



# ARIUS

YDP-S31

Data List  
Daten-Liste  
Liste des données  
Lista de datos

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

If you're already very familiar with MIDI, or are using a computer to control your music hardware with computer-generated MIDI messages, the data provided in this section can help you to control this instrument.

Falls Sie bereits mit MIDI vertraut sind oder einen Computer zur Erzeugung von MIDI-Steuermeldungen für die Instrumente verwenden, können Sie sich zur Steuerung des YDP-S31 nach den im folgenden Abschnitt aufgeführten Spezifikationen richten.

## 1. NOTE ON/OFF

Data format: [9nH] → [kk] → [vv]

- 9nH = Note ON/OFF event (n = channel number)
- kk = Note number (Transmit: 09H ~ 78H = A-2 ~ C8 / Receive: 00H ~ 7FH = C-2 ~ G8)
- vv = Velocity (Key ON = 01H ~ 7FH, Key OFF = 00H)

Data format: [8nH] → [kk] → [vv] (reception only)

- 8nH = Note OFF event (n = channel number)
- kk = Note number: 00H ~ 7FH = C-2 ~ G8)
- vv = Velocity

## 2. CONTROL CHANGE

Data format: [BnH] → [cc] → [vv]

- BnH = Control change (n = channel number)
- cc = Control number
- vv = 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) Main Volume

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

### (3) Expression (reception only)

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

### (4) Damper

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

### (5) Sostenuto

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

### (6) Soft Pedal

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

### (7) Effect1 Depth (Reverb Send Level)

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

Adjusts the reverb send level.

### (8) Effect4 Depth (Variation Effect Send Level)

- |     |               |                  |
|-----|---------------|------------------|
| ccH | Parameter     | Data Range (vvH) |
| 5EH | Effect4 Depth | 00H...7FH        |

### (9) 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

Si vous êtes très familier avec l'interface MIDI ou si vous utilisez un ordinateur pour commander votre matériel de musique au moyen de messages MIDI générés par ordinateur, les données suivantes vous seront utiles et vous aideront à commander le YDP-S31.

Si usted está ya familiarizado con MIDI, o si emplea una computadora para controlar sus aparatos musicales con mensajes MIDI generados por computadora, los datos proporcionados en esta sección le ayudarán a controlar la YDP-S31.

## 3. MODE MESSAGES

Data format: [BnH] → [cc] → [vv]

- BnH = Control event (n = channel number)
- cc = Control number
- vv = 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

Voice Name	MSB	LSB	P.C.#
Grand Piano 1	0	122	1
Grand Piano 2	0	112	1
E.Piano	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 (Special Control)

Data format: [F0H] → [43H] → [73H] → [66H] → [11H] → [0nH] → [ccH] → [vvH] → [F7H]

F0H = Exclusive status  
 43H = Yamaha ID  
 73H = Digital Piano ID  
 7FH = Extended Product ID  
 4BH = Product ID  
 11H = Special control  
 0nH = Control MIDI change (n=channel number)  
 cc = Control number  
 vv = Value  
 F7H = End of Exclusive

Control	Channel	ccH	vvH
Metronome	Always 00H	1BH	00H : off 01H : - 02H : 2/4 03H : 3/4 04H : 4/4 05H : 5/4 06H : 6/4 7FH : No accent
Channel Detune ch:	00H-0FH	43H	(Sets the Detune value for each channel) 00H-7FH
Voice Reserve ch:	00H-0FH	45H	00H : Reserve off 7FH : on*

\* When Volume, Expression is received for Reserve On, they will be effective from the next Key On. Reserve Off is normal.

## 11. 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] 1st bit 3 - 0 → bit 15 - 12 2nd bit 3 - 0 → bit 11 - 8 3rd bit 3 - 0 → bit 7 - 4 4th bit 3 - 0 → bit 3 - 0	00 04 00 00 400
01					
02					
03					
04	1	00 - 7F	MASTER VOLUME	0 - 127	7F
7E		00	XG SYSTEM ON	00=XG system 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 40	2	00-7F	VARIATION TYPE MSB	Refer to Effect MIDI Map	00(=Effect off)
		00-7F	VARIATION 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
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

Function...	Transmitted	Recognized	Remarks	
Basic Channel	Default Changed	1 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 84 91, 94 96-97 100-101	o x *1 o x *1 x *1 x *1 o o x *1 o x *1 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