Chapter 10
The Disklavier & MIDI

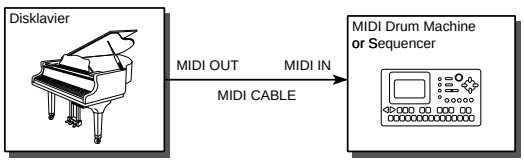
This chapter describes how the Disklavier can be used with other MIDI instruments. The Disklavier's MIDI functions are quite flexible, so there are many different connection possibilities. This chapter provides a few examples. Even if your particular application is not among these, you should be able to derive the information required to create your own setup by reading through these setup examples.

Note: For the MIDI setups described in this chapter, it is recommended that you connect your MIDI instrument to the MIDI OUT connector and set the HOST SELECT switch to MIDI so that the Disklavier functions properly. See "Setting the HOST SELECT Switch" on page 72.

Start/Stop Control of a MIDI Instrument with the Disklavier

In this setup, song disks are played on the Disklavier and a MIDI drum machine or sequencer plays in synchronization. When [PLAY] is pressed, the MIDI instrument starts to play. It can also be paused and stopped via the Disklavier. In addition, the tempo of the MIDI instrument will change as the tempo of the Disklavier is adjusted.

1 **Connect the Disklavier's MIDI OUT to the MIDI instrument's MIDI IN connector using a MIDI cable.**

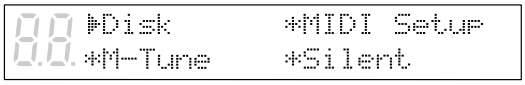


2 **Set the MIDI instrument to synchronize with the incoming MIDI clock, sometimes called "MIDI SYNC".**

Refer to its operating manual for details.

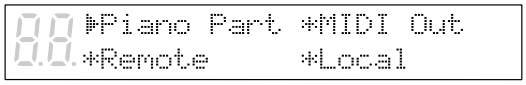
3 **Press [FUNC.].**

The FUNC. indicator lights and the Function menu appears.



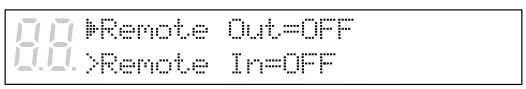
4 **Press [➡] until the ▶ cursor is next to the MIDI Setup option, then press [ENTER].**

The following display appears.



5 **Press [➡] until the ▶ cursor is next to the Remote option, then press [ENTER].**

The following display appears.



6 **Press [+/YES] to set the Remote Out parameter to ON.**

7 **Press [FUNC.] or [STOP] to exit the MIDI setup.**

The Disklavier can now be used in the sequencer system.

Sending the Keyboard Data to a MIDI Instrument

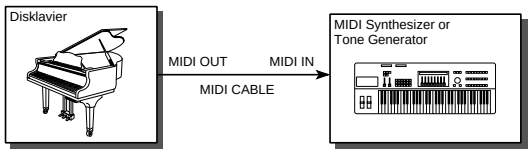
In this setup, as you play the Disklavier, a connected external MIDI tone generator or synthesizer plays as well. This is sometimes referred to as voice layering or unison. A typical combination may be the Disklavier and a strings voice, or the Disklavier and a vibes voice. From the Disklavier, you can select the tone generator's voice, set its volume, and its transposition.

It is also possible to set a split point on the keyboard, so that, for example, your left-hand part is backed by a bass guitar voice and your right-hand part is backed by a marimba. MIDI data from each side of the split point is sent to a different MIDI channel, and the voice, volume, and transposition for each side can be set individually.

Note: This setup is not intended for Ensemble song playback. It is intended for manual piano playing with an external tone generator or synthesizer. To send Ensemble song data to an external MIDI instrument, see "Sending Song Data to a MIDI Instrument" on page 60.

The following procedure describes how to play MIDI instruments from the Disklavier using a keyboard split point.

1 **Connect the Disklavier's MIDI OUT to the external MIDI instrument's MIDI IN connector using a MIDI cable.**

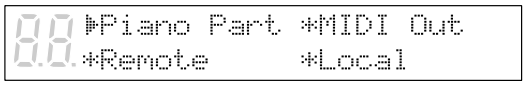


2 **Press [FUNC.].**

The FUNC. indicator lights and the Function menu appears.

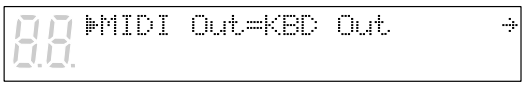
3 **Press [➡] until the ▶ cursor is next to the MIDI Setup option, then press [ENTER].**

The following display appears.



4 **Press [➡] until the ▶ cursor is next to the MIDI Out option, then press [ENTER].**

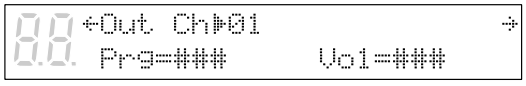
The following display appears.



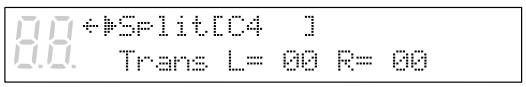
☛ See "Summary of the MIDI Out Parameter in a MIDI Setup" on pages 68 and 69 for details on the MIDI Out parameter.

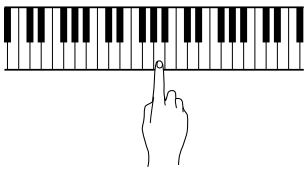
5 **Press [➡].**

A display similar to the following appears.



6 **To set a split point, press [➡] until the following display appears. Then, with the ▶ cursor next to the Split parameter, use the keyboard or the [–/NO] and [+/YES] buttons to select a key.**



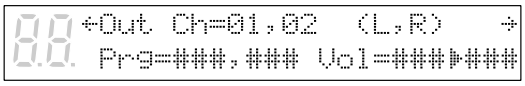


A keyboard split point can be set from A1 to C7.

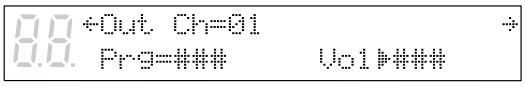
7 **If you want to transpose the MIDI output, press [➡] to position the ▶ cursor next to the Trans parameter, then use the [–/NO] and [+/YES] buttons to set a value.**

The MIDI output can be transposed from –60 to +60 in one semitone steps. Separate transposition values can be set for the left- and right-hand parts.

8 **Press [⬅] until the following display appears.**



If you did not set a split point, the subsequent displays will be similar to the following.

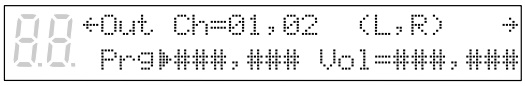


9 **Press [⬅] until the ▶ cursor is next to the Out Ch parameter, then use the [–/NO] and [+/YES] buttons to set a value.**

The "Out Ch" option is used to select the MIDI channel/s through which the Disklavier will transmit MIDI data. It can be set to OFF, MIDI channels 1 to 16 or HP.

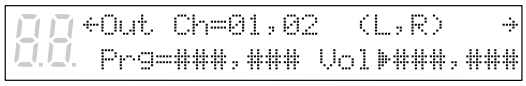
Channel	Description
OFF	No data is sent to the MIDI instrument.
1 to 16	The Disklavier keyboard data and pedal data is sent on the selected channel.
HP	Keyboard data and on/off pedal data will be sent on channel 1, and continuous pedal data (half pedal) will be sent on channel 3. In this case the pedal data will be continuously variable (half pedal).

10 **To select a voice for the MIDI output, press [➡] until the ⊩ cursor is next to the Prg parameter, then use the [–/NO] and [+/YES] buttons to select a voice.**



If you had set a split point, you can set different voices for the left- and right-hand parts.
A setting of "###" means no voice selection.

11 **To set the volume of the MIDI output, press [➡] until the ⊩ cursor is next to the Vol parameter, then use the [–/NO] and [+/YES] buttons to set the volume.**



If you had set a split point, you can set different volume levels for the left- and right-hand piano parts.
A setting of "###" will not change the volume.

12 **Press [FUNC.] or [STOP] to exit the MIDI setup.**

Filtering KBD Out Data

When sending data for the piano part you play on the Disklavier keyboard to an external MIDI instrument, the data contains keyboard touch data and continuous pedal data as well. These data can be filtered so that only basic MIDI messages are output.

1 **Perform up to step 7 of "Sending the Keyboard Data to a MIDI Instrument".**

2 **Press [➡].**

The following display appears.

3 **Use the [–/NO] and [+/YES] buttons to to set the filtering options.**

Parameter	Option	Description
Key Touch	ON (default)	Sends silent notes, diminishing sounds
	OFF	Doesn't send key touch data
Pedal	CONT (default)	Sends continuous pedal data
	SWITCH	Sends On/Off pedal data

4 **Go back to step 8 in "Sending the Keyboard Data to a MIDI Instrument".**

Receiving Data from a MIDI Sequencer

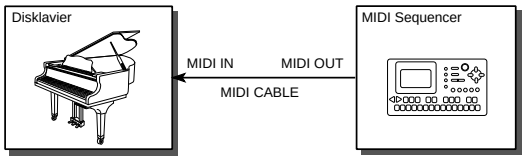
In this setup, the Disklavier is connected to a MIDI sequencer for song recording and playback. In this way you can use a MIDI sequencer's powerful recording and editing functions for creating your Disklavier songs. The sequencer can be a dedicated music sequencer, a MIDI data recorder, or a MIDI sequencer program running on a computer.

A 500 millisecond delay is applied to the incoming MIDI data so that the Disklavier plays more fluently. Because of the delay, be aware that the beat indicator on the sequencer is slightly ahead of the actual sounds being produced. Be aware of this. To control the Disklavier in real time, see "Controlling the Disklavier in Real Time" on page 59.

The Disklavier's Piano Rcv Ch parameter must be set to match that of the sequencer track that contains the piano parts. For example, if the piano part is recorded on sequencer track 7 and track 7 is transmitting on MIDI channel 12, the Disklavier should be set to receive on MIDI channel 12. The Piano Rcv Ch parameter has the following options.

Option	Description
##	MIDI IN data is played by just the internal tone generator.
01 to 16	MIDI IN data is played by the piano on the specified MIDI channel.
HP	MDI IN data is played by the piano. Left-hand part on MIDI channel 1, right-hand part on MIDI channel 2, and half pedal data on MIDI channel 3.
1+2	MIDI IN data is played by the piano. Left-hand part on MIDI channel 1, right-hand part on MIDI channel 2.
Prg	MIDI IN data is played by the piano on the channel with the smallest number containing a piano group voice.
Prg(all)	All channels that contain a piano group voice in the MIDI IN data is played by the piano.

1 **Connect the MIDI sequencer's MIDI OUT to the Disklavier's MIDI IN with a MIDI cable.**

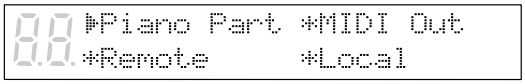


2 **Press [FUNC.].**

The FUNC. indicator lights and the Function menu appears.

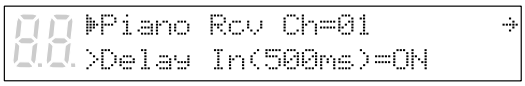
3 **Press [➡] until the ▶ cursor is next to the MIDI Setup option, then press [ENTER].**

The following display appears.



4 **With the ▶ cursor next to the Piano Part option, press [ENTER].**

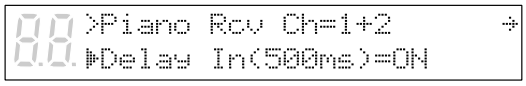
The following display appears.



5 **Use the [–/NO] and [+/YES] buttons to select a MIDI channel.**

☛ See the list of available options on the left.

6 **Press [➡] until the ▶ cursor is next to the Delay In parameter, then use the [–/NO] and [+/YES] buttons to set the Delay In (500 ms) to ON.**



☛ For more information on the 500 ms delay function, see "Controlling the Disklavier in Real Time" on page 59.

7 **Press either [FUNC.] or [STOP] to return to the normal display.**

The Disklavier can now be used in the sequencer system.

Controlling the Disklavier in Real Time

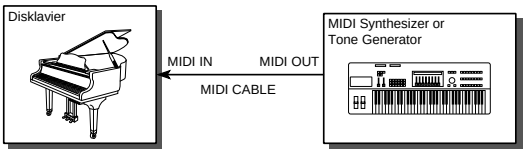
As the Disklavier uses a mechanical system for driving the piano keys, incoming MIDI data cannot be played instantly. For this reason a fixed delay of 500 ms is usually applied to all incoming MIDI data. For most applications this delay will not be a problem.

If you want to play the Disklavier in “real time” via a MIDI master keyboard, synthesizer, or MIDI guitar controller, this fixed delay can be turned off. However, it will still take the Disklavier time to respond to incoming MIDI data and the Disklavier piano response time will vary based on the velocity of the notes and is not user-controllable.

You need to set the Delay In parameter to OFF, and set the Piano Rcv Ch parameter to match that of the other keyboard’s MIDI transmit channels. If the channels do not match, the Disklavier will not respond to the MIDI data.

☛ Refer to the other keyboard’s user guide for information on setting its transmit MIDI channels.

1 **Connect the MIDI controller’s MIDI OUT to the Disklavier’s MIDI IN using a MIDI cable.**

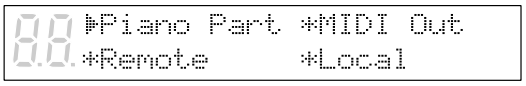


2 **Press [FUNC.].**

The FUNC. indicator lights and the Function menu appears.

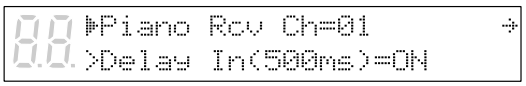
3 **Press [➡] until the ▶ cursor is next to the MIDI Setup option, then press [ENTER].**

The following display appears.



4 **With the ▶ cursor next to the Piano Part option, press [ENTER].**

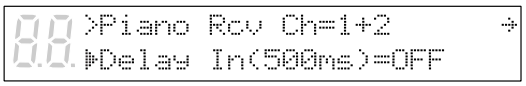
The following display appears.



5 **Use the [–/NO] and [+/YES] buttons to select a MIDI channel.**

☛ See page 58 for a list of available options.

6 **Press [➡] until the ▶ cursor is next to the Delay In parameter, then use the [–/NO] and [+/YES] buttons to set the Delay In (500 ms) to OFF.**



7 **Press [FUNC.] or [STOP] to return to the normal display.**

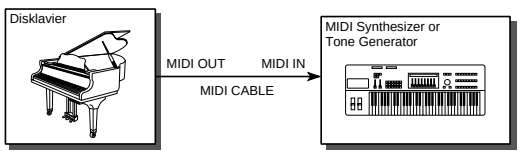
Sending Song Data to a MIDI Instrument

The parts of an Ensemble song are usually played by the internal XG tone generator. However, because the song data that is sent to the internal XG tone generator is simultaneously sent to the MIDI OUT connector, you can also output the song file to an external tone generator or a MIDI instrument such as a synthesizer.

When playing back songs from a computer, for example, it is a good idea to connect an external tone generator if the song has more than 16 channels. In this case, the Disklavier will play channels 1 to 16 and the rest of the channels will be played by the external tone generator. See “Playing Back More than 16 Channels” on page 74.

For the best compatibility, your external MIDI instrument should support Yamaha XG, General MIDI (GM), or both.

1 **Connect the Disklavier’s MIDI OUT to the external MIDI instrument’s MIDI IN connector using a MIDI cable.**

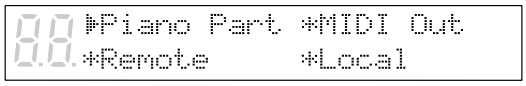


2 **Press [FUNC.].**

The FUNC. indicator lights and the Function menu appears.

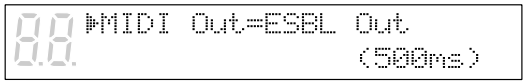
3 **Press [➡] until the ▶ cursor is next to the MIDI Setup option, then press [ENTER].**

The following display appears.



4 **Press [➡] until the ▶ cursor is next to the MIDI Out option, then press [ENTER].**

5 **Use the [–/NO] and [+/YES] buttons to select ESBL Out.**



☛ See “Summary of the MIDI Out Parameter in a MIDI Setup” on pages 68 and 69 for details on the MIDI Out parameter.

6 **Press [FUNC.] or [STOP] to exit the MIDI Setup mode.**

Playing Back Import Files

Songs recorded onto floppy disks using MIDI equipment other than the Disklavier can be played back with the Disklavier. These are called “import files”. For these files, you must specify the tracks to be played by the Disklavier piano, because piano parts in import files may be stored on any track.

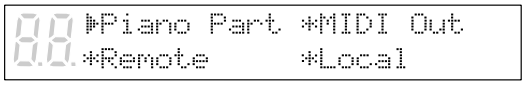
1 **Insert the song disk into the disk drive.**

2 **Press [FUNC.].**

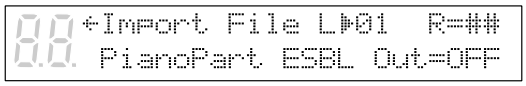
The FUNC. indicator lights and the Function menu appears.

3 **Press [➡] until the ▶ cursor is next to the MIDI Setup option, then press [ENTER].**

The following display appears.



4 **With the cursor next to the Piano Part option, press [ENTER]. Then, press [➡] until the following display appears.**



5 **Use the [–/NO] and [+/YES] buttons to set the piano part channels.**

Option	Description
##	The import file is played by the tone generator only.
01 to 16	The import file is played by the piano on the specified MIDI channel.

Prg	The import file is played by the piano on the channel with the smallest number containing a piano group voice.
Prg(all)	All channels that contain a piano group voice in the import file is played by the piano.

6 **Press [PLAY] to play back the song disk.**

Synchronization Using the MTC

MTC Synchronization Settings

In order to achieve synchronization using the MTC (MIDI time code), the settings for sending and receiving the MTC are performed.

This Disklavier has a function that uses the MIDI time code (MTC) to synchronize with an external component.

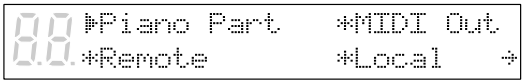
This Disklavier can function either as the Master or as the Slave when synchronization is to be achieved using the MTC. Set the MTC-related parameters in order to use the synchronization function.

1 **Press [FUNC.].**

The FUNC. indicator lights and the Function menu appears.

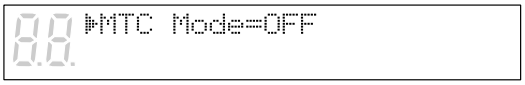
2 **Press [➡] until the ▶ cursor is next to the MIDI setup option, then press [ENTER].**

The following display appears.



3 **Press [➡] until the ▶ cursor is next to the MTC, then press [ENTER].**

The following display appears.



One of the following three MTC mode parameters can be selected.

OFF: (default) The synchronization function is set to OFF.

Slave: Disklavier operates in response to the MTC received from the external component.

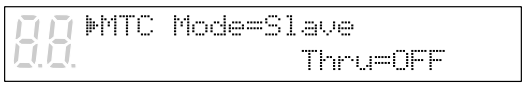
Master: Disklavier sends the MTC to the external component.

Note: The MTC settings are stored in the memory when the power is turned off.

☛ Depending on the MTC settings, some restrictions apply to the remote function. See "Correlation between MTC Settings and Remote Function, and Behavior" on page 67.

To Operate Disklavier in the Slave Mode

4a **Use the [–/NO] and [+/YES] buttons to select "MTC Mode=Slave".**



The MTC can be received at any of the rates shown below. The rate is detected automatically.

Rate parameter

24fps
25fps
DF
30fps

5a **Press [➡] to position the ▸ cursor next to the "Thru", and set the output port.**

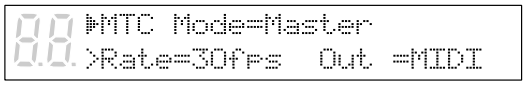
Set the connector from which the MTC which has been received is to be output.

Thru parameter: OFF (default)
MIDI
HOST

"fps" stands for frames per second.
"DF" stands for dropped frame.

To Operate Disklavier in the Master Mode

4b **Use the [–/NO] and [+/YES] buttons to select "MTC Mode=Master".**



5b **Press [➡] to position the ▸ cursor next to the "Rate", and set the frame rate.**

Select the setting that corresponds to the Frame Rate of the external component to be synchronized with.

Rate parameter

24fps
25fps
DF
30fps (default)

6b **Press [➡] to position the ▸ cursor next to "Out," and set the destination where the MTC is to be sent.**

The MTC can be output from either the MIDI OUT connector or TO HOST connector. Select the output destination here.

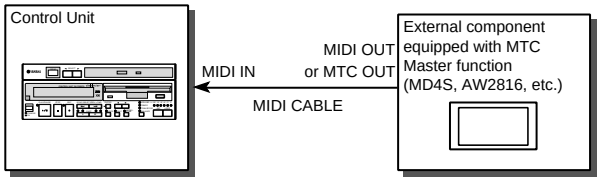
Out parameter: MIDI (default)
HOST

Using Disklavier as the MTC Slave

In this status, Disklavier operates in synchronization with the time information of the external component.

Example of connections

Receiving the MTC from MIDI IN



MTC Mode=Slave

Establish the MTC Master mode by following the instructions in the manual accompanying the external component.

MTC Sync Playback (Slave Mode)

The MTC (MIDI time code) is received, and the MIDI song is played back in synchronization with the external component that supports the MTC. “Slave” must have already been selected as the MTC/MTC mode setting.

1 **Select the song that supports synchronization and that you want to play using [SONG SELECT] buttons. Press [PLAY/PAUSE] button to engage the Playback Standby mode.**

The letters “MTC” flash on the counter area of the playback screen, the following display appears, and “MTC” flashes on the display.

Flashes

2 **Operate the external component. (The external component must first be set up to serve as the MTC Master.)**

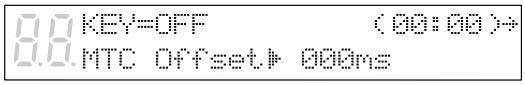
3 **Playback is performed in synchronization with the MTC received from the external component.**

Finely Adjusting the MTC Synchronization Time

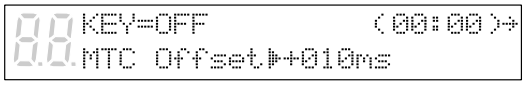
Playback can also be synchronized with an offset applied to the received MTC. A deviation in the synchronization can be adjusted using this parameter.

During song selection, press [◀] on the song name display to display the previous screen.

The following display appears.



Set the offset time.



Parameter - 500 ms to + 500 ms (in 10 ms increments)

Note: In the case of E-SEQ format songs, songs that do not support MTC synchronization, CD playback or Smartkey playback, it is not possible to perform MTC sync playback.

If pause, fast forward or reverse is performed using the Disklavier panel or remote controller during MTC sync playback, the MTC sync playback is suspended. However, sync playback can be resumed in response to signals from the external component by pressing the [STOP] button, and then pressing the [START] button.

MTC Offset appears only when a song that supports synchronization has been selected.

The MTC Offset parameter is stored in the memory even when the power is turned off.

Note: By pressing the [PLAY/PAUSE] button again in the playback standby mode in step 1, a song that supports synchronization can also be played back in the same way as a regular song.

MTC Sync Recording (Slave Mode)

Sync recording is performed while the MTC is received from the external component. "Slave" must have already been selected as the MTC/ MTC mode setting.

1 **Press [REC] to engage the Record Standby mode.**

The REC indicator lights and the PLAY/PAUSE indicator flashes.

2 **Press [PLAY/PAUSE] and recording will begin.**

The PLAY/PAUSE indicator stops flashing.

3 **Operate the external component. (The external component must first be set up to serve as the MTC Master.)**

Note: Bear in mind that regular recording will be performed if you start playing the song before the MTC message is output from the external component. (You must not step on the pedals.)

4 **Start playing your song in synchronization with the external component.**

5 **Upon completion of the song, stop the external component, and then press [STOP].**

Note: MTC sync recording is for recording new songs only.

Song recorded by MTC sync recording are supported by MTC synchronization.

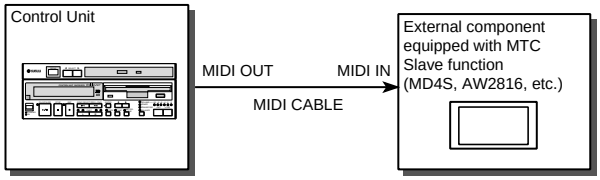
Songs recorded by E-SEQ recording, metronome recording or CD sync recording are not supported by MTC synchronization.

Using Disklavier as the MTC Master

During playback and recording, Disklavier sends the MTC, and the external component operates in synchronization with the MTC.

Example of connections

Sending the MTC from MIDI OUT

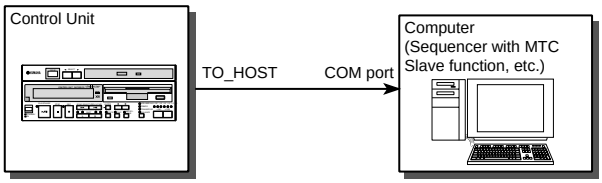


MTC Mode=Master
Rate = Adjust to the external component's rate.

Out=MIDI

Establish the MTC Slave mode by following the instructions in the manual accompanying the external component.

Sending the MTC from TO HOST



MTC Mode=Master
Rate=Adjust to the external component's rate.

Out=HOST

Establish the MTC Slave mode by following the instructions in the manual accompanying the soft.

1 Set the MTC-compatible external component to the MTC receiving standby mode.

Refer to its operating manual for details.

2 Proceed with playback or recording using the control unit.

The MTC is sent, and the MTC-compatible external component starts sync playback.

Correlation between MTC Settings and Remote Function, and Behavior

MTC Mode	Remote		Transmit				Receive		
	Out	In	FA-FC	F2	F8	MTC	FA-FC	F2	MTC
OFF	OFF	OFF	×	×	×	×	×	×	×
	OFF	ON	×	×	×	×	O	O	×
	ON	OFF	O	O	O	×	×	×	×
	ON	ON	O	O	O	×	O	O	×
Slave	OFF	OFF	×	×	×	Thru	×	×	O
	OFF	ON	×	×	×	Thru	O	×	O
	ON	OFF	O	O	×	Thru	×	×	O
	ON	ON	O	O	×	Thru	O	×	O
Master	OFF	OFF	×	×	×	O	×	×	×
	OFF	ON	×	×	×	O	O	×	×
	ON	OFF	O	×	×	O	×	×	×
	ON	ON	O	×	×	O	O	×	×

When the song position has exceeded [7F 7F], F2 (Song Position), F8 (Continue) and F8 (Timing Clock) are not sent.

Summary of the MIDI Out Parameter in a MIDI Setup

The following tables show the differences among the MIDI OUT settings (KBD Out, ESBL Out, Thru Port2) with the **HOST SELECT switch set to MIDI**.

MIDI OUT = KBD Out

Action	TO HOST connector	MIDI OUT connector	Piano/Internal XG tone generator
Play on keyboard	×	MIDI data sent if Out Ch ≠ OFF.	No internal tone generator sounds unless Voice button is ON and Local = ON.
Playback of ensemble song file	×	No data sent except for pedal data. (See note.)	Piano and internal tone generator play normally.
MIDI data received from TO HOST connector	×	×	×
MIDI data received from MIDI IN connector	×	No MIDI data passed through except for pedal data. (See note.)	Piano and internal tone generator play normally; delay applied if Delay In = ON.

× = TO HOST connector inactive

Note: When pedals are played (activated) by data, the depth of the pedals is read by the sensors and sent (KBD Out) via channels selected in the Out Ch setting (as, unlike the keyboard, the pedals cannot distinguish whether they are being activated by foot or by data).

MIDI OUT = ESBL Out

Action	TO HOST connector	MIDI OUT connector	Piano/Internal XG tone generator
Play on keyboard	×	No MIDI data sent unless Voice button in ON.	No internal tone generator sounds unless Voice button is ON and Local = ON.
Playback of ensemble song file	×	All MIDI data sent except for piano parts (pedals always sent on piano channel); piano parts sent if PianoPart ESBL OUT = ON; if E-SEQ song, incremental pedals not sent on channel 3.	Piano and internal tone generator play normally.
MIDI data received from TO HOST connector	×	×	×
MIDI data received from MIDI IN connector	×	All MIDI data passed through except piano parts; piano parts sent if PianoPart ESBL OUT = ON; delay applied if Delay In = ON.	Piano and internal tone generator play normally; delay applied if Delay In = ON.

× = TO HOST connector inactive

MIDI OUT = Thru Port2

Action	TO HOST connector	MIDI OUT connector	Piano/Internal XG tone generator
Play on keyboard	×	No MIDI data sent.	No internal tone generator sounds unless Voice button is ON and Local = ON.
Playback of ensemble song file	×	No MIDI data sent.	Piano and internal tone generator play normally.
MIDI data received from TO HOST connector	×	×	×
MIDI data received from MIDI IN connector	×	No MIDI data passed through.	Piano and internal tone generator play normally; delay applied if Delay In = ON.

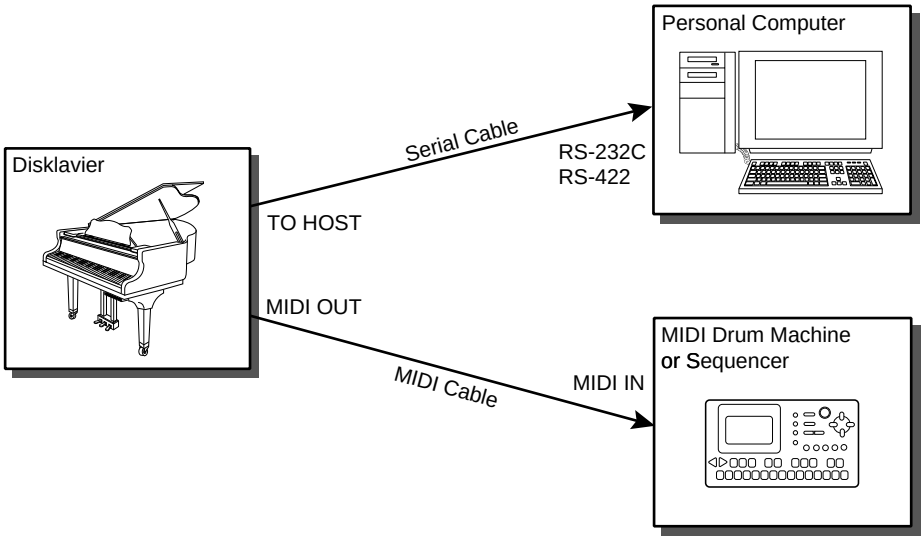
× = TO HOST connector inactive

Chapter 11
The Disklavier & Personal Computers

Creating music with computers used to be a job for professionals only. However, in this age of multimedia and personal computers, almost anyone can enjoy creating music.

General MIDI and Standard MIDI File (SMF) formats supported by the Disklavier are formats common to most personal computers and MIDI instruments. For example, use your personal computer to download SMF data from the Internet and play it on the Disklavier.

The Disklavier can be connected to a personal computer using the TO HOST connector. It can also be connected via MIDI IN/OUT connectors, but a separate MIDI interface is required. The TO HOST connector allows you to connect your Disklavier to a personal computer without the MIDI interface.



Note: To use the Disklavier properly with the computer setups described in this chapter, it is recommended that you connect your computer to the TO HOST connector and set the HOST SELECT switch to PC1, PC2, or MAC depending on your computer type. See “Setting the HOST SELECT Switch” on page 72.

Connecting to a Personal Computer

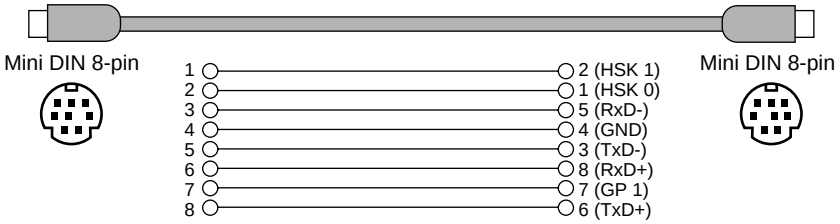
Specifically, Apple Macintosh, IBM PC/AT, and NEC PC-9801/9821 series computers can be directly connected to the Disklavier. Connect the RS-232C or RS-422 connector on your computer to the TO HOST connector on the Control Unit using the specified cables shown below (available separately). Also refer to your computer’s operating manual to make sure the connection is made properly.

Your computer may also require a serial port driver for this function. This software is used for controlling the MIDI interface. For further information, please consult your Yamaha dealer.

Note: Be sure to turn the computer and Disklavier power switches off before making the connections and setting the HOST SELECT switch.

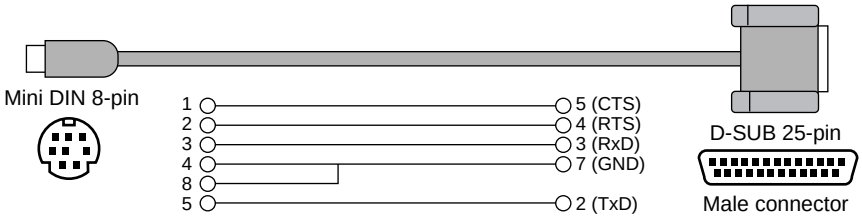
Connecting to an Apple Macintosh Series Computer

Use a standard Macintosh 8-pin system peripheral cable.



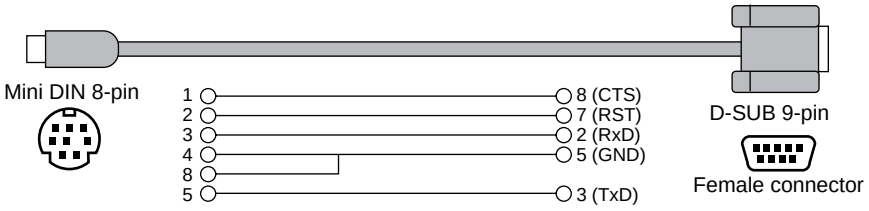
Connecting to an NEC PC-9801/9821 Series Computer

Use a standard 8-pin MINI DIN ➔ 25-pin D-SUB cross cable.

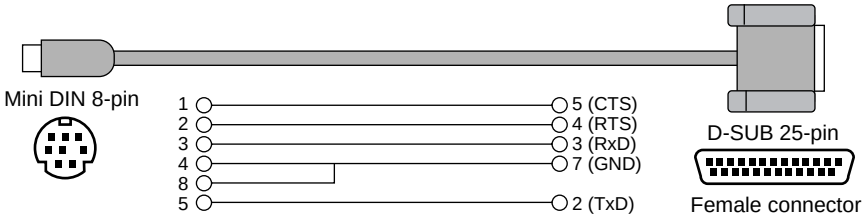


Connecting to an IBM PC/AT Series Computer

(a) Use a standard 8-pin MINI DIN ➔ 9-pin D-SUB cross cable.

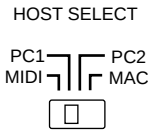


(b) Use a standard 8-pin MINI DIN ➔ 25-pin D-SUB cross cable.



Setting the HOST SELECT Switch

Set the HOST SELECT switch on the rear panel of the Control Unit according to your computer type.



HOST SELECT	Computer type	Baud rate	Remarks
MAC	Apple Macintosh series	31,250	On the computer side, set the clock speed to 1 MHz.
PC1	NEC PC-9801/9821 series	31,250	Some software require the HOST SELECT switch to be set to PC2 (38,400 bps) in order to function properly.
PC2	IBM PC/AT series	38,400	
MIDI	General MIDI equipment	31,250	MIDI data is sent/received via MIDI OUT/IN connectors, and not the TO HOST connector.

* Apple and Macintosh are trademarks of Apple Computer, Inc.

* IBM PC/AT is a trademark of International Business Machines Corporation.

* PC-9801/9821 is a trademark of NEC Corporation.

Playing Back Songs Created in a Computer

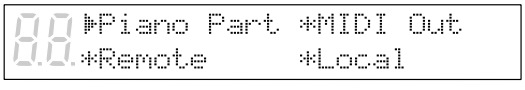
Songs created and stored in your computer system can be played back by the Disklavier.

1 **Press [FUNC.].**

The FUNC. indicator lights and the Function menu appears.

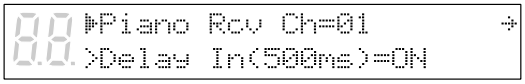
2 **Press [➡] until the ▶ cursor is next to the MIDI Setup option, then press [ENTER].**

The following display appears.



3 **With the ▶ cursor next to the Piano Part option, press [ENTER].**

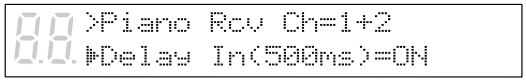
The following display appears.



4 **With the ▶ cursor next to the Piano Rcv Ch parameter, use the [–/NO] and [+/YES] buttons to select the channel for the piano part.**

The selected channel will be played by the Disklavier piano, and the other channels by the internal XG tone generator. See “Receiving Data from a MIDI Sequencer” on page 58 for details on MIDI channels.

5 **Press [➡] until the ⊩ cursor is next to the Delay In parameter, then use the [–/NO] and [+/YES] buttons to set it.**



Option	Description
ON	A delay of 500 ms is applied to all incoming MIDI data from the computer so that the timing of the piano and the internal XG tone generator match for smooth playback.
OFF	The delay is not applied, and the piano is played in "real time". However, playback will not be smooth. When Piano Rcv Ch is set to ##, all channels are played by the internal XG tone generator, so Delay In is automatically set to OFF.

☛ For more information on the 500 ms delay function, see "Controlling the Disklavier in Real Time" on page 59.

6 **Press [FUNC.] or [STOP] to return to the normal display.**

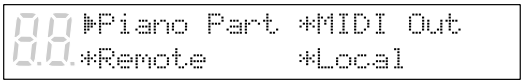
Recording Songs to a Computer (Sequencer)

You can record keyboard and pedal data onto a computer.

1 **Press [FUNC.].**

2 **Press [➡] until the ⊩ cursor is next to the MIDI Setup option, then press [ENTER].**

The following display appears.



3 **Press [➡] until the ⊩ cursor is next to the MIDI Out option, then press [ENTER].**

The following display appears.

☛ See "Summary of the MIDI Out Parameter in a Computer Setup" on pages 76 and 77 for details on the MIDI Out parameter.

4 **With the ⊩ cursor next to the MIDI Out parameter, press [➡].**

The "Out Ch" option is used to select the MIDI channel on which the Disklavier will transmit MIDI data. It can be set to OFF, MIDI channels 1 to 16, or HP.

Channel	Description
OFF	No data is sent to the MIDI instrument.
1 to 16	The Disklavier keyboard data and pedal data is sent on the selected channel.
HP	Keyboard data and on/off pedal data will be sent on channel 1, and continuous pedal data (half pedal) will be sent on channel 3. In this case the pedal data will be continuously variable (half pedal).

If you want to play the piano parts on the internal XG tone generator, set Piano Rcv Ch to ##. There will be no delay effect if all channels are monitored on the internal XG tone generator.

☛ See “Controlling the Disklavier in Real Time” on page 59 for details on the 500 ms delay effect.

To monitor all recording parts on the internal XG tone generator, set the “Echo Back” or “Patch Thru” options on the computer or sequencer to ON. See their operating manuals for details.

5 **Press [FUNC.] or [STOP] to return to the normal display.**

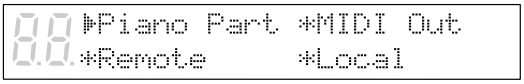
Playing Back More than 16 Channels

You can play back from a computer song data that contains up to 32 channels by connecting the Disklavier’s TO HOST connector to the serial port on a computer and its MIDI OUT connector to a MIDI instrument. The 32 channels are sent to the Disklavier using software corresponding to port signals. The Disklavier plays channels 1 to 16 (port 1), and channels 17 to 32 (port 2) are output to an external MIDI instrument.

1 **Press [FUNC.].**

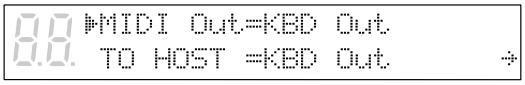
2 **Press [➡] until the ▶ cursor is next to the MIDI Setup option, then press [ENTER].**

The following display appears.



3 **Press [➡] until the ▶ cursor is next to the MIDI Out option, then press [ENTER].**

The following display appears.



☛ See “Summary of the MIDI Out Parameter in a Computer Setup” on pages 76 and 77 for details on the MIDI Out parameter.

4 **With the ▶ cursor next to the MIDI Out parameter, use the [–/NO] and [+/YES] buttons to select “Thru Port2”.**

5 **Press [FUNC.] or [STOP] to return to the normal display.**

Temporarily Deactivating the Internal Tone Generators

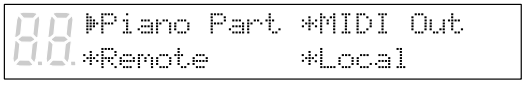
When you are using the Disklavier's internal XG tone generator from a computer and do not want any interference from the keyboard, you can set the Disklavier so that the tone generator and keyboard are temporarily disconnected. Even when the Voice function is on, no sound is produced from the piano. It will sound only by messages received through the MIDI IN or TO HOST connectors.

1 **Press [FUNC.].**

The FUNC. indicator lights and the Function menu appears.

2 **Press [➡] until the ▶ cursor is next to the MIDI Setup option, then press [ENTER].**

The following display appears.



3 **Press [➡] until the ▶ cursor is next to the Local option, then press [ENTER].**

4 **Use the [–/NO] and [+/YES] buttons to set Local to OFF.**

The following display appears.

Note: The OFF setting remains in effect only until the Disklavier is switched off. The next time you switch on the Disklavier, the "Local" setting is returned to ON (default).

5 **Press [FUNC.] or [STOP] to return to the normal display.**

Summary of the MIDI Out Parameter in a Computer Setup

The following tables show the differences among the MIDI OUT settings (KBD Out, ESBL Out, Thru Port2) with the **HOST SELECT switch set to PC1, PC2 or MAC**.

MIDI OUT = KBD Out

Action	TO HOST connector	MIDI OUT connector	Piano/Internal XG tone generator
Play on keyboard	MIDI data sent if Out Ch ≠ OFF.	MIDI data sent if Out Ch ≠ OFF.	No internal tone generator sounds unless Voice button is ON and Local = ON.
Playback of ensemble song file	No MIDI data sent.	No MIDI data sent.	Piano and internal tone generator play normally.
MIDI data received from TO HOST connector	No MIDI data passed through except for pedal data. (See note.)	No MIDI data passed through except for pedal data. (See note.)	Piano and internal tone generator play normally; delay applied if Delay In = ON.
MIDI data received from MIDI IN connector	No MIDI data passed through without delay.	No MIDI data passed through.	Piano and internal tone generator do not respond.

Note: When pedals are played (activated) by data, the depth of the pedals is read by the sensors and sent (KBD Out) via channels selected in the Out Ch setting (as, unlike the keyboard, the pedals cannot distinguish whether they are being activated by foot or by data).

MIDI OUT = ESBL Out

Action	TO HOST connector	MIDI OUT connector	Piano/Internal XG tone generator
Play on keyboard	MIDI data sent if Out Ch ≠ OFF.	MIDI data sent unless Voice button is ON.	No internal tone generator sounds unless Voice button is ON and Local = ON.
Playback of ensemble song file	No MIDI data sent except for pedal data. (See note.)	All MIDI data sent except for piano parts (pedal always sent on piano channel); piano parts sent if PianoPart ESBL OUT = ON; if E-SEQ song, incremental pedals not sent on channel 3.	Piano and internal tone generator play normally.
MIDI data received from TO HOST connector	No MIDI data passed through except for pedal data. (See note.)	All MIDI data passed through; delay applied if Delay In = ON.	Piano and internal tone generator play normally; delay applied if Delay In = ON.
MIDI data received from MIDI IN connector	All MIDI data passed through without delay.	No MIDI data passed through.	Piano and internal tone generator do not respond.

Note: When pedals are played (activated) by data, the depth of the pedals is read by the sensors and sent (KBD Out) via channels selected in the Out Ch setting (as, unlike the keyboard, the pedals cannot distinguish whether they are being activated by foot or by data).

MIDI OUT = Thru Port2

Action	TO HOST connector	MIDI OUT connector	Piano/Internal XG tone generator
Play on keyboard	MIDI data sent if Out Ch ≠ OFF.	No MIDI data sent.	No internal tone generator sounds unless Voice button is ON and Local = ON.
Playback of ensemble song file	No MIDI data sent except for pedal data. (See note.)	No MIDI data sent.	Piano and internal tone generator play normally.
MIDI data received from TO HOST connector	No MIDI data passed through except for pedal data. (See note.)	All MIDI data on channels 17-32 sent; delay applied if Delay In = ON.	Piano and internal tone generator play channels 1-16 normally; delay applied if Delay In = ON.
MIDI data received from MIDI IN connector	All MIDI data passed through.	No MIDI data passed through.	Piano and internal tone generator do not respond.

Note: When pedals are played (activated) by data, the depth of the pedals is read by the sensors and sent (KBD Out) via channels selected in the Out Ch setting (as, unlike the keyboard, the pedals cannot distinguish whether they are being activated by foot or by data).

Chapter 12
Resetting Your Disklavier

If you want to return your Disklavier to its initial factory settings, follow the Reset function below.

Resetting Your Disklavier

You can reset all settings, the Memory Disks, or both.

1 **Specify a disk.**

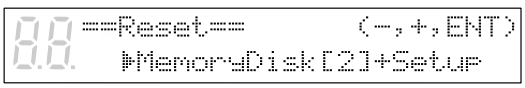
When you select a Memory Disk, the reset function will be effective for the selected disk only.
If you select Memory Disk 0, the disk is reset in SMF format, and an “opening” song or songs are automatically re-recorded on the disk. If you select Memory Disk 1 to F, the disks are reset in SMF format, and nothing is recorded on the disk.

2 **Press [FUNC.].**

The FUNC. indicator lights and the Function menu appears.

3 **Press [➡] until the ▶ cursor is next to the Reset option, then press [ENTER].**

The following display appears.

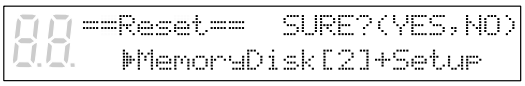


4 **Use the [–/NO] and [+/YES] buttons to select the item that you want to reset. Then press [ENTER].**

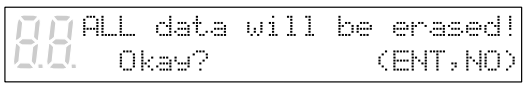
Option	Description
Setup	All settings (See next page.)
Memory Disk [X] + Setup	Memory disk number [X] and all settings (SMF format; sample song included) (See also next pag e.)
Memory Disk [X]	Memory disk number [X] only (SMF format; sample song included)
Factory init. setting	All Memory Disks are returned to initial factory settings

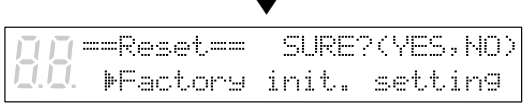
The table on the next page lists the default settings for the items that can be reset.

5a **If you selected Setup, Memory Disk [X] + Setup or Memory Disk [X], press [+/YES] when a display similar to the following appears.**



5b **If you selected Factory init. setting, press [ENTER] when the following display appears, then press [+/YES].**



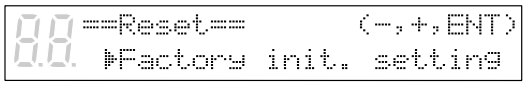


Forced Reset

When the message “UNFORMATTED MEMORY DISK” appears, this indicates that all Memory Disks are damaged.

1 In the Reset display, press [ENTER].

The following display appears.



2 Reset the Memory Disk as described above.

Note: If you accidentally turn off the Control Unit while data is being stored to a Memory Disk, one or all Memory Disks may be damaged. They can only be recovered by returning them to initial factory settings.

Note: Be sure to keep a backup of important data.

Note: You cannot back up write-protected songs such as PianoSoft and PianoSoft·Plus songs onto floppy disks.

Parameter	Default	Options
General		
Volume	0	-10 to 0
Tempo	0	-50 to +20
Transpose	0	-24 to +24
Repeat	OFF	ALL, RPT, RND, A-B
Pedal Cancel	PD on	PDoff, PD on
Voice		
Basic Voice	001	001 to 128
Variation Voice	0	0 to 101 (depending on basic voice)
Vol	100	000 to 127
Piano Tone	OFF	OFF, ON
Metronome		
Click	ON	OFF, ON
Tempo	117	30 to 400
Beat	4/4	1/4 to 9/4
Pedal Count	OFF	OFF, ON
Vol	100	50 to 127
M-Tune		
TG Master Tune	00	-50 to 00 to +50
BALANCE		
TG Master Balance	100	0 to 127, OFF
CD Master Balance	64	0 to 127, OFF
MIDI Setup		
Piano Rcv Ch	01	##, 01 - 16, 1+2, Prg, Prg(all)
Delay In (500 ms)	ON	ON, OFF
Import File L	Prg	##, 01 - 16, Prg, Prg(all)
Import File R	Prg	##, 01 - 16, Prg
Piano Part ESBL Out	OFF	OFF, ON
MIDI Out	KBD OUT	ESBL Out, KBD Out, Thru Port2
Out Ch	01	01 to 16
Split	OFF	OFF, A1 to C7
Trans L	00	-60 to 00 to +60
Trans R	00	-60 to 00 to +60
Remote Out	OFF	OFF, ON
Remote In	OFF	OFF, ON
Local	ON	OFF, ON
***Silent* Functions**		
Reverb type	HALL1	ROOM, HALL1, HALL2
Keyboard movement	ON	ON, OFF
Polyphony	32	32, 64

Chapter 13 Troubleshooting

If you are having difficulty operating your Disklavier, see if any of the symptoms listed below apply to your problem and follow the recommended remedy.

Power

You cannot turn on the Disklavier.

- Make sure the power cord is connected to a suitable AC outlet.
- Switch on the Disklavier's "MAINS" switch.
- Press the [STANDBY / ON] button and turn on the Control Unit.
- If the Disklavier still cannot be turned on, disconnect it from the AC wall outlet, and consult your Disklavier dealer.

☛ *See "Turning On the Disklavier" on page 14 in the Basic Operation Manual.*

Control Unit

The Control Unit does not appear to work correctly.

- Turn off the Control Unit, wait 5 seconds, then turn it back on.
  If the problem continues, consult your Disklavier dealer.

Remote Control

You cannot control the Disklavier using the remote control.

- Make sure that you are pointing the remote control at the Control Unit's remote control sensor.
- Make sure that you are within the remote control's specified operating range.

☛ *See "Using the Remote Control" on page 2 in the Basic Operation Manual.*

- Make sure that the remote control's batteries have been installed correctly.

☛ *See "Installing Batteries in the Remote Control" on page 2 in the Basic Operation Manual.*

- Check the condition of the remote control's batteries.

☛ *See "Battery Replacement" on page 2 in the Basic Operation Manual.*

Playback

None of the playback functions can be used.

- Insert a Disklavier song disk into the disk drive.

Songs are played back at the wrong tempo or in the wrong key.

- Reset the tempo or transposition functions. Once the tempo or transposition functions have been set, they will affect playback of all songs until another disk is inserted, or they are reset.

Songs are not played back in the normal song order.

- Check that the "RND" and "RPT" repeat functions are off.

☛ *See "All Song, Single Song, Random Repeat" on page 36 in the Basic Operation Manual.*

You selected a song using the remote control's number pad, but the last song on the disk is selected.

- If a song number higher than the last song number on the disk is specified, the last song will be selected.

A search time is specified using the remote control, but the end of the song is selected.

- If a time value higher than the total length of the song is specified, the end of the song will be selected.

During playback, complex note trills and faint pianissimo passages are occasionally missed.

- Increase the Disklavier's volume level.
  The Disklavier lowers the playback volume by reducing the force applied to each hammer. So for notes that are already quiet (pianissimo, etc.), when the playback volume is reduced there may not be enough force applied to a hammer for it to strike the strings.

The metronome does not sound during song playback.

- Check that the song uses a measures and beats time format. If not, the metronome will not sound.

When you play back a song you downloaded from the internet, the volume of the piano parts is too loud.

- Song data created for use with other electronic instruments often include sound with high velocity (loudness). Edit the volume of the track containing high velocity.

☛ *See "Editing a Track's Voice & Volume" on page 42.*

PianoSmart

Pianosmart fails to work (fails to synchronize).

- Check whether the CD is the same as the number of the CD printed on the Smart PianoSoft package, etc.
- When the songs are all the same even if the CD is different, copy Smart PianoSoft onto the memory disk, and execute "Change to a different CD."
- When a copied CD and Smart PianoSoft are to be played simultaneously, their playback timing may not coincide.

Pedal

During playback, the pedals do not operate.

- Check that the pedal cancel function is not set to "PDoff."
- The sustain pedal is not made to move. Only the internal mechanism operates.

☛ *See "Operating the Pedals Yourself" on page 41 in the Basic Operation Manual.*

Tone Generator (Ensemble Playback)

During Ensemble song playback, the Ensemble parts cannot be heard.

- Make sure that the amp's volume control is set to an appropriate level.
- Readjust the volume balance.

☛ *See "Balancing the Ensemble Volume (TG Master Balance)" on page 26 in the Basic Operation Manual.*

The pitch of the Disklavier and internal XG tone generator do not match.

- Use the TG Master Tune function to tune the internal XG tone generator.

☛ *See "Tuning the Tone Generator (TG Master Tune)" on page 48 in the Basic Operation Manual.*

The TG Master Balance function does not adjust the volume of the internal XG tone generator.

- Make sure that the BALANCE parameter is set to OFF.

☛ *See "Balancing the Ensemble Volume (TG Master Balance)" on page 26 in the Basic Operation Manual.*

Recording

When recording the second part of an L/R song, the first part will not play back for monitoring.

- Set the Monitor Piano option to ON.

☛ *See "Re-Recording One Part" on page 33.*

When recording a new part to an existing track, the new part replaces the existing parts.

- Set the Record Tr option to OVERDUB.

☛ *See "Overdubbing a Track" on page 39.*

You cannot re-record.

- Re-recording is not possible on protected disks such as PianoSoft and PianoSoft·Plus disks.

Connection with External Devices

The Disklavier cannot send and receive MIDI data with other MIDI instruments.

- Make sure the MIDI cables are connected properly.

A MIDI loop was accidentally created when you connected a computer to the MIDI OUT connector on your Disklavier, so that song data is sent back and forth between the computer and and piano.

- Set MIDI Out to KBD Out.

☛ *See Chapter 11 "The Disklavier & Personal Computers".*

Disk Utilities

You cannot copy a song in the Memory Disk onto a floppy disk.

- Copy-protected songs in the Memory Disk cannot be copied onto a floppy disk. They can only be copied onto the Memory Disk.
- Make sure that the floppy disk's erasure tab is set to "unprotected."

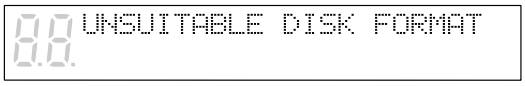
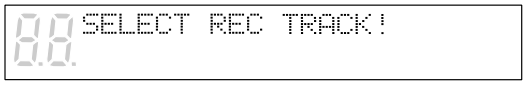
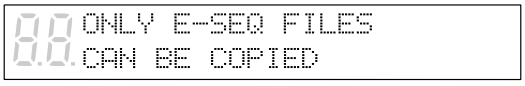
☛ *See "Floppy Disk Accidental Erasure Protection" on page 18.*

Chapter 14
Display Error Messages

While operating your Disklavier an error message may appear in the display. If an error message appears, refer to the table below for an explanation of the message.

Note: This table does not explain every error message.

CANNOT RE-RECORD PROTECTED FILE	PianoSoft songs are write-protected and cannot be re-recorded.
CANNOT EXECUTE. PROTECTED FILES EXIST	The current function cannot be executed because protected files exist on the floppy disk.
DISK FULL! INSERT ANOTHER DISK	No more song data can be recorded onto the floppy disk because the disk is full. Use another floppy disk.
DISK WRITE PROTECTED!	The current function cannot be performed because the floppy disk's erasure protection tab is set to "protected." Set the disk's erasure protection tab to "unprotected." ☛ See "Floppy Disk Accidental Erasure Protection" on page 18.
NOT ENOUGH DISK SPACE	No more song data can be recorded onto the disk because the disk is nearly full.
CANNOT RECORD MORE THAN 60 SONGS	No more than 60 songs can be recorded onto an E-SEQ type disk.
CANNOT RECORD MORE THAN 99 SONGS	No more than 99 songs can be recorded onto an SMF type disk.
SONG FILE NOT FOUND	The current function cannot be performed because this disk contains no songs or only one song.
WRONG DESTINATION DISK	A wrong floppy disk has been inserted as the destination disk. Insert the correct floppy disk.
UNFORMATTED DISK	The floppy disk is either new and has not yet been formatted for use with the Disklavier or uses a format not recognized by the Disklavier. Format the floppy disk. ☛ See "Formatting Disks" on page 17.

	In order to be copied, the destination disk must be the same format as the floppy disk.
	You must select the track you want to record before recording.
	Only E-SEQ files can be recorded onto an E-SEQ type disk.
	The disk may be damaged. Press the Stop key to clear the message. If this message appears frequently with other disks as well, contact your nearest Yamaha service representative.

Chapter 15 Glossary

This glossary provides basic definitions of terms used frequently in Disklavier manuals.

bpm
An abbreviation for beats per minute.

Chain Play
A Disklavier function for playing back multiple disks sequentially.

Clavinova™
A series of Yamaha digital pianos.

Continuous Pedal
See “Incremental Pedal”.

Cursor
The “▶” symbol that is used on the LCD to show the currently selected function or option. When entering song or disk titles, the cursor will be the “_” symbol. Do not confuse this with the [◀] and [▶] buttons.

Disk
Storage media for data. For clarity in the Disklavier manuals, “disk” is used as a generic term to refer to floppy disks, CDs and Memory Disks.

Ensemble Song
A song which contains piano parts and accompanying instrumental voices.
An Ensemble song contains the same left and right-hand parts as an L/R song, and in addition, up to 13 accompanying instrument tracks. These extra tracks are played by the internal XG tone generator. The accompanying tracks may be used for acoustic bass, drums, strings, vibes, etc.

E-SEQ Song Format
A song file format developed by Yamaha for saving songs.

E-SEQ Type Disk
One of two disk types that the Disklavier uses to format disks. E-SEQ type disks are compatible with earlier Disklavier models.

Fast Forward & Reverse
Two Disklavier functions that allow you to quickly locate a position within a song. This is faster than preview and review, but the Disklavier does not play.

Fast Preview & Review
Two Disklavier functions that allow you to search quickly through a song with the Disklavier playing.

Floppy Disk
The magnetic storage medium that the Disklavier uses to save songs. The Disklavier uses the 3.5 inch 2DD and 2HD floppy disks commonly used for computers.

Formatting
New floppy disks must be formatted before they can be used with the Disklavier. Formatting prepares the disk so that it is ready to store Disklavier song data.

General MIDI (GM)
An addition to the MIDI standard that simplifies the transfer of MIDI song files between instruments of different manufacturers. A MIDI song recorded using a GM compatible tone generator should play back correctly when used with any GM compatible tone generator. The standard specifies that a GM compatible tone generator must support 24-note polyphony, 16 parts, and 128 standard voices.

Half Pedal
See “Incremental Pedal”.

Import File
Songs recorded onto floppy disks using MIDI equipment other than the Disklavier and played back by the Disklavier.

Incremental Pedal
Piano pedals are not always completely up or down and may be held somewhere in-between. Using incremental pedal data (also called continuous or half pedal data) the Disklavier precisely records the up and down movement of the piano pedals.

LCD
Liquid Crystal Display. The Control Unit has an LCD that shows 2 large characters and 2 lines of 24 small characters. For clarity in the Disklavier manuals, the LCD is referred to as the “display”.

LED
Light Emitting Diode. The Control Unit’s front panel indicators are LEDs.

L/R Song
In a L/R song, the left-hand piano part is stored on track 1 (L) and the right-hand piano part is stored on track 2 (R). During playback you can cancel either part, and then play that part yourself. When recording an L/R song, you can record the two parts simultaneously or separately.

Memory Disk
The Disklavier has 16 internal Memory Disks that allow you to store song data without a floppy disk. Each Memory Disk has a memory capacity of 1MB.

Metronome
A built-in device designed to mark exact time by a regularly repeated click and flashing LED. Used for both recording and playback.

MIDI
An acronym for Musical Instrument Digital Interface. MIDI allows electronic musical instruments to communicate with each other.

Overdub
The addition of tracks to an existing recording. For example, a Disklavier rhythm track can be created with overdubbing by recording a track with a bass drum, then a track with a snare, then hi-hat, etc.

Piano Parts
Refers to the left- and right-hand piano parts of a song. The left-hand piano part is recorded onto track 1 and the right-hand piano part is recorded onto track 2. These track assignments are the default settings and can be changed.

PianoSoft™
The PianoSoft Disk Collection is a library of prerecorded song disks made by Yamaha specifically for use with the Disklavier.

PianoSoft·Plus™
PianoSoft·Plus disks contain Ensemble songs that can be played on the Disklavier.

Polyphony
The maximum number of voices (or sounds) that can be produced at a time from MIDI instruments.

Program Change Message
MIDI messages used for selecting programs or voices. When an Ensemble song starts playing, Program Change messages are sent to the tone generator to select the correct instrument voices for each ensemble track.

Quantize
A function for auto-correcting the timing of notes you play on the piano. With the quantize function on, the timing of notes played using the Disklavier keyboard will automatically be corrected to the specified quantize value.

Quiet Mode
A *Silent* system mode in which sound is output through the speakers, enabling you to freely adjust the volume of the piano.

Reverb
Short for “reverberation.” The effect that adds a more realistic feel to a sound by simulating the reflection of the sound in rooms and halls of various sizes.

Rhythm Track
Tracks of an ensemble song designated for the accompanying rhythm. The rhythm track is unaffected by the playback transposition function.

Search
A Disklavier function that allows you to start playback from a specific point within a song. This function is set using the remote control.

Sequencer
A sequencer can be used with the Disklavier to play back and record MIDI data.

Silent Mode
A *Silent* system mode in which sound is output through connected headphones so that you can listen to songs or play the piano without disturbing people around you.

Silent System
Yamaha’s innovative system in which a push of the SILENT button keeps the hammers from striking the strings, effectively silencing the acoustic piano. Sound is sent to the digital piano tone generator and output through the speakers (*Quiet* mode) or headphones (*Silent* mode).

Smart PianoSoft™
Software made by Yamaha containing MIDI signals for playing back along with standara audio CDS.

SMF
Abbreviation for Standard MIDI File.

SMF Song Format
A song file format supported by MIDI sequencers and music software.

SMF Type Disk
One of two disk types that the Disklavier uses to format disks. SMF type disks automatically record songs using SMF format 0.

Song
Normally, a short piece of music with lyrics. However, for clarity in Disklavier manuals, the term is used to refer to any piece of music of any genre.

Song Format
The method used to store song data in a file. PianoSoft and PianoSoft·Plus songs use the E-SEQ format. The Disklavier also supports songs in the Standard MIDI File (SMF) format.

Song Number
All songs on a Disklavier disk are numbered sequentially. The currently selected song number is shown in the LCD. Songs can be selected directly by entering the song number using the remote control’s number pad.

Song Sort
A Disklavier function that allows you to rearrange the order of songs on a disk.

Split Point
When a keyboard split point is set before recording, notes played on the left-hand side of the split point are saved as the left-hand part and notes played on the right-hand side of the split point are saved as the right-hand part. This allows you to play the left- and right-hand parts simultaneously, but on different tracks.

Standard MIDI File (SMF)
A file of MIDI data that can be read and used by a number of different MIDI devices and computers. The Disklavier supports all SMF playback functions.

System Exclusive Messages
MIDI messages used for sending system data to a connected MIDI device. For example, when tuning the internal XG tone generator or an external tone generator, System Exclusive Messages are sent via MIDI.

TG Master Balance
A function that allows you to balance the volume levels of the Disklavier and the internal XG tone generator.

TG Master Tune
The function that allows you to tune the internal XG tone generator, and if connected, an external tone generator simultaneously so that their tunings match that of the Disklavier.

Timer Play
A Disklavier function for automatically playing back groups of disks at various pre-set times.

Tone Generator
An electronic device that can generate tones or instrument voices.

Track
Disklavier ensemble song data is organized as tracks. One song can be composed of up to 16 tracks.

Transpose
Changing the key of a song. For example, a song in the key of C is transposed to the key of D when it is moved up two semitones.

Velocity
Because the loudness of a piano note is determined by the speed (velocity) with which a string is struck by a hammer, note loudness is referred to as velocity.

Voice
The sounds produced by a tone generator expressing various instruments. See Chapter 15 “Internal XG Tone Generator Voice & Drum Kit List” in the *Basic Operation Manual* for a listing of basic voices, and the Appendix “MIDI Data Format” at the very end of this manual for a full listing of available voices.

XG
Yamaha XG is an extension of the GM (General MIDI) format. Its greater polyphony, more voices, and use of effects enhances the compatibility between MIDI devices. When a song in the Yamaha XG format is played on another XG-compatible tone generator or synthesizer, it plays and sounds as the original composer/creator intended.

Chapter 16 Specifications

Sensor System	Key Sensors	Single-beam, optical, incremental (GP)
	Hammer Sensors	Single-beam, four-point, optical*
	Pedal Sensors	Sustain & shift: incremental, position-sensing, optical Sostenuto (GP): on/off, optical
Drive System	Keys	16-note polyphonic
	Pedals	Sustain & shift: incremental response
Data Storage	Internal Memory	1.44 MB × 16 flash memory disks (16 MB (Maximum)); up to 9 groups and 99 program sets; built-in calendar/clock/timer
	File Format	Standard MIDI File (format 0, 1) / E-SEQ
Removable Media	Floppy Disk	3.5" 2DD (720 KB) or 2HD (1.44 MB) floppy disk
	Compact Disc	Yamaha PianoSoft·PlusAudio, audio CD
Control Unit	Main Display	Song number plus 24-character × 2-line LCD
	Function Indicators	LEDs, including drive/disk number indicator
	Drive	CD and floppy disk
	Switches	Power, Host Select (MIDI, PC1, PC2, Mac)
	Dimensions (WHD)	227 × 87 × 180 mm (9" × 3 1/2" × 7")
	Weight	2.2 kg (4.8 lbs)
Amplification (GP)		60W × 2; tone and volume controls
	Speakers	16 cm (6 1/4") woofer × 2, 2.5 cm (1") tweeter × 2
Outlet Box (UP)		AC Outlet × 2, Main Switch, Output Jack × 2
Connectors		MIDI In/Out, AUX In/Out (R, L/Mono), Headphones × 2, To Host (serial port), To Piano, CD Control, Audio/Analog MIDI In, Foot Controller
Ensemble Tone	Type	Advanced Wave Memory 2 (AWM2)
	Polyphony	32-note max.
	Ensemble Parts	16
	Voice Module Modes	XG, GM
	Normal Voices	676 (480 selectable)
	Drum Voices	21 kits total (11 selectable)
	Pitch	Set at A=440, tunable ±50 cents in 1-cent steps (in unison with digital piano tone)
Silent System	Silencing Mechanism	Motor-driven hammer shank stopper
	Action Compensation	*Quick Escape* mechanism (GP)
	Piano Tone	AWM2 digital stereo sampling (CFIIIS concert grand); 16 MB wave memory w/sustain pedal resonance effects
	Polyphony	32-note stereo sampling/64-note stereo
SmartKey Capability		Yes
Power Source		Local AC current
Supplied Accessories		Wireless remote control unit w/batteries, PianoSoft sample disk, CD software, blank 3.5" 2HD floppy disk, owner's manuals, control unit suspension bracket (GP),
Optional Accessories		HPE-170 headphones, FC-4, FC-5 foot switches, FC-7 foot controller

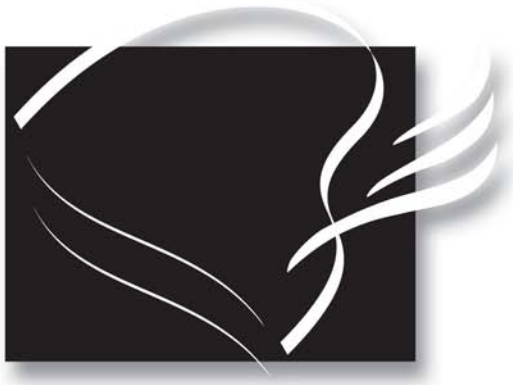
Power Source	Local AC current
Supplied Accessories	Wireless remote control unit w/batteries, PianoSoft sample disk, CD software, blank 3.5" 2HD floppy disk, owner's manuals, control unit suspension bracket (GP), HPE-170 headphones
Optional Accessories	FC-4, FC-5 foot switches, FC-7 foot controller

Function & Controls

Playback Functions	Media Select	Floppy disk, Memory Disks (1 to 16), CD
	Song Select	Rev/fwd, song by song; numerical selection
	Music Search	Rev/fwd, w/ or w/o sound; direct by time or measure
	Repeat	Disk, song, random, segment A~B, segment A~
	Programming	9 disk groups, 99 program sets, chain play, timer play
	Others	L/R part select, auto start, space playback
Playback Controls	Volume	11 levels (0 ~ -10)
	Tempo	-50 ~ +20 in 1 % steps
	Transposition	±24 semitones (2 octaves) in 1-semitone steps
	Balance	Balancing volume of ensemble voices and piano
	Others	Keyboard cancel, pedal cancel, pedal count-in
Recording Functions	Tracks	16 (including 2 for piano)
	L/R Dual Recording	Separate L/R or assignable split point
	Quantize	1/4, 1/6, 1/8, 1/12, 1/16 of a quarter note
	Others	Re-recording
Silent System Controls	Power	On/off (w/ pilot lamp)
	Volume	Continuous
	Reverb	3 modes, depth control
Metronome	Range	30 ~ 400 beats per minute
	Time Signatures	1/4, 2/4, 3/4, 4/4, 5/4, 6/4, 7/4, 8/4, 9/4
	Function	Audible (tick, on/off, volume controllable in the *Silent* system), visual (LEDs)
Editing Functions	Track	Mix, move, copy, delete, transpose
Utility Functions	Song	Copy, sort, delete, type convert (SMF, E-SEQ, earlier Disklavier), time format convert
	Disk	Format, copy, type convert
	Calendar/Clock/Timer	Current time display, time/date stamp for recording
	Title Entry	Disk: 64 characters max. Song: 32 characters max.

* *Some models do not have hammer sensors.*

Specifications are subject to change without prior notice.



disklavier™

Mark III Series

Full-Function Models

Appendix
MIDI Data Format

Appendix
MIDI Data Format

If you are familiar with MIDI, or are using a computer to control your music software with computer-generated MIDI messages, the data provided in this section can help you to control your Disklavier.

Messages include those that can be received by the piano part and/or those that can be received by an ESBL part. Messages that can be transmitted as well as received are shown as “transmitted”.

1. CHANNEL MESSAGES

1.1 Key On / Key Off

(Piano Part, ESBL Part) (transmitted)

Piano Part reception note range = A-1~C7 : C3=60
ESBL part reception note range = C-2~G8
Velocity range = 1~127 (Only the Key On velocity is received)

1.2 Control Change

1.2.1 Bank Select

(ESBL Part) (transmitted)

Cntrl#	Parameter	Data Range
0	Bank Select MSB	0: Normal, 63: User voice, 64: SFX, 126: SFX kit, 127: Drum
32	Bank Select LSB	0...127

You can select the Voice banks with MSB and LSB numbers. MSB and LSB functions differently depending on the play mode.
In XG mode, MSB numbers select Voice type (Normal Voice or Drum Voice), and LSB number select Voice banks.
In TG300B mode, LSB is fixed, and MSB numbers select Voice banks.
(See Normal Voice List Drum Voice List.)
A new bank selection will not become effective until the next Program Change message is received.

1.2.2 Modulation

(ESBL Part)

Cntrl#	Parameter	Data Range
1	Modulation	0...127

1.2.3 Portamento Time

(ESBL Part)

Cntrl#	Parameter	Data Range
5	Portamento Time	0...127

When the parameter 1.2.9 Portamento = ON, values will adjust the speed of pitch change.
A setting of 0 - minimum portamento time, and 127 - maximum portamento time.

1.2.4 Data Entry

(ESBL Part)

Messages which set the value for the parameter specified by RPN/NRPN.

Cntrl#	Parameter	Data Range
6	Data Entry MSB	0...127
38	Data Entry LSB	0...127

Parameter value is determined by combining MSB and LSB.

1.2.5 Main Volume

(Piano Part, ESBL Part) (transmitted)

Cntrl#	Parameter	Data Range
7	Main Volume	0...127

1.2.6 Pan

(ESBL Part)

Cntrl#	Parameter	Data Range
10	Pan	0...127

1.2.7 Expression

(Piano Part, ESBL Part)

Cntrl#	Parameter	Data Range
11	Expression	0...127

1.2.8 Hold1

(Piano Part, ESBL Part) (transmitted)

Cntrl#	Parameter	Data Range
64	Hold1	0...127 (0-63:off, 64-127:on)

1.2.9 Portamento

(ESBL Part)

Cntrl#	Parameter	Data Range
65	Portamento	0...127 (0-63:off, 64-127:on)

1.2.10 Sostenuto

(Piano Part, ESBL Part) (transmitted)

Cntrl#	Parameter	Data Range
66	Sostenuto	0...127 (0-63:off, 64-127:on)

1.2.11 Soft Pedal

(Piano Part, ESBL Part) (transmitted)

Cntrl#	Parameter	Data Range
67	Soft Pedal	0...127 (0-63:off, 64-127:on)

1.2.12 Harmonic Content

(ESBL Part)

Messages which adjust the resonance set for each Voice.

Cntrl#	Parameter	Data Range
71	Harmonic Content	0...127 (0:-64, 64:+0, 127:+63)

Higher values will result in a more characteristic, resonant sound.

Depending on the Voice, the effective range may be narrower than the range available for adjustment.

1.2.13 Release Time

(ESBL Part)

Messages which adjust the envelope release time set for each Voice.

Cntrl#	Parameter	Data Range
72	Release Time	0...127 (0:-64, 64:+0, 127:+63)

1.2.14 Attack Time
(ESBL Part)

Messages which adjust the envelope attack time set for each Voice.

Cntrl#	Parameter	Data Range
73	Attack Time	0...127 (0:-64, 64:+0, 127:+63)

1.2.15 Brightness
(ESBL Part)

Messages which adjust the filter cutoff frequency set for each Voice.

Cntrl#	Parameter	Data Range
74	Brightness	0...127 (0:-64, 64:+0, 127:+63)

1.2.16 Portamento Control
(ESBL Part)

Messages which apply a portamento between the currently-sounding note and the subsequent note.

Cntrl#	Parameter	Data Range
84	Portamento Control	0...127

1.2.17 Effect1 Depth (Reverb Send Level)
(ESBL Part)

Cntrl#	Parameter	Data Range
91	Effect1 Depth	0...127

1.2.18 Effect3 Depth (Chorus Send Level)
(ESBL Part)

Cntrl#	Parameter	Data Range
93	Effect3 Depth	0...127

1.2.19 Effect4 Depth (Variation Effect Send Level)
(ESBL Part)

Cntrl#	Parameter	Data Range
94	Effect4 Depth	0...127

1.2.20 Data Increment / Decrement (for RPN)
(ESBL Part)

Cntrl#	Parameter	Data Range
96	RPN Increment	0...127
97	RPN Decrement	0...127

1.2.21 NRPN (Non-Registered Parameter Number)
(ESBL Part)

Cntrl#	Parameter	Data Range
98	NRPN LSB	0...127
99	NRPN MSB	0...127

First send the NRPN MSB and NRPN LSB to specify the parameter which is to be controlled. Then use Data Entry to set the value of the specified parameter.

* Note that once the NRPN has been set for a channel subsequent data entry will be recognized as the same NRPN's value change. Therefore, after you use the NRPN, you should set a Null (7FH, 7FH) value to avoid an unexpected result.

The following NRPN number can be received.

NRPN		Data entry	
MSB	LSB	MSB	PARAMETER NAME and VALUE RANGE
$01	$08	$mm	Vibrato Rate mm : $00 - $40 - $7F (-64 - 0 - +63)
$01	$09	$mm	Vibrato Depth mm : $00 - $40 - $7F (-64 - 0 - +63)
$01	$0A	$mm	Vibrato Delay mm : $00 - $40 - $7F (-64 - 0 - +63)
$01	$20	$mm	Filter Cutoff Frequency mm : $00 - $40 - $7F (-64 - 0 - +63)
$01	$21	$mm	Filter Resonance mm : $00 - $40 - $7F (-64 - 0 - +63)
$01	$63	$mm	EG Attack Time mm : $00 - $40 - $7F (-64 - 0 - +63)
$01	$64	$mm	EG Decay Time mm : $00 - $40 - $7F (-64 - 0 - +63)
$01	$66	$mm	EG Release Time mm : $00 - $40 - $7F (-64 - 0 - +63)
$14	$rr	$mm	Drum Filter Cutoff Frequency mm : $00 - $40 - $7F (-64 - 0 - +63) rr : drum instrument note number
$15	$rr	$mm	Drum Filter Resonance mm : $00 - $40 - $7F (-64 - 0 - +63) rr : drum instrument note number
$16	$rr	$mm	Drum EG Attack mm : $00 - $40 - $7F (-64 - 0 - +63) rr : drum instrument note number
$17	$rr	$mm	Drum EG Decay Rate mm : $00 - $40 - $7F (-64 - 0 - +63) rr : drum instrument note number Applies to both Decay1 and 2.
$18	$rr	$mm	Drum Instrument Pitch Coarse mm : $00 - $40 - $7F (-64 - 0 - +63) rr : drum instrument note number
$19	$rr	$mm	Drum Instrument Pitch Fine mm : $00 - $40 - $7F (-64 - 0 - +63) rr : drum instrument note number
$1A	$rr	$mm	Drum Instrument Level mm : $00 - $7F (0 - max) rr : drum instrument note number
$1C	$rr	$mm	Drum Instrument Pan mm : $00 - $40 - $7F (random, left - center - right) rr : drum instrument note number
$1D	$rr	$mm	Drum Instrument Reverb Send Level mm : $00 - $7F (0 -max) rr : drum instrument note number
$1E	$rr	$mm	Drum Instrument Chorus Send Level mm : $00 - $7F (0 - max) rr : drum instrument note number
$1F	$rr	$mm	Drum Instrument Variation Send Level mm : $00 - $7F (0 - max) rr : drum instrument note number

MSB 14H- 1FH (for Drum) is valid only if the Multi Part parameter PART MODE = DRUMS 1 or DRUMS2 for that channel. (If PART MODE = DRUM, no values will be changed.)

1.2.22 RPN (Registered Parameter Number)
(ESBL Part)

Cntrl#	Parameter	Data Range
100	RPN LSB	0...127
101	RPN MSB	0...127

The following RPN numbers can be received.

RPN		Data entry		
MSB	LSB	MSB	LSB	PARAMETER NAME and VALUE RANGE
00H	00H	mmH	—	Pitch Bend Sensitivity mm:00-18H (0-24 chromatic steps) Assignable in chromatic steps up to 2 octaves Default : 02H LSB value is ignored.
00H	01H	mmH	11H	Fine Tuning mm: 00H-40H-7FH (-64-0-+63)
00H	02H	mmH	—	Coarse Tuning mm: 28H - 40H - 58H (-24 - +24 chromatic steps) LSB value is ignored.
7FH	7FH	—	—	RPN null Cancels RPN and NRPN numbers

1.2.23 Channel Mode Messages

The following Channel Mode Messages can be received.

2nd byte	3rd byte	
120	0	All Sound Off

121	0	Reset All Controllers
123	0	All Note Off
124	0	Omni Off
125	0	Omni On
126	0 ~ 16	Mono
127	0	Poly

1.2.23.1 All Sound Off

(Piano Part, ESBL Part) (transmitted)

ESBL part;
Terminates all sounds currently sounding on the specified channel. However, the status of channel messages such as Note On and Hold On is maintained.

Piano Part;
The status of channel messages is not maintained.

1.2.23.2 Reset All Controllers

(ESBL Part)

The values of the following controllers will be reset to the defaults.

CONTROLLER	VALUE
Pitch Bend Change	±O (center)
Channel Aftertouch	0 (off)
Polyphonic Aftertouch	0 (off)
Modulation	0 (off)
Expression	127 (max)
Hold l	0 (off)
Portamento	0 (off)
Sostenuto	0 (off)
Soft Pedal	0 (off)
Portamento Control	cancels the Portamento Source Key Number that was received
RPN	number not specified; internal data will not change
NRPN	number not specified; internal data will not change

1.2.23.3 All Note Off

(Piano Part, ESBL Part) (transmitted)

Terminates all notes currently on for the specified channel. However, if Hold 1 or Sostenuto is on, notes will continue sounding until these are turned off.

1.2.23.4 Omni Off

(Piano Part, ESBL Part)

Performs the same function as when an All Notes Off message is received.

1.2.23.5 Omni On

(Piano Part, ESBL Part)

Performs the same function as when an All Notes Off message is received.

1.2.23.6 Mono

(Piano Part, ESBL Part)

Performs the same function as when an All Sounds on message is received, and if the 3rd byte (mono number) is in the range of 0 - 16, sets the corresponding channel to Mono Mode (Mode 4 : m = 1).

1.2.23.7 Poly

(Piano Part, ESBL Part)

Performs the same function as when an All Sounds Off message is received. and sets the corresponding channel to Poly Mode (Mode 3).

1.2.24 Local Control

(Piano Part, ESBL Part)

0;Off Disklavier keyboard does not play the internal voices.
127;On

1.3 Program Change

(ESBL Part) (transmitted)

Messages for Voice selection.
With a combination of Bank Select, you can select not only basic Voice numbers, but also variation Voice bank numbers.

1.4 Pitch Bend

(ESBL Part)

When Multi Part Parameter Rcv PITCH BEND CHANGE=OFF, pitch bend for that part is not received.

1.5 Channel Aftertouch

(ESBL Part)

1.6 Polyphonic Aftertouch

(ESBL Part) (PianoPart) (transmitted)
Applying further pressure on the key does not output “key aftertouch” information. Instead, key position is transmitted as additional information.

2. SYSTEM EXCLUSIVE MESSAGES

2.1 Parameter Change

The Disklavier receives the following parameter change messages.

[UNIVERSAL REALTIME MESSAGE]
1) Master Volume

[UNIVERSAL NON REALTIME MESSAGE]
1) General MIDI Mode On

[XG NATIVE]
1) XG System on
2) XG System Data parameter change
3) Multi Effect1 Data parameter change
4) Multi Part Data parameter change
5) Drums Setup Data parameter change

[OTHER]
1) Master tuning
2) TG300 System Data Parameter change
3) TG300 Multi Effect Data parameter change
4) TG300 Multi Part Data parameter change

2.1.2 Universal Realtime Messages

2.1.2.1 Master Volume

(Piano Part, ESBL Part)

11110000	F0	= Exclusive status
01111111	7F	= Universal Real Time
01111111	7F	= ID of target device
00000100	04	= Sub-ID #1=Device Control Message
00000001	01	= Sub-ID #2=Master Volume
0sssssss	*SS	= Volume LSB
0ttttttt	TT	= Volume MSB
11110111	F7	= End of Exclusive
or		
11110000	F0	= Exclusive status
01111111	7F	= Universal Real Time
0xxxnnnn	XN	= Device Number, xxx = don’t care
00000100	04	= Sub-ID #1=Device Control Message
00000001	01	= Sub-ID #2=Master Volume
0sssssss	SS	= Volume LSB
0ttttttt	TT	= Volume MSB
11110111	F7	= End of Exclusive

When received, the Volume MSB will be effective for the System Parameter MASTER VOLUME.
* “SS” is the hexadecimal expression of Osssssss; same as for “tt”, “aa”, etc.

2.1.3 Universal Non-Realtime Messages

2.1.3.1 General MIDI Mode On

(ESBL Part)

11110000	F0	= Exclusive status
01111110	7E	= Universal Non-Real Time
01111111	7F	= ID of target device
00001001	09	= Sub-ID #1=General MIDI Message
00000001	01	= Sub-ID #2=General MIDI On
11110111	F7	= End of Exclusive
or		
11110000	F0	= Exclusive status
01111110	7E	= Universal Non-Real Time
0xxxnnnn	XN	= Device Number, xxx = don’t care
00001001	09	= Sub-ID #1=General MIDI Message

00000001	01	= Sub-ID #2=General MIDI On
11110111	F7	= End of Exclusive

When General MIDI Mode On is received. the play mode will be changed to XG mode.
When this happens, the ESBL part will receive the MIDI messages which compatible with GM System Level 1, and consequently will not receive NRPN and Bank Select messages. Since approximately 50ms is required to execute this messag, be sure to leave an appropriate interval before the subsequent message.

2.1.4 XG Native Parameter Change
(ESBL Part)

With the Parameter Change messages as listed below, you can change the characteristic of a Voice, such as by Effect Type or effect parameter, transpose, tuning, and others.

11110000	F0	Exclusive status
01000011	43	YAMAHA ID
0001nnnn	1n	Device Number
01001100	4C	XG Model ID
0aaaaaaa	aaaaaaa	Address High
0aaaaaaa	aaaaaaa	Address Mid
0aaaaaaa	aaaaaaa	Address Low
0ddddddd	ddddddd	Data
|	|	
11110111	F7	End of Exclusive

* Any number is OK since the device number for the Disklavier is fixed to “All”.
For parameters with data size of 2 or 4, transmit the appropriate number of data bytes.
When sending the parameter change messages consecutively, be sure to leave an appropriate interval (if the time base is 480. ca 5 unit) between the messages.

2.1.4.1 XG System On
(ESBL Part)

11110000	F0	Exclusive status
01000011	43	YAMAHA ID
0001nnnn	1N	Device Number
01001100	4C	XG Model ID
0aaaaaaa	00	Address High
0aaaaaaa	00	Address Mid
0aaaaaaa	7E	Address Low
00000000	00	Data
11110111	F7	End of Exclusive

When this data is received. the Disklavier will switch to XG mode and all the parameters will be initialized accordingly, and XG-compatible messages such as NRPN and Bank Select messages can be received.
Since approximately 50ms is required to execute this message, be sure to leave an appropriate interval before the subsequent message

2.1.4.2 XG System Data parameter change
(ESBL Part)

See tables <1-1> and <1-2>.

2.1.4.3 Multi Effect1 Data parameter change
(ESBL Part)

See tables <1-1> and <1-3>.

2.1.4.4 Multi Part Data parameter change
(ESBL Part)

See tables <1-1> and <1-4>.

2.1.4.5 Drums Setup Data parameter change
(ESBL Part)

See tables <1-1> and <1-5>.

If a Drum Setup Reset parameter change message is received, the Drum Setup parameter values will be initialized.
Selecting a Drum Set will cause the Drum Setup parameter values to be initialized.

2.1.5 Other parameter changes

2.1.5.1 Master Tuning
(ESBL Part)

11110000	F0	Exclusive status
01000011	43	YAMAHA ID
0001nnnn	1n	Device Number
00100111	27	Model ID
00110000	30	Sub ID2
00000000	00	
00000000	00	
0mmmmmmm	mm	Master Tune MSB
0lllllll	ll	Master Tune LSB
0ccccccc	cc	
11110111	F7	End of Exclusive

This message simultaneously changes the pitch of all channels.

2.2 Bulk Dump
(ESBL Part)

The Disklavier receives the following bulk dump data.

[XG NATIVE]
1) XG System Data
2) Multi Effect1 Data
3) Multi Part Data
4) Drums Setup Data

[QS300 NATIVE]
1) QS300 User Normal Voice Data

2.2.1 XG Native Bulk Dump

11110000	F0	Exclusive status
01000011	43	YAMAHA ID
0000nnnn	0n	Device Number
01001100	4C	XG Model ID
0bbbbbbb	bbbbbbb	ByteCount
0bbbbbbb	bbbbbbb	ByteCount
0aaaaaaa	aaaaaaa	Address High
0aaaaaaa	aaaaaaa	Address Mid
0aaaaaaa	aaaaaaa	Address Low
0ddddddd	dd	Data
|	|	
|	|	
0ccccccc	ccccccc	Checksum
11110111	F7	End of Exclusive

For the Address and Byte Count, refer to the supplementary tables.
The Checksum is the value that results in a value of 0 for the lower 7 bits when the Start Address, Byte Count, plus the Checksum itself are added.

2.2.1.1 XG System Data bulk dump
(ESBL Part)

See tables <1-1> and <1-2>.

2.2.1.2 Multi Effect1 Data bulk dump
(ESBL Part)

See tables <1-1> and <1-3>.

2.2.1.3 Multi Part Data bulk dump
(ESBL Part)

See tables <1-1> and <1-4>.

2.2.1.4 Drums Setup Data bulk dump
(ESBL Part)

See tables <1-1> and <1-5>.

2.2.2 QS300 Native Bulk Dump

11110000	F0	Exclusive status
01000011	43	YAMAHA ID
0000nnnn	0n	Device Number
01001101	4B	QS300 Model ID
0bbbbbbb	bbbbbbb	ByteCount
0bbbbbbb	bbbbbbb	ByteCount
0aaaaaaa	aaaaaaa	Address High
0aaaaaaa	aaaaaaa	Address Mid

0aaaaaaa	aaaaaaa	Address Low
0ddddddd	dd	Data
|	|	
|	|	
0ccccccc	ccccccc	Checksum
11110111	F7	End of Exclusive

2.2.2.1 QS300 User Normal Voice Data bulk damp (ESBL Part)

See tables <2-1> and <2-2>.

3. SYSTEM COMMON MESSAGES

3.1 Song Position Pointer

a) Transmission
This message is transmitted only when the REMOTE OUT parameter is set to On.

b) Reception
This message is received only when REMOTE IN Parameter is set to On.

3.2 Song Select

a) Transmission
This message is transmitted only when the REMOTE OUT parameter is set to On.

b) Reception
This message is received only when REMOTE IN Parameter is set to On.

4. SYSTEM REALTIME MESSAGES

4.1 Active Sensing

a) Transmission
Transmitted.

b) Reception
Once FE has been received. if no MIDI data is subsequently received for longer than an interval of approximately 300msec. the Disklavier will perform the same function as when ALL SOUNDS OFF. ALL NOTES OFF, and RESET ALL CONTROLLERS messages are received, and will then return to a status in which FE is not monitored.

4.2 Timing Clock

a) Transmission
This message is transmitted only when the REMOTE OUT parameter is set to On.

b) Reception
Not recognized.

4.3 Start

a) Transmission
This message is transmitted only when the REMOTE OUT parameter is set to On.

b) Reception
This message is received only when REMOTE IN Parameter is Set to On.

4.4 Stop

a) Transmission
This message is transmitted only when the REMOTE OUT parameter is set to On.

b) Reception
This message is received only when REMOTE IN Parameter is Set to On.

<Table 1-1>

Parameter Bass Address
Model ID = 4C [XG]

	Parameter Change Address			
	(H)	(M)	(L)	Description
XG SYSTEM	00	00	00	System
	00	00	7D	Drum setup Reset
	00	00	7E	XG System On
	00	00	7F	All Parameter Reset
EFFECT1	02	01	00	Effect1 (Reverb, Chorus, Variation)
MULTI PART	08	00	00	Multi Part 1
	:	:	:	:
	08	0F	00	Multi Part 16
DRUM	30	18	00	Drum Setup 1
	30	18	00	Drum Setup 2

------->

Address			Parameter
3n	0B	00	note number 13
3n	0C	00	note number 14
	:		:
3n	5B	00	note number 91

n: Drum setup number (0, 1)

<Table 1-2>

MIDI Parameter Change table (SYSTEM) [XG]

Address (H)			Size (H)	Data (H)	Parameter	Description	Default value
00	00	00	4	0000-07FF	MASTER TUNE	-102.4 - +102.3 [cent] 1st bit3-0→bit15-12 2nd bit3-0→bit11-8 3rd bit3-0→bit7-4 4th bit3-0→bit3-0	00 04 00 00 -400
		04	1	00 - 7F	MASTER VOLUME	0 - 127	7F
		05	1	00 - 7F	not used		
		06	1	28 - 58	TRANSPOSE	-24 - +24 [semitones]	40
		7D		n	DRUM SETUP RESET	n=Drum setup number	
		7E		00	XG SYSTEM ON	00=XG system ON (receive only)	
		7F		00	ALL PARAMETER RESET	00=ON (receive only)	
TOTAL SIZE				07			

<Table 1-3>

MIDI Parameter Change table (EFFECT 1) [XG]

Address (H)			Size (H)	Data (H)	Parameter	Description	Default value (H)
02	01	00	2	00-7F	REVERB TYPE MSB	see Effect Type List	01(=HALL1)
				00-7F	REVERB TYPE LSB	00 : basic type	00
		02	1	00-7F	REVERB PARAMETER 1	see Effect Parameter List	Depends on reverb type
		03	1	00-7F	REVERB PARAMETER 2	”	”
		04	1	00-7F	REVERB PARAMETER 3	”	”
		05	1	00-7F	REVERB PARAMETER 4	”	”
		06	1	00-7F	REVERB PARAMETER 5	”	”
		07	1	00-7F	REVERB PARAMETER 6	”	”
		08	1	00-7F	REVERB PARAMETER 7	”	”
		09	1	00-7F	REVERB PARAMETER 8	”	”
		0A	1	00-7F	REVERB PARAMETER 9	”	”
		0B	1	00-7F	REVERB PARAMETER 10	”	”
		0C	1	00-7F	REVERB RETURN	-∞dB...0dB...+6dB(0...64...127)	40
		0D	1	01-7F	REVERB PAN	L63...C...R63(1...64...127)	40
TOTAL SIZE			0E				
02	01	10	1	00-7F	REVERB PARAMETER 11	see Effect Parameter List	Depends on reverb type
		11	1	00-7F	REVERB PARAMETER 12	”	”
		12	1	00-7F	REVERB PARAMETER 13	”	”
		13	1	00-7F	REVERB PARAMETER 14	”	”
		14	1	00-7F	REVERB PARAMETER 15	”	”
		15	1	00-7F	REVERB PARAMETER 16	”	”
TOTAL SIZE			6				
02	01	20	2	00-7F	CHORUS TYPE MSB	see Effect Type List	41 (=CHORUS1)
				00-7F	CHORUS TYPE LSB	00 : basic type	00
		22	1	00-7F	CHORUS PARAMETER 1	see Effect Parameter List	Depends on chorus Type
		23	1	00-7F	CHORUS PARAMETER 2	”	”
		24	1	00-7F	CHORUS PARAMETER 3	”	”
		25	1	00-7F	CHORUS PARAMETER 4	”	”
		26	1	00-7F	CHORUS PARAMETER 5	”	”
		27	1	00-7F	CHORUS PARAMETER 6	”	”
		28	1	00-7F	CHORUS PARAMETER 7	”	”
		29	1	00-7F	CHORUS PARAMETER 8	”	”
		2A	1	00-7F	CHORUS PARAMETER 9	”	”
		2B	1	00-7F	CHORUS PARAMETER 10	”	”
		2C	1	00-7F	CHORUS RETURN	-∞dB...0dB...+6dB(0...64...127)	40
		2D	1	01-7F	CHORUS PAN	L63...C...R63(1...64...127)	40
		2E	1	00-7F	SEND CHORUS TO REVERB	-∞dB...0dB... +6dB(0...64...127)	00
TOTAL SIZE			0F				
02	01	30	1	00-7F	CHORUS PARAMETER 11	see Effect Parameter List	Depends on chorus Type
		31	1	00-7F	CHORUS PARAMETER 12	”	”
		32	1	00-7F	CHORUS PARAMETER 13	”	”
		33	1	00-7F	CHORUS PARAMETER 14	”	”
		34	1	00-7F	CHORUS PARAMETER 15	”	”
		35	1	00-7F	CHORUS PARAMETER 16	”	”
TOTAL SIZE			6				
02	01	40	2	00-7F	VARIATION TYPE MSB	see Effect Type List	05 (=DELAY L, C, R)
				00-7F	VARIATION TYPE LSB	00 : basic type	00
		42	2	00-7F	VARIATION PARAMETER 1 MSB	see Effect Parameter List	Depends on variation type
				00-7F	VARIATION PARAMETER 1 LSB	”	”
		44	2	00-7F	VARIATION PARAMETER 2 MSB	”	”
				00-7F	VARIATION PARAMETER 2 LSB	”	”
		46	2	00-7F	VARIATION PARAMETER 3 MSB	”	”
				00-7F	VARIATION PARAMETER 3 LSB	”	”
		48	2	00-7F	VARIATION PARAMETER 4 MSB	”	”
				00-7F	VARIATION PARAMETER 4 LSB	”	”
		4A	2	00-7F	VARIATION PARAMETER 5 MSB	”	”
				00-7F	VARIATION PARAMETER 5 LSB	”	”
		4C	2	00-7F	VARIATION PARAMETER 6 MSB	”	”
				00-7F	VARIATION PARAMETER 6 LSB	”	”
		4E	2	00-7F	VARIATION PARAMETER 7 MSB	”	”
				00-7F	VARIATION PARAMETER 7 LSB	”	”
		50	2	00-7F	VARIATION PARAMETER 8 MSB	”	”
				00-7F	VARIATION PARAMETER 8 LSB	”	”
		52	2	00-7F	VARIATION PARAMETER 9 MSB	”	”
				00-7F	VARIATION PARAMETER 9 LSB	”	”
		54	2	00-7F	VARIATION PARAMETER 10 MSB	”	”
				00-7F	VARIATION PARAMETER 10 LSB	”	”
		56	1	00-7F	VARIATION RETURN	-∞ dB...0dB...+6dB(0...64...127)	40
		57	1	01-7F	VARIATION PAN	L63...C...R63(1...64...127)	40
		58	1	00-7F	SEND VARIATION TO REVERB	-∞ dB...0dB...+6dB(0...64...127)	00
		59	1	00-7F	SEND VARIATION TO CHORUS	-∞ dB...0dB...+6dB(0...64...127)	00

		5A	1	00-01	VARIATION CONNECTION	0:INSERTION, 1:SYSTEM	00
		5B	1	00-0F,7F	VARIATION PART	Part1...16(0...15)	7F
						0FF (127)	
		5C	1	00-7F	MW VARIATION CONTROL DEPTH	-64 - +63	40
		5D	1	00-7F	BEND VARIATION CONTROL DEPTH	-64 - +63	40
		5E	1	00-7F	CAT VARIATION CONTROL DEPTH	-64 - +63	40
		5F	1	00-7F	AC1 VARIATION CONTROL DEPTH	-64 - +63	40
		60	1	00-7F	AC2 VARIATION CONTROL DEPTH	-64 - +63	40
TOTAL SIZE			21				
02	01	70	1	00-7F	VARIATION PARAMETER 11	see Effect Parameter List	Depends on variation type
		71	1	00-7F	VARIATION PARAMETER 12	”	”
		72	1	00-7F	VARIATION PARAMETER 13	”	”
		73	1	00-7F	VARIATION PARAMETER 14	”	”
		74	1	00-7F	VARIATION PARAMETER 15	”	”
		75	1	00-7F	VARIATION PARAMETER 16	”	”
TOTAL SIZE			6				

<Table 1-4>

MIDI Parameter Change table (MULTI PART) [XG]

Address (H)			Size (H)	Data (H)	Parameter	Description	Default value (H)
08	nn	00	1	00 - 20	ELEMENT RESERVE	0 - 32	part10=0, other =2
	nn	01	1	00 - 7F	BANK SELECT MSB	0 - 127	part10=7F, other=0
	nn	02	1	00 - 7F	BANK SELECT LSB	0 - 127	00
	nn	03	1	00 - 7F	PROGRAM NUMBER	1 - 128	00
	nn	04	1	00 - 0F, 7F	Rcv CHANNEL	1 - 16,OFF	part no.
	nn	05	1	00 - 01	MONO/POLY MODE	0:MONO	01
						1:POLY	
	nn	06	1	00 - 02	SAME NOTE NUMBER KEY ON ASSIGN	0:SINGLE	1 (all part)
						1:MULTI	part10=2, other=0
						2:INST (for DRUM)	
	nn	07	1	00 - 03	PART MODE	0:NORMAL	00 (other than Part10)
						1:DRUM	02 (Part10)
						2-3:DRUMS1 - 2	
	nn	08	1	28 - 58	NOTE SHIFT	-24 - +24 [semitones]	40
	nn	09	2	00 - FF	DETUNE	-12.8 - +12.7 [Hz]	08 00
	nn	0A				1st bit3-0→bit7-4	(80)
						2nd bit3-0→bit3-0	
	nn	0B	1	00 - 7F	VOLUME	0 - 127	64
	nn	0C	1	00 - 7F	VELOCITY SENSE DEPTH	0 - 127	40
	nn	0D	1	00 - 7F	VELOCITY SENSE OFFSET	0 - 127	40
	nn	0E	1	00 - 7F	PAN	0/random, 1/L63-64/C-127/R63	40
	nn	0F	1	00 - 7F	NOTE LIMIT LOW	C-2 - G8	00
	nn	10	1	00 - 7F	NOTE LIMIT HIGH	C-2 - G8	7F
	nn	11	1	00 - 7F	DRY LEVEL	0 - 127	7F
	nn	12	1	00 - 7F	CHORUS SEND	0 - 127	00
	nn	13	1	00 - 7F	REVERB SEND	0 - 127	40
	nn	14	1	00 - 7F	VARIATION SEND	0 - 127	00
	nn	15	1	00 - 7F	VIBRATO RATE	-64 - +63	40
	nn	16	1	00 - 7F	VIBRATO DEPTH	-64 - +63	40 (drum part ignores)
	nn	17	1	00 - 7F	VIBRATO DELAY	-64 - +63	40 (drum part ignores)
	nn	18	1	00 - 7F	FILTER CUTOFF FREQUENCY	-64 - +63	40
	nn	19	1	00 - 7F	FILTER RESONANCE	-64 - +63	40
	nn	1A	1	00 - 7F	EG ATTACK TIME	-64 - +63	40
	nn	1B	1	00 - 7F	EG DECAY TIME	-64 - +63	40
	nn	1C	1	00 - 7F	EG RELEASE TIME	-61 - +63	40
	nn	1D	1	28 - 58	MW PITCH CONTROL	-24 -+24 [semitones]	40
	nn	1E	1	00 - 7F	MW FILTER CONTROL	-9600 - +9450 [cent]	40
	nn	1F	1	00 - 7F	MW AMPLITUDE CONTROL	-64 - +63	40
	nn	20	1	00 - 7F	MW LFO PMOD DEPTH	0 - 127	0A
	nn	21	1	00 - 7F	MW LFO FMOD DEPTH	0 - 127	00
	nn	22	1	00 - 7F	MW LFO AMOD DEPTH	0 - 127	00
	nn	23	1	28 - 58	BEND PITCH CONTROL	-24 - +24 [semitones]	42
	nn	24	1	00 - 7F	BEND FILTER CONTROL	-9600 - +9450 [cent]	40
	nn	25	1	00 - 7F	BEND AMPLITUDE CONTROL	-64 - +63	40
	nn	26	1	00 - 7F	BEND LFO PMOD DEPTH	+100 - +100 [%]	40
	nn	27	1	00 - 7F	BEND LFO FMOD DEPTH	+100 - +100 [%]	40
	nn	28	1	00 - 7F	BEND LFO AMOD DEPTH	+100 - +100 [%]	40
TOTAL SIZE			29				
	nn	30	1	00 - 01	Rcv PITCH BEND	0/OFF, 1/ON	01
	nn	31	1	00 - 01	Rcv CH AFTER TOUCH (CAT)	0/OFF, 1/ON	01
	nn	32	1	00 - 01	Rcv PROGRAM CHANGE	0/OFF, 1/ON	01

nn	33	1	00 - 01	Rcv CONTROL CHANGE	0/OFF, 1/ON	01
nn	34	1	00 - 01	Rcv POLY AFTER TOUCH (PAT)	0/OFF, 1/ON	01
nn	35	1	00 - 01	Rcv NOTE MESSAGE	0/OFF, 1/ON	01
nn	36	1	00 - 01	Rcv RPN	0/OFF, 1/ON	01
nn	37	1	00 - 01	Rcv NRPN	0/OFF, 1/ON	XG=01, GM=00
nn	38	1	00 - 01	Rcv MODULATION	0/OFF, 1/ON	01
nn	39	1	00 - 01	Rcv VOLUME	0/OFF, 1/ON	01
nn	3A	1	00 - 01	Rcv PAN	0/OFF, 1/ON	01
nn	3B	1	00 - 01	Rcv EXPRESSION	0/OFF, 1/ON	01
nn	3C	1	00 - 01	Rcv HOLD1	0/OFF, 1/ON	01
nn	3D	1	00 - 01	Rcv PORTAMENTO	0/OFF, 1/ON	01
nn	3E	1	00 - 01	Rcv SOSTENUTO	0/OFF, 1/ON	01
nn	3F	1	00 - 01	Rcv SOFT PEDAL	0/OFF, 1/ON	01
nn	40	1	00 - 01	Rcv BANK SELECT	0/OFF,1/ON	XG=01, GM=00
nn	41	1	00 - 7F	SCALE TUNING C	-64 - +63 [cent]	40
nn	42	1	00 - 7F	SCALE TUNING C#	-64 - +63 [cent]	40
nn	43	1	00 - 7F	SCALE TUNING D	-64 - +63 [cent]	40
nn	44	1	00 - 7F	SCALE TUNING D#	-64 - +63 [cent]	40
nn	45	1	00 - 7F	SCALE TUNING E	-64 - +63 [cent]	40
nn	46	1	00 - 7F	SCALE TUNING F	-64 - +63 [cent]	40
nn	47	1	00 - 7F	SCALE TUNING F#	-64 - +63 [cent]	40
nn	48	1	00 - 7F	SCALE TUNING G	-64 - +63 [cent]	40
nn	49	1	00 - 7F	SCALE TUNING G#	-64 - +63 [cent]	40
nn	4A	1	00 - 7F	SCALE TUNING A	-64 - +63 [cent]	40
nn	4B	1	00 - 7F	SCALE TUNING A#	-64 - +63 [cent]	40
nn	4C	1	00 - 7F	SCALE TUNING B	-64 - +63 [cent]	40
nn	4D	1	28 - 58	CAT PITCH CONTROL	-24 - +24 [semitones]	40
nn	4E	1	00 - 7F	CAT FILTER CONTROL	-9600 - +9450 [cent]	40
nn	4F	1	00 - 7F	CAT AMPLITUDE CONTROL	-64 - +63	40
nn	50	1	00 - 7F	CAT LFO PMOD DEPTH	0 - 127	00
nn	51	1	00 - 7F	CAT LFO FMOD DEPTH	0 - 127	00
nn	52	1	00 - 7F	CAT LFO AMOD DEPTH	0 - 127	00
nn	53	1	28 - 58	PAT PITCH CONTROL	-24 - +24 [semitones]	40
nn	54	1	00 - 7F	PAT FILTER CONTROL	-9600 - +9450 [cent]	40
nn	55	1	00 - 7F	PAT AMPLITUDE CONTROL	-64 - +63	40
nn	56	1	00 - 7F	PAT LFO PMOD DEPTH	0 - 127	00
nn	57	1	00 - 7F	PAT LFO FMOD DEPTH	0 - 127	00
nn	58	1	00 - 7F	PAT LFO AMOD DEPTH	0 - 127	00
nn	59	1	00 - 5F	AC1 CONTROLLER NUMBER	0 - 95	10
nn	5A	1	28 - 58	AC1 PITCH CONTROL	-24 - +24 [semitones]	40
nn	5B	1	00 - 7F	AC1 FILTER CONTROL	-9600 - +9450 [cent]	40
nn	5C	1	00 - 7F	AC1 AMPLITUDE CONTROL	-64 - +63	40
nn	5D	1	00 - 7F	AC1 LFO PMOD DEPTH	0 - 127	00
nn	5E	1	00 - 7F	AC1 LFO FMOD DEPTH	0 - 127	00
nn	5F	1	00 - 7F	AC1 LFO AMOD DEPTH	0 - 127	00
nn	60	1	00 - 5F	AC2 CONTROLLER NUMBER	0 - 95	11
nn	61	1	28 - 58	AC2 PITCH CONTROL	-24 - +24 [semitones]	40
nn	62	1	00 - 7F	AC2 FILTER CONTROL	-9600 - +9450 [cent]	40
nn	63	1	00 - 7F	AC2 AMPLITUDE CONTROL	-64 - +63	40
nn	64	1	00 - 7F	AC2 LFO PMOD DEPTH	0 - 127	00
nn	65	1	00 - 7F	AC2 LFO FMOD DEPTH	0 - 127	00
nn	66	1	00 - 7F	AC2 LFO AMOD DEPTH	0 - 127	00
nn	67	1	00 - 01	PORTAMENTO SWITCH	0/OFF, 1/ON	00
nn	68	1	00 - 7F	PORTAMENTO TIME	0 - 127	00
nn	69	1	00 - 7F	PITCH EG INITIAL LEVEL	-64 -+63	40
nn	6A	1	00 - 7F	PITCH EG ATTACK TIME	-64 - +63	40
nn	6B	1	00 - 7F	PITCH EG RELEASE LEVEL	-64 - +63	40
nn	6C	1	00 - 7F	PITCH EG RELEASE TIME	-64 - +63	40
nn	6D	1	01 - 7F	VELOCITY LIMIT LOW	1 - 127	01
nn	6E	1	01 - 7F	VELOCITY LIMIT HIGH	1 - 127	7F
TOTAL SIZE		3F				

nn = Part Number (0:1Part, 1:2Part, 2:3Part, ..., 15:16Part)
For the DRUM PART, the following parameters have no effect.

- SOFT PEDAL
- BANK SELECT LSB
- MONO/POLY
- SCALE TUNING
- PORTAMENTO
- PITCH EG INITIAL LEVEL
- PITCH EG ATTACK TIME
- PITCH EG RELEASE LEVEL
- PITCH EF RELEASE TIME
- POLY AFTER TOUCH

<Table 1-5>

MIDI Parameter Change table (DRUM SETUP) [XG]

Address (H)			Size (H)	Data (H)	Parameter	Description	Default (H)
3n	rr	00	1	00 - 7F	PITCH COARSE	-64 - +63	40
3n	rr	01	1	00 - 7F	PITCH FINE	-64 - +63 [cent]	40
3n	rr	02	1	00 - 7F	LEVEL	0 - 127	Depends on the note
3n	rr	03	1	00 - 7F	ALTERNATE GROUP	0/OFF, 1 - 127	”
3n	rr	04	1	00 - 7F	PAN	0/random, 1/L63 - 64/C - 127/R63	”
3n	rr	05	1	00 - 7F	REVERB SEND	0 - 127	”
3n	rr	06	1	00 - 7F	CHORUS SEND	0 - 127	”
3n	rr	07	1	00 - 7F	VARIATION SEND	0 - 127	7F
3n	rr	08	1	00 - 01	KEY ASSIGN	0/SINGLE, 1/MULTI	00
3n	rr	09	1	00 - 01	Rcv NOTE OFF	0/OFF, 1/ON	Depends on the note
3n	rr	0A	1	00 - 01	Rcv NOTE ON	0/OFF, 1/ON	01
3n	rr	0B	1	00 - 7F	FILTER CUTOFF FREQUENCY	-64 - +63	40
3n	rr	0C	1	00 - 7F	FILTER RESONANCE	-64 - +63	40
3n	rr	0D	1	00 - 7F	EG ATTACK RATE	-64 - +63	40
3n	rr	0E	1	00 - 7F	EG DECAY1 RATE	-64 - +63	40
3n	rr	0F	1	00 - 7F	EG DECAY2 RATE	-64 - +63	40
TOTAL SIZE			10				

[Note]
n: Drum number (0 - 1)
rr: note number (0D - 5B)
When XG system on or GM mode on messages are received, all Drum Setup parameters are initialized.
The Drum Setup Reset message can be used to initialized each Drum Setup parameter.
Selecting a Drum Set will cause the Drum Setup parameter values to be initialized.

<Table 2-1>

Parameter Bass Address
Model ID = 4B [QS300]

Bulk Dump				
	Address			Description
	(H)	(M)	(L)	
USER NORMAL VOICE	11	00	00	User Normal Voice 1
				:
	00	1F	00	User Normal Voice 32

<Table 2-2>

MIDI Bulk Dump table (USER NORMAL VOICE) [QS300]

Address (H)			Size (H)	Data (H)	Parameter	Description	Default (H)
						[Common]	
11	nn	00	17D	20-7E	Voice Name		
		:					
		07					
		08			not used		
		:			”		
		0A			”		
		0B		01-03	Element Switch	1:Element 1 on, 2:Element 2 on, 3:Element 1 and 2 on	
		0C		00-7F	Voice Level		
		0D			not used		
		:			”		
		3C			”		
						[Element 1]	
		3D		00-7F	Wave Number High	bit13-bit7	
		3E		00-7F	Wave Number Low	bit6-bit0	
		3F		00-7F	Note Limit Low		
		40		00-7F	Note Limit High		
		41		00-7F	Velocity Limit Low		
		42		00-7F	Velocity Limit High		
		43		00-01	Filter EG Velocity Curve		
		44		00-02	LFO Wave Select	0:saw, 1:tri, 2:S&H	
		45		00-01	LFO Phase Initialize	0:OFF, 1:ON	
		46		00-3F	LFO Speed		
		47		00-7F	LFO Delay		
		48		00-7F	LFO Fade Time		
		49		00-3F	LFO PMD Depth		
		4A		00-0F	LFO CMD Depth		
		4B		00-1F	LFO AMD Depth		

4C	20-60	Note Shift	
4D	0E -72	Detune	
4E	00-05	Pitch Scaling	0:100%, 1:50%, 2:20%, 3:10%, 4:5%, 5:0%
4F	00-7F	Pitch Scaling Center Note	
50	00-03	Pitch EG Depth	0:1/2oct, 1:1oct, 2:2oct, 3:4oct
51	39-47	Velocity PEG Level Sensitivity	
52	39-47	Velocity PEG Rate Sensitivity	
53	39-47	PEG Rate Scaling	
54	00-7F	PEG Rate Scaling Center Note	
55	00-3F	PEG Rate 1	
56	00-3F	PEG Rate 2	
57	00-3F	PEG Rate 3	
58	00-3F	PEG Rate 4	
59	00-7F	PEG Level 0	
5A	00-7F	PEG Level 1	
5B	00-7F	PEG Level 2	
5C	00-7F	PEG Level 3	
5D	00-7F	PEG Level 4	
5E	00-3F	Filter Resonance	
5F	00-07	Velocity Sensitivity	
60	00-7F	Cutoff Frequency	
61	00-7F	Cutoff Scaling Break Point 1	
62	00-7F	Cutoff Scaling Break Point 2	
63	00-7F	Cutoff Scaling Break Point 3	
64	00-7F	Cutoff Scaling Break Point 4	
65	00-7F	Cutoff Scaling Offset 1	
66	00-7F	Cutoff Scaling Offset 2	
67	00-7F	Cutoff Scaling Offset 3	
68	00-7F	Cutoff Scaling Offset 4	
69	39-47	Velocity FEG Level Sensitivity	
6A	39-47	Velocity FEG Rate Sensitivity	
6B	39-47	FEG Rate Scaling	
6C	00-7F	FEG Rate Scaling Center Note	
6D	00-3F	FEG Rate 1	
6E	00-3F	FEG Rate 2	
6F	00-3F	FEG Rate 3	
70	00-3F	FEG Rate 4	
71	00-7F	FEG Level 0	
72	00-7F	FEG Level 1	
73	00-7F	FEG Level 2	
74	00-7F	FEG Level 3	
75	00-7F	FEG Level 4	
76	00-7F	Element Level	
77	00-7F	Level Scaling Break Point 1	
78	00-7F	Level Scaling Break Point 2	
79	00-7F	Level Scaling Break Point 3	
7A	00-7F	Level Scaling Break Point 4	
7B	00-7F	Level Scaling Offset 1	
7C	00-7F	Level Scaling Offset 2	
7D	00-7F	Level Scaling Offset 3	
7E	00-7F	Level Scaling Offset 4	
7F	00-06	Velocity Curve	
80	00-0F	Pan	0 (Left)-14 (Right), 15:Scaling
81	39-47	AEG Rate Scaling	
82	00-7F	AEG Scaling Center Note	
83	00-0F	AEG Key on Delay	
84	00-7F	AEG Attack Rate	
85	00-7F	AEG Decay 1 Rate	
86	00-7F	AEG Decay 2 Rate	
87	00-7F	AEG Release Rate	
88	00-7F	AEG Decay 1 Level	
89	00-7F	AEG Decay 2 Level	
8A	00-7F	Address Offset High	bit13-bit7
8B	00-7F	Address Offset Low	bit6-bit0
8C	39-47	Resonance Sensitivity	
			[Element 2]
8D			same as [Element 1]
:			”
DC			”
			[Element 3]
DD			not used
:			”
12C			”
12D			[Element 4]
:			not used
17C			”
TOTAL SIZE	17D		”

nn=Voice Number (00-1F)

XG Normal Voice List

Bank Select MSB = 000, LSB = Bank Number

Voice names in bold typeface are voices that can be selected in the Disklavier.
The Disklavier can produce all the voices listed below, but can only display bank 0 voices.

Instrument Group	Program #	Bank #	Voice Name	Element
Piano	1	0	**GrandPno**	1
		1	GrndPnoK	1
		18	MelloGrP	1
		40	PianoStr	2
		41	Dream	2
	2	0	**BritePno**	1
		1	BritPnoK	1
	3	0	**E.Grand**	2
		1	ElGrPnoK	2
		32	Det.CP80	2
		40	ElGrPno1	2
		41	ElGrPno2	2
	4	0	**HnkyTonk**	2
		1	HnkyTnkK	2
	5	0	**E.Piano1**	2
		1	El.Pno1K	1
		18	MelloEP1	2
		32	Chor.EP1	2
		40	HardEl.P	2
		45	VX El.P1	2
		64	60sEl.P	1
	6	0	**E.Piano2**	2
		1	El.Pno2K	1
		32	Chor.EP2	2
		33	DX Hard	2
		34	DXLegend	2
		40	DX Phase	2
		41	DX+Analg	2
		42	DXKotoEP	2
		45	VX El.P2	2
	7	0	**Harpsi.**	1
		1	Harpsi.K	1
		25	Harpsi.2	2
		35	Harpsi.3	2
	8	0	**Clavi.**	2
		1	Clavi. K	1
		27	ClaviWah	2
		64	PulseClv	1
		65	PierceCl	2
Chromatic Percussion	9	0	**Celesta**	1
	10	0	**Glocken**	1
	11	0	**MusicBox**	2
		64	Orgel	2
	12	0	**Vibes**	1
		1	VibesK	1
		45	HardVibe	2
	13	0	**Marimba**	1
		1	MarimbaK	1
		64	SineMrmb	2
		97	Balafon2	2
		98	Log Drum	2
	14	0	**Xylophon**	1
	15	0	**TubulBel**	1
		96	ChrchBel	2
		97	Carillon	2
	16	0	**Dulcimer**	1
		35	Dulcimr2	2
		96	Cimbalom	2
		97	Santur	2

Instrument Group	Program #	Bank #	Voice Name	Element
Organ	17	0	**DrawOrgn**	1
		32	DetDrwOr	2
		33	60sDrOr1	2
		34	60sDrOr2	2
		35	70sDrOr1	2
		36	DrawOrg2	2
		37	60sDrOr3	2
		38	EvenBar	2
		40	16+2"2/3	2
		64	Organ Ba	1
		65	70sDrOr2	2
		66	CheezOrg	2
		67	DrawOrg3	2
	18	0	**PercOrgn**	1
		24	70sPcOr1	2
		32	DetPrcOr	2
		33	LiteOrg	2
		37	PercOrg2	2
	19	0	**RockOrgn**	2
		64	RotaryOr	2
		65	SloRotar	2
		66	FstRotar	2
	20	0	**ChrchOrg**	2
		32	ChurOrg3	2
		35	ChurOrg2	2
		40	NotreDam	2
		64	OrgFlute	2
		65	TrmOrgFl	2
	21	0	**ReedOrgn**	1
		40	Puff Org	2
	22	0	**Acordion**	2
		32	AccordIt	2
	23	0	**Harmnica**	1
		32	Harmo 2	2
	24	0	**TangoAcd**	2
		64	TngoAcd2	2
Guitar	25	0	**NylonGtr**	1
		16	NylonGt2	1
		25	NylonGt3	2
		43	VelGtHrm	2
		96	Ukulele	1
	26	0	**SteelGtr**	1
		16	SteelGt2	1
		35	12StrGtr	2
		40	Nyln&Stl	2
		41	Stl&Body	2
		96	Mandolin	2
	27	0	**Jazz Gtr**	1
		18	MelloGtr	1
		32	JazzAmp	2
	28	0	**CleanGtr**	1
		32	ChorusGt	2
	29	0	**Mute.Gtr**	1
		40	FunkGtr1	2
		41	MuteStlG	2
		43	FunkGtr2	2
		45	Jazz Man	1
	30	0	**Ovrdrive**	1
		43	Gt.Pinch	2
	31	0	**Dist.Gtr**	1
		40	FeedbkGt	2
		41	FeedbGt2	2
	32	0	**GtrHarmo**	1
		65	GtFeedbk	1
		66	GtrHrmo2	1

Instrument Group	Program #	Bank #	Voice Name	Element
Bass	33	0	**Aco.Bass**	1
		40	JazzRthm	2
		45	VXUprght	2
	34	0	**FngrBass**	1
		18	FingrDrk	2
		27	FlangeBa	2
		40	Ba&DstEG	2
		43	FngrSlap	2
		45	FngBass2	2
		65	ModAlem	2
	35	0	**PickBass**	1
		28	MutePkBa	1
	36	0	**Fretless**	1
		32	Fretles2	2
		33	Fretles3	2
		34	Fretles4	2
		96	SynFretl	2
		97	Smooth	2
	37	0	**SlapBas1**	1
		27	ResoSlap	1
		32	PunchThm	2
	38	0	**SlapBas2**	1
		43	VeloSlap	2
	39	0	**SynBass1**	1
		18	SynBa1Dk	1
		20	FastResB	1
		24	AcidBass	1
		35	Clv Bass	2
		40	TeknoBa	2
		64	Oscar	2
		65	SqrBass	1
		66	RubberBa	2
		96	Hammer	2
	40	0	**SynBass2**	2
		6	MelloSB1	1
		12	Seq Bass	2
		18	ClkSynBa	2
		19	SynBa2Dk	1
		32	SmthBa 2	2
		40	ModulrBa	2
		41	DX Bass	2
		64	X WireBa	2
Strings	41	0	**Violin**	1
		8	SlowVln	1
	42	0	**Viola**	1
	43	0	**Cello**	1
	44	0	**Contrabs**	1
	45	0	**Trem.Str**	1
		8	SlowTrStr	1
		40	Susp Str	2
	46	0	**Pizz.Str**	1
	47	0	**Harp**	1
		40	YangChin	2
	48	0	**Timpani**	1

Instrument Group	Program #	Bank #	Voice Name	Element
Ensemble	49	0	**Strings1**	1
		3	S.Strngs	2
		8	SlowStr	1
		24	ArcoStr	2
		35	60sStrng	2
		40	Orchestr	2
		41	Orchstr2	2
		42	TremOrch	2
		45	VeloStr	2
	50	0	**Strings2**	1
		3	S.SlwStr	2
		8	LegatoSt	2
		40	Warm Str	2
		41	Kingdom	2
		64	70s Str	1
		65	Str Ens3	1
	51	0	**Syn.Str1**	2
		27	ResoStr	2
		64	Syn Str4	2
		65	SS Str	2
	52	0	**Syn.Str2**	2
	53	0	ChoirAah	1
		3	S.Choir	2
		16	Ch.Aahs2	2
		32	MelChoir	2
		40	ChoirStr	2
	54	0	**VoiceOoh**	1
	55	0	**SynVoice**	1
		40	SynVox2	2
		41	Choral	2
		64	AnaVoice	1
	56	0	**Orch.Hit**	2
		35	OrchHit2	2
		64	Impact	2
Brass	57	0	**Trumpet**	1
		16	Trumpet2	1
		17	BriteTrp	2
		32	WarmTrp	2
	58	0	**Trombone**	1
		18	Trmbone2	2
	59	0	**Tuba**	1
		16	Tuba 2	1
	60	0	**Mute.Trp**	1
	61	0	**Fr.Horn**	2
		6	FrHrSolo	2
		32	FrHorn2	1
		37	HornOrch	2
	62	0	**BrasSect**	1
		35	Tp&TbSec	2
		40	BrssSec2	2
		41	HiBrass	2
		42	MelloBrs	2
	63	0	**SynBras1**	2
		12	QuackBr	2
		20	RezSynBr	2
		24	PolyBrss	2
		27	SynBras3	2
		32	JumpBrss	2
		45	AnaVelBr	2
		64	AnaBrss1	2
	64	0	**SynBras2**	1
		18	Soft Brs	2
		40	SynBras4	2
		41	ChorBrss	2
		45	VelBras2	2
		64	AnaBras2	2

Bank 0 : (GM)
Bank 1 : Key Scale Planning
Bank 3 : Stereo
Bank 6 : Single
Bank 8 : Slow
Bank 12 : Fast Decay
Bank 14 : Double Attack
Bank 16 : Bright
Bank 17 : Bright
Bank 18 : Dark
Bank 19 : Dark
Bank 20 : Resonant
Bank 24 : Attack
Bank 24 : Release
Bank 27 : Reso Sweep
Bank 28 : Muted
Bank 32 : Detune 1
Bank 33 : Detune 2
Bank 34 : Detune 3
Bank 35 : Octave 1
Bank 36 : Octave 2
Bank 37 : 5th 1
Bank 38 : 5th 2
Bank 39 : Bend
Bank 40 : Tutti
Bank 41 : Tutti
Bank 42 : Tutti
Bank 43 : Velo-Switch
Bank 45 : Velo-Xfade
Bank 64 : Other wave
Bank 65 : Other wave
Bank 66 : Other wave
Bank 67 : Other wave
Bank 68 : Other wave
Bank 69 : Other wave
Bank 70 : Other wave
Bank 71 : Other wave
Bank 72 : Other wave
Bank 96 : Other wave
Bank 97 : Other wave
Bank 98 : Other wave
Bank 99 : Other wave
Bank 100 : Other wave
Bank 101 : Other wave

Bank Select
MSB = 064, LSB = 000
SFX Voice

Instrument Group	Program #	Bank #	Voice Name	Element
Reed	65	0	**SprnoSax**	1
	66	0	**Alto Sax**	1
		40	Sax Sect	2
		43	HyprAlto	2
	67	0	**TenorSax**	1
		40	BrthTnSx	2
		41	SoftTenr	2
		64	TnrSax 2	1
	68	0	**Bari.Sax**	1
	69	0	**Oboe**	2
	70	0	**Eng.Horn**	1
	71	0	**Bassoon**	1
	72	0	**Clarinet**	1
Pipe	73	0	**Piccolo**	1
	74	0	**Flute**	1
	75	0	**Recorder**	1
	76	0	**PanFlute**	1
	77	0	**Bottle**	2
	78	0	**Shakhchi**	2
	79	0	**Whistle**	1
	80	0	**Ocarina**	1
Synth Lead	81	0	**SquareLd**	2
		6	Square 2	1
		8	LMSquare	2
		18	Hollow	1
		19	Shmoog	2
		64	Mellow	2
		65	SoloSine	2
		66	SineLead	1
	82	0	**Saw.Lead**	2
		6	Saw 2	1
		8	ThickSaw	2
		18	DynaSaw	1
		19	DigiSaw	2
		20	Big Lead	2
		24	HeavySyn	2
		25	WaspySyn	2
		40	PulseSaw	2
		41	Dr. Lead	2
		45	VeloLead	2
		96	Seq Ana	2
	83	0	**CaliopLd**	2
		65	Pure Pad	2
	84	0	**Chiff Ld**	2
		64	Rubby	2
	85	0	**CharanLd**	2
		64	DistLead	2
		65	WireLead	2
	86	0	**Voice Ld**	2
		24	SynthAah	2
		64	VoxLead	2
	87	0	**Fifth Ld**	2
		35	Big Five	2
	88	0	**Bass &Ld**	2
		16	Big&Low	2
		64	Fat&Prky	2
		65	SoftWurl	2
Synth Pad	89	0	**NewAgePd**	2
		64	Fantasy2	2
	90	0	**Warm Pad**	2
		16	ThickPad	2
		17	Soft Pad	2
		18	SinePad	2
		64	Horn Pad	2
		65	RotarStr	2
	91	0	**PolySyPd**	2
		64	PolyPd80	2
		65	ClickPad	2
		66	Ana Pad	2
		67	SquarPad	2

Instrument Group	Program #	Bank #	Voice Name	Element
Synth Pad	92	0	**ChoirPad**	2
		64	Heaven2	2
		66	Itopia	2
		67	CC Pad	2
	93	0	**BowedPad**	2
		64	Glacier	2
		65	GlassPad	2
	94	0	**MetalPad**	2
		64	Tine Pad	2
		65	Pan Pad	2
	95	0	**Halo Pad**	2
	96	0	**SweepPad**	2
		20	Shwimmer	2
		27	Converge	2
		64	PolarPad	2
		66	Celstial	2
Synth Effects	97	0	**Rain**	2
		45	ClaviPad	2
		64	HrmoRain	2
		65	AfrcnWnd	2
		66	Caribean	2
	98	0	**SoundTrk**	2
		27	Prologue	2
		64	Ancestrl	2
	99	0	**Crystal**	2
		12	SynDrCmp	2
		14	Popcorn	2
		18	TinyBell	2
		35	RndGlock	2
		40	GlockChi	2
		41	ClearBel	2
		42	ChorBell	2
		64	SynMalet	1
		65	SftCryst	2
		66	LoudGlok	2
		67	XmasBell	2
		68	VibeBell	2
		69	DigiBell	2
		70	AirBells	2
		71	BellHarp	2
		72	Gamelmba	2
	100	0	**Atmosphr**	2
		18	WarmAtms	2
		19	HollwRls	2
		40	NylonEP	2
		64	NylnHarp	2
		65	Harp Vox	2
		66	AtmosPad	2
		67	Planet	2
	101	0	**Bright**	2
		64	FantaBel	2
		96	Smokey	2
	102	0	**Goblins**	2
		64	GobSyn	2
		65	50sSciFi	2
		66	Ring Pad	2
		67	Ritual	2
		68	ToHeaven	2
		70	Night	2
		71	Glisten	2
		96	BelChoir	2
	103	0	**Echoes**	2
		8	EchoPad2	2
		14	Echo Pan	2
		64	EchoBell	2
		65	Big Pan	2
		66	SynPiano	2
		67	Creation	2
		68	Stardust	2
		69	Reso Pan	2
	104	0	**Sci-Fi**	2
		64	Starz	2

Instrument Group	Program #	Bank #	Voice Name	Element
Ethnic	105	0	**Sitar**	1
		32	DetSitar	2
		35	Sitar 2	2
		96	Tambra	2
		97	Tamboura	2
	106	0	**Banjo**	1
		28	MuteBnjo	1
		96	Rabab	2
		97	Gopichnt	2
		98	Oud	2
	107	0	**Shamisen**	1
	108	0	**Koto**	1
		96	T. Koto	2
		97	Kanoon	2
	109	0	**Kalimba**	1
	110	0	**Bagpipe**	2
	111	0	**Fiddle**	1
	112	0	**Shanai**	1
		64	Shanai2	1
		96	Pungi	1
		97	Hichriki	2
Percussive	113	0	**TnklBell**	2
		96	Bonang	2
		97	Gender	2
		98	Gamelan	2
		99	S.Gamlan	2
		100	Rama Cym	2
		101	AsianBel	2
	114	0	**Agogo**	2
	115	0	**SteelDrm**	2
		97	GlasPerc	2
		98	ThaiBell	2
	116	0	**WoodBlok**	1
		96	Castanet	1
	117	0	**TaikoDrm**	1
		96	Gr.Cassa	1
	118	0	**MelodTom**	2
		64	Mel Tom2	1
		65	Real Tom	2
		66	Rock Tom	2
	119	0	**Syn.Drum**	1
		64	Ana Tom	1
		65	ElecPerc	2
	120	0	**RevCymbl**	1
Sound Effects	121	0	**FretNoiz**	2
	122	0	**BrthNoiz**	2
	123	0	**Seashore**	2
	124	0	**Tweet**	2
	125	0	**Telphone**	1
	126	0	**Helicptr**	1
	127	0	**Applause**	1
	128	0	**Gunshot**	1

Program #	MSB=064 LSB=000	Element
1	CuttngNz	1
2	CttngNz2	2
3		
4	Str Slap	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17	Fl.KClik	1
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33	Rain	1
34	Thunder	1
35	Wind	1
36	Stream	2
37	Bubble	2
38	Feed	2
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49	Dog	1
50	Horse	1
51	Bird 2	1
52		
53		
54		
55	Ghost	2
56	Maou	2
57		
58		
59		
60		
61		
62		
63		
64		

Program #	MSB=064 LSB=000	Element
65	Tel.Dial	1
66	DoorSqek	1
67	Door Slam	1
68	Scratch	1
69	Scratch 2	2
70	WindChm	1
71	Telphon2	1
72		
73		
74		
75		
76		
77		
78		
79		
80		
81	CarEngin	1
82	Car Stop	1
83	Car Pass	1
84	CarCrash	1
85	Siren	2
86	Train	1
87	Jetplane	2
88	Starship	2
89	Burst	2
90	Coaster	2
91	SbMarine	2
92		
93		
94		
95		
96		
97	Laughing	1
98	Scream	1
99	Punch	1
100	Heart	1
101	FootStep	1
102		
103		
104		
105		
106		
107		
108		
109		
110		
111		
112		
113	MchinGun	1
114	LaserGun	2
115	Xplosion	2
116	FireWork	2
117		
118		
119		
120		
121		
122		
123		
124		
125		
126		
127		
128		

: No Sound

TG300B Normal Voice List

Bank Select MSB = Bank Number, LSB = ooo

Instrument Group	Program #	Bank #	Voice Name	Element
Piano	1	0	GrandPno	1
		8	GrndPnoK	1
		16	MelloGrP	1
		126	A-Piano1	2
		127	a.piano1	1
	2	0	BritePno	1
		8	BritPnoK	1
		126	A-Piano2	2
		127	a.piano2	1
	3	0	E.Grand	2
		1	ElGrPno1	2
		2	ElGrPno2	2
		8	ElGrPnoK	2
		126	A-Piano3	2
		127	a.piano3	1
	4	0	HnkyTonk	2
		8	HnkyTnkK	2
		126	A-Piano4	2
		127	e.piano1	1
	5	0	E.Piano1	2
		8	Chor.EP1	2
		16	VX El.P1	2
		24	60sEl.P	1
		25	HardEl.P	2
		26	MelloEP1	2
		32	El.Pno1K	1
		126	A-Piano5	1
		127	e.piano2	1
	6	0	E.Piano2	2
		8	Chor.EP2	2
		16	VX El.P2	2
		24	DX Hard	2
		32	El.Pno2K	1
		126	A-Piano6	1
		127	e.piano3	1
	7	0	Harpsi.	1
		8	Harpsi.3	2
		16	Harpsi.K	1
		24	Harpsi.2	2
		126	A-Piano7	1
		127	e.piano4	1
	8	0	Clavi.	2
		8	Clavi. K	1
		126	E-Piano1	2
		127	hnkytnk	2
Chromatic Percussion	9	0	Celesta	1
		126	E-Piano2	2
		127	e.organ1	2
	10	0	Glocken	1
		126	E-Piano3	2
		127	e.organ2	2
	11	0	MusicBox	2
		126	A-Guitr1	1
		127	e.organ3	1
	12	0	Vibes	1
		1	HardVibe	2
		8	VibesK	1
		126	A-Guitr2	2
		127	e.organ4	1
	13	0	Marimba	1
		8	MarimbaK	1
		17	Balafon2	2
		24	Log Drum	2
		126	A-Guitr3	2
		127	pipeorg1	2
	14	0	Xylophon	1
		126	E-Guitr1	2
		127	pipeorg2	2
	15	0	TubulBel	1
		8	ChrchBel	2
		9	Carillon	2
		126	E-Guitr2	1
		127	pipeorg3	2
	16	0	Dulcimer	1
		1	Dulcimr2	2
		8	Cimbalom	2
		126	Slap-1	2
		127	acordion	2

Instrument Group	Program #	Bank #	Voice Name	Element
Organ	17	0	DrawOrgn	1
		1	70sDrOr1	2
		8	DetDrwOr	2
		9	70sDrOr2	2
		16	60sDrOr1	2
		17	60sDrOr2	2
		18	60sDrOr3	2
		24	CheezOrg	2
		32	DrawOrg2	2
		33	EvenBar	2
		40	Organ Ba	1
		126	Slap-2	2
		127	harpsi1	1
	18	0	PercOrgn	1
		1	70sPcOr1	2
		8	DetPrcOr	2
		32	PercOrg2	2
		126	Slap-3	2
		127	harpsi2	2
	19	0	RockOrgn	2
		8	RotaryOr	2
		16	SloRotar	2
		24	FstRotar	2
		126	Slap-4	2
		127	harpsi3	1
	20	0	ChrchOrg	2
		8	ChurOrg2	2
		16	ChurOrg3	2
		24	OrgFlute	2
		32	TrmOrgFl	2
		126	Slap-5	2
		127	clavi1	1
	21	0	ReedOrgn	1
		126	Slap-6	2
		127	clavi2	1
	22	0	Acordion	2
		8	AccordIt	2
		126	Slap-7	2
		127	clavi3	1
	23	0	Harmnica	1
		1	Harmo 2	2
		126	Slap-8	2
		127	celesta1	1
	24	0	TangoAcd	2
		126	Finger-1	1
		127	celesta2	1
Guitar	25	0	NylonGtr	1
		8	Ukulele	1
		16	NylonGt3	2
		24	VelGtHrm	2
		32	NylonGt2	1
		40	LequintG	1
		126	Finger-2	2
		127	synbras1	2
	26	0	SteelGtr	1
		8	12StrGtr	2
		9	Nyln&Stl	2
		16	Mandolin	2
		32	SteelGt2	1
		126	Picked-1	1
		127	synbras2	2
	27	0	Jazz Gtr	1
		1	MelloGtr	1
		8	PdlSteel	1
		126	Picked-2	2
		127	synbras3	2
	28	0	CleanGtr	1
		8	ChorusGt	2
		126	FretlsBs	1
		127	synbras4	2

Instrument Group	Program #	Bank #	Voice Name	Element
Guitar	29	0	Mute.Gtr	1
		8	FunkGtr1	2
		16	FunkGtr2	2
		126	A-Bass	2
		127	synbass1	1
	30	0	Ovrdrive	1
		126	Choir-1	1
		127	synbass2	1
	31	0	Dist.Gtr	1
		8	FeedbkGt	2
		9	FeedbGt2	2
		126	Choir-2	1
		127	synbass3	2
	32	0	GtrHarmo	1
		8	GtFeedbk	1
		126	Choir-3	2
		127	synbass4	1
Bass	33	0	Aco.Bass	1
		126	Choir-4	2
		127	newagepd	2
	34	0	FngrBass	1
		1	FngBass2	2
		126	Strngs-1	2
		127	synharmo	2
	35	0	PickBass	1
		8	MutePkBa	1
		126	Strngs-2	2
		127	choir pd	2
	36	0	Fretless	1
		1	Fretles2	2
		2	Fretles3	2
		3	Fretles4	2
		4	SynFretl	2
		5	Smooth	2
		126	Strngs-3	2
		127	bowed pd	2
	37	0	SlapBas1	1
		8	ResoSlap	1
		126	Strngs-4	2
		127	soundtrk	2
	38	0	SlapBas2	1
		126	E-Organ1	2
		127	atmosphr	2
	39	0	SynBass1	1
		1	SynBa1Dk	1
		8	AcidBass	1
		9	FastResB	1
		10	TeknoBa	2
		16	ResoBass	1
		126	E-Organ2	2
		127	syn warm	2
	40	0	SynBass2	2
		1	ClkSynBa	2
		2	ModulrBa	2
		3	Seq Bass	2
		8	DX Bass	2
		9	X WireBa	2
		16	RubberBa	2
		17	SynBa2Dk	1
		18	MelloSB1	1
		19	SmthBa 2	2
		126	E-Organ3	2
		127	synfunny	1

Instrument Group	Program #	Bank #	Voice Name	Element
Strings	41	0	Violin	1
		8	SlowVln	1
		126	E-Organ4	2
		127	synecho1	2
	42	0	Viola	1
		126	E-Organ5	2
		127	rain	2
	43	0	Cello	1
		126	E-Organ6	2
		127	synoboe	2
	44	0	Contrabs	1
		126	E-Organ7	2
		127	synecho2	2
	45	0	Trem.Str	1
		8	SlowTrStr	1
		9	Susp Str	2
		126	E-Organ8	2
		127	synsolo	2
	46	0	Pizz.Str	1
		126	E-Organ9	2
		127	synrdorg	2
	47	0	Harp	1
		126	SoftTP-1	1
		127	synbell	1
	48	0	Timpani	1
		126	SoftTP-2	1
		127	squareld	2
Ensemble	49	0	Strings1	1
		1	Slow Str	1
		8	Orchestr	2
		9	Orchstr2	2
		10	TremOrch	2
		11	ChoirStr	2
		16	S.Strngs	2
		24	VeloStr	2
		126	TP/TRB-1	1
		127	strsect1	2
	50	0	Strings2	1
		1	70s Str	1
		8	LegatoSt	2
		9	Warm Str	2
		10	S.SlwStr	2
		126	TP/TRB-2	1
		127	strsect2	2
	51	0	Syn.Str1	2
		1	Syn Str4	2
		126	TP/TRB-3	1
		127	strsect3	2
	52	0	Syn.Str2	2
		126	TP/TRB-4	1
		127	pizz.str	1
	53	0	ChoirAah	1
		8	S.Choir	2
		9	MelChoir	2
		32	Ch.Aahs2	2
		126	TP/TRB-5	2
		127	violin 1	2
	54	0	VoiceOoh	1
		126	TP/TRB-6	2
		127	violin 2	1
	55	0	SynVoice	1
		8	SynVox2	2
		126	Sax-1	1
		127	cello 1	1
	56	0	Orch.Hit	2
		1	OrchHit2	2
		8	Impact	2
		16	LoFiRave	2
		126	Sax-2	1
		127	cello 2	1

Instrument Group	Program #	Bank #	Voice Name	Element
Brass	57	0	Trumpet	1
		1	Trumpet2	1
		24	BriteTrp	2
		25	WarmTrp	2
		126	Sax-3	1
		127	contrabs	1
	58	0	Trombone	1
		1	Trmbone2	2
		126	Sax-4	2
		127	harp 1	1
	59	0	Tuba	1
		1	Tuba 2	1
		126	Brass-1	1
		127	harp 2	1
	60	0	Mute.Trp	1
		126	Brass-2	1
		127	guitar 1	1
	61	0	Fr.Horn	2
		1	FrHorn2	2
		8	FrHrSolo	1
		16	HornOrch	2
		126	Brass-3	2
		127	guitar 2	1
	62	0	BrasSect	1
		8	BrssSec2	2
		126	Brass-4	2
		127	elecgtr1	2
	63	0	SynBras1	2
		1	PolyBrss	2
		8	SynBras3	2
		9	QuackBr	2
		16	AnaBrss1	2
		126	Brass-5	2
		127	elecgtr2	2
	64	0	SynBras2	1
		1	Soft Brs	2
		8	SynBras4	2
		16	AnaBrss2	2
		17	VelBras2	2
		126	Orch-Hit	1
		127	sitar	1
Reed	65	0	SprnoSax	1
		127	a.bass 1	1
	66	0	Alto Sax	1
		8	HyprAlto	2
		127	a.bass 2	1
	67	0	TnrSax 2	1
		8	BrthTnSx	2
		127	e.bass 1	1
	68	0	Bari.Sax	1
		127	e.bass 2	1
	69	0	Oboe	2
		127	slapbas1	1
	70	0	Eng.Horn	1
		127	slapbas2	1
	71	0	Bassoon	1
		127	fretles1	1
	72	0	Clarinet	1
		127	fretles2	1
Pipe	73	0	Piccolo	1
		127	flute1	1
	74	0	Flute	1
		127	flute2	1
	75	0	Recorder	1
		127	piccolo1	1
	76	0	PanFlute	1
		127	piccolo2	2
	77	0	Bottle	2
		127	recorder	1
	78	0	Shakhchi	2
		127	panpipes	2
	79	0	Whistle	1
		127	sax1	2
	80	0	Ocarina	1
		127	sax2	1

Instrument Group	Program #	Bank #	Voice Name	Element
Synth Lead	81	0	SquareLd	2
		1	Square 2	1
		2	Hollow	1
		3	Mellow	2
		4	SoloSine	2
		5	Shmoog	2
		6	LMSquare	2
		8	SineLead	1
		127	sax3	1
	82	0	Saw.Lead	2
		1	Saw 2	1
		2	PulseSaw	2
		3	ThickSaw	2
		4	Big Lead	2
		5	VeloLead	2
		6	HeavySyn	2
		7	DynaSaw	1
		8	Dr. Lead	2
		16	WaspySyn	2
		127	sax4	1
	83	0	CaliopLd	2
		2	Pure Pad	2
		127	clarint1	1
	84	0	Chiff Ld	2
		127	clarint2	1
	85	0	CharanLd	2
		8	DistLead	2
		127	oboe	1
	86	0	Voice Ld	2
		127	eng.horn	1
	87	0	Fifth Ld	2
		1	Big Five	2
		127	bassoon	1
	88	0	Bass &Ld	2
		1	Big&Low	2
		2	Fat&Prky	2
		127	harmnica	1
Synth Pad	89	0	NewAgePd	2
		1	Fantasy2	2
		127	trumpet1	1
	90	0	Warm Pad	2
		1	ThickPad	2
		2	Horn Pad	2
		3	RotarStr	2
		4	Soft Pad	2
		127	trumpet2	1
	91	0	PolySyPd	2
		1	PolyPd80	2
		127	trmbone1	2
	92	0	ChoirPad	2
		1	Heaven2	2
		127	trmbone2	2
	93	0	BowedPad	2
		127	fr.horn1	1
	94	0	MetalPad	2
		1	Tine Pad	2
		2	Pan Pad	2
		127	fr.horn2	2
	95	0	Halo Pad	2
		127	tuba	2
	96	0	SweepPad	2
		1	PolarPad	2
		8	Converge	2
		9	Shwimmer	2
		10	Celstial	2
		127	brssect1	1

Instrument Group	Program #	Bank #	Voice Name	Element
Synth Effects	97	0	Rain	2
		1	HrmoRain	2
		2	AfrcnWnd	2
		8	ClaviPad	2
		127	brssect2	2
	98	0	SoundTrk	2
		1	Ancestrl	2
		2	Prologue	2
		127	vibe1	1
	99	0	Crystal	2
		1	SynMalet	1
		2	SftCryst	2
		3	RndGlock	2
		4	LoudGlok	2
		5	GlockChi	2
		6	ClearBel	2
		7	XmasBell	2
		8	VibeBell	2
		9	DigiBell	2
		16	ChorBell	2
		17	AirBells	2
		18	BellHarp	2
		19	Gamelmba	2
		127	vibe2	1
	100	0	Atmosphr	2
		1	WarmAtms	2
		2	NylnHarp	2
		3	Harp Vox	2
		4	HollwRls	2
		5	NylonEP	2
		6	AtmosPad	2
		127	symallet	1
	101	0	Bright	2
		127	maletwin	2
	102	0	Goblins	2
		1	GobSyn	2
		2	50sSciFi	2
		127	glocken	2
	103	0	Echoes	2
		1	EchoBell	2
		2	Echo Pan	2
		3	EchoPad2	2
		4	Big Pan	2
		6	SynPiano	2
		127	tubulbel	1
	104	0	Sci-Fi	2
		1	Starz	2
		127	xylophon	1
Ethnic	105	0	Sitar	1
		1	Sitar 2	2
		2	DetSitar	2
		8	Tambra	2
		16	Tamboura	2
		127	marimba	2
	106	0	Banjo	1
		1	MuteBnjo	1
		8	Rabab	2
		16	Gopichnt	2
		24	Oud	2
		127	koto	1
	107	0	Shamisen	1
		127	sho	2
	108	0	Koto	1
		8	T. Koto	2
		16	Kanoon	2
		127	shakhchi	2
	109	0	Kalimba	1
		127	whistle1	2
	110	0	Bagpipe	2
		127	whistle2	1
	111	0	Fiddle	1
		127	bottle	2
	112	0	Shanai	1
		1	Shanai2	1
		8	Pungi	1
		16	Hichriki	2
		127	breath	2

Instrument Group	Program #	Bank #	Voice Name	Element
Percussive	113	0	TnklBell	2
		8	Bonang	2
		9	Gender	2
		10	Gamelan	2
		11	S.Gamlan	2
		16	Rama Cym	2
		127	timpani	1
	114	0	Agogo	2
		127	melotom	1
	115	0	SteelDrm	2
		127	deepsnar	1
	116	0	WoodBlok	1
		8	Castanet	1
		127	e.perc1	1
	117	0	TaikoDrm	1
		8	Gr.Cassa	1
		127	e.perc2	1
	118	0	MelodTom	2
		1	Real Tom	2
		8	Mel Tom2	1
		9	Rock Tom	2
		127	taiko	1
	119	0	Syn.Drum	1
		8	Ana Tom	1
		9	ElecPerc	2
		127	taikorim	1
	120	0	RevCymbl	1
		127	cymbal	2
Sound Effects	121	0	FretNoiz	2
		1	CuttngNz	1
		2	Str Slap	1
		3	CttngNz2	2
		127	castanet	1
	122	0	BrthNoiz	2
		1	Fl.KClik	1
		127	triangle	1
	123	0	Seashore	2
		1	Rain	1
		2	Thunder	1
		3	Wind	1
		4	Stream	2
		5	Bubble	2
		127	orchehit	1
	124	0	Tweet	2
		1	Dog	1
		2	Horse	1
		3	Bird 2	1
		127	telphone	1
	125	0	Telphone	1
		1	Tel.Dial	1
		2	DoorSqek	1
		3	DoorSlam	1
		4	Scratch	1
		5	WindChm	1
		6	Scratch2	2
		127	bird	1
	126	0	Helicptr	1
		1	CarEngin	1
		2	Car Stop	1
		3	Car Pass	1
		4	CarCrash	1
		5	Siren	2
		6	Train	1
		7	Jetplane	2
		8	Starship	2
		9	Burst	2
		16	Coaster	2
		127	jam	1
	127	0	Applause	1
		1	Laughing	1
		2	Scream	1
		3	Punch	1
		4	Heart	1
		5	FootStep	1
		127	efctwatr	2
	128	0	Gunshot	1
		1	MchinGun	1
		2	LaserGun	2
		3	Xplosion	2
		127	efctjngl	2

XG Drum Voice List

Bank Select MSB = Bank Number, LSB = 000

Drum kit names in bold typeface are those that can be selected in the Disklavier.

Bank				127	127	127	127	127	127	127	127	127	126	126
Program #				1	2	9	17	25	26	33	41	49	1	2
Note#	Note	Key off	Alternate assign	**Standard Kit**	**Standard2 Kit**	**Room Kit**	**Rock Kit**	**Electro Kit**	**Analog Kit**	**Jazz Kit**	**Brush Kit**	**Classic Kit**	SFX 1	SFX 2
13	C# -1		3	Surdo Mute										
14	D -1		3	Surdo Open										
15	D# -1			Hi Q										
16	E -1			Whip Slap										
17	F -1		4	Scratch Push										
18	F# -1		4	Scratch Pull										
19	G -1			Finger Snap										
20	G# -1			Click Noise										
21	A -1			Metronome Click										
22	A# -1			Metronome Bell										
23	B -1			Seq Click L										
24	C 0			Seq Click H										
25	C# 0			Brush Tap										
26	D 0	O		Brush Swirl L										
27	D# 0			Brush Slap										
28	E 0	O		Brush Swirl H				Reverse Cymbal	Reverse Cymbal					
29	F 0	O		Snare Roll	Snare Roll 2									
30	F# 0			Castanet				Hi Q	Hi Q					
31	G 0			Snare L	Snare L 2		SD Rock M	Snare M	SD Rock H		Brush Slap L			
32	G# 0			Sticks										
33	A 0			Bass Drum L			Bass Drum M	Bass Drum H 4	Bass Drum M			Bass Drum L2		
34	A# 0			Open Rim Shot	Open Rim Shot 2									
35	B 0			Bass Drum M	Bass Drum M 2		Bass Drum H 3	BD Rock	BD Analog L			Gran Cassa		
36	C 1			Bass Drum H	Bass Drum H 2		BD Rock	BD Gate	BD Analog H	BD Jazz	BD Soft	Gran Cassa Mute	Guitar Cutting Noise	Dial Tone
37	C# 1			Side Stick					Analog Side Stick				Guitar Cutting Noise 2	Door Creaking
38	D 1			Snare M	Snare M 2	SD Room L	SD Rock	SD Rock L	Analog Snare L		Brush Slap M	Marching Sn M		Door Slam
39	D# 1			Hand Clap									String Slap	Scratch
40	E 1			Snare H	Snare H 2	SD Room H	SD Rock Rim	SD Rock H	Analog Snare H		Brush Tap H	Marching Sn H		Scratch 2
41	F 1			Floor Tom L		Room Tom 1	Rock Tom 1	E Tom 1	Analog Tom 1	Jazz Tom 1	Brush Tom 1	Jazz Tom 1		Windchime
42	F# 1		1	Hi-Hat Closed					Analog HH Closed 1					Telephone Ring2
43	G 1			Floor Tom H		Room Tom 2	Rock Tom 2	E Tom 2	Analog Tom 2	Jazz Tom 2	Brush Tom 2	Jazz Tom 2		
44	G# 1		1	Hi-Hat Pedal					Analog HH Closed 2					
45	A 1			Low Tom		Room Tom 3	Rock Tom 3	E Tom 3	Analog Tom 3	Jazz Tom 3	Brush Tom 3	Jazz Tom 3		
46	A# 1		1	Hi-Hat Open					Analog HH Open					
47	B 1			Mid Tom L		Room Tom 4	Rock Tom 4	E Tom 4	Analog Tom 4	Jazz Tom 4	Brush Tom 4	Jazz Tom 4		
48	C 2			Mid Tom H		Room Tom 5	Rock Tom 5	E Tom 5	Analog Tom 5	Jazz Tom 5	Brush Tom 5	Jazz Tom 5		
49	C# 2			Crash Cymbal 1					Analog Cymbal			Hand Cym.Open L		
50	D 2			High Tom		Room Tom 6	Rock Tom 6	E Tom 6	Analog Tom 6	Jazz Tom 6	Brush Tom 6	Jazz Tom 6		
51	D# 2			Ride Cymbal 1								Hand Cym.Closed L		
52	E 2			Chinese Cymbal									FL.Key Click	Engine Start
53	F 2			Ride Cymbal Cup										Tire Screech
54	F# 2			Tambourine										Car Passing
55	G 2			Splash Cymbal										Crash
56	G# 2			Cowbell					Analog Cowbell					Siren
57	A 2			Crash Cymbal 2								Hand Cym.Open H		Train
58	A# 2			Vibraslap										Jetplane
59	B 2			Ride Cymbal 2								Hand Cym.Closed H		Starship
60	C 3			Bongo H										Burst Noise
61	C# 3			Bongo L										Coaster
62	D 3			Conga H Mute					Analog Conga H					SbMarine
63	D# 3			Conga H Open					Analog Conga M					
64	E 3			Conga L					Analog Conga L					
65	F 3			Timbale H										
66	F# 3			Timbale L										
67	G 3			Agogo H										
68	G# 3			Agogo L									Rain	Laughing
69	A 3			Cabasa									Thunder	Screaming
70	A# 3			Maracas					Analog Maracas				Wind	Punch
71	B 3	O		Samba Whistle H									Stream	Heartbeat
72	C 4	O		Samba Whistle L									Bubble	Footsteps
73	C# 4			Guiro Short									Feed	
74	D 4	O		Guiro Long										
75	D# 4			Claves					Analog Claves					
76	E 4			Wood Block H										
77	F 4			Wood Block L										
78	F# 4			Cuica Mute				Scratch Push	Scratch Push					
79	G 4			Cuica Open				Scratch Pull	Scratch Pull					
80	G# 4		2	Triangle Mute										
81	A 4		2	Triangle Open										
82	A# 4			Shaker										
83	B 4			Jingle Bell										
84	C 5			Bell Tree									Dog	Machine Gun
85	C# 5												Horse Gallop	Laser Gun
86	D 5												Bird 2	Explosion
87	D# 5													FireWork
88	E 5													
89	F 5													
90	F# 5												Ghost	
91	G 5												Maou	

: Same as Standard kit

: No sound

TG300B Drum Voice List

Program #			1	9	17	25	26	33	41	49	57	128
Note#	Note	Alternate assign	Standard Kit	Room Kit	Power Kit	Electro Kit	Analog Kit	Jazz Kit	Brush Kit	Orchestra Kit	SFX Set	C/M Kit
25	C# 0		Snare Roll									
26	D 0		Finger Snap									
27	D# 0		Hi Q							Hi-Hat Closed		
28	E 0		Whip Slap							Hi-Hat Pedal		
29	F 0	7	Scratch Push							Hi-Hat Open		
30	F# 0	7	Scratch Pull							Ride Cymbal 1		
31	G 0		Sticks									
32	G# 0		Click Noise									
33	A 0		Metronome Click									
34	A# 0		Metronome Bell									
35	B 0		Bass Drum M							BD Jazz		
36	C 1		Bass Drum H		BD Power	BD Electronic	BD Analog H	BD Jazz	BD Soft	Gran Cassa		
37	C# 1		Side Stick				Analog Side Stick					
38	D 1		Snare M		SD Power	SD Electronic	Analog Snare L		Brush Tap	Concert SD		
39	D# 1		Hand Clap						Brush Slap	Castanet	High-Q	
40	E 1		Snare H			SD Power			Brush Swirl	Concert SD	Slap	SD Electro
41	F 1		Floor Tom L	Room Tom 1	Room Tom 1	E Tom 1	Analog Tom 1	Jazz Tom 1	Jazz Tom 1	Timpani F	Scratch Push	
42	F# 1	1	Hi-Hat Closed				Analog HH Closed 1			Timpani F#	Scratch Pull	
43	G 1		Floor Tom H	Room Tom 2	Room Tom 2	E Tom 2	Analog Tom 2	Jazz Tom 2	Jazz Tom 2	Timpani G	Sticks	
44	G# 1	1	Hi-Hat Pedal				Analog HH Closed 2			Timpani G#	Square Click	Hi-Hat Open 1
45	A 1		Low Tom	Room Tom 3	Room Tom 3	E Tom 3	Analog Tom 3	Jazz Tom 3	Jazz Tom 3	Timpani A	Metronome Click	
46	A# 1	1	Hi-Hat Open				Analog HH Open			Timpani A#	Metronome Bell	Hi-Hat Open 2
47	B 1		Mid Tom L	Room Tom 4	Room Tom 4	E Tom 4	Analog Tom 4	Jazz Tom 4	Jazz Tom 4	Timpani B	Guitar Fret Noise	
48	C 2		Mid Tom H	Room Tom 5	Room Tom 5	E Tom 5	Analog Tom 5	Jazz Tom 5	Jazz Tom 5	Timpani C	Guitar Cutting Down	
49	C# 2		Crash Cymbal 1				Analog Cymbal			Timpani C#	Guitar Cutting Up	
50	D 2		High Tom	Room Tom 6	Room Tom 6	E Tom 6	Analog Tom 6	Jazz Tom 6	Jazz Tom 6	Timpani D	Ac Bass Slap	
51	D# 2		Ride Cymbal 1							Timpani D#	FL.Key Click	
52	E 2		Chinese Cymbal			Reverse Cymbal				Timpani E	Laughing	
53	F 2		Ride Cymbal Cup							Timpani F	Screaming	
54	F# 2		Tambourine								Punch	
55	G 2		Splash Cymbal								Heartbeat	
56	G# 2		Cowbell				Analog Cowbell				Footsteps 1	
57	A 2		Crash Cymbal 2							Hand Cym.1	Footsteps 2	
58	A# 2		Vibraslap								Applause	
59	B 2		Ride Cymbal 2							Hand Cym.2	Door Creaking	
60	C 3		Bongo H								Door Slam	
61	C# 3		Bongo L								Scratch	
62	D 3		Conga H Mute				Analog Conga H				Windchime	
63	D# 3		Conga H Open				Analog Conga M				Engine Start	
64	E 3		Conga L				Analog Conga L				Tire Screech	
65	F 3		Timbale H								Car Passing	
66	F# 3		Timbale L								Crash	
67	G 3		Agogo H								Siren	
68	G# 3		Agogo L								Train	
69	A 3		Cabasa								Jetplane	
70	A# 3		Maracas				Analog Maracas				Helicopter	
71	B 3	2	Samba Whistle H								Starship	
72	C 4	2	Samba Whistle L								Gunshot	
73	C# 4	3	Guiro Short								Machine Gun	Vibraslap
74	D 4	3	Guiro Long								Laser Gun	
75	D# 4		Claves				Analog Claves				Explosion	
76	E 4		Wood Block H								Dog	Laughing
77	F 4		Wood Block L								Horse Gallop	Screaming
78	F# 4	4	Cuica Mute								Bird Tweet	Punch
79	G 4	4	Cuica Open								Rain	Heartbeat
80	G# 4	5	Triangle Mute								Thunder	Footsteps 1
81	A 4	5	Triangle Open								Wind	Footsteps 2
82	A# 4		Shaker								Seashore	Applause
83	B 4		Jingle Bell								Stream	Door Creaking
84	C 5		Bell Tree								Bubble	Door Slam
85	C# 5		Castanet									Scratch
86	D 5	6	Surdo Mute									Windchime
87	D# 5	6	Surdo Open									Engine Start
88	E 5									Applause		Tire Screech
89	F 5											Car Passing
90	F# 5											Crash
91	G 5											Siren
92	G# 5											Train
93	A 5											Jetplain
94	A# 5											Helicopter
95	B 5											Starship
96	C 6											Gunshot
97	C# 6											Machine Gun
98	D 6											Laser Gun
99	D# 6											Explosion
100	E 6											Dog
101	F 6											Horse Gallop
102	F# 6											Bird Tweet
103	G 6											Rain
104	G# 6											Thunder
105	A 6											Wind
106	A# 6											Seashore
107	B 6											Stream
108	C 7											Bubble

: Same as Standard kit

: No sound

Effect Type List

Exclusive		Effect Type	Description
MSB	LSB		
REVERB			
00	00	NO EFFECT	Effect turned off.
01	00	HALL1	Reverb simulating the resonance of a hall.
01	01	HALL2	Reverb simulating the resonance of a hall.
02	00	ROOM1	Reverb simulating the resonance of a room.
02	01	ROOM2	Reverb simulating the resonance of a room.
02	02	ROOM3	Reverb simulating the resonance of a room.
03	00	STAGE1	Reverb appropriate for a solo instrument.
03	01	STAGE2	Reverb appropriate for a solo instrument.
04	00	PLATE	Reverb simulating a metal plate reverb unit.
10	00	WHITE ROOM	A unique short reverb with a bit of initial delay.
11	00	TUNNEL	Simulation of a tunnel space expanding to left and right.
13	00	BASEMENT	A bit of initial delay followed by reverb with a unique resonance.
CHORUS			
00	00	NO EFFECT	Effect turned off.
41	00	CHORUS1	Conventional chorus program that adds natural spaciousness.
41	01	CHORUS2	Conventional chorus program that adds natural spaciousness.
41	02	CHORUS3	Conventional chorus program that adds natural spaciousness.
41	08	CHORUS4	Chorus with stereo input. The pan setting specified for the Part will also apply to the effect sound.
42	00	CELESTE1	A 3-phase LFO adds modulation and spaciousness to the sound.
42	01	CELESTE2	A 3-phase LFO adds modulation and spaciousness to the sound.
42	02	CELESTE3	A 3-phase LFO adds modulation and spaciousness to the sound.
42	08	CELESTE4	Celeste with stereo input. The pan setting specified for the Part will also apply to the effect sound.
43	00	FLANGER1	Adds a jet-airplane effect to the sound.
43	01	FLANGER2	Adds a jet-airplane effect to the sound.
43	08	FLANGER3	Adds a jet-airplane effect to the sound.
VARIATION			
00	00	NO EFFECT	Effect turned off.
01	00	HALL1	Reverb simulating the resonance of a hall.
01	01	HALL2	Reverb simulating the resonance of a hall.
02	00	ROOM1	Reverb simulating the resonance of a room.
02	01	ROOM2	Reverb simulating the resonance of a room.
02	02	ROOM3	Reverb simulating the resonance of a room.
03	00	STAGE1	Reverb appropriate for a solo instrument.
03	01	STAGE2	Reverb appropriate for a solo instrument.
04	00	PLATE	Reverb simulating a metal plate reverb unit.
05	00	DELAY L, C, R	A program that creates three delay sounds; L, R, and C (center).
06	00	DELAY L, R	A program that creates two delay sounds; L and R. Two feedback delays are provided.
07	00	ECHO	Two delays (L and R) and independent feedback delays for L and R.
08	00	CROSS DELAY	A program that crosses the feedback of two delays.
09	00	EARLY REF1	An effect that produces only the early reflection component of reverb.
09	01	EARLY REF2	An effect that produces only the early reflection component of reverb.
0A	00	GATE REVERB	A simulation of gated reverb.
0B	00	REVERSE GATE	A program that simulates gated reverb played backwards.
14	00	KARAOKE 1	A delay with feedback of the same types as used for karaoke reverb.
14	01	KARAOKE 2	A delay with feedback of the same types as used for karaoke reverb.
14	02	KARAOKE 3	A delay with feedback of the same types as used for karaoke reverb.
41	00	CHORUS1	Conventional chorus program that add natural spaciousness.
41	01	CHORUS2	Conventional chorus program that adds natural spaciousness.
41	02	CHORUS3	Conventional chorus program that adds natural spaciousness.
41	08	CHORUS4	Chorus with stereo input.
42	00	CELESTE1	A 3-phase LFO adds modulation and spaciousness to the sound.
42	01	CELESTE2	A 3-phase LFO adds modulation and spaciousness to the sound.
42	02	CELESTE3	A 3-phase LFO adds modulation and spaciousness to the sound.
42	08	CELESTE4	Celeste with stereo input.
43	00	FLANGER1	Adds a jet-airplane effect to the sound.
43	01	FLANGER2	Adds a jet-airplane effect to the sound.
43	08	FLANGER3	Adds a jet-airplane effect to the sound.
44	00	SYMPHONIC	A multi-phase version of CELESTE.
45	00	ROTARY SPEAKER	A simulation of a rotary speaker. You can use AC1 (assignable controller) etc. to control the speed of rotation.
46	00	TREMOLO	An effect that cyclically modulates the volume.
47	00	AUTO PAN	A program that cyclically moves that sound image to left and right, front and back.
48	00	PHASER1	Cyclically changes the phase to add modulation to the sound.
48	08	PHASER2	Phaser with stereo input.
49	00	DISTORTION	Adds a sharp-edged distortion to the sound.
4A	00	OVER DRIVE	Adds mild distortion to the sound.
4B	00	AMP SIMULATOR	A simulation of a guitar amp.
4C	00	3BAND EQ (MONO)	A mono EQ with adjustable LOW, MID, and HIGH equalizing.
4D	00	2BAND EQ (STEREO)	A stereo EQ with adjustable LOW and HIGH. Ideal for drum Parts.
4E	00	AUTO WAH (LFO)	Cyclically modulates the center frequency of a wah filter. With an AC1 etc. this can function as a pedal wah.
40	00	THRU	Bypass without applying any effect.

* MSB, LSB is represented in hexadecimal.
* LCB=0 is the basic effect type.

Effect Parameter List

No	Parameter	Range	Value	See Table	Control
HALL1, HALL2, ROOM 1, 2, 3, STAGE 1, 2, PLATE					
1	Reverb Time	0.3~30.0s	0-69	table#4	
2	Diffusion	0~10	0-10		
3	Initial Delay	0~63	0-63	table#5	
4	HPF Cutoff	Thru~8.0kHz	0-52	table#3	
5	LPF Cutoff	1.0k~Thru	34-60	table#3	
6					
7					
8					
9					
10	Dry/Wet	D63>W~D=W~D<W63	1-127		•
11	Rev Delay	0~63	0-63	table#5	
12	Density	0~3	0-3		
13	Er/Rev Balance	E63>R ~ E=R ~ E>R63	1-127		
14					
15	Feedback Level	-63~+63	1-127		
16					
WHITE ROOM, TUNNEL, BASEMENT					
1	Reverb Time	0.3~30.0s	0-69	table#4	
2	Diffusion	0~10	0-10		
3	Initial Delay	0~63	0-63	table#5	
4	HPF Cutoff	Thru~8.0kHz	0-52	table#3	
5	LPF Cutoff	1.0k~Thru	34-60	table#3	
6	Width	0.5~10.2m	0-37	table#11	
7	Height	0.5~20.2m	0-73	table#11	
8	Depth	0.5~30.2m	0-104	table#11	
9	Wall Vary	0~30	0-30		
10	Dry/Wet	D63>W~D=W~D<W63	1-127		•
11	Rev Delay	0~63	0-63	table#5	
12	Density	0~3	0-3		
13	Er/Rev Balance	E63>R~E=R~E>R63	1-127		
14					
15	Feedback Level	-63~+63	1-127		
16					
DELAY L, C, R					
1	Lch Delay	0.1~715.0ms	1-7150		
2	Rch Delay	0.1~715.0ms	1-7150		
3	Cch Delay	0.1~715.0ms	1-7150		
4	Feedback Delay	0.1~715.0ms	1-7150		
5	Feedback Level	-63~+63	1-127		
6	Cch Level	0~127	0-127		
7	High Damp	0.1~1.0	1-10		
8					
9					
10	Dry/Wet	D63>W~D=W~D<W63	1-127		•
11					
12					
13	EQ Low Frequency	50Hz~2.0kHz	8-40	table#3	
14	EQ Low Gain	-12~+12dB	52-76		
15	EQ High Frequency	500Hz~16.0kHz	28-58	table#3	
16	EQ High Gain	-12~+12dB	52-76		
DELAY L, R					
1	Lch Delay	0.1~715.0ms	1-7150		
2	Rch Delay	0.1~715.0ms	1-7150		
3	Feedback Delay1	0.1~715.0ms	1-7150		
4	Feedback Delay2	0.1~715.0ms	1-7150		
5	Feedback Level	-63~+63	1-127		
6	High Damp	0.1~1.0	1-10		
7					
8					
9					
10	Dry/Wet	D63>W~D=W~D<W63	1-127		•
11					
12					
13	EQ Low Frequency	50Hz~2.0kHz	8-40	table#3	
14	EQ Low Gain	-12~+12dB	52-76		
15	EQ High Frequency	500Hz~16.0kHz	28-58	table#3	
16	EQ High Gain	-12~+12dB	52-76		

No	Parameter	Range	Value	See Table	Control
ECHO					
1	Lch Delay1	0.1~355.0ms	1-3350		
2	Lch Feedback Level	-63~+63	1-127		
3	Rch Delay1	0.1~355.0ms	1-3550		
4	Rch Feedback Level	-63~+63	1-127		
5	High Damp	0.1~1.0	1-10		
6	Lch Delay2	0.1~355.0ms	1-3550		
7	Rch Delay2	0.1~355.0ms	1-3550		
8	Delay2 Level	0~127	0-127		
9					
10	Dry/Wet	D63>W~D=W~D<W63	1-127		•
11					
12					
13	EQ Low Frequency	50Hz~2.0kHz	8-40	table#3	
14	EQ Low Gain	-12~+12dB	52-76		
15	EQ High Frequency	500Hz~16.0kHz	28-58	table#3	
16	EQ High Gain	-12~+12dB	52-76		
CROSS DELAY					
1	L->R Delay	0.1~355.0ms	1-3550		
2	R->L Delay	0.1~355.0ms	1-3550		
3	Feedback Level	-63~+63	1-127		
4	Input Select	L, R, L&R	0-2		
5	High Damp	0.1~1.0	1-10		
6					
7					
8					
9					
10	Dry/Wet	D63>W~D=W~D<W63	1-127		•
11					
12					
13	EQ Low Frequency	50Hz~2.0kHz	8-40	table#3	
14	EQ Low Gain	-12~+12dB	52-76		
15	EQ High Frequency	500Hz~16.0kHz	28-58	table#3	
16	EQ High Gain	-12~+12dB	52-76		
EARLY REF1, EARLY REF2					
1	Type	S-H, L-H, Rdm, Rvs, Plt, Spr	0-5		
2	Room Size	0.1~7.0	0-44	table#6	
3	Diffusion	0~10	0-10		
4	Initial Delay	0~63	0-63	table#5	
5	Feedback Level	-63~+63	1-127		
6	HPF Cutoff	Thru~8.0kHz	0-52		
7	LPF Cutoff	1.0k~Thru	34-60		
8					
9					
10	Dry/Wet	D63>W~D=W~D<W63	1-127		•
11	Liveness	0~10	0-10		
12	Density	0~3	0-3		
13	High Damp	0.1~1.0	1-10		
14					
15					
16					
GATE REVERB, REVERSE GATE					
1	Type	TypeA, TypeB	0-1		
2	Room Size	0.1~7.0	0-44	table#6	
3	Diffusion	0~10	0-10		
4	Initial Delay	0~63	0-63	table#5	
5	Feedback Level	-63~+63	1-127		
6	HPF Cutoff	Thru~8.0kHz	0-52		
7	LPF Cutoff	1.0k~Thru	34-60		
8					
9					
10	Dry/Wet	D63>W~D=W~D<W63	1-127		•
11	Liveness	0~10	0-10		
12	Density	0~3	0-3		
13	High Damp	0.1~1.0	1-10		
14					
15					
16					

• : Can be controlled by AC1 (Assignable Controller 1)

No.* : T hese numbers correspond to the Parameter Suffix numbers in <Table 1-3>

See Table** : Refer to “Effect Data Assign Table”

No	Parameter	Range	Value	See Table	Control
KARAOKE 1, 2, 3					
1	Delay Time	0~127	0-127	table#7	
2	Feedback Level	-63~+63	1-127		
3	HPF Cutoff	Thru~8.0kHz	0-52		
4	LPF Cutoff	1.0k~Thru	34-60		
5					
6					
7					
8					
9					
10	Dry/Wet	D63>W~D=W~D<W63	1-127		•
11					
12					
13					
14					
15					
16					
CHORUS 1, 2, 3, 4, CELESTE 1, 2, 3, 4					
1	LFO Frequency	0.00~39.7Hz	0-127	table#1	
2	LFO PM Depth	0~127	0-127		
3	Feedback Level	-63~+63	1-127		
4	Delay Offset	0~127	0-127	table#2	
5					
6	EQ Low Frequency	50Hz~2.0kHz	8-40	table#3	
7	EQ Low Gain	-12~+12dB	52-76		
8	EQ High Frequency	500Hz~16.0kHz	28-58	table#3	
9	EQ High Gain	-12~+12dB	52-76		
10	Dry/Wet	D63>W~D=W~D<W63	1-127		•
11					
12					
13					
14					
15	Input Mode	mono/stereo	0-1		
16					
FLANGER 1, 2, 3					
1	LFO Frequency	0.00~39.7Hz	0-127	table#1	
2	LFO Depth	0~127	0-127		
3	Feedback Level	-63~+63	1-127		
4	Delay Offset	0~63	0-63	table#2	
5					
6	EQ Low Frequency	50Hz~2.0kHz	8-40	table#3	
7	EQ Low Gain	-12~+12dB	52-76		
8	EQ High Frequency	500Hz~16.0kHz	28-58	table#3	
9	EQ High Gain	-12~+12dB	52-76		
10	Dry/Wet	D63>W~D=W~D<W63	1-127		•
11					
12					
13					
14	LFO Phase Difference	-180~+180deg	4-124		
15					
16					
SYMPHONIC					
1	LFO Frequency	0.00~39.7Hz	0-127	table#1	
2	LFO Depth	0~127	0-127		
3	Delay Offset	0~127	0-127	table#2	
4					
5					
6	EQ Low Frequency	50Hz~2.0kHz	8-40	table#3	
7	EQ Low Gain	-12~+12dB	52-76		
8	EQ High Frequency	500Hz~16.0kHz	28-58	table#3	
9	EQ High Gain	-12~+12dB	52-76		
10	Dry/Wet	D63>W~D=W~D<W63	1-127		•
11					
12					
13					
14					
15					
16					

No	Parameter	Range	Value	See Table	Control
ROTARY SPEAKER					
1	LFO Frequency	0.00~39.7Hz	0-127	table#1	•
2	LFO Depth	0~127	0-127		
3					
4					
5					
6	EQ Low Frequency	50Hz~2.0kHz	8-40	table#3	
7	EQ Low Gain	-12~+12dB	52-76		
8	EQ High Frequency	500Hz~16.0kHz	28-58	table#3	
9	EQ High Gain	-12~+12dB	52-76		
10	Dry/Wet	D63>W~D=W~D<W63	1-127		
11					
12					
13					
14					
15					
16					
TREMOLO					
1	LFO Frequency	0.00~39.7Hz	0-127	table#1	•
2	AM Depth	0~127	0-127		
3	PM Depth	0~127	0-127		
4					
5					
6	EQ Low Frequency	50Hz~2.0kHz	8-40	table#3	
7	EQ Low Gain	-12~+12dB	52-76		
8	EQ High Frequency	500Hz~16.0kHz	28-58	table#3	
9	EQ High Gain	-12~+12dB	52-76		
10					
11					
12					
13					
14		-180~+180deg	4-124		
15	Input Mode	mono/stereo	0-1		
16					
AUTO PAN					
1	LFO Frequency	0.00~39.7Hz	0-127	table#1	•
2	L/R Depth	0~127	0-127		
3	F/R Depth	0~127	0-127		
4	PAN Direction	L<->R, L->R, L<-R, Lturn, Rturn, L/R	0-5		
5					
6	EQ Low Frequency	50Hz~2.0kHz	8-40	table#3	
7	EQ Low Gain	-12~+12dB	52-76		
8	EQ High Frequency	500Hz~16.0kHz	28-58	table#3	
9	EQ High Gain	-12~+12dB	52-76		
10					
11					
12					
13					
14					
15					
16					
PHASER1, PHASER2					
1	LFO Frequency	0.00~39.7Hz	0-127	table#1	
2	LFO Depth	0~127	0-127		
3	Phase Shift	0~127	0-127		
4	Feedback Level	-63~+63	1-127		
5					
6	EQ Low Frequency	50Hz~2.0kHz	8-40	table#3	
7	EQ Low Gain	-12~+12dB	52-76		
8	EQ High Frequency	500Hz~16.0kHz	28-58	table#3	
9	EQ High Gain	-12~+12dB	52-76		
10	Dry/Wet	D63>W~D=W~D<W63	1-127		•
11	Stage	3~10	3-10		
12	Diffusion	Mono/Stereo	0-1		
13	LFO Phase Di	-180~+180deg	4-124		
14					
15					
16					

• : Can be controlled by AC1 (Assignable Controller 1)
No.* : T hese numbers correspond to the Parameter Suffix numbers in <Table 1-3>
See Table** : Refer to “Effect Data Assign Table”

No	Parameter	Range	Value	See Table	Con-trol
DISTORTION, OVERDRIVE					
1	Drive	0~127	0-127		•
2	EQ Low Frequency	50Hz~2.0kHz	8-40	table#3	
3	EQ Low Gain	-12~+12dB	52-76		
4	LPF Cutoff	1.0k~Thru	34-60	table#3	
5	Output Level	0~127	0-127		
6					
7	EQ Mid Frequency	500Hz~10.0kHz	28-54	table#3	
8	EQ Mid Gain	-12~+12dB	52-76		
9	EQ Mid Width	1.0~12.0	10-120		
10	Dry/Wet	D63>W~D=W~D<W63	1-127		
11	Edge (Clip Curve)	0~127	0-127	mild ~sharp	
12					
13					
14					
15					
16					
GUITAR AMP SIMULATOR					
1	Drive	0~127	0-127		•
2	AMP Type	Off, Stack, Combo, Tube	0-3		
3	LPF Cutoff	1.0k~Thru	34-60	table#3	
4	Output Level	0~127	0-127		
5					
6					
7					
8					
9					
10	Dry/Wet	D63>W~D=W~D<W63	1-127		
11	Edge (Clip Curve)	0~127	0-127	mild ~sharp	
12					
13					
14					
15					
16					
3-BAND EQ					
1	EQ Low Gain	-12~+12dB	52-76		
2	EQ Mid Frequency	500Hz~10.0kHz	28-54	table#3	
3	EQ Mid Gain	-12~+12dB	52-76		
4	EQ Mid Width	1.0~12.0	10-120		
5	EQ High Gain	-12~+12dB	52-76		
6	EQ Low Frequency	50Hz~2.0kHz	8-40	table#3	
7	EQ High Frequency	500Hz~16.0kHz	28-58	table#3	
8					
9					
10					
11					
12					
13					
14					
15					
16					

No	Parameter	Range	Value	See Table	Con-trol
2-BAND EQ					
1	EQ Low Frequency	50Hz~2.0kHz	8-40	table#3	
2	EQ Low Gain	-12~+12dB	52-76		
3	EQ High Frequency	500Hz~16.0kHz	28-58	table#3	
4	EQ High Gain	-12~+12dB	52-76		
5					
6					
7					
8					
9					
10					
11	EQ Mid Frequency	100Hz~10.0kHz	14-54	table#3	
12	EQ Mid Gain	-12~+12dB	52-76		
13	EQ Mid Width	1.0~12.0	10-120		
14					
15					
16					
AUTO WAH					
1	LFO Frequency	0.00~39.7Hz	0-127	table#1	
2	LFO Depth	0~127	0-127		
3	Cutoff Frequency	0~127	0-127		•
4	Resonance	1.0~12.0	10-120		
5					
6	EQ Low Frequency	50Hz~2.0kHz	8-40	table#3	
7	EQ Low Gain	-12~+12dB	52-76		
8	EQ High Frequency	500Hz~16.0kHz	28-58	table#3	
9	EQ High Gain	-12~+12dB	52-76		
10	Dry/Wet	D63>W~D=W~D<W63	1-127		
11					
12					
13					
14					
15					
16					

• : Can be controlled by AC1 (Assignable Controller 1)
No.* : T hese numbers correspond to the Parameter Suffix numbers in <Table 1-3>
See Table** : Refer to “Effect Data Assign Table”

Effect Data Assign Table

Table#1

LFO Frequency (Hz)

Data	Value	Data	Value	Data	Value
0	0.00	43	1.81	86	5.38
1	0.04	44	1.85	87	5.55
2	0.08	45	1.89	88	5.72
3	0.13	46	1.94	89	6.06
4	0.17	47	1.98	90	6.39
5	0.21	48	2.02	91	6.73
6	0.25	49	2.06	92	7.07
7	0.29	50	2.10	93	7.40
8	0.34	51	2.15	94	7.74
9	0.38	52	2.19	95	8.08
10	0.42	53	2.23	96	8.41
11	0.46	54	2.27	97	8.75
12	0.51	55	2.31	98	9.08
13	0.55	56	2.36	99	9.42
14	0.59	57	2.40	100	9.76
15	0.63	58	2.44	101	10.10
16	0.67	59	2.48	102	10.80
17	0.72	60	2.52	103	11.40
18	0.76	61	2.57	104	12.10
19	0.80	62	2.61	105	12.80
20	0.84	63	2.65	106	13.50
21	0.88	64	2.69	107	14.10
22	0.93	65	2.78	108	14.80
23	0.97	66	2.86	109	15.50
24	1.01	67	2.94	110	16.20
25	1.05	68	3.03	111	16.80
26	1.09	69	3.11	112	17.50
27	1.14	70	3.20	113	18.20
28	1.18	71	3.28	114	19.50
29	1.22	72	3.37	115	20.90
30	1.26	73	3.45	116	22.20
31	1.30	74	3.53	117	23.60
32	1.35	75	3.62	118	24.90
33	1.39	76	3.70	119	26.20
34	1.43	77	3.87	120	27.60
35	1.47	78	4.04	121	28.90
36	1.51	79	4.21	122	30.30
37	1.56	80	4.37	123	31.60
38	1.60	81	4.54	124	33.00
39	1.64	82	4.71	125	34.30
40	1.68	83	4.88	126	37.00
41	1.72	84	5.05	127	39.70
42	1.77	85	5.22		

Table#2

Modulation Delay Offset (ms)

Data	Value	Data	Value	Data	Value
0	0.0	43	4.3	86	8.6
1	0.1	44	4.4	87	8.7
2	0.2	45	4.5	88	8.8
3	0.3	46	4.6	89	8.9
4	0.4	47	4.7	90	9.0
5	0.5	48	4.8	91	9.1
6	0.6	49	4.9	92	9.2
7	0.7	50	5.0	93	9.3
8	0.8	51	5.1	94	9.4
9	0.9	52	5.2	95	9.5
10	1.0	53	5.3	96	9.6
11	1.1	54	5.4	97	9.7
12	1.2	55	5.5	98	9.8
13	1.3	56	5.6	99	9.9
14	1.4	57	5.7	100	10.0
15	1.5	58	5.8	101	11.1
16	1.6	59	5.9	102	12.2
17	1.7	60	6.0	103	13.3
18	1.8	61	6.1	104	14.4
19	1.9	62	6.2	105	15.5
20	2.0	63	6.3	106	17.1
21	2.1	64	6.4	107	18.6
22	2.2	65	6.5	108	20.2
23	2.3	66	6.6	109	21.8
24	2.4	67	6.7	110	23.3
25	2.5	68	6.8	111	24.9
26	2.6	69	6.9	112	26.5
27	2.7	70	7.0	113	28.0
28	2.8	71	7.1	114	29.6
29	2.9	72	7.2	115	31.2
30	3.0	73	7.3	116	32.8
31	3.1	74	7.4	117	34.3
32	3.2	75	7.5	118	35.9
33	3.3	76	7.6	119	37.5
34	3.4	77	7.7	120	39.0
35	3.5	78	7.8	121	40.6
36	3.6	79	7.9	122	42.2
37	3.7	80	8.0	123	43.7
38	3.8	81	8.1	124	45.3
39	3.9	82	8.2	125	46.9
40	4.0	83	8.3	126	48.4
41	4.1	84	8.4	127	50.0
42	4.2	85	8.5		

Table#3

EQ Frequency (Hz)

Data	Value	Data	Value
0	THRU(20)	43	2.8k
1	22	44	3.2k
2	25	45	3.6k
3	28	46	4.0k
4	32	47	4.5k
5	36	48	5.0k
6	40	49	5.6k
7	45	50	6.3k
8	50	51	7.0k
9	56	52	8.0k
10	63	53	9.0k
11	70	54	10.0k
12	80	55	11.0k
13	90	56	12.0k
14	100	57	14.0k
15	110	58	16.0k
16	125	59	18.0k
17	140	60	THRU(20.0k)
18	160		
19	180		
20	200		
21	225		
22	250		
23	280		
24	315		
25	355		
26	400		
27	450		
28	500		
29	560		
30	630		
31	700		
32	800		
33	900		
34	1.0k		
35	1.1k		
36	1.2k		
37	1.4k		
38	1.6k		
39	1.8k		
40	2.0k		
41	2.2k		
42	2.5k		

Table#4

Reverb Time (ms)

Data	Value	Data	Value
0	0.3	43	4.6
1	0.4	44	4.7
2	0.5	45	4.8
3	0.6	46	4.9
4	0.7	47	5.0
5	0.8	48	5.5
6	0.9	49	6.0
7	1.0	50	6.5
8	1.1	51	7.0
9	1.2	52	7.5
10	1.3	53	8.0
11	1.4	54	8.5
12	1.5	55	9.0
13	1.6	56	9.5
14	1.7	57	10.0
15	1.8	58	11.0
16	1.9	59	12.0
17	2.0	60	13.0
18	2.1	61	14.0
19	2.2	62	15.0
20	2.3	63	16.0
21	2.4	64	17.0
22	2.5	65	18.0
23	2.6	66	19.0
24	2.7	67	20.0
25	2.8	68	25.0
26	2.9	69	30.0
27	3.0		
28	3.1		
29	3.2		
30	3.3		
31	3.4		
32	3.5		
33	3.6		
34	3.7		
35	3.8		
36	3.9		
37	4.0		
38	4.1		
39	4.2		
40	4.3		
41	4.4		
42	4.5		

Table#5

Delay Time (ms)

Data	Value	Data	Value	Data	Value
0	0.1	43	67.8	86	135.5
1	1.7	44	69.4	87	137.0
2	3.2	45	70.9	88	138.6
3	4.8	46	72.5	89	140.2
4	6.4	47	74.1	90	141.8
5	8.0	48	75.7	91	143.3
6	9.5	49	77.2	92	144.9
7	11.1	50	78.8	93	146.5
8	12.7	51	80.4	94	148.1
9	14.3	52	81.9	95	149.6
10	15.8	53	83.5	96	151.2
11	17.4	54	85.1	97	152.8
12	19.0	55	86.7	98	154.4
13	20.6	56	88.2	99	155.9
14	22.1	57	89.8	100	157.5
15	23.7	58	91.4	101	159.1
16	25.3	59	93.0	102	160.6
17	26.9	60	94.5	103	162.2
18	28.4	61	96.1	104	163.8
19	30.0	62	97.7	105	165.4
20	31.6	63	99.3	106	166.9
21	33.2	64	100.8	107	168.5
22	34.7	65	102.4	108	170.1
23	36.3	66	104.0	109	171.7
24	37.9	67	105.6	110	173.2
25	39.5	68	107.1	111	174.8
26	41.0	69	108.7	112	176.4
27	42.6	70	110.3	113	178.0
28	44.2	71	111.9	114	179.5
29	45.7	72	113.4	115	181.1
30	47.3	73	115.0	116	182.7
31	48.9	74	116.6	117	184.3
32	50.5	75	118.2	118	185.8
33	52.0	76	119.7	119	187.4
34	53.6	77	121.3	120	189.0
35	55.2	78	122.9	121	190.6
36	56.8	79	124.4	122	192.1
37	58.3	80	126.0	123	193.7
38	59.9	81	127.6	124	195.3
39	61.5	82	129.2	125	196.9
40	63.1	83	130.7	126	198.4
41	64.6	84	132.3	127	200.0
42	66.2	85	133.9		

Table#6

Room Size (m)

Data	Value	Data	Value
0	0.1	43	6.8
1	0.3	44	7.0
2	0.4		
3	0.6		
4	0.7		
5	0.9		
6	1.0		
7	1.2		
8	1.4		
9	1.5		
10	1.7		
11	1.8		
12	2.0		
13	2.1		
14	2.3		
15	2.5		
16	2.6		
17	2.8		
18	2.9		
19	3.1		
20	3.2		
21	3.4		
22	3.5		
23	3.7		
24	3.9		
25	4.0		
26	4.2		
27	4.3		
28	4.5		
29	4.6		
30	4.8		
31	5.0		
32	5.1		
33	5.3		
34	5.4		
35	5.6		
36	5.7		
37	5.9		
38	6.1		
39	6.2		
40	6.4		
41	6.5		
42	6.7		

Table#7

Delay Time (ms)

Data	Value	Data	Value	Data	Value
0	0.1	43	135.5	86	270.9
1	3.2	44	138.6	87	274.0
2	6.4	45	141.8	88	277.2
3	9.5	46	144.9	89	280.3
4	12.7	47	148.1	90	283.5
5	15.8	48	151.2	91	286.6
6	19.0	49	154.4	92	289.8
7	22.1	50	157.5	93	292.9
8	25.3	51	160.7	94	296.1
9	28.4	52	163.8	95	299.2
10	31.6	53	167.0	96	302.4
11	34.7	54	170.1	97	305.5
12	37.9	55	173.3	98	308.7
13	41.0	56	176.4	99	311.8
14	44.2	57	179.6	100	315.0
15	47.3	58	182.7	101	318.1
16	50.5	59	185.9	102	321.3
17	53.6	60	189.0	103	324.4
18	56.8	61	192.2	104	327.6
19	59.9	62	195.3	105	330.7
20	63.1	63	198.5	106	333.9
21	66.2	64	201.6	107	337.0
22	69.4	65	204.8	108	340.2
23	72.5	66	207.9	109	343.3
24	75.7	67	211.1	110	346.5
25	78.8	68	214.2	111	349.6
26	82.0	69	217.4	112	352.8
27	85.1	70	220.5	113	355.9
28	88.3	71	223.7	114	359.1
29	91.4	72	226.8	115	362.2
30	94.6	73	230.0	116	365.4
31	97.7	74	233.1	117	368.5
32	100.9	75	236.3	118	371.7
33	104.0	76	239.4	119	374.8
34	107.2	77	242.6	120	378.0
35	110.3	78	245.7	121	381.1
36	113.5	79	248.9	122	384.3
37	116.6	80	252.0	123	387.4
38	119.8	81	255.2	124	390.6
39	122.9	82	258.3	125	393.7
40	126.1	83	261.5	126	396.9
41	129.2	84	264.6	127	400.0
42	132.4	85	267.7		

Table#8

Reverb Width; Depth; Height

Data	Value	Data	Value	Data	Value
0	0.5	43	11.8	86	24.2
1	0.8	44	12.1	87	24.5
2	1.0	45	12.3	88	24.9
3	1.3	46	12.6	89	25.2
4	1.5	47	12.9	90	25.5
5	1.8	48	13.1	91	25.8
6	2.0	49	13.4	92	26.1
7	2.3	50	13.7	93	26.5
8	2.6	51	14.0	94	26.8
9	2.8	52	14.2	95	27.1
10	3.1	53	14.5	96	27.5
11	3.3	54	14.8	97	27.8
12	3.6	55	15.1	98	28.1
13	3.9	56	15.4	99	28.5
14	4.1	57	15.6	100	28.8
15	4.4	58	15.9	101	29.2
16	4.6	59	16.2	102	29.5
17	4.9	60	16.5	103	29.9
18	5.2	61	16.8	104	30.2
19	5.4	62	17.1		
20	5.7	63	17.3		
21	5.9	64	17.6		
22	6.2	65	17.9		
23	6.5	66	18.2		
24	6.7	67	18.5		
25	7.0	68	18.8		
26	7.2	69	19.1		
27	7.5	70	19.4		
28	7.8	71	19.7		
29	8.0	72	20.0		
30	8.3	73	20.2		
31	8.6	74	20.5		
32	8.8	75	20.8		
33	9.1	76	21.1		
34	9.4	77	21.4		
35	9.6	78	21.7		
36	9.9	79	22.0		
37	10.2	80	22.4		
38	10.4	81	22.7		
39	10.7	82	23.0		
40	11.0	83	23.3		
41	11.2	84	23.6		
42	11.5	85	23.9		

YAMAHA [Disklavier] **MIDI IMPLEMENTATION CHART** Date : 01-Feb-2000
Model: Mark III Full-Function Version : 1.00

Function...		Transmitted	Recognized	Remarks
Basic	Default	1-16	1-16	Memorized
Channel	Changed	1-16	1-16	
Mode	Default	3	3	
	Messages	×	3, 4 (m=1) *2, *3	
	Altered	**********	×	
Note Number :		0-127	0-127	
	True voice	**********	0-127	
Velocity	Note ON	O 9nH, v=1-127	O v=1-127	
	Note OFF	O	O	
After Touch	Key s	O *5	O	
	Ch s	×	O *1, *2	
Pitch Bend		×	O 0-24 semi *1, *2	
Control Change	0, 32	O	O *1, *2	Bank Select
	7, 11	O	O *1	
	1, 5, 10	×	O *1, *2	
	6, 38	×	O *2	Data Entry
	64	O	O	Hold1 (Sustain)
	65	×	O *2	Portament
	66	O *4	O *2	Sostenuto
	67	O	O	Soft (Shift) Pedal
	71-74, 84	×	O *2	
	91, 93, 94	×	O *2	Effect Depth
	96-101	×	O *1, *2	
Prog Change : True #		O 0-127	O 0-127 *2	
		**********		
System Exclusive		O	O	
Common	: Song Pos	O *1	O *1	
	: Song Sel	O *1	O *1	
	: Tune	×	×	
System Real Time	: Clock	O	×	
	: Commands	O *1	O *1	
Aux Mes-sages	: All Sound OFF	O	O (120, 126, 127)	
	: Reset All Cntrls	×	O (121)	
	: Local ON/OFF	×	O	
	: All Notes OFF	O	O (123-125)	
	: Active Sense	O	O	
	: Reset	×	×	

Notes
*1 = Received (transmitted) if switch is on.
*2 = Only ESBL Part can recognize.
*3 = m is always treated as 1 regardless of its value.
*4 = Transmit if this model has a Sostenuto Pedal.
*5 = Applying further pressure on the key does not output key aftertouch information. Instead, key position is transmitted as additional information.

Mode 1 : OMNI ON. POLY Mode 2 : OMNI ON. MONO O : Yes
Mode 3 : OMNI OFF. POLY Mode 4 : OMNI OFF. MONO × : No

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