KAWAI

K5000W/S/R MIDI Implementation

(Version 2.0)

Contents

This document is mailly written for the synthesizer part.

MIDI implementation

1. Recognized Data

1.1 CHANNEL VOICE MESSAGE

Note off

Status	2nd Byte	3rd Byte
8nH	kkH	vvH
9nH	kkH	00H

n=MIDI channel number :0H-fH(ch.1 - ch.16)
kk=Note Number :00H - 7fH(0 - 127)
vv=Velocity :00H - 7fH(0 - 127)

Note on

Status	2nd Byte	3rd Byte
9nH	kkH	vvH

n=MIDI channel number :0H-fH(ch.1 - ch.16)
kk=Note Number :00H - 7fH(0 - 127)
vv=Velocity :00H - 7fH(0 - 127)

Control Change
Bank Select

Status	2nd Byte	3rd Byte
BnH	00H	mmH
BnH	20H	llH

n=MIDI channel number :0H-fH(ch.1 - ch.16)
mm=Bank Number MSB Default = 00H
ll=Bank Number LSB Default = 00H

Bank# K5000W

MSB LSB	Program#	function	
00H 00H	0-127	G1 - 128	
63H 00H	0-13	B103 - 116	(See B bank program no. table)
64H 00H	0-127	A1 - 128	
65H 00H	0-63	C1 - 64	
67H 00H	0-127	E1 - 128	(Only when ME-1 is installed)
68H 00H	0-127	F1 - 128	(Only when ME-1 is installed)

Note: ME-1 is an optional Memory Expansion Kit

Bank# K5000S/R

MSB LSB	Program#	function	
64H 00H	0-127	A1 - 128	
65H 00H	0-63	M1 - 64	
66H 00H	0-127	D1 - 128	
67H 00H	0-127	E1 - 128	(Only when ME-1 is installed)
68H 00H	0-127	F1 - 128	(Only when ME-1 is installed)

Modulation

Status	2nd Byte	3rd Byte
BnH	01H	vvH

n=MIDI channel number :0H-fH(ch.1 - ch.16)
vv = Modulation depth :00H - 7fH(0 - 127) Default = 00H

Portamento Time

Status	2nd Byte	3rd Byte
BnH	05H	vvH

n=MIDI channel number :0H-fH(ch.1 - ch.16)
vv = Portamento time :00H - 7fH(0 - 127) Default = 00H

Data Entry

Status	2nd Byte	3rd Byte
BnH	06H	mmH
BnH	26H	llH

n=MIDI channel number :0H-fH(ch.1 - ch.16)

mm,ll=Value indicated in RPN/NRPN, see RPN/NRPN chapter :00H - 7fH(0 - 127)

Volume

Status	2nd Byte	3rd Byte
BnH	07H	vvH

n=MIDI channel number :0H-fH(ch.1 - ch.16)

vv = Volume :00H - 7fH(0 - 127) Default = 7fH

Panpot

Status	2nd Byte	3rd Byte
BnH	0aH	vvH

n=MIDI channel number :0H-fH(ch.1 - ch.16)

vv = Panpot :00H - 40H - 7fH(left - Center - right) Default = 40H(center)

Expression

Status	2nd Byte	3rd Byte
BnH	0bH	vvH

n=MIDI channel number :0H-fH(ch.1 - ch.16)

vv = Expression :00H - 7fH(0 - 127) Default = 7fH

General Purpose Controllers1-4

Status	2nd Byte	3rd Byte	
BnH	10H	vvH	GPC#1, and macro controller(Harm Lo)
BnH	11H	vvH	GPC#2, and macro controller(Harm Hi)
BnH	12H	vvH	GPC#3, and macro controller(FF bias)
BnH	13H	vvH	GPC#4, and macro controller(FF speed)

n=MIDI channel number :0H-fH(ch.1 - ch.16)

vv = Control Value :00H - 7fH(0 - 127) Default = 7fH

Hold1

Status	2nd Byte	3rd Byte
BnH	40H	vvH

n=MIDI channel number :0H-fH(ch.1 - ch.16)

vv = Control Value :00H - 7fH(0 - 127) Default = 00H

0 - 63 =OFF, 64 - 127=ON

Portament On/Off

Status	2nd Byte	3rd Byte
BnH	41H	vvH

n=MIDI channel number :0H-fH(ch.1 - ch.16)

vv = Control Value :00H - 7fH(0 - 127) Default = 00H

0 - 63 =OFF, 64 - 127=ON

Hold2

Status	2nd Byte	3rd Byte
BnH	45H	vvH

n=MIDI channel number :0H-fH(ch.1 - ch.16)

vv = Control Value :00H - 7fH(0 - 127) Default = 00H

0 - 63 =OFF, 64 - 127=ON

Sound controllers #2-9

Status	2nd Byte	3rd Byte		
BnH	47H	vvH	macro controller Even/Odd	(Sound controler #2)
BnH	48H	vvH	macro controller Release	(Sound controler #3)
BnH	49H	vvH	macro controller Attack	(Sound controler #4)
BnH	4aH	vvH	macro controller Cutoff	(Sound controler #5)
BnH	4bH	vvH	macro controller FF depth	(Sound controler #6)
BnH	4cH	vvH	macro controller Velocity	(Sound controler #7)
BnH	4dH	vvH	macro controller Resonanse	(Sound controler #8)
BnH	4eH	vvH	macro controller Decay	(Sound controler #9)

n=MIDI channel number :0H-fH(ch.1 - ch.16)
vv = Control Value :00H - 7fH(0 - 127) Default = 00H

General Purpose Controllers5-8 (Only for K5000S/R)

Status	2nd Byte	3rd Byte	
BnH	50H	vvH	GPC#5, and macro contoroller(User1)
BnH	51H	vvH	GPC#6, and macro contoroller(User2)
BnH	52H	vvH	GPC#7, and macro contoroller(User3)
BnH	53H	vvH	GPC#8, and macro contoroller(User4)

n=MIDI channel number :0H-fH(ch.1 - ch.16)
vv = Control Value :00H - 7fH(0 - 127) Default = 00H

Portamento Control

Status	2nd Byte	3rd Byte
BnH	54H	kkH

n=MIDI channel number :0H-fH(ch.1 - ch.16)
kk=source note number :00H - 7fH(0 - 127)

Common Effect1-5 (Only K5000W compose mode)

Only when Effect Algorithm is set to 2, these data are recognized and change the Effect path, seeing the following table.

Status	2nd Byte	3rd Byte	
BnH	5bH	vvH	Reverb depth
BnH	5dH	vvH	Effect2 depth

n=MIDI channel number :0H-fH(ch.1 - ch.16)
vv = Control Value :00H - 27H(0 - 39)LO, 28H - 7fH(40-127)HI

path select	Chorus	Reverb
1	hi	hi
2	lo	hi
3	hi	lo
4	lo	lo

NRPN MSB/LSB

Status	2nd Byte	3rd Byte
BnH	63H	mmH
BnH	62H	llH

n=MIDI channel number :0H-fH(ch.1 - ch.16)
mm=MSB of the NRPN parameter number
ll=LSB of the NRPN parameter number

NRPN numbers implemented in K5000 series are as follows

NRPN #	Data	
MSB LSB	MSB	Function & Range
01H 20H	mmH	Cutoff offset
		mm:0eH - 40H - 72H(-50 - 0 +50)

01H 63H	mmH	Attack time offset for DCA & DCF	mm:0eH - 40H - 72H(-50 - 0 +50)	
01H 64H	mmH	Decay1 time offset for DCA & DCF	mm:0eH - 40H - 72H(-50 - 0 +50)	
01H 65H	mmH	Release time offset for DCA & DCF	mm:0eH - 40H - 72H(-50 - 0 +50)	
20H 40H	vvH	SW1 on panel	vv:0 - 63 =OFF, 64 - 127=ON	(Only for K5000S/R)
20H 41H	vvH	SW2 on panel	vv:0 - 63 =OFF, 64 - 127=ON	(Only for K5000S/R)
20H 42H	vvH	F.SW1(foot sw)	vv:0 - 63 =OFF, 64 - 127=ON	(Only for K5000S/R)
20H 43H	vvH	F.SW2(foot sw)	vv:0 - 63 =OFF, 64 - 127=ON	(Only for K5000S/R)

* Ignoring the LSB of data Entry
* It is not affected in case of modifying cutoff if tone does not use the dcf.

RPN MSB/LSB

Status	2nd Byte	3rd Byte
BnH	65H	mmH
BnH	64H	llH

n=MIDI channel number :0H-fH(ch.1 - ch.16)
mm=MSB of the RPN parameter number
ll=LSB of the RPN parameter number

RPN number implemted in K5000 series are the followings

RPN #	Data			
MSB LSB	MSB	Function & Range		
00H 00H	mmH	Pitch bend sensitivity	mm:00H - 18H(0 - 24 half tone)	Default = 02H
			ll:Ignored(as 00H)	
00H 01H	mmH	Master fine tuning	mm,ll:00 00H - 40 00H - 7f 7f (-8192x100/8192 - 0 +8192x100/8192 cent)	
00H 02H	mmH	Master coarse tuning	mm:28H - 40H - 58H(-24 - 0 - +24 half tone)	
			ll:Ignored(as 00H)	
7fH 7fH	--	RPN NULL		

Program Change

Status	2nd Byte
CnH	ppH

n=MIDI channel number :0H-fH(ch.1 - ch.16)
pp=Program number :00H - 7fH(Prog#1 - prog#128) Default = 00H

Channel Pressure

Status	2nd Byte
DnH	vvH

n=MIDI channel number :0H-fH(ch.1 - ch.16)
vv=Channel Pressure :00H - 7fH(0 - 127) Default = 00H

Pitch Bend Change

Status	2nd Byte	3rd Byte
EnH	llH	mmH

n=MIDI channel number :0H-fH(ch.1 - ch.16)
mm,ll=Pitch bend value :00 00 - 7f 7fH(-8192 - 0 - +8192) Default = 40 00H(center)

1.2 CHANNEL MODE MESSAGE

All Sound OFF

Status	2nd Byte	3rd Byte
BnH	78H	00H

n=MIDI channel number :0H-fH(ch.1 - ch.16)

Reset All Controller

Status	2nd Byte	3rd Byte
BnH	79H	00H

n=MIDI channel number :0H-fH(ch.1 - ch.16)

*Change the following value when this message received

Contorollers	setting value
Pitch Bend change	+-0(center)
Polyphonic key pressure	0(off)
Channel pressure	0(off)
Modulation	0(off)
Expression	127(max)
Hold1	0(off)
RPN	Disable parameter number, no change internal value
NRPN	Disable parameter number, no change internal value

Program change,Bank select, Volume, Panpot, Reverb level, and Effect1-4 level will not be affected.

Local On/Off (Except K5000R)

Status	2nd Byte	3rd Byte
BnH	7aH	vvH

n=MIDI channel number :0H-fH(ch.1 - ch.16)
vv=0(Off), 127(On)

All Note Off

Status	2nd Byte	3rd Byte
BnH	7bH-7fH	00H

n=MIDI channel number :0H-fH(ch.1 - ch.16)

1.3 SYSTEM REALTIME MESSAGE

Timing Clock
Status
f8H

Start(Only K5000W)
Status
faH

Continue(Only K5000W)
status
fbH

Stop(Only K5000W)
status
fcH

Active sensing
Status
feH

2.Transmitted Data

2.1 CHANNEL VOICE MESSAGE

Note off

Status	2nd Byte	3rd Byte
9nH	kkH	00H

n=MIDI channel number	:0H-fH(ch.1 - ch.16)
kk=Note Number	:00H - 7fH(0 - 127)
vv=Velocity	:00H - 7fH(0 - 127)

Note on

Status	2nd Byte	3rd Byte
9nH	kkH	vvH

n=MIDI channel number	:0H-fH(ch.1 - ch.16)
kk=Note Number	:00H - 7fH(0 - 127)
vv=Velocity	:00H - 7fH(0 - 127)

Control Change

Bank Select

Status	2nd Byte	3rd Byte
BnH	00H	mmH
BnH	20H	llH

n=MIDI channel number	:0H-fH(ch.1 - ch.16)
mm=Bank Number MSB	
ll=Bank Number LSB	

Bank# K5000W

MSB LSB	Program#	function	
00H 00H	0-127	G1 - 128	
63H 00H	0-13	B103 - 116	(See B bank program no. table)
64H 00H	0-127	A1 - 128	
65H 00H	0-63	C1 - 64	
67H 00H	0-127	E1 - 128	(Only when ME-1 is installed)
68H 00H	0-127	F1 - 128	(Only when ME-1 is installed)

Bank# K5000S/R

MSB LSB	Program#	function	
64H 00H	0-127	A1 - 128	
65H 00H	0-63	M1 - 64	
66H 00H	0-127	D1 - 128	
67H 00H	0-127	E1 - 128	(Only when ME-1 is installed)
68H 00H	0-127	F1 - 128	(Only when ME-1 is installed)

Modulation (Except K5000R)

Status	2nd Byte	3rd Byte
BnH	01H	vvH

n=MIDI channel number	:0H-fH(ch.1 - ch.16)
vv = Modulation depth	:00H - 7fH(0 - 127)

Portamento Time

Status	2nd Byte	3rd Byte
BnH	05H	vvH

n=MIDI channel number	:0H-fH(ch.1 - ch.16)	
vv = Portamento time	:00H - 7fH(0 - 127)	Default = 00H

Data Entry

Status	2nd Byte	3rd Byte
BnH	06H	mmH
BnH	26H	llH

n=MIDI channel number	:0H-fH(ch.1 - ch.16)
mm,ll=value indicated in RPN/NRPN, see RPN/NRPN chapter	:00H - 7fH(0 - 127)
Only for Quick MIDI function	

Expression (Except K5000R)

Status	2nd Byte	3rd Byte		
BnH	0bH	vvH		
n=MIDI channel number			:0H-fH(ch.1 - ch.16)	
vv = Expression			:00H - 7fH(0 - 127)	Default = 7fH

Hold1 (Except K5000R)

Status	2nd Byte	3rd Byte		
BnH	40H	vvH		
n=MIDI channel number			:0H-fH(ch.1 - ch.16)	
vv = Control Value			:00H - 7fH(0 - 127) 0 - 63 =OFF, 64 - 127=ON	Default = 00H

Portamento On/Off

Status	2nd Byte	3rd Byte		
BnH	41H	vvH		
n=MIDI channel number			:0H-fH(ch.1 - ch.16)	
vv = Control Value			:00H - 7fH(0 - 127) 0 - 63 =OFF, 64 - 127=ON	Default = 00H

General Purpose Controllers1-4

Status	2nd Byte	3rd Byte		
BnH	10H	vvH	macro contoroller(Harm Lo)	GPC#1
BnH	11H	vvH	macro contoroller(Harm Hi)	GPC#2
BnH	12H	vvH	macro contoroller(FF bias)	GPC#3
BnH	13H	vvH	macro contoroller(FF speed)	GPC#4
n=MIDI channel number			:0H-fH(ch.1 - ch.16)	
vv = Control Value			:00H - 7fH(0 - 127)	Default = 7fH

Sound controllers #2-9

Status	2nd Byte	3rd Byte		
BnH	47H	vvH	macro controller Even/Odd	(Sound controler #2)
BnH	48H	vvH	macro controller Release	(Sound controler #3)
BnH	49H	vvH	macro controller Attack	(Sound controler #4)
BnH	4aH	vvH	macro controller Cutoff	(Sound controler #5)
BnH	4bH	vvH	macro controller FF depth	(Sound controler #6)
BnH	4cH	vvH	macro controller Velocity	(Sound controler #7)
BnH	4dH	vvH	macro controller Resonanse	(Sound controler #8)
BnH	4eH	vvH	macro controller Decay	(Sound controler #9)
n=MIDI channel number			:0H-fH(ch.1 - ch.16)	
vv = Control Value			:00H - 7fH(0 - 127)	Default = 00H

General Purpose Controllers5-8 (Only for K5000S/R)

Status	2nd Byte	3rd Byte		
BnH	50H	vvH	macro contoroller(User1)	GPC#5
BnH	51H	vvH	macro contoroller(User2)	GPC#6
BnH	52H	vvH	macro contoroller(User3)	GPC#7
BnH	53H	vvH	macro contoroller(User4)	GPC#8
n=MIDI channel number			:0H-fH(ch.1 - ch.16)	
vv = Control Value			:00H - 7fH(0 - 127)	Default = 00H

NRPN MSB/LSB(Only K5000S)

Status	2nd Byte	3rd Byte
BnH	63H	mmH
BnH	62H	llH

n=MIDI channel number :0H-fH(ch.1 - ch.16)
mm=MSB of the NRPN parameter number
ll=LSB of the NRPN parameter number

NRPN numbers implemented in K5000S are as follows

NRPN #	Data	
MSB LSB	MSB	Function & Range
20H 40H	mmH	SW1 on panel
20H 41H	mmH	SW2 on panel
20H 42H	mmH	FSW1(foot sw)
20H 43H	mmH	FSW2(foot sw)

mm:00H(Off) 7fH(On)

Program Change

Status	2nd Byte
CnH	ppH

n=MIDI channel number :0H-fH(ch.1 - ch.16)
pp=Program number :00H - 7fH(Prog#1 - prog#128) Default = 00H

Channel Pressure (Except K5000R)

Status	2nd Byte
DnH	vvH

n=MIDI channel number :0H-fH(ch.1 - ch.16)
vv=Channel Pressure :00H - 7fH(0 - 127)

Pitch Bend Change (Except K5000R)

Status	2nd Byte	3rd Byte
EnH	llH	mmH

n=MIDI channel number :0H-fH(ch.1 - ch.16)
mm,ll=Pitch bend value :00 00 - 7f 7fH(-8192 - 0 - +8192)

2.2 CHANNEL MODE MESSAGE

2.3 SYETEM REALTIME MESSAGE

Timing Clock
Status
f8H

Start(Only K5000W)
Status
faH

Stop(Only K5000W)
status
fcH

Active sensing
Status
feH

3. Exclusive data

3.1 K5000 DATA DUMP

The K5000 series can receive these dump data, and also can transmit one by panel operation in System-Dump.

3.1.1 DATA DUMP FORMAT

a:BLOCK SINGLE DUMP(ADD, All of enable patch in A1 - 128)

Format: F0 40 <ch> 21 00 0A 00 00 <sub1> <sub2> .... <sub18> <sub19> <DATA> F7

<ch>:MIDI ch (00~0F)

<sub1>~<sub19>:Tone MAP

<sub1>: bit0 = 1(Tone No.A01 Data include)
bit1 = 1(Tone No.A02 Data include)
:
bit6 = 1(Tone No.A07 Data include)

<sub2>: bit0 = 1(Tone No.A08 Data include)
bit1 = 1(Tone No.A09 Data include)
:
bit6 = 1(Tone No.A14 Data include)
:

<sub18>: bit0 = 1(Tone No.A120 Data include)
bit1 = 1(Tone No.A121 Data include)
:
bit6 = 1(Tone No.A126 Data include)

<sub19>: bit0 = 1(Tone No.A127 Data include)
bit1 = 1(Tone No.A128 Data include)

<DATA>: ADD Tone data which specified by <sub1>~<sub19>

b:ONE SINGLE DUMP(ADD, A1 - 128)

Format: F0 40 <ch> 20 00 0A 00 00 <sub1> <DATA> F7

<ch>:MIDI ch (00~0F)

<sub1>:Tone No.(00~7F)

<DATA>: One ADD tone data

The Structure of ADD tone data

(Single Tone DATA) + (ADD Wave KIT DATA)*No.of src(included muted src)

The structure of the Single Tone DATA

(check sum) + (effect DATA) + (common DATA) + (source DATA)*No. of used sources

The structure of ADD Wave KIT DATA

(check sum) + (HC KIT DATA) + (HC code1 DATA) + (HC code2 DATA)
+ (Formant Filter DATA) + (Harmonic Envelope data) + (Loudness sense select)

Caution: ADD Wave KIT DATA should be ordered by number

c:BLOCK SINGLE DUMP(PCM, All of B70 - 116) (Only for K5000W)

Format: F0 40 <ch> 21 00 0A 00 01 <DATA> F7

<ch>:MIDI ch (00~0F)

<DATA>: all PCM tone data of user area

d:ONE SINGLE DUMP(PCM, B70 - 116) (Only for K5000W)

Format: F0 40 <ch> 20 00 0A 00 01 <sub1> <DATA> F7

<ch>:MIDI ch (00~0F)

<sub1>:Tone No.(45~73)

<DATA>: one PCM tone data

The Structure of the PCM tone

(Single Tone DATA)

The structure of the Single Tone DATA

(check sum) + (effect DATA) + (common DATA) + (source DATA)*used source no.

e:DRUM KIT DUMP(B117) (Only for K5000W)

Format: F0 40 <ch> 20 00 0A 10 <DATA> F7

<ch>:MIDI ch (00~0F)

<DATA>: User Drum kit data

The structure of drum kit data

(check sum) + (effect DATA) + (common DATA) + (NOTE DATA)

f:BLOCK DRUM INST DUMP(All of Inst User1 - 32) (Only for K5000W)

Format: F0 40 <ch> 21 00 0A 11 <DATA> F7

<ch>:MIDI ch (00~0F)

<DATA>: all drum inst data of user area

g:ONE DRUM INST DUMP(User Inst U1 - 32) (Only for K5000W)

Format: F0 40 <ch> 20 00 0A 11 <sub1> <DATA> F7

<ch>:MIDI ch (00~0F)

<sub1>:INST No.(0~1F)

<DATA>: One drum inst data

The structure of the drum inst data

(check sum) + (common DATA) + (SRC1 DATA)

h:BLOCK COMBI DUMP(All of C1 - 64) (Combi is changed to Multi on K5000S/R)

Format: F0 40 <ch> 21 00 0A 20 <DATA> F7

<ch>:MIDI ch (00~0F)

<DATA>: all Combi data

i:ONE COMBI DUMP(C1 - 64) (Combi is changed to Multi on K5000S/R)

Format: F0 40 <ch> 20 00 0A 20 <sub1> <DATA> F7

<ch>:MIDI ch (00~0F)

<sub1>:INST No.(0~3F)

<DATA>: One combi data

The structure of the combi patch

(check sum) + (effect DATA) + (common DATA) + (Section DATA)*4

Section DATA should be ordered as Section1,2,3,4

j:BLOCK SINGLE DUMP(ADD, All of enable patch in D1 - 128) (Only for K5000S/R)

Format: F0 40 <ch> 21 00 0A 00 02 <sub1> <sub2> .... <sub18> <sub19> <DATA> F7

<ch>:MIDI ch (00~0F)

<sub1>~<sub19>:Tone MAP

<sub1>: bit0 = 1(Tone No.D01 Data include)

bit1 = 1(Tone No.D02 Data include)

:

bit6 = 1(Tone No.D07 Data include)

<sub2>: bit0 = 1(Tone No.D08 Data include)

bit1 = 1(Tone No.D09 Data include)

:

bit6 = 1(Tone No.D14 Data include)

:

<sub18>: bit0 = 1(Tone No.D120 Data include)
bit1 = 1(Tone No.D121 Data include)
:
bit6 = 1(Tone No.D126 Data include)
<sub19>: bit0 = 1(Tone No.D127 Data include)
bit1 = 1(Tone No.D128 Data include)

<DATA>: ADD Tone data which specified by <sub1>~<sub19>

k:ONE SINGLE DUMP(ADD, D1 - 128) (Only for K5000S/R)

Format: F0 40 <ch> 20 00 0A 00 02 <sub1> <DATA> F7

<ch>:MIDI ch (00~0F)

<sub1>:Tone No.(00~7F)

<DATA>: One ADD tone data

The Structure of ADD tone data

(Single Tone DATA) + (ADD Wave KIT DATA)*No.of src(included muted src)

The structure of the Single Tone DATA

(check sum) + (effect DATA) + (common DATA) + (source DATA)*No. of used sources

The structure of ADD Wave KIT DATA

(check sum) + (HC KIT DATA) + (HC code1 DATA) + (HC code2 DATA)
+ (Formant Filter DATA) + (Harmonic Envelope data) + (Loudness sense select)

Caution: ADD Wave KIT DATA should be ordered by number

l:BLOCK SINGLE DUMP(ADD, All of enable patch in E1 - 128) (Only when ME-1 is installed)

Format: F0 40 <ch> 21 00 0A 00 03 <sub1> <sub2> .... <sub18> <sub19> <DATA> F7

<ch>:MIDI ch (00~0F)

<sub1>~<sub19>:Tone MAP

<sub1>: bit0 = 1(Tone No.E01 Data include)
bit1 = 1(Tone No.E02 Data include)
:
bit6 = 1(Tone No.E07 Data include)
<sub2>: bit0 = 1(Tone No.E08 Data include)
bit1 = 1(Tone No.E09 Data include)
:
bit6 = 1(Tone No.E14 Data include)
:
<sub18>: bit0 = 1(Tone No.E120 Data include)
bit1 = 1(Tone No.E121 Data include)
:
bit6 = 1(Tone No.E126 Data include)
<sub19>: bit0 = 1(Tone No.E127 Data include)
bit1 = 1(Tone No.E128 Data include)

<DATA>: ADD Tone data which specified by <sub1>~<sub19>

m:ONE SINGLE DUMP(ADD, E1 - 128) (Only when ME-1 is installed)

Format: F0 40 <ch> 20 00 0A 00 03 <sub1> <DATA> F7

<ch>:MIDI ch (00~0F)

<sub1>:Tone No.(00~7F)

<DATA>: One ADD tone data

The Structure of ADD tone data

(Single Tone DATA) + (ADD Wave KIT DATA)*No.of src(included muted src)

The structure of the Single Tone DATA

(check sum) + (effect DATA) + (common DATA) + (source DATA)*No. of used sources

The structure of ADD Wave KIT DATA

(check sum) + (HC KIT DATA) + (HC code1 DATA) + (HC code2 DATA)
+ (Formant Filter DATA) + (Harmonic Envelope data) + (Loudness sense select)

Caution: ADD Wave KIT DATA should be ordered by number

n:BLOCK SINGLE DUMP(ADD, All of enable patch in F1 - 128) (Only when ME-1 is installed)

Format: F0 40 <ch> 21 00 0A 00 04 <sub1> <sub2> .... <sub18> <sub19> <DATA> F7

<ch>:MIDI ch (00~0F)

<sub1>~<sub19>:Tone MAP

<sub1>: bit0 = 1(Tone No.F01 Data include)
bit1 = 1(Tone No.F02 Data include)
:
bit6 = 1(Tone No.F07 Data include)

<sub2>: bit0 = 1(Tone No.F08 Data include)
bit1 = 1(Tone No.F09 Data include)
:
bit6 = 1(Tone No.F14 Data include)
:

<sub18>: bit0 = 1(Tone No.F120 Data include)
bit1 = 1(Tone No.F121 Data include)
:
bit6 = 1(Tone No.F126 Data include)

<sub19>: bit0 = 1(Tone No.F127 Data include)
bit1 = 1(Tone No.F128 Data include)

<DATA>: ADD Tone data which specified by <sub1>~<sub19>

o:ONE SINGLE DUMP(ADD, F1 - 128) (Only when ME-1 is installed)

Format: F0 40 <ch> 20 00 0A 00 04 <sub1> <DATA> F7

<ch>:MIDI ch (00~0F)

<sub1>:Tone No.(00~7F)

<DATA>: One ADD tone data

The Structure of ADD tone data

(Single Tone DATA) + (ADD Wave KIT DATA)*No.of src(included muted src)

The structure of the Single Tone DATA

(check sum) + (effect DATA) + (common DATA) + (source DATA)*No. of used sources

The structure of ADD Wave KIT DATA

(check sum) + (HC KIT DATA) + (HC code1 DATA) + (HC code2 DATA)
+ (Formant Filter DATA) + (Harmonic Envelope data) + (Loudness sense select)

Caution: ADD Wave KIT DATA should be ordered by number

3.1.2 SINGLE TONE DATA

The Structure of the 1Single Patch

BANK B[B70-116]:(check sum)+(COMMON)+(SOURCE)*2 (Only for K5000W)

BANK A,D,E,F:(check sum)+(COMMON)+(SOURCE)*(2~8)

(check sum:1BYTE)

BANK B: check sum = {(common sum) + (source1 sum) [+(source2 sum)] + 0xa5} & 0x7f (Only for K5000W)

BANK A,D,E,F: check sum = {(common sum) + (source1 sum) [+(source2-8 sum)] + 0xa5} & 0x7f

3.1.2.1 COMMON DATA

No.	PARAMETER			BIT MAP	VALUE
1	Effect	Algorithm		- - - - - - v v	0~3
2		Reverb	Type	- - - - v v v v	0~10
3			dry/wet1	- v v v v v v v	0~100
4			dry/wet2(para1)	- v v v v v v v	0~100
5			para2	- v v v v v v v	0~127 (depends on type)
6			para3	- v v v v v v v	0~127 (depends on type)
7			para4	- v v v v v v v	0~127 (depends on type)
8		Effect1	Type	- - v v v v v v	11~47
9			Depth	- v v v v v v v	0~100
10			para1	- v v v v v v v	0~127 (depends on type)
11			para2	- v v v v v v v	0~127 (depends on type)
12			para3	- v v v v v v v	0~127 (depends on type)
13			para4	- v v v v v v v	0~127 (depends on type)
14		Effect2	Type	- - v v v v v v	11~47
15			Depth	- v v v v v v v	0~100
16			para1	- v v v v v v v	0~127 (depends on type)
17			para2	- v v v v v v v	0~127 (depends on type)
18			para3	- v v v v v v v	0~127 (depends on type)
19			para4	- v v v v v v v	0~127 (depends on type)
20		Effect3	Type	- - v v v v v v	11~47
21			Depth	- v v v v v v v	0~100
22			para1	- v v v v v v v	0~127 (depends on type)
23			para2	- v v v v v v v	0~127 (depends on type)
24			para3	- v v v v v v v	0~127 (depends on type)
25			para4	- v v v v v v v	0~127 (depends on type)
26		Effect4	Type	- - v v v v v v	11~47
27			Depth	- v v v v v v v	0~100
28			para1	- v v v v v v v	0~127 (depends on type)
29			para2	- v v v v v v v	0~127 (depends on type)
30			para3	- v v v v v v v	0~127 (depends on type)
31			para4	- v v v v v v v	0~127 (depends on type)
32	GEQ		freq 1	- v v v v v v v	58(-6)~70(+6)
33			freq 2	- v v v v v v v	58(-6)~70(+6)
34			freq 3	- v v v v v v v	58(-6)~70(+6)
35			freq 4	- v v v v v v v	58(-6)~70(+6)
36			freq 5	- v v v v v v v	58(-6)~70(+6)
37			freq 6	- v v v v v v v	58(-6)~70(+6)
38			freq 7	- v v v v v v v	58(-6)~70(+6)
39	Common	drum_mark		- - - - - - - 0	0=normal(not drum)
40		Name 1st		- v v v v v v v	ASCII
41		Name 2nd		- v v v v v v v	ASCII

No.	PARAMETER			BIT MAP	VALUE
42		Name 3rd		- v v v v v v v	ASCII
43		Name 4th		- v v v v v v v	ASCII
44		Name 5th		- v v v v v v v	ASCII
45		Name 6th		- v v v v v v v	ASCII
46		Name 7th		- v v v v v v v	ASCII
47		Name 8th		- v v v v v v v	ASCII
48		Volume		- v v v v v v v	0~127
49		Poly		- - - - - - v v	0=POLY,1=SOLO1,2=SOLO2
50		no use		- - - - - - - -	no use
51		src_type		- - - - - v v v	No. of sources:2~6
52		src_mute_1		- - - - v v v v	v=0:mute,bit0~5=source1~6
53		AM		- - - - - v v v	v=0:off,v=1~5(src2~6)
54		Effect contol	control source1	- - - - v v v v	0~13 see "control source1&2"
55			destination	- - - - - v v v	0~9 see "Effect destination list"
56			depth	- v v v v v v v	(-31)33~(+31)95
57			control source2	- - - - v v v v	0~13 see "control source1&2"
58			destination	- - - - - v v v	0~9 see "Effect destination list"
59			depth	- v v v v v v v	(-31)33~(+31)95
60		portamento on/off		- - - - - - - v	v=0:off,1=on
61		portamento speed		- v v v v v v v	0~127
62	for K5000S/R	macro controller 1	parameter1	- - - - v v v v	0~19 see "macro controller list" (K5000W=0)
63	for K5000S/R		parameter2	- - - - v v v v	0~19 see "macro controller list" (K5000W=0)
64	for K5000S/R	macro controller 2	parameter1	- - - - v v v v	0~19 see "macro controller list" (K5000W=0)
65	for K5000S/R		parameter2	- - - - v v v v	0~19 see "macro controller list" (K5000W=0)
66	for K5000S/R	macro controller 3	parameter1	- - - - v v v v	0~19 see "macro controller list" (K5000W=0)
67	for K5000S/R		parameter2	- - - - v v v v	0~19 see "macro controller list" (K5000W=0)
68	for K5000S/R	macro controller 4	parameter1	- - - - v v v v	0~19 see "macro controller list" (K5000W=0)
69	for K5000S/R		parameter2	- - - - v v v v	0~19 see "macro controller list" (K5000W=0)
70	for K5000S/R	macro controller 1	parameter1 depth	- v v v v v v v	(-31)33~(+31)95 (K5000W=64)
71	for K5000S/R		parameter2 depth	- v v v v v v v	(-31)33~(+31)95 (K5000W=64)
72	for K5000S/R	macro controller 2	parameter1 depth	- v v v v v v v	(-31)33~(+31)95 (K5000W=64)
73	for K5000S/R		parameter2 depth	- v v v v v v v	(-31)33~(+31)95 (K5000W=64)
74	for K5000S/R	macro controller 3	parameter1 depth	- v v v v v v v	(-31)33~(+31)95 (K5000W=64)
75	for K5000S/R		parameter2 depth	- v v v v v v v	(-31)33~(+31)95 (K5000W=64)
76	for K5000S/R	macro controller 4	parameter1 depth	- v v v v v v v	(-31)33~(+31)95 (K5000W=64)
77	for K5000S/R		parameter2 depth	- v v v v v v v	(-31)33~(+31)95 (K5000W=64)
78	for K5000S/R	SW1	parameter	- - - - v v v v	0~16 see "SW,FSW list" (K5000W=0)
79	for K5000S/R	SW2	parameter	- - - - v v v v	0~16 see "SW,FSW list" (K5000W=0)
80	for K5000S/R	F.SW1	parameter	- - - - v v v v	0~16 see "SW,FSW list" (K5000W=0)
81	for K5000S/R	F.SW2	parameter	- - - - v v v v	0~16 see "SW,FSW list" (K5000W=0)

EFFECT DESTINATION LIST

No.	DESTINATION
0	effect1 dry/wet
1	effect1 para
2	effect2 dry/wet
3	effect2 para
4	effect3 dry/wet
5	effect3 para
6	effect4 dry/wet
7	effect4 para
8	reverb dry/wet1
9	reverb dry/wet2

CONTROL SOURCE 1&2

No.	SOURCE
0	bender
1	ch pressure
2	wheel
3	expression
4	MIDI volume
5	Panpot
6	General controller 1
7	General controller 2
8	General controller 3
9	General controller 4
10	General controller 5
11	General controller 6
12	General controller 7
13	General controller 8

MACRO CONTROLLER LIST (Only for K5000S/R)

No.	DESTINATION
0	pitch offset
1	cutoff offset
2	level
3	vibrato depth offset
4	growl depth offset
5	tremolo depth offset
6	lfo speed offset
7	attack time offset
8	decay1 time offset
9	release time offset
10	velocity offset
11	resonance offset
12	panpot offset
13	FF bias offset
14	FF ENV/LFO depth offset
15	FF ENV/LFO speed offset
16	Harmonic lo offset
17	Harmonic hi offset
18	Harmonic even offset
19	Harmonic odd offset

SW/FSW LIST (Only for K5000S/R)

No.	DESTINATION
0	OFF
1	Harm Max
2	Harm Bright
3	Harm Dark
4	Harm Saw
5	Select Loud
6	Add Loud
7	Add 5th
8	Add Odd
9	Add Even
10	HE #1
11	HE #2
12	HE Loop
13	FF max
14	FF Comb
15	FF hicut
16	FF Comb2

3.1.2.2 SOURCE DATA

No.	PARAMETER				BIT MAP	VALUE
1	Source	Control	zone_lo		- v v v v v v v	0~127
2			zone_hi		- v v v v v v v	0~127
3			velo sw		- t t v v v v v	t:(0=off,1=loud,2=soft)v:(velo:0=4 ~ 31=127)
4			effect path		- - - - - - v v	0~3
5			Volume		- v v v v v v v	0~127
6			Bender	Pitch	- - - v v v v v	0~24
7				Cutoff	- - - v v v v v	0~31
8			Press	destination 1	- - - v v v v v	0~19
9				depth	- v v v v v v v	(-31)33~(+31)95
10				destination 2	- - - v v v v v	0~19
11				depth	- v v v v v v v	(-31)33~(+31)95
12			Wheel	destination 1	- - - v v v v v	0~19
13				depth	- v v v v v v v	(-31)33~(+31)95
14				destination 2	- - - v v v v v	0~19
15				depth	- v v v v v v v	(-31)33~(+31)95
16			Express	destination 1	- - - v v v v v	0~19
17				depth	- - - v v v v v	(-31)33~(+31)95
18				destination 2	- - - v v v v v	0~19
19				depth	- v v v v v v v	(-31)33~(+31)95
20			assignable	control source1	- - - - v v v v	0~13 see "control source1&2"
21			control	destination	- - - v v v v v	0~19 see "destination list"
22				depth	- v v v v v v v	(-31)33~(+31)95
23				control source2	- - - - v v v v	0~13 see "control source1&2"
24				destination	- - - v v v v v	0~19 see "destination list"
25				depth	- v v v v v v v	(-31)33~(+31)95
26			Key On Delay		- v v v v v v v	0~127
27			Pan	type	- - - - - - v v	0=normal,1=KS,2=-ks,3=Random
28				normal value	- v v v v v v v	(63L)1~(63R)127
29		DCO	Wave Kit MSB		- - - - - v v v	0~340(1-341) PCM for B bank(Only K5000W)
30			LSB		- v v v v v v v	341-463(342-464) PCM for A, 512=ADD
31			Coarse		- v v v v v v v	(-24)40~(+24)88
32			Fine		- v v v v v v v	(-63)1~(+63)127
33			Fixed Key		- v v v v v v v	0=OFF, 21~108=ON(A-1 - C7)
34			KS Pitch		- - - - - - v v	0=0cent,1=25cent,2=33cent,3=50cent
35			Pitch Env	Start Level	- v v v v v v v	(-63)1~(+63)127
36				Attack Time	- v v v v v v v	0~127
37				Attack Level	- v v v v v v v	(-63)1~(+63)127
38				Decay Time	- v v v v v v v	0~127
39				Time Velo Sense	- v v v v v v v	(-63)1~(+63)127
40				Level Velo Sense	- v v v v v v v	(-63)1~(+63)127
41		DCF	DCF		- - - - - - - v	0=Active,1=Bypass
42			Mode		- - - - - - - v	0=lo pass,1=hi pass
43			Velo Curve		- - - - v v v v	0~11(1-12)
44			Resonance		- - - - - v v v	0~7
45			DCF level		- - - - - v v v	0~7(7~0)
46			Cutoff		- v v v v v v v	0~127
47			Cutoff KS Depth		- v v v v v v v	(-63)1~(+63)127
48			Cutoff Velo Depth		- v v v v v v v	(-63)1~(+63)127
49			DCF Env depth		- v v v v v v v	(-63)1~(+63)127
50			DCF Env	Attack Time	- v v v v v v v	0~127
51				Decay1 Time	- v v v v v v v	0~127
52				Decay1 Level	- v v v v v v v	(-63)1~(+63)127
53				Decay2 Time	- v v v v v v v	0~127
54				Decay2 Level	- v v v v v v v	(-63)1~(+63)127
55				Release Time	- v v v v v v v	0~127
56			DCF KS to Env	Attack Time	- v v v v v v v	(-63)1~(+63)127
57				Decay1 Time	- v v v v v v v	(-63)1~(+63)127
58			DCF Velo to Env	Env Depth	- v v v v v v v	(-63)1~(+63)127
59				Attack Time	- v v v v v v v	(-63)1~(+63)127
60				Decay1 Time	- v v v v v v v	(-63)1~(+63)127
61		DCA	Velo Curve		- - - - - v v v	0~11

No.	PARAMETER				BIT MAP	VALUE
62			DCA Env	Attack Time	- v v v v v v v	0~127
63				Decay1 Time	- v v v v v v v	0~127
64				Decay1 Level	- v v v v v v v	0~127
65				Decay2 Time	- v v v v v v v	0~127
66				Decay2 Level	- v v v v v v v	0~127
67				Release Time	- v v v v v v v	0~127
68			DCA KS to Env	Level	- v v v v v v v	(-63)1~(+63)127
69				Attack Time	- v v v v v v v	(-63)1~(+63)127
70				Decay1 Time	- v v v v v v v	(-63)1~(+63)127
71				Release Time	- v v v v v v v	(-63)1~(+63)127
72			DCA Velo Sense	Level	- - v v v v v	0~63
73				Attack Time	- v v v v v v v	(-63)1~(+63)127
74				Decay1 Time	- v v v v v v v	(-63)1~(+63)127
75				Release Time	- v v v v v v v	(-63)1~(+63)127
76		LFO	Waveform		- - - - - v v v	0=Tri,1=Sqr,2=Saw,3=Sin,4=Rndm
77			Speed		- v v v v v v v	0~127
78			Delay On Set		- v v v v v v v	0~127
79			Fade In	time	- v v v v v v v	0~127
80				to speed	- - v v v v v v	0~63
81			Pitch (Vibrato)	Depth	- - v v v v v v	0~63
82				KS	- v v v v v v v	(-63)1~(+63)127
83			DCF (Growl)	Depth	- - v v v v v v	0~63
84				KS	- v v v v v v v	(-63)1~(+63)127
85			DCA (Tremolo)	Depth	- - v v v v v v	0~63
86				KS	- v v v v v v v	(-63)1~(+63)127

(DESTINATION LIST)

No.	DESTINATION
0	pitch offset
1	cutoff offset
2	level
3	vibrato depth offset
4	growl depth offset
5	tremolo depth offset
6	lfo speed offset
7	attack time offset
8	decay1 time offset
9	release time offset
10	velocity offset
11	resonance offset
12	panpot offset
13	FF bias offset
14	FF ENV/LFO depth offset
15	FF ENV/LFO speed offset
16	Harmonic lo offset
17	Harmonic hi offset
18	Harmonic even offset
19	Harmonic odd offset

(CONTROL SOURCE 1&2)

No.	SOURCE
0	bender
1	ch pressure
2	wheel
3	expression
4	MIDI volume
5	PANPOT
6	General controller 1
7	General controller 2
8	General controller 3
9	General controller 4
10	General controller 5
11	General controller 6
12	General controller 7
13	General controller 8

3.1.3 ADD WAVE KIT

The structure of 1ADD Wave kit
(check sum)+(HC KIT)+(HC code1)+(HC code2)+(Formant)+(HC env)+(LS select):806 Byte

(check sum)
chek sum = {(HCKIT sum) + (HCcode1 sum) +(HCcode2 sum) +(FF sum) +(HCenv sum) +(loud sence select) + 0xa5} & 0x7f

No.	PARAMETER				BIT MAP	VALUE
1	check sum				- v v v v v v v	

(HC KIT)

No.	PARAMETER				BIT MAP	VALUE
2	MORF FLAG				- - - - - - - v	0=MORF OFF,1=MORF ON
3	Harmonics	Common	Total Gain		- - v v v v v v	1~63
4		NON-MORF	Harm Group	1~64 / 65~128	- - - - - - - v	0=LO(1~64harm),1=HI(65~128harm)
5			KS to Gain		- v v v v v v v	(-63)1~(+63)127
6			Balance	Velo curve	- - - - v v v v	0~11
7				Velo depth	- v v v v v v v	0~127
8		MORF	HC	HC1 patch No.	- v v v v v v v	0~127
9				source No.	- - - - v v v v	0~11(0~5:soft,6~11:loud)
10				HC2 patch No.	- v v v v v v v	0~127
11				source No.	- - - - v v v v	0~11(0~5:soft,6~11:loud)
12				HC3 patch No.	- v v v v v v v	0~127
13				source No.	- - - - v v v v	0~11(0~5:soft,6~11:loud)
14				HC4 patch No.	- v v v v v v v	0~127
15				source No.	- - - - v v v v	0~11(0~5:soft,6~11:loud)
16			HE	Time1	- v v v v v v v	0~127
17				Time2	- v v v v v v v	0~127
18				Time3	- v v v v v v v	0~127
19				Time4	- v v v v v v v	0~127
20				Loop	- - - - - - v v	0(OFF),1(LP1),2(LP2)
21	Formant	Bias			- v v v v v v v	(-63)1~(+63)127
22		Env/LFO sel			- - - - - - - v	0=ENV,1=LFO
23		Env	Env Depth		- v v v v v v v	(-63)1~(+63)127
24			Attack	Rate	- v v v v v v v	0~127
25				Level	- v v v v v v v	(-63)1~(+63)127
26			Decay1	Rate	- v v v v v v v	0~127
27				Level	- v v v v v v v	(-63)1~(+63)127
28			Decay2	Rate	- v v v v v v v	0~127
29				Level	- v v v v v v v	(-63)1~(+63)127
30			Release	Rate	- v v v v v v v	0~127
31				Level	- v v v v v v v	(-63)1~(+63)127
32			LOOP		- - - - - - v v	0(OFF),1(LP1),2(LP2)
33			Velo Sence	Env Depth	- v v v v v v v	(-63)1~(+63)127
34			KS	Env Depth	- v v v v v v v	(-63)1~(+63)127
35		LFO	Speed		- v v v v v v v	0~127
36			shape		- - - - - - v v	0=TRI,1=SAW,2=RNDM
37			Depth		- - v v v v v v	0~63

(HC code1:soft)

No.	PARAMETER				BIT MAP	VALUE
38	HC	1st			- v v v v v v v	0~127
39		2nd			- v v v v v v v	0~127
100		63rd			- v v v v v v v	0~127
101		64th			- v v v v v v v	0~127

(HC code2:loud)

No.	PARAMETER				BIT MAP	VALUE
102	HC	1st			- v v v v v v v	0~127
103		2nd			- v v v v v v v	0~127
164		63rd			- v v v v v v v	0~127
165		64th			- v v v v v v v	0~127

(Formant Filter data)

No.	PARAMETER				BIT MAP	VALUE
166	Formant	1st			- v v v v v v v	0~127
167		2nd			- v v v v v v v	0~127
292		127th			- v v v v v v v	0~127
293		128th			- v v v v v v v	0~127

(Harmonic Envelope data)

No.	PARAMETER				BIT MAP	VALUE
294	HC env	1st	rate0		- v v v v v v v	0~127
295			level0		- - v v v v v v	0~63
296			rate1		- v v v v v v v	0~127
297			level1		- S v v v v v v	0~63 ,S:RS flag(=0:LP1, =1:Loop off/LP2)
298			rate2		- v v v v v v v	0~127
299			level2		- T v v v v v v	0~63 ,T:RT flag(=0:Loop off, =1 LP1/LP2)
300			rate3		- v v v v v v v	0~127
301			level3		- - v v v v v v	0~63
302	HC env	2nd	rate0		- v v v v v v v	0~127
303			level0		- - v v v v v v	0~63
304			rate1		- v v v v v v v	0~127
305			level1		- S v v v v v v	0~63 ,S:RS flag(=0:LP1, =1:Loop off/LP2)
306			rate2		- v v v v v v v	0~127
307			level2		- T v v v v v v	0~63 ,T:RT flag(=0:Loop off, =1 LP1/LP2)
308			rate3		- v v v v v v v	0~127
309			level3		- - v v v v v v	0~63
798	HC env	64th	rate0		- v v v v v v v	0~127
799			level0		- - v v v v v v	0~63
800			rate1		- v v v v v v v	0~127
801			level1		- S v v v v v v	0~63 ,S:RS flag(=0:LP1, =1:Loop off/LP2)
802			rate2		- v v v v v v v	0~127
803			level2		- T v v v v v v	0~63 ,T:RT flag(=0:Loop off, =1 LP1/LP2)
804			rate3		- v v v v v v v	0~127
805			level3		- - v v v v v v	0~63
806	dummy				- - - - - - - -	0

3.1.4 DRUM KIT PARAMETER (Only for K5000W)

The structure of 1Drum kit Patch (check sum) + (COMMON)+(NOTE DATA)

(check sum):1BYTE)

check sum = {(common sum) + (note data sum) + 0xa5} & 0x7f

3.1.4.1 COMMON DATA (Only for K5000W)

No.	PARAMETER			BIT MAP	VALUE
1	Effect	Algorithm		- - - - - - v v	0~3
2		Reverb	Type	- - - - v v v v	0~10
3			dry/wet1	- v v v v v v v	0~100
4			dry/wet2	- v v v v v v v	0~100
5			para2	- v v v v v v v	0~127 depends on Type
6			para3	- v v v v v v v	0~127 depends on Type
7			para4	- v v v v v v v	0~127 depends on Type
8		Effect1	Type	- - v v v v v v	0~36
9			dry/wet	- v v v v v v v	0~100
10			para1	- v v v v v v v	0~127 depends on Type
11			para2	- v v v v v v v	0~127 depends on Type
12			para3	- v v v v v v v	0~127 depends on Type
13			para4	- v v v v v v v	0~127 depends on Type
14		Effect2	Type	- - v v v v v v	0~36
15			dry/wet	- v v v v v v v	0~100
16			para1	- v v v v v v v	0~127 depends on Type
17			para2	- v v v v v v v	0~127 depends on Type
18			para3	- v v v v v v v	0~127 depends on Type
19			para4	- v v v v v v v	0~127 depends on Type
20		Effect3	Type	- - v v v v v v	0~36
21			dry/wet	- v v v v v v v	0~100
22			para1	- v v v v v v v	0~127 depends on Type
23			para2	- v v v v v v v	0~127 depends on Type
24			para3	- v v v v v v v	0~127 depends on Type
25			para4	- v v v v v v v	0~127 depends on Type
26		Effect4	Type	- - v v v v v v	0~36
27			dry/wet	- v v v v v v v	0~100
28			para1	- v v v v v v v	0~127 depends on Type
29			para2	- v v v v v v v	0~127 depends on Type
30			para3	- v v v v v v v	0~127 depends on Type
31			para4	- v v v v v v v	0~127 depends on Type
32	GEQ		freq 1	- v v v v v v v	0~127
33			freq 2	- v v v v v v v	0~127
34			freq 3	- v v v v v v v	0~127
35			freq 4	- v v v v v v v	0~127
36			freq 5	- v v v v v v v	0~127
37			freq 6	- v v v v v v v	0~127
38			freq 7	- v v v v v v v	0~127
39	Common	drum_mark		- - - - - - - 1	1=drum kit
40		Name 1st		- v v v v v v v	ASCII
41		Name 2nd		- v v v v v v v	ASCII
42		Name 3rd		- v v v v v v v	ASCII
43		Name 4th		- v v v v v v v	ASCII
44		Name 5th		- v v v v v v v	ASCII
45		Name 6th		- v v v v v v v	ASCII
46		Name 7th		- v v v v v v v	ASCII
47		Name 8th		- v v v v v v v	ASCII
48		Volume		- v v v v v v v	0~127
49		contol	control source1	- - - - v v v v	0~13 see "control source1&2"
50			destination	- - - - - v v v	0~9 see "Effect destination list"
51			depth	- v v v v v v v	(-31)33~(+31)95
52			control source2	- - - - v v v v	0~13 see "control source1&2"
53			destination	- - - - - v v v	0~9 see "Effect destination list"
54			depth	- v v v v v v v	(-31)33~(+31)95

3.1.4.2NOTEDATA note No.19h~ (Only for K5000W)

STU	PARAMETER			BIT MAP	VALUE
1	NOTE 0	INST No.	MSB	- - - - - - v v	0=MUTE,1~253,254~285=USR1~32
2			LSB	- v v v v v v v	
3	NOTE 1	INST No.	MSB	- - - - - - v v	0=MUTE,1~253,254~285=USR1~32
4			LSB	- v v v v v v v	
5	NOTE 2	INST No.	MSB	- - - - - - v v	0=MUTE,1~253,254~285=USR1~32
6			LSB	- v v v v v v v	
121	NOTE 60	INST No.	MSB	- - - - - - v v	0=MUTE,1~253,254~285=USR1~32
122			LSB	- v v v v v v v	
123	NOTE 61	INST No.	MSB	- - - - - - v v	0=MUTE,1~253,254~285=USR1~32
124			LSB	- v v v v v v v	
125	NOTE 62	INST No.	MSB	- - - - - - v v	0=MUTE,1~253,254~285=USR1~32
126			LSB	- v v v v v v v	
127	NOTE 63	INST No.	MSB	- - - - - - v v	0=MUTE,1~253,254~285=USR1~32
128			LSB	- v v v v v v v	

3.1.5 DRUM INST DATA (Only for K5000W)

The structure of 1 DRUM TONE
(chek sum) + (COMMON)+(1SRC):

(check sum:1BYTE)

check sum = {(common sum) + (1src sum) + 0xa5} & 0x7f

3.1.5.1COMMONDATA (Only for K5000W)

No.	PARAMETER				BIT MAP	VALUE
1	Common		dummy		- - - - - - - v	=0(fix)
2			Volume		- v v v v v v v	0~127
3			Gate		- - v v v v v v	0=OFF recognize,1~32=GATE
4			Excl group		- - - - v v v v	0=OFF,1~8=group1~8
5			effect_path		- - - - - - v v	0~3(1-4)
6			src_mute		- - - - - - v v	=01(fix)

3.1.5.2 SOURCE DATA (Only for K5000W)

No.	PARAMETER				BIT MAP	VALUE
1	Source	Control	Volume		- v v v v v v v	0~127
2			PAN		- v v v v v v v	(63L)1~(63R)127
3		DCO	Wave No. MSB		- - - - - - v v	0~224
4			LSB		- v v v v v v v	
5			Coarse		- v v v v v v v	(-24)40~(+24)88
6			Fine		- v v v v v v v	(-63)1~(+63)127
7			Pitch Env	Start Level	- v v v v v v v	(-63)1~(+63)127
8				Attack Time	- v v v v v v v	0~127
9				Level Velo Sense	- v v v v v v v	(-63)1~(+63)127
10		DCF	Cutoff		- v v v v v v v	0~127
11			Cutoff Velo Depth		- v v v v v v v	(-63)1~(+63)127
12		DCA	DCA Env	Attack Time	- v v v v v v v	0~127
13				Decay1 Time	- v v v v v v v	0~127
14				Decay1 Level	- v v v v v v v	0~127
15				Release Time	- v v v v v v v	0~127
16			DCA Velo Sense	Level	- - v v v v v v	0~63
17				Attack Time	- v v v v v v v	(-63)1~(+63)127
18				Decay1 Time	- v v v v v v v	(-63)1~(+63)127

3.1.6 COMBI PARAMETER (Combi is changed to Multi on K5000S/R)

The structure of 1COMBI Patch (check sum) + (COMMON)+(SECTION DATA)

(check sum):1BYTE)
check sum = {(common sum) + (section data sum) + 0xa5} & 0x7f

3.1.6.1 COMMON DATA

No.	PARAMETER			BIT MAP	VALUE
1	Effect	Algorhithm		- - - - - - v v	0~3
2		Reverb	Type	- - - - v v v v	0~10
3			dry/wet1	- v v v v v v v	0~100
4			dry/wet2	- v v v v v v v	0~100
5			para2	- v v v v v v v	0~127 depends on Type
6			para3	- v v v v v v v	0~127 depends on Type
7			para4	- v v v v v v v	0~127 depends on Type
8		Effect1	Type	- - v v v v v	0~36
9			dry/wet	- v v v v v v v	0~100
10			para1	- v v v v v v v	0~127 depends on Type
11			para2	- v v v v v v v	0~127 depends on Type
12			para3	- v v v v v v v	0~127 depends on Type
13			para4	- v v v v v v v	0~127 depends on Type
14		Effect2	Type	- - v v v v v	0~36
15			dry/wet	- v v v v v v v	0~100
16			para1	- v v v v v v v	0~127 depends on Type
17			para2	- v v v v v v v	0~127 depends on Type
18			para3	- v v v v v v v	0~127 depends on Type
19			para4	- v v v v v v v	0~127 depends on Type
20		Effect3	Type	- - v v v v v	0~36
21			dry/wet	- v v v v v v v	0~100
22			para1	- v v v v v v v	0~127 depends on Type
23			para2	- v v v v v v v	0~127 depends on Type
24			para3	- v v v v v v v	0~127 depends on Type
25			para4	- v v v v v v v	0~127 depends on Type
26		Effect4	Type	- - v v v v v	0~36
27			dry/wet	- v v v v v v v	0~100
28			para1	- v v v v v v v	0~127 depends on Type
29			para2	- v v v v v v v	0~127 depends on Type
30			para3	- v v v v v v v	0~127 depends on Type
31			para4	- v v v v v v v	0~127 depends on Type
32	GEQ		freq 1	- v v v v v v v	0~127
33			freq 2	- v v v v v v v	0~127
34			freq 3	- v v v v v v v	0~127
35			freq 4	- v v v v v v v	0~127
36			freq 5	- v v v v v v v	0~127
37			freq 6	- v v v v v v v	0~127
38			freq 7	- v v v v v v v	0~127
39	COMMON	Name 1st		- v v v v v v v	ASCII
40		Name 2nd		- v v v v v v v	ASCII
41		Name 3rd		- v v v v v v v	ASCII
42		Name 4th		- v v v v v v v	ASCII
43		Name 5th		- v v v v v v v	ASCII
44		Name 6th		- v v v v v v v	ASCII
45		Name 7th		- v v v v v v v	ASCII
46		Name 8th		- v v v v v v v	ASCII
47		volume		- v v v v v v v	0~127
48		Mute		- - - - v v v v	v=0:Mute,bit0~3:section1~4
49		contol	control source1	- - - - v v v v	0~13 see "control source1&2"
50			destination	- - - - v v v v	0~9 see "Effect destination list"
51			depth	- v v v v v v v	(-31)33~(+31)95
52			control source2	- - - - v v v v	0~13 see "control source1&2"
53			destination	- - - - v v v v	0~9 see "Effect destination list"
54			depth	- v v v v v v v	(-31)33~(+31)95

3.1.6.2 SECTION DATA SECTION No. 1~4

No.	PARAMETER			BIT MAP	VALUE
1	SINGLE	INST No.	MSB	- - - - - - v v	0~127:G,128~255:B,256~383:A(k5000W)
2			LSB	- v v v v v v v	256~383:A,384~511:D(K5000S/R)*1
3	VOLUME			- v v v v v v v	0~127
4	PAN			- v v v v v v v	0~127
5	EFF PATH			- - - - - - v v	0~3
6	TRANSPOSE			- v v v v v v v	40(-24)~88(+24)
7	TUNE			- v v v v v v v	1(-63)~127(+63)
8	ZONE	LO		- v v v v v v v	0~127
9		HI		- v v v v v v v	0~127
10	VELO SW	TYPE		- - - - - - v v	0:off,1:loud,2:soft
11		VALUE		- v v v v v v v	1~127
12	Only K5000S/R	RCV CH		- - - - v v v v	0~15(1~16) (k5000W=0)

*1: 512~639:E, 640~767:F when ME-1 is installed

3.1.7 DATA DUMP REQUEST

a:BLOCK SINGLE DUMP REQUEST(ADD, All of enable patch in A1 - 128)
Format: F0 40 <ch> 01 00 0A 00 00 00 F7
<ch>:MIDI ch (00~0F)

b:ONE SINGLE DUMP REQUEST(ADD, A1 - 128)
Format: F0 40 <ch> 00 00 0A 00 00 <data> F7
<ch>:MIDI ch (00~0F)
<DATA>: patch no.: 0 - 7f

c:BLOCK SINGLE DUMP REQUEST(PCM, All of B70 - 116) (Only for K5000W)
Format: F0 40 <ch> 01 00 0A 00 01 00 F7
<ch>:MIDI ch (00~0F)

d:ONE SINGLE DUMP REQUEST(PCM, B70 - 116) (Only for K5000W)
Format: F0 40 <ch> 00 00 0A 00 01 <DATA> F7
<ch>:MIDI ch (00~0F)
<DATA>: patch no.: 45H -73H

e:DRUM KIT DUMP REQUEST(B117) (Only for K5000W)
Format: F0 40 <ch> 00 00 0A 10 00 00 F7
<ch>:MIDI ch (00~0F)

f:BLOCK DRUM INST DUMP REQUEST(All of Inst User1 - 32) (Only for K5000W)
Format: F0 40 <ch> 01 00 0A 11 00 00 F7
<ch>:MIDI ch (00~0F)

g:ONE DRUM INST DUMP REQUEST(User Inst U1 - 32) (Only for K5000W)
Format: F0 40 <ch> 00 00 0A 11 00 <DATA> F7
<ch>:MIDI ch (00~0F)
<DATA>: inst no.:00H - 1fH

h:BLOCK COMBI DUMP REQUEST(All of C1 - 64) (Combi is changed to Multi on K5000S/R)
Format: F0 40 <ch> 01 00 0A 20 00 00 F7
<ch>:MIDI ch (00~0F)

i:ONE COMBI DUMP REQUEST(C1 - 64) (Combi is changed to Multi on K5000S/R)
Format: F0 40 <ch> 00 00 0A 20 00 <DATA> F7
<ch>:MIDI ch (00~0F)
<DATA>: Combi no.:00H - 3fH

j:BLOCK SINGLE DUMP REQUEST(ADD, All of enable patch in D1 - 128) (Only for K5000S/R)
Format: F0 40 <ch> 01 00 0A 00 02 00 F7
<ch>:MIDI ch (00~0F)

k:ONE SINGLE DUMP REQUEST(ADD, D1 - 128) (Only for K5000S/R)
Format: F0 40 <ch> 00 00 0A 00 02 <data> F7
<ch>:MIDI ch (00~0F)
<DATA>: patch no.: 0 - 7f

l:BLOCK SINGLE DUMP REQUEST(ADD, All of enable patch in E1 - 128) (Only when ME-1 is installed)
Format: F0 40 <ch> 01 00 0A 00 03 00 F7
<ch>:MIDI ch (00~0F)

m:ONE SINGLE DUMP REQUEST(ADD, E1 - 128) (Only when ME-1 is installed)
Format: F0 40 <ch> 00 00 0A 00 03 <data> F7
<ch>:MIDI ch (00~0F)
<DATA>: patch no.: 0 - 7f

n:BLOCK SINGLE DUMP REQUEST(ADD, All of enable patch in F1 - 128) (Only when ME-1 is installed)
Format: F0 40 <ch> 01 00 0A 00 04 00 F7
<ch>:MIDI ch (00~0F)

o:ONE SINGLE DUMP REQUEST(ADD, F1 - 128) (Only when ME-1 is installed)
Format: F0 40 <ch> 00 00 0A 00 04 <data> F7
<ch>:MIDI ch (00~0F)
<DATA>: patch no.: 0 - 7f

3.2 K5000W/S Parameter change

K5000 series do not transmit these parameter change data except 3.2.7 Arpeggio parameter.

3.2.1 Exclusive Data Format

1st.	F0h:	Exclusive
2nd.	40h:	Kawai ID
3rd.	00h:	Channel No.
4th.	10h:	Function No.
5th.	00h:	Group No.
6th.	0Ah:	Machine No.
7th.	xxh:	sub1
8th:	xxh:	sub2
9th:	xxh:	sub3
10th:	xxh:	sub4
11th:	xxh:	sub5
12th:	vvh:	data Hi
13th:	vvh:	data Lo
14th:	F7h:	End of Exclusive

3.2.2 Single Tone Parameter

3.2.2.1 Single Tone Common Parameter

sub1: 01h :single
sub2: 00h :common
sub3: 00h :dummy
sub4: 00h :dummy

sub5	PARAMETER	data Hi (bit)	data Lo (bit)	VALUE
00h	Name 1st	0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
01h	Name 2nd	0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
02h	Name 3rd	0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
03h	Name 4th	0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
04h	Name 5th	0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
05h	Name 6th	0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
06h	Name 7th	0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
07h	Name 8th	0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
08h	Volume	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
09h	Poly	0 0 0 0 0 0 0 0	0 0 0 0 0 0 v v	0=POLY,1=SOLO1,2=SOLO2
0Ah	no use	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	no use
0Bh	src_type	0 0 0 0 0 0 0 0	0 0 0 0 0 v v v	No. of sources:2~6
0Ch	src_mute_1	0 0 0 0 0 0 0 0	0 0 v v v v v v	v=0:mute,bit0~5=source1~6
0Dh	AM on/off	0 0 0 0 0 0 0 0	0 0 0 0 0 v v v	v=0:off,v=1~5(src2~6)
0Eh	control source1	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~13 see "control source1&2"
0Fh	destination	0 0 0 0 0 0 0 0	0 0 0 0 0 v v v	0~9 see "Effect destination list"
10h	depth	0 0 0 0 0 0 0 0	0 v v v v v v v	(-31)33~(+31)95
11h	control source2	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~13 see "control source1&2"
12h	destination	0 0 0 0 0 0 0 0	0 0 0 0 0 v v v	0~9 see "Effect destination list"
13h	depth	0 0 0 0 0 0 0 0	0 v v v v v v v	(-31)33~(+31)95
14h	Porta on/off	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 v	v=0:off,1=on
15h	Porta speed	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
16h	assign para1-1	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~19 see "macro controller list" (K5000W=0)
17h	assign para1-2	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~19 see "macro controller list" (K5000W=0)
18h	assign para2-1	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~19 see "macro controller list" (K5000W=0)
19h	assign para2-2	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~19 see "macro controller list" (K5000W=0)
1Ah	assign para3-1	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~19 see "macro controller list" (K5000W=0)
1Bh	assign para3-2	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~19 see "macro controller list" (K5000W=0)
1Ch	assign para4-1	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~19 see "macro controller list" (K5000W=0)
1Dh	assign para4-2	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~19 see "macro controller list" (K5000W=0)
1Eh	assign para1-1	0 0 0 0 0 0 0 0	0 v v v v v v v	(-31)33~(+31)95 (K5000W=64)
1Fh	assign para1-2	0 0 0 0 0 0 0 0	0 v v v v v v v	(-31)33~(+31)95 (K5000W=64)
20h	assign para2-1	0 0 0 0 0 0 0 0	0 v v v v v v v	(-31)33~(+31)95 (K5000W=64)
21h	assign para2-2	0 0 0 0 0 0 0 0	0 v v v v v v v	(-31)33~(+31)95 (K5000W=64)
22h	assign para3-1	0 0 0 0 0 0 0 0	0 v v v v v v v	(-31)33~(+31)95 (K5000W=64)
23h	assign para3-2	0 0 0 0 0 0 0 0	0 v v v v v v v	(-31)33~(+31)95 (K5000W=64)
24h	assign para4-1	0 0 0 0 0 0 0 0	0 v v v v v v v	(-31)33~(+31)95 (K5000W=64)
25h	assign para4-2	0 0 0 0 0 0 0 0	0 v v v v v v v	(-31)33~(+31)95 (K5000W=64)
26h	assign sw para1	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~15 see "SW,FSW list" (K5000W=0)
27h	assign sw para2	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~15 see "SW,FSW list" (K5000W=0)
28h	assign fsw para1	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~15 see "SW,FSW list" (K5000W=0)
29h	assign fsw para2	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~15 see "SW,FSW list" (K5000W=0)

Sub5=16h - 29h are ignored in K5000W

3.2.2.2 Single Tone Source Parameter

sub1: 01h :single
sub2: 01h :source
sub3: xxh :source No.(00h~05h)
sub4: 00h :dummy

sub5	PARAMETER			data Hi(bit)	data Lo(bit)	VALUE
00h	Control	zone_lo		0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
01h		zone_hi		0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
02h		velo sw		0 0 0 0 0 0 0 0	0 t t v v v v v	t:(0=off,1=loud,2=soft),v:(velo:0(1)~31(127)
03h		effect path		0 0 0 0 0 0 0 0	0 0 0 0 0 0 v v	0~3
04h		Volume		0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
05h		Bender	Pitch	0 0 0 0 0 0 0 0	0 0 0 v v v v v	0~24
06h			Cutoff	0 0 0 0 0 0 0 0	0 0 0 v v v v v	0~31
07h		Press	parameter 1	0 0 0 0 0 0 0 0	0 0 0 v v v v v	0~19
08h			depth	0 0 0 0 0 0 0 0	0 v v v v v v v	(-31)33~(+31)95
09h			parameter 2	0 0 0 0 0 0 0 0	0 0 0 v v v v v	0~19
0ah			depth	0 0 0 0 0 0 0 0	0 v v v v v v v	(-31)33~(+31)95
0bh		Wheel	parameter 1	0 0 0 0 0 0 0 0	0 0 0 v v v v v	0~19
0ch			depth	0 0 0 0 0 0 0 0	0 v v v v v v v	(-31)33~(+31)95
0dh			parameter 2	0 0 0 0 0 0 0 0	0 0 0 v v v v v	0~19
0eh			depth	0 0 0 0 0 0 0 0	0 v v v v v v v	(-31)33~(+31)95
0fh		Express	parameter 1	0 0 0 0 0 0 0 0	0 0 0 v v v v v	0~19
10h			depth	0 0 0 0 0 0 0 0	0 0 0 v v v v v	(-31)33~(+31)95
11h			parameter 2	0 0 0 0 0 0 0 0	0 0 0 v v v v v	0~19
12h			depth	0 0 0 0 0 0 0 0	0 v v v v v v v	(-31)33~(+31)95
13h		control	control source1	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~13 see "control source1&2"
14h			destination	0 0 0 0 0 0 0 0	0 0 0 v v v v v	0~19 see "destination list"
15h			depth	0 0 0 0 0 0 0 0	0 v v v v v v v	(-31)33~(+31)95
16h			control source2	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~13 see "control source1&2"
17h			destination	0 0 0 0 0 0 0 0	0 0 0 v v v v v	0~19 see "destination list"
18h			depth	0 0 0 0 0 0 0 0	0 v v v v v v v	(-31)33~(+31)95
19h		Key On Delay		0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
1ah		Pan	type	0 0 0 0 0 0 0 0	0 0 0 0 0 0 v v	0=normal,1=KS,2=-KS,3=Random
1bh			normal value	0 0 0 0 0 0 0 0	0 v v v v v v v	(63L)1~(63R)127
1ch	DCO	Wave Kit		0 0 0 0 0 v v v	0 v v v v v v v	0-340:PCM for B(K500W),341-463:PCM for A,512:ADD
1eh		Coarse		0 0 0 0 0 0 0 0	0 v v v v v v v	(-24)40~(+24)88
1fh		Fine		0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
20h		Fixed Key		0 0 0 0 0 0 0 0	0 v v v v v v v	0=ON, 21~108=OFF
21h		KS Pitch		0 0 0 0 0 0 0 0	0 0 0 0 0 0 v v	0=0cent,1=25cent,2=33cent,3=50cent
22h		Pitch Env	Start Level	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
23h			Attack Time	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
24h			Attack Level	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
25h			Decay Time	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
26h			Time Velo Sense	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
27h			Level Velo Sense	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
28h	DCF	DCF		0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 v	0=Active,1=Bypass
29h		Mode		0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 v	0=lo pass,1=hi pass
2ah		Velo Curve		0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~11(1-12)
2bh		Resonance		0 0 0 0 0 0 0 0	0 0 0 0 0 v v v	0~7
2ch		DCF level		0 0 0 0 0 0 0 0	0 0 0 0 0 v v v	0~7(7~0)
2dh		Cutoff		0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
2eh		Cutoff KS Depth		0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
2fh		Cutoff Velo Depth		0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
30h		DCF Env depth		0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
31h		DCF Env	Attack Time	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
32h			Decay1 Time	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
33h			Decay1 Level	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
34h			Decay2 Time	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
35h			Decay2 Level	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
36h			Release Time	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
37h		DCF KS to Env	Attack Time	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127

sub5	PARAMETER			data Hi(bit)	data Lo(bit)	VALUE
38h			Decay1 Time	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
39h		DCF Velo to Env	Env Depth	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
3ah			Attack Time	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
3bh			Decay1 Time	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
3ch	DCA	Velo Curve		0 0 0 0 0 0 0 0	0 0 0 0 0 v v v	0~11
3dh		DCA Env	Attack Time	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
3eh			Decay1 Time	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
3fh			Decay1 Level	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
40h			Decay2 Time	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
41h			Decay2 Level	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
42h			Release Time	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
43h		DCA KS to Env	Level	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
44h			Attack Time	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
45h			Decay1 Time	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
46h			Release Time	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
47h		DCA Velo Sense	Level	0 0 0 0 0 0 0 0	0 0 v v v v v v	0~63
48h			Attack Time	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
49h			Decay1 Time	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
4ah			Release Time	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
4bh	LFO	Waveform		0 0 0 0 0 0 0 0	0 0 0 0 0 v v v	0=Tri,1=Sqr,2=Saw,3=Sin,4=Rndm
4ch		Speed		0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
4dh		Delay On Set		0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
4eh		Fade In	time	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
4fh			to speed	0 0 0 0 0 0 0 0	0 0 v v v v v v	0~63
50h		Pitch (Vibrato)	Depth	0 0 0 0 0 0 0 0	0 0 v v v v v v	0~63
51h			KS	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
52h		DCF (Growl)	Depth	0 0 0 0 0 0 0 0	0 0 v v v v v v	0~63
53h			KS	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
54h		DCA (Tremolo)	Depth	0 0 0 0 0 0 0 0	0 0 v v v v v v	0~63
55h			KS	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127

3.2.3 Single Tone ADD Wave Parameter

3.2.3.1 ADD Wave HC Kit Parameter

sub1: 02h :Single Tone ADD Wave Parameter
sub2: 40h :HC Kit Parameter
sub3: xxh :Source No.(00h~05h)
sub4: 00h :dummy

sub5	PARAMETER				data Hi(bit)	data Lo(bit)	VALUE
00h	MORF FLAG				0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 v	0=MORF OFF,1=MORF ON
01h	Harmonics	Common	Total Gain		0 0 0 0 0 0 0 0	0 0 v v v v v v	1~63
02h		NON-MORF	Harm Group	1~64 / 65~128	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 v	0=LO(1~64harm),1=HI(65~128harm)
03h			KS to Gain		0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
04h			Balance	Velo curve	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~11
05h				Velo depth	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
06h		MORF	HC	HC1 select	0 v v v v v v v	0 v v v v v v v	data Hi:patch No.(0~127)
							data Lo:source No.(0~5=soft,6~11=loud,127=editer)
08h				HC2 select	0 v v v v v v v	0 v v v v v v v	data Hi:patch No.(0~127)
							data Lo:source No.(0~5=soft,6~11=loud,127=editer)
0Ah				HC3 select	0 v v v v v v v	0 v v v v v v v	data Hi:patch No.(0~127)
							data Lo:source No.(0~5=soft,6~11=loud,127=editer)
0Ch				HC4 select	0 v v v v v v v	0 v v v v v v v	data Hi:patch No.(0~127)
							data Lo:source No.(0~5=soft,6~11=loud,127=editer)
0Eh			HE	Time1	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
0Fh				Time2	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
10h				Time3	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
11h				Time4	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
12h				Loop	0 0 0 0 0 0 0 0	0 0 0 0 0 0 v v	0(OFF),1(LP1),2(LP2)
13h	Formant	Bias			0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
14h		Env/LFO sel			0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 v	0=ENV,1=LFO
15h		Env	Env Depth		0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
16h			Attack	Rate	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
17h				Level	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
18h			Decay1	Rate	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
19h				Level	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
1Ah			Decay2	Rate	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
1Bh				Level	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
1Ch			Release	Rate	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
1Dh				Level	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
1Eh			LOOP		0 0 0 0 0 0 0 0	0 0 0 0 0 0 v v	0(OFF),1(LP1),2(LP2)
1Fh			Velo Sence	Env Depth	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
20h			KS	Env Depth	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
21h		LFO	Speed		0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
22h			Shape		0 0 0 0 0 0 0 0	0 0 0 0 0 0 v v	0=TRI,1=SAW,2=RNDM
23h			Depth		0 0 0 0 0 0 0 0	0 0 v v v v v v	0~63

3.2.3.2 ADD Wave HC code1 Parameter

sub1: 02h :Single Tone ADD Wave Parameter
sub2: 41h :HC code1 Parameter
sub3: xxh :Source No.(00h~05h)
sub4: yyh :Harmonic No (00h~3Fh)
sub5: 00h :dummy
data l 00h :dummy
data l zzh :value(0~7Fh)

3.2.3.3 ADD Wave HC code2 Parameter

sub1: 02h :Single Tone ADD Wave Parameter
sub2: 42h :HC code2 Parameter
sub3: xxh :Source No.(00h~05h)
sub4: yyh :Harmonic No (00h~3Fh)
sub5: 00h :dummy
data h 00h :dummy
data l zzh :value(0~7Fh)

3.2.3.4 ADD Wave Formant Filter Parameter

sub1: 02h :Single Tone ADD Wave Parameter
sub2: 43h :Formant Filter Parameter
sub3: xxh :Source No.(00h~05h)
sub4: yyh :Formant No. (00h~7Fh)
sub5: 00h :dummy
data h 00h :dummy
data l zzh :value(0~7Fh)

3.2.3.5 ADD Wave Harmonic Envelope Parameter

sub1: 02h :Single Tone ADD Wave Parameter
sub2: 44h :Harmonic Envelope Parameter
sub3: xxh :Source No.(00h~05h)
sub4: yyh :Harmonic No (00h~3Fh)

sub5	PARAMETER				data Hi(bit)	data Lo(bit)	VALUE
00h	HC Envelope	time	attack		0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
01h		level	attack		0 0 0 0 0 0 0 0	0 0 v v v v v v	0~63
02h		Rate	decay1		0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
03h		Level	decay1		0 0 0 0 0 0 0 0	0 0 v v v v v v	0~63
04h		Rate	decay2		0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
05h		Level	decay2		0 0 0 0 0 0 0 0	0 0 v v v v v v	0~63
06h		Rate	release		0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
07h		Level	release		0 0 0 0 0 0 0 0	0 0 v v v v v v	0~63
08h		loop			0 0 0 0 0 0 0 0	0 0 0 0 0 0 v v	0(OFF),1(LP1),2(LP2)

3.2.3.6 ADD Wave HC code Parameter for MORF

sub1: 02h :Single Tone ADD Wave Parameter
sub2: 45h :HC code Parameter for MORF
sub3: xxh :Phase No.(00h~03h)
sub4: yyh :Harmonic No (00h~3Fh)
sub5: 00h :dummy
data h 00h :dummy
data l zzh :value(0~7Fh)

3.2.3.7 ADD MORF execute

sub1: 02h :Single Tone ADD Wave Parameter
sub2: 46h :ADD MORF execute
sub3: 0xh :Source No.(0~5)
sub4: 00h :dummy
sub5: 00h :dummy
data h 00h :dummy
data l 01h :execute

3.2.4 Drum KIT Parameter (Only for K5000W)

3.2.4.1 Drum KIT Common Parameter (Only for K5000W)

sub1: 00h :Drum KIT
sub2: 00h :common
sub3: 00h :dummy
sub4: 00h :dummy

sub5	PARAMETER		data Hi (bit)	data Lo (bit)	VALUE
00h	Name 1st		0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
01h	Name 2nd		0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
02h	Name 3rd		0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
03h	Name 4th		0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
04h	Name 5th		0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
05h	Name 6th		0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
06h	Name 7th		0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
07h	Name 8th		0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
08h	Volume		0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
0ah	control source1		0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~13 see "control source1&2"
0bh	destination		0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~9 see "Effect destination list"
0ch	depth		0 0 0 0 0 0 0 0	0 v v v v v v v	(-31)33~(+31)95
0dh	control source2		0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~13 see "control source1&2"
0eh	destination		0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~9 see "Effect destination list"
0fh	depth		0 0 0 0 0 0 0 0	0 v v v v v v v	(-31)33~(+31)95

3.2.4.2 Drum KIT tone select Parameter
(Only for K5000W)

sub1: 00h :Drum KIT
sub2: 01h :tone select
sub3: **h :Note select(0~63)
sub4: 00h :dummy

sub5	PARAMETER		data Hi (bit)	data Lo (bit)	VALUE
00h	Tone No.		0 0 0 0 0 0 v v	0 v v v v v v v	0=MUTE,1~253,254~285=USR1~32

3.2.4.3 DRUM Inst Common Parameter
(Only for K5000W)

sub1: 10h :DRUM Tone
sub2: 00h :common
sub3: 00h :dummy
sub4: 00h :dummy

sub5		PARAMETER		data Hi (bit)	data Lo (bit)	VALUE
00h		Volume		0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
01h		Gate		0 0 0 0 0 0 0 0	0 0 v v v v v v	0=OFF recognize,1~32=GATE
02h		Excl group		0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0=OFF,1~8=group1~8
03h		effect_path		0 0 0 0 0 0 0 0	0 0 0 0 0 0 v v	0~3(1-4)
04h		src_mute		0 0 0 0 0 0 0 0	0 0 0 0 0 0 v v	=01(fix)

3.2.4.4 DRUM Inst Source Parameter
(Only for K5000W)

sub1: 10h :DRUM Tone
sub2: 01h :Source
sub3: 00h :dummy
sub4: 00h :dummy

sub5	PARAMETER			data Hi(bit)	data Lo(bit)	VALUE
00h	Control	Volume		0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
01h		PAN		0 0 0 0 0 0 0 0	0 v v v v v v v	(63L)1~(63R)127
02h	DCO	Wave No.		0 0 0 0 0 v v v	0 v v v v v v v	0~224
03h		Coarse		0 0 0 0 0 0 0 0	0 v v v v v v v	(-24)40~(+24)88
05h		Fine		0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
06h		Pitch Env	Start Level	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
07h			Attack Time	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
08h			Level Velo Sense	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
09h	DCF	Cutoff		0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
0ah		Cutoff velo depth		0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
0eh	DCA	DCA Env	Attack Time	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
0fh			Decay1 Time	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
10h			Decay1 Level	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
11h			Release Time	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
12h		DCA Velo Sens	Level	0 0 0 0 0 0 0 0	0 0 v v v v v v	0~63
13h			Attack Time	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127
14h			Decay1 Time	0 0 0 0 0 0 0 0	0 v v v v v v v	(-63)1~(+63)127

3.2.5 COMBI Parameter (Combi is changed to Multi on K5000S/R)

3.2.5.1 COMBI Common Parameter

sub1: 04h :COMBI
sub2: 00h :common
sub3: 00h :dummy
sub4: 00h :dummy

sub5	PARAMETER	data Hi (bit)	data Lo (bit)	VALUE
00h	Name 1st	0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
01h	Name 2nd	0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
02h	Name 3rd	0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
03h	Name 4th	0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
04h	Name 5th	0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
05h	Name 6th	0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
06h	Name 7th	0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
07h	Name 8th	0 0 0 0 0 0 0 0	0 v v v v v v v	ASCII
08h	Volume	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
0ah	Mute	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	v=0:Mute,bit0~3:section1~4
0bh	control source1	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~13 see "control source1&2"
0ch	destination	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~9 see "Effect destination list"
0dh	depth	0 0 0 0 0 0 0 0	0 v v v v v v v	(-31)33~(+31)95
0eh	control source2	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~13 see "control source1&2"
0fh	destination	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~9 see "Effect destination list"
10h	depth	0 0 0 0 0 0 0 0	0 v v v v v v v	(-31)33~(+31)95

3.2.5.2 COMBI section Parameter

sub1: 04h :COMBI
sub2: 01h :section
sub3: **h :section No.(0~3)
sub4: 00h :dummy

sub5	PARAMETER	data Hi (bit)	data Lo (bit)	VALUE
00h	Tone No.	0 0 0 0 0 0 v v	0 v v v v v v v	*1
01h	VOLUME	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
02h	PAN	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
03h	EFF PATH	0 0 0 0 0 0 0 0	0 0 0 0 0 0 v v	0~3
04h	TRANSPOSE	0 0 0 0 0 0 0 0	0 v v v v v v v	40(-24)~88(+24)
05h	TUNE	0 0 0 0 0 0 0 0	0 v v v v v v v	1(-63)~127(+63)
06h	ZONE LO	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
07h	HI	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127
08h	VELO SW TYPE	0 0 0 0 0 0 0 0	0 0 0 0 0 0 v v	0=OFF,1=LOUD,2=SOFT
09h	VALUE	0 0 0 0 0 0 0 0	0 v v v v v v v	1~127
0ah	RCV CH	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~15(1ch~16ch)K5000S/R =0(fix)K5000W

sub5=0ah Only for K5000S/R

*1 0~127:G, 128~255:B, 256~383:A(K5000W)
256~383:A, 384~511:D(K5000S/R)
512~639:E, 640~767:F (when ME-1 inserted)

3.2.6 Effect/EQ Parameter

3.2.6.1 Effect Algorithm

sub1: 03h :Effect/EQ
sub2: 00h :Effect
sub3: 00h :Algorhithm
sub4: 00h :dummy

sub5		PARAMETER		data Hi(bit)	data Lo(bit)	VALUE
00h		Effect	Algorithm	0 0 0 0 0 0 0 0	0 0 0 0 0 0 v v	0~3

3.2.6.2 Effect Parameter

sub1: 03h :Effect/EQ
sub2: 00h :Effect
sub3: **h :1=Reverb,2~5=Effect1~4
sub4: 00h :dummy

sub5		PARAMETER		data Hi(bit)	data Lo(bit)	VALUE
00h		Type		0 0 0 0 0 0 0 0	0 0 v v v v v v	Reverb:0~10,Effect:11~47
01h		dry/wet		0 0 0 0 0 0 0 0	0 v v v v v v v	0~100
02h		para1		0 0 0 0 0 0 0 0	0 * * * * * * *	varies depending on Type
03h		para2		0 0 0 0 0 0 0 0	0 * * * * * * *	varies depending on Type
04h		para3		0 0 0 0 0 0 0 0	0 * * * * * * *	varies depending on Type
05h		para3		0 0 0 0 0 0 0 0	0 * * * * * * *	varies depending on Type

3.2.6.3 EQ Parameter

sub1: 03h :Effect/EQ
sub2: 01h :EQ
sub3: 00h :dummy
sub4: 00h :dummy

sub5		PARAMETER		data Hi(bit)	data Lo(bit)	VALUE
00h		freq1		0 0 0 0 0 0 0 0	0 v v v v v v v	58(-6)~70(+6)
01h		freq2		0 0 0 0 0 0 0 0	0 v v v v v v v	58(-6)~70(+6)
02h		freq3		0 0 0 0 0 0 0 0	0 v v v v v v v	58(-6)~70(+6)
03h		freq4		0 0 0 0 0 0 0 0	0 v v v v v v v	58(-6)~70(+6)
04h		freq5		0 0 0 0 0 0 0 0	0 v v v v v v v	58(-6)~70(+6)
05h		freq6		0 0 0 0 0 0 0 0	0 v v v v v v v	58(-6)~70(+6)
06h		freq7		0 0 0 0 0 0 0 0	0 v v v v v v v	58(-6)~70(+6)

3.2.6.4 Instant Edit (Only for K5000W single mode)

sub1: 03h :Effect/EQ
sub2: 00h :Effect
sub3: 06h :Instant Edit
sub4: 00h :dummy

sub5		PARAMETER		data Hi(bit)	data Lo(bit)	VALUE
00h		EFX offset		0 0 0 0 0 0 0 0	0 v v v v v v v	1(-63)~127(+63)
01h		REV offset		0 0 0 0 0 0 0 0	0 v v v v v v v	1(-63)~127(+63)

3.2.7 Arpeggio Parameter (Only for K5000S/R)
Arpeggion parameters are transimitted and received except 3.2.7.2).

3.2.7.1 Arpeggio On/Off
sub1: 60h :Arpeggio
sub2: 00h :Arpeggio On/Off
sub3: 00h :dummy
sub4: 00h :dummy

sub5		PARAMETER		data Hi(bit)	data Lo(bit)	VALUE
00h		Arpeggio	On/Off	0 0 0 0 0 0 0 0	0 v v v v v v v	0:Off, 7f On

3.2.7.2 Arpeggio Speed(Only receive)
sub1: 60h :Arpeggio
sub2: 10h :Arpeggio speed
sub3: 00h :dummy
sub4: 00h :dummy

sub5		PARAMETER		data Hi(bit)	data Lo(bit)	VALUE
00h		Arpeggio	speed	0 0 0 0 0 0 0 0	0 v v v v v v v	0~127

3.2.7.3 Arpeggio Mode
sub1: 60h :Arpeggio
sub2: 20h :Arpeggio Mode
sub3: 00h :dummy
sub4: 00h :dummy

sub5		PARAMETER		data Hi(bit)	data Lo(bit)	VALUE
00h		Arpeggio	Mode	0 0 0 0 0 0 0 0	0 0 0 0 v v v v	0~10:mode (see "Arpeggio Mode list")

3.2.7.4 Arpeggio Pattern and Variation
sub1: 60h :Arpeggio
sub2: 30h :Arpeggio Pattern
sub3: 00h :dummy
sub4: 00h :dummy

sub5		PARAMETER		data Hi(bit)	data Lo(bit)	VALUE
00h		Arpeggio	pattern	0 0 0 0 v v v v	0 0 0 0 0 c c c	vvvv=0~10:pattern (see "Arpeggio Pattern list")
						ccc=0~7:variation 1~8

3.2.7.5 Arpeggio Tempo
sub1: 60h :Arpeggio
sub2: 11h :Arpeggio Tempo
sub3: 00h :dummy
sub4: 00h :dummy

sub5		PARAMETER		data Hi(bit)	data Lo(bit)	VALUE
00h		Arpeggio	tempo	0 0 0 0 0 0 v v	0 v v v v v v v	vvvvvvvv = 10 ~ 300

Arpeggio Mode list

0	1-Oct
1	2-Oct
2	3-Oct
3	Hold 1 Oct
4	Hold 2 Oct
5	Hold 3 Oct
6	Hold Random
7	Hold & Trig 1 Oct
8	Hold & Trig 2 Oct
9	Hold & Trig 3 Oct
10	Hold & Trig Random

Arpeggio Pattern list

0	Up
1	U/D 1
2	U/D 2
3	Down
4	Key Order
5	Random
6	Chord Trigger
7	Chord Gate
8	Seq pattern1
9	Seq pattern2
10	User

3.3 Others

3.3.1 Track Control(Effect path Change) (Only for K5000W)

K5000W does not transmit these data but receive only.

Status	Data byte	Status
foH	40H,cc,11H,00H,0aH,00H,mm,vv	f7H

cc:Global ch(7fH), or Unit ch(00H-0fH)

mm:Destination MIDI Ch:0-fH

vv:Effect path value:(0-3)1-4

3.3.2 Acknowledge Format

K5000W/S/R transmit these data after receiving the dump data.

Status	Data byte	Status
foH	40H,cc,aa,00H,0aH	f7H

cc: Unit channel number :0H-fH(ch.1 - ch.16)

aa: Function No. 40h: Write Complete
41h: Write Error
42h: Write Error by protect
44h: Write Error by memory full
45h: Write Error by no expansion board

3.3.3 Back Up/Reset

K5000W/S/R do not transmit these data but receive only.

Status	Data byte	Status
foH	40H,cc,32H,00H,0aH,rr	f7H

cc: Unit channel number :0H-fH(ch.1 - ch.16)

rr: Remote function number 01H: Back up
02H: Reset

3.3.4 To Single Mode

K5000W/S/R do not transmit these data but receive only.

Jump to Single mode when receiving this command.

Status	Data byte	Status
foH	40H,cc,31H,00H,0aH,mm	f7H

cc: Unit channel number :0H-fH(ch.1 - ch.16)

mm: Mode change number 01H: Jump to single mode

3.3.5 ID Request(KAWAI)

K5000W/S/R do not transmit these data but receive only.

Status	Data byte	Status
foH	40H,cc,60H	f7H

cc: Unit channel number :0H-fH(ch.1 - ch.16)

3.3.6 ID Acknowledge(KAWAI)

K5000 transmit these data after receiving the KAWAI ID request.

Status	Data byte	Status
foH	40H,cc,61H,00H,0aH,ii	f7H

cc: Unit channel number :0H-fH(ch.1 - ch.16)

ii: Sub ID number 01H: K5000W

02H: K5000S

03H: K5000R

3.4 General Exclusive message

The K5000W/S/R receive these data.

GM System On (Only for K5000W)

Status	Data byte	Status
foH	7eH,7fH,09H,01H	f7H

GS Reset (Only for K5000W)

Status	Data byte	Status
foH	41H,dev,42H,12H,40H,00H,7fH,00H,41H	f7H

Master Volume

Status	Data byte	Status
foH	7fH,7fH,04H,01H,llH,mmH	f7H

ll=LSB of volume(00H)

mm= MSB of volume

Master Volume

Status	Data byte	Status
foH	41H,10H,42H,12H,40H,00H,04H,mm,cc	f7H

mm= volume

cc=check sum =80H-(LO 7bit of(44H + mm))

Use for Rhythm or Normal part (Only for K5000W)

Status	Data byte	Status
foH	41H,1xH,42H,12H,40H,11H,15H,mmH,ccH	f7H

x=0(10ch),1(1ch),2(2ch),,,,,,9(9ch),10(11ch),11(12ch),12(13ch),,,15(16ch)

ll=00 ; Normal part 01:Drum part

cc=check sum cc=1aH at ll=00H, cc=19H at ll=01H

ID request(Universal)

Status	Data byte	Status
foH	7eH,cc,06H,01H	f7H

cc: Unit channel number :0H-fH(ch.1 - ch.16)

ID Acknowledge (Universal)

K5000 transmit these data after receiving the KAWAI ID request (Universal).

Status	Data byte	Status
foH	7eH,cc,06H,02H,40h,00H,00H,0aH,iiH,vvH,rrH,ssH,eeH	f7H

cc: Unit channel number :0H-fH(ch.1 - ch.16)

ii: Sub ID number 01H: K5000W
02H: K5000S
03H: K5000R

vv,rr,ss:version no. ver. vv.rr ss

ee:aux ee=0 : no expansion
ee=1 : expansion inserted

4. MIDI implementation Chart

4.1 K5000W

[Advanced Additive workstation]
Model KAWAI K5000W MIDI Implementation Chart

Date:JAN,20,1997
Version:2.0

		Transimitted		Recognized		Remarks
Function		MIDI A	MIDI B	MIDI A	MIDI B	
Basic	Default	X	X	1-16	1-16	
Channel	Changed	X	X	1-16	1-16	
Mode	Default	X	X	Mode 3	Mode 3	
	Messages	X	X	X	X	
	Altered	*****	*****			
Note		0-127	0-127	0-127	0-127	
Number:	True voice	*****	*****	0-127	0-127	
Velocity	Note ON	1-127	1-127	1-127	1-127	
	Note OFF	X	X	X	X	
After	Key's	X	X	X	X	
Touch	Ch's	0-127	0-127	0-127	0-127	
Pitch Bend		O	O	O	O	
Control Change	0,32	O	O	O	O	Bank Select
	1	O	O	O	O	Modulation
	5	X	X	O	O	Portamento time
	6,38	O	O	O	O	Data Entry
	7	X	X	O	O	Volume
	10	X	X	O	O	Panpot
	11	O	O	O	O	Expression
	16-19	O	O	O	O	GPC1-4*
	64	O	O	O	O	Hold1
	65	X	X	O	O	Portamento On/off
	69	X	X	O	O	Hold2
	70-79	O	O	O	O	Sound Controller2-9
	80-83	X	X	O	O	GPC5-8*
	84	X	X	O	O	Portamento Control
	91	X	X	O	O	*1
	93	X	X	O	O	*2
	98,99	X	X	O	O	NRPN LSB,MSB
	100,101	X	X	O	O	RPN LSB,MSB
	0-127	O(quick MIDI)	O(quick MIDI)	X	X	
Prog		O	O	O	O	
Change:	True #	****	****	0-127	0-127	
System Exclusive		O	X	O	O *3	
	:Song pos	X	X	X	X	
Common	:Song sel	X	X	X	X	
	:Tune	X	X	X	X	
System	:Clock	O	X	O	O	
Real time	:Commands	O(250,252)	X	O(250,251,25	X	
	All Sound OFF	X	X	O	X	
	Reset All Cntrlr	X	X	O	O	
Aux	:Locall ON/OFF	X	X	O	O	
	:All Note OFF	X	X	O(123-127)	O(123-127)	
Mes-	:Active Sense	O	O	O	O	
sages	:Reset	X	X	X	X	

Notes

*1 For selecting a path of Reverb Lo/Hi only when Algo is set to 2.
*2 For selecting a path of Chorus Lo/Hi only when Algo is set to 2.
*3 Except K5000W exclusive
*GPC: General Purpose Controllers

4.2 K5000S

[Advanced Additive synthesizer] Date:JAN,20,1997

Model KAWAI K5000S Version:2.0

MIDI Implementation Chart

		Transimitted	Recognized	Remarks
Function				
Basic	Default	X	1-16	
Channel	Changed	X	1-16	
Mode	Default	X	Mode 3	
	Messages	X	X	
	Altered	*****		
Note		0-127	0-127	
Number:	True voice	*****	0-127	
Velocity	Note ON	1-127	1-127	
	Note OFF	X	X	
After	Key's	X	X	
Touch	Ch's	0-127	0-127	
Pitch Bend		0	0	
Control Change	0,32	0	0	Bank Select
	1	0	0	Modulation
	6,38	0	0	Data Entry
	5	0	0	Portamento time
	7	X	0	Volume
	10	X	0	Panpot
	11	0	0	Expression
	16-19	0	0	GPC1-4*
	64	0	0	Hold1
	65	0	0	Portamento On/off
	69	X	0	Hold2
	70-79	0	0	Sound Controller2-9
	80-83	0	0	GPC5-8*
	84	X	0	Portamento Control
	98,99	0	0	NRPN LSB,MSB
	100,101	X	0	RPN LSB,MSB
	0-127	0(quick MIDI)	X	
Prog		0	0	
Change:	True #	****	0-127	
System Exclusive		0	0	
	:Song pos	X	X	
Common	:Song sel	X	X	
	:Tune	X	X	
System	:Clock	0	0	
Real time	:Commands	X	X	
	All Sound OFF	X	0	
	Reset All Cntrlr	X	0	
Aux	:Locall ON/OFF	X	0	
	:All Note OFF	X	0(123-127)	
Mes-	:Active Sense	0	0	
sages	:Reset	X	X	

Notes

*GPC: General Purpose Controllers

4.3 K5000R

[Advanced Additive synthesizer Module] Date:JAN,20,1997

Model KAWAI K5000R Version:2.0

MIDI Implementation Chart

		Transimitted	Recognized	Remarks
Function				
Basic	Default	X	1-16	
Channel	Changed	X	1-16	
Mode	Default	X	Mode 3	
	Messages	X	X	
	Altered	*****		
Note		0-127 *1	0-127	
Number:	True voice	*****	0-127	
Velocity	Note ON	1-127 *1	1-127	
	Note OFF	X	X	
After	Key's	X	X	
Touch	Ch's	X	0-127	
Pitch Bend		X	O	
Control Change	0,32	O	O	Bank Select
	1	X	O	Modulation
	6,38	O	O	Data Entry
	5	X	O	Portamento time
	7	X	O	Volume
	10	X	O	Panpot
	11	X	O	Expression
	16-19	O	O	GPC1-4*
	64	X	O	Hold1
	65	O	O	Portamento On/off
	69	X	O	Hold2
	70-79	O	O	Sound Controller2-9
	80-83	O	O	GPC5-8*
	84	X	O	Portamento Control
	98,99	O	O	NRPN LSB,MSB
	100,101	X	O	RPN LSB,MSB
Prog		O	O	
Change:	True #	****	0-127	
System Exclusive		O	O	
	:Song pos	X	X	
Common	:Song sel	X	X	
	:Tune	X	X	
System	:Clock	O	O	
Real time	:Commands	X	X	
	All Sound OFF	X	O	
	Reset All Cntrlr	X	O	
Aux	:Locall ON/OFF	X	X	
	:All Note OFF	X	O(123-127)	
Mes-	:Active Sense	O	O	
sages	:Reset	X	X	

Notes

*1: Only when arpeggio On

*GPC: General Purpose Controllers

5. Table

5.1 K5000W B BANK SOUNDS
5.1.1 Preset B1 - 69
(Only for K5000W)

No.	NAME	PGM	Bank	
			MSB	LSB
B001	WidPiano	000	008	000
B002	E.Grand2	002	096	000
B003	OldUprit	003	096	000
B004	E.Piano3	004	016	000
B005	60's EP	004	024	000
B006	E.Piano4	005	096	000
B007	DistClav	007	096	000
B008	ChrchBel	014	008	000
B009	DetunOr1	016	008	000
B010	60's Org	016	016	000
B011	CheseOrg	016	024	000
B012	Drawbar2	016	032	000
B013	PercOrg2	017	032	000
B014	DetunOr2	018	096	000
B015	ChrcOrg2	019	008	000
B016	Accord.2	021	008	000
B017	Ukulele	024	008	000
B018	NylonGt2	024	032	000
B019	12strGtr	025	008	000
B020	Nyln+Stl	025	009	000
B021	Mandolin	025	016	000
B022	SteelGt2	025	096	000
B023	Hawaiian	026	008	000
B024	MellowGt	026	096	000
B025	ChorusGt	027	008	000
B026	Hi.E.Gtr	027	096	000
B027	FunkGtr	028	008	000
B028	Res.O.D	029	096	000
B029	FeedBkGt	030	008	000
B030	PowerGtr	030	016	000
B031	Res.Dist	030	096	000
B032	Ac.Bass2	032	096	000
B033	FngBass2	033	096	000
B034	TubeBass	033	097	000
B035	MutePick	034	008	000
B036	SynBass3	038	001	000
B037	SynBass4	038	008	000
B038	SynBass5	039	008	000
B039	SynBass6	039	016	000
B040	SlwVioln	040	008	000
B041	Orchstra	048	008	000
B042	Strings3	048	096	000
B043	ChorAah2	052	032	000
B044	Voi_Ooh2	053	096	000
B045	WarmTrmp	056	096	000
B046	DublBone	057	001	000
B047	Brass2	061	008	000
B048	Oct.Bras	062	096	000
B049	SynBras3	063	008	000
B050	AltoSax2	065	008	000
B051	BrthTenr	066	008	000
B052	Flute2	073	096	000
B053	Winds1	073	097	000
B054	Winds2	073	098	000
B055	Sine	080	008	000
B056	SquarLd2	080	096	000
B057	Dist.Sqr	080	097	000
B058	Dr.Solo	081	008	000
B059	SawLead2	081	096	000
B060	DstSawLd	081	097	000
B061	Sweep2	095	096	000
B062	TaishoKT	107	008	000
B063	E.TOM	118	008	000
B064	E.Percus	118	009	000
B065	GtCutN1	120	001	000
B066	StrgSlap	120	002	000
B067	GtCutN2	120	003	000
B068	Scratch	124	004	000
B069	WndChime	124	005	000

5.1.2 User B70 - 116
(Only for K5000W)

No.	NAME		Bank	
		PGM	MSB	LSB
B070	F1Brass	031	008	000
B071	RezzoPad	102	002	000
B072	HipLead	115	008	000
B073	WoodMoon	116	008	000
B074	SmlRadio	121	001	000
B075	Soppad	122	001	000
B076	MiniRizm	122	002	000
B077	RubberSQ	122	003	000
B078	SkyPiano	122	004	000
B079	DarkBass	122	005	000
B080	BeBright	123	001	000
B081	VLead	123	002	000
B082	EatEast	123	003	000
B083	PatSynth	124	001	000
B084	ManuGate	124	002	000
B085	VeloBend	124	003	000
B086	Filtrist	125	001	000
B087	Vochord	125	002	000
B088	SaxyBony	125	003	000
B089	WheelBar	125	004	000
B090	OutaTune	125	005	000
B091	MelonOrg	125	006	000
B092	5000Vega	125	007	000
B093	BagVoice	125	008	000
B094	FeedPizz	125	009	000
B095	DearMuse	126	001	000
B096	Victory	126	002	000
B097	MetroPol	126	003	000
B098	PilotPad	126	004	000
B099	AquaPol	126	005	000
B100	Meadow	127	001	000
B101	SpaceAge	127	002	000
B102	BreezPad	127	003	000
B103	PeckaBas	000	099	000
B104	SlappyBs	001	099	000
B105	DownBass	002	099	000
B106	DigiTalk	003	099	000

B107	WhlPluck	004	099	000
B108	RezoRizm	005	099	000
B109	PaddyEP	006	099	000
B110	NitePluk	007	099	000
B111	Windaful	008	099	000
B112	PlntDust	009	099	000
B113	Yellomo	010	099	000
B114	BitHard	011	099	000
B115	WatrWalk	012	099	000
B116	Reflecta	013	099	000

5.1.3 Drum Kit B117(user), B118 - 128(preset)
(Only for K5000W)

No.	NAME		Bank	
		PGM	MSB	LSB
B117	TECHNO	095		
B118	ORCHESTR	048		
B119	SFX	056		
B120	STANDRD1	000		
B121	STANDRD2	001		
B122	ROOM	008		
B123	POWER	016		
B124	ELECTRIC	024		
B125	BOB	025		
B126	DANCE	026		
B127	JAZZ	032		
B128	BRUSH	040		

5.1.4 Extra Patches B70 - 116(user)
(Only for K5000W)

No.	NAME		Bank	
		PGM	MSB	LSB
B070	GtFeedbk	031	008	000
B071	EchoPan	102	002	000
B072	Castanet	115	008	000
B073	CncertBD	116	008	000
B074	Fl.KeyC	121	001	000
B075	Rain	122	001	000
B076	Thunder	122	002	000
B077	Wind	122	003	000
B078	Stream	122	004	000
B079	Bubble	122	005	000
B080	Dog	123	001	000
B081	HorseGal	123	002	000
B082	Bird2	123	003	000
B083	Telephn2	124	001	000
B084	DoorCrek	124	002	000
B085	Door	124	003	000
B086	CarEngin	125	001	000
B087	CarStop	125	002	000
B088	CarPass	125	003	000
B089	CarCrash	125	004	000
B090	Siren	125	005	000
B091	Train	125	006	000
B092	Jetplane	125	007	000
B093	Starship	125	008	000
B094	BurstNiz	125	009	000
B095	Laughnig	126	001	000
B096	Screming	126	002	000
B097	Punch	126	003	000
B098	HertBeat	126	004	000
B099	FootStep	126	005	000
B100	MashnGun	127	001	000
B101	Lasergun	127	002	000
B102	Explosin	127	003	000
B103	Untitled	000	099	000
B104	Untitled	001	099	000
B105	Untitled	002	099	000
B106	Untitled	003	099	000
B107	Untitled	004	099	000
B108	Untitled	005	099	000
B109	Untitled	006	099	000
B110	Untitled	007	099	000
B111	Untitled	008	099	000
B112	Untitled	009	099	000
B113	Untitled	010	099	000
B114	Untitled	011	099	000
B115	Untitled	012	099	000
B116	Untitled	013	099	000
B117	TECHNO	095		

5.2 Exclusive Command Table

Command	No.	Destination	Trans	Receive
One Block Dump Request	00H	A,B,D,E,F,Kit,dr inst,Combi	No	Yes
All Block Dump Request	01H	A,B,D,E,F,dr inst,Combi	No	Yes
Parameter send	10H	Single,Combi,Effect	No	Yes
Track Control	11H	Effect path	No	Yes
One Block Dump	20H	A,B,D,E,F,Kit,dr inst,Combi	Yes	Yes
All Block Dump	21H	A,B,D,E,F,dr inst,Combi	Yes	Yes
Mode change	31H		No	Yes
Remote	32H		No	Yes
Write complete	40H		Yes	No
Write Error	41H		Yes	No
Write Error by protect	42H		Yes	No
Write Error by memory full	44H		Yes	No
Write Error by no expand memory	45H		Yes	No

B,Kit,Dr inst are only for K5000W

(Combi is changed to Multi on K5000S)

D is only for K5000S/R

E,F are only when ME-1 inserted

5.3 Dump command table

K5000W

		1st,2nd,3rd	4th	5th	6th	7th	8th	9th	10th
One	ADD Bank A	f0H,40H,ch	20H	00H	0aH	00H	00H	sub1	dt
	PCM Bank B	f0H,40H,ch	20H	00H	0aH	00H	01H	sub1	dt
	exp Bank E	f0H,40H,ch	20H	00H	0aH	00H	03H	sub1	dt
	exp Bank F	f0H,40H,ch	20H	00H	0aH	00H	04H	sub1	dt
	dr kit	f0H,40H,ch	20H	00H	0aH	10H	dt		
	dr inst	f0H,40H,ch	20H	00H	0aH	11H	dt		
	combi	f0H,40H,ch	20H	00H	0aH	20H	sub1	dt	
Block	ADD Bank A	f0H,40H,ch	21H	00H	0aH	00H	00H	sub1	sub2
	PCM Bank B	f0H,40H,ch	21H	00H	0aH	00H	01H	dt	dt
	exp Bank E	f0H,40H,ch	21H	00H	0aH	00H	03H	sub1	sub2
	exp Bank F	f0H,40H,ch	21H	00H	0aH	00H	04H	sub1	sub2
	dr inst	f0H,40H,ch	21H	00H	0aH	11H	dt		
	combi	f0H,40H,ch	21H	00H	0aH	20H	dt		

K5000S/R

		1st,2nd,3rd	4th	5th	6th	7th	8th	9th	10th
One	ADD Bank A	f0H,40H,ch	20H	00H	0aH	00H	00H	sub1	dt
	ADD Bank D	f0H,40H,ch	20H	00H	0aH	00H	02H	sub1	dt
	exp Bank E	f0H,40H,ch	20H	00H	0aH	00H	03H	sub1	dt
	exp Bank F	f0H,40H,ch	20H	00H	0aH	00H	04H	sub1	dt
	Multi	f0H,40H,ch	20H	00H	0aH	20H	sub1	dt	
Block	ADD Bank A	f0H,40H,ch	21H	00H	0aH	00H	00H	sub1	sub2
	ADD Bank D	f0H,40H,ch	21H	00H	0aH	00H	02H	sub1	sub2
	exp Bank E	f0H,40H,ch	21H	00H	0aH	00H	03H	sub1	sub2
	exp Bank F	f0H,40H,ch	21H	00H	0aH	00H	04H	sub1	sub2
	Multi	f0H,40H,ch	21H	00H	0aH	20H	dt		

ch:channel no.(0-0fH)
sub1:Sub1 command
sub2:Sub2 command
dt:data

5.4 parameter change comand table

K5000W

		1st - 6th	7th	8th	9th	10th	11th	12th	13th	14th
		f0H,40H,ch,10H,00H,0aH	sub1	sub2	sub3	sub4	sub5	dt	dt	f7
single	cmn		01H	00H	00H	00H	0-29H	dtH	dtL	
	src		01H	01H	xx	00H	0-55H	dtH	dtL	
add	hckit		02H	40H	xx	00H	0-23H	dtH	dtL	
	HC code1		02H	41H	xx	yy	00H	00H	dtL	
	HC code2		02H	42H	xx	yy	00H	00H	dtL	
	FF		02H	43H	xx	yy	00H	00H	dtL	
	HE		02H	44H	xx	yy	0-8H	dtH	dtL	
	HC Morf		02H	45H	xx	yy	00H	00H	dtL	
	Morf exec		02H	46H	xx	00H	00H	00H	01H	
Dr kit	Kit common		00H	00H	00H	00H	0-0fH	dtH	dtL	
	Kit inst selct		00H	01H	tt	00H	00H	dtH	dtL	
Dr inst	Dr inst cmn		10H	00H	00H	00H	0-04H	dtH	dtL	
	Dr inst src		10H	01H	00H	00H	0-14H	dtH	dtL	
Combi	Combi cmn		04H	00H	00H	00H	0-10H	dtH	dtL	
	Combi sect		04H	01H	ss	00H	0-0aH	dtH	dtL	
Effect	Effect Algo		03H	00H	00H	00H	00H	dtH	dtL	
	Effect para		03H	00H	ee	00H	0-05H	dtH	dtL	
	Eq para		03H	01H	00H	00H	0-06H	dtH	dtL	

K5000S/R

		1st - 6th	7th	8th	9th	10th	11th	12th	13th	14th
		f0H,40H,ch,10H,00H,0aH	sub1	sub2	sub3	sub4	sub5	dt	dt	f7
single	cmn		01H	00H	00H	00H	0-29H	dtH	dtL	
	src		01H	01H	xx	00H	0-55H	dtH	dtL	
add	hckit		02H	40H	xx	00H	0-23H	dtH	dtL	
	HC code1		02H	41H	xx	yy	00H	00H	dtL	
	HC code2		02H	42H	xx	yy	00H	00H	dtL	
	FF		02H	43H	xx	yy	00H	00H	dtL	
	HE		02H	44H	xx	yy	0-8H	dtH	dtL	
	HC Morf		02H	45H	xx	yy	00H	00H	dtL	
	Morf exec		02H	46H	xx	00H	00H	00H	01H	
Multi	Multi cmn		04H	00H	00H	00H	0-10H	dtH	dtL	
	Multi sect		04H	01H	ss	00H	0-0aH	dtH	dtL	
Effect	Effect Algo		03H	00H	00H	00H	00H	dtH	dtL	
	Effect para		03H	00H	ee	00H	0-05H	dtH	dtL	
	Eq para		03H	01H	00H	00H	0-06H	dtH	dtL	
Arpeggio	control		60H	0-30H	00H	00H	00H	dtH	dtL	

xx:src no.(0-05H)
yy:harm no.(0-3fH)
tt:note select(0-40H)
ss:section No.(0-03H)
ee:01H=Reverb,02H-05H=Effect1-4
dtL:data low
dtH:data High

Kawai Musical Inst. Mfg. Co., Ltd.
OW622VER2.0-L 9701
Printed in Japan