Chapter 20
Song and Disk Formats and Compatibility

This chapter describes the song formats and disk types that the Disklavier uses to control song data on disks. This information is relevant to using the Disklavier song data with other Yamaha instruments or MIDI equipment.

Song Format

Song format refers to the format in which songs are recorded onto the Memory Disk or floppy disks. The Disklavier supports both the most commonly used Standard MIDI File (SMF) format and Yamaha's E-SEQ format.

SMF Format Songs

If you plan to edit your Disklavier songs on a MIDI instrument or computer music software, it would be wise to record them in the SMF format. It will provide you with access to a vast range of creative MIDI options. The Disklavier automatically records songs in SMF format if the disk on which the songs are to be recorded is formatted as an SMF type disk. (See "Disk Types" below.)

To be exact, the Disklavier records songs in SMF format 0 by default. (SMF format 1 is supported by the Disklavier for playback functions.)

When recording SMF songs, song tempo can be set between 30 and 400 bpm.

For songs with pedal data, incremental pedal data is stored on tracks 1 and 2.

You can also select any voice for tracks 3 to 9 and 11 to 16. Tracks 1 and 2 are for Disklavier piano parts and track 10 for the rhythm track.

E-SEQ Format Songs

If you plan to play back your Disklavier songs on earlier Disklavier models or the Clavinova series, you should record them in E-SEQ format. E-SEQ is a representative song file format developed by Yamaha, and its playback and recording functions are supported in full by the Disklavier. To record your Disklavier songs in E-SEQ format, the disk to which the songs are to be recorded should be formatted as an E-SEQ type disk. (See "Disk Types" below.)

When recording E-SEQ songs, song tempo can be set between 30 and 280 bpm.

For songs with pedal data, on/off pedal data is stored on tracks 1 and 2, and incremental pedal data is stored on track 3.

You can also select any voice for tracks 4 to 9 and 11 to 16. Tracks 1 to 3 are for Disklavier piano parts and track 10 for the rhythm track.

Disk Types

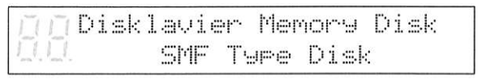
You can format the Memory Disk and floppy disks in either SMF or E-SEQ format, in accordance with the song format you want to use for recording your Disklavier songs. (See "Formatting Disks" on page 52 and "Converting Disk Type" on page 109.) The Memory Disk is formatted as an SMF type disk as a factory presetting.

Note: The terms "SMF type disk" and "E-SEQ type disk" are unique to the Yamaha Disklavier, and should not be confused with SMF and E-SEQ song formats described above. With the Disklavier, however, song format and disk type has much to do with the other. This is described in detail below.

SMF Type Disks

Disklavier songs recorded to a disk formatted as an SMF type disk will be recorded in SMF format 0 by default. However, it is possible to copy E-SEQ songs to an SMF type disk.

If a disk is formatted as an SMF type disk, the following display should appear as the disk title display.

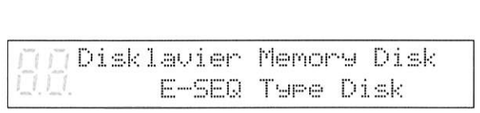


Up to 99 songs can be recorded onto an SMF type disk, depending on the size of the song file.

E-SEQ Type Disks

Disklavier songs recorded to a disk formatted as an E-SEQ type disk will be recorded in E-SEQ format only. It is not possible to copy SMF songs to an E-SEQ type disk. E-SEQ disks can be played back by earlier Disklavier models as well as by the Disklavier. (Some early models may not be able to play back, in part, E-SEQ songs recorded using the Disklavier.)

If a disk is formatted as an E-SEQ type disk, the following display should appear as the disk title display.



Up to 60 songs can be recorded onto an E-SEQ type disk.

Cl and Other Type Disks

Disks formatted by instruments other than the Disklavier may be displayed as Cl Type Disk or Other Type Disk. These disks can be played back by the Disklavier, but once Disklavier songs are reocrded to these disks, they will automatically become SMF type disks, and you may no longer be able to play them back on the instruments in which they were originally formatted.

Converting Song Format

SMF songs can be converted to E-SEQ songs and vice versa.

Note: When converting songs from SMF to E-SEQ song format, if there is an instrumental part on track 3, incremental pedal data will be lost to accommodate the instrumental part on track 3.

1 **Press the [FUNC.] button.**

The FUNC. indicator lights and the Function menu display appears.

2 **With the ▶ cursor next to the Disk option, press the [ENTER] button.**

ENTER

The Disk menu display appears.

```
00 ▶Format      *SongDelete
00 *SongCopy    *SongSort    →
```

3 **Use the [→] cursor button to position the ▶ cursor next to the Song Convert option, then press the [ENTER] button.**

←/→ → ENTER

```
00 ←*DiskCopy ▶SongConvert
00  *Counter   *DiskConvert
```

The following display appears.

```
00 [Song Convert]      (ENT)
00 ▶ 01 PIANO001.MID→E-SEQ
```

4 **Use the [–/NO] [+/YES] buttons to select the song that you want to convert.**

–/NO +/YES

5 **When you have selected the song, press the [→] cursor button to position the ▶ cursor next to the arrow. Then use the [–/NO] [+/YES] buttons to select a song format: E-SEQ, SMF0 or SMF1.**

Symbol	Song format
E-SEQ	E-SEQ format
SMF0	Standard MIDI File format 0
SMF1	Standard MIDI File format 1

←/→ → –/NO +/YES

```
00 [Song Convert]      (ENT)
00 ▶ 01 PIANO001.MID▶E-SEQ
```

6 **Press the [ENTER] button.**

ENTER

A display similar to the following appears.

```
00 [Song Convert]SURE?(Y/N)
00   01 PIANO001.MID→E-SEQ
```


7 **Press the [+/YES] button to begin song conversion.**

–/NO +/YES

If you do not want convert the song, press the [–/NO] button.

8 **When song conversion is completed, the following display appears.**

Press any button to return to the normal display.

```
00 COMPLETE
00  PRESS ANY BUTTON
```

When a song format is converted, the extension of the file name changes.

Converting Disk Type

SMF type disks can be converted to E-SEQ type disks and vice versa. This can be helpful when you want to play back a song recorded in the SMF format on an earlier Disklavier model, or when you want to use song data recorded in the E-SEQ format with other MIDI instruments.

1 **Press the [FUNC.] button.**

FUNC.

The FUNC. indicator lights and the Function menu display appears.

2 **With the ▶ cursor next to the Disk option, press the [ENTER] button.**

ENTER

The Disk menu display appears.

```
00 ▶Format      *SongDelete
00 *SongCopy    *SongSort    →
```

3 **Use the [→] cursor button to position the ▶ cursor next to the Disk Convert option. Then press the [ENTER] button.**

←/→ → ENTER

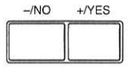
```
00 ←*DiskCopy *SongConvert
00  *Counter  ▶DiskConvert
```

The following display appears.

```
00 [DiskConvert]
00   SMF→▶E-SEQ Type (ENT)
```

4 **Use the [–/NO] [+/YES] buttons to select a song format.**

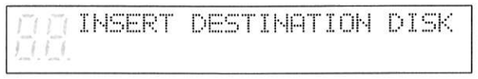
E-SEQ type disks can be converted to SMF type disks or Piano1 disks.
SMF type disks can be converted to E-SEQ type disks or Piano1 disks.



Note: Piano1 is a format that can be played back by all Disklaviers. In the display, disk type for a Piano1 type disk will be shown as E-SEQ.

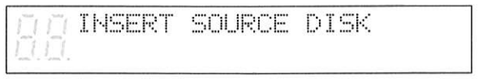
5 **Press the [ENTER] button.**

The following display appears.



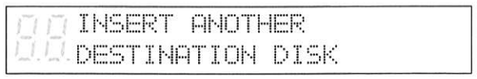
Insert the destination disk.

Depending on the size of the disk, the following display may appear.



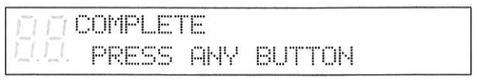
Eject the destination disk and insert the source disk. You may need to repeat this several times until the conversion is complete.

If all data cannot fit onto one disk, the following display appears. Insert another floppy disk and conversion will continue.



6 **When the conversion process is complete, the following display appears.**

Press any button to return to the normal display.



Chapter 21
The Disklavier & MIDI

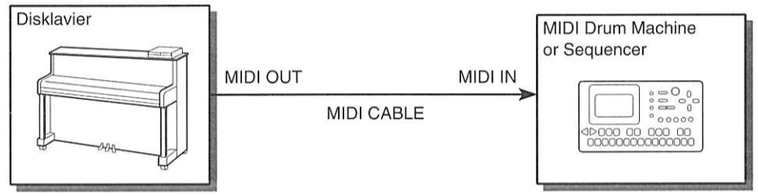
This chapter describes how the Disklavier can be used with other MIDI instruments. The Disklavier's MIDI functions are quite flexible, so there are many different connection possibilities. This chapter provides a few examples. Even if your particular application is not one of these, by reading through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

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 124.

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 the [PLAY] button 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.

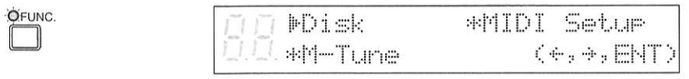
1 **Connect the Disklavier's MIDI OUT to the MIDI drum machine or sequencer's MIDI IN connector using a MIDI cable.**



2 **Set the MIDI drum machine or sequencer to synchronize with the incoming MIDI clock, sometimes called "MIDI SYNC". Refer to its operating manual for details.**

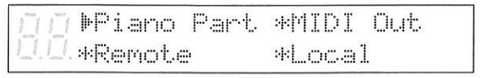
3 **Press the [FUNC.] button.**

The FUNC. indicator lights and the following display appears.



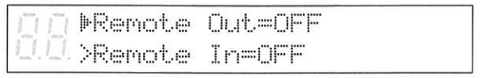
4 **Use the [→] cursor button to position the ▶ cursor next to the MIDI Setup option, then press the [ENTER] button.**

The following display appears.

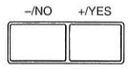


5 **Press the [➧] cursor button until the ▶ cursor is next to the Remote option, then press the [ENTER] button.**

The following display appears.



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



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

The Disklavier can now be used in the sequencer system.

Sending the Keyboard Data to a MIDI Instrument

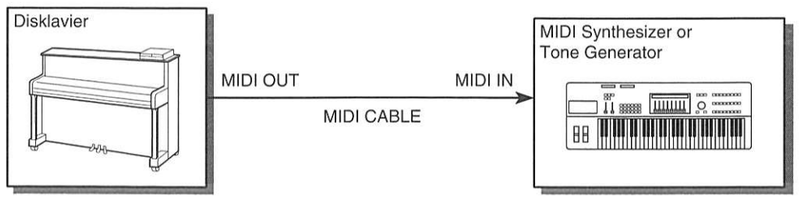
In this setup, as you play the Disklavier, a connected external MIDI tone generator or synthesizer plays as well. This is sometimes referred to as voice layering or unison. A typical combination may be the Disklavier and a strings voice, or the Disklavier and a vibes voice. From the Disklavier, you can 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 on 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 118.

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.**

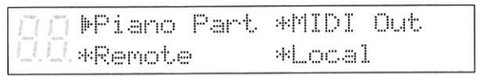


2 **Press the [FUNC.] button.**

The FUNC. indicator lights and the Function menu display appears.

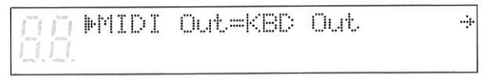
3 **Use the [➧] cursor button to position the ▶ cursor next to the MIDI Setup option, then press the [ENTER] button.**

The following display appears.



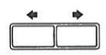
4 **Use the [➧] cursor button to position the ▶ cursor next to the MIDI Out option, then press the [ENTER] button.**

The following display appears.

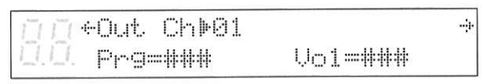


→ See "Summary of the MIDI Out Parameter in a MIDI Setup" on pages 121 and 122 for details on the MIDI Out parameter.

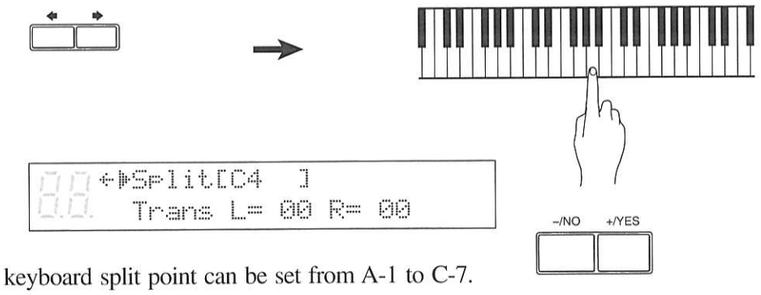
5 **Press the [➧] cursor button.**



A display similar to the following appears.

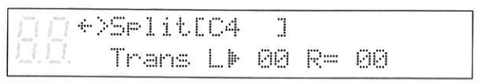


6 **To set a split point, press the [➧] cursor button until the following display appears. Then, with the ▶ cursor next to the Split parameter, use the keyboard or the [–/NO] [+/YES] buttons to select a key.**



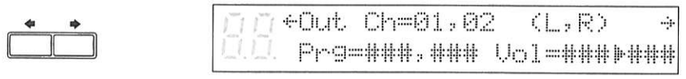
A keyboard split point can be set from A-1 to C-7.

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

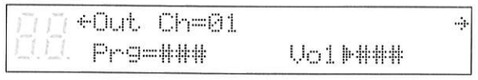


The MIDI output can be transposed from –60 to +60 in one semitone steps.
Separate transposition values can be set for the left- and right-hand parts.

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



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

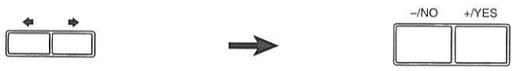


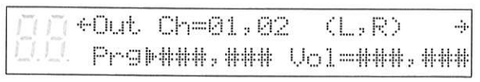
9 **Press the [⬅] cursor button to position the ▶ next to the Out Ch parameter, then use the [–/NO] [+/YES] buttons to set a value.**

The "Out Ch" option is used to select the MIDI channel/s 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	Not applicable.

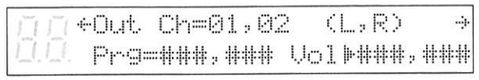
10 **To select a voice for the MIDI output, press the [➧] cursor button to position the ▶ cursor next to the Prg parameter, then use the [–/NO] [+/YES] buttons to select a voice.**





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 the [➧] cursor button to position the ▶ cursor next to the Vol parameter, then use the [–/NO] [+/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 the [FUNC.] button or the [STOP] button to exit the MIDI setup.**

Receiving Data from a MIDI Sequencer

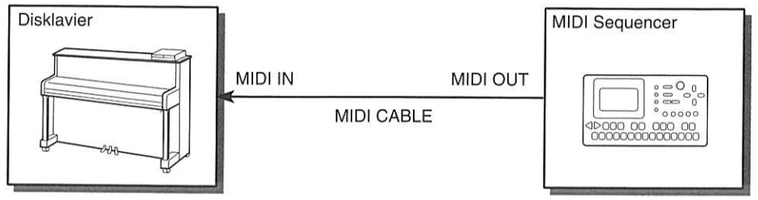
In this setup, the Disklavier is connected to a MIDI sequencer for song recording and playback. In this way you can use a MIDI sequencer's powerful recording and editing functions for creating your Disklavier songs. The sequencer can be a dedicated music sequencer, a MIDI data recorder, or a MIDI sequencer 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 you may notice 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 117.

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	Not applicable.
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 which contain 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.**

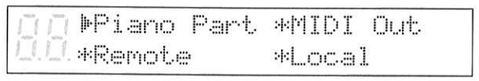


2 **Press the [FUNC.] button.**

The FUNC. indicator lights and the Function menu display appears.

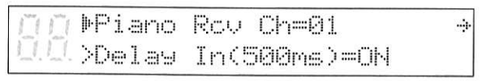
3 **Use the [➧] cursor button to position the ⊩ cursor next to the MIDI Setup option, then press the [ENTER] button.**

The following display appears.

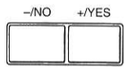


4 **With the ⊩ cursor next to the Piano Part option, press the [ENTER] button.**

The following display appears.

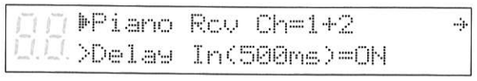


5 **Use the [–/NO] [+/YES] buttons to select a MIDI channel.**



See page 115 for a list of available options.

6 **Press the [➧] cursor button to position the ⊩ cursor next to the Delay In parameter, then use the [–/NO] [+/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 117.

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

The Disklavier can now be used in the sequencer system.

Controlling the Disklavier in Real Time

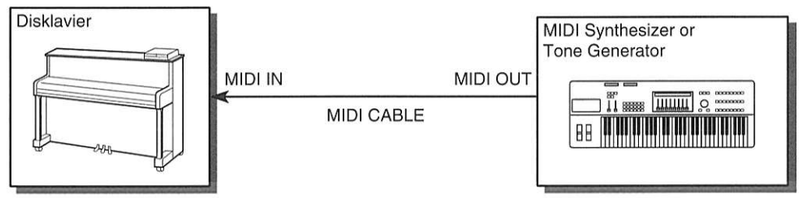
As the Disklavier uses a mechanical system for driving the piano keys, incoming MIDI data cannot be played instantly. For this reason a fixed delay of 500 ms is usually applied to all incoming MIDI data. For most applications this delay will not be a problem.

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.

As well as set the Delay In parameter to OFF, you also have to set the Piano Rcv Ch parameter to match that of the other keyboard's MIDI transmit channel. 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.**

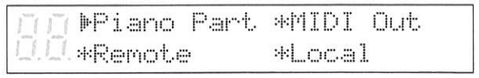


2 **Press the [FUNC.] button.**

The FUNC. indicator lights and the Function menu display appears.

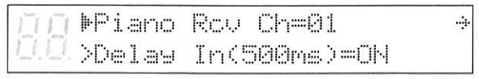
3 **Use the [➧] cursor button to position the ⊩ cursor next to the MIDI Setup option, then press the [ENTER] button.**

The following display appears.

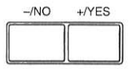


4 **With the ▸ cursor next to the Piano Part option, press the [ENTER] button.**

The following display appears.

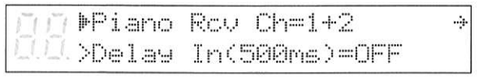


5 **Use the [–/NO] [+/YES] buttons to select a MIDI channel.**



See page 115 for a list of available options.

6 **Press the [→] cursor button to position the ▸ cursor next to the Delay In parameter, then use the [–/NO] [+/YES] buttons to set the Delay In (500 ms) to OFF.**



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

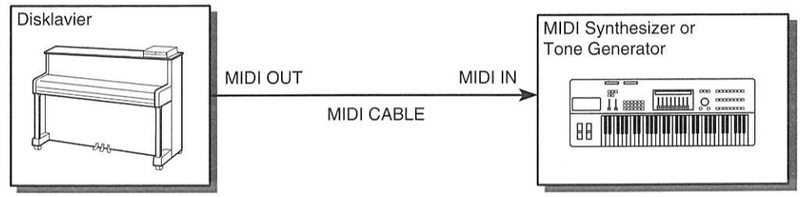
Sending Song Data to a MIDI Instrument

The parts of an Ensemble song are usually played by the internal XG tone generator. However, as 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 MIDI instrument such as a synthesizer.

When playing back songs from a computer, for example, it would be 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 127.

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.**



Note: Disconnect the external speakers from the AUX OUT on the Control Box and connect them to the external MIDI instrument if you want to sound only the external MIDI instrument.

2 **Press the [FUNC.] button.**

The FUNC. indicator lights and the Function menu display appears.

3 **Use the [→] cursor button to position the ▸ cursor next to the MIDI Setup option, then press the [ENTER] button.**

The following display appears.

4 **Use the [→] cursor button to position the ▸ cursor next to the MIDI Out option, then press the [ENTER] button.**

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

→ See "Summary of the MIDI Out Parameter in a MIDI Setup" on pages 121 and 122 for details on the MIDI Out parameter.

6 **Press the [FUNC.] button or the [STOP] button 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. They are called "import files". In this case, however, you must specify the tracks to be played by the Disklavier piano, as piano parts in import files may be stored on any track.

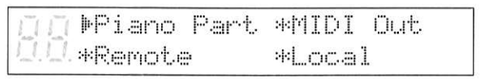
1 **Insert the song disk into the disk drive.**

2 **Press the [FUNC.] button.**

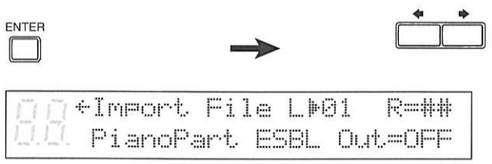
The FUNC. indicator lights and the Function menu display appears.

3 **Use the [➧] cursor button to position the ▶ cursor next to the MIDI Setup option, then press the [ENTER] button.**

The following display appears.



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



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

Option	Description
##	The import file is played by just the tone generator.
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 which contains 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 the [PLAY] button to play back the song disk.**

Remote Control

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 is 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.

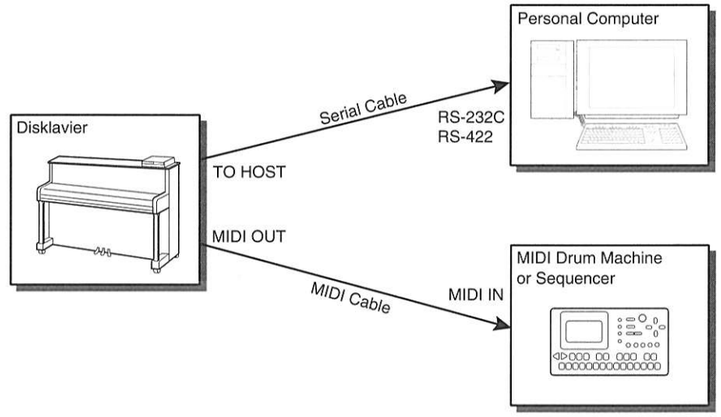
× = TO HOST connector inactive

Chapter 22
The Disklavier & Computers

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

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

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



Note: For 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, so that the Disklavier functions properly. See "Setting the HOST SELECT Switch" on page 124.

Connecting to a Computer

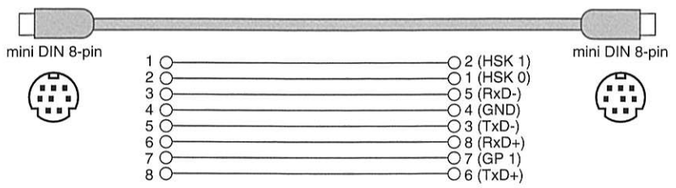
Specifically, Apple Macintosh, IBM PC/AT, and NEC PC-9801/9821 series computers can be directly connected to the Disklavier. Connect the RS-232C or RS-422 connector on your computer to the TO HOST connector on the Control Unit using the specified cables shown below (available separately). Also refer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

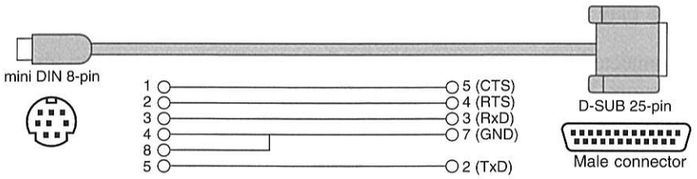
Connecting to an Apple Macintosh Series Computer

Use a standard Macintosh 8-pin system peripheral cable.



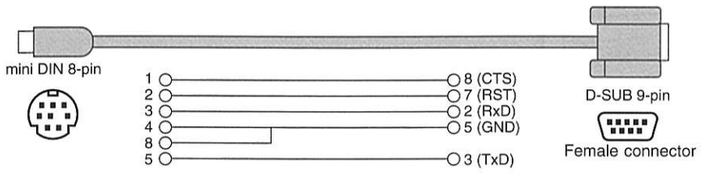
Connecting to an NEC PC-9801/9821 Series Computer

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

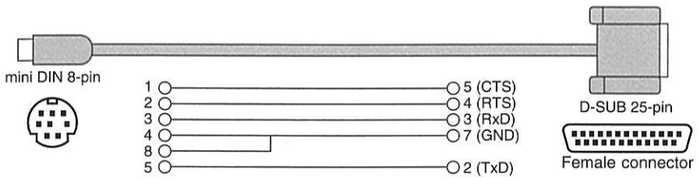


Connecting to an IBM PC/AT Series Computer

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

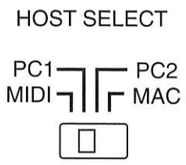


(b) Use a standard 8-pin MINI DIN → 25-pin D-SUB cross cable.



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 trade marks 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 in a Computer

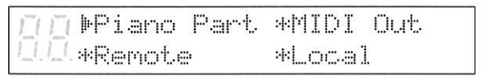
Songs created and stored in your computer system can be played back by the Disklavier.

1 **Press the [FUNC.] button.**

The FUNC. indicator lights and the Function menu display appears.

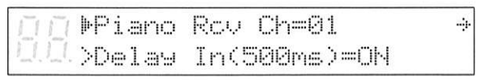
2 **Use the [▸] cursor button to position the ▸ cursor next to the MIDI Setup option, then press the [ENTER] button.**

The following display appears.

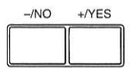


3 **With the ▸ cursor next to the Piano Part option, press the [ENTER] button.**

The following display appears.

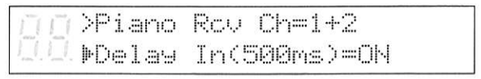


4 **With the ▸ cursor next to the Piano Rcv Ch parameter, use the [–/NO] [+/YES] buttons to select the channel for the piano part.**



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 115 for details on MIDI channels.

5 **Press the [▸] cursor button to position the ▸ cursor next to the Delay In parameter, then use the [–/NO] [+/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 117.

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

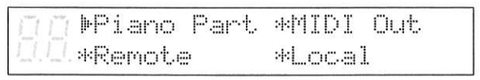
Recording Songs to a Computer (Sequencer)

You can record keyboard and pedal data onto a computer.

1 **Press the [FUNC.] button.**

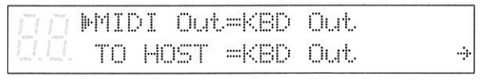
2 **Press the [▸] cursor button to position the ▸ cursor next to the MIDI Setup option, then press the [ENTER] button.**

The following display appears.



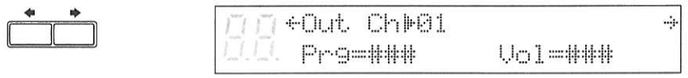
3 **Press the [▸] cursor button to position the ▸ cursor next to the MIDI Out option, then press the [ENTER] button.**

The following display appears.



→ See "Summary of the MIDI Out Parameter in a Computer Setup" on pages 130 and 131 for details on the MIDI Out parameter.

4 **With the ▸ cursor next to the MIDI Out parameter, press the [▸] cursor button.**



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	Not applicable.

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 117 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 the [FUNC.] button or the [STOP] button to return to the normal display.**

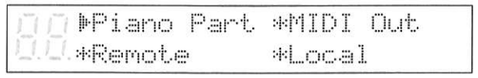
Playing Back More than 16 Channels

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. Using software corresponding to port signals, the 32 channels are sent to the Disklavier. 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 the [FUNC.] button.**

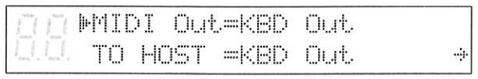
2 **Press the [➧] cursor button to position the ▸ cursor next to the MIDI Setup option, then press the [ENTER] button.**

The following display appears.



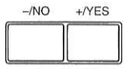
3 **Press the [➧] cursor button to position the ▸ cursor next to the MIDI Out option, then press the [ENTER] button.**

The following display appears.



→ See "Summary of the MIDI Out Parameter in a Computer Setup" on pages 130 and 131 for details on the MIDI Out parameter.

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



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

Temporarily Deactivating the Internal Tone Generators

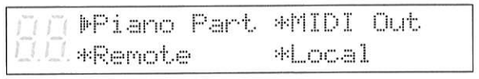
When you are using the Disklavier's internal XG tone generator from a computer and do not want any interference from the keyboard, you can set the Disklavier so that the tone generator and keyboard are temporarily disconnected. Even when the Voice function is on, no sound is produced from the piano.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

1 **Press the [FUNC.] button.**

The FUNC. indicator lights and the Function menu display appears.

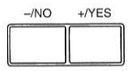
2 **Press the [➧] cursor button to position the ▸ cursor next to the MIDI Setup option, then press the [ENTER] button.**

The following display appears.

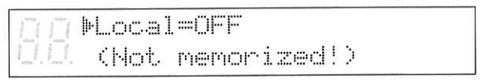


3 **Press the [➧] cursor button to position the ▸ cursor next to the Local option, then press the [ENTER] button.**

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



The following display appears.



Note: The OFF setting remain 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 the [FUNC.] button or the [STOP] button 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.	No MIDI data passed through except for pedal data.	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.

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.	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	No MIDI data sent except for pedal data.	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.	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.

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.	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.