



ARIUS

YDP-161

YDP-141

**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) Sostenuto

ccH Parameter Data Range (vvH)

42H Sostenuto 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-161	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-141	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, Sostenuuto, 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] → [IiH] → [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

IiH = 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

IiH = 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	41H	08H
PHASER	48H	11H
TREMOLO	77H	00H
ROTARY SP	42H	12H
OFF	00H	00H

Function...	Transmitted	Recognized	Remarks	
Basic Channel	Default Changed	1-16 1-16	1-16 1-16	
Mode	Default Messages Altered	3 x *****	3 x x	
Note Number	: True voice	0-127 *****	0-127 0-127	
Velocity	Note ON Note OFF	o 9nH,v=1-127 x	o 9nH,v=1-127 x	
After Touch	Key's Ch's	x *1 x	x x	
Pitch Bend		x *1	o 0-24 semi	
Control Change	0,32 1 7 10 11 6, 38 64,66,67 71-74 84 91,93 96-97 100-101	o x *1 o x *1 o x *1 o x *1 o x *1 x *1	o o o o o o o o o o o	Bank Select Modulation Main Volume Panpot Expression Data Entry Portament Control Effect Depth RPN Inc, Dec RPN LSB, MSB
Prog Change	: True #	o 0 - 127 *****	o 0 - 127	
System Exclusive		o	o	
Common	: Song Pos. : Song Sel. : Tune	x x x	x x x	
System Real Time	: Clock : Commands	o o	o o	
Aux Messages	: All Sound Off : Reset All Cntrls : Local ON/OFF : All Notes OFF : Active Sense : Reset	o o x o o x	o (120,126,127) o (121) o (122) o (123-125) o x	
Notes:		*1 These Control Change messages are not transmitted via panel operation, but may be transmitted during song playback.		

Mode 1 : OMNI ON, POLY
 Mode 3 : OMNI OFF, POLY

Mode 2 : OMNI ON, MONO
 Mode 4 : OMNI OFF, MONO

o : Yes
 x : No