

ARIUS

YDP-160

YDP-140

Data List
Daten-Liste
Liste des données
Lista de datos

MIDI Data Format / MIDI-Datenformat / Format des données MIDI / Formato de datos MIDI

1. NOTE ON/OFF

Data format: [9nH] → [kkH] → [vvH]
 9nH = Note ON/OFF event (n = channel number)
 kkH = Note number (Transmit: 09H ~ 78H = A-2 ~ C8 /
 Receive: 00H ~ 7FH = C-2 ~ G8)
 vvH = Velocity (Key ON = 01H ~ 7FH, Key OFF = 00H)
 Data format: [8nH] → [kkH] → [vvH] (reception only)
 8nH = Note OFF event (n = channel number)
 kkH = Note number: 00H ~ 7FH = C-2 ~ G8)
 vvH = Velocity

2. CONTROL CHANGE

Data format: [BnH] → [ccH] → [vvH]
 BnH = Control change (n = channel number)
 ccH = Control number
 vvH = Data Range

(1) Bank Select

ccH	Parameter	Data Range(vvH)
00H	Bank Select MSB	00H:Normal
20H	Bank Select LSB	00H...7FH

Bank selection processing does not occur until receipt of next Program Change message.

(2) Modulation (reception only)

ccH	Parameter	Data Range (vvH)
01H	Modulation	00H...7FH

(3) Main Volume

ccH	Parameter	Data Range (vvH)
07H	Volume MSB	00H...7FH

(4) Panpot (reception only)

ccH	Parameter	Data Range (vvH)
0AH	Panpot	00H...7FH

(5) Expression

ccH	Parameter	Data Range (vvH)
0BH	Expression MSB	00H...7FH

(6) Damper

ccH	Parameter	Data Range (vvH)
40H	Damper MSB	00H...7FH

(7) Sostenuo

ccH	Parameter	Data Range (vvH)
42H	Sostenuo	00H-3FH:off, 40H-7FH:on

(8) Soft Pedal

ccH	Parameter	Data Range (vvH)
43H	Soft Pedal	00H-3FH:off, 40H-7FH:on

(9) Harmonic Content (reception only)

ccH	Parameter	Data Range (vvH)
47H	Harmonic Content	00H...7FH

(10) Release Time (reception only)

ccH	Parameter	Data Range (vvH)
48H	Release Time	00H...7FH

(11) Attack Time (reception only)

ccH	Parameter	Data Range (vvH)
49H	Attack Time	00H...7FH

(12) Brightness (reception only)

ccH	Parameter	Data Range (vvH)
4AH	Brightness	00H...7FH

(13) Portamento Control

ccH	Parameter	Data Range (vvH)
54H	Portamento	00H...7FH

(14) Effect1 Depth (Reverb Send Level)

ccH	Parameter	Data Range (vvH)
5BH	Effect1 Depth	00H...7FH

Adjusts the reverb send level.

(15) Effect3 Depth (Chorus Send Level)

ccH	Parameter	Data Range (vvH)
5DH	Chorus Depth	00H...7FH

(16) RPN

65H	RPN	MSB
64H	RPN	LSB
06H	Data Entry	MSB
26H	Data Entry	LSB
60H	Data	Increment
61H	Data	Decrement

* Parameters that are controllable with RPN

- Coarse Tune
- Fine Tune
- Pitch Bend Range

3. MODE MESSAGES

Data format: [BnH] → [ccH] → [vvH]
 BnH = Control event (n = channel number)
 ccH = Control number
 vvH = Data Range

(1) All Sound Off

ccH	Parameter	Data Range (vvH)
78H	All Sound Off	00H

(2) Reset All Controllers

ccH	Parameter	Data Range (vvH)
79H	Reset All Controllers	00H

Resets controllers as follows.

Controller	Value
Expression	127 (max)
Damper Pedal	0 (off)
Sostenuto	0 (off)
Soft Pedal	0 (off)

(3) Local Control (reception only)

ccH	Parameter	Data Range (vvH)
7AH	Local Control	00H (off), 7FH (on)

(4) All Notes Off

ccH	Parameter	Data Range (vvH)
7BH	All Notes Off	00H

Switches OFF all the notes that are currently ON on the specified channel. Any notes being held by the damper or sostenuto pedal will continue to sound until the pedal is released.

(5) Omni Off (reception only)

ccH	Parameter	Data Range (vvH)
7CH	Omni Off	00H

Same processing as for All Notes Off.

(6) Omni On (reception only)

ccH	Parameter	Data Range (vvH)
7DH	Omni On	00H

Same processing as for All Notes Off.

(7) Mono (reception only)

ccH	Parameter	Data Range (vvH)
7EH	Mono	00H

Same processing as for All Sound Off.

(8) Poly (reception only)

ccH	Parameter	Data Range (vvH)
7FH	Poly	00H

Same processing as for All Sound Off.

- When Control Change is turned OFF, Control Change messages will not be transmitted or received.
- Local on/off, OMNI on/off are not transmitted. (The appropriate note off number is supplied with "All Note Off" transmission).
- When a voice bank MSB/LSB is received, the number is stored in the internal buffer regardless of the received order, then the stored value is used to select the appropriate voice when a program change message is received.
- Poly mode is always active. This mode will not change when the instrument receives MONO/POLY mode message.

4. PROGRAM CHANGE

Data format: [CnH] → [ppH]

CnH = Program event (n = channel number)

ppH = Program change number

P.C.#=Program Change number

YDP-160	MSB	LSB	P.C.#
Grand Piano 1	0	122	1
Grand Piano 2	0	112	1
E.Piano 1	0	122	6
E.Piano 2	0	122	5
Harpsichord 1	0	122	7
Harpsichord 2	0	123	7
Vibraphone	0	122	12
Church Organ 1	0	123	20
Church Organ 2	0	122	20
Strings	0	122	49

YDP-140	MSB	LSB	P.C.#
Grand Piano 1	0	122	1
Grand Piano 2	0	112	1
E.Piano 1	0	122	6
Harpsichord	0	122	7
Church Organ	0	123	20
Strings	0	122	49

- When program change reception is turned OFF, no program change data is transmitted or received.
- When you specify a program change as a number in the range of 0-127, specify a number that is one less than the program change number listed above. For example, to specify program change number 1, you would specify program change 0.

5. Pitch Bend Change

[EnH] → [ccH] → [ddH]

ccH = LSB

ddH = MSB

6. SYSTEM REALTIME MESSAGES

[rrH]

F8H: Timing clock

FAH: Start

FCH: Stop

FEH: Active sensing

Data	Transmission	Reception
F8H	Transmitted every 96 clocks	Received as 96-clock tempo timing when MIDI clock is set to External.
FAH	Song start	Song start Not received when the MIDI clock is set to Internal.
FCH	Song stop	Song stop Not received when the MIDI clock is set to Internal.
FEH	Transmitted every 200 milliseconds	If a signal is not received via MIDI for more than 400 milliseconds, the same processing will take place for All Sound Off, All Notes Off and Reset All Controllers as when those signals are received.

- If an error occurs during MIDI reception, the Damper, Sostenu, and Soft effects for all channels are turned off and an All Note Off occurs.

7. SYSTEM EXCLUSIVE MESSAGES

(Universal System Exclusive)

(1) Universal Realtime Message

Data format: [F0H] → [7FH] → [XnH] → [04H] → [01H] → [IH] → [mmH] → [F7H]

MIDI Master Volume

- Simultaneously changes the volume of all channels.
- When a MIDI master volume message is received, the volume only has affect on the MIDI receive channel, not the panel master volume.

F0H = Exclusive status
 7FH = Universal Realtime
 7FH = ID of target device
 04H = Sub-ID #1=Device Control Message
 01H = Sub-ID #2=Master Volume
 //H = Volume LSB
 mmH = Volume MSB
 F7H = End of Exclusive

or

F0H = Exclusive status
 7FH = Universal Realtime
 XnH = When n is received n=0~F, whichever is received.
 X = don't care
 04H = Sub-ID #1=Device Control Message
 01H = Sub-ID #2=Master Volume
 //H = Volume LSB
 mmH = Volume MSB
 F7H = End of Exclusive

(2) Universal Non-Realtime Message (GM On)

General MIDI Mode On

Data format: [F0H] → [7EH] → [XnH] → [09H] → [01H] → [F7H]

F0H = Exclusive status
 7EH = Universal Non-Realtime
 7FH = ID of target device
 09H = Sub-ID #1=General MIDI Message
 01H = Sub-ID #2=General MIDI On
 F7H = End of Exclusive

or

F0H = Exclusive status
 7EH = Universal Non-Realtime
 XnH = When received, n=0~F.
 X = don't care
 09H = Sub-ID #1=General MIDI Message
 01H = Sub-ID #2=General MIDI On
 F7H = End of Exclusive

When the General MIDI mode ON message is received, the MIDI system will be reset to its default settings. This message requires approximately 50ms to execute, so sufficient time should be allowed before the next message is sent.

8. SYSTEM EXCLUSIVE MESSAGES (XG Standard)

(1) XG Native Parameter Change

Data format: [F0H] → [43H] → [1nH] → [4CH] → [hhH] → [mmH] → [//H] → [ddH] → [F7H]

F0H = Exclusive status
43H = YAMAHA ID
1nH = When received, n=0~F.
When transmitted, n=0.
4CH = Model ID of XG
hhH = Address High
mmH = Address Mid
//H = Address Low
ddH = Data
|
F7H = End of Exclusive

Data size must match parameter size (2 or 4 bytes).

When the XG System On message is received, the MIDI system will be reset to its default settings.

The message requires approximately 50ms to execute, so sufficient time should be allowed before the next message is sent.

(2) XG Native Bulk Data (reception only)

Data format: [F0H] → [43H] → [0nH] → [4CH] → [aaH] → [bbH] → [hhH] → [mmH] → [//H] → [ddH] → ... → [ccH] → [F7H]

F0H = Exclusive status
43H = YAMAHA ID
0nH = When received, n=0~F.
When transmitted, n=0.
4CH = Model ID of XG
aaH = ByteCount
bbH = ByteCount
hhH = Address High
mmH = Address Mid
//H = Address Low
ddH = Data
| |
| |
ccH = Check sum
F7H = End of Exclusive

- Receipt of the XG SYSTEM ON message causes reinitialization of relevant parameters and Control Change values. Allow sufficient time for processing to execute (about 50 msec) before sending this instrument another message.
- XG Native Parameter Change message may contain two or four bytes of parameter data (depending on the parameter size).
- For information about the Address and Byte Count values, refer to Table 1 below. Note that the table's Total Size value gives the size of a bulk block. Only the top address of the block (00H, 00H, 00H) is valid as a bulk data address.

9. SYSTEM EXCLUSIVE MESSAGES (Digital Piano MIDI Format)

Data format: [F0H] → [43H] → [73H] → [xxH] → [nnH] → [F7H]

F0H = Exclusive status
43H = Yamaha ID
73H = Digital Piano ID
01H = Product ID (digital piano common)
xxH = Substatus
nn Control
02H Internal MIDI clock
03H External MIDI clock
06H Bulk Data (the bulk data follows 06H)
F7H = End of Exclusive

10. SYSTEM EXCLUSIVE MESSAGES (Others)

Data format: [F0H] → [43H] → [1nH] → [27H] → [30H] → [00H] → [00H] → [mmH] → [//H] → [ccH] → [F7H]

Master Tuning (XG and last message priority) simultaneously changes the pitch of all channels.

F0H = Exclusive Status
43H = Yamaha ID
1nH = When received, n=0~F.
When transmitted, n=0.
27H = Model ID of TG100
30H = Sub ID
00H =
00H =
mmH = Master Tune MSB
//H = Master Tune LSB
ccH = don't care (under 7FH)
F7H = End of Exclusive

<Table 1>

MIDI Parameter Change table (SYSTEM)

Address (H)	Size (H)	Data (H)	Parameter	Description	Default value (H)
00 00 00	4	020C - 05F4(*1)	MASTER TUNE	-50 - +50[cent]	00 04 00 00
01				1st bit 3 - 0 → bit 15 - 12	400
02				2nd bit 3 - 0 → bit 11 - 8	
03				3rd bit 3 - 0 → bit 7 - 4	
04	1	00 - 7F	MASTER VOLUME	0 - 127	7F
7E		00	XG SYSTEM ON	00=XG sytem ON	
7F		00	RESET ALL PARAMETERS	00=ON (receive only)	
TOTAL SIZE 07					

*1: Values lower than 020CH select -50 cents. Values higher than 05F4H select +50 cents.

<Table 2>

MIDI Parameter Change table (EFFECT 1)

Refer to the "Effect MIDI Map" for a complete list of Reverb, Chorus and Variation type numbers.

Address (H)	Size (H)	Data (H)	Parameter	Description	Default value (H)
02 01 00	2	00 - 7F	REVERB TYPE MSB	Refer to Effect MIDI Map	01(=HALL1)
		00 - 7F	REVERB TYPE LSB	00 : basic type	00
02 01 20	2	00 - 7F	CHORUS TYPE MSB	Refer to Effect MIDI Map	00(=Effect off)
		00 - 7F	CHORUS TYPE LSB	00 : basic type	00

• "VARIATION" refers to the EFFECT on the panel.

<Table 3>

MIDI Parameter Change table (MULTI PART)

Address (H)	Size (H)	Data (H)	Parameter	Description	Default value (H)
08 nn 11	1	00 - 7F	DRY LEVEL	0 - 127	7F
08 nn 0C	1	00 - 7F	VELOCITY SENSE DEPTH	0 - 127	40
08 nn 0D	1	00 - 7F	VELOCITY SENSE OFFSET	0 - 127	40

nn = Part Number

• **Effect MIDI Map**

REVERB

	MSB	LSB
ROOM	02H	10H
HALL 1	01H	10H
HALL 2	01H	11H
STAGE	03H	10H
OFF	00H	00H

EFFECT

	MSB	LSB
CHORUS	42H	10H
PHASER	48H	10H
TREMOLO	46H	10H
ROTARY SP	47H	10H
OFF	00H	00H

