MIDIEngine 8Port/SE™
User's Manual

In a Hurry?

**Check the
Quick Start Guide
On Page 3**

Music Quest

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Quick Start Guide

If you're comfortable installing computer hardware and software and are anxious to use the 8Port/SE right away, please follow the steps below:

1   Set your computer's printer port for normal printing operation.

2   Disable your computer's power saving features (typically required only for notebook computers).

3   Make sure no other devices or drivers use the same IRQ as your printer port.

4   Turn off power to your computer and all other system components.

5   Make sure the 8Port/SE's power switch is in the off position, then plug in its power adapter.

6   Connect the 8Port/SE to your printer port with the included cable.

7   Connect your MIDI instruments and other equipment to the 8Port/SE.

8   Turn on your computer and the 8Port/SE.

9   Start Windows and install the Windows driver from the 8Port/SE diskette using the Drivers applet in Windows' Control Panel.

10 Install the Patchbay software from Windows' File Manager by running the SETUP.EXE program on the 8Port/SE diskette

11 Go to it!

12 If you have trouble, you'll likely find the solution in this manual, so please read it!

FCC Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15, Subpart B of the FCC Rules. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause interference to radio communications.

These limits are designed to provide reasonable protection against such interference in a residential situation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by one or more of the following measures:

■ Reorient or relocate the receiving antenna of the affected radio or television.

■ Increase the separation between the equipment and the affected receiver.

■ Connect the equipment and the affected receiver to power outlets on separate circuits.

■ Consult the dealer or an experienced radio / TV technician for help.

Modifications

Changes or modifications not expressly approved by Music Quest, Inc. could void the user's authority to operate the equipment.

Shielded Cables

Shielded cables must be used with this equipment to maintain compliance with FCC regulations.

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Overview

Thank you for purchasing the MIDIEngine 8Port/SE, an 8-port MIDI interface, patchbay, and SMPTE processor. With the 8Port/SE's integrated functions, high capacity, and flexible use, we think you'll find it makes you more productive and your work more enjoyable.

Included With Your 8Port/SE

Your 8Port/SE package should include the following:

- 8Port/SE 19" rack-mount unit

- Printer port connecting cable

- Power adapter

- Diskette with Windows driver and Patchbay software

- This manual

- User registration card

Additional Requirements

To use the MIDI features of the 8Port/SE, you need the following additional components:

- Any IBM compatible with a standard printer port

- MIDI sound equipment

- Music software

- Standard MIDI cables to connect MIDI equipment

Optional components include:

- Multitrack recorder or other device to send / receive SMPTE signals

- Shielded audio cables with 1/4" phone plug termination, if using SMPTE

- Footswitch or trigger signal source

In This Manual

The 8Port/SE is a very powerful and versatile device. As such, you will find it quite beneficial to understand how it works before putting it to use. Doing so will help you use it more effectively and avoid installation problems.

Brief summaries of each chapter in this manual are presented below, in order of their appearance:

- *8Port/SE Feature Summary* highlights many of the 8Port/SE's advanced features.

- *Orientation* briefly describes the 8Port/SE's various components and their usage.

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- *Printer Port Usage* discusses printer port and other settings which may affect proper 8Port/SE operation.

- *Connecting the 8Port/SE* tells you how to connect the unit to your computer and other system components.

- *Initial Checkout* tells you how to quickly check proper operation of the 8Port/SE.

- *8Port/SE Programs* describes the 8Port/SE's user and factory programs which control its operation.

- *Using the MIDI Ports* describes usage and features of the 8Port/SE's eight MIDI ports.

- *Using SMPTE Sync* describes in detail the procedures for using SMPTE synchronization with the 8Port/SE.

- *The Footswitch / Trigger Input* presents the various uses for an attached footswitch or trigger source.

- *Installing the Windows Driver* guides you in installing the 8Port/SE's multi-client Windows driver.

- *Using Windows MIDI Software* guides you in using your Windows programs with the 8Port/SE.

- *Using Patchbay* tells you how to install and use the Patchbay software to control the 8Port/SE.

- *In Case of Difficulty* covers common installation and operational problems and suggestions for resolution.

Before You Begin...

Make a Backup Copy of the 8Port/SE Diskette

For safety's sake, make a backup copy of the 8Port/SE diskette. To copy the diskette, have a blank formatted diskette ready and put the original 8Port/SE diskette in the A: (or B:) drive. Then, do one of the following:

■ **If you are running in Dos**, you can use the DISKCOPY command by typing the following at the Dos prompt:

DISKCOPY A: A: (or DISKCOPY B: B:)

Then press the ENTER key and follow the prompts.

■ **In Windows**, use File Manager to copy the diskette. Just use the **Copy Disk...** function in the **Disk** menu.

Read README.TXT

Be sure to read the README.TXT file on the 8Port/SE diskette. This file contains information that didn't make its way to the manual, and may include material which is important for your installation.

To read README.TXT, put the diskette in the A: (or B:) drive, and then do one of the following:

README.TXT may have special instructions to use the 8PORT/SE in your system!

■ **In Dos**, view the file on-screen using the EDIT program. To do this, type the following at the Dos prompt:

EDIT A:README.TXT   (or EDIT B:README.TXT)

Then press the ENTER key.

■ **In Windows**, you can use Notepad to view the file. Just use the **Open...** function in the **File** menu and choose the README.TXT file from the A: (or B:) drive.

Take Your Time!

Please take your time installing the 8Port/SE!

Your chances for successful installation depend on your preparation. Proceeding one step at a time makes it easier to identify and solve any problems you may encounter.

8Port/SE Feature Summary

- For all IBM compatible computers, including laptop, notebook, desktop, and tower models

- 8 x 8 MIDI interface—128 channels in and out

- High speed parallel printer port connection for easy hookup and transport; connecting cable included

- Non-multiplexed operation for high MIDI throughput

- Data from any MIDI input(s) easily routed or merged to any MIDI output(s)

- Powerful message filtering, channel filtering, and channel change functions

- MIDI data compression on all ports

- MIDI patchbay operation independent of computer

- Flawless SMPTE sync and generation—all formats

- Adjustable SMPTE freewheel for bulletproof sync

- Automatic SMPTE regeneration

- Selectable SMPTE output level

- Easy-to-use Patchbay Windows software for complete 8Port/SE setup and control

- Eight user programs specify unique MIDI routing, merging, filtering, and SMPTE settings

- User programs stored in nonvolatile memory

- Simple front panel program selection

- Front panel LEDs monitor MIDI input and output, SMPTE activity, applied power

- Panic button to squelch stuck notes

- Footswitch / trigger input

- 19" single space rack-mount enclosure

- Multi-client Windows driver allows multiple programs to use the 8Port/SE at the same time

Orientation

Before getting started, examine the 8Port/SE chassis to become familiar with its various components. The following sections briefly describe their use.

Connectors

MIDI Inputs

The MIDI input connectors, labeled IN 1 - IN 8, will be connected to MIDI outputs of your instruments. Connectors for the first seven inputs are located on the back of the unit. IN 8 is on the front panel for convenient access.

MIDI Outputs

The MIDI output connectors, labeled OUT 1 - OUT 8, will be connected to MIDI inputs of your instruments. There are two connectors for OUT 8—one on the back panel and one on the front; you should use only one of these.

Printer Port Connector
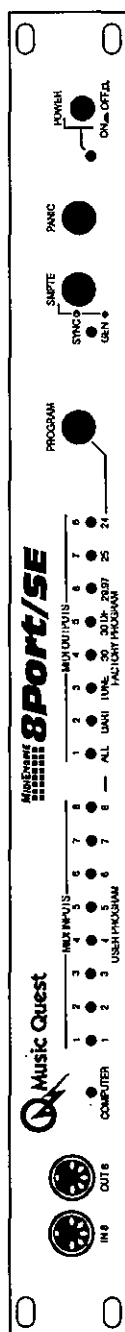
The 8Port/SE is connected with the supplied cable to your computer's printer port via the connector on the back panel labeled TO PRINTER PORT.

SMPTE OUT Jack
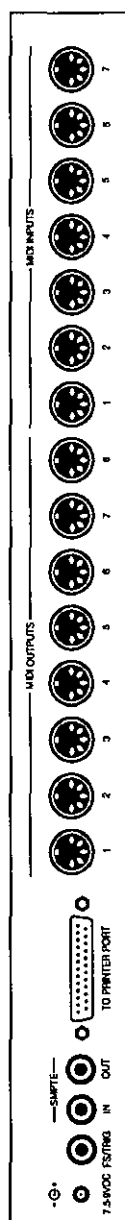
The 8Port/SE generates ("stripes") SMPTE with a signal sent to connected equipment via the SMPTE OUT jack.

SMPTE IN Jack

The 8Port/SE syncs to incoming SMPTE time code received at the SMPTE IN jack.

8Port/SE front panel

8Port/SE back panel

Footswitch / Trigger Jack

You can connect a footswitch or feed a trigger signal to the 8Port/SE at the FS/TRIG jack. A footswitch or trigger signal may be used to cause MIDI messages to be sent to the computer and/or selected MIDI outputs. A footswitch can also be used to change 8Port/SE programs.

Power Jack

A DC power adapter supplies 8Port/SE power via the power jack, which is located on the back panel and labeled as 7.5-9VDC.

Buttons and Switches

Program Button

The PROGRAM button is used to select an 8Port/SE program. Pressing the button causes an LED to flash, indicating the currently selected program. You can press the program button repeatedly to advance to a new program.

SMPTE Button

The SMPTE button is used to stripe SMPTE or ready the 8Port/SE for syncing to SMPTE. Pressing the button toggles between these two states.

Panic Button

Pressing the PANIC button causes the 8Port/SE to output note off and controller clear messages to all MIDI outputs. This is useful in squelching "stuck notes."

Power Switch

The POWER switch turns on and off 8Port/SE power. Be sure power is off when making equipment connections.

LED Indicators

Computer LED

The COMPUTER LED glows steadily when software has control of the 8Port/SE.

MIDI Input LEDs

The LEDs marked as MIDI INPUTS are lit to reflect reception of data from MIDI IN ports. These LEDs are also used to indicate an 8Port/SE user program; see *Program Button* above.

MIDI Output LEDs

The LEDs marked as MIDI OUTPUTS are lit to reflect output of data through MIDI OUT ports. These LEDs are also used to indicate an 8Port/SE factory program; see *Program Button* above.

SYNC/GEN LED

The SYNC/GEN LED glows steadily when striping SMPTE. It flashes when the 8Port/SE syncs to a SMPTE signal. The LED is off when the 8Port/SE is ready to sync (the default condition) but no time code is being received.

Power LED

The POWER LED is lit whenever the 8Port/SE has power connected and its power switch is in the ON position.

Printer Port Usage

Before connecting the 8Port/SE to your computer, you must make sure that the printer port you use is properly configured and not in conflict with other system resources. This chapter addresses critical issues relevant to proper operation of your printer port with the 8Port/SE.

> **Most installation problems are related to setup of your printer port. Please read this chapter thoroughly to avoid these problems!**

Port Configuration

Some computers have printer ports which can be set for special modes of operation, variously described as "enhanced," "bidirectional," "external floppy," "expansion port," and others. For the 8Port/SE, your printer port must be set for normal printer use.

> **Configure your printer port for normal use with a printer; this is often referred to as "unidirectional" or "output only" operation.**

Printer Port Number

You will need to know which printer port you are using for the 8Port/SE when you install its Windows driver. Printer ports are numbered as LPT1, LPT2, or LPT3. Consult your printer port manual or computer manual to determine which printer port you are using. If yours is a notebook computer, you will likely be using LPT1.

Printer Port IRQ

The 8Port/SE uses your printer port's IRQ for communication. You will need to know which IRQ your printer port uses when you install the 8Port/SE's Windows driver. Consult your printer port manual or computer manual to determine the printer port's IRQ. Normally it will either be IRQ7 or IRQ5.

CAUTION!
Many installation
problems are due
to conflicting
IRQ settings.

Your printer port's IRQ must not be used by other devices or drivers or you will have trouble using the 8Port/SE.

Other Printer Port Drivers

If you have drivers installed for other devices which use a printer port, and they are set to use the same port as the 8Port/SE, they could conflict with the 8Port/SE's access to the printer port.

Most printer drivers will not present a problem. You are more likely to have difficulty with a non-printing driver.

If you have trouble using the 8Port/SE and have other printer port drivers installed, you should try temporarily removing or disabling them to see if the problem disappears. In this case, you should either disable them when using MIDI, replace those drivers with their Microsoft equivalents, or obtain updated drivers if available. Consult the driver provider for details.

Power Management

Most notebook computers have power saving features to conserve battery power. In some computers, such features cause the printer port to be turned off even while the computer's processor still operates. If this happens, the 8Port/SE's driver will be unable to communicate with the 8Port/SE, with unpredictable results.

You should disable your computer's power saving features or set the time-out value to "always on."

Sound Card Conflicts

If you have a sound card, make sure that it doesn't use the same IRQ as your printer port. Sound cards use several IRQs, so be sure to check them all.

If a sound card uses the same IRQ as your printer port, you must change the IRQ for either the sound card or the printer port so they are different.

Sound cards are often a source of installation problems.

Make sure your sound card and its drivers do not use the same IRQ as your printer port.

You should also insure that a sound card's drivers are not set to use the printer port's IRQ. You can check the sound card Windows drivers using the Drivers applet in Control Panel. If your sound card has a Dos driver, you can check its IRQ assignments by examining the driver settings in the CONFIG.SYS and AUTOEXEC.BAT files.

Consult your sound card manual or the manufacturer for information about changing the IRQ for the card and its drivers.

Changing System Settings

As described earlier in this chapter, sometimes it is necessary to adjust printer port or other system settings to insure proper operation. Some computers have a special setup program which can change these settings.

In many cases, a computer's setup program is accessed pressing a certain key (typically F1) when the computer is powering up. In this case, you will often see a message on the screen asking if you want to run the setup program.

Consult your computer manual for instructions on changing system settings.

Connecting the 8Port/SE

This chapter tells you how to connect the 8Port/SE to your computer; to your MIDI equipment; to a multitrack tape deck; to a footswitch or trigger signal; and to a power source.

> **Before making connections, turn off power to all system components. Making connections when power is applied increases the chance of damaging equipment by power transients, static discharge, and other effects.**

Connecting to Your Computer

In this step, you will connect a 25-wire cable between the 8Port/SE and a printer port on your computer. The cable used should have all 25 pins connected straight through, pin-for-pin, with a 25-pin male D connector on one end, and a 25-pin female D connector on the other.
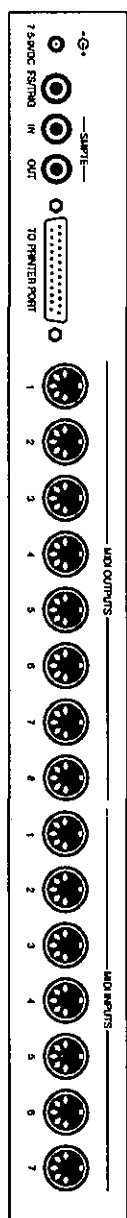
Connect the male connector of the included cable to a printer port on your computer, and connect the female connector to the 8Port/SE receptacle labeled TO PRINTER PORT. Secure the connections by gently screwing the cable connector screws into the threaded hex jackscrews on the printer port and 8Port/SE connectors. Be careful not to overtighten the screws.

Note which printer port you are using (LPT1, LPT2, etc.) as this information will be needed when you install the 8Port/SE's Windows driver.

> **WARNING: Be sure to connect the 8Port/SE to a printer port and NOT to a serial port or other device. 25-pin D connectors are common, easily leading to mistaken identity.**
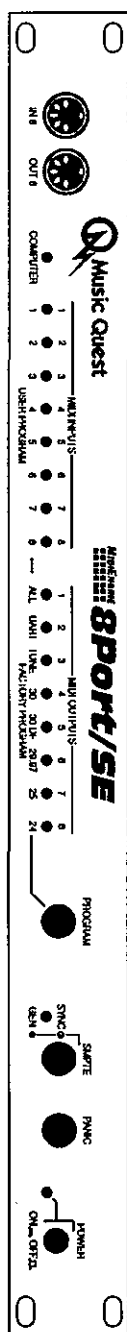
8Port/SE front panel

8Port/SE back panel

MIDI Connections

The 8Port/SE has eight independent MIDI ports. It receives MIDI data from other equipment via IN 1 - IN 8 and transmits data to other equipment via OUT 1 - OUT 8. The MIDI connections you make depend on your equipment. Use only standard MIDI cables, available from most dealers of MIDI equipment or from Music Quest.

> **Make sure that you connect 8Port/SE MIDI OUTs to instrument MIDI INs, and 8Port/SE MIDI INs to instrument MIDI OUTs.**

MIDI INs

Connect 8Port/SE MIDI INs to the MIDI OUTs of your MIDI equipment. You may wish to connect the MIDI OUT of your primary controller to the IN 8 connector (on the 8Port/SE's front panel) for convenient access.

MIDI OUTs

Connect 8Port/SE MIDI OUTs to the MIDI INs of your MIDI equipment. Note that the 8Port/SE has two OUT 8 connectors—one on the front panel and one on the back. You can connect to either of these, but not to both.

> **Avoid "MIDI loops" in which MIDI output from a device makes it way back into that device.**

SMPTE Connections

The 8Port/SE includes SMPTE IN and SMPTE OUT jacks for direct connection to multitrack tape recorders, video devices, or other equipment capable of receiving or transmitting a sync signal. The sync signals are output as simple line-level audio, so special equipment is not required.

Avoid running SMPTE signals through a mixer.

In general, you should not route SMPTE signals through a mixing console as this would add distortion to the signals and may affect synchronization.

SMPTE IN

The SMPTE IN jack receives a signal from an external source. Connect your multitrack tape deck (or video equipment) sync output to SMPTE IN on the 8Port/SE, using a shielded audio cable with 1/4″ phone plug termination. If your deck does not have a designated sync track, connect the tape output connector for the last track to 8Port/SE SMPTE IN.

SMPTE OUT

SMPTE OUT supplies a signal to an external device. Connect your tape deck (or video equipment) sync input (or tape input to the last track) to SMPTE OUT using a shielded audio cable with 1/4″ phone plug termination.

Footswitch / Trigger Connections

You can connect either a footswitch or trigger source to the 8Port/SE via the FS/TRIG jack on the back panel.

Footswitch

You can use either a normally open or normally closed footswitch. Connect it to the FS/TRIG jack with a shielded audio cable with 1/4″ phone plug termination.

> **If you intend to use a footswitch, it must be connected to the 8Port/SE prior to turning on 8Port/SE power.**

Trigger

Alternatively, you can connect a low level trigger signal to the FS/TRIG jack with a shielded audio cable with 1/4″ phone plug termination.

Power Connections

Your 8Port/SE is powered via the included DC power adapter, which will be connected to an AC power source. Before making power connections, examine the power adapter to make sure that it is marked for use with the AC voltage in your locale. (In the U.S., AC voltage sources are in the range 115-125VAC, 60 Hz).

Power Requirements

The 8Port/SE requires filtered unregulated DC voltage in the range of 7.5 to 9 VDC, with current capacity of 300 milliamps minimum. The DC power adapter jack is wired for a standard 5.5mm x 2.1mm barrel plug, with center conductor positive. If you lose the power adapter, contact Music Quest (or your Music Quest distributor, if outside the U.S. and Canada) to purchase a replacement unit. In an emergency, you can purchase a power adapter meeting these specifications from a consumer electronics store.

Using a power adapter not meeting these specifications voids the 8Port/SE's warranty.

Connecting Power

First, make sure the 8Port/SE's power switch is in the OFF position. Connect the small DC power plug at the end of the adapter's cord into the 8Port/SE at the jack labeled 7.5-9VDC. Then, plug the power module into the AC power source.

Initial Checkout

Now that you have connected the 8Port/SE to your computer and your MIDI equipment, you may wish to quickly check that it is operating correctly.

Note: Before proceeding, make sure you do not have any "MIDI loops" in your system, i.e., paths in which MIDI data from 8Port/SE MIDI OUTs could make its way back to 8Port/SE MIDI INs.

Proceed as follows:

1   Turn on 8Port/SE power. The POWER LED should glow steadily. The COMPUTER LED should be off since software is not yet using the 8Port/SE.

2   Select the ALL program by pressing the PROGRAM button repeatedly until the ALL LED flashes.

3   Play a scale on a MIDI controller connected to one of the 8Port/SE MIDI INs. The corresponding MIDI IN LED should flash as the notes are played. All MIDI OUT LEDs should flash as well since the ALL program sends MIDI data from any input to all outputs.

4   Select the TUNE program by pressing the PROGRAM button until the TUNE LED flashes. All MIDI OUT LEDs should then flash as the 8Port/SE transmits middle C note messages for all channels to all ports. You should hear these notes played on connected instruments.

5   Press the PROGRAM button once to end the TUNE program. The ALL LED should then flash briefly.

6   Press the SMPTE button to start striping SMPTE. The SYNC/GEN LED should glow steadily. Press the SMPTE button again and the LED should turn off.

7   Press the PANIC button. All MIDI OUT LEDs should glow steadily for about two seconds as note off messages (and others) for all channels are sent to all ports.

If these tests are successful, the 8Port/SE itself is working properly. If not, please consult *In Case of Difficulty.*

8Port/SE Programs

The 8Port/SE includes support for eight user programs and eight factory programs. These programs control 8Port/SE operation as described in this chapter. A thorough understanding of the programs is critical if you want to make the most effective use of the 8Port/SE.

User Programs

Each of the user programs can specify a unique 8Port/SE configuration tailored to your requirements. You will use the Patchbay program to create or change these programs, which control the following features:

MIDI Data Routing and Merging

The 8Port/SE routes and merges MIDI data among selected MIDI ports and the computer.

Message Filtering

The types of MIDI messages which are routed or merged can be restricted according to message type.

Channel Filtering

The routing or merging of MIDI voice messages can be restricted according to their channel numbers.

Channel Change

The channel number of MIDI voice messages can be changed with the channel bump feature.

SMPTE Format

You can specify the SMPTE format used when striping SMPTE with the 8Port/SE's SMPTE button.

SMPTE Origin

You can specify the starting SMPTE origin time used when striping SMPTE with the 8Port/SE's SMPTE button.

SMPTE Freewheel

The freewheel setting determines the 8Port/SE's tolerance for bad incoming SMPTE time code.

MTC Output

You can direct the 8Port/SE to send MIDI Time Code messages—corresponding to received or generated SMPTE—to the computer and/or to selected MIDI OUTs.

SMPTE Output Level

The SMPTE signal level can be set to either +3db or -6db.

Footswitch / Trigger Message Output

You can direct the 8Port/SE to output specified messages to the computer and/or selected MIDI OUTs when a footswitch is depressed or released or when a trigger signal is received.

Factory Programs

The following 8Port/SE factory programs are fixed in function and used on as-needed basis.

ALL

This program causes all MIDI data received from any port to be routed to all ports and to the computer. It is typically used as an aid in MIDI system checkout.

UART

The UART program causes MIDI data to be routed according to the settings of the last selected user program, but no message processing takes place, and data is passed "as is," whether or not it forms valid MIDI messages. This program is typically only used for special purposes.

TUNE

This program causes middle C note messages to be sent for all channels to all MIDI outputs. This is quite useful for setting output levels and for insuring that your MIDI equipment is operating and properly connected.

30

The 30 program causes 30-frame nondrop SMPTE to be immediately striped starting at 00:00:00:00. Other settings for the current user program remain in effect. This program and the remaining programs described below are useful in their own right, or when you can't remember the SMPTE parameters for a given user program.

30 DF

The 30 DF program causes 30-frame drop SMPTE to be immediately striped starting at 00:00:00:00. Other settings for the current user program remain in effect.

29.97

The 29.97 program causes 29.97 *nondrop* SMPTE to be immediately striped starting at 00:00:00:00. Other settings for the current user program remain in effect.

25

The 25 program causes 25-frame SMPTE to be immediately striped starting at 00:00:00:00. Other settings for the current user program remain in effect.

24

The 24 program causes 24-frame SMPTE to be immediately generated starting at 00:00:00:00. Other settings for the current user program remain in effect.

Selecting a Program

You can select a user or factory program by any of the means given below. In any case, the settings for the program thus selected become immediately effective in controlling 8Port/SE operation.

Selecting Programs in Patchbay

The Patchbay software can be used to select an 8Port/SE program. For details, see *Using Patchbay*.

Selecting Programs on the Front Panel

The PROGRAM button can be used to select 8Port/SE programs. Pressing the button causes a program LED to flash, indicating the currently selected program. You can then press the program button repeatedly, as required, to advance to a new program. Each time, the next program LED flashes and then extinguishes after two seconds unless the button is pressed again. The program selected is the one indicated by the LED which last flashed when the two second time-out elapses.

Selecting Programs with a Footswitch

If you choose this option for the FS/TRIG input, depressing the footswitch allows program selection just as if pressing the PROGRAM button.

When changing programs, avoid sending MIDI to the 8Port/SE, either from the computer or from a MIDI controller.

Nonvolatile Program Storage

The 8Port/SE stores user programs in nonvolatile memory so that program settings are retained even during a power outage. When power is restored after an outage, the user program last selected is made effective.

Initializing User Programs

8Port/SE user programs are preset at the factory, and may be viewed with the Patchbay program. You should change these programs to accommodate your specific needs. See *Using Patchbay* for information on changing user programs.

If for some unexpected reason 8Port/SE user programs are corrupted, the PROGRAM button can be used to re-establish factory settings for these. To do this, switch off 8Port/SE power. Press the PROGRAM button and hold it down while switching power on. Then, release the PROGRAM button.

Using the MIDI Ports

This chapter details operation of the 8Port/SE's MIDI ports. As you will learn, the 8Port/SE can route or merge MIDI data among the MIDI ports and the computer in any way you choose.

Refer to the chapter *Using Windows MIDI Software* for instructions on accessing MIDI ports with your programs.

MIDI INs

MIDI data received at the 8Port/SE's MIDI INs can be routed or merged to selected MIDI OUTs. Thus, you can, for example, drive a tone module from a keyboard controller without using the computer. Received data can also be sent to the computer for use by software, as when recording into a sequencer program.

The MIDI INPUT LEDs are lit to reflect reception of data from MIDI IN ports. To provide a more useful indication of MIDI data flow, these LEDs will not light when MIDI clocks or active sensing messages are received, nor for MIDI data which is rejected by filter settings.

MIDI OUTs

Your software can send MIDI data to 8Port/SE MIDI OUTs, as during sequencer software playback. This data is merged with any data which should be routed from selected MIDI INs to the same MIDI OUTs.

The MIDI OUTPUT LEDs are lit to reflect data sent through the MIDI OUT ports. Just as for MIDI input, these LEDs will not light when MIDI clocks or active sensing messages are output, nor for messages rejected by filtering.

Avoid "MIDI loops" in which MIDI output from a device makes it way back into that device.

Message Processing

The 8Port/SE interprets MIDI messages received from MIDI INs and from the computer. As required, it applies message filtering, channel filtering, and channel change functions according to settings you specify.

Significantly, these settings apply on a per-connection basis. As a result, you can pick and choose what messages go where, with complete specificity. For example, you could ask that routing of messages from IN 3 to OUT 4 exclude pitch bend messages without affecting message flow from IN 3 to other outputs or from other inputs to OUT 4. This powerful capability should become clearer when you read the chapter *Using Patchbay.*

Message Filtering

MIDI messages which are routed or merged among the MIDI ports and the computer can be filtered according to message type. For example, you can require that pitch bend messages be excluded in the flow of data between IN 2 and the computer.

Channel Filtering

MIDI voice messages which are routed or merged among the MIDI ports and the computer can be filtered according to their channel number. For example, you can require that only channel 1 messages are routed from IN 3 to OUT 4.

Channel Change

The channel number of MIDI voice messages can be changed with a "channel bump" feature. This setting increases the channel number of received messages before these are sent to MIDI OUTs or to the computer. For example, a channel bump value of 3 causes received channel 1 messages to be sent as channel 4 messages. Channel numbers "roll over" as needed so that, for example, a channel bump of 3 changes channel 15 messages to be output as channel 2 messages (16...1...2).

Normally, you will want channel numbers to be unchanged; in this case use a channel bump value of 0.

MIDI Interface vs. MIDI Patchbay

The 8Port/SE is used by your computer and music software as a full 8-IN x 8-OUT, 128-channel MIDI interface.

When not used with the computer, the 8Port/SE acts as a MIDI patchbay with flexible MIDI data routing, merging, and filtering capabilities, from MIDI INs to MIDI OUTs.

Note that the 8Port/SE does not distinguish between interface and patchbay operation. It merely processes MIDI data according to its current program settings. Data is sent to or received from the computer if the 8Port/SE is connected to it and you are running music software.

IMPORTANT! ▮▶   **Routing or merging of MIDI data from inputs to outputs is independent of computer activity.**

The Panic Button

You have probably experienced "stuck notes" when using your MIDI equipment. Stuck notes can arise in a variety of situations, and usually result from reception of note on messages without matching note off messages.

The 8Port/SE includes a PANIC button on its front panel which is useful for squelching stuck notes." When you press the PANIC button, the 8Port/SE sends the following messages to all MIDI OUTs:

■ "All notes off" messages for each channel

■ Individual note off messages for every note and each channel

■ Certain controller clear messages

Using SMPTE Sync

The 8Port/SE's SMPTE feature provides many important benefits for time code synchronization. This chapter treats SMPTE sync from the viewpoint of the sequencer user. Extension to other applications is straightforward. The chapter may be considered in three parts:

The first part of the chapter serves as background for those not intimately familiar with SMPTE.

The second part of the chapter details how the 8Port/SE deals with SMPTE.

The final sections provide the nuts and bolts of striping SMPTE tapes and syncing to SMPTE with your software and other equipment. Experienced SMPTE users may wish to skip to those sections.

What is SMPTE and Why is it Used?

SMPTE is actually an acronym for the Society of Motion Picture and Television Engineers. In common parlance, SMPTE refers to an encoding of time onto some medium for the purpose of synchronization. SMPTE has historically been used for audio / video sync, but is now commonly used in audio-only applications since it is a standardized sync format.

In MIDI systems, SMPTE sync is straightforward. Let us assume that you have a sequence that you want to record on multitrack tape. First, a sync track is recorded from the 8Port/SE's SMPTE OUT signal. Then, your sequencer program is synced to the SMPTE sync track by feeding the sync signal from your deck to 8Port/SE SMPTE IN. Your sequencer will then play back the sequence according to the time code embedded in the sync signal.

SMPTE synchronization is a widely misunderstood topic. By learning a few basic rules however, you'll find syncing to SMPTE to be conceptually and practically quite simple.

SMPTE Terminology

To clarify the discussion of SMPTE, several definitions are given below.
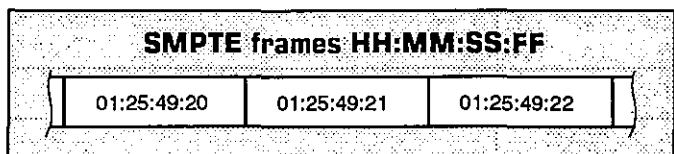
Synchronization

Synchronization is the means by which two or more signals are locked together in time. For multitrack tape work, we demand that the various audio tracks are musically in time—in sync—with one another, or what results can scarcely be called music. For audio / video applications, we demand that the audio is in proper time—in sync—with respect to the video, or the resulting image events are out of audio context. We have all seen old movies in which a character's voice leads or lags lip movement; such is the result of bad synchronization.

SMPTE Time Code

Time code is the essence of SMPTE. It is a coding of time on some medium in terms of hours, minutes, seconds, and frames (subdivisions of a second). This time coding allows a reading device or program to know the running time of an event, such as the time into a musical sequence.

The figure below shows how consecutive SMPTE time code frames are recorded on a length of magnetic tape. In ideal conditions, the time it takes a tape head or other device to pass over a frame is the reciprocal of the frame rate; e.g., at 30 frames per second, the duration of each frame is 1/30th of a second.

SMPTE frames HH:MM:SS:FF		
01:25:49:20	01:25:49:21	01:25:49:22

SMPTE frames recorded in a sync track

SMPTE Sync Track

A SMPTE sync track is a length of tape or other medium onto which is recorded running SMPTE time code for the purpose of synchronization. The time code so recorded

serves as a reference point for the occurrence of specific events. For example, a SMPTE sync track makes it possible to record the sound of a chair crashing to a floor at precisely two minutes and 30 seconds into a tape.
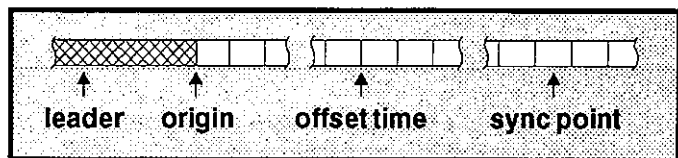
Significant points in a SMPTE sync track
(sync point may be anywhere in the sync track)

Striping a Tape

Recording a SMPTE sync track on tape is often referred to as "striping" a tape.

SMPTE Format

The SMPTE format used is generally application dependent, as described below.

30-frame nondrop is used for most audio-only (as with multitrack tape) and some audio / video applications.

30-frame drop is used typically for audio / video applications. The frame rate used for 30-frame drop is actually 29.97 frames per second to correspond to color video frame rates. This format specifies a frame counting sequence in which frames are periodically "dropped" so that wall clock time nominally agrees with SMPTE time.

29.97 nondrop is used primarily for video post production work. It proceeds at 29.97 frames per second, but with a *nondrop* counting sequence. This is not the same as 30-frame drop or what some refer to as "29.97 drop," and is used only for applications which cannot use 30-frame drop format. Use of this format gives rise to differences between wall clock time and SMPTE time.

25-frame is used for PAL European video

24-frame is used for film production.

SMPTE Origin

SMPTE origin is the time represented by the first frame of time code recorded on a SMPTE sync track. The sync track must be recorded so that the SMPTE origin precedes the offset time (see below) by at least three seconds.

Offset Time

SMPTE offset time—often referred to as "start time"— is the time at which an event should begin. For sequencing purposes, offset time is that SMPTE time on tape at which recording of the song should begin.

SMPTE usage requires that offset time must follow origin time by at least three seconds. This period allows tape motors to come up to speed, amplifiers to stabilize, a SMPTE reader to lock on, and a sequencer program to locate in its sequence.

Sync Point

A sync point is that point (on tape) at which sync should be established. This can be anywhere in the sync track, according to the needs of the moment.

MIDI Time Code

MIDI Time Code ("MTC") is a type of MIDI message which captures SMPTE information for communication between MIDI equipment and software.

There is a direct correspondence between SMPTE and MTC; MTC is simply the means by which SMPTE time code is reported via MIDI. In fact, most sequencers which can sync to SMPTE actually do so via MTC messages.

8Port/SE SMPTE Modes

At any given time, the 8Port/SE is either striping SMPTE (stripe mode) or ready to sync to SMPTE (sync mode). The current mode may be determined by the state of the SYNC/GEN LED. If it glows steadily, the 8Port/SE is in SMPTE stripe mode; otherwise it is in SMPTE sync mode.

The 8Port/SE should normally be in sync mode so it is always prepared to sync to incoming SMPTE. Thus, after striping, you should return the 8Port/SE to sync mode.

How the 8Port/SE Stripes SMPTE

The 8Port/SE can be made to stripe SMPTE from the front panel or by software such as the Patchbay program. It can stripe any SMPTE format with any origin time.

Internal circuitry provides signal output at the SMPTE OUT jack with either +3db or -6db output level. This signal is cabled directly to a tape deck input jack or another device accepting a line-level audio signal. The SYNC/GEN LED glows steadily while striping.

Time Code Reporting

While striping, the 8Port/SE will output MTC to your sequencer software, via the Sync Port, and/or to selected MIDI OUTs, according to current user program settings.

Sequencing While Striping

Since the 8Port/SE can send MTC to your sequencer software, you can actually sequence while striping SMPTE.

How the 8Port/SE Reads SMPTE

Initial Lock-On

The 8Port/SE reads SMPTE directly from tape or another source which provides signal to the SMPTE IN jack. Upon reception of SMPTE, the 8Port/SE automatically determines the SMPTE format used. This process takes 1/2 second on average, but may take up to a second. The SYNC/GEN LED then flashes as SMPTE is received.

Time Code Reporting

After initial lock-on, the 8Port/SE outputs MTC to your sequencer software. MTC can also be sent to MIDI OUTs, the 8Port/SE can serve as a SMPTE sync box when not used with a computer.

SMPTE Freewheel

The 8Port/SE provides dropout protection—"freewheel"—on SMPTE input. This allows a sequencer or other program to reliably sync to SMPTE even when receiving corrupted time code such as from a tape dropout.

A side effect of freewheel is that the 8Port/SE continues to report time code for a short time after the incoming signal ceases, as when you stop your tape deck. It is not possible for it to distinguish between bad time code and lack of a signal. This is not harmful; you will simply notice that your software continues to sync for a brief time after you have stopped tape or removed the incoming signal.

The 8Port/SE's tolerance for bad time code can be adjusted with the with the freewheel setting in the Patchbay program. By default, 10 frames of freewheel are provided.

Regeneration and Jam Sync

When the 8Port/SE reads incoming SMPTE, it regenerates time code with identical timing to the SMPTE OUT jack. Regeneration allows re-striping of a damaged sync track or "bouncing" from one sync track to another.

In the case of a severely damaged sync track, or if you need to extend the length of a sync track, the 8Port/SE can also be made to "jam sync." To do this, set the freewheel setting in Patchbay to **Jam Sync**. In this case, once the 8Port/SE locks onto time code, it will continue to (re)generate SMPTE indefinitely.

How a Sequencer Uses SMPTE

When sequencing, time code sent by the 8Port/SE is first used by software to determine where playback or record should begin, according to the sync point. The program will then use running time code for timing purposes.

At first, a sequencer sees time code represented by the sync point. If the sync point precedes the offset time, the sequencer awaits the arrival of time code for the offset time, and will then begin playback or record at the start of the sequence. If the sync point is after the offset time, the sequencer will subtract the offset time from the sync point time, and then pick up playback or record that amount of time into the sequence. This is referred to as "chasing tape." Once sequencing has thus begun, a sequencer should maintain timing in lock step with receipt of subsequent time code messages.

> **The 8Port/SE does not *directly* control sequence timing. As a result, any timing problems you encounter when syncing to SMPTE are typically sequencer-related.**

Striping A SMPTE Tape

You can use the 8Port/SE to stripe a SMPTE tape with the Patchbay program, by pressing the SMPTE button on the 8Port/SE's front panel, or by selecting one of the SMPTE factory programs on the front panel. Each of these methods is described later in this section, following the general instructions below.

General Instructions for Striping SMPTE

1   Insure that sync connections between your deck and the 8Port/SE are as shown in *Connecting the 8Port/SE.*

2   If practical, defeat noise reduction and equalization for the track to be used for sync. The 8Port/SE is tolerant of a distorted signal, but other equipment which may read the tape may not be so forgiving.

3   Set record levels to between -10db and +3db, accord-
ing to your equipment's needs. To facilitate setting
levels, the 8Port/SE emits a leader tone.

4   Determine the SMPTE origin time with which you
want the sync track to begin. Unless you have a spe-
cific reason to use a different time, you can safely
choose 00:00:00:00 as the origin.

5   Determine the SMPTE format to be used. If you're
making multitrack audio tapes and do not expect oth-
ers to have to sync to your tape, then pick freely from
any of the formats. If you work with a studio or other
third parties, consult them to determine their require-
ments. Refer to *SMPTE Terminology* earlier in this
chapter for brief descriptions of SMPTE formats.

6   Start the tape rolling, preparing to record SMPTE on
the desired track. Use the first or last track on tape to
minimize sync signal bleedthrough to adjacent tracks.

7   Allow several seconds of leader before the sync track.

8   Start striping SMPTE using one of the methods de-
scribed later in this section.

9   Allow sufficient time for the sync track to be recorded.
It is a good idea to provide a minute or two of extra
margin so that the duration of the sync track will be
longer than the sequence to be recorded. You must
provide at least three seconds of margin.

10 Stop the tape. The SMPTE track has been recorded.

11 Stop striping SMPTE.

**The 8Port/SE outputs a constant leader tone
when not striping or syncing to SMPTE. This
tone make it easy to set levels on your deck.**

Striping With Patchbay

To stripe SMPTE with Patchbay, proceed as described
below. See *Using Patchbay* for details on running the
Patchbay program.

1   Start Patchbay by double-clicking its icon.

2   Click on the **SMPTE** button.

3   Choose the desired SMPTE format by clicking on the applicable radio button.

4   Enter the SMPTE origin time in the space provided.

5   Choose the desired destination(s) for MTC to be sent by the SMPTE processor. In most cases you will want MTC to be sent only to the computer. If MTC is not sent to the computer, the tape will be properly striped but Patchbay cannot display the generated time code.

6   Select the SMPTE output level by clicking on the applicable radio button. Choose -6db unless your deck requires a higher level.

7   Click the **Stripe** button.

8   SMPTE will be generated until you click **Stop** or **OK**.

Striping by Pressing the SMPTE Button

Push the SMPTE button on the 8Port/SE's front panel to stripe SMPTE according to the SMPTE settings for the current user program. The SYNC/GEN LED will then glow steadily. When you are finished striping, push the SMPTE button again so that the 8Port/SE will be prepared to sync to SMPTE.

Striping with the SMPTE button always uses the current user program settings.

Striping by Selecting a Factory Program

You can use one of the five SMPTE factory programs to stripe SMPTE. Simply select the appropriate program using the PROGRAM button and SMPTE will be striped starting at 00:00:00:00. The SYNC/GEN LED will then glow steadily. When finished striping, press the SMPTE button so the 8Port/SE will be prepared to sync to SMPTE.

Syncing to a SMPTE Tape

Follow the steps below to sync to a SMPTE tape. The details will vary from one program to the next, so consult the instructions in your software's user manual.

1   Make sure you have selected the 8Port/SE's Sync Port in your software. (The Sync Port is described in the chapter *Using Windows MIDI Software*).

2   If you have already recorded your song, load it into your sequencer, or set the tempo map for a new song to be recorded.

3   Tell your software to sync to SMPTE or MTC.

4   Tell your software the SMPTE format being used.

5   Tell your software the SMPTE offset time. This is the SMPTE time at which your song will be begin to be recorded on tape. Due to the manner in which SMPTE information is encoded on tape, the SMPTE offset should be at least three seconds after the first SMPTE frame on the sync track (SMPTE origin). For example, if the tape was striped beginning with 00:00:00:00, you could specify a SMPTE offset of 00:00:03:00.

6   Set your software to begin record or playback, as required. Most programs will display a message such as **Waiting for Sync.**

7   If possible, defeat any noise reduction or equalization settings affecting the sync track.

8   Set tape playback levels to between -10 db and -3 db.

9   Start the tape rolling at the desired point. Most programs can pick up sync anywhere in the sync track, and will start the song at the appropriate point.

10 Your software will then be clocked by SMPTE until you stop the tape or tell the program to stop.

The Footswitch / Trigger Input

The 8Port/SE's FS/TRIG input accepts either a footswitch or a trigger signal, as described below.

Footswitch

You can use a normally open or normally closed footswitch. If used, a footswitch must be connected before powering on the 8Port/SE.

Footswitch options include:

- Changing 8Port/SE programs

- Sending a specified MIDI message to the computer, and/or to selected MIDI OUTs, when the footswitch is depressed and when it is released

Trigger

You can use a trigger signal to cause the 8Port/SE to send a specified message to the computer and/or to selected MIDI OUTs. A "holdoff" parameter is provided to sensitize the 8Port/SE to the trigger signal and prevent "double hits."

Typical trigger sources include drum pads such as the Roland PD-7, and Trigger Perfect's 210AP and SC-10 devices for acoustic drums. Other source signals will work as well. You may find it necessary to adjust signal levels to obtain optimum results.

## Specifying Footswitch / Trigger Operation
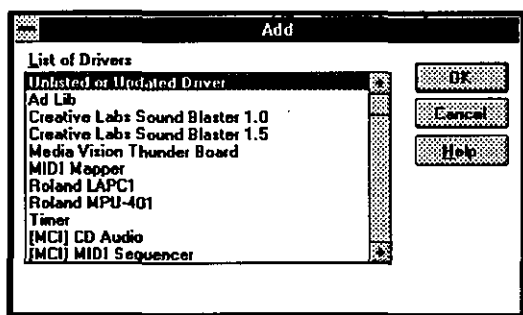
You must use the Patchbay program to setup footswitch / trigger operation. See the chapter *Using Patchbay* for details.

Installing the Windows Driver

To use the 8Port/SE with Windows programs, install its Windows driver according to the steps below:

Some programs supply their own Windows MIDI drivers. Rather than use those drivers, instruct such programs to use a manufacturer-supplied *multimedia* driver.

1   First, start Windows normally, per the instructions in your Windows manual.

2   Start Control Panel by double-clicking its icon, which is usually found in the Main program group of Program Manager.

3   Double-click the Drivers icon. The Drivers dialog box will appear, showing a list of drivers already installed.

4   Click on the **Add...** button to tell Drivers that you want to add a new driver. A new dialog box will then appear, with a list of drivers which are included on the Windows diskettes.

5   Click on the entry **Unlisted or Updated Driver.** Then click the OK button.

6   Drivers will instruct you to insert the driver diskette. Put the 8Port/SE diskette in the A: or B: drive, as appropriate to your system.

7   Tell Drivers which drive you put the diskette in. If you put it in A:, then you should type A:\ in the space provided, or B:\ if you used the B: drive.

8   Click the **OK** button.

9   Windows will access the diskette. After a brief delay, a new dialog box will appear. Click on the entry for **MIDIEngine 8Port/SE MIDI Driver**. Then click **OK**.

10 The driver setup dialog box will then appear. Specify the printer port number and IRQ used by the printer port to which you have connected the 8Port/SE.

11 Then click **OK**. Installation and setup of the driver is complete, but you will be notified that you must exit and restart Windows for the driver to take effect. You may restart Windows now or later, but you cannot use MIDI applications with the driver until Windows is restarted. Click the appropriate button.

12 If you chose to not yet restart Windows, close the Drivers applet by clicking its **Close** button, then exit Control Panel by double-clicking on the box in the upper left corner of its window.

Be cautious of other Windows drivers which can use the printer port. Most printer drivers will not disturb the 8Port/SE's driver, but many special purpose drivers will.

Using Windows MIDI Software

Before actually using Windows software to record or play back through MIDI, you must tell the program to use the 8Port/SE. This is done differently from one program to the next, so consult your software manuals to make sure.

Selecting Ports in Your MIDI Programs

For most Windows programs, you should first start the program and look for a menu item called **MIDI Devices** or similar. Then, click that item to access the application's MIDI setup dialog box. Simply choose those 8Port/SE ports you wish to use with the program.

MIDI Input Ports

MIDI IN 1 - MIDI IN 8

Select those 8Port/SE MIDI IN ports from which you want to send MIDI data to the computer.

The Sync Port

The Sync Port is a specially designated port which is used for receiving only certain messages:

- MTC, corresponding to received or generated SMPTE

- MIDI messages generated by a footswitch

- MIDI messages generated by a trigger signal

- 8Port/SE responses to sysex messages sent to it via the Control Port

Select the Sync Port in your program if you expect to receive any of these messages

If you intend to sync to SMPTE, you must select the Sync Port in your software.

MIDI Output Ports

MIDI OUT 1 - MIDI OUT 8

Select those 8Port/SE MIDI OUT ports to which you want to send MIDI data from the computer.

The Control Port

The Control Port is a specially designated port used to send the 8Port/SE system exclusive messages governing its operation. Most users will not use this port and should not select it.

The Broadcast Port

The Broadcast Port is a specially designated port which is used to send selected MIDI data to *all* MIDI OUTs. Data sent to the Broadcast Port is merged with other data, whether from your software or as routed from MIDI INs.

Multi-Client Windows Driver

The 8Port/SE's multi-client driver lets multiple Windows MIDI programs simultaneously access the 8Port/SE.

Microsoft MIDI Mapper

Some programs, like Windows Media Player, require that all MIDI output be sent via the MIDI Mapper instead of an installed driver. Since the MIDI Mapper only processes 16 MIDI channels, you'll want to have your programs communicate directly to the 8Port/SE driver if they can.

Creating a MIDI Map

To create a MIDI map for use with the 8Port/SE, start the MIDI Mapper by doubling clicking its icon in Control Panel. Click the **Show Setups** button, then click on **New**.... Provide a name for the map you are about to create, and click **OK**. A table will then appear on the screen. For each **Src Chan** in the table, set **Port Name** for the 8Port/SE MIDI OUT to which you want to send MIDI data for that channel. Click **OK** when you're done, and then click **Close** to exit the MIDI Mapper.

Using Patchbay
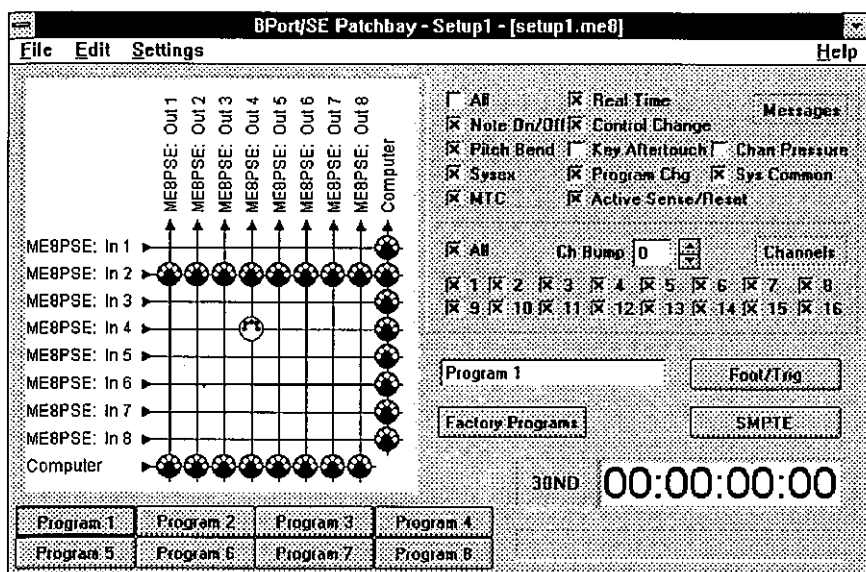
Patchbay gives you complete control over the 8Port/SE. Its primary use is for the maintenance of 8Port/SE user programs, though it can be used for striping SMPTE tapes and for other purposes as well.

The first part of this chapter tells you how to install and run Patchbay. Remaining sections provide usage details.

Installing Patchbay

To install the Patchbay program in your computer, proceed as follows:

1   First, start Windows normally, per the instructions in your Windows manual.

2   Put the 8Port/SE diskette in the A: or B: drive, as appropriate to your system.

3   In Program Manager, access the **File** menu, and click on **Run**....

4   In the text entry box that then appears, type in A:\SETUP or B:\SETUP, as appropriate to your system, and then click **OK**.

5   Setup will then install Patchbay software on your hard drive. When complete, a new program group will be created for Patchbay.

Patchbay's main window

Running Patchbay

To run Patchbay, first locate its program group in Windows' Program Manager. Then, simply double-click the 8Port/SE Patchbay icon.

Setup Files
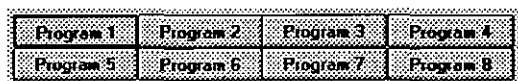
Patchbay works with "setup files"—files which embody a set of eight 8Port/SE user programs. Your use of Patchbay will involve manipulation of setup files to select or modify 8Port/SE user programs.

On start-up, Patchbay reads the last saved setup file, if any, which normally corresponds to the user programs which are stored in the 8Port/SE's nonvolatile memory. If no file was previously opened, as when running the program the first time, Patchbay automatically creates eight user programs with default settings.

While in Patchbay, you can open a previously saved setup file, create a new file from default settings, and save files when you have completed your work.

Selecting a Program

As described above, the current Patchbay setup holds a set of eight user programs. At any given time, settings for one program are displayed in Patchbay and active in the 8Port/SE. A user program is selected by pressing one of the buttons on the program button bar, located at the lower left corner of Patchbay's window.

| Program 1 | Program 2 | Program 3 | Program 4 |
| Program 5 | Program 6 | Program 7 | Program 8 |

Press a program button to display
that program's settings

Modifying Programs

While in Patchbay, you may freely modify user programs for the current setup. The changes you make may then be saved to your hard drive and/or stored in the 8Port/SE, as described in the next section.

Storing Programs in 8Port/SE Nonvolatile Memory

IMPORTANT! ▪▶

After modifying user programs, you can store them in the 8Port/SE's nonvolatile memory. Until and unless you store revised programs, any changes made in Patchbay are **not** reflected in the 8Port/SE other than for its presently active settings. Once programs are stored, their settings are retained in the 8Port/SE, even after a power outage.

Connection Grid

The connection grid occupies the left side of Patchbay's window and is used to effect MIDI data routing for the current user program. Input ports are shown to the left of the grid and output ports above the grid. A MIDI icon located at a given grid location causes MIDI data to be routed from the input port identified on the same row as the icon, and to the output port identified on the same column as the icon. For example, if an icon is located at the upper left corner of the grid, then data received from the first MIDI IN will be sent to the first MIDI OUT. As another example, if each position of the leftmost column of the grid has an icon, then data received at all MIDI INs and from the computer will be merged to MIDI OUT 1.

Adding and Removing Connections

Adding a MIDI data routing connection with an icon is accomplished by right-clicking at the desired grid location. Removing a connection is likewise accomplished by right-clicking an icon.

The displayed connections apply to the current user program and are also immediately effective in the 8Port/SE.

Avoid "MIDI loops" in which MIDI output from a device makes it way back into that device.

Selecting Connections

MIDI icons are "selected" to apply message filtering, channel filtering, or channel change of data flowing between the indicated ports. An icon is selected by left-clicking on it; it is then highlighted. Multiple icons are selected by pressing the CTRL key and left-clicking. When no icons are highlighted, all are automatically selected so you can easily set filter options for all routing connections.

Normal and highlighted MIDI icons

Message Filters

For the current program, the types of messages routed according to highlighted icons are specified with filter checkboxes. An "x" in a checkbox allows messages of the indicated type to be routed. An empty checkbox causes messages to be excluded from routed data. Left-clicking on a checkbox toggles the filter setting on and off.

The figure at the top of the next page shows exclusion of key aftertouch and channel pressure messages.
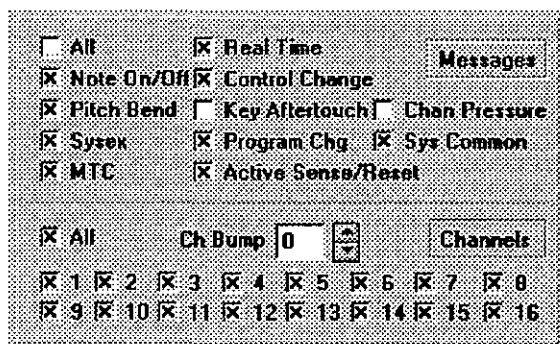
Message and channels filter settings

Note: When multiple icons are selected, a checkbox may be filled with gray to indicate differing filter settings.

Channel Filters

Voice messages may also be filtered by channel number. Channel filtering is accomplishing in exactly the same manner as for message filtering, as described above, but with the channel number checkboxes instead.

Channel Bump

For the current program, the channel number of voice messages routed according to selected icons is increased by the **Ch Bump** setting. For example, a channel bump of 3 causes channel 1 messages to be changed to channel 4 messages, channel 2 messages to be changed to channel 5 messages, and so on. Channels "roll over" as required. For example, applying a channel bump of 3 to channel 15 results in channel 2 (16...1...2).

Normally, you will want channel numbers to be unchanged; in this case, use a channel bump of 0.

Foot/Trig Button

Click the **Foot/Trig** button to change or view destinations for footswitch or trigger events for the current program. An 'x' appearing in a checkbox allows footswitch or trigger events to be sent to the indicated port(s).
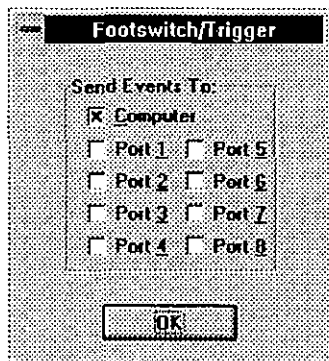
Footswitch / Trigger event destinations

SMPTE Button

Click Patchbay's **SMPTE** button to stripe SMPTE tapes and to change or view SMPTE settings. Settings are provided for SMPTE format, origin time, output level, MTC destinations, and freewheel. Striping with the SMPTE button on the 8Port/SE's front panel uses settings provided in this dialog box (for the current user program).
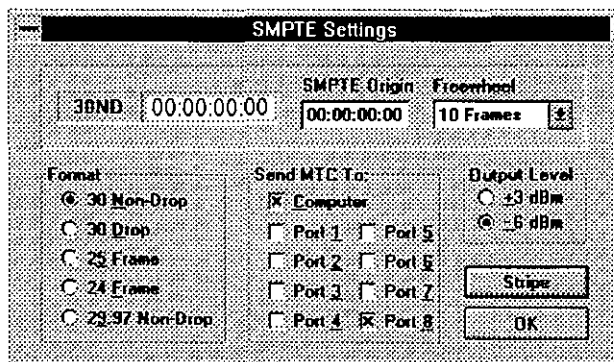
SMPTE Settings dialog box

Port Names

All MIDI ports can be named to your liking. This allows convenient reference to ports in terms of connected instruments. For example, you could use "Yamaha TG100" to refer to OUT 1. The port names you choose will appear in your Windows MIDI applications. To change a port name, just click on it, enter the new name in the text entry box which then appears, and press the ENTER key.

Factory Programs

The eight 8Port/SE factory programs can also be accessed from Patchbay. Just click the **Factory Programs** button.

Menu Selections

File Menu

New

Clears the current Patchbay setup and sets defaults for a new one.

Open...

Opens an existing Patchbay setup file.

Save

Saves the current Patchbay setup to your hard drive using the file name of the currently open setup. Saving a Patchbay setup file does NOT change 8Port/SE nonvolatile memory; use **Settings | Store Current Program** or **Settings | Store All Programs** to store programs in the 8Port/SE's nonvolatile memory.

Save As...

Saves the current Patchbay setup to your hard drive with a file name you choose.

Exit

Exits Patchbay. If changes were made to the current setup and not stored in the 8Port/SE's nonvolatile memory or saved to a file, you will be warned before Patchbay exits.

Edit Menu

Copy Program

Makes a copy of the current user program so that it can be pasted into another program.

Paste Program
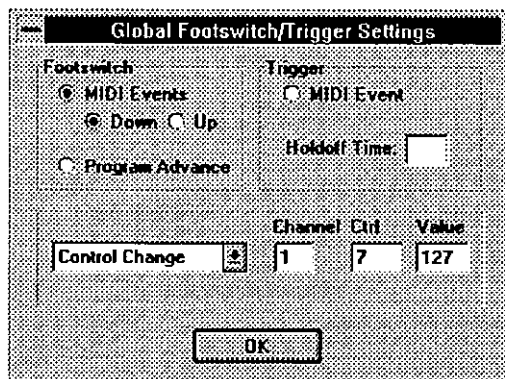
Pastes the program which was copied with the **Copy Program** function into the current program.

Settings Menu

Footswitch / Trigger...

Allows you to define the function of the 8Port/SE Footswitch / Trigger input. Available functions include changing 8Port/SE programs with a footswitch or generating MIDI events from the footswitch or a trigger source.

If you specify MIDI events, you can select among various message types and enter specific data values for them.

Global Footswitch / Trigger Settings dialog box

Name Setup...

Allows you to enter a descriptive name to refer to the current Patchbay setup. This name appears on Patchbay's title bar along with the name of the current file.

Always On Top

If checked, insures that Patchbay is always visually on top of any other open windows.

Store Current Program

Stores the currently selected user program to 8Port/SE nonvolatile memory.

Retrieve Current Program

Retrieves from 8Port/SE nonvolatile memory the program corresponding to the currently selected user program.

Store All Programs

Stores all user programs in the current Patchbay setup to 8Port/SE nonvolatile memory.

Retrieve All Programs

Retrieves all user programs from 8Port/SE nonvolatile memory, thus overwriting the current Patchbay setup.

Help Menu

Quick Help

Displays the help screen.

About 8Port/SE Patchbay

Displays the Patchbay program version.

In Case of Difficulty

Make sure you have installed the 8Port/SE
per the instructions given. A rereading of this
User's Manual may be helpful in uncovering
a subtle problem when installing. Be sure to
also read the README.TXT file found on the
8Port/SE diskette.

Where to Start

While possible, it is very unlikely that the 8Port/SE itself
is defective. Most problems users experience are related
to setup of the printer port, MIDI software, or the Win-
dows driver. In these cases, there is likely a simple setting
that needs to be changed. The remainder of this chapter
will help you to diagnose and correct installation and
usage problems.

Problem-Solving Procedures

When experiencing difficulty, first isolate the problem to
a specific operational scenario. For example, does the
problem seem related to MIDI input? MIDI output? Or is
it a more general operating problem in which nothing
seems to work right? Then, determine what components
are used when the problem occurs, eliminating from con-
sideration those which are not involved in the problem
scenario. Try to isolate the problem to a specific compo-
nent by 1) checking that other components work cor-
rectly, or 2) replacing one component with another of the
same type to see if the problem ceases to occur.

This basic procedure will help speed problem resolution
by reducing the number of potential causes as quickly as
possible. With this in mind, consult the following sections
for common problem descriptions and possible causes
suggesting a solution.

General Operational Problems

The 8Port/SE doesn't work at all, even without the computer.

Make sure you are using the supplied power adapter, and that it is properly connected to the 8Port/SE. Also check that the 8Port/SE power switch is in the ON position!

The COMPUTER LED does not light when starting a MIDI program.

Check answers to the remaining problem descriptions in this section.

Windows software does not recognize the 8Port/SE.

Have you installed the 8Port/SE's Windows driver? If not, refer to *Installing the Windows Driver.*

Check the 8Port/SE's connection to the computer.

There may be a problem in your printer port setup. Read thoroughly the chapter *Printer Port Usage.*

Check that the Windows driver settings for port and IRQ are correct for the printer port used by the 8Port/SE.

Make sure your Windows programs are properly set to access the 8Port/SE's ports.

The computer locks up when starting a Windows MIDI program.

You may have other Windows drivers installed which use the printer port. See the chapter *Printer Port Usage.*

Check for and eliminate any MIDI loops which could cause MIDI data output by the 8Port/SE to be routed back into the 8Port/SE. This can easily happen with patchbays, external sequencers, and other intelligent devices.

Check also suggestions for the preceding item.

The 8Port/SE worked fine until I installed a sound card.

The sound card and/or its driver(s) may be using the same IRQ as your printer port. See *Printer Port Usage.*

My sound card quit working after I installed the 8Port/SE.

Check the answer to the preceding item.

The 8Port/SE works erratically—some things work, some don't.

User programs may not be properly set. Use Patchbay to check these settings and change them as necessary.

The user programs may have been corrupted. You may wish to set the user programs to their factory settings to reestablish proper operation. See the section *Initializing User Programs* in the chapter *8Port/SE Programs*.

MIDI Input / Output Problems

Some front panel controls work but no MIDI data is passed.

The 8Port/SE user programs may not be properly set. Use Patchbay to check these settings and change them as necessary.

Check MIDI connections. Be sure 8Port/SE MIDI OUTs are connected to instrument MIDI INs and vice-versa.

Check that your instruments are set to use MIDI.

Some MIDI IN *and* MIDI OUT LEDs glow steadily and won't quit.

You may have a MIDI loop. Disconnect and then reconnect MIDI cables for the affected port(s) to break the loop. Then, make sure that MIDI data output from the 8Port/SE cannot make its way back into the 8Port/SE.

Notes are doubled when playing from a keyboard into software.

Make sure your keyboard is not in local mode.

Disable your software's MIDI thru or MIDI echo setting.

You may want to change MIDI routing in the 8Port/SE's user program(s). The 8Port/SE **always** routes data according to current program settings, independent of software. It is thus possible that data received from a controller is echoed by your software **and** by the 8Port/SE.

Some instruments play the wrong patches.

Instrument MIDI receive channel(s) may not agree with the MIDI data sent. Check channel settings in your software as well as the channel bump settings for the current 8Port/SE user program.

My software can't access all 8Port/SE MIDI ports.

Check your software's MIDI setup to insure that the desired 8Port/SE MIDI ports are selected.

Most programs limit the number of MIDI ports supported. Consult your software manual for details.

There are timing problems with MIDI playback.

In most cases, this is due to inadequate computer speed. If you're using Windows MIDI programs, you can try running Windows in standard mode, or change timing resolution in your MIDI programs.

Disable any screen saver programs you are using.

Try disabling the Windows "swap file" using the 386 Enhanced applet in Windows' Control Panel.

My instrument loses system exclusive data sent to it.

Many instruments cannot receive MIDI data sent at full MIDI speed. Some programs can slow the rate at which sysex messages are output so as to alleviate this problem; check your software manuals for details.

SMPTE Problems

SMPTE doesn't work at all

Verify proper SMPTE connections as described in the chapter *Connecting the 8Port/SE*.

Monitor the sync tone received at your deck when striping tape, or at the 8Port/SE SMPTE IN jack when syncing to tape. Absence of a modulated sync signal may indicate bad cable connections.

For testing purposes, try using a different tape deck; even a cheap boom box with a cassette recorder will suffice for this. If sync works OK with this deck and not the other, then there may be problems with the other deck (quite unlikely) or a simple cabling problem.

The 8Port/SE responds to SMPTE, but my software doesn't.

Make sure your software is properly set to sync to SMPTE.

Check that software is set to use the 8Port/SE's Sync Port.

Make sure that you are giving your software the correct SMPTE format and offset time.

The 8Port/SE SMPTE LED shows erratic response to SMPTE.

Check that SMPTE connections are secure.

Try defeating your deck's noise reduction or equalization settings.

Avoid routing SMPTE signals through a mixer.

You may have a system grounding problem. Try changing power distribution to various components of your system, such as connecting all system components to a common power strip. See the Sept. 1992 and Oct. 1992 issues of *ELECTRONIC MUSICIAN* for excellent articles on grounding principles.

Sequencing often stalls in the middle of a SMPTE track.

If the 8Port/SE SMPTE LED continues to flash when receiving SMPTE, consult the software developer.

If the SMPTE LED turns off at the point of stall, check answers to the preceding questions.

Try disabling the Windows "swap file" using the 386 Enhanced applet in Windows' Control Panel.

Try disabling any screen saver programs.

Notes are bunched at the start of a song when syncing to SMPTE.

Your software must be set for an offset time which is at least three seconds after the SMPTE origin.

SMPTE syncs OK from the beginning of a sync track, but there are locate errors when chasing tape.

Some programs do not correctly compute the starting point when beginning sync in the middle of the sync track. Check with the software developer.

I have problems with 30-frame drop SMPTE, but not other formats.

Verify that the tape indeed has 30-frame drop time code, and that your software is set for this format.

Some programs do not correctly handle 30-frame drop format. Check with the software developer.

My sequencer keeps running even after stopping the tape.

This is not harmful. It is expected and inherent in SMPTE freewheel. There is no way for the 8Port/SE to detect the difference between a stopped tape and bad sync data. You can reduce the effect by changing the freewheel setting in Patchbay.

A tone emanates from SMPTE OUT even when not striping tape.

This is expected. The 8Port/SE outputs a constant leader tone to facilitate setting level on your tape deck.

There are timing irregularities when syncing to SMPTE.

This could be due to inadequate computer speed. If you're using Windows MIDI programs, you can try running Windows in standard mode, or change timing resolution in your MIDI programs.

Try disabling any screen saver programs you are using.

Check with the software developer for any known problems when the program syncs to SMPTE.

Patchbay displays 30-frame nondrop when reading 29.97 nondrop.

MIDI Time Code does not differentiate these. The precise frame rate is only of consequence in generating time code and to the SMPTE-using application (which thus must be told which is used).

Other Problems

I hear a low frequency hum sound in my audio equipment.

You have a system grounding problem. Try changing the power distribution to components of your system, such as by connecting all equipment to a common power strip. See also the September 1992 and October 1992 issues of *ELECTRONIC MUSICIAN* for two excellent articles on grounding principles.

My instrument displays a "MIDI Data Error" or "MIDI Buffer Full."

Check for bad MIDI cables.

No Solutions Yet?

Before calling for technical support, PLEASE thoroughly read this manual and the README.TXT file on the 8Port/SE diskette. You may save yourself a phone call, and give us more time to help other customers.

If you still cannot get the 8Port/SE to work properly, you can contact our tech support personnel via:

CompuServe (account 75300,2770)
Music Quest section of MIDI Vendor A forum.

Technical Support, voice: 214 881-7408
Hours: Monday - Friday, 1 p.m. to 5:30 p.m. CST / CDT.

Fax: 214 422-7094

When calling, briefly explain the problem and be as specific as possible. It would be helpful to know what steps can reproduce the problem, and what equipment and software you use. If practical, be seated in front of your equipment when you call.

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