# Technics

MIDI

SX-EX70

MIDI Terminals

MIDI (Musical Instrument Digital Interface) is the standard specification that enables connection to equipment such as synthesizers and personal computers. Data transmission and reception are possible between the Technics organ and equipment provided with MIDI terminals.

in: The terminal that receives data from external equipment.

out: The terminal that transmits data from the organ to external equipment.

● Use a 5-pin DIN cord (less than 15 m long) for these connections.

This organ can transmit or receive data for **upper**, **lower**, **bass** and **solo** parts.
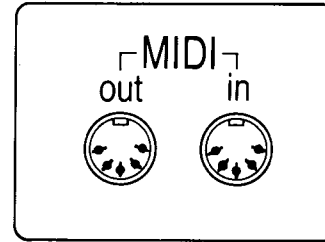
The following data can be received.

[Connect the **in** terminal of this instrument to the **out** terminal of the external equipment.]

● **Keyboard On/Off Data of External Equipment**
  The sound for this instrument can be heard by playing the external equipment.
  ● Depending on the tone, noise such as a click sound may occur when high notes are played.
● **Program Change Data**
  The tones for this instrument can be selected by operating the external equipment.
  ● The Voice Setting Computer (VSC) is selected for the **upper** part; no voice is selected for the **lower** part.
● **MIDI Clock Signal**
  You can play this instrument in synchronization with the clock on the external equipment (clock **MIDI** mode).
● **Effect Data, Sustain Data**
  The effect and sustain for this instrument can be controlled by operating the external equipment. (Only **upper** and **lower** parts can be controlled.)
● **Start/Stop Data**
  You can start and stop this instrument from the external equipment.
● **FSC (when loading) Number**
  By operating the external equipment, the FSC for this instrument can be selected.

The following data can be transmitted.

[Connect the **out** terminal of this instrument to the **in** terminal of the external equipment.]

● **Keyboard On/Off Data**
  The sound from the external equipment can be heard by playing this instrument.
● **Program Change Data**
  The tone for the external equipment can be selected by operating the tone buttons for this instrument.
  ● The following buttons are used to select voices for each part.
    Upper part ..... **percussive presets** voice buttons
    Lower part ..... **orchestral presets** voice buttons
    Bass part .... **bass** voice buttons
    Solo part .... **solo presets** voice buttons
● **Internal Clock Signal**
  You can synchronize the external equipment with this instrument (clock **int** mode).
● **Effect Data, Sustain Data**
  The effect and sustain of the external equipment can be controlled by operating the **effect** and **sustain** buttons for this instrument. (Only **upper** and **lower** parts can be controlled.)
● **Start/Stop Data**
  You can start and stop the external equipment from this instrument.
● **FSC (when loading) Number**
  The song of the external equipment can be selected by loading the FSC for this instrument.

● These data cannot be received by some equipment.
● When connected to equipment that has a hold function, the **sustain on** button for this instrument will work with this function to hold a note indefinitely.
● When using the Play Sequencer, the external instrument can be played automatically.

MIDI Mode Setting

When using MIDI signals, set the MIDI mode as follows:

- **Basic Channel Designation**

  Basic channels numbered from 1 to 16 are available for MIDI signals. The channels on the transmission side and receiving side must match before keyboard on/off data, tone data, effect data and sustain data can be transmitted and received.

  - Set the necessary basic channel number for each upper, lower, bass, and solo part.

- **Clock Selection**

  Select the internal clock (**int**) when playing in time with this instrument's clock. Select the **MIDI** clock when playing in time with the external equipment clock.

  - When the **MIDI** clock is selected, the rhythm can only be started if **MIDI** clock is received from external equipment.

- **Program Change, Effect, Sustain, Start/Stop**

  Whether or not the data for each of these items is transmitted or received can be set.

 - Except for start/stop, each can be set individually.

<Procedure>

[1] Press the **record** button. The button will flash.

[2] Press the **MIDI set** button. The button will flash slowly. The MIDI set mode is now functioning.

[3] Set the necessary mode.

I. Setting by parts for basic channel, program change, effect, sustain

1. Choose the part to be set with the **part select** buttons. (For example, turn on the **bass** button.)
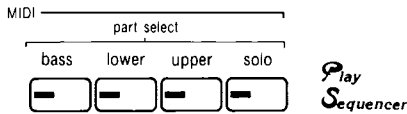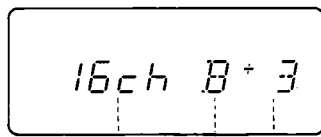

2. Press the key on the lower keyboard (**1** to **16**) corresponding to the basic channel number set for the part.
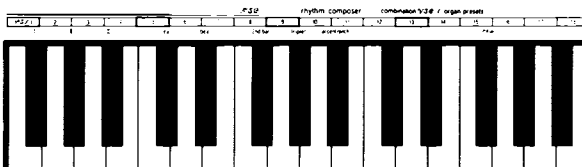
🎼Musical☰Display☰

- The Musical Display will show the part and basic channel.

  U ...upper L ...lower

  B ...bass S ...solo

basic channel   part   octave shift

- Multiple parts cannot be assigned to the same basic channel. When a key for a basic channel that has already been designated is pressed, an error sound will be made.

- In the initial mode, the parts are preset as follows: upper...1, lower...2, bass...3, solo...4.

3. For the part of the program change, effect or sustain desired, turn on the corresponding button for transmission or reception and turn off the others.
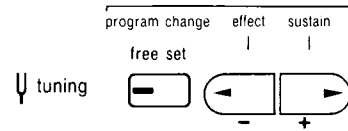
- Only the upper and lower parts for effect and sustain can be set.

4. Repeat steps **1** through **3** for other parts.

II. Setting for clock and start/stop

■ Set the clock by pressing the **clock int/MIDI** button.

- The internal clock is set when the button is turned off.

■ Turn on the **start/stop** button to transmit or receive the start/stop data.

[4] Press the **record** button to turn it off.

- When the power to this instrument is turned off and then on again, the clock is set to the internal mode (**int**). All information except the clock remains the same as it was before the power was turned off.

Storage of parts

The data regarding any parts to be transmitted or received can be stored in the Voice Setting Computer and recalled by simply using the **VSC** buttons.

- When the **cancel** button on the VSC is pressed, the data for all parts are transmitted or received.

<Procedure>
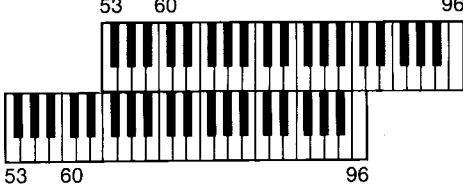
1. Press the **record** button. (The button will flash.)

2. Press one of the **VSC** buttons. (The button will flash slowly.)

- Do not press any of the voice or effect buttons while the **VSC** button is flashing, to prevent altering the contents of the VSC.

3. Turn on the **part select** buttons corresponding to the part to be transmitted or received.

4. Turn off the **record** button to complete storage.

- Other arrangements can be stored in the same way using the other VSC buttons.

- Storage can be continued by pressing another VSC button instead of the **record** button in step **4**.

Note Number and Octave Shift

Note Number

Keyboard note numbers are as shown below during normal operation.

Part	Note Number
Upper	53 60 96
Lower	41 60 84
Solo	53 60 96 / 53 60 96
Bass	36 48

Octave Shift

Each part can also be shifted as far as 3 octaves up or down. **MIDI in** and **MIDI out** octave shifts are interrelated. If **out** is +1, **in** is automatically set to −1.

<Setting the Octave Shift>

1. Press the **record** button.
2. Press the **MIDI set** button.
3. Turn the **FSC** button on.
4. Select the part to be shifted with the **part select** button.
5. Set the octave shift with the keys on the lower keyboard (**1** to **7**).

Lower keyboard	**out** octave shift	**in** octave shift
1	−3	+3
2	−2	+2
3	−1	+1
4	0	0
5	+1	−1
6	+2	−2
7	+3	−3

♣Musical♣Display♣

The **out** octave shift is displayed.

```
  I6ch  B÷3
```
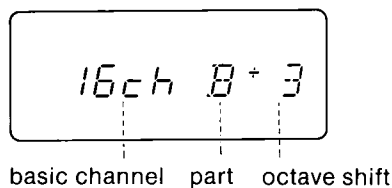
basic channel   part   octave shift

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6. Repeat steps **4~5** for any other parts.
7. Press the **record** button to turn it off.
- The stored octave shift is retained in memory for about one week even after the power is turned off.
- Octave shifts are not stored in the Voice Setting Computer or Fullband Setting Computer.

Organ Sound Off Mode

Organ sound output can be turned off when the organ is connected with the **MIDI** terminal to an external instrument for sound reproduction.
- The on or off condition of each part (**upper, lower, bass, solo**) can be set, and the settings can be stored in the respective VSC buttons.

<Procedure>

Setting each part
1. Press the **record** button.
2. Press one of the VSC buttons.
3. With the **FSC** button held down, press the desired **part select** button to enable or disable audio output.
   - The part for which the **part select** button indicator is lit will be output.
4. Press the **record** button to turn it off.

Turning the sound off mode on/off
1. Press the **record** button.
2. With the **FSC** button held down, press the VSC **set** button to turn the sound off mode on.
   With the **FSC** button held down, press the VSC **cancel** button to turn the sound off mode off. (The **record** button automatically turns off.)
- The sound off mode is cancelled when the power is turned off and on again, and when the initial mode is reset.

FSC Number (Song Select)

- With the following exceptions, song select transmission and reception cannot be interrupted.
  1. Song select reception is not possible when the organ is recording, when the Play Sequencer is being used, and when the Fullband Setting Computer is reading data.
  2. When selecting a song, the song select is not transmitted if the numbered key on the lower keyboard is pressed while holding down the **FSC** button.

- Song select range
  Reception: Usable memory area
Internal memory	0~4
Memory pack (SY-P3)	0~7
Memory disk (normal mode)	0~19

  Transmission: The memory area 0~19 can be transmitted regardless of the memory used.
  " E̲ r̲r̲ " may be displayed by the organ.

For further information on MIDI data, etc., refer to the Implementation Chart at the end of this manual.

MIDI Implementation Chart

Technics Organ
[SX-EX70]   **(Transmitted)**

Function...		upper	lower	bass	solo	Remarks
Basic	Default	1~16	1~16	1~16	1~16	memorized
Channel	Changed	1~16	1~16	1~16	1~16	
Mode	Default	3	3	3	3	
	Messages	×	×	×	×	
	Altered	——	——	——	——	
Note		36~127	36~127	**36~108	36~127	Including the use of
Number	True voice	——	——	——	——	Octave Shift
Velocity	Note ON	×	×	×	×	
	Note OFF	×(9nH:V=0)	×(9nH:V=0)	×(9nH:V=0)	×(9nH:V=0)	
After	Key's	×	×	×	×	
Touch	Ch's	×	×	×	×	
Pitch Bender		×	×	×	×	
Control Change	64	*○ ×	*○ ×	×	×	sustain
	92	*○ ×	*○ ×	×	×	multi-tremolo fast
	93	*○ ×	*○ ×	×	×	multi-tremolo slow
	94	*○ ×	*○ ×	×	×	celeste
Prog Change		*○ (0~7) ×	*○ (0~7) ×	*○ (0~7) ×	*○ (0~11) ×	
	True #	——	——	——		
System Exclusive		×				
System	Song Pos	×				
	Song Sel	○				
Common	Tune	×				
System Real Time	Clock	○				
	Commands	*○ ×				
Aux	Local ON/OFF	×	×	×	×	
	All Notes OFF	○	○	○	○	
Messages	Active Sense	○				
	Reset	×				
Notes		*○ ×.......... Whether or not the data for each of these items is transmitted can be set.				
		**Including the use of Full Bass Pedal.				

Mode 1:   OMNI ON,   POLY   **Mode 2:**   OMNI ON,   MONO
Mode 3:   OMNI OFF,   POLY   **Mode 4:**   OMNI OFF,   MON○

MIDI Implementation Chart

Technics Organ
[SX-EX70]

(Recognized)

Function...		upper	lower	bass	solo	Remarks
Basic Channel	Default	1~16	1~16	1~16	1~16	memorized
	Changed	1~16	1~16	1~16	1~16	
Mode	Default	3	3	3	3	OMNI OFF POLY Mode
	Messages	×	×	×	×	
	Altered	——	——	——	——	
Note Number		**35~119	**35~119	24~95	48~107	Changes depending on the position of the Transpose slide control or Octave Shift.
	True voice	**36~119	**36~119	**36~95	48~107	
Velocity	Note ON	×	×	×	×	
	Note OFF	× (9nH:V=0)	× (9nH:V=0)	× (9nH:V=0)	× (9nH:V=0)	
After Touch	Key's	×	×	×	×	
	Ch's	×	×	×	×	
Pitch Bender		×	×	×	×	
Control Change	64	*○ ×	*○ ×	×	×	sustain
	92	*○ ×	*○ ×	×	×	multi-tremolo fast
	93	*○ ×	*○ ×	×	×	multi-tremolo slow
	94	*○ ×	*○ ×	×	×	celeste
Prog Change		*○ (0~7) ×	×	*○ (0~7) ×	*○ (0~11) ×	
	True #	0~7		0~7	0~11	
System Exclusive		×				
System Common	Song Pos	×				
	Song Sel	○				
	Tune	×				
System Real Time	Clock	○				
	Commands	*○ ×				
Aux	Local ON/OFF	×	×	×	×	(123~127)
	All Notes OFF	○	○	○	○	
Messages	Active Sense	○				
	Reset	×				

*○ ×.......... Whether or not the data for each of these items is received can be set.

** Changes depending on the selected voice.

Mode 2:	OMNI ON,	MONO	○ : Yes
Mode 4:	OMNI OFF,	MONO	× : No

ns as published by the Japan MIDI Association.

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