VIVO SX8 MIDI IMPLEMENTATION

1. Received data

■ Channel Voice Messages

● Note off

Status	2nd byte	3rd byte
8nH	kkH	ccH

n= MIDI channel number: 0H~FH (Ch.1~16)

kk= note number: 00H~7FH (0~127)

cc= note off velocity: 00H~7FH (0~127)

● Note on

Status	2nd byte	3rd byte
9nH	kkH	vvH

n= MIDI channel number: 0H~FH (Ch.1~16)

kk= note number: 00H~7FH (0~127)

vv= note off velocity: 00H~7FH (0~127)

• Not received when Rx.STATUS= OFF. (Initial value is ON)

■ Control Change

● Bank Sound Select (Controller number 0, 32)

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

n= MIDI channel number: 0H~FH (Ch.1~16)

mm= Bank number MSB: 00H~7FH (Initial value= 00H)

ll= Bank number LSB: 00H~7FH (Initial value= 00H)

• Not received when "PG" Rx is Off.

● Modulation (Controller number 1)

Status	2nd byte	3rd byte
BnH	01H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16)

vv= Modulation depth: 00H~7FH (0~127)

• Not received when Rx.MODULATION= OFF (Initial value is ON).

● Volume (Controller number 7)

Status	2nd byte	3rd byte
BnH	07H	vvH

n= MIDI channel number 0H~FH (Ch.1~16)

vv= Volume: 00H~7FH (0~127),

• Not received when Rx.VOLUME= OFF (Initial value is ON).

● Panpot (Controller number 10)

Status	2nd byte	3rd byte
BnH	0AH	vvH

n= MIDI channel number: 0H~FH (Ch.1~16)

vv= pan: 00H~40H~7FH (Left~Center~Right). Initial value= 40H (Center)

• Not received when "Panpot" RX is Off

● Expression (Controller number 11)

Status	2nd byte	3rd byte
BnH	0BH	vvH

n= MIDI channel number: 0H~FH (Ch.1~16)

vv= Expression: 00H~7FH (0~127), Initial value= 7FH (127)

• Not received when "Expression" RX is Off.

● Hold (Controller number 64)

Status	2nd byte	3rd byte
BnH	40H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16)

vv= Control value: 00H~7FH (0~127)

• Not received when "Hold" RX is Off.

● Sostenuto (Controller number 66)

Status	2nd byte	3rd byte
BnH	42H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16)

vv= Control value: 00H~7FH (0~127) 0~63= OFF, 64~127= ON

• Not received when "Sostenuto" RX is Off.

● Soft (Controller number 67)

Status	2nd byte	3rd byte
BnH	43H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16)

vv= Control value: 00H~7FH (0~127) 0~63= OFF, 64~127= ON

• Not received when "Soft" RX is Off.

● Reverb Send Level (Controller number 91)

Status	2nd byte	3rd byte
BnH	5BH	vvH

n= MIDI channel number: 0H~FH (Ch.1~16)

vv= Reverb Send Level: 00H~7FH (0~127)

• This message adjusts the Reverb Send Level of each Part.

• Not received when "Reverb" RX is Off.

● Program Change

Status	2nd byte
CnH	ppH

n= MIDI channel number: 0H~FH (Ch.1~16)

pp= Program number: 00H~7FH (prog.1~prog.128)

• Not received when "PG" RX is Off.

● Pitch Bend Change

Status	2nd byte	3rd byte
EnH	llH	mmH

n= MIDI channel number: 0H~FH (Ch.1~16)

mm, ll= Pitch Bend value: 00 00H~40 00H~7F 7FH (–8192~0~+8191)

• Not received when "PB " RX is Off.

● AFTERTOUCH (Channel Pressure)

Status	2nd byte
DnH	vvH

n= MIDI channel number: 0H~FH (Ch.1~16)

vv= value: 00H~7FH (0~127)

• Not received when "Aftertouch" RX is Off.

• The Aftertouch will affect to all notes received in that channel.

■ Channel Mode Messages

● All Sounds Off (Controller number 120)

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

n= MIDI channel number: 0H~FH (Ch.1~16)

When the message is received, all notes currently sounding on the corresponding channel will be turned Off.

● Reset All Controllers (Controller number 121)

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

n= MIDI channel number: 0H~FH (Ch.1~16)

• When this message is received, the following controllers will be set to their reset values.

Controller Reset value:

Pitch Bend Change +/-0 (center)

Modulation 0 (off)

Expression 127 (max)

Hold 1 0 (off)

Sostenuto 0 (off)

Soft 0 (off)

● All Notes Off (Controller number 123)

Status	2nd byte	3rd byte
BnH	7BH	00H

n= MIDI channel number: 0H~FH (Ch.1~16)

When All Notes Off is received, all notes on the corresponding channel will be turned off. However, if Hold 1 or Sostenuto is ON, the sound will be continued until these are turned off.

■ Memory RX

Midi Message	***Value***	***Memory***
PG	0 ~ 79	NUMBER: 1 ~ 80

• Default MIDI channel is 15

Example:

• to receive Memory 1 send PG=0

• to receive Memory 43 send PG= 42

• Not received when "Memory RX Status" is Off.

■ TONE WHEEL MIDI Messages

● UPPER TW 16' (Controller number 16)

Status	2nd byte	3rd byte
BnH	10H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

● UPPER TW 5 1/3'(Controller number 17)

Status	2nd byte	3rd byte
BnH	11H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

● UPPER TW 8' (Controller number 18)

Status	2nd byte	3rd byte
BnH	12H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

UPPER TW 4'(Controller number 19)

Status	2nd byte	3rd byte
BnH	13H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

● **UPPER TW 2 2/3' (Controller number 20)**

Status 2nd byte 3rd byte

BnH 14H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

● **UPPER TW 2' (Controller number 21)**

Status 2nd byte 3rd byte

BnH 15H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 2nd byte 3rd byte

0H = 0, 10H = 1, 2 15H vvH

• Not received when "Organ Control - Status" RX is Off.

● **UPPER TW 1 3/5' (Controller number 22)**

Status 2nd byte 3rd byte

BnH 16H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

● **UPPER TW 1 1/3' (Controller number 23)**

Status 2nd byte 3rd byte

BnH 17H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

● **UPPER TW 1' (Controller number 24)**

Status 2nd byte 3rd byte

BnH 18H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

● **LOWER TW 16' (Controller number 70)**

Status 2nd byte 3rd byte

BnH 46H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

● **LOWER TW 5 1/3'(Controller number 71)**

Status 2nd byte 3rd byte

BnH 47H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

● **LOWER TW 8' (Controller number 72)**

Status 2nd byte 3rd byte

BnH 48H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

● **LOWER TW 4'(Controller number 73)**

Status 2nd byte 3rd byte

BnH 49H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

● **LOWER TW 2 2/3' (Controller number 74)**

Status 2nd byte 3rd byte

BnH 4AH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

● **LOWER TW 2' (Controller number 75)**

Status 2nd byte 3rd byte

BnH 4BH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

● **LOWER TW 1 3/5' (Controller number 76)**

Status 2nd byte 3rd byte

BnH 4CH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

● **LOWER TW 1 1/3' (Controller number 77)**

Status 2nd byte 3rd byte

BnH 4DH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

LOWER TW 1' (Controller number 78)

Status 2nd byte 3rd byte

BnH 4EH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

PEDAL TW 16' (Controller number 14)

Status 2nd byte 3rd byte

BnH 0EH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

PEDAL TW 5 1/3'(Controller number 15)

Status 2nd byte 3rd byte

BnH 0FH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

PEDAL TW 8' (Controller number 25)

Status 2nd byte 3rd byte

BnH 19H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

PEDAL TW 4'(Controller number 26)

Status 2nd byte 3rd byte

BnH 1AH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

● **PEDAL TW 2 2/3' (Controller number 27)**

Status 2nd byte 3rd byte

BnH 1BH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

● **PEDAL TW 2' (Controller number 28)**

Status 2nd byte 3rd byte

BnH 1CH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

● **PEDAL TW 1 3/5' (Controller number 29)**

Status 2nd byte 3rd byte

BnH 1DH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

● **PEDAL TW 1 1/3' (Controller number 30)**

Status 2nd byte 3rd byte

BnH 1EH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

● **PEDAL TW 1' (Controller number 31)**

Status 2nd byte 3rd byte

BnH 1FH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not received when "Organ Control - Status" RX is Off.

● **TW Percussion ON/OFF (Controller number 87)**

Status 2nd byte 3rd byte

BnH 57H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H-7FH (0-127)

00H = Off, 7FH = On

• Not received when "Organ Control - Status" RX is Off.

● TW Percussion NORMAL/SOFT (Controller number 88)

Status	2nd byte	3rd byte
BnH	58H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = Normal, 7FH = Soft

• Not received when "Organ Control - Status" RX is Off.

● TW Percussion Time SLOW/FAST (Controller number 89)

Status	2nd byte	3rd byte
BnH	59H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = Slow, 7FH = Fast

• Not received when "Organ Control - Status" RX is Off.

● TW Percussion Harmonic 2nd/3rd (Controller number 95)

Status	2nd byte	3rd byte
BnH	5FH	vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = 2nd, 7FH = 3rd

• Not received when "Organ Control - Status" RX is Off.

● TW Vibrato Mode (Controller number 84)

Status	2nd byte	3rd byte
BnH	54H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = 2nd, 7FH = 3rd

• Not received when "Organ Control - Status" RX is Off.

● TW Vibrato On/Off (Controller number 69)

Status	2nd byte	3rd byte
BnH	45H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = 2nd, 7FH = 3rd

• Not received when "Organ Control - Status" RX is Off.

● TW Rotary On/Off (Controller number 80)

Status	2nd byte	3rd byte
BnH	50H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = 2nd, 7FH = 3rd

• Not received when "Organ Control - Status" RX is Off.

● TW Rotary Brake On/Off (Controller number 81)

Status	2nd byte	3rd byte
BnH	51H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = 2nd, 7FH = 3rd

• Not received when "Organ Control - Status" RX is Off.

TW Rotary Slow/Fast (Controller number 82)

Status	2nd byte	3rd byte
BnH	52H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = 2nd, 7FH = 3rd

• Not received when "Organ Control - Status" RX is Off.

● TW Overdrive On/Off (Controller number 83)

Status	2nd byte	3rd byte
BnH	53H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = 2nd, 7FH = 3rd

• Not received when "Organ Control - Status" RX is Off.

● TW Overdrive Level (Controller number 90)

Status	2nd byte	3rd byte
BnH	5AH	vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = 2nd, 7FH = 3rd

• Not received when "Organ Control - Status" RX is Off.

● TW Overdrive Drive (Controller number 92)

Status	2nd byte	3rd byte
BnH	5CH	vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = 2nd, 7FH = 3rd

• Not received when "Organ Control - Status" RX is Off.

● TW Overdrive Tone (Controller number 94)

Status	2nd byte	3rd byte
BnH	5EH	vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = 2nd, 7FH = 3rd

• Not received when "Organ Control - Status" RX is Off.

2.Trasmitted data

■ Control Change

● Bank Select (Controller number 0, 32)

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

n= MIDI channel number: 0H~FH (Ch.1~16)

mm= Bank number MSB: 00H~7FH

ll= Bank number LSB: 00H~7FH

• Not transmitted when "PG" Tx is Off.

● Modulation (Controller number 1)

Status	2nd byte	3rd byte
BnH	01H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16)

vv= Modulation depth: 00H~7FH (0~127)

• Not transmitted when "Modulation" TX is OFF.

● Volume (Controller number 7)

Status	2nd byte	3rd byte
BnH	07H	vvH

n= MIDI channel number 0H~FH (Ch.1~16)

vv= Volume: 00H~7FH (0~127), Initial value= 64H (100)

• Not transmitted when "Volume" TX is off.

● Pan (Controller number 10)

Status	2nd byte	3rd byte
BnH	0AH	vvH

n= MIDI channel number: 0H~FH (Ch.1~16)

vv= pan: 00H~40H~7FH (Left~Center~Right),

• Not transmitted when "PanPot" RX is Off

● Expression (Controller number 11)

Status	2nd byte	3rd byte
BnH	0BH	vvH

n= MIDI channel number: 0H~FH (Ch.1~16)

vv= Expression: 00H~7FH (0~127), Initial value= 7FH (127)

• This adjusts the volume of a Part. It can be used independently from volume messages. Expression messages are used for musical expression within a performance,

e.g., expression pedal movements, crescendo and decrescendo.

• Not transmitted when "Expression" TX is Off.

●Hold (Controller number 64)

Status	2nd byte	3rd byte
BnH	40H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16)

vv= Control value: 00H~7FH (0~127)

• Not transmitted when "Hold" TX is Off.

●Sostenuto (Controller number 66)

Status	2nd byte	3rd byte
BnH	42H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16)

vv= Control value: 00H~7FH (0~127) 0~63= OFF, 64~127= ON

• Not transmitted when "Sostenuto" TX is Off.

●Soft (Controller number 67)

Status	2nd byte	3rd byte
BnH	43H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16)

vv= Control value: 00H~7FH (0~127) 0~63= OFF, 64~127= ON

• Not transmitted when "Soft" TX is Off.

●Reverb Send Level (Controller number 91)

Status	2nd byte	3rd byte
BnH	5BH	vvH

n= MIDI channel number: 0H~FH (Ch.1~16)

vv= Reverb Send Level: 00H~7FH (0~127)

• This message adjusts the Reverb Send Level of each Part.

• Not transmitted when "Reverb" TX is Off.

●Program Change

Status	2nd byte
CnH	ppH

n= MIDI channel number: 0H~FH (Ch.1~16)

pp= Program number: 00H~7FH (prog.1~prog.128)

• Not transmitted when "PG" TX is Off.

● Pitch Bend Change

Status	2nd byte	3rd byte
EnH	llH	mmH

n= MIDI channel number: 0H~FH (Ch.1~16)

mm, ll= Pitch Bend value: 00 00H~40 00H~7F 7FH (–8192~0~+8191)

• Not trasmitted when "PB " TX is Off.

● **AFTERTOUCH (Channel Pressure)**

Status 2nd byte

DnH vvH

n= MIDI channel number: 0H~FH (Ch.1~16)

vv= value: 00H~7FH (0~127)

• Not transmitted when "Aftertouch" TX is Off.

• The Aftertouch will affect to all notes playing in that channel.

■ Memory TX

Midi Message	*Value*	*Memory*
PG	0 ~ 79	NUMBER: 1 ~ 80

• Default MIDI channel is 15

• Not transmitted when "Memory TX Status" is Off.

■ TONE WHEEL MIDI Messages

● **UPPER TW 16' (Controller number 16)**

Status 2nd byte 3rd byte

BnH 10H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **UPPER TW 5 1/3'(Controller number 17)**

Status 2nd byte 3rd byte

BnH 11H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **UPPER TW 8' (Controller number 18)**

Status 2nd byte 3rd byte

BnH 12H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **UPPER TW 4'(Controller number 19)**

Status 2nd byte 3rd byte

BnH 13H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **UPPER TW 2 2/3' (Controller number 20)**

Status 2nd byte 3rd byte

BnH 14H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **UPPER TW 2' (Controller number 21)**

Status 2nd byte 3rd byte

BnH 15H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **UPPER TW 1 3/5' (Controller number 22)**

Status 2nd byte 3rd byte

BnH 16H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **UPPER TW 1 1/3' (Controller number 23)**

Status 2nd byte 3rd byte

BnH 17H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **UPPER TW 1' (Controller number 24)**

Status 2nd byte 3rd byte

BnH 18H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **LOWER TW 16' (Controller number 70)**

Status 2nd byte 3rd byte

BnH 46H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **LOWER TW 5 1/3'(Controller number 71)**

Status 2nd byte 3rd byte

BnH 47H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **LOWER TW 8' (Controller number 72)**

Status 2nd byte 3rd byte

BnH 48H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **LOWER TW 4'(Controller number 73)**

Status 2nd byte 3rd byte

BnH 49H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **LOWER TW 2 2/3' (Controller number 74)**

Status 2nd byte 3rd byte

BnH 4AH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **LOWER TW 2' (Controller number 75)**

Status 2nd byte 3rd byte

BnH 4BH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **LOWER TW 1 3/5' (Controller number 76)**

Status 2nd byte 3rd byte

BnH 4CH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **LOWER TW 1 1/3' (Controller number 77)**

Status 2nd byte 3rd byte

BnH 4DH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **LOWER TW 1' (Controller number 78)**

Status 2nd byte 3rd byte

BnH 4EH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **PEDAL TW 16' (Controller number 14)**

Status 2nd byte 3rd byte

BnH 0EH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **PEDAL TW 5 1/3'(Controller number 15)**

Status 2nd byte 3rd byte

BnH 0FH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **PEDAL TW 8' (Controller number 25)**

Status 2nd byte 3rd byte

BnH 19H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **PEDAL TW 4'(Controller number 26)**

Status 2nd byte 3rd byte

BnH 1AH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **PEDAL TW 2 2/3' (Controller number 27)**

Status 2nd byte 3rd byte

BnH 1BH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **PEDAL TW 2' (Controller number 28)**

Status 2nd byte 3rd byte

BnH 1CH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **PEDAL TW 1 3/5' (Controller number 29)**

Status 2nd byte 3rd byte

BnH 1DH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **PEDAL TW 1 1/3' (Controller number 30)**

Status 2nd byte 3rd byte

BnH 1EH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **PEDAL TW 1' (Controller number 31)**

Status 2nd byte 3rd byte

BnH 1FH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

0H = 0, 10H = 1, 20H = 2, 30H = 3, 40H = 4, 50H = 5, 60H = 7, 70H = 7, 7FH = 8

• Not transmitted when "Organ Control - Status" TX is Off.

● **TW Percussion ON/OFF (Controller number 87)**

Status 2nd byte 3rd byte

BnH 57H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H-7FH (0-127)

00H = Off, 7FH = On

• Not received when "Organ Control - Status" RX is Off.

● **TW Percussion NORMAL/SOFT (Controller number 88)**

Status 2nd byte 3rd byte

BnH 58H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = Normal, 7FH = Soft

• Not received when "Organ Control - Status" RX is Off.

● **TW Percussion Time SLOW/FAST (Controller number 89)**

Status 2nd byte 3rd byte

BnH 59H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = Slow, 7FH = Fast

• Not received when "Organ Control - Status" RX is Off.

● **TW Percussion Harmonic 2nd/3rd (Controller number 95)**

Status 2nd byte 3rd byte

BnH 5FH vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = 2nd, 7FH = 3rd

• Not transmitted when "Organ Control - Status" TX is Off.

● **TW Rotary On/Off (Controller number 80)**

Status 2nd byte 3rd byte

BnH 50H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = 2nd, 7FH = 3rd

• Not transmitted when "Organ Control - Status" TX is Off.

● **TW Rotary Slow/Fast (Controller number 82)**

Status 2nd byte 3rd byte

BnH 52H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = 2nd, 7FH = 3rd

• Not transmitted when "Organ Control - Status" TX is Off.

● **TW Rotary Brake On/Off (Controller number 81)**

Status 2nd byte 3rd byte

BnH 51H vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = 2nd, 7FH = 3rd

• Not transmitted when "Organ Control - Status" TX is Off.

● **TW Vibrato Mode (Controller number 84)**

Status	2nd byte	3rd byte
BnH	54H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = 2nd, 7FH = 3rd

• Not transmitted when "Organ Control - Status" TX is Off.

● **TW Vibrato On/Off (Controller number 69)**

Status	2nd byte	3rd byte
BnH	45H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = 2nd, 7FH = 3rd

• Not transmitted when "Organ Control - Status" TX is Off.

● **TW Overdrive On/Off (Controller number 83)**

Status	2nd byte	3rd byte
BnH	53H	vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = 2nd, 7FH = 3rd

• Not transmitted when "Organ Control - Status" TX is Off.

● **TW Overdrive Drive (Controller number 92)**

Status	2nd byte	3rd byte
BnH	5CH	vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = 2nd, 7FH = 3rd

• Not transmitted when "Organ Control - Status" TX is Off.

● **TW Overdrive Level (Controller number 90)**

Status	2nd byte	3rd byte
BnH	5AH	vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = 2nd, 7FH = 3rd

• Not transmitted when "Organ Control - Status" TX is Off.

● **TW Overdrive Tone (Controller number 94)**

Status	2nd byte	3rd byte
BnH	5EH	vvH

n= MIDI channel number: 0H~FH (Ch.1~16); default midi ch.14

vv= Control value: 00H~7FH (0~127)

00H = 2nd, 7FH = 3rd

• Not transmitted when "Organ Control - Status" TX is Off.