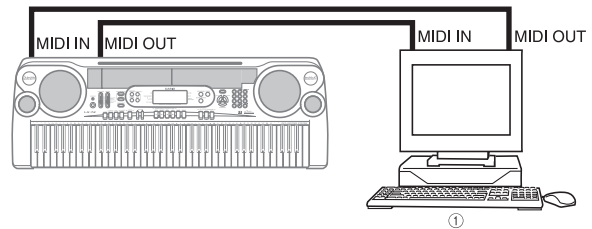


What is MIDI?

The letters MIDI stand for Musical Instrument Digital Interface, which is the name of a worldwide standard for digital signals and connectors that makes it possible to exchange musical data between musical instruments and computers (machines) produced by different manufacturers. MIDI compatible equipment can exchange keyboard key press, key release, tone change, and other data as messages. Though you do not need any special knowledge about MIDI to use this keyboard as a stand-alone unit, MIDI operations require a bit of specialized knowledge. This section provides you with an overview of MIDI that will help to get you going.

MIDI Connections

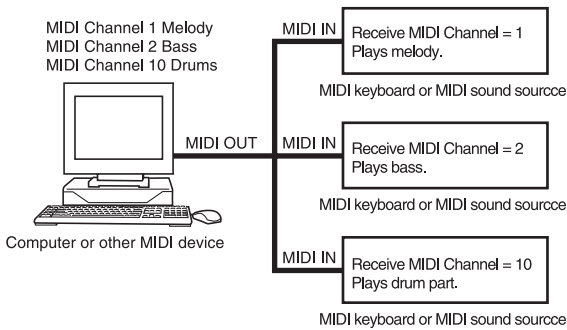
MIDI messages are sent out through the MIDI OUT terminal of one machine to the MIDI IN terminal of another machine over a MIDI cable. To send a message from this keyboard to another machine, for example, you must use a MIDI cable to connect the MIDI OUT terminal of this keyboard to the MIDI IN terminal of the other machine. To send MIDI messages back to this keyboard, you need to use a MIDI cable to connect the other machine's MIDI OUT terminal to the MIDI IN terminal of this keyboard. To use a computer or other MIDI device to record and playback the MIDI data produced by this keyboard, you must connect the MIDI IN and MIDI OUT terminals of both machines in order to send and receive data.



- ① Computer or other MIDI device
- ◆ To use the MIDI THRU function of a connected computer, sequencer, or other MIDI device, be sure to turn this keyboard's LOCAL CONTROL off (page E-54).

MIDI Channels

MIDI allows you to send the data for multiple parts at the same time, with each part being sent over a separate MIDI channel. There are 16 MIDI channels, numbered 1 through 16, and MIDI channel data is always included whenever you exchange data (key press, pedal operation, etc.). Both the sending machine and the receiving machine must be set to the same channel for the receiving unit to correctly receive and play data. If the receiving machine is set to Channel 2, for example, it receives only MIDI Channel 2 data, and all other channels are ignored.



This keyboard is equipped with multi-timbre capabilities, which means it can receive messages over all 16 MIDI channels and play up to 16 parts at the same time. Keyboard and pedal operations performed on this keyboard are sent out by selecting a MIDI channel (1 to 16) and then sending the appropriate message.

General MIDI

As we have already seen, MIDI makes it possible to exchange musical data between devices produced by different manufacturers. This musical data does not consist of the notes themselves, but rather information on whether a keyboard key is pressed or released, and the tone number. If tone number 1 on a keyboard produced by Company A is PIANO while tone number 1 on a Company B's keyboard is BASS, for example, sending data from Company A's keyboard to Company B's keyboard produces a result entirely different from the original. If a computer, sequencer or other device with auto accompaniment capabilities is used to produce music data for the Company A keyboard which has 16 parts (16 channels) and then that data is sent to the Company B keyboard which can receive only 10 parts (10 channels), the parts that cannot be played will not be heard. The standard for the tone numbering sequence, the number of pads, and other general factors that determine the sound source configuration, which was arrived at by mutual consultations by manufacturers, is called General MIDI. The General MIDI standard defines the tone numbering sequence, the drum sound numbering sequence, the number of MIDI channels that can be used, and other general factors that determine the sound source configuration. Because of this, musical data produced on a General MIDI sound source can be played back using similar tones and identical nuances as the original, even when played on another manufacturer's sound source. This keyboard conforms with General MIDI standards, so it can be connected to a computer or other device and used to play back General MIDI data that has been purchased, downloaded from the Internet, or obtained from any other source.

Changing MIDI Settings

You can use this keyboard in combination with an external sequencer, synthesizer, or other MIDI device to play along with commercially available General MIDI software. This section tells you how to make the MIDI settings required when connecting to an external device.

TRANPOSE/TUNE/MIDI Button

Each press of the TRANPOSE/TUNE/MIDI button cycles through a total of 12 setting screens: the transpose screen, the tuning screen, and 10 MIDI setting screens. If you accidentally pass the screen you want to use, keep pressing the TRANPOSE/TUNE/MIDI button until the screen appears again. Also note that leaving a setting screen is automatically cleared from the display if you do not perform any operation for about five seconds.

GM MODE (Default: Off)

■ on

This keyboard plays General MIDI data from a computer or other external device. MIDI IN CHORD JUDGE cannot be used when GM MODE is turned on.

■ off

MIDI IN CHORD JUDGE can be used.

1. Press the TRANPOSE/TUNE/MIDI button until the GM MODE screen appears.

Example:

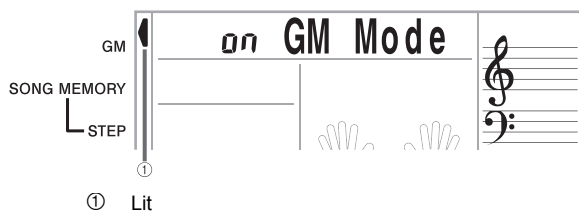
When GM MODE is turned off



- Use the [+] and [-] or [0] and [1] buttons to turn the setting on and off.

Example:

To turn GM MODE on



KEYBOARD CHANNEL

The keyboard channel is the channel used to send MIDI messages from this keyboard to an external device. You can specify one channel from 1 to 16 as the keyboard channel.

- Press the TRANSPOSE/TUNE/MIDI button until the KEYBOARD CHANNEL screen appears.

01 Keybd Ch

- Use the [+], [-], and the number buttons to change the channel number.

Example:

To specify channel 4

04 Keybd Ch

NAVIGATE CHANNEL (Default: 4)

When MIDI messages are received from an external device for play on this keyboard, the navigate channel is the channel whose note data appears on the display and is used to light keyboard keys. You can select one channel from 1 to 8 as the navigate channel. Since this setting lets you use the data on any channel of commercially available MIDI software to light the keyboard keys, you can analyze how different parts of an arrangement are played.

- Press the TRANSPOSE/TUNE/MIDI button until the NAVIGATE CHANNEL screen appears.

4 Navi . Ch

- Use the [+], [-], and the number buttons [1] through [8] to change the channel number.

Example:

To specify channel 2

2 Navi . Ch

NOTE

- The navigate channel automatically changes to 1 whenever you turn MIDI IN CHORD JUDGE.

- To turn off specific sounds before playing back MIDI data that is being received

Navigate channel on/off

- While playing MIDI data, press the RIGHT/TRACK 2 button.
 - This cuts the sound of the navigate channel, but keyboard keys continue to light in accordance with the channel's data as it is received. Press the RIGHT/TRACK 2 button again to turn the channel back on.

Next lower channel from navigate channel on/off

- While playing MIDI data, press the LEFT/TRACK 1 button.
 - This cuts the sound of the channel whose number is one less than the navigate channel, but keyboard keys continue to light in accordance with the channel's data as it is received. Press the LEFT/TRACK 1 button again to turn the channel back on.

Example:

If the navigate channel is channel 4, the above operation turns off channel 3. If the navigate channel is channel 1 or 2, the above operation turns off channel 8.

MIDI IN CHORD JUDGE (Default: Off)

■ on

When a chord specification method is selected by the MODE switch, chords are specified by the keyboard channel note data input from the MIDI IN terminal.

■ oFF

MIDI IN CHORD JUDGE is turned off.

1. Press the TRANSPOSE/TUNE/MIDI button until the MIDI IN CHORD JUDGE screen appears.

oFF Chord

2. Use the [+] and [-] or [0] and [1] buttons to turn the setting on and off.

Example:

To turn MIDI IN CHORD JUDGE on

on Chord

NOTE

- MIDI IN CHORD JUDGE automatically turns off whenever you change the navigate channel to any channel besides 01.

LOCAL CONTROL (Default: On)

This setting determines whether or not the keyboard and sound source of this keyboard are connected internally. When recording to a computer or other external device connected to this keyboard's MIDI IN/OUT terminal, it helps if you turn LOCAL CONTROL off.

■ on

Anything played on the keyboard is sounded by the internal sound source and simultaneously output as a MIDI message from the MIDI OUT terminal.

■ oFF

Anything played on the keyboard is output as a MIDI message from the MIDI OUT terminal, without being sounded by the internal sound source. Turn LOCAL CONTROL off whenever you are using the MIDI THRU function of a computer or other external device. Also note that

the no sound is produced by the keyboard if LOCAL CONTROL is turned off and no external device is connected.

1. Press the TRANSPOSE/TUNE/MIDI button until the LOCAL CONTROL screen appears.

Example:

When LOCAL CONTROL is on

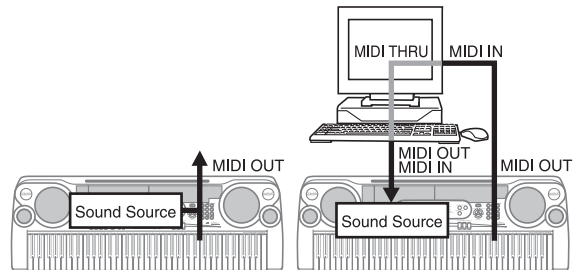
on Local

2. Use the [+] and [-] or [0] and [1] buttons to turn the setting on and off.

Example:

To turn LOCAL CONTROL off

oFF Local



LOCAL CONTROL On

Notes played on the keyboard are sounded by the internal sound source and output as MIDI messages from the MIDI OUT terminal.

LOCAL CONTROL Off

Notes played on the keyboard are output as MIDI messages from the MIDI OUT terminal, but not sounded directly by the internal sound source. The MIDI THRU terminal of the connected device can be used to return the MIDI message and sound it on this keyboard's sound source.

ACCOMP MIDI OUT (Default: Off)

■ on

Auto Accompaniment is played by the keyboard and the corresponding MIDI message is output from the MIDI OUT terminal.

■ oFF

Auto Accompaniment MIDI messages are not output from the MIDI OUT terminal.

1. Press the TRANSPOSE/TUNE/MIDI button until the ACCOMP MIDI OUT screen appears.

Example:

When ACCOMP MIDI OUT is off

off AcompOut

2. Use the [+] and [-] or [0] and [1] buttons to turn the setting on and off.

Example:

To turn ACCOMP MIDI OUT on

on AcompOut

TOUCH CURVE (Default: 0)

■ 0

Normal touch curve

■ 1

Louder than normal tone, even when little pressure is used to press keyboard keys. When touch response is turned off, sound is produced at a louder volume than normal.

1. Press the TRANSPOSE/TUNE/MIDI button until the TOUCH CURVE SELECT screen appears.

0 Touch

2. Use the [+] and [-] or [0] and [1] buttons to change the setting.

Example:

To select touch curve 1

1 Touch

SUSTAIN/ASSIGNABLE JACK

■ SUS (sustain)

Specifies a sustain*¹ effect when the pedal is depressed.

■ SoS (sostenuto)

Specifies a sostenuto*² effect when the pedal is depressed.

■ SFt (soft)

Specifies reduction of the sound's volume when the pedal is depressed.

■ rHy (rhythm)

Specifies the START/STOP button operation when the pedal is depressed.

1. Press the TRANSPOSE/TUNE/MIDI button until the SUSTAIN/ASSIGNABLE JACK screen appears.

Example:

When sustain is currently set

SUS Jack

2. Use the [+] and [-] or [0], [1], [2], and [3] buttons to change the setting.

Example:

To select rhythm

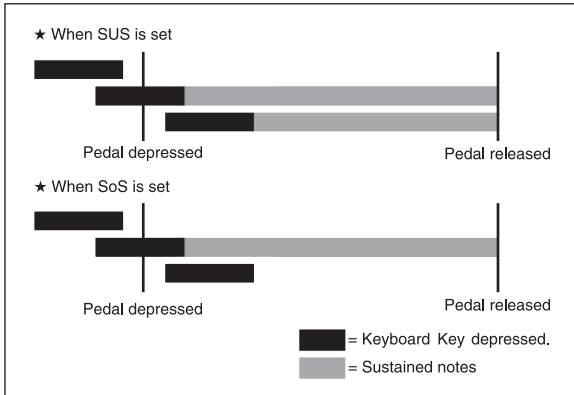
rHy Jack

***1. Sustain**

With piano tones and other sounds that decay, the pedal acts as a damper pedal, with sounds being sustained longer when the pedal is depressed. With organ tones and other continuous sounds, notes played on the keyboard continue to sound until the pedal is released. In either case, the sustain effect is also applied to any notes that are played while the pedal is depressed.

*2. Sostenuto

This effect performs the same way as sustain, except that it is applied only to notes that are sounding already when the pedal is depressed. It does not affect notes that are played after the pedal is depressed.



SOUND RANGE SHIFT (Default: On)

on

Shifts low range tones one octave lower and "072 PICCOLO" one octave higher.

oFF

Plays low range tones and "072 PICCOLO" at their normal levels.

1. Press the TRANSPOSE/TUNE/MIDI button until the SOUND RANGE SHIFT screen appears.

on Shift

2. Use the [+] and [-] or [0] and [1] buttons to change the setting.

Example:

To turn SOUND RANGE SHIFT off

oFF Shift

Messages

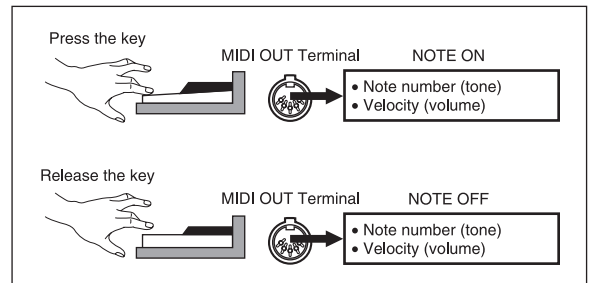
There is a wide variety of messages defined under the MIDI standard, and this section details the particular messages that can be sent and received by this keyboard. An asterisk is used to mark messages that affect the entire keyboard. Messages without an asterisk are those that affect only a particular channel.

NOTE ON/OFF

This message sends data when a key is pressed (NOTE ON) or released (NOTE OFF).

A NOTE ON/OFF message include a note number (to indicate note whose key is being pressed or released) and velocity (keyboard pressure as a value from 1 to 127). NOTE ON velocity is always used to determine the relative volume of the note. This keyboard does not receive NOTE OFF velocity data.

Whenever you press or release a key on this keyboard, the corresponding NOTE ON or NOTE OFF message is sent from the MIDI OUT terminal.



NOTE

- The pitch of a note depends on the tone that is being used, as shown in the "Note Table" on page A-1. Whenever this keyboard receives a note number that is outside its range for that tone, the same tone in the nearest available octave is substituted.



PROGRAM CHANGE

This is the tone selection message. PROGRAM CHANGE can contain tone data within the range of 0 to 127.

A PROGRAM CHANGE message is sent out through this keyboard's MIDI OUT terminal whenever you manually change its tone number. Receipt of a PROGRAM CHANGE message from an external machine changes the tone setting of this keyboard.

NOTE

- This keyboard supports 128 tones in the range 0 to 127. However, Channel 10 is a percussion-only channel, and Channels 0, 8, 16, 24, 25, 32, 40, 48, and 62 correspond to the nine drum set sounds of this keyboard.

PITCH BEND

This message carries pitch bend information for smoothly sliding the pitch upwards or downwards during keyboard play. This keyboard does not send pitch bend data, but it can receive such data.

CONTROL CHANGE

This message adds effects such as vibrato and volume changes applied during keyboard play. CONTROL CHANGE data includes a control number (to identify the effect type) and a control value (to specify the on/off status and depth of the effect).

The following is a list of data that can be sent or received using CONTROL CHANGE.

Effect	Control Number
★ Modulation	1
★ Volume	7
★ Pan	10
★ Expression	11
Hold 1	64
Sostenuto	66
Soft Pedal	67
RPN*	100 / 101
Data Entry	6/38

★ indicates receive-only messages

- * RPN stands for Registered Parameter Number, which is a special control change number used when combining multiple control changes. The parameter being controlled is selected using the control values of control numbers 100 and 101, and then settings are made using the control values of DATA ENTRY (control numbers 6 and 38). This keyboard uses RPN to control this keyboard's pitch bend sense (pitch change width in accordance with bend data) from another external MIDI device, transpose (this keyboard's overall tuning adjusted in halftone units), and tune (this keyboard's overall fine tuning).

NOTE

- Sustain (control number 64), sostenuto (control number 66), and soft (control number 67) effects applied using the foot pedal are also applied.

ALL SOUND OFF

This message forces all sound being produced over the current channel to turn off, regardless of how the sound is being produced.

ALL NOTES OFF

This message turns off all note data sent from an external device and currently being sounded on the channel.

- Any notes being sustained using a sustain pedal or sostenuto pedal continue to sound until the next pedal off.

RESET ALL CONTROLLERS

This messages initializes pitch bend and all other control changes.

SYSTEM EXCLUSIVE*

This message is used to control system exclusives, which are tone fine adjustments that are unique to a particular machine. Originally, system exclusives were unique to a particular model, but now there are also universal system exclusives that are applicable to machines that are different models and even produced by different manufacturers.

The following are the system exclusive messages supported by this keyboard.



■ GM SYSTEM ON ([F0][7E][7F][09][01][F7])

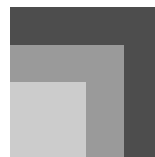
GM SYSTEM ON is used by an external machine to turn on this keyboard's GM system. GM stands for General MIDI.

- ◆ GM SYSTEM ON takes more time to process than other messages, so when GM SYSTEM ON is stored in the sequencer it can take more than 100msec until the next message.

■ GM SYSTEM OFF ([F0][7E][7F][09][02][F7])

GM SYSTEM OFF is used by an external machine to turn off this keyboard's GM system.

Troubleshooting



Problem	Possible Cause	Action	See Page
No keyboard Sound	<ol style="list-style-type: none"> 1. Power supply problem. 2. Power is not turned on. 3. Volume setting is too low. 4. The MODE switch is in the CASIO CHORD or FINGERED position. 5. LOCAL CONTROL is off. 6. MIDI data has changed the VOLUME and EXPRESSION settings to 0. 	<ol style="list-style-type: none"> 1. Correctly attach the AC adaptor, make sure that batteries (+/-) are facing correctly, and check to make sure that batteries are not dead. 2. Press the POWER button to turn on power. 3. Use the VOLUME slider to increase volume. 4. Normal play is not possible on the accompaniment keyboard while the MODE switch is set to CASIO CHORD or FINGERED. Change the MODE switch setting to NORMAL. 5. Turn on LOCAL CONTROL. 6. Adjust both parameters. 	<p>Pages E-13, E-14</p> <p>Page E-18</p> <p>Page E-18</p> <p>Page E-22</p> <p>Page E-54</p> <p>Page E-57</p>
<p>Any of the following symptoms while using battery power.</p> <ul style="list-style-type: none"> ♦ Dim power indicator ♦ Instrument does not turn on ♦ Display that is flickering, dim, or difficult to read ♦ Abnormally low speaker/headphone volume ♦ Distortion of sound output ♦ Occasional interruption of sound when playing at high volume ♦ Sudden power failure when playing at high volume ♦ Flickering or dimming of the display when playing at high volume ♦ Continued sound output even after you release a key ♦ A tone that is totally different from the one that is selected ♦ Abnormal rhythm pattern and Song Bank play ♦ Dimming of keyboard lights when notes sound ♦ Loss of power, sound distortion, or low volume when playing from a connected computer or MIDI device 	Low battery power	Replace the batteries with a set of new ones or use the AC adaptor.	Pages E-13, E-14
Auto Accompaniment does not sound.	Accompaniment volume is set to 000.	Use the ACCOMP VOLUME button to increase the volume.	Page E-27
Sound output does not change when key pressure is varied.	Touch response is turned off.	Press the TOUCH RESPONSE button to turn it on.	Page E-49

Troubleshooting

Problem	Possible Cause	Action	See Page
Key light stays on.	Keyboard is waiting for play of the correct note during Step 1 or Step 2 play.	1. Press the lit key to continue with Step 1 or Step 2 play. 2. Press the START/STOP button to quit Step 1 or Step 2 play.	Pages E-33, E-34 Pages E-33, E-34
Keys are lit though no sound is being produced.	Power on alert is reminding you that power was left on without any operation being performed.	Press any button or keyboard key to restore power to normal.	Page E-14
When playing with another MIDI instrument, keys or tunings do not match.	Transpose or tuning is set to a value other than 00.	Use the TRANSPOSE/TUNE/MIDI button to display the applicable setting screens and set both transpose and tuning to 00.	Pages E-49, E-50
Cannot record Auto Accompaniment or rhythm.	Track other than Track 1 is selected as the recording track.	Use the track select buttons to select Track 1. (Track 2 is melody track.)	Page E-37
When playing General MIDI data with a computer, playback notes do not match those produced when lit keys are pressed.	Wrong SOUND RANGE SHIFT setting	Use the TRANSPOSE/TUNE/MIDI button to display the SOUND RANGE SHIFT screen and correct the setting.	Page E-56
Playing on the keyboard produces an unnatural sound when connected to a computer.	The computer's MIDI THRU function is turned on.	Turn off the MIDI THRU function on the computer or turn off LOCAL CONTROL on the keyboard.	Page E-54
Cannot record chord accompaniment data on a computer.	ACCOMP MIDI OUT is turned off.	Turn on ACCOMP MIDI OUT.	Page E-55

Specifications



Model:	LK-73
Keyboard:	73 standard-size keys, 6 octaves (with touch response on/off)
Key Light System:	Can be turned on and off (up to 10 keys can be lit at the same time)
Tones:	137 (128 General MIDI tones + 9 drum tones); with layer and split
Rhythm Instrument Tones:	61
Polyphony:	24 notes maximum (12 for certain tones)
Auto Accompaniment Rhythm Patterns: Tempo: Chords: Rhythm Controllers: Accomp Volume:	100 Variable (216 steps, ♩ = 40 to 255) 3 fingering methods (CASIO CHORD, FINGERED, FULL RANGE CHORD) START/STOP, INTRO, NORMAL/FILL-IN, VAR/FILL-IN, SYNCHRO/ENDING 0 to 127 (128 steps)
3-step Lesson: Playback:	3 lessons (Step 1, 2, 3) Repeat play of a single tune
Song Bank Number of Tunes: Controllers:	100 PLAY/PAUSE, STOP, FF, REW, LEFT/TRACK 1, RIGHT/TRACK 2
Musical Information Function:	Tone, Auto Accompaniment, Song Bank numbers and names; staff notation, tempo, metronome, measure and beat number, step lesson display, chord name, dynamic mark, fingering, octave mark, pedal operation
Metronome: Beat Specification:	On/Off 1 to 6
Song Memory Songs: Recording Tracks: Recording Methods: Memory Capacity:	2 2 Real-time, step Approximately 5,200 notes (total for two songs)
MIDI:	16 multi-timbre receive, GM Level 1 standard
Other Functions Transpose: Tuning:	25 steps (-12 semitones to +12 semitones) 101 steps (A ₄ = approximately 440Hz ±50Cents)
Terminals MIDI Terminals: Sustain/Assignable Terminal: Headphone/Output Terminal: Output Impedance: Output Voltage:	IN, OUT Standard jack (sustain, sostenuto, soft, rhythm start/stop) Stereo standard jack 100Ω 4V (RMS) MAX
Power Jack:	9V DC



Specifications

Power Supply: Batteries: Battery Life: AC Adaptor: Auto Power Off:	2-way 6 D-size batteries Approximately 5 hours continuous operation on manganese batteries AD-5 Turns power off approximately 6 minutes after last key operation. Enabled under battery power only, can be disabled manually.
Speaker Output:	3W + 3W
Power Consumption:	9V --- 7.7W
Dimensions:	116.2 × 42.1 × 14.2 cm (45 ¹³ / ₁₆ × 16 ⁹ / ₁₆ × 5 ⁵ / ₈ inch)
Weight:	Approximately 8.7 kg (19.2 lbs)(without batteries)

- ◆ Design and specifications are subject to change without notice.

Care of your keyboard



■ **Avoid heat, humidity or direct sunlight.**

Do not overexpose the instrument to direct sunlight, or place it near an air conditioner, or in any extremely hot place.

■ **Do not use near a TV or radio.**

This instrument can cause video or audio interference with TV and radio reception. If this happens, move the instrument away from the TV or radio.

■ **Do not use lacquer, thinner or similar chemicals for cleaning.**

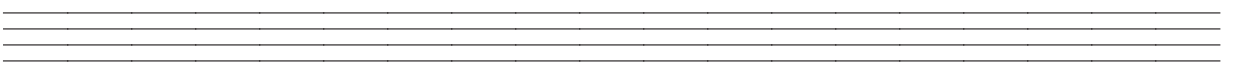
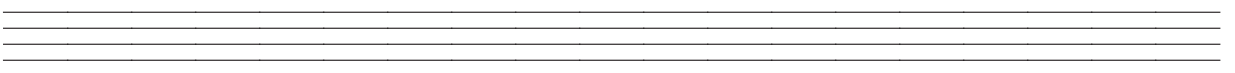
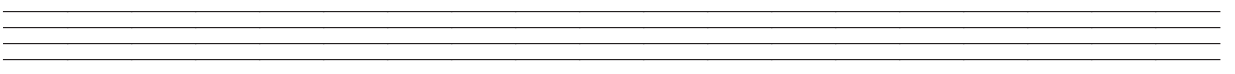
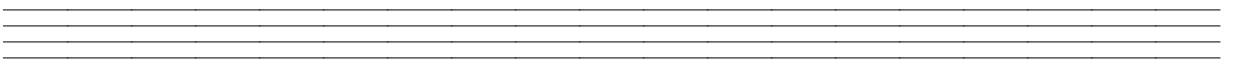
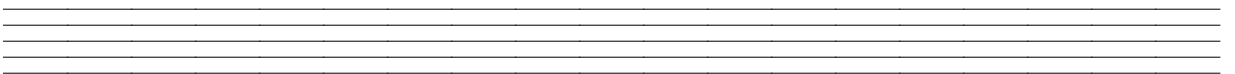
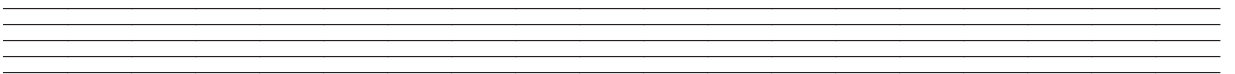
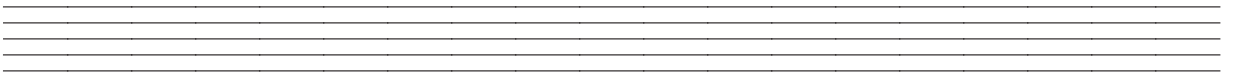
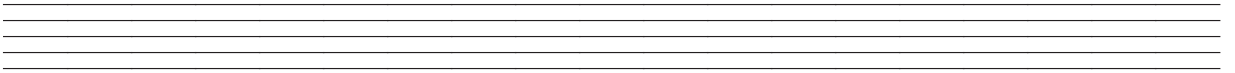
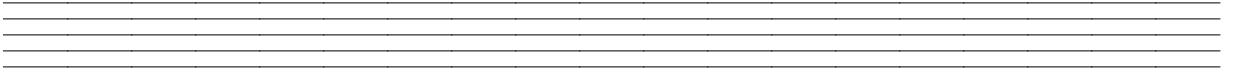
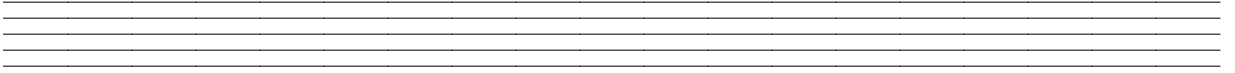
Clean the keyboard with a soft cloth dampened in a weak solution of water and a neutral detergent. Soak the cloth in the solution and squeeze until it is almost dry.

■ **Avoid use in areas subjected to temperature extremes.**

Extreme heat can cause figures on the LCD screen to become dim and difficult to read. This condition should correct itself when the keyboard is brought back to normal temperature.

NOTE

- You may notice lines in the finish of the case of this keyboard. These lines are a result of the molding process used to shape the plastic of the case. They are not cracks or breaks in the plastic, and are no cause for concern.



Appendix/Apéndice

Note Table

Tabla de notas

(1)	(2)	(3)	(4)
000	24	A	A0 - C8
001	24	A	A0 - C8
002	12	A	A0 - C8
003	12	A	A0 - C8
004	24	A	E1 - G7
005	24	A	E1 - G7
006	24	A	F2 - F6
007	24	A	C2 - C7
008	24	A	C4 - C8
009	24	A	C5 - C8

(1)	(2)	(3)	(4)
010	12	A	C4 - C6
011	24	A	F3 - F6
012	24	A	C3 - C6
013	24	A	F4 - C7
014	24	A	C4 - F5
015	12	A	C4 - C6
016	12	A	C2 - C7
017	12	A	C2 - C7
018	12	A	C2 - C7
019	12	A	A0 - C8

(1)	(2)	(3)	(4)
020	24	A	C2 - C7
021	12	A	F3 - F6
022	24	A	C4 - C6
023	12	A	F3 - F6
024	24	A	E2 - C6
025	24	A	E2 - C6
026	24	A	E2 - D6
027	24	A	E2 - D6
028	24	A	E2 - D6
029	24	A	E2 - D6

(1)	(2)	(3)	(4)
030	24	A	E2 - D6
031	24	A	E2 - D6
032	24	A	E1 - G3
033	24	A	E1 - G3
034	24	A	E1 - G3
035	24	A	E1 - G3
036	24	A	E1 - G3
037	24	A	E1 - G3
038	24	A	E1 - G3
039	24	A	E1 - G3

(1)	(2)	(3)	(4)
040	24	A	G3 - C7
041	24	A	C3 - C6
042	24	A	C2 - C5
043	24	A	E1 - G3
044	24	A	E1 - C7
045	24	A	E1 - C7
046	24	A	B0 - G7
047	24	A	C2 - A3
048	24	A	E1 - C7
049	24	A	E1 - C7

(1)	(2)	(3)	(4)
050	24	A	C2 - C7
051	12	A	C2 - C7
052	24	A	C3 - G5
053	24	A	C3 - G5
054	12	A	C3 - C6
055	12	A	C3 - C5
056	24	A	A#3 - A#6
057	24	A	A#1 - D#5
058	24	A	F1 - G3
059	24	A	A#3 - A#5

(1)	(2)	(3)	(4)
060	12	A	F2 - F5
061	24	A	C2 - C7
062	12	A	C2 - C7
063	12	A	C2 - C7
064	24	A	F#3 - D#6
065	24	A	C#3 - G#5
066	24	A	F#2 - D#5
067	24	A	C#2 - G#4
068	24	A	A#3 - G6
069	24	A	E3 - A5

(1)	(2)	(3)	(4)
070	24	A	A#1 - C5
071	24	A	D3 - G6
072	24	B	D5 - C8
073	24	A	C4 - C7
074	24	A	C4 - C7
075	24	A	C4 - C7
076	12	A	C4 - C7
077	24	A	G3 - C6
078	24	A	C4 - C7
079	24	A	C4 - C6

(1)	(2)	(3)	(4)
080	12	A	A0 - C8
081	12	A	A0 - C8
082	12	A	C2 - C7
083	12	A	C2 - C7
084	12	A	C2 - C7
085	12	A	C2 - C7
086	12	A	C2 - C7
087	12	A	A0 - C8
088	12	A	C2 - C7
089	24	A	C2 - C7

(1)	(2)	(3)	(4)
090	12	A	C2 - C7
091	12	A	C2 - C7
092	12	A	C2 - C7
093	12	A	C2 - C7
094	12	A	C2 - C7
095	12	A	C2 - C7
096	12	A	C2 - C7
097	12	A	C2 - C7
098	12	A	C2 - C7
099	12	A	C2 - C7

(1)	(2)	(3)	(4)
100	12	A	C2 - C7
101	12	A	C2 - C7
102	12	A	C2 - C7
103	12	A	C2 - C7
104	24	A	C3 - F5
105	24	A	D3 - C6
106	24	A	D3 - G5
107	24	A	G3 - C6
108	24	A	C3 - G5
109	12	A	C2 - F5

(1)	(2)	(3)	(4)
110	12	A	G3 - C7
111	24	A	C3 - C5
112	24	A	C5 - C6
113	24	A	C4 - C5
114	12	A	E3 - E5
*115	24	C	C4 - C5
*116	24	C	C4 - C5
*117	24	C	C4 - C5
*118	12	C	C4 - C5
*119	24	C	C4 - C5

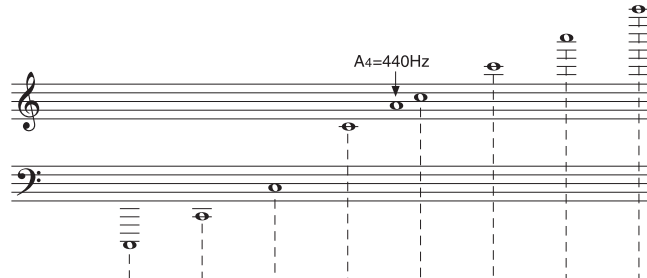
(1)	(2)	(3)	(4)
*120	24	C	C4 - C5
121	24	A	C4 - C5
*122	12	C	C4 - C5
*123	24	C	C4 - C5
*124	24	C	C4 - C5
*125	24	C	C4 - C5
*126	12	C	C4 - C5
*127	24	C	C4 - C5

NOTE

1. Tone number
2. Maximum polyphony
3. Range type
4. Recommended sound range for General MIDI
 - The meaning of each range type is described to the right.
 - The pitch of tones marked with an asterisk does not change, no matter which keyboard key is pressed.
 - Percussion sounds (tone numbers 128 to 136) have maximum polyphony of 12.
 - Turning on SOUND RANGE SHIFT (page E-56) causes range type B Tone (072 PICCOLO) to shift by one octave.

NOTA

1. Número de sonido
2. Polifonía máxima
3. Tipo de gama
4. Gama de sonido recomendado por la MIDI General
 - El significado de cada tipo de gama se describe a la derecha.
 - La altura tonal de los sonidos marcados con un asterisco no cambian, sin tener en cuenta qué tecla del teclado se presiona.
 - Los sonidos de percusión (números de sonido 128 a 136) tienen una polifonía máxima de 12.
 - Activando SOUND RANGE SHIFT (página S-56) ocasiona que el sonido (072 PICCOLO) de tipo de gama B se desplace en una octava.



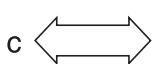
Range Type Tipo de gama	C-1	C0	C1	C2	C3	C4	C5	C6	C7	G7	C8	C9	G9
A (Standard type) (Tipo estándar)													
B ("072 PICCOLO") only (Solamente "072 PICCOLO")													
C (Sound Effect) (Efecto de sonido)	No scale for tones. Sin escala para los sonidos.												



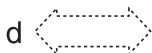
.....Keyboard range (SOUND RANGE SHIFT turned on)
.....Gama del teclado (SOUND RANGE SHIFT activado).



.....Keyboard range (SOUND RANGE SHIFT turned off)
.....Gama del teclado (SOUND RANGE SHIFT desactivado).



.....Available range (using transpose or MIDI receive)
.....Gama disponible (usando la transposición o recepción MIDI).



.....Notes in these ranges are produced by playing the notes in range C that are in the nearest octave as the result of transpose and MIDI data receive.
.....Las notas en estas gamas se producen ejecutando las notas en la gama C que se encuentre en la octava más cercana como resultado de las la transposición o recepción de datos MIDI.

Drum Assignment List ("←" Indicates the same sound as STANDARD SET)

Lista de asignación de batería ("←" Indica el mismo sonido que STANDARD SET)

Key/Note number	Drumset 1 STANDARD SET	Drumset 2 ROOM SET	Drumset 3 POWER SET	Drumset 4 ELEC SET	Drumset 5 SYNTH SET	Drumset 6 JAZZ SET	Drumset 7 BRUSH SET	Drumset 8 ORCHESTRA SET	Drumset 9 VOICE SET
E1 27	HIGH Q								
F1 28	SLAP							CLOSED HH-HAT	
F1 29	SCRATCH PUSH							PEDAL HH-HAT	
F1 30	SCRATCH PULL							OPEN HH-HAT	
G1 31	STICKS							RIPE CYMBAL 1	
A1 32	SQUARE CLICK								
A1 33	METRONOME CLICK								
A1 34	METRONOME BELL								
B1 35	ACUSTIC BASS DRUM	POWER BASS DRUM 2	POWER BASS DRUM 2	POWER BASS DRUM 2	SYNTH BASS DRUM 2	JAZZ BASS DRUM 2	JAZZ BASS DRUM 2	JAZZ BASS DRUM 1	SYNTH BASS DRUM 1
C2 36	BASS DRUM	POWER BASS DRUM 1	POWER BASS DRUM 1	ELEC BASS DRUM	SYNTH BASS DRUM 1	JAZZ BASS DRUM 1	JAZZ BASS DRUM 1	CONCERT BASS DRUM	VOICE BASS DRUM
D2 38	DEEP SNARE	ROOM SNARE 1	POWER SNARE 1	ELEC SNARE	SYNTH SNARE 1	JAZZ SNARE 1	BRUSH TAP	CONCERT SNARE	SYNTH SNARE
E2 40	ACUSTIC SNARE 2	ROOM SNARE 2	POWER SNARE 2	DANCE SNARE	SYNTH SNARE 2	JAZZ SNARE 2	BRUSH SWIRL	CONCERT SNARE	SYNTH SNARE 1
F2 41	CLOSED HH-HAT	ROOM LOW FLOOR TOM	ROOM LOW FLOOR TOM	ELEC LOW FLOOR TOM	SYNTH LOW FLOOR TOM			TIMPANI F	SYNTH LOW FLOOR TOM
G2 43	HIGH FLOOR TOM	ROOM HIGH FLOOR TOM	ROOM HIGH FLOOR TOM	ELEC HIGH FLOOR TOM	SYNTH HIGH FLOOR TOM			TIMPANI G	VOICE CLOSED HH-HAT
A2 44	PEDAL HH-HAT	ROOM LOW TOM	ROOM LOW TOM	ELEC LOW TOM	SYNTH LOW TOM			TIMPANI A'	VOICE PEDAL HH-HAT
B2 46	OPEN HH-HAT	ROOM LOW MID TOM	ROOM LOW MID TOM	ELEC LOW MID TOM	SYNTH OPEN HH-HAT			TIMPANI A	VOICE LOW TOM
C3 47	LOW MID TOM	ROOM LOW MID TOM	ROOM LOW MID TOM	ELEC LOW MID TOM	SYNTH LOW MID TOM			TIMPANI B'	VOICE OPEN HH-HAT
B3 48	HIGH MID TOM	ROOM HIGH MID TOM	ROOM HIGH MID TOM	ELEC HIGH MID TOM	SYNTH HIGH MID TOM			TIMPANI B	SYNTH LOW MID TOM
C#3 49	CRASH CYMBAL 1				SYNTH CYMBAL			TIMPANI C'	SYNTH HIGH MID TOM
D3 50	HIGH TOM	ROOM HIGH TOM	ROOM HIGH TOM	ELEC HIGH TOM	SYNTH HIGH TOM			TIMPANI D	SYNTH CYMBAL
E3 52	CHINESE CYMBAL			REVERSE CYMBAL				TIMPANI E'	
F3 53	RIPE BELL							TIMPANI E	
G3 55	MIMOURNE							TIMPANI F	
A3 56	CRASH CYMBAL				SYNTH CYMBELL				
A3 57	CRASH CYMBAL 2							CONCERT CYMBAL 2	SYNTH CYMBELL
B3 59	VIBRAS-SLAP								
B3 59	RIPE CYMBAL 2							CONCERT CYMBAL 1	
C4 60	HIGH BONGO								
C#4 61	LOW BONGO								
D4 62	MUTE HIGH CONGA				SYNTH MUTE HIGH CONGA				SYNTH MUTE HIGH CONGA
E4 64	OPEN HIGH CONGA				SYNTH OPEN HIGH CONGA				SYNTH OPEN HIGH CONGA
F4 65	LOW CONGA				SYNTH LOW CONGA				SYNTH LOW CONGA
G4 67	HIGH TIMBALES								
F#4 66	LOW TIMBALES								
G4 67	HIGH AGOGO								
A4 69	LOW AGOGO								
A4 69	CABASA								
B4 71	MARACAS				SYNTH MARACAS				SYNTH MARACAS
B4 71	SHORT WHISTLE								
C5 72	LONG WHISTLE								
D5 74	LONG GUIRO								
E5 76	CLAVES				SYNTH CLAVES				SYNTH CLAVES
E5 76	HIGH WOOD BLOCK								
F5 77	LOW WOOD BLOCK								
F#5 78	MUTE CUJICA								
G5 79	OPEN CUJICA								
A#5 80	MUTE TRIANGLE								
A5 81	OPEN TRIANGLE								
B5 83	SHAKER								
B5 83	JINGLE BELL								
C6 84	BELL TREE								
D6 86	CASTANETS								
D6 86	MUTE SURDO								
E6 87	OPEN SURDO								APPLAUSE
E6 88									

Fingered Chord Chart

Cuadro de acordes Fingered

Chord Type Root	M	m	7	m7	dim7	M7	dim	m7 ^b 5
C								
C [#] /(D ^b)								
D								
(D [#])/E ^b								
E								
F								
F [#] /(G ^b)								
G								
(G [#])/A ^b								
A								
(A [#])/B ^b								
B								

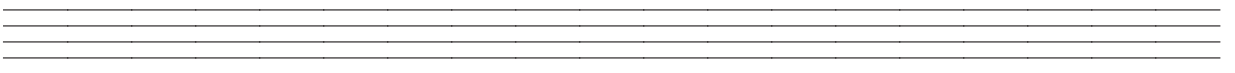
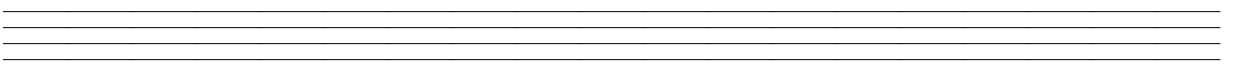
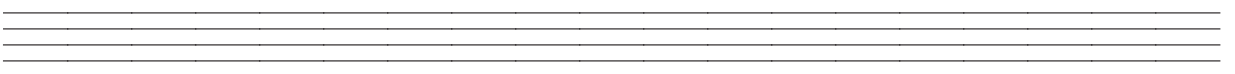
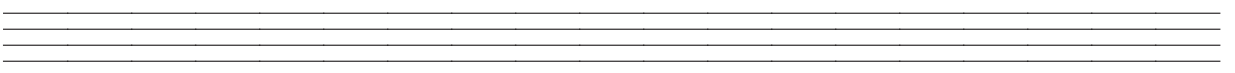
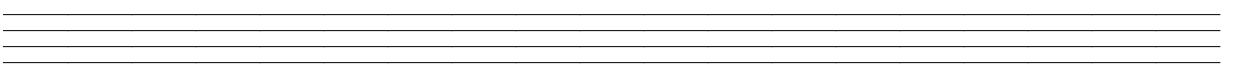
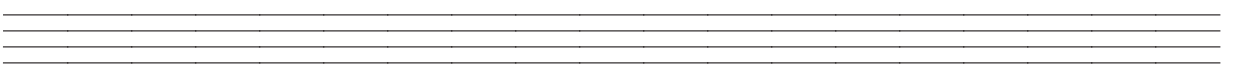
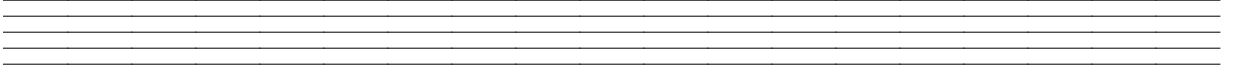
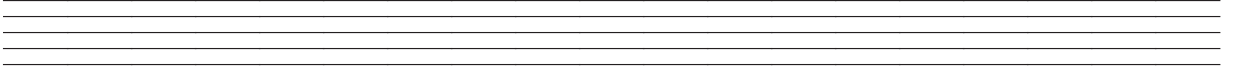
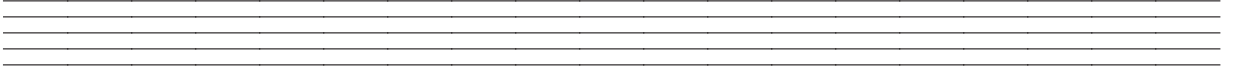
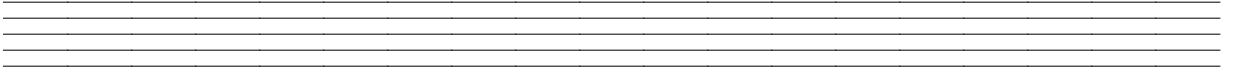


Chord Type Root	aug	sus4	7sus4	m add9	mM7	7 ^b 5	add9
C							
C [#] /(D ^b)							
D							
(D [#])/E ^b							
E							
F							
F [#] /(G ^b)							
G							
(G [#])/A ^b							
A							
(A [#])/B ^b							
B							

Rhythm List

Lista de ritmos

POPS I	25 EURO BEAT	JAZZ/FUSION	75 MAMBO
00 POP 1	26 RAP	50 BIG BAND	76 RHUMBA
01 WORLD POP	27 TRANCE	51 JAZZ VOICES	77 CHA-CHA-CHA
02 SOUL BALLAD 1	28 FUNK	52 SLOW SWING	78 MARENGUE
03 POP SHUFFLE	29 VERY FUNKY	53 SWING 1	79 BOLERO
04 POP BALLAD	ROCK I	54 SWING 2	LATIN II/VARIOUS I
05 POP 2	30 ROCK WALTZ	55 FOX TROT	80 SALSA
06 BALLAD	31 SLOW ROCK 1	56 MODERN JAZZ	81 REGGAE
07 FUSION SHUFFLE	32 SLOW ROCK 2	57 ACID JAZZ	82 PUNTA
08 POP 3	33 SOFT ROCK 1	58 LATIN FUSION	83 CUMBIA
09 SOUL BALLAD 2	34 SOFT ROCK 2	59 JAZZ WALTZ	84 PASODOBLE
POPS II	35 SOFT ROCK 3	EUROPEAN	85 RUMBA CATALANA
10 16 BEAT 1	36 FOLKIE POP	60 POLKA 1	86 SEVILLANA
11 16 BEAT 2	37 POP ROCK 1	61 POLKA 2	87 SKA
12 16 BEAT 3	38 60'S SOUL	62 MARCH 1	88 TEX-MEX
13 8 BEAT 1	39 POP ROCK 2	63 MARCH 2	89 FOLKLORE
14 8 BEAT 2	ROCK II	64 SLOW WALTZ	VARIOUS II
15 8 BEAT 3	40 ROCK 1	65 VIENNESE WALTZ	90 COUNTRY
16 POP 4	41 ROCK 2	66 WALTZ	91 BLUEGRASS
17 DANCE POP	42 POP ROCK 3	67 FRENCH WALTZ	92 TOWNSHIP
18 POP FUSION	43 RIFF ROCK	68 SERENADE	93 FAST GOSPEL
19 POP WALTZ	44 HEAVY METAL	69 TANGO	94 SLOW GOSPEL
DANCE/FUNK	45 50'S ROCK	LATIN I	95 RAI
20 JUNGLE	46 TWIST	70 BOSSA NOVA 1	96 ADANI
21 RAVE	47 NEW ORLNS R&R	71 BOSSA NOVA 2	97 BALADI
22 TECHNO	48 CHICAGO BLUES	72 SAMBA 1	98 ENKA
23 GROOVE SOUL	49 R&B	73 SAMBA 2	99 STR QUARTET
24 DISCO		74 JAZZ SAMBA	



Function ...	Transmitted	Recognized	Remarks
Basic Channel Default Changed	1-16*1 1-16	1-16 1-16	*1 Hold in memory as long as the power is supplied
Mode Default Messages Altered	Mode 3 X *****	Mode 3 X *****	
Note Number: True voice	24 - 96 *****	0-127 12 - 108*2	*2 See Note Table on page A-1.
Velocity Note ON Note OFF	O 9nH v = 1-127 X 9nH v = 0	O 9nH v = 1-127 X 9nH v = 0, 8nH v = XX	XX = no relation
After Touch Key's Ch's	X X	X O*3	
Pitch Bender	X	O	
Control Change 1 6,38 7 10 11 64 66 67	X O*4 X X X O*5 O*5 O*5	O*3 O*4 O O O O O O O	Modulation Data entry Volume Pan Expression Hold1 Sostenuto Soft pedal

100, 101 120 121	O*4 X X	O*4 O O	RPN LSB, MSB All sound off Reset all controller
Program Change: True #	O 0-127 *****	O 0-127 *****	
System Exclusive	O*6	O*6	
System Common : Song Pos : Song Sel : Tune	X X X	X X X	
System Real Time : Clock : Commands	O O	X X	
Aux Messages : Local ON/OFF : All notes OFF : Active Sense : Reset	X X X X	X O O X	
Remarks	<p>*3 Modulation and after touch for each channel are the same effect. *4 FINE TUNE, COARSE TUNE send/receive, and PITCH BEND SENSE, RPN Null receive *5 In accordance with sustain/assignable terminal setting *6 GM on/off GM ON : [F0] [7E] [7F] [09] [01] [F7] GM OFF : [F0] [7E] [7F] [09] [02] [F7]</p>		
Mode 1 : OMNI ON, POLY Mode 3 : OMNI OFF, POLY	Mode 2 : OMNI ON, MONO Mode 4 : OMNI OFF, MONO	O : Yes X : No	



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