YAMAHA

# Clavinova®

## MIDI Data Format

MIDI-Datenformat

Format des données MIDI

Formato de datos MIDI

CLP-470
CLP-440
CLP-430
CLP-S408
CLP-S406
CLP-465GP

EN
DE
FR
ES

# MIDI Channel Message

●: Can be transmitted and recognized.
▲: Cannot be transmitted by the panel operations, but can be transmitted by song playback data.
×: Cannot be transmitted or received.

| MIDI Events | Status byte | | 1st Data byte | | | 2nd Data byte | | | Transmitted | Recognized |
|---|---|---|---|---|---|---|---|---|---|---|
| | Status | | Data | (HEX) | Parameter | Data | (HEX) | Parameter | | |
| Key Off | 8nH | (n: channel no.) | kk | | Key no. (0 - 127) | vv | | Velocity (0 - 127) | ● | ● |
| Key On | 9nH | | kk | | Key no. (0 - 127) | vv | | Key On: vv = 1 - 127<br>Key Off: vv = 0 | ● | ● |
| Control Change | BnH | | 0 | (00H) | Bank Select MSB | 0 | (00H) | Normal | ● | ● |
| | | | 32 | (20H) | Bank Select LSB | 0 - 127 | | | ● | ● |
| | | | 1 | (01H) | Modulation | 0 - 127 | (...7FH) | | ● | ● |
| | | | 6 | (06H) | Data Entry MSB | 0 - 127 | (...7FH) | | ● | ● |
| | | | 38 | (26H) | Data Entry LSB | 0 - 127 | (...7FH) | | | |
| | | | 7 | (07H) | Main Volume | 0 - 127 | (...7FH) | | ● | ● |
| | | | 10 | (0AH) | Panpot | 0 - 127 | (...7FH) | | ▲ | ● |
| | | | 11 | (0BH) | Expression | 0 - 127 | (...7FH) | | ● | ● |
| | | | 64 | (40H) | Damper (Sustain) | 0 - 127 | (...7FH) | | ● | ● |
| | | | 66 | (42H) | Sostenuto | 0 - 127 | (...7FH) | | ● | ● |
| | | | 67 | (43H) | Soft Pedal | 0 - 127 | (...7FH) | | ● | ● |
| | | | 71 | (47H) | Harmonic Content | 0 - 127 | (...7FH) | | ▲ | ● |
| | | | 72 | (48H) | Release Time | 0 - 127 | (...7FH) | | ▲ | ● |
| | | | 73 | (49H) | Attack Time | 0 - 127 | (...7FH) | | ▲ | ● |
| | | | 74 | (4AH) | Brightness | 0 - 127 | (...7FH) | | ▲ | ● |
| | | | 84 | (54H) | Portamento Control | 0 - 127 | (...7FH) | | ▲ | ● |
| | | | 91 | (5BH) | Effect1 Depth<br>(Reverb Send Level) | 0 - 127 | (...7FH) | | ● | ● |
| | | | 93 | (5DH) | Effect3 Depth<br>(Chorus Send Level) | 0 - 127 | (...7FH) | | ● | ● |
| | | | 96 | (60H) | Increment | 0 - 127 | (...7FH) | | ▲ | ● |
| | | | 97 | (61H) | Decrement | 0 - 127 | (...7FH) | | | |
| | | | 100 | (64H) | RPN LSB | 0 - 127 | (...7FH) | | ● | ● |
| | | | 101 | (65H) | RPN MSB | 0 - 127 | (...7FH) | | | |
| Mode Message | BnH | | 120 | (78H) | All Sound Off | 0 | | | ▲ | ● |
| | | | 121 | (79H) | Reset All Controller | 0 | | | ▲ | ● |
| | | | 122 | (7AH) | Local Control | 0: OFF<br>7F: ON | | | × | ● |
| | | | 123 | (7BH) | All Note Off | 0 | | | ▲ | ● |
| | | | 124 | (7CH) | OMNI OFF | 0 | | | × | ● |
| | | | 125 | (7DH) | OMNI ON | 0 | | | × | ● |
| | | | 126 | (7EH) | MONO | 0 - 16 | (...10H) | | × | ● |
| | | | 127 | (7FH) | POLY | 0 | | | × | ● |
| | Note<br>This instrument is fixed to Multi-timbral Mode and Poly Mode, since these modes do not change even when Omni on/ omni off/ Mono/Poly Mode messages are received. | | | | | | | | | |
| Program Change | CnH | | pp | | 0 - 127 | – | | – | ● | ● |
| Channel After Touch | DnH | | vv | | | – | | | × | ● |
| Polyphonic After Touch | AnH | | kk | | | vv | | | × | × |
| Pitch Bend Change | EnH | | cc | | LSB | dd | | MSB | ▲ | ● |
| Realtime Message | F8H | MIDI Clock | – | | | – | | | ● | × |
| | FAH | Start | – | | | – | | | ● | ● |
| | FBH | Continue | – | | | – | | | × | × |
| | FCH | Stop | – | | | – | | | ● | ● |
| | FEH | Active Sens | – | | | – | | | ● | ● |
| | FFH | System Reset | – | | | – | | | × | × |
| | Note<br>When an Overrun or Framing error occurs, the Damper, Sostenuto and Soft are set to off in all channels, and All Notes Off is executed. | | | | | | | | | |

## PROGRAM CHANGE

### CLP-470/440/S408/S406

P.C.# =Program Change Number

| Voice Name | | MSB | LSB | P.C.# (0–127) |
|---|---|---|---|---|
| GRAND PIANO 1 | | 108 | 0 | 0 |
| | VARIATION | 108 | 1 | 0 |
| GRAND PIANO 2 | | 108 | 2 | 0 |
| | VARIATION | 108 | 3 | 0 |
| GRAND PIANO 3 | | 108 | 0 | 1 |
| | VARIATION | 108 | 1 | 1 |
| GRAND PIANO 4 | | 108 | 2 | 1 |
| | VARIATION | 108 | 3 | 1 |
| E.PIANO 1 | | 108 | 0 | 5 |
| | VARIATION | 108 | 0 | 88 |
| E.PIANO 2 | | 108 | 0 | 4 |
| | VARIATION | 108 | 1 | 4 |
| HARPSICHORD | | 108 | 0 | 6 |
| | VARIATION | 108 | 1 | 6 |
| PIPE ORGAN | | 108 | 1 | 19 |
| | VARIATION | 108 | 0 | 19 |
| JAZZ ORGAN | | 108 | 0 | 16 |
| | VARIATION | 108 | 1 | 16 |
| STRINGS | | 108 | 0 | 48 |
| | VARIATION | 108 | 0 | 49 |
| CHOIR | | 108 | 0 | 52 |
| | VARIATION | 108 | 1 | 52 |
| VIBES/GUITAR | | 108 | 0 | 11 |
| | VARIATION | 108 | 0 | 24 |
| WOOD BASS | | 108 | 0 | 32 |
| | VARIATION | 108 | 1 | 32 |
| E.BASS | | 108 | 0 | 33 |
| | VARIATION | 108 | 0 | 35 |

### CLP-430/465GP

P.C.# =Program Change Number

| Voice Name | MSB | LSB | P.C.# (0–127) |
|---|---|---|---|
| GRAND PIANO 1 | 108 | 0 | 0 |
| GRAND PIANO 2 | 108 | 2 | 0 |
| GRAND PIANO 3 | 108 | 0 | 1 |
| GRAND PIANO 4 | 108 | 2 | 1 |
| E.PIANO 1 | 108 | 0 | 5 |
| E.PIANO 2 | 108 | 0 | 4 |
| HARPSICHORD | 108 | 0 | 6 |
| PIPE ORGAN 1 | 108 | 1 | 19 |
| PIPE ORGAN 2 | 108 | 0 | 19 |
| JAZZ ORGAN | 108 | 0 | 16 |
| STRINGS 1 | 108 | 0 | 48 |
| STRINGS 2 | 108 | 0 | 49 |
| CHOIR | 108 | 0 | 52 |
| VIBRAPHONE | 108 | 0 | 11 |

## Parameters controlled by RPN (Registered Parameter Numbers)

| RPN | | Data Entry | | Parameter | Data Range |
|---|---|---|---|---|---|
| MSB | LSB | MSB | LSB | | |
| 00H | 00H | mmH | – | Pitch Bend Sensitivity* | mm: 00H-18H (0...+24[semitones]) |
| 00H | 01H | mmH | llH | Fine Tune | mm ll: 00H 00H -100[cent]<br>...<br>mm ll: 40H 00H 0[cent]<br>...<br>mm ll: 7FH 7FH 100[cent] |
| 00H | 02H | mmH | – | Coarse Tune | mm: 28H-40H-58H<br>(-24...0...+24[semitones]) |
| 7FH | 7FH | – | – | Null | – |

*For some Piano and Harpsichord Voices, the pitch may not be changed according to the pitch bend setting range.

# MIDI Parameter Change Table

### MIDI PARAMETER CHANGE TABLE (XG SYSTEM)

| Address (H) | | | Size (H) | Data (H) | Parameter | Transmitted | Recognized | Description | Default value (H) |
|---|---|---|---|---|---|---|---|---|---|
| 00 | 00 | 00<br>01<br>02<br>03 | 4 | 0000 - 07FF | MASTER TUNE | ● | ● | -102.4 - +102.3[cent]<br>1st bit3 - 0 ➜ bit15 - 12<br>2nd bit3 - 0 ➜ bit11 - 8<br>3rd bit3 - 0 ➜ bit7 - 4<br>4th bit3 - 0 ➜ bit3 - 0 | 00 04 00 00 |
| | | 04 | 1 | 00 - 7F | MASTER VOLUME | × | ● | 0 - 127 | 7F |
| | | 05 | 1 | 00 - 7F | (MASTER ATTENUATOR) | × | × | | |
| | | 06 | 1 | 28 - 58 | TRANSPOSE | × | × | -12 - +12[semitones]<br>(MIDI value = 34H – 4CH) | 40 |
| | | 7D | | n | DRUM SETUP RESET | × | × | n = Drum setup number | |
| | | 7E | | 00 | XG SYSTEM ON | ● (*1) | ● | 00 = XG sytem ON | |
| | | 7F | | 00 | ALL PARAMETER RESET | × | ● (*2) | 00 = ON | |

TOTAL SIZE 7

(*1) Output when Init Send is transmitted.

(*2) When "XG ALL PARAMETER RESET" message is received, generates "XG SYSTEM ON" on the tone generator and generates reinitialization of the tuning value on the panel.

### MIDI PARAMETER CHANGE TABLE (EFFECT 1)

| Address (H) | | | Size (H) | Data (H) | Parameter | Transmitted | Recognized | Description | Default |
|---|---|---|---|---|---|---|---|---|---|
| 02 | 01 | 00 | 2 | 00 - 7F<br>00 - 7F | REVERB TYPE MSB<br>REVERB TYPE LSB | ● | ● | Refer to Effect MIDI Map (page 5) | 01 (= HALL1)<br>00 |
| 02 | 01 | 20 | 2 | 00 - 7F<br>00 - 7F | CHORUS TYPE MSB<br>CHORUS TYPE LSB | ● | ● | Refer to Effect MIDI Map (page 5) | 41 (= CHORUS1)<br>00 |
| | | 22 | 1 | 00 - 7F | CHORUS PARAMETER 1 | ● | ● | | |
| | | 24 | 1 | 00 - 7F | CHORUS PARAMETER 3 | ● | ● | | |

### MIDI PARAMETER CHANGE TABLE (EFFECT 2)

| Address (H) | | | Size (H) | Data (H) | Parameter | Transmitted | Recognized | Description | Default |
|---|---|---|---|---|---|---|---|---|---|
| 03 | n | 00 | 2 | 00-7F<br>00-7F | INSERTION EFFECT TYPE MSB<br>INSERTION EFFECT TYPE LSB | ● | ● | | 05(=DELAY L,C,R)(*9)<br>00 |
| | | 0B | 1 | 00-7F | INSERTION EFFECT PARAMETER 10 | ● | ● | | |
| | | 0C | 1 | 00-7F | INSERTION EFFECT PART NUMBER | ● | ● | | |
| | | 10 | 1 | 00-7F | AC1 INSERTION CONTROL DEPTH | ● | ● | | |

### MIDI PARAMETER CHANGE TABLE (MULTI PART)

| Address (H) | | | Size (H) | Data (H) | Parameter | Transmitted | Recognized | Description | Default value (H) |
|---|---|---|---|---|---|---|---|---|---|
| 8 | nn | 07 | 1 | 00 - 05 | PART MODE | ● | ● | | |
| 00 | 00 | 0C | 1 | 00 - 7F | VELOCITY SENSE DEPTH | ● | ● | 0 - 127 | |
| | | 0D | 1 | 00 - 7F | VELOCITY SENSE OFFSET | ● | ● | 0 - 127 | |
| | | 11 | 1 | 00 - 7F | DRY LEVEL | ● | ● | 0 - 127 | 7F |
| | | 41 | 1 | 00 - 7F | SCALE TUNING C | ● | ● | | |
| | | 42 | 1 | 00 - 7F | SCALE TUNING C# | ● | ● | | |
| | | 43 | 1 | 00 - 7F | SCALE TUNING D | ● | ● | | |
| | | 44 | 1 | 00 - 7F | SCALE TUNING D# | ● | ● | | |
| | | 45 | 1 | 00 - 7F | SCALE TUNING E | ● | ● | | |
| | | 46 | 1 | 00 - 7F | SCALE TUNING F | ● | ● | | |
| | | 47 | 1 | 00 - 7F | SCALE TUNING F# | ● | ● | | |
| | | 48 | 1 | 00 - 7F | SCALE TUNING G | ● | ● | | |
| | | 49 | 1 | 00 - 7F | SCALE TUNING G# | ● | ● | | |
| | | 4A | 1 | 00 - 7F | SCALE TUNING A | ● | ● | | |
| | | 4B | 1 | 00 - 7F | SCALE TUNING A# | ● | ● | | |
| | | 4C | 1 | 00 - 7F | SCALE TUNING B | ● | ● | | |
| | | 59 | 1 | 00 - 5F | AC1 CONTROLLER NUMBER | ● | ● | 0…95 | |

# System Exclusive Messages

| MIDI EVENT | | Data Format | Transmitted | Recognized |
|---|---|---|---|---|
| Universal System Exclusive | MIDI Master Volume | F0H 7FH 7FH 04H 01H ll mm F7H<br>ll mm — Volume (mm = MSB, ll = LSB)<br>or<br>F0H 7FH XN 04H 01H ll mm F7H<br>XN — When N is received N = 0 - F, whichever is received. X = Ignored<br>ll mm — Volume (mm = MSB , ll = LSB) | × | ● |
| | GM System On | F0H 7EH 7FH 09H 01H F7H<br>or<br>F0H 7EH XN 09H 01H F7H<br>0xxxnnnn XN — When N is received N = 0 - F, whichever is received. X = Ignored. | ● | ● |
| XG | XG Parameter Change | F0H 43H 1nH 4CH hh mm ll dd … F7H<br>hh mm ll — Address<br>dd — Data | ● | ● |
| | XG Bulk Dump | F0H 43H 0nH 4CH aa bb hh mm ll dd … dd cc F7H<br>0n — Device Number n = 0 (send), 0 - f (receive)<br>aa bb — Byte Count (aa << 7) + bb<br>hh mm ll — Address<br>dd — Data<br>cc — Check SUM | × | ● |
| Clavinova compliance | Internal Clock | F0H 43H 73H 01H 02H F7H | × | × |
| | External Clock | F0H 43H 73H 01H 03H F7H | × | × |
| | String Resonance Depth | F0H 43H 73H 01H 50H 11H 0nH 02H dd F7<br>0n = Channel 00H ~ 0FH<br>dd = Depth 00H ~ 48H | ● | ● |
| | Sustain Sample Depth | F0H 43H 73H 01H 50H 11H 0nH 03H dd F7<br>0n = Channel 00H ~ 0FH<br>dd = Depth 00H ~ 48H | ● | ● |
| | Key Off Sampling Depth | F0H 43H 73H 01H 50H 11H 0nH 04H dd F7<br>0n = Channel 00H ~ 0FH<br>dd = Depth 00H ~ 50H | ● | ● |
| Others | Master Tune | F0H 43H 1n 27H 30H 00H 00H mm ll cc F7H<br>1n — Channel (0 (Send), 0 - f (receive) )<br>mm ll cc — (mm << 4) + ll (1step/1cent), cc = Ignored | × | ● |

Effect MIDI Map (Reverb)

| | MSB | LSB |
|---|---|---|
| ROOM | 02H | 10H |
| HALL1 | 01H | 10H |
| HALL2 | 01H | 11H |
| STAGE | 03H | 10H |
| OFF | 00H | 00H |

Effect MIDI Map (Effect)

| | MSB | LSB |
|---|---|---|
| CHORUS | 41H | 08H |
| PHASER | 48H | 11H |
| TREMOLO | 77H | 00H |
| ROTARY SP | 42H | 12H |
| OFF | 00H | 00H |

[ Digital Piano ] Date : 05-Oct-2010
Model CLP-470/440/430/S408/S406/465GP MIDI Implementation Chart Version : 1.2

| Function... | | Transmitted | Recognized | Remarks |
|---|---|---|---|---|
| Basic | Default | 1 - 16 | 1 - 16 | |
| Channel | Changed | O | O | |
| Mode | Default | 3 | 3 | |
| | Messages | X | X | |
| | Altered | ********** | X | |
| Note Number : True voice | | 0 - 127<br>********** | 0 - 127<br>0 - 127 | |
| Velocity | Note ON | O 9nH,v=1-127 | O 9nH,v=1-127 | |
| | Note OFF | O 8nH,v=1-127 | O 9nH,v=0 or 8nH | |
| After | Key's | X | O | |
| Touch | Ch's | X | O | |
| Pitch Bend | | X *1 | O 0 - 24 semitones | *2 |
| Control | 0,32 | O | O | Bank Select |
| Change | 1 | X *1 | O | Modulation |
| | 7 | O | O | Main Volume |
| | 10 | X *1 | O | Panpot |
| | 11 | O | O | Expression |
| | 6,38 | X *1 | O | Data Entry |
| | 64,66,67 | O | O | Pedal |
| | 71-74 | X *1 | O | |
| | 84 | O | O | Portamento Control |
| | 91,93 | O | O | Effect Depth |
| | 96-97 | X *1 | O | RPN Inc,Dec |
| | 100-101 | O | O | RPN LSB,MSB |
| Prog Change : True # | | O 0 - 127<br>********** | O 0 - 127 | |
| System Exclusive | | O | O | |
| Common : Song Pos. | | X | X | |
| : Song Sel. | | X | X | |
| : Tune | | X | X | |
| System : Clock | | O | X | |
| Real Time : Commands | | O | O | |
| : All Sound Off | | X | O (120,126,127) | |
| Aux : Reset All Cntrls | | X | O (121) | |
| : Local ON/OFF | | X | O (122) | |
| Mes- : All Notes OFF | | X | O (123-125) | |
| sages: Active Sense | | O | O | |
| : Reset | | X | X | |

Notes:

*1 These Control Change messages cannot be transmitted by panel operations, but can be transmitted by song playback data.

*2 For some Piano and Harpsichord Voices, the pitch may not be changed according to the pitch bend setting range.

Mode 1 : OMNI ON , POLY Mode 2 : OMNI ON ,MONO O : Yes
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF,MONO X : No

U.R.G., Digital Musical Instruments Division

A0