



DIGITAL PIANO

P - 105

Referencia MIDI

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# Funciones MIDI

Puede realizar ajustes minuciosos en las funciones MIDI.

## Selección de canales de transmisión y recepción MIDI

En cualquier configuración de controles MIDI, los canales MIDI de los dispositivos transmisor y receptor deben coincidir para que la transferencia de datos sea correcta.

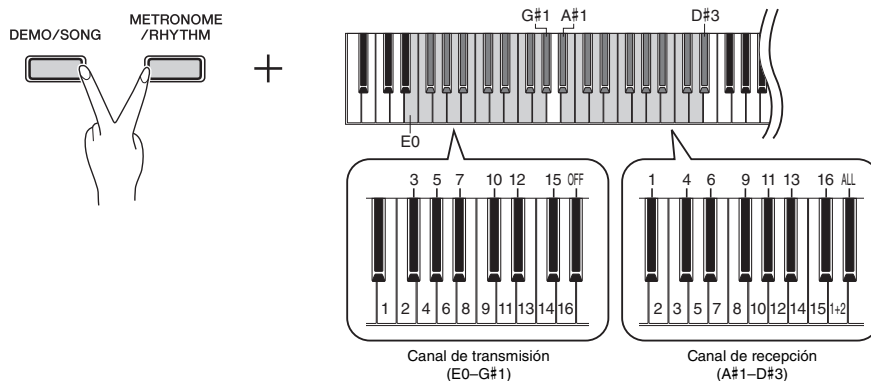
Con este parámetro se especifica el canal en el que el instrumento transmite o recibe los datos MIDI.

### Ajuste del canal de transmisión

Mientras mantiene presionado el botón [DEMO/SONG], mantenga presionado el botón [METRONOME/RHYTHM] y después presione una de las teclas E0–G#1.

### Ajuste del canal de recepción

Mientras mantiene presionado el botón [DEMO/SONG], mantenga presionado el botón [METRONOME/RHYTHM] y después presione una de las teclas A#1–D#3.



#### NOTA

En el modo Dual, División o Dúo los datos de la voz 1 se transmiten por su canal especificado y los de la voz 2 se transmiten por el canal cuyo número sea el inmediatamente superior al del canal especificado. En este caso, no se transmitirá ningún dato si el canal de transmisión está ajustado en "OFF".

#### NOTA

##### All (Todos):

Recepción "multitimbre". Permite la recepción simultánea de distintas partes en los 16 canales MIDI, con lo que el instrumento puede reproducir datos de canciones de varios canales recibidos desde un ordenador.

##### 1+2:

Recepción "1+2". Permite la recepción simultánea en los canales 1 y 2 únicamente, con lo que el instrumento puede reproducir datos de canciones de los canales 1 y 2 recibidos desde un ordenador.

#### NOTA

Los cambios de programa y otros mensajes de canal similares recibidos no afectarán a los ajustes del panel del instrumento ni a las notas que se tocan en el teclado.

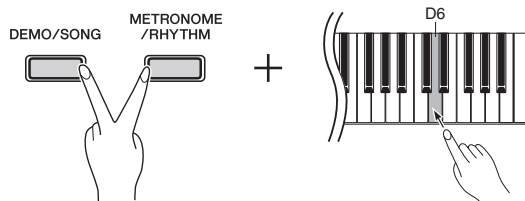
#### NOTA

Los datos de las melodías de demostración y de las melodías predefinidas no se pueden transmitir a través de MIDI.

## Control local ON/OFF

Por "control local" se entiende el hecho de que, normalmente, el teclado del instrumento controla su generador de tonos internos, lo que permite que las voces internas se interpreten directamente desde el teclado. En esta situación, el control local está activado (ON), ya que el generador de tonos interno lo controla localmente el propio teclado. No obstante, el control local puede desactivarse (OFF), de forma que el teclado del instrumento no toque voces internas, pero se siga transmitiendo la información MIDI apropiada a través del terminal [USB TO HOST] cuando se tocan las notas en el teclado. Al mismo tiempo, el generador de tonos interno responde a la información MIDI recibida a través del terminal [USB TO HOST].

Mientras mantiene presionado el botón [DEMO/SONG], mantenga presionado el botón [METRONOME/RHYTHM] y después presione la tecla D6. Al presionar repetidamente la tecla D6 se alterna entre control local activado y desactivado.



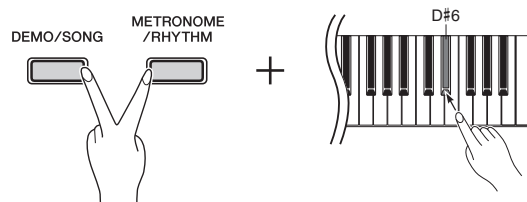
#### NOTA

**Ajuste predeterminado:** ON (Activado)

## Cambio de programa ON/OFF

Normalmente, el instrumento responderá a los números de cambio de programa MIDI recibidos desde un ordenador, de forma que la voz con el mismo número se seleccionará en el canal correspondiente (la voz del teclado no cambia). El instrumento normalmente enviará además un número de cambio de programa MIDI cuando se seleccione una de sus voces, con lo que la voz o el programa con el mismo número se seleccionará en el ordenador si éste se ha configurado para recibir y responder a números de cambio de programa MIDI. Esta función permite cancelar la recepción y transmisión de números de cambio de programa de forma que los sonidos puedan seleccionarse en el instrumento sin que por ello se vea afectado el ordenador.

Mientras mantiene presionado el botón [DEMO/SONG], mantenga presionado el botón [METRONOME/RHYTHM] y después presione la tecla D#6. Al presionar repetidamente la tecla D#6 se alterna entre cambio de programa activado y desactivado.



**NOTA**

Para obtener información acerca de los números de cambio de programa para cada una de las voces del instrumento, consulte la página 5.

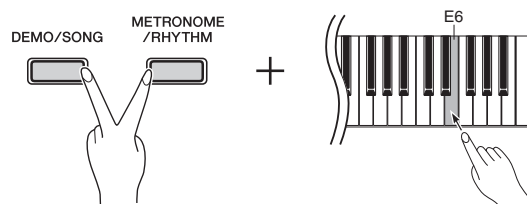
**NOTA**

**Ajuste predeterminado:** ON (Activado)

## Cambio de control ON/OFF

Normalmente, el instrumento responderá a los datos de cambio de control MIDI recibidos desde un ordenador, de forma que la voz en el canal correspondiente se verá afectada por los ajustes del pedal y otros ajustes de "control" recibidos desde el dispositivo de control (no afecta al sonido del teclado). El instrumento también transmite los datos de cambio de control MIDI cuando están en funcionamiento el pedal u otros controles apropiados. Esta función permite cancelar la recepción y transmisión de datos de cambio de control de forma que, por ejemplo, el pedal y otros controles del instrumento pueden funcionar sin que esto afecte a un ordenador.

Mientras mantiene presionado el botón [DEMO/SONG], mantenga presionado el botón [METRONOME/RHYTHM] y después presione la tecla E6. Al presionar repetidamente la tecla E6 se alterna entre cambio de control activado y desactivado.



**NOTA**

Para obtener información acerca de los cambios de control que se pueden utilizar con el instrumento, consulte la página 4.

**NOTA**

**Ajuste predeterminado:** ON (Activado)

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

## 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) 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 Pedal/Sustain

ccH	Parameter	Data Range (vvH)
40H	Sustain 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 (reception only)

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	Effect3 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] -> [cc] -> [vv]  
 BnH = Control event (n = channel number)  
 cc = Control number  
 vv = Data Range

### (1) All Sound Off (reception only)

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

### (2) Reset All Controllers (reception only)

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

Resets controllers as follows.

Controller	Value
Expression	127 (max)
Sustain	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 (reception only)

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 sustain 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 a 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 1	0	122	6
E. PIANO 2	0	123	6
E. PIANO 3	0	122	5
E. PIANO 4	0	123	5
JAZZ ORGAN	0	122	17
PIPE ORGAN	0	123	20
ROCK ORGAN	0	122	19
VIBRAPHONE	0	122	12
STRINGS	0	122	49
HARPSICHORD	0	122	7
WOOD BASS	0	122	33
E. BASS	0	122	34

- 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 a value of 0.

#### 5. Pitch Bend Change (reception only)

[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 Sustain, Sostenuto, 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] -> [//H] -> [mmH] -> [F7H]

##### MIDI Master Volume (reception only)

- 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 received, n=0–F.

X = irrelevant

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 = irrelevant

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 the 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  
 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 =  
 30H = Sub ID  
 00H =  
 00H =  
 mmH = Master Tune MSB  
 //H = Master Tune LSB  
 ccH = irrelevant (under 7FH)  
 F7H = End of Exclusive

&lt;Table 1&gt;

**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	-102.4+102.3[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 -102.4 cents. Values higher than 05F4H select +102.3 cents.

&lt;Table 2&gt;

**MIDI Parameter Change table (EFFECT 1)**

Refer to the "Effect MIDI Map" for a complete list of Reverb and Chorus 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
20	2	00–7F	CHORUS TYPE MSB	Refer to Effect MIDI Map	41 (=CHORUS1)
		00–7F	CHORUS TYPE LSB	00 : basic type	00
22	1	00–7F	CHORUS PARAMETER 1		
24	1	00–7F	CHORUS PARAMETER 3		

&lt;Table 3&gt;

**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
0C	1	00–7F	VELOCITY SENSE DEPTH	0–127	40
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

# MIDI Implementation Chart / MIDI-Implementationsstabelle / MIDI Implementation Chart / Gráfico de implementación MIDI

YAMAHA [ Digital Piano ]  
Model P-105 MIDI Implementation Chart

Date :27-JAN-2012  
Version : 1.0

Function...	Transmitted	Recognized	Remarks
Basic Channel Default Changed	1 - 16 o	1 - 16 o	
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 9nH, v=0	o 9nH, v=1-127 x	
After Touch Key's Ch's	x 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 o x *1 o o o x *1 x o o o x o	o o o o o o o o o o o o o	Bank Select Modulation Main Volume Panpot Expression Data Entry Pedal  Portament Control Reverb Depth Chorus 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 : Clock Real Time : Commands	o o	o o	
Aux : All Sound Off : Reset All Cntrls : Local ON/OFF Mes- : All Notes OFF sages : Active Sense : Reset	x x x x o x	o (120,126,127) o (121) o (122) o (123-125) o x	
Notes: *1 These function are not transmitted by panel operation. It may be transmitted during a Song performance.			

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

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

o : Yes  
x : No