePreampSim(IFX) / St.TubePreamp(MFX)  
 10: St.Decimator  
 11: Reverb  
 12: Early Reflect  
 13: L/C/R Delay  
 14: St.Delay  
 15: AutoPanDelay  
 16: St.AutoPanDly  
 17: Mod Delay  
 18: St.Mod Delay  
 19: Tape Echo  
 20: St.Chorus  
 21: Ensemble  
 22: St.Flanger  
 23: St.Phaser  
 24: St.Tremolo  
 25: St.Ring Mod  
 26: Pitch Shifter(IFX) / St.PitchShift(MFX)

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27: Grain Shifter(IFX) / St.GrainShift(MFX)  
28: St.Vibrato  
29: RotarySpeaker  
30: Talking Mod

\*T04-2 :  
(See R3 Effect Parameter Structure)

\*T05-1 :  
0: 1/32            3: 1/12            6: 1/4  
1: 1/24            4: 1/8             7: 1/2  
2: 1/16            5: 1/6             8: 1/1

\*T05-2 :  
0: Up  
1: Down  
2: Alt1  
3: Alt2  
4: Random  
5: Trigger

\*T06-1 :  
0: Saw            4: Noise            8: Audio In  
1: Pulse           5: Formant  
2: Tri            6: DWGS  
3: Sin(Cross)    7: PCM

\*T06-2 : Patch1-6 Destination  
0: PITCH            5: NOISE LEVEL      10: DRIVE/WS DEPTH  
1: OSC2 PITCH      6: FLT1 TYPE        11: AMP  
2: OSC1 CNTL1      7: FLT1 CUTOFF      12: PAN  
3: OSC1 LEVEL      8: FLT1 RESONANCE   13: LFO1 FREQ  
4: OSC2 LEVEL      9: FLT2 CUTOFF      14: LFO2 FREQ

\*T06-3 : [kHz]  
0: 0.01    16: 0.17    32: 0.83    48: 2.75    64: 4.75    80: 8.50    96: 15.0    112: 39.0  
1: 0.02    17: 0.18    33: 0.92    49: 2.88    65: 4.88    81: 8.75    97: 16.0    113: 41.0  
2: 0.03    18: 0.19    34: 1.00    50: 3.00    66: 5.00    82: 9.00    98: 17.0    114: 44.0  
3: 0.04    19: 0.20    35: 1.13    51: 3.13    67: 5.25    83: 9.25    99: 18.0    115: 47.0  
4: 0.05    20: 0.21    36: 1.25    52: 3.25    68: 5.50    84: 9.50    100: 19.0   116: 50.0  
5: 0.06    21: 0.22    37: 1.38    53: 3.38    69: 5.75    85: 9.75    101: 20.0   117: 53.0  
6: 0.07    22: 0.23    38: 1.50    54: 3.50    70: 6.00    86: 10.0    102: 21.5   118: 57.0  
7: 0.08    23: 0.24    39: 1.63    55: 3.63    71: 6.25    87: 10.5    103: 23.0   119: 61.0  
8: 0.09    24: 0.25    40: 1.75    56: 3.75    72: 6.50    88: 11.0    104: 24.5   120: 65.0  
9: 0.10    25: 0.29    41: 1.88    57: 3.88    73: 6.75    89: 11.5    105: 26.0   121: 70.0  
10: 0.11   26: 0.33    42: 2.00    58: 4.00    74: 7.00    90: 12.0    106: 27.5   122: 75.0  
11: 0.12   27: 0.42    43: 2.13    59: 4.13    75: 7.25    91: 12.5    107: 29.0   123: 80.0  
12: 0.13   28: 0.50    44: 2.25    60: 4.25    76: 7.50    92: 13.0    108: 31.0   124: 85.0  
13: 0.14   29: 0.58    45: 2.38    61: 4.38    77: 7.75    93: 13.5    109: 33.0   125: 90.0  
14: 0.15   30: 0.67    46: 2.50    62: 4.50    78: 8.00    94: 14.0    110: 35.0   126: 95.0  
15: 0.16   31: 0.75    47: 2.63    63: 4.63    79: 8.25    95: 14.5    111: 37.0   127: 100

\*T06-4 :  
0: 8/1            4: 3/4            8: 1/4            12: 1/12          16: 1/64  
1: 4/1            5: 1/2            9: 3/16           13: 1/16  
2: 2/1            6: 3/8            10: 1/6           14: 1/24  
3: 1/1            7: 1/3            11: 1/8           15: 1/32

\*T07-1 :  
0: 20            10: 63            20: 200           30: 710  
1: 22            11: 71            21: 224           31: 800  
2: 25            12: 80            22: 250           32: 900  
3: 28            13: 90            23: 280           33: 1000  
4: 32            14: 10            24: 3150  
5: 36            15: 11            25: 4002  
6: 40            16: 12            26: 4505  
7: 45            17: 14            27: 5000  
8: 50            18: 16            28: 5600  
9: 56            19: 18            29: 6300

\*T07-2 :  
0: 1.00           10: 3.15           20: 11.2  
1: 1.12           11: 4.00           21: 12.5  
2: 1.25           12: 4.50           22: 14.0  
3: 1.40           13: 5.00           23: 16.0  
4: 1.60           14: 5.60           24: 18.0  
5: 1.80           15: 6.30           25: 20.0  
6: 2.00           16: 7.10  
7: 2.24           17: 8.00  
8: 2.50           18: 9.00  
9: 2.80           19: 10.0

\*T08-1 :  
0: 1/48           4: 1/12            8: 3/16            12: 1/2  
1: 1/32           5: 3/32            9: 1/4             13: 2/3  
2: 1/24           6: 1/8             10: 1/3            14: 3/4  
3: 1/16           7: 1/6             11: 3/8            15: 1/1

## 2.RECOGNIZED RECEIVE DATA

```

*T09-1 : Motion SEQ Destination List
  0: None          10: Filt1 Cutoff      20: Panpot          30: EG3Attack       40: Patch5Int
  1: Pitch         11: Filt1 Resonance    21: Drive          31: EG3Decay       41: Patch6Int
  2: Portament    12: Filt1 Type        22: EG1Attack      32: EG3Sustain
  3: OSC1Ctrl1    13: Filt1 EG1Int      23: EG1Decay      33: EG3Release
  4: OSC1Ctrl2    14: Filt1 KbdTrack    24: EG1Sustain    34: LFO1Freq
  5: OSC2Semi     15: Filt2 Cutoff      25: EG1Release    35: LFO2Freq
  6: OSC2Tune     16: Filt2 Resonance   26: EG2Attack     36: Patch1Int
  7: OSC1Level    17: Filt2 EG1Int      27: EG2Decay     37: Patch2Int
  8: OSC2Level    18: Filt2 KbdTrack    28: EG2Sustain    38: Patch3Int
  9: NoiseLeve   19: AmpLevell        29: EG2Release    39: Patch4Int

*T10-1 :
  0: P.Bend       2~97: #CC00~95
  1: A.Touch     98~115: #CC102~119

*T10-2 :
  0: Volume       3: A.Touch          6: FootPdl
  1: Exp Pdl     4: Mod Wheel
  2: Panpot      5: BreathC

*T10-3 :
  0: Damper      4: Oct -
  1: Prog +     5: Portmnt
  2: Prog -     6: Arpegio Off/On
  3: Oct +

*T10-4 :
[+00]: Portamento      [+29]: EG1 Sustain      [+58]: Vcd Direct Level
[+01]: Unison SW       [+30]: EG1 Release     [+59]: Vcd In Src1 Level
[+02]: OSC1 Wave       [+31]: EG2 Attack      [+60]: Vcd In Src2 Level
[+03]: OSC1 Mod.       [+32]: EG2 Decay       [+61]: Vcd Level
[+04]: OSC1 Ctrl1     [+33]: EG2 Sustain     [+62]: Vcd Formant Shift
[+05]: OSC1 Ctrl2     [+34]: EG2 Release     [+63]: Vcd FC Offset
[+06]: OSC2 Wave       [+35]: LFO1 Wave       [+64]: Vcd Resonance
[+07]: OSC2 Mod.       [+36]: LFO1 Frequency  [+65]: Vcd Fc Mod.Int
[+08]: OSC2 Semitone  [+37]: LFO2 Wave       [+66]: Vcd E.F. Sens
[+09]: OSC2 Tune      [+38]: LFO2 Frequency  [+67]: Vcd Formant Motion No.
[+10]: OSC1 Level     [+39]: Patch1 Int.
[+11]: OSC2 Level     [+40]: Patch2 Int.
[+12]: Noise Level    [+41]: Patch3 Int.
[+13]: Filter Routing [+42]: Patch4 Int.
[+14]: Filter1 Type Balance [+43]: Patch5 Int.
[+15]: Filter1 Cutoff [+44]: Patch6 Int.
[+16]: Filter1 Resonance [+45]: EQ Hi.Gain
[+17]: Filter1 EG1 Int [+46]: EQ Low.Gain
[+18]: Filter1 KeyTrack [+47]: Mod.Seq. SW
[+19]: Filter2 Type   [+48]: FX1 Edit1
[+20]: Filter2 Cutoff [+49]: FX2 Edit1
[+21]: Filter2 Resonance [+50]: MFX Edit
[+22]: Filter2 EG1 Int [+51]: FX1 Dry/Wet
[+23]: Filter2 KeyTrack [+52]: FX2 Dry/Wet
[+24]: Amp Level      [+53]: MFX Dry/Wet
[+25]: Panpot         [+54]: Vcd Threshold
[+26]: Drive/WS Depth [+55]: Vcd HPF Level
[+27]: EG1 Attack     [+56]: Vcd HPF Gate
[+28]: EG1 Decay      [+57]: Vcd Mod Select

```

## R3 Effect Parameter Structure

TABLE 1 : INSERT EFFECT PARAMETER  
 No. : No. in the PROGRAM DUMP DATA.  
 Parameter ID & SUB ID [Hex]: for PARAMETER CHANGE.

1 St.Compressor

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	not use			--
+2	Sensitivity	1~127=1~127		x9:+02
+3	Attack	0~127=0.1~500 msec	*T01-01	x9:+03
+4	Output Level	0~127=0~127		x9:+04

2 St.Limiter

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	not use			--
+2	Ratio	0~68,69=1.0:1~50.0:1,Inf:1	*T01-02	x9:+02
+3	Threshold	24~64=-40~0 dB	*T01-03	x9:+03
+4	Attack	0~127=0.1~500 msec	*T01-01	x9:+04
+5	Gain Adjust	23,24~88=-Inf,-40~+24 dB	*T01-04	x9:+05

3 St.Gate

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	not use			--
+2	Threshold	0~127=0~127		x9:+02
+3	Attack	0~127=0.1~500 msec	*T01-01	x9:+03
+4	Release	0~127=0.3~1500 msec	*T01-05	x9:+04
+5	Gain Adjust	23,24~88=-Inf,-40~+24 dB	*T01-04	x9:+05

4 St.Filter

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Filter Type	0~4=LPF24,LPF18,LPF12,HPF12,BPF12		x9:+01
+2	Cutoff	0~127=0~127		x9:+02
+3	Resonance	0~127=0~127		x9:+03
+4	Trim	0~127=0~127		x9:+04
+5	Mod Source	0,1=LFO,Ctrl		x9:+05
+6	Mod Intensity	64+/-63=-63~+63		x9:+06
+7	Mod Response	0~127=0~127		x9:+07
+8	LFO Tempo Sync	0,1=Off,On		x9:+08
+9	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	x9:+09
+10	LFO Sync Note	0~16=8/1~1/64	*T03-02	x9:+10
+11	LFO Waveform	0~4=Saw,Squ,Tri,Sin,S&H		x9:+11
+12	LFO Shape	64+/-63=-63~+63		x9:+12
+13	LFO KeySync	0,1=Off,Timbre		x9:+13
+14	LFO Init Phase	0~18=0,10,20~180 [degree]		x9:+14
+15	Control Source	0~13=Off~MIDI5	*T04-01	x9:+15



## 5 St. Wah

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Wah Type	0~5=Y-CRY~M-VOX	*T01-06	x9:+01
+2	Frequency	64+/-63=-63~+63		x9:+02
+3	Resonance	64+/-63=-63~+63		x9:+03
+4	Mod Source	0~2=Auto,LFO,Ctrl		x9:+04
+5	Mod Intensity	64+/-63=-63~+63		x9:+05
+6	Mod Response	0~127=0~127		x9:+06
+7	Env.Sens	0~127=0~127		x9:+07
+8	Env.Shape	64+/-63=-63~+63		x9:+08
+9	LFO Tempo Sync	0,1=Off,On		x9:+09
+10	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	x9:+10
+11	LFO Sync Note	0~16=8/1~1/64	*T03-02	x9:+11
+12	LFO Waveform	0~4=Saw,Squ,Tri,Sin,S&H		x9:+12
+13	LFO Shape	64+/-63=-63~+63		x9:+13
+14	LFO KeySync	0,1=Off,Timbre		x9:+14
+15	LFO Init Phase	0~18=0,10,20~180 [degree]		x9:+15
+16	Control Source	0~13=Off~MIDI5	*T04-01	x9:+16

## 6 St. Band EQ

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Trim	0~127=0~127		x9:+01
+2	B1 Type	0,1=Peaking,Shelv Low		x9:+02
+3	B2 Type	0,1=Peaking,Shelv Hi		x9:+03
+4	B1 Frequency	0~58=20~20 kHz	*T01-07	x9:+04
+5	B1 Q	0~95=0.5,0.6~9.9,10		x9:+05
+6	B1 Gain	64+/-36=-18,-17.5~0~17.5,18 dB		x9:+06
+7	B2 Frequency	0~58=20~20 kHz	*T01-07	x9:+07
+8	B2 Q	0~95=0.5,0.6~9.9,10		x9:+08
+9	B2 Gain	64+/-36=-18,-17.5~0~17.5,18 dB		x9:+09

## 7 Distortion

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Gain	0~127=0~127		x9:+01
+2	Pre EQ Frequency	0~58=20~20 kHz	*T01-07	x9:+02
+3	Pre EQ Q	0~95=0.5,0.6~9.9,10		x9:+03
+4	Pre EQ Gain	64+/-36=-18,-17.5~0~17.5,18 dB		x9:+04
+5	B1 Frequency	0~58=20~20 kHz	*T01-07	x9:+05
+6	B1 Q	0~95=0.5,0.6~9.9,10		x9:+06
+7	B1 Gain	64+/-36=-18,-17.5~0~17.5,18 dB		x9:+07
+8	B2 Frequency	0~58=20~20 kHz	*T01-07	x9:+08
+9	B2 Q	0~95=0.5,0.6~9.9,10		x9:+09
+10	B2 Gain	64+/-36=-18,-17.5~0~17.5,18 dB		x9:+10
+11	B3 Frequency	0~58=20~20 kHz	*T01-07	x9:+11
+12	B3 Q	0~95=0.5,0.6~9.9,10		x9:+12
+13	B3 Gain	64+/-36=-18,-17.5~0~17.5,18 dB		x9:+13
+14	Output Level	0~127=0~127		x9:+14

## KORG R3 MIDI Implementation

### 8 Cabinet Simulator

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Cabinet Type	0~10=Tweed1x8~US_V30	*T01-08	x9:+01
+2	Air	0~127=0~127		x9:+02
+3	Trim	0~127=0~127		x9:+03

### 9 Tube Preamp Simulator

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Tube1 Low Cut	0~127=0~127		x9:+01
+2	Tube1 High Cut	0~127=0~127		x9:+02
+3	Tube1 Gain	23,24~64~88=-Inf,-40~0~+24 dB		x9:+03
+4	Tube1 Bias	0~100=0~100 %		x9:+04
+5	Tube1 Satulation	0~100=0~100 %		x9:+05
+6	Phase	0,1=Normal,Inverted		x9:+06
+7	Tube2 Low Cut	0~127=0~127		x9:+07
+8	Tube2 High Cut	0~127=0~127		x9:+08
+9	Tube2 Gain	23,24~64~88=-Inf,-40~0~+24 dB		x9:+09
+10	Tube2 Bias	0~100=0~100 %		x9:+10
+11	Tube2 Satulation	0~100=0~100 %		x9:+11
+12	Output Level	0~127=0~127		x9:+12

### 10 St.Decimator

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	PreLPF	0,1=Off,On		x9:+01
+2	HighDamp	0~100=0~100 %		x9:+02
+3	Fs	0~94=1.0,1.5,~47.5,48.0 kHz		x9:+03
+4	Bit	0~20=4~24 bit		x9:+04
+5	Output Level	0~127=0~127		x9:+05
+6	Fs Mod Intensity	64+/-63=-63~+63		x9:+06
+7	LFO Tempo Sync	0,1=Off,On		x9:+07
+8	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	x9:+08
+9	LFO Sync Note	0~16=8/1~1/64	*T03-02	x9:+09
+10	LFO Waveform	0~4=Saw,Squ,Tri,Sin,S&H		x9:+10
+11	LFO Shape	64+/-63=-63~+63		x9:+11
+12	LFO KeySync	0,1=Off,Timbre		x9:+12
+13	LFO Init Phase	0~18=0,10,20~180 [degree]		x9:+13

### 11 Reverb

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Type	0~2=Hall,Plate,Room		x9:+01
+2	Reverb Time	0~127=0.1~10.0sec	*T05-01/02	x9:+02
+3	High Damp	0~100=0~100 %		x9:+03

## 12 Early Reflections

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Type	0~3=Sharp,Loose,Mod,Reverse		x9:+01
+2	ER Time	0~87=10~400 msec	*T01-09	x9:+02
+3	Pre Delay	0~127=0~200 msec	*T02-01	x9:+03
+4	Pre EQ Trim	0~127=0~127		x9:+04
+5	not use			--
+6	not use			--
+7	High Damp	0~100=0~100 %		x9:+07
+8	Low Damp	0~100=0~100 %		x9:+08

## 13 L/C/R Delay

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Delay TempoSync	0,1=Off,On		x9:+01
+2	Time Ratio	0~127=12.5~400% (Sync=On) 0~127=0.5~400% (Sync=Off)	*T06-01 *T06-02	x9:+02
+3	L Delay Time	0~127=0~1000 msec	*T06-04	x9:+03
+4	C Delay Time	0~127=0~1000 msec	*T06-04	x9:+04
+5	R Delay Time	0~127=0~1000 msec	*T06-04	x9:+05
+6	L Delay Time	0~13=1/64~1/1	*T06-14	x9:+06
+7	C Delay Time	0~13=1/64~1/1	*T06-14	x9:+07
+8	R Delay Time	0~13=1/64~1/1	*T06-14	x9:+08
+9	L Delay Level	0~127=0~127		x9:+09
+10	C Delay Level	0~127=0~127		x9:+10
+11	R Delay Level	0~127=0~127		x9:+11
+12	C Feedback	0~127=0~127		x9:+12
+13	High Damp	0~100=0~100 %		x9:+13
+14	Low Damp	0~100=0~100 %		x9:+14
+15	Trim	0~127=0~127		x9:+15
+16	Spread	0~127=0~127		x9:+16

## 14 St.Delay

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Type	0,1=Stereo,Cross		x9:+01
+2	Delay TempoSync	0,1=Off,On		x9:+02
+3	Time Ratio	0~127=12.5~400% (Sync=On) 0~127=0.5~400% (Sync=Off)	*T06-01 *T06-02	x9:+03
+4	L Delay Time	0~127=0~500 msec	*T06-03	x9:+04
+5	R Delay Time	0~127=0~500 msec	*T06-03	x9:+05
+6	L Delay Time	0~13=1/64~1/1	*T06-14	x9:+06
+7	R Delay Time	0~13=1/64~1/1	*T06-14	x9:+07
+8	Feedback	0~127=0~127		x9:+08
+9	High Damp	0~100=0~100 %		x9:+09
+10	Low Damp	0~100=0~100 %		x9:+10
+11	Trim	0~127=0~127		x9:+11
+12	Spread	0~127=0~127		x9:+12

## KORG R3 MIDI Implementation

### 15 Auto Panning Delay

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Delay TempoSync	0,1=Off,On		x9:+01
+3	Time Ratio	0~127=12.5~400% (Sync=On) *T06-01 0~127=0.5~400% (Sync=Off) *T06-02		x9:+03
+3	L Delay Time	0~127=0~1000 msec	*T06-04	x9:+03
+4	R Delay Time	0~127=0~1000 msec	*T06-04	x9:+04
+5	L Delay Time	0~13=1/64~1/1	*T06-14	x9:+05
+6	R Delay Time	0~13=1/64~1/1	*T06-14	x9:+06
+7	FeedBack	0~127=0~127		x9:+07
+8	Mod Depth	0~127=0~127		x9:+08
+9	LFO Tempo Sync	0,1=Off,On		x9:+09
+10	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	x9:+10
+11	LFO Sync Note	0~16=8/1~1/64	*T03-02	x9:+11
+12	LFO Waveform	0~4=Saw,Squ,Tri,Sin,S&H		x9:+12
+13	LFO Shape	64+/-63=-63~+63		x9:+13
+14	LFO KeySync	0,1=Off,Timbre		x9:+14
+15	LFO Init Phase	0~18=0,10,20~180 [degree]		x9:+15
+16	High Damp	0~100=0~100 %		x9:+16
+17	Low Damp	0~100=0~100 %		x9:+17
+18	Trim	0~127=0~127		x9:+18

### 16 St.Auto Panning Delay

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Delay Tempo Sync	0,1=Off,On		x9:+01
+2	Time Ratio	0~127=12.5~400% (Sync=On) *T06-01 0~127=0.5~400% (Sync=Off) *T06-02		x9:+02
+3	L Delay Time	0~127=0~500 msec	*T06-03	x9:+03
+4	R Delay Time	0~127=0~500 msec	*T06-03	x9:+04
+5	L Delay Time	0~13=1/64~1/1	*T06-14	x9:+05
+6	R Delay Time	0~13=1/64~1/1	*T06-14	x9:+06
+7	FeedBack	0~127=0~127		x9:+07
+8	Mod Depth	0~127=0~127		x9:+08
+9	LFO Tempo Sync	0,1=Off,On		x9:+09
+10	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	x9:+10
+11	LFO Sync Note	0~16=8/1~1/64	*T03-02	x9:+11
+12	LFO Waveform	0~4=Saw,Squ,Tri,Sin,S&H		x9:+12
+13	LFO Shape	64+/-63=-63~+63		x9:+13
+14	LFO KeySync	0,1=Off,Timbre		x9:+14
+15	LFO Init Phase	0~18=0,10,20~180 [degree]		x9:+15
+16	LFO Spread	64+/-18=-180~180 [degree]		x9:+16
+17	High Damp	0~100=0~100 %		x9:+17
+18	Low Damp	0~100=0~100 %		x9:+18
+19	Trim	0~127=0~127		x9:+19

## 17 Modulation Delay

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Delay Tempo Sync	0,1=Off,On		x9:+01
+2	Time Ratio	0~127=12.5~400% (Sync=On) 0~127=0.5~400% (Sync=Off)	*T06-01 *T06-02	x9:+02
+3	L Delay Time	0~127=0~980 msec	*T06-09	x9:+03
+4	R Delay Time	0~127=0~980 msec	*T06-09	x9:+04
+5	L Delay Time	0~13=1/64~1/1	*T06-14	x9:+05
+6	R Delay Time	0~13=1/64~1/1	*T06-14	x9:+06
+7	FeedBack	0~127=0~127		x9:+07
+8	Mod Depth	0~127=0~127		x9:+08
+9	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	x9:+09
+10	LFO Spread	64+/-18=-180~180 [degree]		x9:+10

## 18 St.Modulation Delay

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Delay Tempo Sync	0,1=Off,On		x9:+01
+2	Time Ratio	0~127=12.5~400% (Sync=On) 0~127=0.5~400% (Sync=Off)	*T06-01 *T06-02	x9:+02
+3	L Delay Time	0~127=0~480 msec	*T06-08	x9:+03
+4	R Delay Time	0~127=0~480 msec	*T06-08	x9:+04
+5	L Delay Time	0~13=1/64~1/1	*T06-14	x9:+05
+6	R Delay Time	0~13=1/64~1/1	*T06-14	x9:+06
+7	FeedBack	0~127=0~127		x9:+07
+8	Mod Depth	0~127=0~127		x9:+08
+9	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	x9:+09
+10	LFO Spread	64+/-18=-180~180 [degree]		x9:+10

## 19 Tape Echo

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Delay Tempo Sync	0,1=Off,On		x9:+01
+2	Time Ratio	0~127=12.5~400% (Sync=On) 0~127=0.5~400% (Sync=Off)	*T06-01 *T06-02	x9:+02
+3	Tap1 Delay Time	0~127=0~980 msec	*T06-09	x9:+03
+4	Tap2 Delay Time	0~127=0~980 msec	*T06-09	x9:+04
+5	Tap1 Delay Time	0~13=1/64~1/1	*T06-14	x9:+05
+6	Tap2 Delay Time	0~13=1/64~1/1	*T06-14	x9:+06
+7	Tap1 Level	0~127=0~127		x9:+07
+8	Tap2 Level	0~127=0~127		x9:+08
+9	FeedBack	0~127=0~127		x9:+09
+10	High Damp	0~100=0~100 %		x9:+10
+11	Low Damp	0~100=0~100 %		x9:+11
+12	Trim	0~127=0~127		x9:+12
+13	Saturation	0~127=0~127		x9:+13
+14	Wah Flatter Freq	0~127=0.01~100.0 Hz	*T03-01	x9:+14
+15	Wah Flatter Depth	0~127=0~127		x9:+15
+16	Pre Tone	0~127=0~127		x9:+16
+17	Spread	0~127=0~127		x9:+17

## KORG R3 MIDI Implementation

### 20 St.Chorus

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Mod Depth	0~127=0~127		x9:+01
+2	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	x9:+02
+3	LFO Spread	64+/-18=-180~180 [degree]		x9:+03
+4	PreDelay L	0~119=0~50 msec	*T06-12	x9:+04
+5	PreDelay R	0~119=0~50 msec	*T06-12	x9:+05
+6	Trim	0~127=0~127		x9:+06
+7	Low EQ Gain	64+/-30=-15~+15 dB		x9:+07
+8	High EQ Gain	64+/-30=-15~+15 dB		x9:+08

### 21 Ensemble

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Mod Depth	0~127=0~127		x9:+01
+2	Speed	1~127=1~127		x9:+02

### 22 St.Flanger/CombFilter

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Type	0,1=Flanger,Comb		x9:+01
+2	[Flanger]Delay	0~113=0~30 msec	*T06-13	x9:+02
+3	[Comb] CutOff	0~127=0~127		x9:+03
+4	Mod Depth	0~127=0~127		x9:+04
+5	Feedback	0~127=0~127		x9:+05
+6	[Flanger]Phase	0,1=+,-		x9:+06
+7	LFO Tempo Sync	0,1=Off,On		x9:+07
+8	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	x9:+08
+9	LFO Sync Note	0~16=8/1~1/64	*T03-02	x9:+09
+10	LFO Waveform	0~4=Saw,Squ,Tri,Sin,S&H		x9:+10
+11	LFO Shape	64+/-63=-63~+63		x9:+11
+12	LFO KeySync	0,1=Off,Timbre		x9:+12
+13	LFO Init Phase	0~18=0,10,20~180 [degree]		x9:+13
+14	LFO Spread	64+/-18=-180~180 [degree]		x9:+14
+15	High Damp	0~100=0~100 %		x9:+15

## 23 St. Phaser

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Type	0,1=Blue,U-VB		x9:+01
+2	Manual	0~127=0~127		x9:+02
+3	Mod Depth	0~127=0~127		x9:+03
+4	Resonance	0~127=0~127		x9:+04
+5	Phase	0,1=+,-		x9:+05
+6	LFO Tempo Sync	0,1=Off,On		x9:+06
+7	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	x9:+07
+8	LFO Sync Note	0~16=8/1~1/64	*T03-02	x9:+08
+9	LFO Waveform	0~4=Saw,Squ,Tri,Sin,S&H		x9:+09
+10	LFO Shape	64+/-63=-63~+63		x9:+10
+11	LFO KeySync	0,1=Off,Timbre		x9:+11
+12	LFO Init Phase	0~18=0,10,20~180 [degree]		x9:+12
+13	LFO Spread	64+/-18=-180~180 [degree]		x9:+13
+14	High Damp	0~100=0~100 %		x9:+14

## 24 St.Tremolo

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Mod Depth	0~127=0~127		x9:+01
+2	LFO Tempo Sync	0,1=Off,On		x9:+02
+3	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	x9:+03
+4	LFO Sync Note	0~16=8/1~1/64	*T03-02	x9:+04
+5	LFO Waveform	0~4=Saw,Squ,Tri,Sin,S&H		x9:+05
+6	LFO Shape	64+/-63=-63~+63		x9:+06
+7	LFO KeySync	0,1=Off,Timbre		x9:+07
+8	LFO Init Phase	0~18=0,10,20~180 [degree]		x9:+08
+9	LFO Spread	64+/-18=-180~180 [degree]		x9:+09

## 25 St.Ring Modulator

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	OSC Mode	0,1=Fixed,Note		x9:+01
+2	Frequency	0~127=0~12.0 kHz	*T03-03	x9:+02
+3	Offset	64+/-48=-48~+48		x9:+03
+4	Fine	64+/-50=-100,-98~0~98,100 cent		x9:+04
+5	OSC Waveform	0~2=Saw,Tri,Sine		x9:+05
+6	LFO Intensity	64+/-63=-63~+63		x9:+06
+7	LFO Tempo Sync	0,1=Off,On		x9:+07
+8	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	x9:+08
+9	LFO Sync Note	0~16=8/1~1/64	*T03-02	x9:+09
+10	LFO Waveform	0~4=Saw,Squ,Tri,Sin,S&H		x9:+10
+11	LFO Shape	64+/-63=-63~+63		x9:+11
+12	LFO KeySync	0,1=Off,Timbre		x9:+12
+13	LFO Init Phase	0~18=0,10,20~180 [degree]		x9:+13
+14	Pre LPF	0~127=0~127		x9:+14

## KORG R3 MIDI Implementation

### 26 Pitch Shifter

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Pitch Shift	64+/-24=-24~+24		x9:+01
+2	Fine	64+/-50=-100,-98~0~98,100 cent		x9:+02
+3	not use			--
+4	not use			--
+5	not use			--
+6	not use			--
+7	not use			--
+8	not use			--
+9	Mode	0~2=Slow,Medium,Fast		x9:+09
+10	High Damp	0~100=0~100 %		x9:+10
+11	Trim	0~127=0~127		x9:+11

### 27 Grain Shifter

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Duration TempoSync	0,1=Off,On		x9:+01
+2	Time Ratio	0~127=12.5~400% (Sync=On) *T06-01 0~127=0.5~400% (Sync=Off) *T06-02		x9:+02
+3	Duration	0~127=0~500 msec *T06-03		x9:+03
+4	not use			--
+5	LFO Tempo Sync	0,1=Off,On		x9:+05
+6	LFO Frequency	0~127=0.01~100.0 Hz *T03-01		x9:+06
+7	LFO Sync Note	0~16=8/1~1/64 *T03-02		x9:+07
+8	LFO KeySync	0,1=Off,Timbre		x9:+08
+9	LFO Init Phase	0~18=0,10,20~180 [degree]		x9:+09
+10	not use			--

### 28 St.Vibrato

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Mod Depth	0~127=0~127		x9:+01
+2	LFO Tempo Sync	0,1=Off,On		x9:+02
+3	LFO Frequency	0~127=0.01~100.0 Hz *T03-01		x9:+03
+4	LFO Sync Note	0~16=8/1~1/64 *T03-02		x9:+04
+5	LFO Waveform	0~4=Saw,Squ,Tri,Sin,S&H		x9:+05
+6	LFO Shape	64+/-63=-63~+63		x9:+06
+7	LFO KeySync	0,1=Off,Timbre		x9:+07
+8	LFO Init Phase	0~18=0,10,20~180 [degree]		x9:+08
+9	LFO Spread	64+/-18=-180~180 [degree]		x9:+09



## 29 Rotary Speaker

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Mode Switch	0,1=Rotate,Stop		x9:+01
+2	ModeSw. Ctrl. Src	0~13=Off~MIDI5	*T04-01	x9:+02
+3	ModeSw. Ctrl. Mode	0,1=Toggle,Moment		x9:+03
+4	Speaker Ctrl. Type	0,1=Switch,Manual		x9:+04
+5	[Sw]Speed Switch	0,1=Slow,Fast		x9:+05
+6	[Sw]Sw. Ctrl. Src	0~13=Off~MIDI5	*T04-01	x9:+06
+7	[Sw]Sw. Ctrl. Mode	0,1=Toggle,Moment		x9:+07
+8	[Ml]Speed	1~127=1~127		x9:+08
+9	[Ml]Speed Ctrl.Src	0~13=Off~MIDI5	*T04-01	x9:+09
+10	[Ml]Speed Ctrl.Int	64+/-63=-63~+63		x9:+10
+11	Horn/Rotor Balance	0,1~99,100=Rotor,1:99 ~ 99:1,Horn		x9:+11
+12	Horn Acceleration	0~127=0~127		x9:+12
+13	Horn Ratio	0,1~76=stop,0.5~2.0	*T01-10	x9:+13
+14	Rotor Acceleration	0~127=0~127		x9:+14
+15	Rotor Ratio	0,1~76=stop,0.5~2.0	*T01-10	x9:+15
+16	Mic Distance	0~127=0~127		x9:+16
+17	Spread	0~127=0~127		x9:+17
+18	Trim	0~127=0~127		x9:+18

## 30 Talking Modulator

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		x9:+00
+1	Voice Control	64+/-63=Bottom,-62~Center~+62,Top		x9:+01
+2	Voice Top	0~4=A,I,U,E,O		x9:+02
+3	Voice Center	0~4=A,I,U,E,O		x9:+03
+4	Voice Bottom	0~4=A,I,U,E,O		x9:+04
+5	Resonance	0~127=0~127		x9:+05
+6	Drive	0~127=0~127		x9:+06
+7	Mod Source	0~2=Auto,LFO,Ctrl		x9:+07
+8	Mod Intensity	64+/-63=-63~+63		x9:+08
+9	Mod Response	0~127=0~127		x9:+09
+10	[Auto] Env.Sens	0~127=0~127		x9:+10
+11	[Auto] Env.Shape	64+/-63=-63~+63		x9:+11
+12	LFO Tempo Sync	0,1=Off,On		x9:+12
+13	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	x9:+13
+14	LFO Sync Note	0~16=8/1~1/64	*T03-02	x9:+14
+15	LFO Waveform	0~4=Saw,Squ,Tri,Sin,S&H		x9:+15
+16	LFO Shape	64+/-63=-63~+63		x9:+16
+17	LFO KeySync	0,1=Off,Timbre		x9:+17
+18	LFO Init Phase	0~18=0,10,20~180 [degree]		x9:+18
+19	[Ctrl] Ctrl.1 Src	0~13=Off~MIDI5	*T04-01	x9:+19

## KORG R3 MIDI Implementation

TABLE 2 : MASTER EFFECT PARAMETER  
 No. : No. in the PROGRAM DUMP DATA.  
 Parameter ID & SUB ID [Hex]: for PARAMETER CHANGE.

1 St.Compressor				
No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Envelope Select	0,1=LR Mix,LR Indv.		61:01
+2	Sensitivity	1~127=1~127		61:02
+3	Attack	0~127=0.1~500 msec	*T01-01	61:03
+4	Output Level	0~127=0~127		61:04

2 St.Limiter				
No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Envelope Select	0,1=LR Mix,LR Indv.		61:01
+2	Ratio	0~68,69=1.0:1~50.0:1,Inf:1	*T01-02	61:02
+3	Threshold	24~64=-40~0 dB	*T01-03	61:03
+4	Attack	0~127=0.1~500 msec	*T01-01	61:04
+5	Gain Adjust	23,24~88=-Inf,-40~+24 dB	*T01-04	61:05

3 St.Gate				
No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Envelope Select	0,1=LR Mix,LR Indv.		61:01
+2	Threshold	0~127=0~127		61:02
+3	Attack	0~127=0.1~500 msec	*T01-01	61:03
+4	Release	0~127=0.3~1500 msec	*T01-05	61:04
+5	Gain Adjust	23,24~88=-Inf,-40~+24 dB	*T01-04	61:05

4 St.Filter				
No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Filter Type	0~4=LPF24,LPF18,LPF12,HPF12,BPF12		61:01
+2	Cutoff	0~127=0~127		61:02
+3	Resonance	0~127=0~127		61:03
+4	Trim	0~127=0~127		61:04
+5	Mod Source	0,1=LFO,Ctrl		61:05
+6	Mod Intensity	64+/-63=-63~+63		61:06
+7	Mod Response	0~127=0~127		61:07
+8	LFO Tempo Sync	0,1=Off,On		61:08
+9	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	61:09
+10	LFO Sync Note	0~16=8/1~1/64	*T03-02	61:10
+11	LFO Waveform	0~4=Saw,Squ,Tri,Sin,S&H		61:11
+12	LFO Shape	64+/-63=-63~+63		61:12
+13	LFO KeySync	0,1=Off,Timbre		61:13
+14	LFO Init Phase	0~18=0,10,20~180 [degree]		61:14
+15	Control Source	0~13=Off~MIDI5	*T04-01	61:15

## 5 St.Wah

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Wah Type	0~5=Y-CRY~M-VOX	*T01-06	61:01
+2	Frequency	64+/-63=-63~+63		61:02
+3	Resonance	64+/-63=-63~+63		61:03
+4	Mod Source	0~2=Auto,LFO,Ctrl		61:04
+5	Mod Intensity	64+/-63=-63~+63		61:05
+6	Mod Response	0~127=0~127		61:06
+7	Env.Sens	0~127=0~127		61:07
+8	Env.Shape	64+/-63=-63~+63		61:08
+9	LFO Tempo Sync	0,1=Off,On		61:09
+10	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	61:10
+11	LFO Sync Note	0~16=8/1~1/64	*T03-02	61:11
+12	LFO Waveform	0~4=Saw,Squ,Tri,Sin,S&H		61:12
+13	LFO Shape	64+/-63=-63~+63		61:13
+14	LFO KeySync	0,1=Off,Timbre		61:14
+15	LFO Init Phase	0~18=0,10,20~180 [degree]		61:15
+16	Control Source	0~13=Off~MIDI5	*T04-01	61:16

## 6 4Band EQ

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Trim	0~127=0~127		61:01
+2	B1 Type	0,1=Peaking,Shelv Low		61:02
+3	B4 Type	0,1=Peaking,Shelv Hi		61:03
+4	B1 Frequency	0~58=20~20 kHz	*T01-07	61:04
+5	B1 Q	0~95=0.5,0.6~9.9,10		61:05
+6	B1 Gain	64+/-36=-18,-17.5~0~17.5,18 dB		61:06
+7	B2 Frequency	0~58=20~20 kHz	*T01-07	61:07
+8	B2 Q	0~95=0.5,0.6~9.9,10		61:08
+9	B2 Gain	64+/-36=-18,-17.5~0~17.5,18 dB		61:09
+10	B3 Frequency	0~58=20~20 kHz	*T01-07	61:10
+11	B3 Q	0~95=0.5,0.6~9.9,10		61:11
+12	B3 Gain	64+/-36=-18,-17.5~0~17.5,18 dB		61:12
+13	B4 Frequency	0~58=20~20 kHz	*T01-07	61:13
+14	B4 Q	0~95=0.5,0.6~9.9,10		61:14
+15	B4 Gain	64+/-36=-18,-17.5~0~17.5,18 dB		61:15

## KORG R3 MIDI Implementation

### 7 Distortion

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Gain	0~127=0~127		61:01
+2	Pre EQ Frequency	0~58=20~20 kHz	*T01-07	61:02
+3	Pre EQ Q	0~95=0.5,0.6~9.9,10		61:03
+4	Pre EQ Gain	64+/-36=-18,-17.5~0~17.5,18 dB		61:04
+5	B1 Frequency	0~58=20~20 kHz	*T01-07	61:05
+6	B1 Q	0~95=0.5,0.6~9.9,10		61:06
+7	B1 Gain	64+/-36=-18,-17.5~0~17.5,18 dB		61:07
+8	B2 Frequency	0~58=20~20 kHz	*T01-07	61:08
+9	B2 Q	0~95=0.5,0.6~9.9,10		61:09
+10	B2 Gain	64+/-36=-18,-17.5~0~17.5,18 dB		61:10
+11	B3 Frequency	0~58=20~20 kHz	*T01-07	61:11
+12	B3 Q	0~95=0.5,0.6~9.9,10		61:12
+13	B3 Gain	64+/-36=-18,-17.5~0~17.5,18 dB		61:13
+14	Output Level	0~127=0~127		61:14

### 8 Cabinet Simulator

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Cabinet Type	0~10=Tweed1x8~US_V30	*T01-08	61:01
+2	Air	0~127=0~127		61:02
+3	Trim	0~127=0~127		61:03

### 9 St.Tube Preamp Simulator

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Tube1 Low Cut	0~127=0~127		61:01
+2	Tube1 High Cut	0~127=0~127		61:02
+3	Tube1 Gain	23,24~64~88=-Inf,-40~0~+24dB		61:03
+4	Tube1 Bias	0~100=0~100 %		61:04
+5	Tube1 Satulation	0~100=0~100 %		61:05
+6	Phase	0,1=Normal,Inverted		61:06
+7	Tube2 Low Cut	0~127=0~127		61:07
+8	Tube2 High Cut	0~127=0~127		61:08
+9	Tube2 Gain	23,24~64~88=-Inf,-40,~0~+24dB		61:09
+10	Tube2 Bias	0~100=0~100 %		61:10
+11	Tube2 Satulation	0~100=0~100 %		61:11
+12	Output Level	0~127=0~127		61:12

## 10 St.Decimator

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	PreLPF	0,1=Off,On		61:01
+2	HighDamp	0~100=0~100 %		61:02
+3	Fs	0~94=1.0,1.5,~47.5,48.0 kHz		61:03
+4	Bit	0~20=4~24		61:04
+5	Output Level	0~127=0~127		61:05
+6	Fs Mod Intensity	64+/-63=-63~+63		61:06
+7	LFO Tempo Sync	0,1=Off,On		61:07
+8	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	61:08
+9	LFO Sync Note	0~16=8/1~1/64	*T03-02	61:09
+10	LFO Waveform	0~4=Saw,Squ,Tri,Sin,S&H		61:10
+11	LFO Shape	64+/-63=-63~+63		61:11
+12	LFO KeySync	0,1=Off,Timbre		61:12
+13	LFO Init Phase	0~18=0,10,20~180 [degree]		61:13

## 11 Reverb

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Type	0~5=Hall~BrightRoom	*T05-03	61:01
+2	Reverb Time	0~127=0.1~10.0sec	*T05-01/02	61:02
+3	High Damp	0~100=0~100 %		61:03
+4	Pre Delay	0~127=0~200 msec	*T02-01	61:04
+5	Pre Delay Thru	0~127=0~127		61:05
+6	Pre EQ Trim	0~127=0~127		61:06
+7	Low EQ Gain	64+/-30=-15,-14.5~0~14.5,15 dB		61:07
+8	High EQ Gain	64+/-30=-15,-14.5~0~14.5,15 dB		61:08
+9	ER Level	0~127=0~127		61:09
+10	Reverb Level	0~127=0~127		61:10

## 12 Early Reflections

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Type	0~3=Sharp,Loose,Mod,Reverse		61:01
+2	ER Time	0~127=10~800 msec	*T01-09	61:02
+3	Pre Delay	0~127=0~200 msec	*T02-01	61:03
+4	Pre EQ Trim	0~127=0~127		61:04
+5	Low EQ Gain	64+/-30=-15,-14.5~0~14.5,15 dB		61:05
+6	High EQ Gain	64+/-30=-15,-14.5~0~14.5,15 dB		61:06
+7	High Damp	0~100=0~100 %		61:07
+8	Low Damp	0~100=0~100 %		61:08

## KORG R3 MIDI Implementation

### 13 L/C/R Delay

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Delay TempoSync	0,1=Off,On		61:01
+2	Time Ratio	0~127=12.5~400% (Sync=On) *T06-01 0~127=0.5~400% (Sync=Off) *T06-02		61:02
+3	L Delay Time	0~127=0~1400 msec	*T06-06	61:03
+4	C Delay Time	0~127=0~1400 msec	*T06-06	61:04
+5	R Delay Time	0~127=0~1400 msec	*T06-06	61:05
+6	L Delay Time	0~13=1/64~1/1	*T06-14	61:06
+7	C Delay Time	0~13=1/64~1/1	*T06-14	61:07
+8	R Delay Time	0~13=1/64~1/1	*T06-14	61:08
+9	L Delay Level	0~127=0~127		61:09
+10	C Delay Level	0~127=0~127		61:10
+11	R Delay Level	0~127=0~127		61:11
+12	C Feedback	0~127=0~127		61:12
+13	High Damp	0~100=0~100 %		61:13
+14	Low Damp	0~100=0~100 %		61:14
+15	Trim	0~127=0~127		61:15
+16	Spread	0~127=0~127		61:16

### 14 St.Delay

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Type	0,1=Stereo,Cross		61:01
+2	Delay TempoSync	0,1=Off,On		61:02
+3	Time Ratio	0~127=12.5~400% (Sync=On) *T06-01 0~127=0.5~400% (Sync=Off) *T06-02		61:03
+4	L Delay Time	0~127=0~700 msec	*T06-05	61:04
+5	R Delay Time	0~127=0~700 msec	*T06-05	61:05
+6	L Delay Time	0~13=1/64~1/1	*T06-14	61:06
+7	R Delay Time	0~13=1/64~1/1	*T06-14	61:07
+8	Feedback	0~127=0~127		61:08
+9	High Damp	0~100=0~100 %		61:09
+10	Low Damp	0~100=0~100 %		61:10
+11	Trim	0~127=0~127		61:11
+12	Spread	0~127=0~127		61:12

## 15 Auto Panning Delay

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Delay TempoSync	0,1=Off,On		61:01
+2	Time Ratio	0~127=12.5~400% (Sync=On) *T06-01 0~127=0.5~400% (Sync=Off) *T06-02		61:02
+3	L Delay Time	0~127=0~1400 msec	*T06-06	61:03
+4	R Delay Time	0~127=0~1400 msec	*T06-06	61:04
+5	L Delay Time	0~13=1/64~1/1	*T06-14	61:05
+6	R Delay Time	0~13=1/64~1/1	*T06-14	61:06
+7	FeedBack	0~127=0~127		61:07
+8	Mod Depth	0~127=0~127		61:08
+9	LFO Tempo Sync	0,1=Off,On		61:09
+10	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	61:10
+11	LFO Sync Note	0~16=8/1~1/64	*T03-02	61:11
+12	LFO Waveform	0~4=Saw,Squ,Tri,Sin,S&H		61:12
+13	LFO Shape	64+/-63=-63~+63		61:13
+14	LFO KeySync	0,1=Off,Timbre		61:14
+15	LFO Init Phase	0~18=0,10,20~180 [degree]		61:15
+16	High Damp	0~100=0~100 %		61:16
+17	Low Damp	0~100=0~100 %		61:17
+18	Trim	0~127=0~127		61:18

## 16 St.Auto Panning Delay

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Delay Tempo Sync	0,1=Off,On		61:01
+2	Time Ratio	0~127=12.5~400% (Sync=On) *T06-01 0~127=0.5~400% (Sync=Off) *T06-02		61:02
+3	L Delay Time	0~127=0~700 msec	*T06-05	61:03
+4	R Delay Time	0~127=0~700 msec	*T06-05	61:04
+5	L Delay Time	0~13=1/64~1/1	*T06-14	61:05
+6	R Delay Time	0~13=1/64~1/1	*T06-14	61:06
+7	FeedBack	0~127=0~127		61:07
+8	Mod Depth	0~127=0~127		61:08
+9	LFO Tempo Sync	0,1=Off,On		61:09
+10	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	61:10
+11	LFO Sync Note	0~16=8/1~1/64	*T03-02	61:11
+12	LFO Waveform	0~4=Saw,Squ,Tri,Sin,S&H		61:12
+13	LFO Shape	64+/-63=-63~+63		61:13
+14	LFO KeySync	0,1=Off,Timbre		61:14
+15	LFO Init Phase	0~18=0,10,20~180 [degree]		61:15
+16	LFO Spread	64+/-18=-180~180 [degree]		61:16
+17	High Damp	0~100=0~100 %		61:17
+18	Low Damp	0~100=0~100 %		61:18
+19	Trim	0~127=0~127		61:19

## KORG R3 MIDI Implementation

### 17 Modulation Delay

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Delay Tempo Sync	0,1=Off,On		61:01
+2	Time Ratio	0~127=12.5~400% (Sync=On) *T06-01 0~127=0.5~400% (Sync=Off) *T06-02		61:02
+3	L Delay Time	0~127=0~1380 msec	*T06-11	61:03
+4	R Delay Time	0~127=0~1380 msec	*T06-11	61:04
+5	L Delay Time	0~13=1/64~1/1	*T06-14	61:05
+6	R Delay Time	0~13=1/64~1/1	*T06-14	61:06
+7	FeedBack	0~127=0~127		61:07
+8	Mod Depth	0~127=0~127		61:08
+9	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	61:09
+10	LFO Spread	64+/-18=-180~180 [degree]		61:10

### 18 St.Modulation Delay

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Delay Tempo Sync	0,1=Off,On		61:01
+2	Time Ratio	0~127=12.5~400% (Sync=On) *T06-01 0~127=0.5~400% (Sync=Off) *T06-02		61:02
+3	L Delay Time	0~127=0~680 msec	*T06-10	61:03
+4	R Delay Time	0~127=0~680 msec	*T06-10	61:04
+5	L Delay Time	0~13=1/64~1/1	*T06-14	61:05
+6	R Delay Time	0~13=1/64~1/1	*T06-14	61:06
+7	FeedBack	0~127=0~127		61:07
+8	Mod Depth	0~127=0~127		61:08
+9	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	61:09
+10	LFO Spread	64+/-18=-180~180 [degree]		61:10

### 19 Tape Echo

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Delay Tempo Sync	0,1=Off,On		61:01
+2	Time Ratio	0~127=12.5~400% (Sync=On) *T06-01 0~127=0.5~400% (Sync=Off) *T06-02		61:02
+3	Tap1 Delay Time	0~127=0~1380 msec	*T06-11	61:03
+4	Tap2 Delay Time	0~127=0~1380 msec	*T06-11	61:04
+5	Tap1 Delay Time	0~13=1/64~1/1	*T06-14	61:05
+6	Tap2 Delay Time	0~13=1/64~1/1	*T06-14	61:06
+7	Tap1 Level	0~127=0~127		61:07
+8	Tap2 Level	0~127=0~127		61:08
+9	FeedBack	0~127=0~127		61:09
+10	High Damp	0~100=0~100 %		61:10
+11	Low Damp	0~100=0~100 %		61:11
+12	Trim	0~127=0~127		61:12
+13	Saturation	0~127=0~127		61:13
+14	Wah Flatter Freq	0~127=0.01~100.0 Hz	*T03-01	61:14
+15	Wah Flatter Depth	0~127=0~127		61:15
+16	Pre Tone	0~127=0~127		61:16
+17	Spread	0~127=0~127		61:17



## 20 St.Chorus

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Mod Depth	0~127=0~127		61:01
+2	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	61:02
+3	LFO Spread	64+/-18=-180~180 [degree]		61:03
+4	PreDelay L	0~119=0~50 msec	*T06-12	61:04
+5	PreDelay R	0~119=0~50 msec	*T06-12	61:05
+6	Trim	0~127=0~127		61:06
+7	Low EQ Gain	64+/-30=-15~+15 dB		61:07
+8	High EQ Gain	64+/-30=-15~+15 dB		61:08

## 21 Ensemble

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Mod Depth	0~127=0~127		61:01
+2	Speed	1~127=1~127		61:02

## 22 St.Flanger/CombFilter

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Type	0,1=Flanger,Comb		61:01
+2	[Flanger]Delay	0~113=0~30 msec	*T06-13	61:02
+3	[Comb] CutOff	0~127=0~127		61:03
+4	Mod Depth	0~127=0~127		61:04
+5	Feedback	0~127=0~127		61:05
+6	[Flanger]Phase	0,1=+,-		61:06
+7	LFO Tempo Sync	0,1=Off,On		61:07
+8	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	61:08
+9	LFO Sync Note	0~16=8/1~1/64	*T03-02	61:09
+10	LFO Waveform	0~4=Saw,Squ,Tri,Sin,S&H		61:10
+11	LFO Shape	64+/-63=-63~+63		61:11
+12	LFO KeySync	0,1=Off,Timbre		61:12
+13	LFO Init Phase	0~18=0,10,20~180 [degree]		61:13
+14	LFO Spread	64+/-18=-180~180 [degree]		61:14
+15	High Damp	0~100=0~100 %		61:15

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### 23 St. Phaser

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Type	0,1=Blue,U-VB		61:01
+2	Manual	0~127=0~127		61:02
+3	Mod Depth	0~127=0~127		61:03
+4	Resonance	0~127=0~127		61:04
+5	Phase	0,1=+,-		61:05
+6	LFO Tempo Sync	0,1=Off,On		61:06
+7	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	61:07
+8	LFO Sync Note	0~16=8/1~1/64	*T03-02	61:08
+9	LFO Waveform	0~4=Saw,Squ,Tri,Sin,S&H		61:09
+10	LFO Shape	64+/-63=-63~+63		61:10
+11	LFO KeySync	0,1=Off,Timbre		61:11
+12	LFO Init Phase	0~18=0,10,20~180 [degree]		61:12
+13	LFO Spread	64+/-18=-180~180 [degree]		61:13
+14	High Damp	0~100=0~100 %		61:14

### 24 St. Tremolo

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Mod Depth	0~127=0~127		61:01
+2	LFO Tempo Sync	0,1=Off,On		61:02
+3	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	61:03
+4	LFO Sync Note	0~16=8/1~1/64	*T03-02	61:04
+5	LFO Waveform	0~4=Saw,Squ,Tri,Sin,S&H		61:05
+6	LFO Shape	64+/-63=-63~+63		61:06
+7	LFO KeySync	0,1=Off,Timbre		61:07
+8	LFO Init Phase	0~18=0,10,20~180 [degree]		61:08
+9	LFO Spread	64+/-18=-180~180 [degree]		61:09

### 25 St. Ring Modulator

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	OSC Mode	0,1=Fixed,Note		61:01
+2	Frequency	0~127=0~12.0 kHz	*T03-03	61:02
+3	Offset	64+/-48=-48~+48		61:03
+4	Fine	64+/-50=-100,-98~0~98,100 cent		61:04
+5	OSC Waveform	0~2=Saw,Tri,Sine		61:05
+6	LFO Intensity	64+/-63=-63~+63		61:06
+7	LFO Tempo Sync	0,1=Off,On		61:07
+8	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	61:08
+9	LFO Sync Note	0~16=8/1~1/64	*T03-02	61:09
+10	LFO Waveform	0~4=Saw,Squ,Tri,Sin,S&H		61:10
+11	LFO Shape	64+/-63=-63~+63		61:11
+12	LFO KeySync	0,1=Off,Timbre		61:12
+13	LFO Init Phase	0~18=0,10,20~180 [degree]		61:13
+14	Pre LPF	0~127=0~127		61:14

## 26 St.Pitch Shifter

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Pitch Shift	64+/-24=-24~+24		61:01
+2	Fine	64+/-50=-100,-98~0~98,100 cent		61:02
+3	Delay Tempo Sync	0,1=Off,On		61:03
+4	Time Ratio	0~127=12.5~400% (Sync=On) *T06-01 0~127=0.5~400% (Sync=Off) *T06-02		61:04
+5	Delay Time	0~127=0~500 msec	*T06-03	61:05
+6	Delay Time	0~13=1/64~1/1	*T06-14	61:06
+7	FB Position	0,1=Pre,Post		61:07
+8	Feedback	0~127=0~127		61:08
+9	Mode	0~2=Slow,Medium,Fast		61:09
+10	High Damp	0~100=0~100 %		61:10
+11	Trim	0~127=0~127		61:11

## 27 St.Grain Shifter

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Duration TempoSync	0,1=Off,On		61:01
+2	Time Ratio	0~127=12.5~400% (Sync=On) *T06-01 0~127=0.5~400% (Sync=Off) *T06-02		61:02
+3	Duration	0~127=0~350 msec	*T06-07	61:03
+4	Duration	0~13=1/64~1/1	*T06-14	61:04
+5	LFO Tempo Sync	0,1=Off,On		61:05
+6	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	61:06
+7	LFO Sync Note	0~16=8/1~1/64	*T03-02	61:07
+8	LFO KeySync	0,1=Off,Timbre		61:08
+9	LFO Init Phase	0~18=0,10,20~180 [degree]		61:09
+10	LFO Spread	64+/-18=-180~180 [degree]		61:10

## 28 St.Vibrato

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Mod Depth	0~127=0~127		61:01
+2	LFO Tempo Sync	0,1=Off,On		61:02
+3	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	61:03
+4	LFO Sync Note	0~16=8/1~1/64	*T03-02	61:04
+5	LFO Waveform	0~4=Saw,Squ,Tri,Sin,S&H		61:05
+6	LFO Shape	64+/-63=-63~+63		61:06
+7	LFO KeySync	0,1=Off,Timbre		61:07
+8	LFO Init Phase	0~18=0,10,20~180 [degree]		61:08
+9	LFO Spread	64+/-18=-180~180 [degree]		61:09

## KORG R3 MIDI Implementation

### 29 Rotary Speaker

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Mode Switch	0,1=Rotate,Stop		61:01
+2	ModeSw. Ctrl. Src	0~13=Off~MIDI5	*T04-01	61:02
+3	ModeSw. Ctrl. Mode	0,1=Toggle,Moment		61:03
+4	Speaker Ctrl. Type	0,1=Switch,Manual		61:04
+5	[Sw]Speed Switch	0,1=Slow,Fast		61:05
+6	[Sw]Sw. Ctrl. Src	0~13=Off~MIDI5	*T04-01	61:06
+7	[Sw]Sw. Ctrl. Mode	0,1=Toggle,Moment		61:07
+8	[Ml]Speed	1~127=1~127		61:08
+9	[Ml]Speed Ctrl.Src	0~13=Off~MIDI5	*T04-01	61:09
+10	[Ml]Speed Ctrl.Int	64+/-63=-63~+63		61:10
+11	Horn/Rotor Balance	0,1~99,100=Rotor,1:99 ~ 99:1,Horn		61:11
+12	Horn Acceleration	0~127=0~127		61:12
+13	Horn Ratio	0,1~76=stop,0.5~2.0	*T01-10	61:13
+14	Rotor Acceleration	0~127=0~127		61:14
+15	Rotor Ratio	0,1~76=stop,0.5~2.0	*T01-10	61:15
+16	Mic Distance	0~127=0~127		61:16
+17	Spread	0~127=0~127		61:17
+18	Trim	0~127=0~127		61:18

### 30 Talking Modulator

No. (bit)	PARAMETER	VALUE	DESCRIPTION	ID:SubID
+0	Dry/Wet	0,1~99,100=Dry,1:99 ~ 99:1,Wet		61:00
+1	Voice Control	64+/-63=Bottom,-62~Center~+62,Top		61:01
+2	Voice Top	0~4=A,I,U,E,O		61:02
+3	Voice Center	0~4=A,I,U,E,O		61:03
+4	Voice Bottom	0~4=A,I,U,E,O		61:04
+5	Resonance	0~127=0~127		61:05
+6	Drive	0~127=0~127		61:06
+7	Mod Source	0~2=Auto,LFO,Ctrl		61:07
+8	Mod Intensity	64+/-63=-63~+63		61:08
+9	Mod Response	0~127=0~127		61:09
+10	[Auto] Env.Sens	0~127=0~127		61:10
+11	[Auto] Env.Shape	64+/-63=-63~+63		61:11
+12	LFO Tempo Sync	0,1=Off,On		61:12
+13	LFO Frequency	0~127=0.01~100.0 Hz	*T03-01	61:13
+14	LFO Sync Note	0~16=8/1~1/64	*T03-02	61:14
+15	LFO Waveform	0~4=Saw,Squ,Tri,Sin,S&H		61:15
+16	LFO Shape	64+/-63=-63~+63		61:16
+17	LFO KeySync	0,1=Off,Timbre		61:17
+18	LFO Init Phase	0~18=0,10,20~180 [degree]		61:18
+19	[Ctrl] Ctrl.1 Src	0~13=Off~MIDI5	*T04-01	61:19

*T01-01 : [msec]							
0: 0.1	16: 1.7	32: 4.7	48: 10.5	64: 23.0	80: 50.0	96: 110	112: 240
1: 0.2	17: 1.8	33: 5.0	49: 11.0	65: 24.0	81: 53.0	97: 115	113: 252
2: 0.3	18: 1.9	34: 5.3	50: 11.5	66: 25.0	82: 55.0	98: 121	114: 265
3: 0.4	19: 2.0	35: 5.6	51: 12.0	67: 27.0	83: 58.0	99: 127	115: 278
4: 0.5	20: 2.2	36: 5.9	52: 12.5	68: 28.0	84: 61.0	100: 133	116: 292
5: 0.6	21: 2.4	37: 6.2	53: 13.0	69: 29.0	85: 64.0	101: 140	117: 307
6: 0.7	22: 2.6	38: 6.5	54: 13.5	70: 31.0	86: 68.0	102: 147	118: 322
7: 0.8	23: 2.8	39: 6.8	55: 14.0	71: 32.0	87: 71.0	103: 155	119: 338
8: 0.9	24: 3.0	40: 7.1	56: 15.0	72: 34.0	88: 75.0	104: 162	120: 355
9: 1.0	25: 3.2	41: 7.4	57: 16.0	73: 36.0	89: 78.0	105: 170	121: 373
10: 1.1	26: 3.4	42: 7.8	58: 17.0	74: 37.0	90: 82.0	106: 179	122: 391
11: 1.2	27: 3.6	43: 8.2	59: 18.0	75: 39.0	91: 86.0	107: 188	123: 411
12: 1.3	28: 3.8	44: 8.6	60: 19.0	76: 41.0	92: 91.0	108: 197	124: 432
13: 1.4	29: 4.0	45: 9.0	61: 20.0	77: 43.0	93: 95.0	109: 207	125: 453
14: 1.5	30: 4.2	46: 9.4	62: 21.0	78: 46.0	94: 99.0	110: 218	126: 476
15: 1.6	31: 4.4	47: 10.0	63: 22.0	79: 48.0	95: 104	111: 229	127: 500
*T01-02 :							
0: 1.0:1	16: 9.0:1	32: 17.0:1	48: 30.0:1	64: 46.0:1			
1: 1.5:1	17: 9.5:1	33: 17.5:1	49: 31.0:1	65: 47.0:1			
2: 2.0:1	18: 10.0:1	34: 18.0:1	50: 32.0:1	66: 48.0:1			
3: 2.5:1	19: 10.5:1	35: 18.5:1	51: 33.0:1	67: 49.0:1			
4: 3.0:1	20: 11.0:1	36: 19.0:1	52: 34.0:1	68: 50.0:1			
5: 3.5:1	21: 11.5:1	37: 19.5:1	53: 35.0:1	69: Inf:1			
6: 4.0:1	22: 12.0:1	38: 20.0:1	54: 36.0:1				
7: 4.5:1	23: 12.5:1	39: 21.0:1	55: 37.0:1				
8: 5.0:1	24: 13.0:1	40: 22.0:1	56: 38.0:1				
9: 5.5:1	25: 13.5:1	41: 23.0:1	57: 39.0:1				
10: 6.0:1	26: 14.0:1	42: 24.0:1	58: 40.0:1				
11: 6.5:1	27: 14.5:1	43: 25.0:1	59: 41.0:1				
12: 7.0:1	28: 15.0:1	44: 26.0:1	60: 42.0:1				
13: 7.5:1	29: 15.5:1	45: 27.0:1	61: 43.0:1				
14: 8.0:1	30: 16.0:1	46: 28.0:1	62: 44.0:1				
15: 8.5:1	31: 16.5:1	47: 29.0:1	63: 45.0:1				
*T01-03 :							
24: -40	32: -32	40: -24	48: -16	56: -8	64: 0		
25: -39	33: -31	41: -23	49: -15	57: -7			
26: -38	34: -30	42: -22	50: -14	58: -6			
27: -37	35: -29	43: -21	51: -13	59: -5			
28: -36	36: -28	44: -20	52: -12	60: -4			
29: -35	37: -27	45: -19	53: -11	61: -3			
30: -34	38: -26	46: -18	54: -10	62: -2			
31: -33	39: -25	47: -17	55: -9	63: -1			
*T01-04 :							
23: -Inf	33: -31	43: -21	53: -11	63: -1	73: 9	83: 19	
24: -40	34: -30	44: -20	54: -10	64: 0	74: 10	84: 20	
25: -39	35: -29	45: -19	55: -9	65: 1	75: 11	85: 21	
26: -38	36: -28	46: -18	56: -8	66: 2	76: 12	86: 22	
27: -37	37: -27	47: -17	57: -7	67: 3	77: 13	87: 23	
28: -36	38: -26	48: -16	58: -6	68: 4	78: 14	88: 24	
29: -35	39: -25	49: -15	59: -5	69: 5	79: 15		
30: -34	40: -24	50: -14	60: -4	70: 6	80: 16		
31: -33	41: -23	51: -13	61: -3	71: 7	81: 17		
32: -32	42: -22	52: -12	62: -2	72: 8	82: 18		
*T01-05 : [msec]							
0: 0.3	16: 5.1	32: 14	48: 32	64: 69	80: 151	96: 329	112: 720
1: 0.6	17: 5.4	33: 15	49: 33	65: 72	81: 158	97: 346	113: 756
2: 0.9	18: 5.7	34: 16	50: 35	66: 76	82: 166	98: 363	114: 794
3: 1.2	19: 6.0	35: 17	51: 36	67: 80	83: 174	99: 381	115: 834
4: 1.5	20: 6.6	36: 18	52: 38	68: 84	84: 183	100: 400	116: 876
5: 1.8	21: 7.2	37: 19	53: 39	69: 88	85: 193	101: 420	117: 920
6: 2.1	22: 7.8	38: 20	54: 41	70: 92	86: 203	102: 441	118: 966
7: 2.4	23: 8.4	39: 21	55: 42	71: 97	87: 213	103: 464	119: 1014
8: 2.7	24: 9.0	40: 22	56: 45	72: 101	88: 224	104: 487	120: 1065
9: 3.0	25: 9.6	41: 23	57: 48	73: 107	89: 235	105: 511	121: 1118
10: 3.3	26: 10.2	42: 24	58: 51	74: 112	90: 247	106: 537	122: 1174
11: 3.6	27: 10.8	43: 25	59: 54	75: 118	91: 259	107: 564	123: 1233
12: 3.9	28: 11.4	44: 26	60: 57	76: 124	92: 272	108: 592	124: 1295
13: 4.2	29: 12.0	45: 27	61: 60	77: 130	93: 284	109: 622	125: 1360
14: 4.5	30: 12.6	46: 28	62: 63	78: 137	94: 298	110: 653	126: 1428
15: 4.8	31: 13.2	47: 30	63: 66	79: 143	95: 313	111: 686	127: 1500
*T01-06 :							
0: Y-CRY							
1: RM-A							
2: RM-B							
3: J-CRY							
4: VOX							
5: M-VOX							
*T01-07 : [Hz]							
0: 20	8: 50	16: 125	24: 315	32: 900	40: 2.24k	48: 6.30k	56: 16.0k
1: 22	9: 56	17: 140	25: 400	33: 1.0k	41: 2.50k	49: 7.10k	57: 18.0k
2: 25	10: 63	18: 160	26: 450	34: 1.12k	42: 2.80k	50: 8.00k	58: 20.0k
3: 28	11: 71	19: 180	27: 500	35: 1.25k	43: 3.15k	51: 9.00k	
4: 32	12: 80	20: 200	28: 560	36: 1.4k	44: 4.00k	52: 10.0k	
5: 36	13: 90	21: 224	29: 630	37: 1.6k	45: 4.50k	53: 11.2k	
6: 40	14: 100	22: 250	30: 710	38: 1.8k	46: 5.00k	54: 12.5k	
7: 45	15: 112	23: 280	31: 800	39: 2.0k	47: 5.60k	55: 14.0k	

# KORG R3 MIDI Implementation

```

*T01-08 :
0: Tweedlx8
1: Tweedlx12
2: Tweed4x10
3: Black2x10
4: Black2x12
5: AC15
6: AC30
7: AD412
8: UK_H30
9: UK_T75
10: US_V30 *T01-09 : ER Time

*T01-09 : ER Time
0: 10      16: 26      32: 42      48: 90      64: 170     80: 330     96: 490     112: 650
1: 11      17: 27      33: 43      49: 95      65: 180     81: 340     97: 500     113: 660
2: 12      18: 28      34: 44      50: 100     66: 190     82: 350     98: 510     114: 670
3: 13      19: 29      35: 45      51: 105     67: 200     83: 360     99: 520     115: 680
4: 14      20: 30      36: 46      52: 110     68: 210     84: 370     100: 530    116: 690
5: 15      21: 31      37: 47      53: 115     69: 220     85: 380     101: 540    117: 700
6: 16      22: 32      38: 48      54: 120     70: 230     86: 390     102: 550    118: 710
7: 17      23: 33      39: 49      55: 125     71: 240     87: 400     103: 560    119: 720
8: 18      24: 34      40: 50      56: 130     72: 250     88: 410     104: 570    120: 730
9: 19      25: 35      41: 55      57: 135     73: 260     89: 420     105: 580    121: 740
10: 20     26: 36      42: 60      58: 140     74: 270     90: 430     106: 590    122: 750
11: 21     27: 37      43: 65      59: 145     75: 280     91: 440     107: 600    123: 760
12: 22     28: 38      44: 70      60: 150     76: 290     92: 450     108: 610    124: 770
13: 23     29: 39      45: 75      61: 155     77: 300     93: 460     109: 620    125: 780
14: 24     30: 40      46: 80      62: 160     78: 310     94: 470     110: 630    126: 790
15: 25     31: 41      47: 85      63: 165     79: 320     95: 480     111: 640    127: 800

*T01-10 : Horn/Roter Ratio
0: Stop    16: 0.80    32: 1.12    48: 1.44    64: 1.76
1: 0.50    17: 0.82    33: 1.14    49: 1.46    65: 1.78
2: 0.52    18: 0.84    34: 1.16    50: 1.48    66: 1.80
3: 0.54    19: 0.86    35: 1.18    51: 1.50    67: 1.82
4: 0.56    20: 0.88    36: 1.20    52: 1.52    68: 1.84
5: 0.58    21: 0.90    37: 1.22    53: 1.54    69: 1.86
6: 0.60    22: 0.92    38: 1.24    54: 1.56    70: 1.88
7: 0.62    23: 0.94    39: 1.26    55: 1.58    71: 1.90
8: 0.64    24: 0.96    40: 1.28    56: 1.60    72: 1.92
9: 0.66    25: 0.98    41: 1.30    57: 1.62    73: 1.94
10: 0.68   26: 1.00    42: 1.32    58: 1.64    74: 1.96
11: 0.70   27: 1.02    43: 1.34    59: 1.66    75: 1.98
12: 0.72   28: 1.04    44: 1.36    60: 1.68    76: 2.00
13: 0.74   29: 1.06    45: 1.38
14: 0.76   30: 1.08
15: 0.78   31: 1.10
16: 0.80   32: 1.12
17: 0.82   33: 1.14
18: 0.84   34: 1.16
19: 0.86   35: 1.18
20: 0.88   36: 1.20
21: 0.90   37: 1.22
22: 0.92   38: 1.24
23: 0.94   39: 1.26
24: 0.96   40: 1.28
25: 0.98   41: 1.30
26: 1.00   42: 1.32
27: 1.02   43: 1.34
28: 1.04   44: 1.36
29: 1.06   45: 1.38
30: 1.08   46: 1.40
31: 1.10   47: 1.42
32: 1.12
33: 1.14
34: 1.16
35: 1.18
36: 1.20
37: 1.22
38: 1.24
39: 1.26
40: 1.28
41: 1.30
42: 1.32
43: 1.34
44: 1.36
45: 1.38
46: 1.40
47: 1.42

*T02-01 : [msec]
0: 0      16: 16      32: 32      48: 48      64: 74      80: 106     96: 138     112: 170
1: 1      17: 17      33: 33      49: 49      65: 76      81: 108     97: 140     113: 172
2: 2      18: 18      34: 34      50: 50      66: 78      82: 110     98: 142     114: 174
3: 3      19: 19      35: 35      51: 51      67: 80      83: 112     99: 144     115: 176
4: 4      20: 20      36: 36      52: 52      68: 82      84: 114     100: 146    116: 178
5: 5      21: 21      37: 37      53: 53      69: 84      85: 116     101: 148    117: 180
6: 6      22: 22      38: 38      54: 54      70: 86      86: 118     102: 150    118: 182
7: 7      23: 23      39: 39      55: 56      71: 88      87: 120     103: 152    119: 184
8: 8      24: 24      40: 40      56: 58      72: 90      88: 122     104: 154    120: 186
9: 9      25: 25      41: 41      57: 60      73: 92      89: 124     105: 156    121: 188
10: 10     26: 26      42: 42      58: 62      74: 94      90: 126     106: 158    122: 190
11: 11     27: 27      43: 43      59: 64      75: 96      91: 128     107: 160    123: 192
12: 12     28: 28      44: 44      60: 66      76: 98      92: 130     108: 162    124: 194
13: 13     29: 29      45: 45      61: 68      77: 100     93: 132     109: 164    125: 196
14: 14     30: 30      46: 46      62: 70      78: 102     94: 134     110: 166    126: 198
15: 15     31: 31      47: 47      63: 72      79: 104     95: 136     111: 168    127: 200

*T03-01 : [Hz]
0: 0.01    16: 0.17    32: 0.83    48: 2.75    64: 4.75    80: 8.50    96: 15.0    112: 39.0
1: 0.02    17: 0.18    33: 0.92    49: 2.88    65: 4.88    81: 8.75    97: 16.0    113: 41.0
2: 0.03    18: 0.19    34: 1.00    50: 3.00    66: 5.00    82: 9.00    98: 17.0    114: 44.0
3: 0.04    19: 0.20    35: 1.13    51: 3.13    67: 5.25    83: 9.25    99: 18.0    115: 47.0
4: 0.05    20: 0.21    36: 1.25    52: 3.25    68: 5.50    84: 9.50    100: 19.0   116: 50.0
5: 0.06    21: 0.22    37: 1.38    53: 3.38    69: 5.75    85: 9.75    101: 20.0   117: 53.0
6: 0.07    22: 0.23    38: 1.50    54: 3.50    70: 6.00    86: 10.0    102: 21.5   118: 57.0
7: 0.08    23: 0.24    39: 1.63    55: 3.63    71: 6.25    87: 10.5    103: 23.0   119: 61.0
8: 0.09    24: 0.25    40: 1.75    56: 3.75    72: 6.50    88: 11.0    104: 24.5   120: 65.0
9: 0.10    25: 0.29    41: 1.88    57: 3.88    73: 6.75    89: 11.5    105: 26.0   121: 70.0
10: 0.11   26: 0.33    42: 2.00    58: 4.00    74: 7.00    90: 12.0    106: 27.5   122: 75.0
11: 0.12   27: 0.42    43: 2.13    59: 4.13    75: 7.25    91: 12.5    107: 29.0   123: 80.0
12: 0.13   28: 0.50    44: 2.25    60: 4.25    76: 7.50    92: 13.0    108: 31.0   124: 85.0
13: 0.14   29: 0.58    45: 2.38    61: 4.38    77: 7.75    93: 13.5    109: 33.0   125: 90.0
14: 0.15   30: 0.67    46: 2.50    62: 4.50    78: 8.00    94: 14.0    110: 35.0   126: 95.0
15: 0.16   31: 0.75    47: 2.63    63: 4.63    79: 8.25    95: 14.5    111: 37.0   127: 100

*T03-02 :
0: 8/1      4: 3/4      8: 1/4      12: 1/12     16: 1/64
1: 4/1      5: 1/2      9: 3/16     13: 1/16
2: 2/1      6: 3/8      10: 1/6     14: 1/24
3: 1/1      7: 1/3      11: 1/8     15: 1/32

```

## R3 Effect Parameter Structure

```

*T03-03 : [kHz]
0: 0.000    16: 0.10    32: 0.37    48: 1.05    64: 2.00    80: 3.60    96: 5.80   112: 9.00
1: 0.002    17: 0.11    33: 0.39    49: 1.10    65: 2.10    81: 3.70    97: 6.00   113: 9.20
2: 0.004    18: 0.12    34: 0.41    50: 1.15    66: 2.20    82: 3.80    98: 6.20   114: 9.40
3: 0.006    19: 0.13    35: 0.43    51: 1.20    67: 2.30    83: 3.90    99: 6.40   115: 9.60
4: 0.008    20: 0.14    36: 0.45    52: 1.25    68: 2.40    84: 4.00   100: 6.60   116: 9.80
5: 0.010    21: 0.15    37: 0.50    53: 1.30    69: 2.50    85: 4.10   101: 6.80   117: 10.0
6: 0.015    22: 0.17    38: 0.55    54: 1.35    70: 2.60    86: 4.20   102: 7.00   118: 10.2
7: 0.020    23: 0.19    39: 0.60    55: 1.40    71: 2.70    87: 4.30   103: 7.20   119: 10.4
8: 0.025    24: 0.21    40: 0.65    56: 1.45    72: 2.80    88: 4.40   104: 7.40   120: 10.6
9: 0.03      25: 0.23    41: 0.70    57: 1.50    73: 2.90    89: 4.50   105: 7.60   121: 10.8
10: 0.04     26: 0.25    42: 0.75    58: 1.55    74: 3.00    90: 4.60   106: 7.80   122: 11.0
11: 0.05     27: 0.27    43: 0.80    59: 1.60    75: 3.10    91: 4.80   107: 8.00   123: 11.2
12: 0.06     28: 0.29    44: 0.85    60: 1.65    76: 3.20    92: 5.00   108: 8.20   124: 11.4
13: 0.07     29: 0.31    45: 0.90    61: 1.70    77: 3.30    93: 5.20   109: 8.40   125: 11.6
14: 0.08     30: 0.33    46: 0.95    62: 1.80    78: 3.40    94: 5.40   110: 8.60   126: 11.8
15: 0.09     31: 0.35    47: 1.00    63: 1.90    79: 3.50    95: 5.60   111: 8.80   127: 12.0

*T04-01 : Control Source
0: Off
1: Velocity
2: AfterTouch
3: PitchBend
4: ModWheel
5: Assignable Pedal
6: Assignable SW
7: Damper
8: Env.Follower
9: MIDI1
10: MIDI2
11: MIDI3
12: MIDI4
13: MIDI5

*T05-01 : Reverb Time [sec] *Type (Hall,SmthHall,WetPlate,DryPlate)
0: 0.1      16: 0.5      32: 0.8      48: 1.2      64: 1.6      80: 1.9      96: 2.3      112: 2.7
1: 0.1      17: 0.5      33: 0.9      49: 1.2      65: 1.6      81: 1.9      97: 2.3      113: 2.7
2: 0.1      18: 0.5      34: 0.9      50: 1.2      66: 1.6      82: 2.0      98: 2.3      114: 2.7
3: 0.2      19: 0.5      35: 0.9      51: 1.3      67: 1.6      83: 2.0      99: 2.4      115: 2.7
4: 0.2      20: 0.6      36: 0.9      52: 1.3      68: 1.7      84: 2.0      100: 2.4     116: 2.7
5: 0.2      21: 0.6      37: 0.9      53: 1.3      69: 1.7      85: 2.0      101: 2.4     117: 2.8
6: 0.2      22: 0.6      38: 1.0      54: 1.3      70: 1.7      86: 2.1      102: 2.4     118: 2.8
7: 0.3      23: 0.6      39: 1.0      55: 1.4      71: 1.7      87: 2.1      103: 2.5     119: 2.8
8: 0.3      24: 0.6      40: 1.0      56: 1.4      72: 1.7      88: 2.1      104: 2.5     120: 2.8
9: 0.3      25: 0.7      41: 1.0      57: 1.4      73: 1.8      89: 2.1      105: 2.5     121: 2.9
10: 0.3      26: 0.7      42: 1.1      58: 1.4      74: 1.8      90: 2.2      106: 2.5     122: 2.9
11: 0.4      27: 0.7      43: 1.1      59: 1.4      75: 1.8      91: 2.2      107: 2.5     123: 2.9
12: 0.4      28: 0.7      44: 1.1      60: 1.5      76: 1.8      92: 2.2      108: 2.6     124: 2.9
13: 0.4      29: 0.8      45: 1.1      61: 1.5      77: 1.9      93: 2.2      109: 2.6     125: 3.0
14: 0.4      30: 0.8      46: 1.2      62: 1.5      78: 1.9      94: 2.2      110: 2.6     126: 3.0
15: 0.4      31: 0.8      47: 1.2      63: 1.5      79: 1.9      95: 2.3      111: 2.6     127: 3.0

*T05-02 : Reverb Time Type [sec] *Type(Room,BritRoom)
0: 0.1      16: 1.3      32: 2.6      48: 3.8      64: 5.1      80: 6.3      96: 7.6      112: 8.8
1: 0.2      17: 1.4      33: 2.7      49: 3.9      65: 5.2      81: 6.4      97: 7.7      113: 8.9
2: 0.3      18: 1.5      34: 2.8      50: 4.0      66: 5.2      82: 6.5      98: 7.7      114: 9.0
3: 0.3      19: 1.6      35: 2.8      51: 4.1      67: 5.3      83: 6.6      99: 7.8      115: 9.1
4: 0.4      20: 1.7      36: 2.9      52: 4.2      68: 5.4      84: 6.6      100: 7.9     116: 9.1
5: 0.5      21: 1.7      37: 3.0      53: 4.2      69: 5.5      85: 6.7      101: 8.0     117: 9.2
6: 0.6      22: 1.8      38: 3.1      54: 4.3      70: 5.6      86: 6.8      102: 8.1     118: 9.3
7: 0.6      23: 1.9      39: 3.1      55: 4.4      71: 5.6      87: 6.9      103: 8.1     119: 9.4
8: 0.7      24: 2.0      40: 3.2      56: 4.5      72: 5.7      88: 7.0      104: 8.2     120: 9.5
9: 0.8      25: 2.0      41: 3.3      57: 4.5      73: 5.8      89: 7.0      105: 8.3     121: 9.5
10: 0.9      26: 2.1      42: 3.4      58: 4.6      74: 5.9      90: 7.1      106: 8.4     122: 9.6
11: 1.0      27: 2.2      43: 3.5      59: 4.7      75: 5.9      91: 7.2      107: 8.4     123: 9.7
12: 1.0      28: 2.3      44: 3.5      60: 4.8      76: 6.0      92: 7.3      108: 8.5     124: 9.8
13: 1.1      29: 2.4      45: 3.6      61: 4.9      77: 6.1      93: 7.3      109: 8.6     125: 9.8
14: 1.2      30: 2.4      46: 3.7      62: 4.9      78: 6.2      94: 7.4      110: 8.7     126: 9.9
15: 1.3      31: 2.5      47: 3.8      63: 5.0      79: 6.3      95: 7.5      111: 8.8     127: 10.0

*T05-03 :
0: Hall
1: SmoothHall
2: WetPlate
3: DryPlate
4: Room
5: BrightRoom

*T06-01 : Time Ratio [%] Sync=ON
0: 12.5     16: 25.0     32: 50.0     48: 66.6     64: 100.0    80: 133.0    96: 200.0    112: 300.0
1: 12.5     17: 25.0     33: 50.0     49: 66.6     65: 100.0    81: 133.0    97: 200.0    113: 300.0
2: 12.5     18: 25.0     34: 50.0     50: 75.0     66: 100.0    82: 133.0    98: 200.0    114: 300.0
3: 12.5     19: 25.0     35: 50.0     51: 75.0     67: 100.0    83: 133.0    99: 200.0    115: 300.0
4: 12.5     20: 25.0     36: 50.0     52: 75.0     68: 125.0    84: 133.0    100: 200.0   116: 300.0
5: 12.5     21: 25.0     37: 50.0     53: 75.0     69: 125.0    85: 133.0    101: 200.0   117: 300.0
6: 12.5     22: 25.0     38: 50.0     54: 75.0     70: 125.0    86: 150.0    102: 200.0   118: 300.0
7: 12.5     23: 25.0     39: 50.0     55: 75.0     71: 125.0    87: 150.0    103: 200.0   119: 300.0
8: 16.7     24: 33.3     40: 50.0     56: 75.0     72: 125.0    88: 150.0    104: 250.0   120: 400.0
9: 16.7     25: 33.3     41: 66.6     57: 75.0     73: 125.0    89: 150.0    105: 250.0   121: 400.0
10: 16.7    26: 33.3     42: 66.6     58: 75.0     74: 125.0    90: 150.0    106: 250.0   122: 400.0
11: 16.7    27: 33.3     43: 66.6     59: 100.0    75: 125.0    91: 150.0    107: 250.0   123: 400.0
12: 16.7    28: 33.3     44: 66.6     60: 100.0    76: 125.0    92: 150.0    108: 250.0   124: 400.0
13: 16.7    29: 33.3     45: 66.6     61: 100.0    77: 133.0    93: 150.0    109: 250.0   125: 400.0
14: 16.7    30: 33.3     46: 66.6     62: 100.0    78: 133.0    94: 150.0    110: 250.0   126: 400.0
15: 16.7    31: 33.3     47: 66.6     63: 100.0    79: 133.0    95: 200.0    111: 250.0   127: 400.0

```

# KORG R3 MIDI Implementation

```

*T06-02 : Time Ratio [%] Sync=OFF
0: 0.5      16: 8.5      32: 23.0     48: 59.0     64: 100.0    80: 120.0    96: 158.0   112: 210.0
1: 1.0      17: 9.0       33: 25.0     49: 62.0     65: 100.0    81: 122.0    97: 161.0   113: 215.0
2: 1.5      18: 9.5       34: 28.0     50: 65.0     66: 101.0    82: 123.0    98: 164.0   114: 220.0
3: 2.0      19: 10.0      35: 30.0     51: 66.6     67: 102.0    83: 125.0    99: 167.0   115: 225.0
4: 2.5      20: 11.0      36: 32.0     52: 72.0     68: 103.0    84: 128.0   100: 170.0   116: 230.0
5: 3.0      21: 12.5      37: 33.3     53: 75.0     69: 104.0    85: 130.0   101: 173.0   117: 240.0
6: 3.5      22: 13.0      38: 36.0     54: 78.0     70: 105.0    86: 133.3   102: 176.0   118: 250.0
7: 4.0      23: 14.0      39: 38.0     55: 81.0     71: 106.0    87: 134.0   103: 179.0   119: 260.0
8: 4.5      24: 15.0      40: 40.0     56: 85.0     72: 107.0    88: 136.0   104: 182.0   120: 270.0
9: 5.0      25: 16.7      41: 42.0     57: 89.0     73: 108.0    89: 138.0   105: 185.0   121: 280.0
10: 5.5     26: 17.0      42: 44.0     58: 92.0     74: 109.0    90: 140.0   106: 188.0   122: 300.0
11: 6.0     27: 18.0      43: 46.0     59: 95.0     75: 110.0    91: 143.0   107: 191.0   123: 320.0
12: 6.5     28: 19.0      44: 48.0     60: 98.0     76: 112.0    92: 146.0   108: 194.0   124: 340.0
13: 7.0     29: 20.0      45: 50.0     61: 100.0    77: 114.0    93: 150.0   109: 197.0   125: 360.0
14: 7.5     30: 21.0      46: 53.0     62: 100.0    78: 116.0    94: 152.0   110: 200.0   126: 380.0
15: 8.0     31: 22.0      47: 56.0     63: 100.0    79: 118.0    95: 155.0   111: 205.0   127: 400.0

*T06-03 : DelayTime 0~500[msec]
0: 0        16: 16        32: 34        48: 66        64: 125       80: 205       96: 285      112: 365
1: 1        17: 17        33: 36        49: 68        65: 130       81: 210       97: 290      113: 370
2: 2        18: 18        34: 38        50: 70        66: 135       82: 215       98: 295      114: 375
3: 3        19: 19        35: 40        51: 72        67: 140       83: 220       99: 300      115: 380
4: 4        20: 20        36: 42        52: 74        68: 145       84: 225      100: 305     116: 390
5: 5        21: 21        37: 44        53: 76        69: 150       85: 230      101: 310     117: 400
6: 6        22: 22        38: 46        54: 78        70: 155       86: 235      102: 315     118: 410
7: 7        23: 23        39: 48        55: 80        71: 160       87: 240      103: 320     119: 420
8: 8        24: 24        40: 50        56: 85        72: 165       88: 245      104: 325     120: 430
9: 9        25: 25        41: 52        57: 90        73: 170       89: 250      105: 330     121: 440
10: 10      26: 26        42: 54        58: 95        74: 175       90: 255      106: 335     122: 450
11: 11      27: 27        43: 56        59: 100       75: 180       91: 260      107: 340     123: 460
12: 12      28: 28        44: 58        60: 105       76: 185       92: 265      108: 345     124: 470
13: 13      29: 29        45: 60        61: 110       77: 190       93: 270      109: 350     125: 480
14: 14      30: 30        46: 62        62: 115       78: 195       94: 275      110: 355     126: 490
15: 15      31: 32        47: 64        63: 120       79: 200       95: 280      111: 360     127: 500

*T06-04 : DelayTime 0~1000[msec]
0: 0        16: 16        32: 60        48: 140       64: 250       80: 410       96: 570      112: 730
1: 1        17: 18        33: 65        49: 145       65: 260       81: 420       97: 580      113: 740
2: 2        18: 20        34: 70        50: 150       66: 270       82: 430       98: 590      114: 750
3: 3        19: 22        35: 75        51: 155       67: 280       83: 440       99: 600      115: 760
4: 4        20: 24        36: 80        52: 160       68: 290       84: 450      100: 610     116: 780
5: 5        21: 26        37: 85        53: 165       69: 300       85: 460      101: 620     117: 800
6: 6        22: 28        38: 90        54: 170       70: 310       86: 470      102: 630     118: 820
7: 7        23: 30        39: 95        55: 175       71: 320       87: 480      103: 640     119: 840
8: 8        24: 32        40: 100       56: 180       72: 330       88: 490      104: 650     120: 860
9: 9        25: 34        41: 105       57: 185       73: 340       89: 500      105: 660     121: 880
10: 10      26: 36        42: 110       58: 190       74: 350       90: 510      106: 670     122: 900
11: 11      27: 38        43: 115       59: 200       75: 360       91: 520      107: 680     123: 920
12: 12      28: 40        44: 120       60: 210       76: 370       92: 530      108: 690     124: 940
13: 13      29: 45        45: 125       61: 220       77: 380       93: 540      109: 700     125: 960
14: 14      30: 50        46: 130       62: 230       78: 390       94: 550      110: 710     126: 980
15: 15      31: 55        47: 135       63: 240       79: 400       95: 560      111: 720     127: 1000

*T06-05 : DelayTime 0~700[msec]
0: 0        16: 16        32: 44        48: 100       64: 180       80: 260       96: 390      112: 550
1: 1        17: 17        33: 46        49: 105       65: 185       81: 265       97: 400      113: 560
2: 2        18: 18        34: 48        50: 110       66: 190       82: 270       98: 410      114: 570
3: 3        19: 19        35: 50        51: 115       67: 195       83: 275       99: 420      115: 580
4: 4        20: 20        36: 52        52: 120       68: 200       84: 280      100: 430     116: 590
5: 5        21: 22        37: 54        53: 125       69: 205       85: 285      101: 440     117: 600
6: 6        22: 24        38: 56        54: 130       70: 210       86: 290      102: 450     118: 610
7: 7        23: 26        39: 58        55: 135       71: 215       87: 300      103: 460     119: 620
8: 8        24: 28        40: 60        56: 140       72: 220       88: 310      104: 470     120: 630
9: 9        25: 30        41: 65        57: 145       73: 225       89: 320      105: 480     121: 640
10: 10      26: 32        42: 70        58: 150       74: 230       90: 330      106: 490     122: 650
11: 11      27: 34        43: 75        59: 155       75: 235       91: 340      107: 500     123: 660
12: 12      28: 36        44: 80        60: 160       76: 240       92: 350      108: 510     124: 670
13: 13      29: 38        45: 85        61: 165       77: 245       93: 360      109: 520     125: 680
14: 14      30: 40        46: 90        62: 170       78: 250       94: 370      110: 530     126: 690
15: 15      31: 42        47: 95        63: 175       79: 255       95: 380      111: 540     127: 700

*T06-06 : DelayTime 0~1400[msec]
0: 0        16: 22        32: 90        48: 190       64: 350       80: 510       96: 780      112: 1100
1: 1        17: 24        33: 95        49: 200       65: 360       81: 520       97: 800      113: 1120
2: 2        18: 26        34: 100       50: 210       66: 370       82: 530       98: 820      114: 1140
3: 3        19: 28        35: 105       51: 220       67: 380       83: 540       99: 840      115: 1160
4: 4        20: 30        36: 110       52: 230       68: 390       84: 550      100: 860     116: 1180
5: 5        21: 35        37: 115       53: 240       69: 400       85: 560      101: 880     117: 1200
6: 6        22: 40        38: 120       54: 250       70: 410       86: 580      102: 900     118: 1220
7: 7        23: 45        39: 125       55: 260       71: 420       87: 600      103: 920     119: 1240
8: 8        24: 50        40: 130       56: 270       72: 430       88: 620      104: 940     120: 1260
9: 9        25: 55        41: 135       57: 280       73: 440       89: 640      105: 960     121: 1280
10: 10      26: 60        42: 140       58: 290       74: 450       90: 660      106: 980     122: 1300
11: 12      27: 65        43: 145       59: 300       75: 460       91: 680      107: 1000    123: 1320
12: 14      28: 70        44: 150       60: 310       76: 470       92: 700      108: 1020    124: 1340
13: 16      29: 75        45: 160       61: 320       77: 480       93: 720      109: 1040    125: 1360
14: 18      30: 80        46: 170       62: 330       78: 490       94: 740      110: 1060    126: 1380
15: 20      31: 85        47: 180       63: 340       79: 500       95: 760      111: 1080    127: 1400

```



\*T06-07 : Duration DelayTime 0~350[msec]

0: 0	16: 16	32: 32	48: 48	64: 78	80: 110	96: 190	112: 270
1: 1	17: 17	33: 33	49: 49	65: 80	81: 115	97: 195	113: 275
2: 2	18: 18	34: 34	50: 50	66: 82	82: 120	98: 200	114: 280
3: 3	19: 19	35: 35	51: 52	67: 84	83: 125	99: 205	115: 285
4: 4	20: 20	36: 36	52: 54	68: 86	84: 130	100: 210	116: 290
5: 5	21: 21	37: 37	53: 56	69: 88	85: 135	101: 215	117: 295
6: 6	22: 22	38: 38	54: 58	70: 90	86: 140	102: 220	118: 300
7: 7	23: 23	39: 39	55: 60	71: 92	87: 145	103: 225	119: 305
8: 8	24: 24	40: 40	56: 62	72: 94	88: 150	104: 230	120: 310
9: 9	25: 25	41: 41	57: 64	73: 96	89: 155	105: 235	121: 315
10: 10	26: 26	42: 42	58: 66	74: 98	90: 160	106: 240	122: 320
11: 11	27: 27	43: 43	59: 68	75: 100	91: 165	107: 245	123: 325
12: 12	28: 28	44: 44	60: 70	76: 102	92: 170	108: 250	124: 330
13: 13	29: 29	45: 45	61: 72	77: 104	93: 175	109: 255	125: 335
14: 14	30: 30	46: 46	62: 74	78: 106	94: 180	110: 260	126: 340
15: 15	31: 31	47: 47	63: 76	79: 108	95: 185	111: 265	127: 350

\*T06-08 : DelayTime 0~480[msec]

0: 0	16: 16	32: 32	48: 62	64: 115	80: 195	96: 275	112: 355
1: 1	17: 17	33: 33	49: 64	65: 120	81: 200	97: 280	113: 360
2: 2	18: 18	34: 34	50: 66	66: 125	82: 205	98: 285	114: 365
3: 3	19: 19	35: 36	51: 68	67: 130	83: 210	99: 290	115: 370
4: 4	20: 20	36: 38	52: 70	68: 135	84: 215	100: 295	116: 375
5: 5	21: 21	37: 40	53: 72	69: 140	85: 220	101: 300	117: 380
6: 6	22: 22	38: 42	54: 74	70: 145	86: 225	102: 305	118: 390
7: 7	23: 23	39: 44	55: 76	71: 150	87: 230	103: 310	119: 400
8: 8	24: 24	40: 46	56: 78	72: 155	88: 235	104: 315	120: 410
9: 9	25: 25	41: 48	57: 80	73: 160	89: 240	105: 320	121: 420
10: 10	26: 26	42: 50	58: 85	74: 165	90: 245	106: 325	122: 430
11: 11	27: 27	43: 52	59: 90	75: 170	91: 250	107: 330	123: 440
12: 12	28: 28	44: 54	60: 95	76: 175	92: 255	108: 335	124: 450
13: 13	29: 29	45: 56	61: 100	77: 180	93: 260	109: 340	125: 460
14: 14	30: 30	46: 58	62: 105	78: 185	94: 265	110: 345	126: 470
15: 15	31: 31	47: 60	63: 110	79: 190	95: 270	111: 350	127: 480

\*T06-09 : DelayTime 0~980[msec]

0: 0	16: 16	32: 60	48: 140	64: 240	80: 400	96: 560	112: 720
1: 1	17: 18	33: 65	49: 145	65: 250	81: 410	97: 570	113: 730
2: 2	18: 20	34: 70	50: 150	66: 260	82: 420	98: 580	114: 740
3: 3	19: 22	35: 75	51: 155	67: 270	83: 430	99: 590	115: 750
4: 4	20: 24	36: 80	52: 160	68: 280	84: 440	100: 600	116: 760
5: 5	21: 26	37: 85	53: 165	69: 290	85: 450	101: 610	117: 780
6: 6	22: 28	38: 90	54: 170	70: 300	86: 460	102: 620	118: 800
7: 7	23: 30	39: 95	55: 175	71: 310	87: 470	103: 630	119: 820
8: 8	24: 32	40: 100	56: 180	72: 320	88: 480	104: 640	120: 840
9: 9	25: 34	41: 105	57: 185	73: 330	89: 490	105: 650	121: 860
10: 10	26: 36	42: 110	58: 190	74: 340	90: 500	106: 660	122: 880
11: 11	27: 38	43: 115	59: 195	75: 350	91: 510	107: 670	123: 900
12: 12	28: 40	44: 120	60: 200	76: 360	92: 520	108: 680	124: 920
13: 13	29: 45	45: 125	61: 210	77: 370	93: 530	109: 690	125: 940
14: 14	30: 50	46: 130	62: 220	78: 380	94: 540	110: 700	126: 960
15: 15	31: 55	47: 135	63: 230	79: 390	95: 550	111: 710	127: 980

\*T06-10 : DelayTime 0~680[msec]

0: 0	16: 16	32: 44	48: 100	64: 180	80: 260	96: 370	112: 530
1: 1	17: 17	33: 46	49: 105	65: 185	81: 265	97: 380	113: 540
2: 2	18: 18	34: 48	50: 110	66: 190	82: 270	98: 390	114: 550
3: 3	19: 19	35: 50	51: 115	67: 195	83: 275	99: 400	115: 560
4: 4	20: 20	36: 52	52: 120	68: 200	84: 280	100: 410	116: 570
5: 5	21: 22	37: 54	53: 125	69: 205	85: 285	101: 420	117: 580
6: 6	22: 24	38: 56	54: 130	70: 210	86: 290	102: 430	118: 590
7: 7	23: 26	39: 58	55: 135	71: 215	87: 295	103: 440	119: 600
8: 8	24: 28	40: 60	56: 140	72: 220	88: 300	104: 450	120: 610
9: 9	25: 30	41: 65	57: 145	73: 225	89: 305	105: 460	121: 620
10: 10	26: 32	42: 70	58: 150	74: 230	90: 310	106: 470	122: 630
11: 11	27: 34	43: 75	59: 155	75: 235	91: 320	107: 480	123: 640
12: 12	28: 36	44: 80	60: 160	76: 240	92: 330	108: 490	124: 650
13: 13	29: 38	45: 85	61: 165	77: 245	93: 340	109: 500	125: 660
14: 14	30: 40	46: 90	62: 170	78: 250	94: 350	110: 510	126: 670
15: 15	31: 42	47: 95	63: 175	79: 255	95: 360	111: 520	127: 680

\*T06-11 : DelayTime 0~1380[msec]

0: 0	16: 22	32: 90	48: 190	64: 350	80: 510	96: 760	112: 1080
1: 1	17: 24	33: 95	49: 200	65: 360	81: 520	97: 780	113: 1100
2: 2	18: 26	34: 100	50: 210	66: 370	82: 530	98: 800	114: 1120
3: 3	19: 28	35: 105	51: 220	67: 380	83: 540	99: 820	115: 1140
4: 4	20: 30	36: 110	52: 230	68: 390	84: 550	100: 840	116: 1160
5: 5	21: 35	37: 115	53: 240	69: 400	85: 560	101: 860	117: 1180
6: 6	22: 40	38: 120	54: 250	70: 410	86: 570	102: 880	118: 1200
7: 7	23: 45	39: 125	55: 260	71: 420	87: 580	103: 900	119: 1220
8: 8	24: 50	40: 130	56: 270	72: 430	88: 600	104: 920	120: 1240
9: 9	25: 55	41: 135	57: 280	73: 440	89: 620	105: 940	121: 1260
10: 10	26: 60	42: 140	58: 290	74: 450	90: 640	106: 960	122: 1280
11: 12	27: 65	43: 145	59: 300	75: 460	91: 660	107: 980	123: 1300
12: 14	28: 70	44: 150	60: 310	76: 470	92: 680	108: 1000	124: 1320
13: 16	29: 75	45: 160	61: 320	77: 480	93: 700	109: 1020	125: 1340
14: 18	30: 80	46: 170	62: 330	78: 490	94: 720	110: 1040	126: 1360
15: 20	31: 85	47: 180	63: 340	79: 500	95: 740	111: 1060	127: 1380

# KORG R3 MIDI Implementation

```
*T06-12 : DelayTime 0~50[msec]
0: 0.0      16: 1.6      32: 4.4      48: 8.4      64: 14.0     80: 22.0     96: 30.0    112: 43.0
1: 0.1      17: 1.7      33: 4.6      49: 8.7      65: 14.5     81: 22.5     97: 30.5    113: 44.0
2: 0.2      18: 1.8      34: 4.8      50: 9.0      66: 15.0     82: 23.0     98: 31.0    114: 45.0
3: 0.3      19: 1.9      35: 5.0      51: 9.3      67: 15.5     83: 23.5     99: 31.5    115: 46.0
4: 0.4      20: 2.0      36: 5.2      52: 9.6      68: 16.0     84: 24.0    100: 32.0    116: 47.0
5: 0.5      21: 2.2      37: 5.4      53: 9.9      69: 16.5     85: 24.5    101: 32.5    117: 48.0
6: 0.6      22: 2.4      38: 5.6      54: 10.2     70: 17.0     86: 25.0    102: 33.0    118: 49.0
7: 0.7      23: 2.6      39: 5.8      55: 10.5     71: 17.5     87: 25.5    103: 34.0    119: 50.0
8: 0.8      24: 2.8      40: 6.0      56: 10.8     72: 18.0     88: 26.0    104: 35.0
9: 0.9      25: 3.0      41: 6.3      57: 11.1     73: 18.5     89: 26.5    105: 36.0
10: 1.0     26: 3.2      42: 6.6      58: 11.4     74: 19.0     90: 27.0    106: 37.0
11: 1.1     27: 3.4      43: 6.9      59: 11.7     75: 19.5     91: 27.5    107: 38.0
12: 1.2     28: 3.6      44: 7.2      60: 12.0     76: 20.0     92: 28.0    108: 39.0
13: 1.3     29: 3.8      45: 7.5      61: 12.5     77: 20.5     93: 28.5    109: 40.0
14: 1.4     30: 4.0      46: 7.8      62: 13.0     78: 21.0     94: 29.0    110: 41.0
15: 1.5     31: 4.2      47: 8.1      63: 13.5     79: 21.5     95: 29.5    111: 42.0
```

```
*T06-13 : DelayTime 0~30[msec]
0: 0.0      16: 1.6      32: 3.2      48: 4.8      64: 6.8      80: 10.5     96: 15.3    112: 28.0
1: 0.1      17: 1.7      33: 3.3      49: 4.9      65: 7.0      81: 10.8     97: 15.6    113: 30.0
2: 0.2      18: 1.8      34: 3.4      50: 5.0      66: 7.2      82: 11.1     98: 15.9
3: 0.3      19: 1.9      35: 3.5      51: 5.1      67: 7.4      83: 11.4     99: 16.2
4: 0.4      20: 2.0      36: 3.6      52: 5.2      68: 7.6      84: 11.7    100: 16.5
5: 0.5      21: 2.1      37: 3.7      53: 5.3      69: 7.8      85: 12.0    101: 17.0
6: 0.6      22: 2.2      38: 3.8      54: 5.4      70: 8.0      86: 12.3    102: 17.5
7: 0.7      23: 2.3      39: 3.9      55: 5.5      71: 8.2      87: 12.6    103: 18.0
8: 0.8      24: 2.4      40: 4.0      56: 5.6      72: 8.4      88: 12.9    104: 18.5
9: 0.9      25: 2.5      41: 4.1      57: 5.7      73: 8.6      89: 13.2    105: 19.0
10: 1.0     26: 2.6      42: 4.2      58: 5.8      74: 8.8      90: 13.5    106: 19.5
11: 1.1     27: 2.7      43: 4.3      59: 5.9      75: 9.0      91: 13.8    107: 20.0
12: 1.2     28: 2.8      44: 4.4      60: 6.0      76: 9.3      92: 14.1    108: 21.0
13: 1.3     29: 2.9      45: 4.5      61: 6.2      77: 9.6      93: 14.4    109: 22.0
14: 1.4     30: 3.0      46: 4.6      62: 6.4      78: 9.9      94: 14.7    110: 24.0
15: 1.5     31: 3.1      47: 4.7      63: 6.6      79: 10.2     95: 15.0    111: 26.0
```

```
*T06-14 : DelayTime TempoSync=ON
0: 1/64      6: 1/6      12: 3/4
1: 1/32      7: 3/16     13: 1/1
2: 1/24      8: 1/4
3: 1/16      9: 1/3
4: 1/12     10: 3/8
5: 1/8      11: 1/2
```

```
*T03-03 : [kHz]
0: 0.000     16: 0.10    32: 0.37    48: 1.05    64: 2.00    80: 3.60    96: 5.80    112: 9.00
1: 0.002     17: 0.11    33: 0.39    49: 1.10    65: 2.10    81: 3.70    97: 6.00    113: 9.20
2: 0.004     18: 0.12    34: 0.41    50: 1.15    66: 2.20    82: 3.80    98: 6.20    114: 9.40
3: 0.006     19: 0.13    35: 0.43    51: 1.20    67: 2.30    83: 3.90    99: 6.40    115: 9.60
4: 0.008     20: 0.14    36: 0.45    52: 1.25    68: 2.40    84: 4.00    100: 6.60    116: 9.80
5: 0.010     21: 0.15    37: 0.50    53: 1.30    69: 2.50    85: 4.10    101: 6.80    117: 10.0
6: 0.015     22: 0.17    38: 0.55    54: 1.35    70: 2.60    86: 4.20    102: 7.00    118: 10.2
7: 0.020     23: 0.19    39: 0.60    55: 1.40    71: 2.70    87: 4.30    103: 7.20    119: 10.4
8: 0.025     24: 0.21    40: 0.65    56: 1.45    72: 2.80    88: 4.40    104: 7.40    120: 10.6
9: 0.03      25: 0.23    41: 0.70    57: 1.50    73: 2.90    89: 4.50    105: 7.60    121: 10.8
10: 0.04     26: 0.25    42: 0.75    58: 1.55    74: 3.00    90: 4.60    106: 7.80    122: 11.0
11: 0.05     27: 0.27    43: 0.80    59: 1.60    75: 3.10    91: 4.80    107: 8.00    123: 11.2
12: 0.06     28: 0.29    44: 0.85    60: 1.65    76: 3.20    92: 5.00    108: 8.20    124: 11.4
13: 0.07     29: 0.31    45: 0.90    61: 1.70    77: 3.30    93: 5.20    109: 8.40    125: 11.6
14: 0.08     30: 0.33    46: 0.95    62: 1.80    78: 3.40    94: 5.40    110: 8.60    126: 11.8
15: 0.09     31: 0.35    47: 1.00    63: 1.90    79: 3.50    95: 5.60    111: 8.80    127: 12.0
```

```
*T04-01 : Control Source
0: Off
1: Velocity
2: AfterTouch
3: PitchBend
4: ModWheel
5: Assignable Pedal
6: Assignable SW
7: Damper
8: Env.Follower
9: MIDI1
10: MIDI2
11: MIDI3
12: MIDI4
13: MIDI5
```

```
*T05-01 : Reverb Time [sec] *Type (Hall,SmthHall,WetPlate,DryPlate)
0: 0.1      5: 0.6      10: 1.1     15: 1.6     20: 2.1     25: 2.6
1: 0.2      6: 0.7      11: 1.2     16: 1.7     21: 2.2     26: 2.7
2: 0.3      7: 0.8      12: 1.3     17: 1.8     22: 2.3     27: 2.8
3: 0.4      8: 0.9      13: 1.4     18: 1.9     23: 2.4     28: 2.9
4: 0.5      9: 1.0      14: 1.5     19: 2.0     24: 2.5     29: 3.0
```

```

*T05-02 : Reverb Time Type [sec] *Type(Room,BritRoom)
0: 0.1 15: 1.6 30: 3.1 45: 4.6 60: 6.1 75: 7.6 90: 9.1
1: 0.2 16: 1.7 31: 3.2 46: 4.7 61: 6.2 76: 7.7 91: 9.2
2: 0.3 17: 1.8 32: 3.3 47: 4.8 62: 6.3 77: 7.8 92: 9.3
3: 0.4 18: 1.9 33: 3.4 48: 4.9 63: 6.4 78: 7.9 93: 9.4
4: 0.5 19: 2.0 34: 3.5 49: 5.0 64: 6.5 79: 8.0 94: 9.5
5: 0.6 20: 2.1 35: 3.6 50: 5.1 65: 6.6 80: 8.1 95: 9.6
6: 0.7 21: 2.2 36: 3.7 51: 5.2 66: 6.7 81: 8.2 96: 9.7
7: 0.8 22: 2.3 37: 3.8 52: 5.3 67: 6.8 82: 8.3 97: 9.8
8: 0.9 23: 2.4 38: 3.9 53: 5.4 68: 6.9 83: 8.4 98: 9.9
9: 1.0 24: 2.5 39: 4.0 54: 5.5 69: 7.0 84: 8.5 99: 10.0
10: 1.1 25: 2.6 40: 4.1 55: 5.6 70: 7.1 85: 8.6
11: 1.2 26: 2.7 41: 4.2 56: 5.7 71: 7.2 86: 8.7
12: 1.3 27: 2.8 42: 4.3 57: 5.8 72: 7.3 87: 8.8
13: 1.4 28: 2.9 43: 4.4 58: 5.9 73: 7.4 88: 8.9
14: 1.5 29: 3.0 44: 4.5 59: 6.0 74: 7.5 89: 9.0

*T05-03 :
0: Hall
1: SmoothHall
2: WetPlate
3: DryPlate
4: Room
5: BrightRoom

*T06-01 : Time Ratio [%] Sync=ON
0: 12.5 16: 25.0 32: 50.0 48: 66.6 64: 100.0 80: 133.0 96: 200.0 112: 300.0
1: 12.5 17: 25.0 33: 50.0 49: 66.6 65: 100.0 81: 133.0 97: 200.0 113: 300.0
2: 12.5 18: 25.0 34: 50.0 50: 75.0 66: 100.0 82: 133.0 98: 200.0 114: 300.0
3: 12.5 19: 25.0 35: 50.0 51: 75.0 67: 100.0 83: 133.0 99: 200.0 115: 300.0
4: 12.5 20: 25.0 36: 50.0 52: 75.0 68: 125.0 84: 133.0 100: 200.0 116: 300.0
5: 12.5 21: 25.0 37: 50.0 53: 75.0 69: 125.0 85: 133.0 101: 200.0 117: 300.0
6: 12.5 22: 25.0 38: 50.0 54: 75.0 70: 125.0 86: 150.0 102: 200.0 118: 300.0
7: 12.5 23: 25.0 39: 50.0 55: 75.0 71: 125.0 87: 150.0 103: 200.0 119: 300.0
8: 16.7 24: 33.3 40: 50.0 56: 75.0 72: 125.0 88: 150.0 104: 250.0 120: 400.0
9: 16.7 25: 33.3 41: 66.6 57: 75.0 73: 125.0 89: 150.0 105: 250.0 121: 400.0
10: 16.7 26: 33.3 42: 66.6 58: 75.0 74: 125.0 90: 150.0 106: 250.0 122: 400.0
11: 16.7 27: 33.3 43: 66.6 59: 100.0 75: 125.0 91: 150.0 107: 250.0 123: 400.0
12: 16.7 28: 33.3 44: 66.6 60: 100.0 76: 125.0 92: 150.0 108: 250.0 124: 400.0
13: 16.7 29: 33.3 45: 66.6 61: 100.0 77: 133.0 93: 150.0 109: 250.0 125: 400.0
14: 16.7 30: 33.3 46: 66.6 62: 100.0 78: 133.0 94: 150.0 110: 250.0 126: 400.0
15: 16.7 31: 33.3 47: 66.6 63: 100.0 79: 133.0 95: 200.0 111: 250.0 127: 400.0

*T06-02 : Time Ratio [%] Sync=OFF
0: 0.5 16: 8.5 32: 23.0 48: 59.0 64: 100.0 80: 120.0 96: 158.0 112: 210.0
1: 1.0 17: 9.0 33: 25.0 49: 62.0 65: 100.0 81: 122.0 97: 161.0 113: 215.0
2: 1.5 18: 9.5 34: 28.0 50: 65.0 66: 101.0 82: 123.0 98: 164.0 114: 220.0
3: 2.0 19: 10.0 35: 30.0 51: 66.6 67: 102.0 83: 125.0 99: 167.0 115: 225.0
4: 2.5 20: 11.0 36: 32.0 52: 72.0 68: 103.0 84: 128.0 100: 170.0 116: 230.0
5: 3.0 21: 12.5 37: 33.3 53: 75.0 69: 104.0 85: 130.0 101: 173.0 117: 240.0
6: 3.5 22: 13.0 38: 36.0 54: 78.0 70: 105.0 86: 133.3 102: 176.0 118: 250.0
7: 4.0 23: 14.0 39: 38.0 55: 81.0 71: 106.0 87: 134.0 103: 179.0 119: 260.0
8: 4.5 24: 15.0 40: 40.0 56: 85.0 72: 107.0 88: 136.0 104: 182.0 120: 270.0
9: 5.0 25: 16.7 41: 42.0 57: 89.0 73: 108.0 89: 138.0 105: 185.0 121: 280.0
10: 5.5 26: 17.0 42: 44.0 58: 92.0 74: 109.0 90: 140.0 106: 188.0 122: 300.0
11: 6.0 27: 18.0 43: 46.0 59: 95.0 75: 110.0 91: 143.0 107: 191.0 123: 320.0
12: 6.5 28: 19.0 44: 48.0 60: 98.0 76: 112.0 92: 146.0 108: 194.0 124: 340.0
13: 7.0 29: 20.0 45: 50.0 61: 100.0 77: 114.0 93: 150.0 109: 197.0 125: 360.0
14: 7.5 30: 21.0 46: 53.0 62: 100.0 78: 116.0 94: 152.0 110: 200.0 126: 380.0
15: 8.0 31: 22.0 47: 56.0 63: 100.0 79: 118.0 95: 155.0 111: 205.0 127: 400.0

*T06-03 : DelayTime 0~500[msec]
0: 0 16: 16 32: 34 48: 66 64: 125 80: 205 96: 285 112: 365
1: 1 17: 17 33: 36 49: 68 65: 130 81: 210 97: 290 113: 370
2: 2 18: 18 34: 38 50: 70 66: 135 82: 215 98: 295 114: 375
3: 3 19: 19 35: 40 51: 72 67: 140 83: 220 99: 300 115: 380
4: 4 20: 20 36: 42 52: 74 68: 145 84: 225 100: 305 116: 390
5: 5 21: 21 37: 44 53: 76 69: 150 85: 230 101: 310 117: 400
6: 6 22: 22 38: 46 54: 78 70: 155 86: 235 102: 315 118: 410
7: 7 23: 23 39: 48 55: 80 71: 160 87: 240 103: 320 119: 420
8: 8 24: 24 40: 50 56: 85 72: 165 88: 245 104: 325 120: 430
9: 9 25: 25 41: 52 57: 90 73: 170 89: 250 105: 330 121: 440
10: 10 26: 26 42: 54 58: 95 74: 175 90: 255 106: 335 122: 450
11: 11 27: 27 43: 56 59: 100 75: 180 91: 260 107: 340 123: 460
12: 12 28: 28 44: 58 60: 105 76: 185 92: 265 108: 345 124: 470
13: 13 29: 29 45: 60 61: 110 77: 190 93: 270 109: 350 125: 480
14: 14 30: 30 46: 62 62: 115 78: 195 94: 275 110: 355 126: 490
15: 15 31: 32 47: 64 63: 120 79: 200 95: 280 111: 360 127: 500

*T06-04 : DelayTime 0~1000[msec]
0: 0 16: 16 32: 60 48: 140 64: 250 80: 410 96: 570 112: 730
1: 1 17: 18 33: 65 49: 145 65: 260 81: 420 97: 580 113: 740
2: 2 18: 20 34: 70 50: 150 66: 270 82: 430 98: 590 114: 750
3: 3 19: 22 35: 75 51: 155 67: 280 83: 440 99: 600 115: 760
4: 4 20: 24 36: 80 52: 160 68: 290 84: 450 100: 610 116: 780
5: 5 21: 26 37: 85 53: 165 69: 300 85: 460 101: 620 117: 800
6: 6 22: 28 38: 90 54: 170 70: 310 86: 470 102: 630 118: 820
7: 7 23: 30 39: 95 55: 175 71: 320 87: 480 103: 640 119: 840
8: 8 24: 32 40: 100 56: 180 72: 330 88: 490 104: 650 120: 860
9: 9 25: 34 41: 105 57: 185 73: 340 89: 500 105: 660 121: 880
10: 10 26: 36 42: 110 58: 190 74: 350 90: 510 106: 670 122: 900
11: 11 27: 38 43: 115 59: 200 75: 360 91: 520 107: 680 123: 920
12: 12 28: 40 44: 120 60: 210 76: 370 92: 530 108: 690 124: 940
13: 13 29: 45 45: 125 61: 220 77: 380 93: 540 109: 700 125: 960
14: 14 30: 50 46: 130 62: 230 78: 390 94: 550 110: 710 126: 980
15: 15 31: 55 47: 135 63: 240 79: 400 95: 560 111: 720 127: 1000

```

## KORG R3 MIDI Implementation

```

*T06-05 : DelayTime 0~700[msec]
0: 0      16: 16      32: 44      48: 100     64: 180     80: 260     96: 390    112: 550
1: 1      17: 17      33: 46      49: 105     65: 185     81: 265     97: 400    113: 560
2: 2      18: 18      34: 48      50: 110     66: 190     82: 270     98: 410    114: 570
3: 3      19: 19      35: 50      51: 115     67: 195     83: 275     99: 420    115: 580
4: 4      20: 20      36: 52      52: 120     68: 200     84: 280    100: 430    116: 590
5: 5      21: 22      37: 54      53: 125     69: 205     85: 285    101: 440    117: 600
6: 6      22: 24      38: 56      54: 130     70: 210     86: 290    102: 450    118: 610
7: 7      23: 26      39: 58      55: 135     71: 215     87: 300    103: 460    119: 620
8: 8      24: 28      40: 60      56: 140     72: 220     88: 310    104: 470    120: 630
9: 9      25: 30      41: 65      57: 145     73: 225     89: 320    105: 480    121: 640
10: 10    26: 32      42: 70      58: 150     74: 230     90: 330    106: 490    122: 650
11: 11    27: 34      43: 75      59: 155     75: 235     91: 340    107: 500    123: 660
12: 12    28: 36      44: 80      60: 160     76: 240     92: 350    108: 510    124: 670
13: 13    29: 38      45: 85      61: 165     77: 245     93: 360    109: 520    125: 680
14: 14    30: 40      46: 90      62: 170     78: 250     94: 370    110: 530    126: 690
15: 15    31: 42      47: 95      63: 175     79: 255     95: 380    111: 540    127: 700

*T06-06 : DelayTime 0~1400[msec]
0: 0      16: 22      32: 90      48: 190     64: 350     80: 510     96: 780    112: 1100
1: 1      17: 24      33: 95      49: 200     65: 360     81: 520     97: 800    113: 1120
2: 2      18: 26      34: 100     50: 210     66: 370     82: 530     98: 820    114: 1140
3: 3      19: 28      35: 105     51: 220     67: 380     83: 540     99: 840    115: 1160
4: 4      20: 30      36: 110     52: 230     68: 390     84: 550    100: 860    116: 1180
5: 5      21: 35      37: 115     53: 240     69: 400     85: 560    101: 880    117: 1200
6: 6      22: 40      38: 120     54: 250     70: 410     86: 580    102: 900    118: 1220
7: 7      23: 45      39: 125     55: 260     71: 420     87: 600    103: 920    119: 1240
8: 8      24: 50      40: 130     56: 270     72: 430     88: 620    104: 940    120: 1260
9: 9      25: 55      41: 135     57: 280     73: 440     89: 640    105: 960    121: 1280
10: 10    26: 60      42: 140     58: 290     74: 450     90: 660    106: 980    122: 1300
11: 12    27: 65      43: 145     59: 300     75: 460     91: 680    107: 1000   123: 1320
12: 14    28: 70      44: 150     60: 310     76: 470     92: 700    108: 1020   124: 1340
13: 16    29: 75      45: 160     61: 320     77: 480     93: 720    109: 1040   125: 1360
14: 18    30: 80      46: 170     62: 330     78: 490     94: 740    110: 1060   126: 1380
15: 20    31: 85      47: 180     63: 340     79: 500     95: 760    111: 1080   127: 1400

*T06-07 : Duration DelayTime 0~350[msec]
0: 0      16: 16      32: 32      48: 48      64: 78      80: 110     96: 190    112: 270
1: 1      17: 17      33: 33      49: 49      65: 80      81: 115     97: 195    113: 275
2: 2      18: 18      34: 34      50: 50      66: 82      82: 120     98: 200    114: 280
3: 3      19: 19      35: 35      51: 52      67: 84      83: 125     99: 205    115: 285
4: 4      20: 20      36: 36      52: 54      68: 86      84: 130    100: 210    116: 290
5: 5      21: 21      37: 37      53: 56      69: 88      85: 135     101: 215   117: 295
6: 6      22: 22      38: 38      54: 58      70: 90      86: 140     102: 220   118: 300
7: 7      23: 23      39: 39      55: 60      71: 92      87: 145     103: 225   119: 305
8: 8      24: 24      40: 40      56: 62      72: 94      88: 150     104: 230   120: 310
9: 9      25: 25      41: 41      57: 64      73: 96      89: 155     105: 235   121: 315
10: 10    26: 26      42: 42      58: 66      74: 98      90: 160     106: 240   122: 320
11: 11    27: 27      43: 43      59: 68      75: 100     91: 165     107: 245   123: 325
12: 12    28: 28      44: 44      60: 70      76: 102     92: 170     108: 250   124: 330
13: 13    29: 29      45: 45      61: 72      77: 104     93: 175     109: 255   125: 335
14: 14    30: 30      46: 46      62: 74      78: 106     94: 180     110: 260   126: 340
15: 15    31: 31      47: 47      63: 76      79: 108     95: 185     111: 265   127: 350

*T06-08 : DelayTime 0~480[msec]
0: 0      16: 16      32: 32      48: 62      64: 115     80: 195     96: 275    112: 355
1: 1      17: 17      33: 33      49: 64      65: 120     81: 200     97: 280    113: 360
2: 2      18: 18      34: 34      50: 66      66: 125     82: 205     98: 285    114: 365
3: 3      19: 19      35: 36      51: 68      67: 130     83: 210     99: 290    115: 370
4: 4      20: 20      36: 38      52: 70      68: 135     84: 215    100: 295    116: 375
5: 5      21: 21      37: 40      53: 72      69: 140     85: 220    101: 300    117: 380
6: 6      22: 22      38: 42      54: 74      70: 145     86: 225    102: 305    118: 390
7: 7      23: 23      39: 44      55: 76      71: 150     87: 230    103: 310    119: 400
8: 8      24: 24      40: 46      56: 78      72: 155     88: 235    104: 315    120: 410
9: 9      25: 25      41: 48      57: 80      73: 160     89: 240    105: 320    121: 420
10: 10    26: 26      42: 50      58: 85      74: 165     90: 245    106: 325    122: 430
11: 11    27: 27      43: 52      59: 90      75: 170     91: 250    107: 330    123: 440
12: 12    28: 28      44: 54      60: 95      76: 175     92: 255    108: 335    124: 450
13: 13    29: 29      45: 56      61: 100     77: 180     93: 260    109: 340    125: 460
14: 14    30: 30      46: 58      62: 105     78: 185     94: 265    110: 345    126: 470
15: 15    31: 31      47: 60      63: 110     79: 190     95: 270    111: 350    127: 480

*T06-09 : DelayTime 0~980[msec]
0: 0      16: 16      32: 60      48: 140     64: 240     80: 400     96: 560    112: 720
1: 1      17: 18      33: 65      49: 145     65: 250     81: 410     97: 570    113: 730
2: 2      18: 20      34: 70      50: 150     66: 260     82: 420     98: 580    114: 740
3: 3      19: 22      35: 75      51: 155     67: 270     83: 430     99: 590    115: 750
4: 4      20: 24      36: 80      52: 160     68: 280     84: 440    100: 600    116: 760
5: 5      21: 26      37: 85      53: 165     69: 290     85: 450    101: 610    117: 780
6: 6      22: 28      38: 90      54: 170     70: 300     86: 460    102: 620    118: 800
7: 7      23: 30      39: 95      55: 175     71: 310     87: 470    103: 630    119: 820
8: 8      24: 32      40: 100     56: 180     72: 320     88: 480    104: 640    120: 840
9: 9      25: 34      41: 105     57: 185     73: 330     89: 490    105: 650    121: 860
10: 10    26: 36      42: 110     58: 190     74: 340     90: 500    106: 660    122: 880
11: 11    27: 38      43: 115     59: 195     75: 350     91: 510    107: 670    123: 900
12: 12    28: 40      44: 120     60: 200     76: 360     92: 520    108: 680    124: 920
13: 13    29: 45      45: 125     61: 210     77: 370     93: 530    109: 690    125: 940
14: 14    30: 50      46: 130     62: 220     78: 380     94: 540    110: 700    126: 960
15: 15    31: 55      47: 135     63: 230     79: 390     95: 550    111: 710    127: 980

```

```
*T06-10 : DelayTime 0~680[msec]
0: 0      16: 16      32: 44      48: 100     64: 180     80: 260     96: 370     112: 530
1: 1      17: 17      33: 46      49: 105     65: 185     81: 265     97: 380     113: 540
2: 2      18: 18      34: 48      50: 110     66: 190     82: 270     98: 390     114: 550
3: 3      19: 19      35: 50      51: 115     67: 195     83: 275     99: 400     115: 560
4: 4      20: 20      36: 52      52: 120     68: 200     84: 280     100: 410    116: 570
5: 5      21: 22      37: 54      53: 125     69: 205     85: 285     101: 420    117: 580
6: 6      22: 24      38: 56      54: 130     70: 210     86: 290     102: 430    118: 590
7: 7      23: 26      39: 58      55: 135     71: 215     87: 295     103: 440    119: 600
8: 8      24: 28      40: 60      56: 140     72: 220     88: 300     104: 450    120: 610
9: 9      25: 30      41: 65      57: 145     73: 225     89: 305     105: 460    121: 620
10: 10    26: 32      42: 70      58: 150     74: 230     90: 310     106: 470    122: 630
11: 11    27: 34      43: 75      59: 155     75: 235     91: 320     107: 480    123: 640
12: 12    28: 36      44: 80      60: 160     76: 240     92: 330     108: 490    124: 650
13: 13    29: 38      45: 85      61: 165     77: 245     93: 340     109: 500    125: 660
14: 14    30: 40      46: 90      62: 170     78: 250     94: 350     110: 510    126: 670
15: 15    31: 42      47: 95      63: 175     79: 255     95: 360     111: 520    127: 680
```

```
*T06-11 : DelayTime 0~1380[msec]
0: 0      16: 22      32: 90      48: 190     64: 350     80: 510     96: 760     112: 1080
1: 1      17: 24      33: 95      49: 200     65: 360     81: 520     97: 780     113: 1100
2: 2      18: 26      34: 100     50: 210     66: 370     82: 530     98: 800     114: 1120
3: 3      19: 28      35: 105     51: 220     67: 380     83: 540     99: 820     115: 1140
4: 4      20: 30      36: 110     52: 230     68: 390     84: 550     100: 840    116: 1160
5: 5      21: 35      37: 115     53: 240     69: 400     85: 560     101: 860    117: 1180
6: 6      22: 40      38: 120     54: 250     70: 410     86: 570     102: 880    118: 1200
7: 7      23: 45      39: 125     55: 260     71: 420     87: 580     103: 900    119: 1220
8: 8      24: 50      40: 130     56: 270     72: 430     88: 600     104: 920    120: 1240
9: 9      25: 55      41: 135     57: 280     73: 440     89: 620     105: 940    121: 1260
10: 10    26: 60      42: 140     58: 290     74: 450     90: 640     106: 960    122: 1280
11: 12    27: 65      43: 145     59: 300     75: 460     91: 660     107: 980    123: 1300
12: 14    28: 70      44: 150     60: 310     76: 470     92: 680     108: 1000   124: 1320
13: 16    29: 75      45: 160     61: 320     77: 480     93: 700     109: 1020   125: 1340
14: 18    30: 80      46: 170     62: 330     78: 490     94: 720     110: 1040   126: 1360
15: 20    31: 85      47: 180     63: 340     79: 500     95: 740     111: 1060   127: 1380
```

```
*T06-12 : DelayTime 0~50[msec]
0: 0.0    16: 1.6     32: 4.4     48: 8.4     64: 14.0    80: 22.0    96: 30.0    112: 43.0
1: 0.1    17: 1.7     33: 4.6     49: 8.7     65: 14.5    81: 22.5    97: 30.5    113: 44.0
2: 0.2    18: 1.8     34: 4.8     50: 9.0     66: 15.0    82: 23.0    98: 31.0    114: 45.0
3: 0.3    19: 1.9     35: 5.0     51: 9.3     67: 15.5    83: 23.5    99: 31.5    115: 46.0
4: 0.4    20: 2.0     36: 5.2     52: 9.6     68: 16.0    84: 24.0    100: 32.0   116: 47.0
5: 0.5    21: 2.2     37: 5.4     53: 9.9     69: 16.5    85: 24.5    101: 32.5   117: 48.0
6: 0.6    22: 2.4     38: 5.6     54: 10.2    70: 17.0    86: 25.0    102: 33.0   118: 49.0
7: 0.7    23: 2.6     39: 5.8     55: 10.5    71: 17.5    87: 25.5    103: 34.0   119: 50.0
8: 0.8    24: 2.8     40: 6.0     56: 10.8    72: 18.0    88: 26.0    104: 35.0
9: 0.9    25: 3.0     41: 6.3     57: 11.1    73: 18.5    89: 26.5    105: 36.0
10: 1.0    26: 3.2     42: 6.6     58: 11.4    74: 19.0    90: 27.0    106: 37.0
11: 1.1    27: 3.4     43: 6.9     59: 11.7    75: 19.5    91: 27.5    107: 38.0
12: 1.2    28: 3.6     44: 7.2     60: 12.0    76: 20.0    92: 28.0    108: 39.0
13: 1.3    29: 3.8     45: 7.5     61: 12.5    77: 20.5    93: 28.5    109: 40.0
14: 1.4    30: 4.0     46: 7.8     62: 13.0    78: 21.0    94: 29.0    110: 41.0
15: 1.5    31: 4.2     47: 8.1     63: 13.5    79: 21.5    95: 29.5    111: 42.0
```

```
*T06-13 : DelayTime 0~30[msec]
0: 0.0    16: 1.6     32: 3.2     48: 4.8     64: 6.8     80: 10.5    96: 15.3    112: 28.0
1: 0.1    17: 1.7     33: 3.3     49: 4.9     65: 7.0     81: 10.8    97: 15.6    113: 30.0
2: 0.2    18: 1.8     34: 3.4     50: 5.0     66: 7.2     82: 11.1    98: 15.9
3: 0.3    19: 1.9     35: 3.5     51: 5.1     67: 7.4     83: 11.4    99: 16.2
4: 0.4    20: 2.0     36: 3.6     52: 5.2     68: 7.6     84: 11.7    100: 16.5
5: 0.5    21: 2.1     37: 3.7     53: 5.3     69: 7.8     85: 12.0    101: 17.0
6: 0.6    22: 2.2     38: 3.8     54: 5.4     70: 8.0     86: 12.3    102: 17.5
7: 0.7    23: 2.3     39: 3.9     55: 5.5     71: 8.2     87: 12.6    103: 18.0
8: 0.8    24: 2.4     40: 4.0     56: 5.6     72: 8.4     88: 12.9    104: 18.5
9: 0.9    25: 2.5     41: 4.1     57: 5.7     73: 8.6     89: 13.2    105: 19.0
10: 1.0    26: 2.6     42: 4.2     58: 5.8     74: 8.8     90: 13.5    106: 19.5
11: 1.1    27: 2.7     43: 4.3     59: 5.9     75: 9.0     91: 13.8    107: 20.0
12: 1.2    28: 2.8     44: 4.4     60: 6.0     76: 9.3     92: 14.1    108: 21.0
13: 1.3    29: 2.9     45: 4.5     61: 6.2     77: 9.6     93: 14.4    109: 22.0
14: 1.4    30: 3.0     46: 4.6     62: 6.4     78: 9.9     94: 14.7    110: 24.0
15: 1.5    31: 3.1     47: 4.7     63: 6.6     79: 10.2    95: 15.0    111: 26.0
```

```
*T06-14 : DelayTime TempoSync=ON
0: 1/64    6: 1/6     12: 3/4
1: 1/32    7: 3/16    13: 1/1
2: 1/24    8: 1/4
3: 1/16    9: 1/3
4: 1/12    10: 3/8
5: 1/8     11: 1/2
```

**KORG** KORG INC.  
4015-2 Yanokuchi, Inagi-city, Tokyo 206-0812 Japan