

OMS 2.0 for Windows

Opcode publishes on-line documents in two formats: Common Ground™ and Adobe Acrobat™. The following sections contain basic information about these on-line publications.

- **Common Ground Documents**

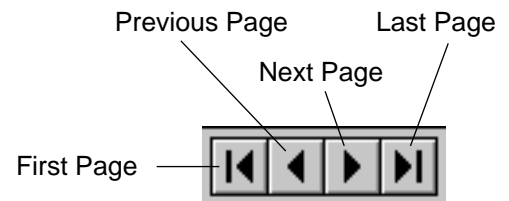
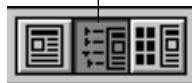
If you downloaded this document in Common Ground (.dp) format, then it uses the digital paper format developed by No Hands™ software. It includes an imbedded Common Ground mini-viewer, which allows you to view the document using the various **Page** Menu commands, and to print the document by choosing **File>Print**.

| Page | |
|----------|----|
| First | ⌘[|
| Next | ⌘> |
| Previous | ⌘< |
| Last | ⌘] |
| <hr/> | |
| Go to... | ⌘G |

- **Acrobat Documents**

If you downloaded this document in Adobe Acrobat (.pdf) format, then use Acrobat Reader's numerous Toolbar buttons to view and print this document. Some of the more common buttons are discussed below. For more information about Acrobat Reader, see its on-line documentation.

View Bookmarks
Select this option to activate a complete hypertext table of contents



Additionally, many Acrobat formatted publications contain hypertext links imbedded within the text. Simply click any blue underlined text to “jump” to the cross-referenced information.

CH 1: OVERVIEW AND INSTALLATION

INTRODUCTION TO THE OPEN MUSIC SYSTEM™ (OMS)

Opcode's Open Music System (OMS) is a code library that bridges the gap between MIDI applications and MIDI hardware. It has many functions and features:

- **OMS acts as a central MIDI driver**

OMS-compatible applications use OMS to communicate with all of your MIDI hardware (such as synthesizers, drum machines, PC sound cards, effects devices, or MIDI controllers).

- **OMS provides a central location for defining and storing a detailed description of your MIDI studio**

Use the OMS Setup application to create a Studio Setup document, in which you store a detailed description of the MIDI devices in your studio—including their names, their MIDI channels, and how they're all physically connected.

All OMS-compatible applications reference this Studio Setup document. So, if you change your studio in any way, simply modify your Studio Setup document and all compatible applications are immediately aware of the change.

- **OMS provides a patch name management tool**

Use this tool, appropriately called the Name Manager, to store the names of all the patches in your MIDI devices and provide those names to your OMS-compatible applications.

- **OMS handles all your computer's internal MIDI timing**

This allows you to run multiple OMS-compatible applications simultaneously and in perfect synchronization.

- **OMS gives you access to hundreds of MIDI channels**

The actual number of MIDI channels that OMS can access depends on which MIDI interface(s) you use.

Standard MIDI interfaces (such as a SoundBlaster or Opcode's Note/1) access 16 total MIDI channels. Multiport MIDI Interfaces (such as Opcode's Music Quest 8Port/SE) access 16 MIDI channels on each pair of MIDI In/Out jacks. So, for example, since an 8Port/SE has 8 pairs of MIDI In/Out jacks, it can access 128 total MIDI channels.

For more information, see your MIDI interface manuals.

ABOUT THIS MANUAL

This manual assumes that you're familiar with basic PC and Windows operations. If you're not, please read those manuals before installing or using OMS.

Also, you should have a basic understanding of MIDI. If you don't, you may wish to purchase one of the many basic MIDI reference books available from your local book store or music retailer.

This manual accurately describes OMS operations at the time of its printing. However, updates and changes may occur. Always look for the latest information in the Read Me files on your master program disk.

WHAT THIS MANUAL DOESN'T COVER

This manual does not discuss the Name Manager. Although the Name Manager is part of OMS, its services are available only from within OMS-compatible applications and not from within the OMS Setup application. Therefore, Name Manager information is contained within your OMS-compatible application manuals.

Also, OMS supports a wide variety of MIDI hardware configurations. Because many of these configurations are of interest to a small percentage of users, Opcode documents them in special on-line documents called "Technical Publications." These publications address specific topics not covered in the written manual.

You can download Technical Publications for OMS (or any other Opcode products) from Opcode's World Wide Web site at:

<http://www.opcode.com>

If you don't have Web access, you can contact Opcode to receive Technical Publications through the mail. For more information about contacting Opcode, see [Contacting Opcode \(pg. 6\)](#).

This manual uses a number of conventions that make it easier to discuss and understand certain on-screen actions.

MOUSE ACTIONS

This manual uses the following terms to describe various mouse actions:

- **Click:** When the manual instructs you to “click,” position the mouse where you’re told and press once on the mouse button, then immediately release it.
- **Double-click:** When the manual instructs you to “double-click,” position the mouse where you’re told and rapidly press and release the mouse button twice.
- **Press and hold:** When the manual instructs you to “press and hold,” position the mouse where you’re told, press the mouse button and hold it down until instructed to release it.
- **Release:** When the manual instructs you to “release,” let up on the mouse button (which you were probably holding down because of an earlier “press and hold” instruction).
- **Drag:** When the manual instructs you to “drag,” position the mouse where you’re told, then press the mouse button and hold it down as you move the mouse.
- **Move:** When the manual instructs you to “move” the mouse, simply move it to another location on the screen without pressing its button.

CHOOSE VS. SELECT

The words “choose” and “select” are often interchangeable in conversational English. In this manual, however, there is a distinct difference between the two terms.

- **Select:** When the manual tells you to “select” something, it stays selected. This is the case with check boxes and menu options.
- **Choose:** When the manual tells you to “choose” something, a one-time action is performed. This is the case with most commands; they perform their chosen action only once.

MENU COMMANDS

This manual uses a shorthand technique to invoke various menu items. For instance, this manual might say:

“Choose **Studio>New Device.**”

What this means in plain English is, “choose the **New Device** command from the **Studio** menu.” Although the shorthand technique results in sub-standard grammar, it’s easier to read and decipher than a complete sentence because it displays the menu’s hierarchical structure plainly and simply.



Figure 1: Shorthand Invocation of Menu Items

BEFORE INSTALLING OMS

Before you install OMS, you should:

- Connect your MIDI interface or sound cards to your PC (as described in those manuals).
- Install all related Windows device drivers (as described in the card or MIDI interface manuals).
- Connect your MIDI devices (synthesizers, drum machines, effects units) to the MIDI interface, then turn them on.

INSTALLING OMS

There is an installer program on your OMS master disk. To install OMS:

- ① Insert the master disk into your floppy drive and run A:SETUP.EXE
If your floppy is drive B, then run B:SETUP.EXE
- ② Answer each question as prompted by the installer application.
The installer places all the necessary OMS files onto your hard disk automatically.

WHAT'S INSTALLED Here is an overview of the OMS file layout:

- The Open Music System software is placed into the Windows folder (usually C:\Windows).
- The OMS Setup application is placed inside a folder named OMSAPPS.

CONTACTING OPCODE

To reach Opcode Technical Support:

| | |
|----------------|--|
| Phone | 415-856-3331 (M-F, 9-5 + Sat, 11-5, Pacific Time) |
| FAX | 415-856-0777 |
| FTP | ftp.opcode.com |
| World-Wide Web | http://www.opcode.com |
| E-mail | support@opcode.com |

CH 2: CREATING A NEW STUDIO SETUP DOCUMENT

This chapter teaches you to use the OMS Setup application to create a new Studio Setup document.

WHAT IS A STUDIO SETUP DOCUMENT?

A Studio Setup document is an exact model of your MIDI Studio. A fully configured Studio Setup document contains information about:

- MIDI interfaces connected either externally (such as an Opcode Music Quest 2Port/SE) or internally (such as an MQX-32M).
- MIDI cards installed inside your computer (such as a SoundBlaster™).
- Software-based synthesizers and other “Virtual Devices” (such as Creative’s FM or AWE synths).
- MIDI devices connected to MIDI interfaces (such as synthesizers, drum machines, effects devices, and MIDI controllers).

Additionally, a Studio Setup document contains information about how all this hardware is physically connected.

You can create and store any number of Studio Setup documents to describe any number of studios or studio configurations, but OMS can reference only one Studio Setup document at a time. This is called the “current Studio Setup document.”

Once you’ve defined a current Studio Setup document, OMS knows each instrument’s name, port, MIDI reception channel(s), Device ID and many other details. This information is provided to all OMS-compatible applications. Within these applications, you simply select and work with devices by name—OMS handles the rest. Any time you change your current Studio Setup document, OMS automatically provides the updated information to all your OMS-compatible applications.

CREATING YOUR FIRST STUDIO SETUP DOCUMENT

To create a new Studio Setup document:

- ① If you have not already done so, install your MIDI cards and interfaces, connect your MIDI devices to your MIDI interface and turn them on.

See your card, interface, and/or MIDI device manuals if you need help.

You create and modify Studio Setup documents using an application called OMS Setup, so...

- ② Find the **OMS Setup** application.
By default, the OMS installer creates a program group (or Start Menu group) for Opcode applications and puts the OMS Setup shortcut program icon in it.

- ③ Run **OMS Setup** to start the program.

After starting the OMS Setup application, you'll see the dialog box shown in [Figure 2](#).

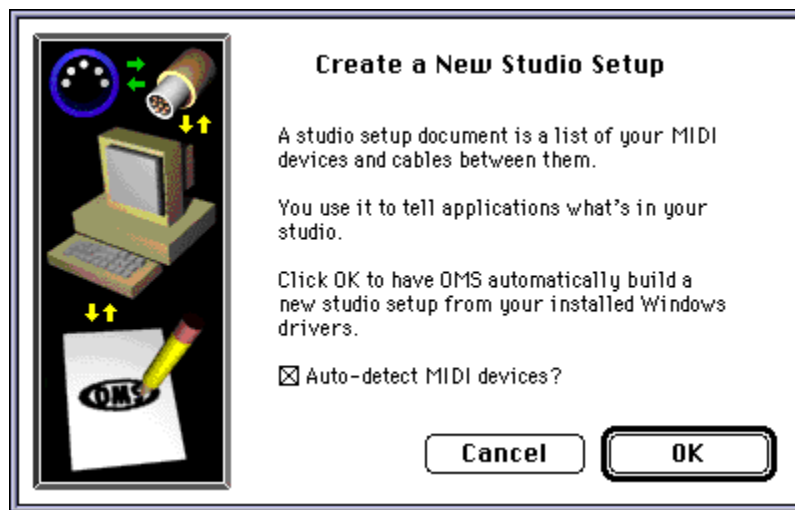


Figure 2: Configure OMS Dialog

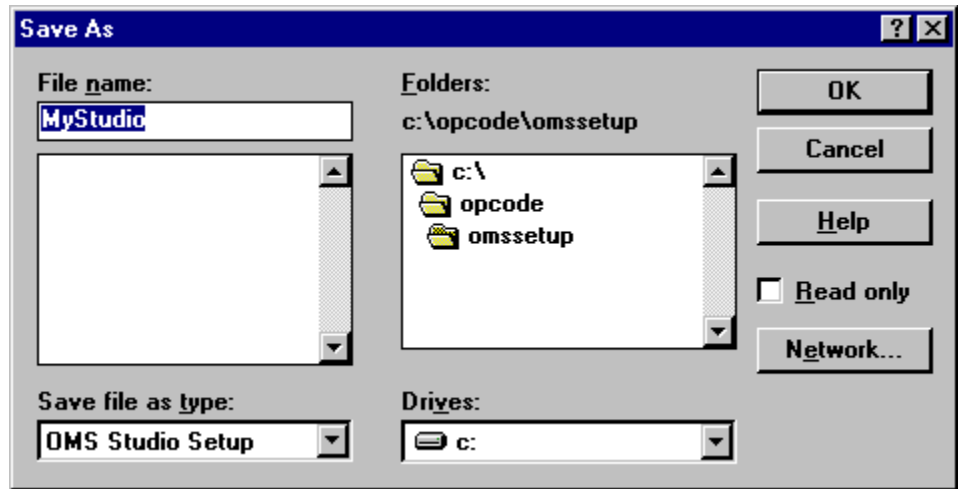
- ④ Click **OK** to proceed.

OMS scans all your installed Windows device drivers.

Then, if you checked the **Auto-detect MIDI devices** option, OMS Setup next attempts to automatically identify any MIDI devices capable of supplying this information—currently only a handful of modern devices have this ability.

☆ *NOTE: To auto-detect a device, it must have both its MIDI In and MIDI Out jacks connected to the interface.*

You'll see a dialog box asking you to name your new Studio Setup document.



- Save your Studio Setup document with whatever name you like. OMS Setup saves the Studio Setup document and displays it on the screen.

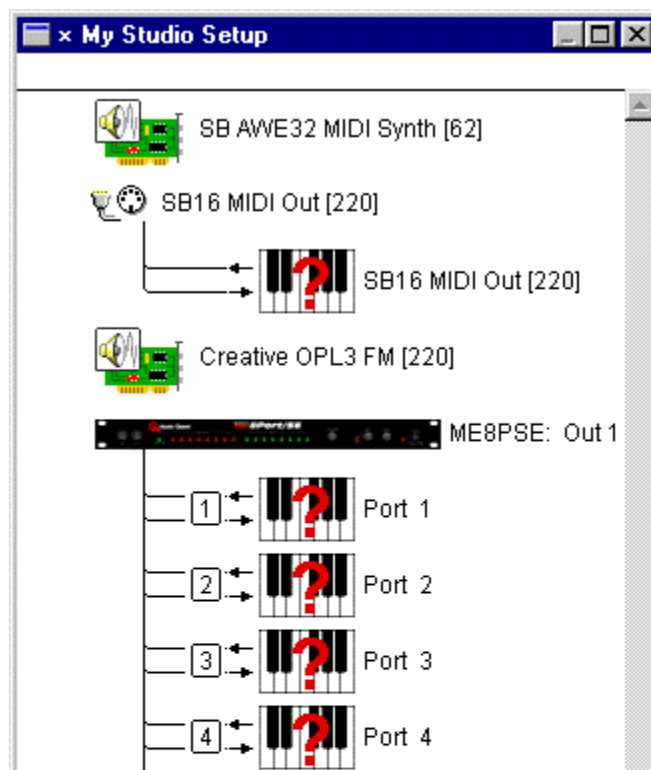


Figure 3: Studio Setup Document

The example shown in [Figure 3](#) shows a Studio Setup document for a PC equipped with a SoundBlaster AWE-32 card and Opcode's 8Port/SE MIDI interface.

☆ **IMPORTANT:** Your Studio Setup document will most likely look different than the one shown in [Figure 3](#) because it's based on **your** MIDI hardware.

ANATOMY OF THE STUDIO SETUP DOCUMENT

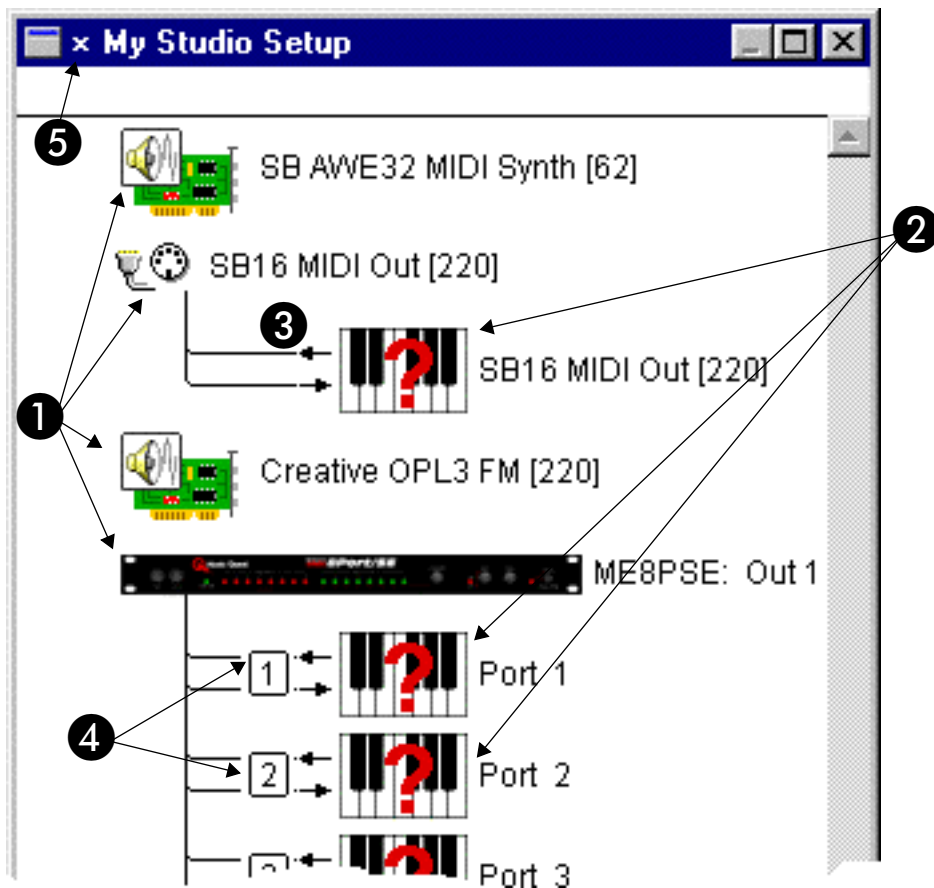


Figure 4: Anatomy of a Studio Setup Document

[Figure 4](#) shows the various elements contained in a typical Studio Setup document. These are:

① MIDI interfaces, cards, and software-based synthesizers

The example shown in [Figure 4](#) contains four such devices: The “ME8PSE” is the 8Port/SE multiport MIDI interface. The “SB16” is the SoundBlaster’s built-in MIDI Interface. The “AWE 32” and the “OPL3 FM” are both software-based synthesizers (known as “virtual devices”) that come with the SoundBlaster.

☆ *NOTE: Notice that a single Creative AWE32 SoundBlaster card appears as three distinct devices: the SB AWE32 MIDI Synth; the Creative OPL3 FM Synth; and the SB16 MIDI Out (a true MIDI interface).*

2 Undefined MIDI devices

Even if you checked the **Auto-detect MIDI Devices** option in the Configure OMS dialog box, only the most modern MIDI devices are capable of defining themselves to OMS Setup. OMS Setup has no way of detecting what other MIDI devices are connected to your MIDI interface (or even if any are actually connected). Therefore, it creates a generic undefined MIDI device on each MIDI port for which it doesn't auto-detect a device. You can recognize an undefined device by the question mark icon.



Figure 5: Undefined MIDI Device Icon

In the example shown in [Figure 3 \(pg. 9\)](#), OMS Setup automatically created and connected nine undefined MIDI devices to the 8Port/SE. Also, since the SoundBlaster can use a special cable to function as a standard 1 IN x 1 OUT MIDI interface, a single undefined MIDI device is shown connected to it.

[Chapter 3: Defining MIDI Devices](#) discusses how to define MIDI devices in a Studio Setup document.

3 MIDI cables (signal flow)

The connecting lines indicate MIDI cables and the arrows indicate the signal flow direction.

By default, OMS Setup assumes you have a pair of MIDI cables connected to each undefined MIDI device.

You'll learn how to modify these connections in the Studio Setup document to model your actual MIDI studio in [Chapter 4: Connecting Devices in the Studio Setup Document](#).

4 MIDI ports on a multiport MIDI interface

Multiport MIDI interfaces display each of their MIDI ports in the Studio Setup document.

By default, if OMS Setup can't auto-detect a specific MIDI device, it creates an undefined MIDI device on each port.

If you have only a standard MIDI interface (such as the SoundBlaster shown in [Figure 4](#)), then the Studio Setup document won't contain any port numbers for that interface.

5 Current Studio Setup indicator

The current Studio Setup document is indicated by a small “X” to the left of its name.

A current Studio Setup document contains an “x” to the left of the document’s name.



Non-current Studio Setup document does not contain the “x”

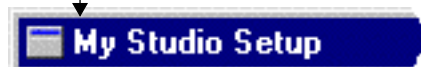


Figure 6: Current Studio Setup Indicator

As discussed in [What is a Studio Setup Document? \(pg. 7\)](#), you can create and save any number of Studio Setup documents, each of which may reflect different studio configurations (or even different studios). But OMS can reference only one Studio Setup document at a time—this is called the “current Studio Setup document.”

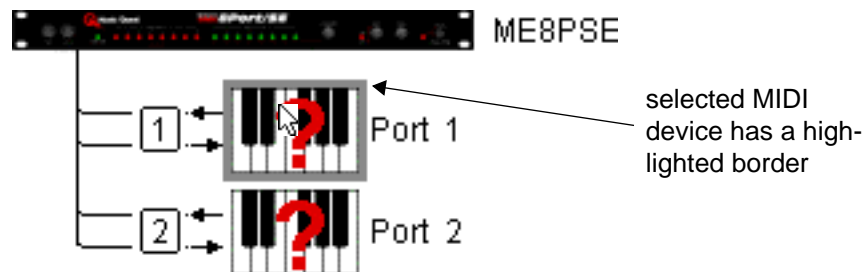
CH 3: DEFINING MIDI DEVICES

In this chapter, you'll learn how to define the MIDI devices in your Studio Setup document so that they accurately represent the hardware in your MIDI studio.

DEFINING AN UNDEFINED MIDI DEVICE

If the current Studio Setup document isn't already open, choose **File>Open Current Studio Setup**, then follow through these steps to learn how to define a MIDI device in your Studio Setup document.

- ① Click an undefined MIDI device to select it (highlighting it).



- ② Choose **Studio>MIDI Device Info**.
Alternately, you could simply double-click a MIDI device icon.
OMS Setup opens a MIDI Device Info dialog box for the selected MIDI device.

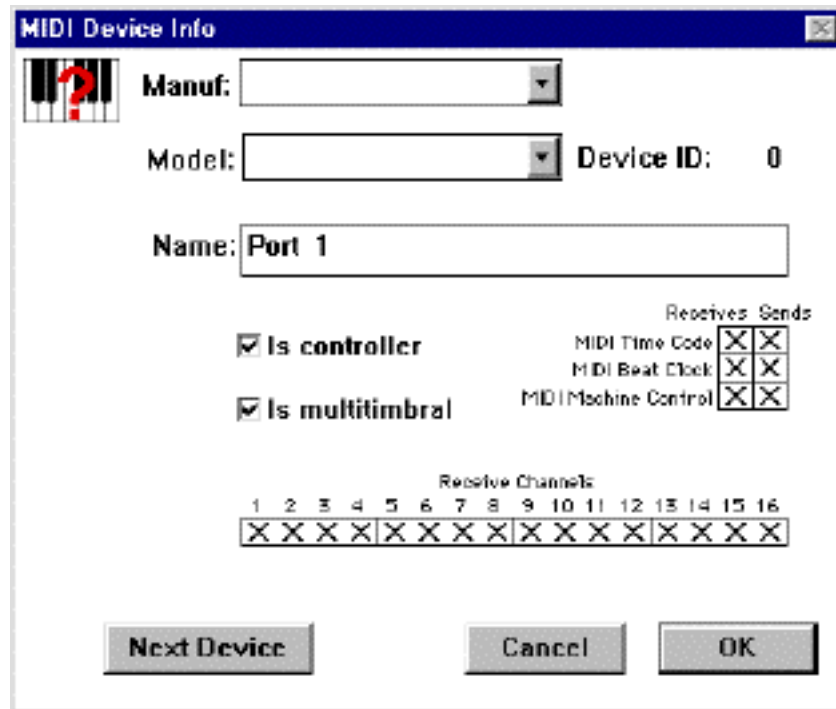


Figure 7: MIDI Device Info Dialog Box

DEFINING THE
MANUFACTURER
AND MODEL

You'll first want to define the MIDI device's manufacturer and model number. To do so:

- ① Click the **Manuf** arrow button to open its drop-down list box, then select the manufacturer of the MIDI device (as shown in [Figure 8](#)).

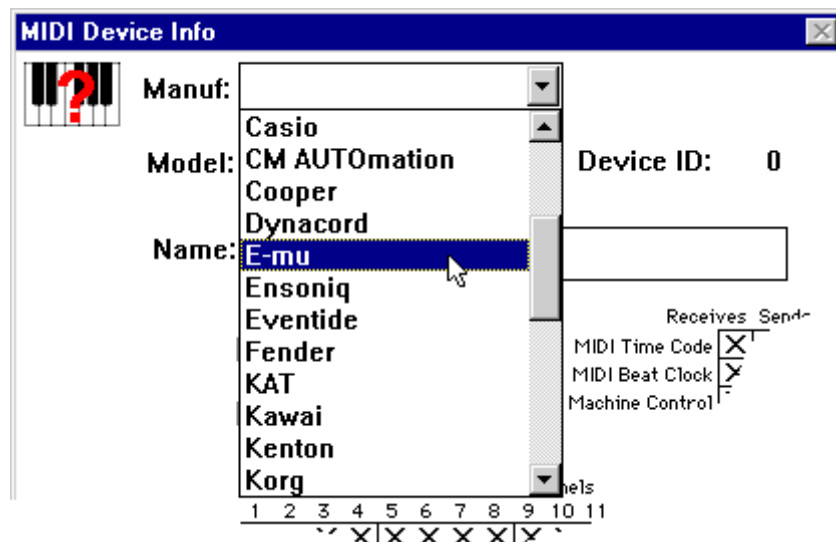


Figure 8: Select a Manufacturer

- ② Click the **Model** arrow button to open its drop-down list box, then select the model of the MIDI device.

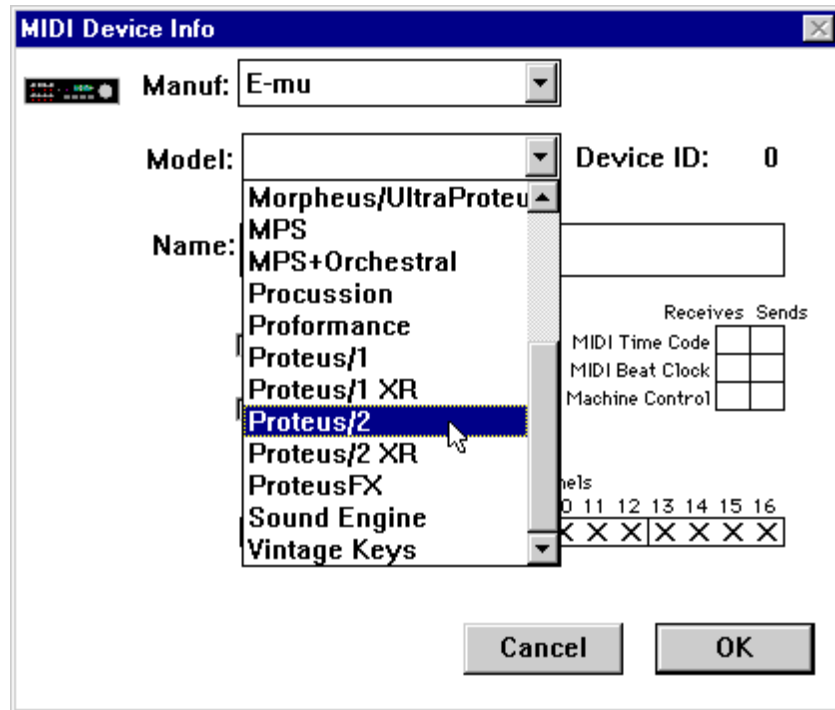


Figure 9: Select a Model

OMS Setup automatically fills in the **Name** field with the model's name. You can type in a different name if you desire.

You'll next want to define the MIDI characteristics of the selected device.

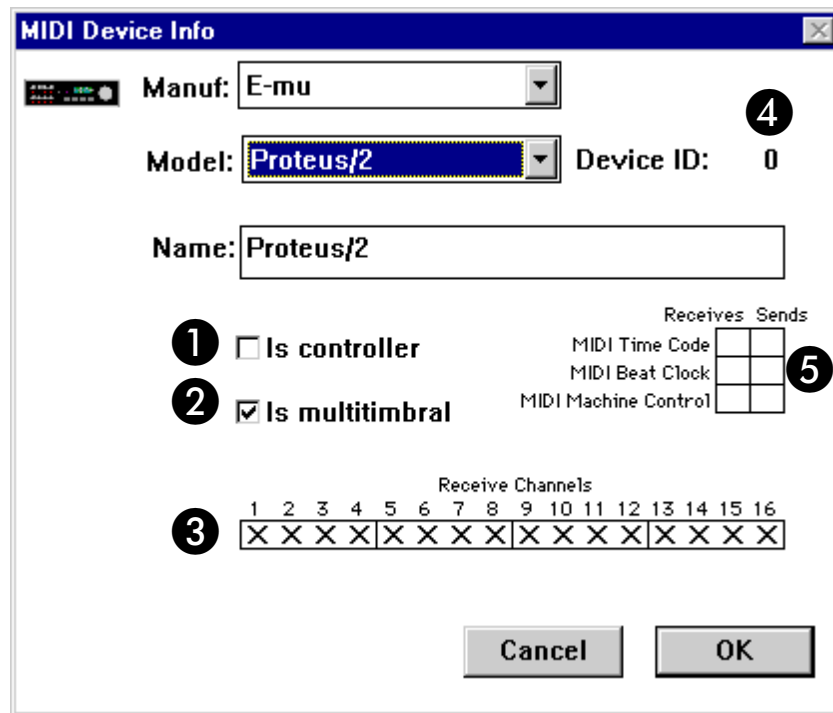


Figure 10: MIDI Characteristics

[Figure 10](#) shows the various MIDI characteristics contained in the MIDI Device Info dialog box. These are:

1 Is controller check box

Check this check box if your MIDI device is a MIDI controller (such as a keyboard, MIDI guitar, MIDI drum pads, and so on).

This check box is automatically set when you define a Manufacturer and Model, but you can override the default setting.

2 Is multitimbral check box

Check this check box if your MIDI device is multitimbral.

Multitimbral means that the device is capable of receiving MIDI data on more than one channel. Most modern synthesizers are multitimbral—many early MIDI synthesizers are not.

This check box is automatically set when you define a Manufacturer and Model, but you can override the default setting.

3 MIDI Receive Channels

Check all the MIDI channels on which your MIDI device receives MIDI data.

For example, if your synthesizer is set up to receive only on MIDI channels 1 through 6, check only the boxes numbered 1 through 6.

If the **Is multitimbral** check box is not checked, your device can receive on only one MIDI channel, so you can check only one box at a time.

4 Device ID

Set the Device ID numerical to match the Device ID setting on your MIDI device.

If the **Is multitimbral** check box is not checked, the Device ID is automatically set to match the MIDI Receive Channel. You can enter a different Device ID number if you wish.

See your MIDI device manual to learn how to view (or change) its Device ID.

5 MIDI Synchronization check boxes

Check the **MIDI Time Code** check boxes only if: 1) your MIDI device sends or receives MIDI Time Code, and 2) you intend to use it to synchronize that MIDI device to your OMS-compatible MIDI sequencer.

Check the **MIDI Beat Clock** check boxes only if: 1) your MIDI device sends or receives MIDI Beat Clock, and 2) you intend to use it to synchronize that MIDI device to your OMS-compatible MIDI sequencer. Many drum machines and synthesizers with built-in sequencers are able to send and receive MIDI Beat Clock.

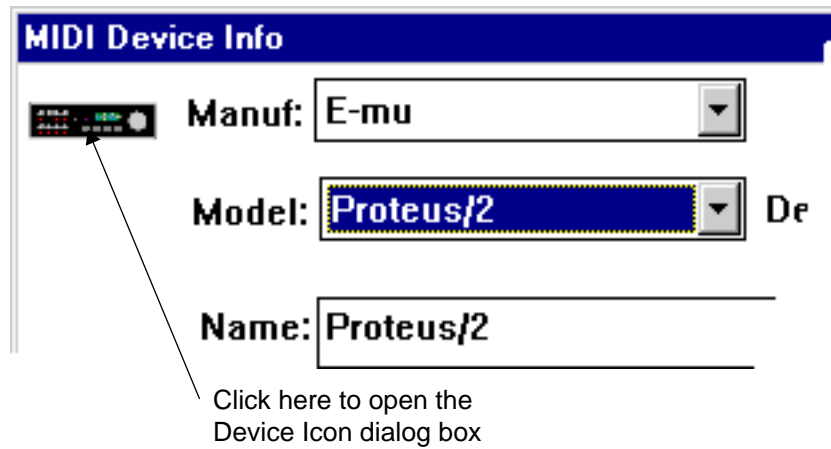
Check the **MIDI Machine Control** check boxes only if: 1) your MIDI device sends or receives MIDI Machine Control, and 2) you intend to use it to synchronize that MIDI device to your OMS-compatible MIDI sequencer.

See your MIDI device manuals to learn whether or not they support any of these synchronization methods.

ASSIGNING A DEVICE ICON

When you select a Manufacturer and Model, OMS Setup automatically assigns an icon to that MIDI device. To select a different icon:

- ① Click the icon in the upper left corner of the MIDI Device Info dialog box.



The Device Icon dialog box appears.

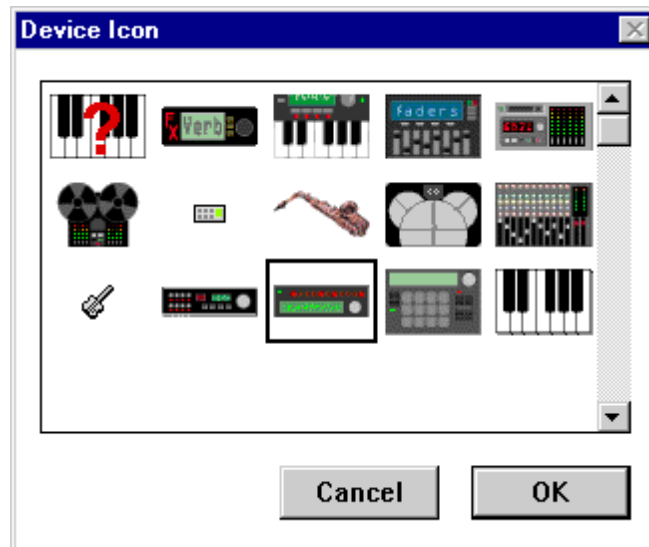


Figure 11: Device Icon Dialog Box

- ② Click a different icon in this dialog box, then click the **OK** button.

☆ *NOTE: You can open the Device Icon dialog box directly from the Studio Setup Window. To do so, simply click the device's icon to select it, then choose **Studio>Device Icon**.*

FINISHING THE DEFINITION

When you've finished defining a MIDI device, click the **OK** button in the MIDI Device Info dialog box.

Your Studio Setup document now contains a fully defined MIDI device, complete with the device's name and icon.

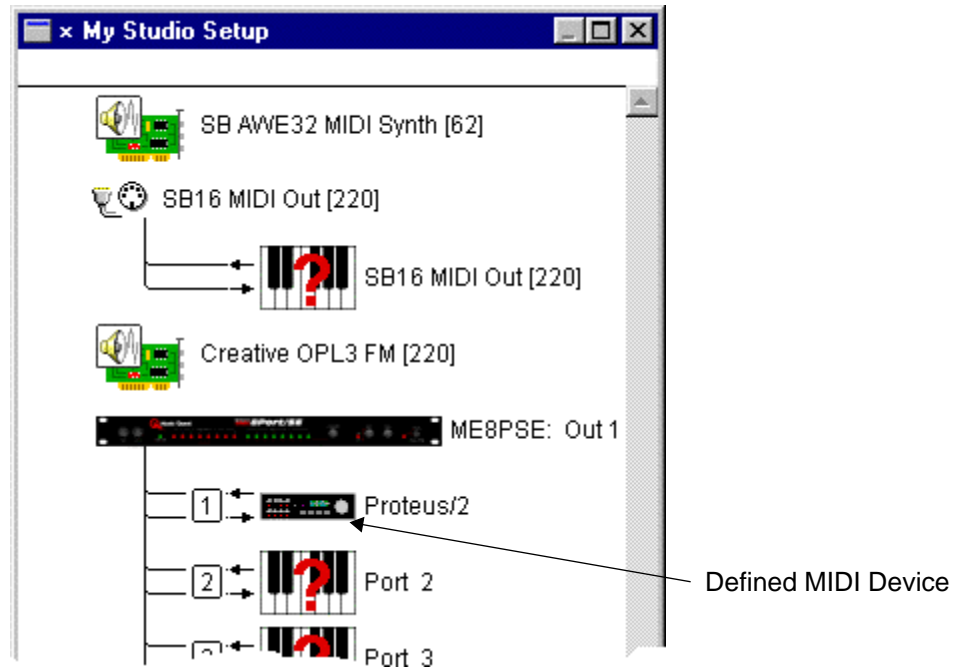


Figure 12: Studio Setup Document with a Defined MIDI Device

DEFINING ADDITIONAL MIDI DEVICES

Repeat all the steps discussed in [Defining an Undefined MIDI Device \(pg. 13\)](#) until you've defined every MIDI device in your studio, then choose **File>Save** to save your Studio Setup document.

DELETING MIDI DEVICES

If your Studio Setup document contains MIDI devices that aren't in your actual MIDI studio, you can delete them from the document.

This is particularly useful for:

- removing undefined devices created by the OMS Setup application.
OR...
- removing devices no longer contained in your MIDI studio.

To remove the unused MIDI devices from your Studio Setup document:

- ① Click a MIDI device to select it (highlighting it as shown in [Figure 13](#)).

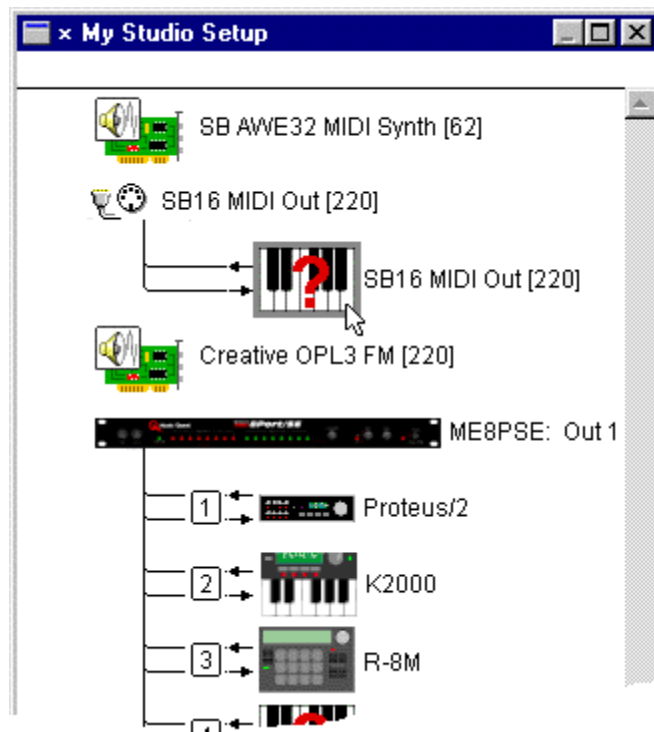


Figure 13: Selecting an Unused MIDI Device

- ② Choose **Edit>Delete**.
OMS Setup removes the MIDI Device from your Studio Setup document.

- ③ Continue this process for all remaining, unused MIDI devices.

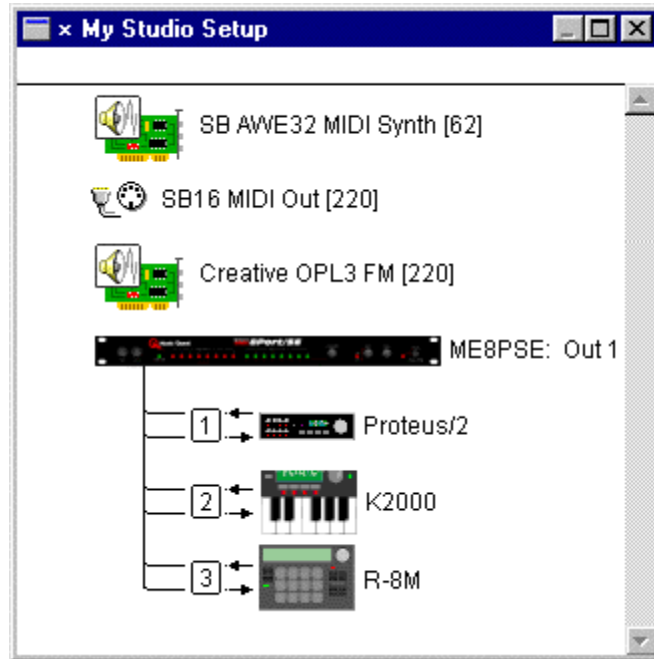


Figure 14: Studio Setup Document with No Undefined MIDI Devices

ADDING MIDI DEVICES TO A STUDIO SETUP DOCUMENT

Sometimes you'll need to add a MIDI device to your Studio Setup document. To do so:

- ① Choose **Studio>New Device**.
OMS Setup opens the MIDI Device Info dialog box.

- ② Configure the dialog box as discussed in [Defining an Undefined MIDI Device \(pg. 13\)](#).

OMS Setup creates a new device and automatically adds it to the top of your Studio Setup document.

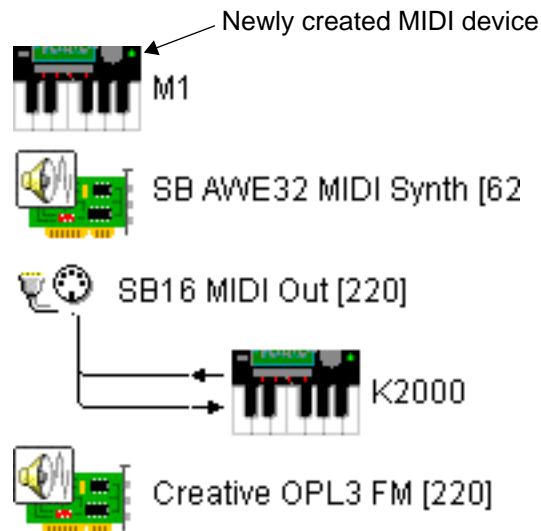


Figure 15: New, Unconnected MIDI Device

- ☆ *NOTE: If an interface or MIDI device is selected (highlighted) when you choose the **Studio>New Device** command, OMS Setup automatically attaches the new device to the selected device, rather than adding it to the top of the Studio Setup document.*

[Chapter 4: Connecting Devices in the Studio Setup Document](#) will tell you how to connect MIDI devices together in a Studio Setup document.

CH 4: CONNECTING DEVICES IN THE STUDIO SETUP DOCUMENT

In this chapter, you'll connect all the MIDI devices in your Studio Setup document to mirror the way the actual hardware is connected in your studio.

When you finish connecting device icons, your Studio Setup document will function as a graphic representation of the MIDI components in your studio.

☆ *IMPORTANT: The Studio Setup document should reflect, as accurately as possible, the actual connection of MIDI devices in your studio. OMS-compatible applications derive their knowledge of the devices in your studio from the Studio Setup document.*

CONNECTING MIDI DEVICES TOGETHER

To “connect” MIDI devices together in a Studio Setup document, simply drag one device icon onto another.

Using this technique, you can connect...

- MIDI devices to MIDI interfaces, as discussed in [Connecting Devices to a MIDI Interface \(pg. 24\)](#).
- MIDI devices to other MIDI devices. This technique is used when “daisy chaining devices using MIDI Thru jacks, as discussed in [Using MIDI Thru Ports \(pg. 28\)](#).
- MIDI patchbays to MIDI interfaces, as discussed in [Using MIDI PatchBays \(pg. 33\)](#).
- MIDI devices to MIDI patchbays, as discussed in [Using MIDI PatchBays \(pg. 33\)](#).

CONNECTING DEVICES TO A MIDI INTERFACE

Assume you have a 1-in x 2-out MIDI interface, and that you defined two MIDI devices, one of which was added to the top of your Studio Setup document (as shown in [Figure 16](#)).

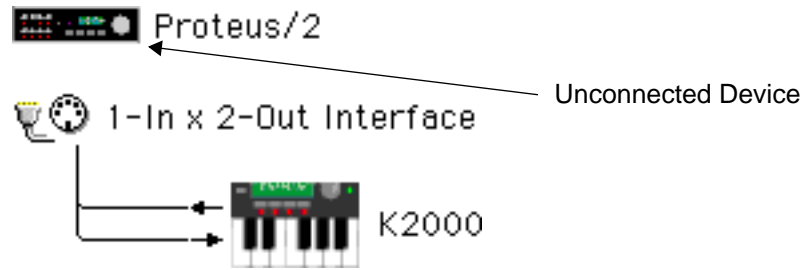
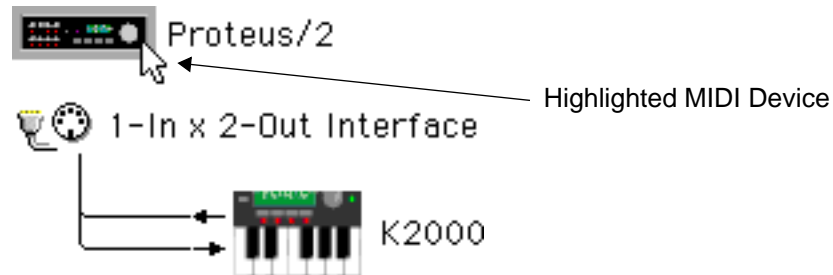


Figure 16: Studio Setup Document with Unconnected Device

To connect the Proteus/2 to your MIDI interface:

- ① Move the cursor over the Proteus/2 icon, then press and hold the mouse button.

The MIDI device becomes highlighted.

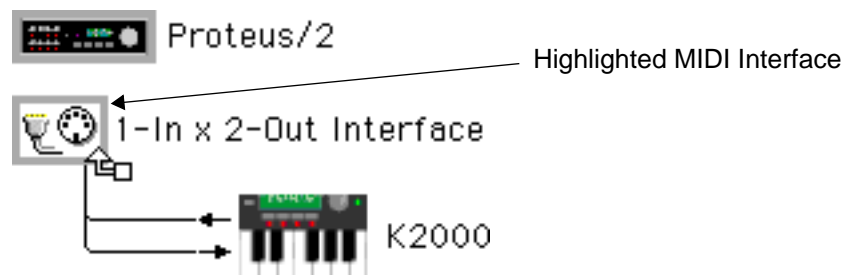


- ② While still holding the mouse button, drag the cursor over the MIDI interface icon.

Notice, when you drag, that the cursor becomes a “drag cursor.”



The MIDI interface becomes highlighted.



- ③ Release the mouse button.
OMS Setup “connects” the MIDI device to the MIDI interface.

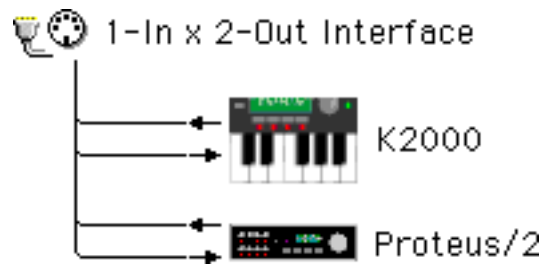
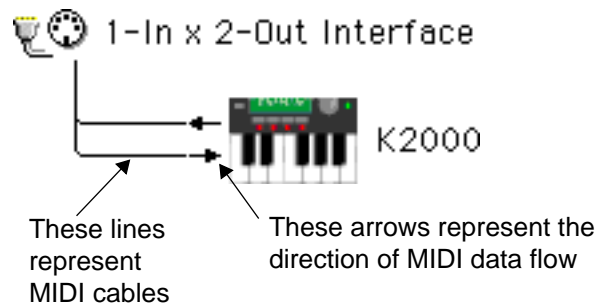


Figure 17: Studio Setup Document Shows Both MIDI Devices Connected to the MIDI Interface

CONNECTING AND DISCONNECTING MIDI CABLES

The last step in defining your Studio Setup document is to connect or disconnect MIDI cables to reflect the actual cabling in your real MIDI studio.

The Studio Setup document represents each connected MIDI device with a pair of lines running in and out of its left side. These lines represent MIDI cables and the arrows indicate the direction of MIDI data flow.



To “disconnect” a cable in a Studio Setup document, simply click its directional arrow. To reconnect a cable, click it again.

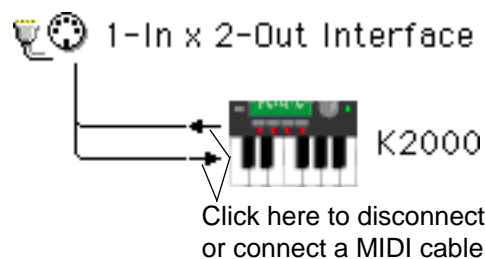


Figure 18: Disconnecting/Connecting Cables

PRACTICAL
EXAMPLE

[Figure 19](#) contains a 1-in by 2-out MIDI interface. Obviously this Studio Setup document is wrong—the MIDI interface contains only one MIDI In jack, yet the Studio Setup document shows two synthesizers sending MIDI data to the interface.

This document shows TWO MIDI cables connected to the interface's single MIDI In port—obviously an incorrect representation.

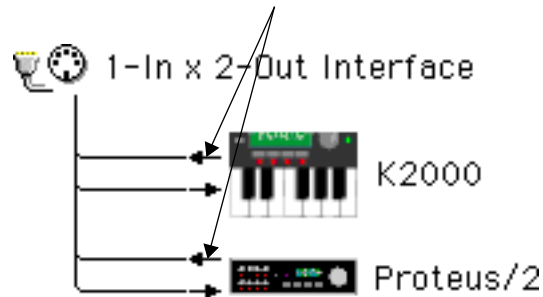
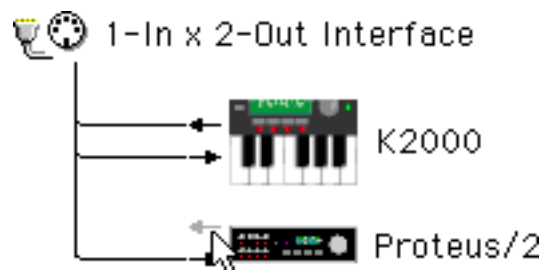


Figure 19: Incorrect MIDI Cabling

The actual MIDI studio has the K2000's MIDI Out jack connected to the MIDI interface and both device's MIDI In jacks connected to the MIDI interface. To modify your Studio Setup to show the correct connection:

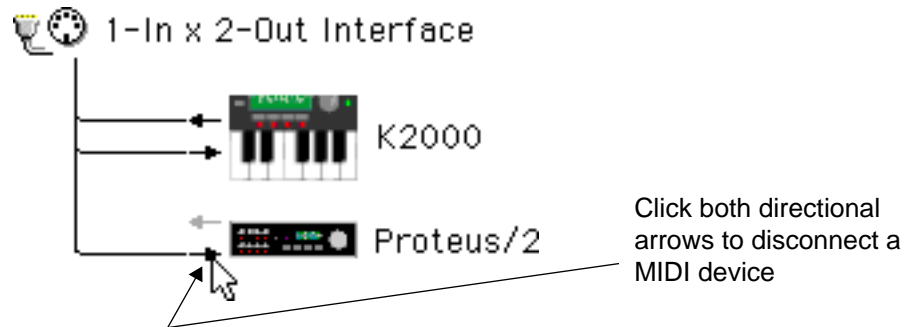
- ① Click the MIDI Out arrow to the left of the Proteus/2. OMS Setup removes the cable from the Studio Setup document. Your Studio Setup document now accurately reflects the cabling in your MIDI Studio.



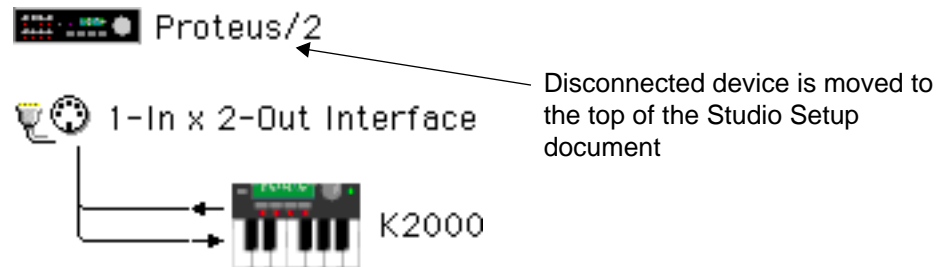
DISCONNECTING MIDI DEVICES

If you disconnect a device in your actual studio, you should also disconnect it in your Studio Setup document. To do so:

- ① Click both directional arrows to the left of the MIDI device you wish to disconnect.



OMS Setup disconnects the MIDI device and moves it to the top of the Studio Setup document.



This is better than deleting the device because it remains in your Studio Setup document. Then, if you reconnect the device at a later date, you need only re-connect it in the Studio Setup document, as well.

CH 5: SPECIAL STUDIO SETUP TECHNIQUES

USING MIDI THRU PORTS

Most MIDI devices have a MIDI Thru port, which passes along any MIDI data received on the device's MIDI In port. MIDI Thru ports let you "daisy-chain" MIDI devices. In a Studio Setup document, you represent Thru port connections by connecting one MIDI device to another.

THRU EXAMPLE 1 Assume you have two MIDI devices connected as shown in [Figure 20](#).

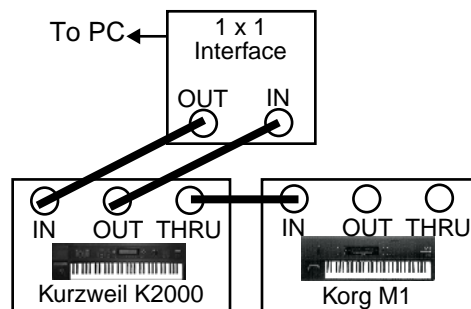
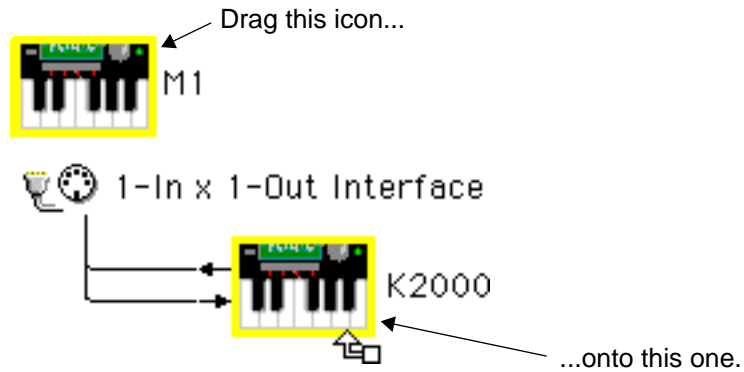


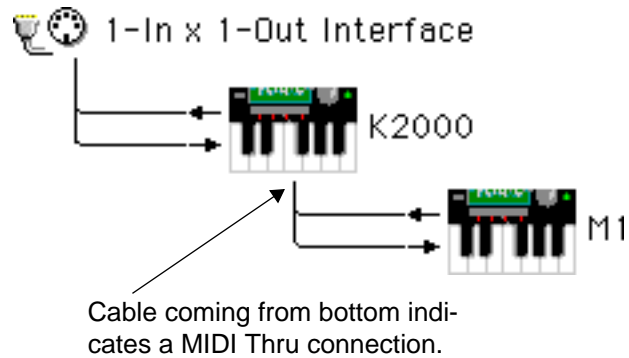
Figure 20: Daisy Chained MIDI Devices

To create this connection in a Studio Setup document:

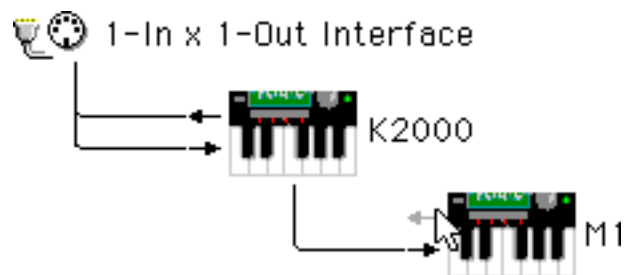
- ① Drag the M1 icon on top of the K2000.



OMS Setup connects the M1 to the K2000 indicating a “Thru” connection.



- ② Click the M1 MIDI Out arrow to disconnect it.



Your Studio Setup document now accurately reflects the cabling in your actual MIDI studio.

THRU EXAMPLE 2

Assume you have two MIDI devices connected as shown in [Figure 21](#).

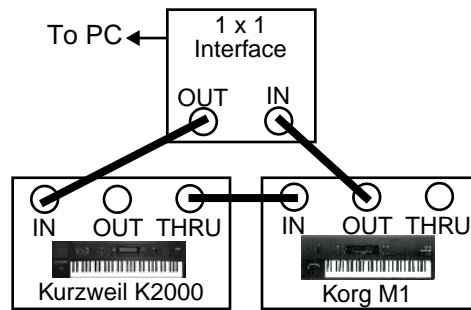
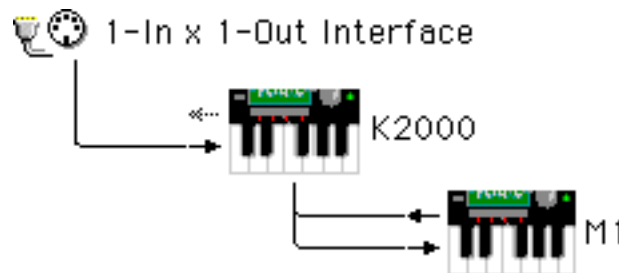


Figure 21: Alternative MIDI Daisy Chain

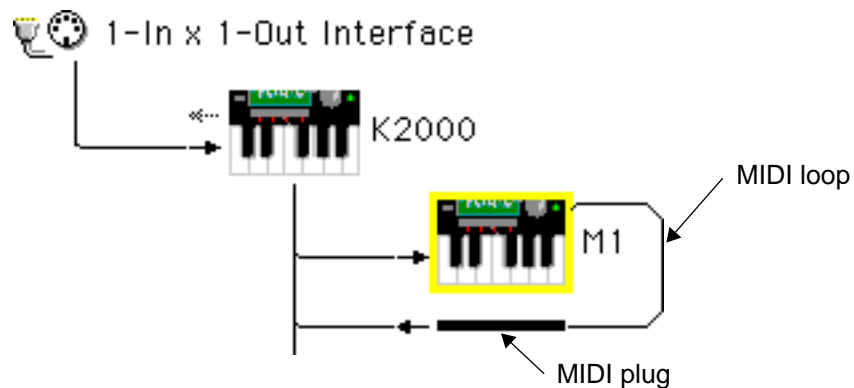
To create this connection in a Studio Setup document:

- ① Drag the M1 icon on top of the K2000 icon, then disconnect the K2000's MIDI output.

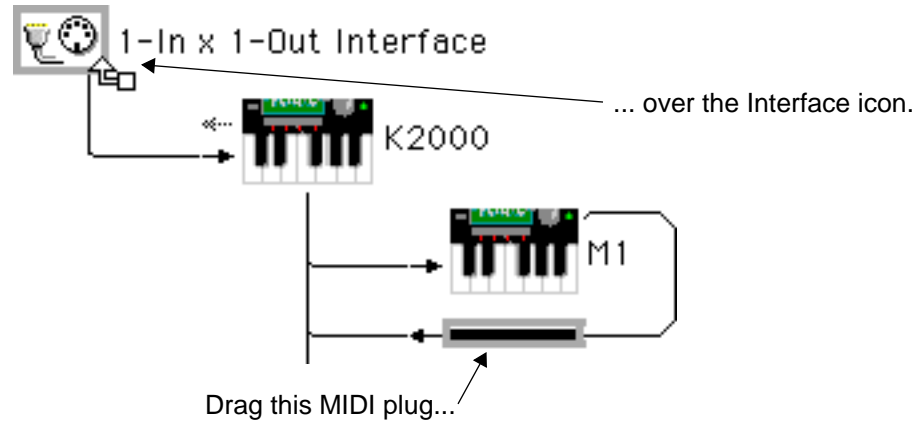
Your Studio Setup document looks like this:



- ② Click the M1 icon to select it (highlighting it).
- ③ Choose **Studio>Different In/Out Ports**.
OMS Setup creates a MIDI loop with a MIDI plug.



- ④ Drag the MIDI plug onto the MIDI interface icon.



OMS Setup creates the Studio Setup document shown in [Figure 22](#), which now accurately reflects the MIDI connections shown in [Figure 21](#).

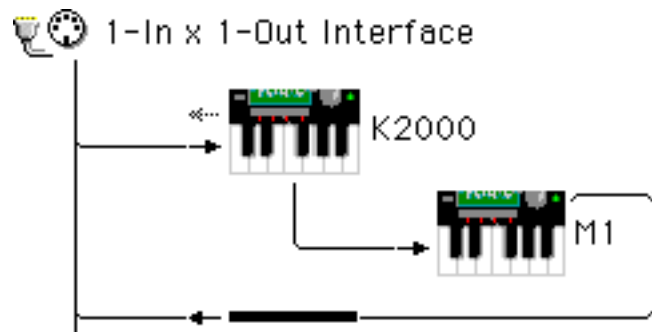


Figure 22: Correct Studio Setup Document

USING MIDI MERGERS

A MIDI merger combines the MIDI outputs of two different MIDI devices into a single MIDI output.

For example, assume your studio has a 1-in x 2-out MIDI interface and that you have two MIDI keyboard synthesizers. Without a MIDI merger, you could connect only one of your keyboard's MIDI outputs to your computer.

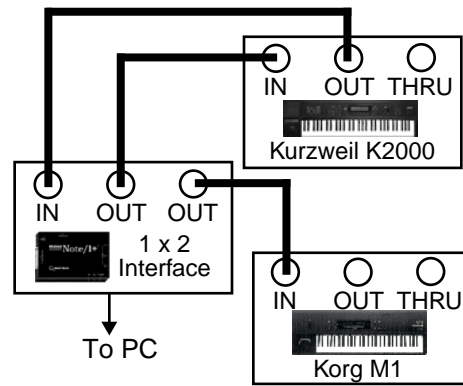
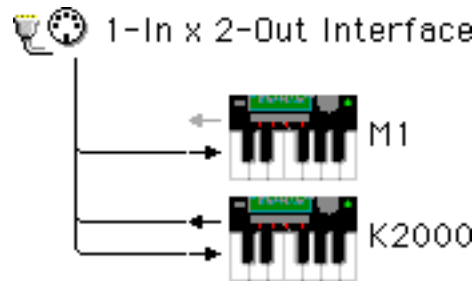


Figure 23: M1 cannot be used as a MIDI Controller

This results in the following Studio Setup Document:



By using a MIDI merger, you could combine the outputs of both keyboards, so that either could be used as a MIDI controller.

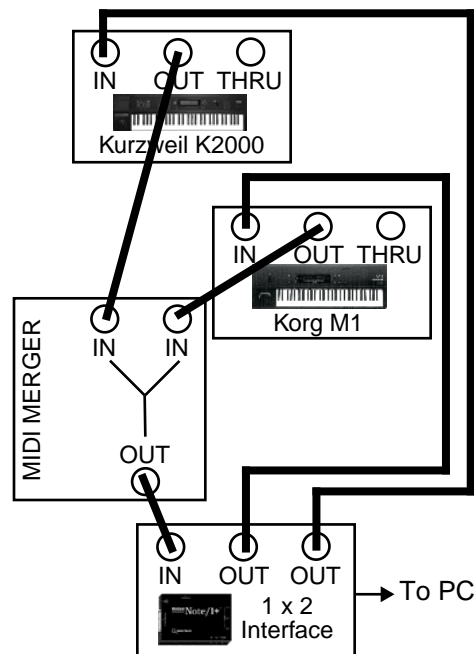


Figure 24: Connecting a MIDI Merger

To indicate the use of an external MIDI merger in the Studio Setup document, simply connect the MIDI outputs from both merged devices to the MIDI interface as shown in [Figure 25](#).

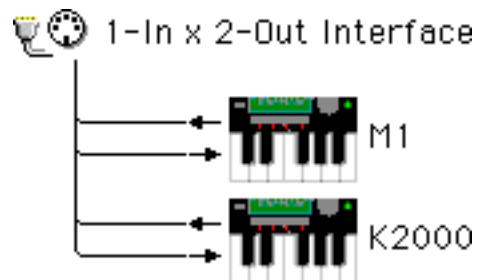


Figure 25: Studio Setup Indicates Use of a MIDI Merger

Notice that both the K2000 and the M1 can send MIDI data to the interface. The MIDI merger does not appear in the Studio Setup document, but its function is represented by the two MIDI cables coming from the two MIDI devices.

USING MIDI PATCHBAYS

A MIDI patchbay (sometimes called a patcher, switcher, or thru box) is an external box that contains numerous MIDI In/Out jacks, which allows you to connect many MIDI devices to a single MIDI interface.

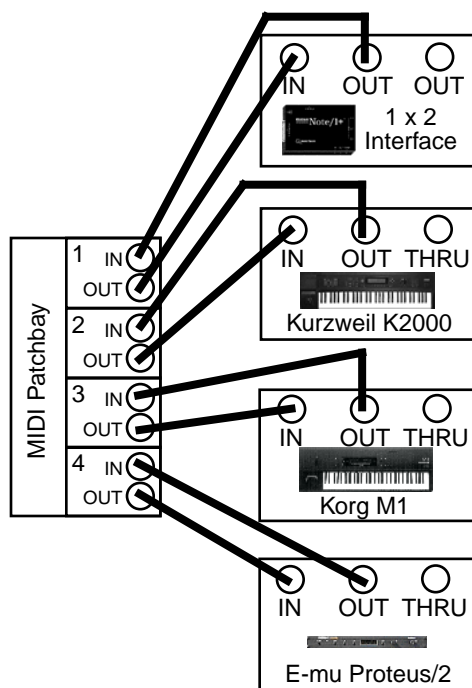


Figure 26: Studio With MIDI Patchbay

Figure 27 shows a Studio Setup document for the MIDI studio shown in Figure 26.

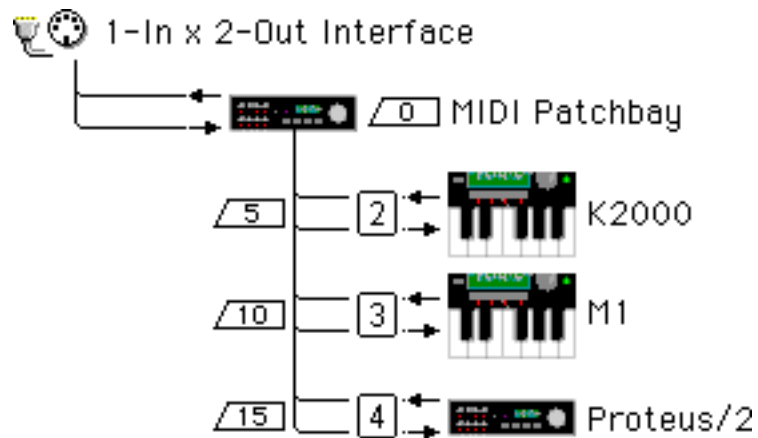
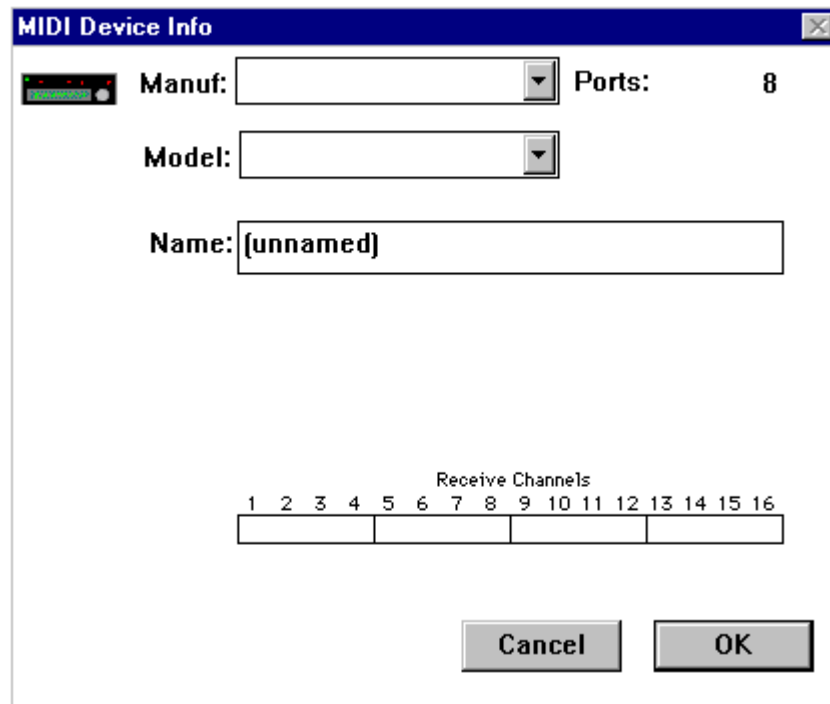


Figure 27: Studio Setup with MIDI Patchbay

ADDING A MIDI PATCHBAY TO THE STUDIO SETUP DOCUMENT

This section discusses how to configure a Studio Setup document using a MIDI patchbay. More detailed instructions are in a separate Technical Publication at Opcode's Web site.

- ① Choose **Studio>New Patcher**.
The Patcher Info dialog box appears.



- ② From the drop-down list boxes, select the manufacturer and model of your MIDI patchbay.
You can select “other” if you don’t see your patchbay in the list.
- ③ Use the **Ports** numerical to enter the number of MIDI ports (In/Out MIDI jack pairs) on your MIDI patchbay.
OMS Setup enters the number automatically when you select a known patchbay from the **Manuf** and **Model** drop-down lists.
- ④ Using the **Receive Channels** check boxes, select the MIDI channel on which your patchbay receives MIDI program change information.
- ⑤ Click the **OK** button.
OMS Setup adds the MIDI patchbay to the top of your Studio Setup document.
- ⑥ Drag the patchbay icon onto the MIDI interface icon to connect it.
- ⑦ Drag MIDI devices onto the patchbay icon to connect them.

[Figure 28](#) shows the anatomy of a typical MIDI patchbay connection.

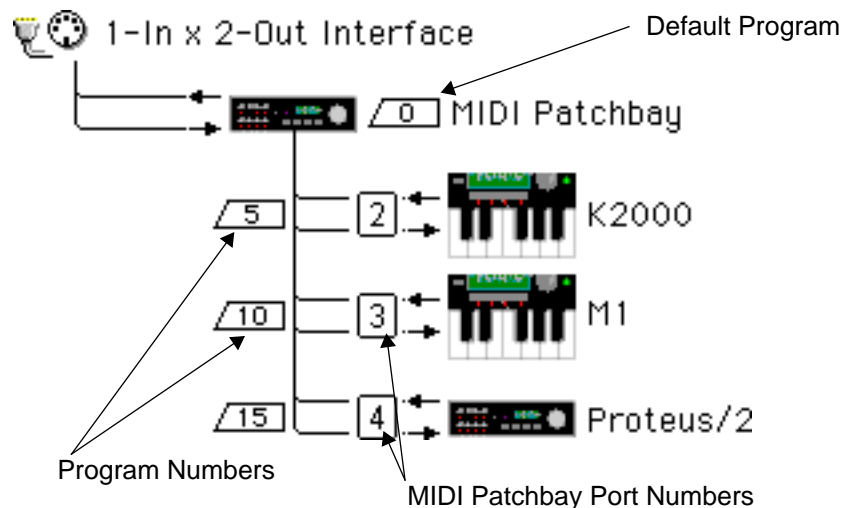


Figure 28: MIDI Patchbay Anatomy

- ⑧ Set the ports and program numbers to mirror your MIDI patchbay’s actual operation (as discussed below).

Briefly:

- **MIDI Patchbay Port Numbers:** These numerals correspond to the numbered ports on your MIDI patchbay. For example, if your Korg M1 is connected to port 3 of your MIDI patchbay, set the numerical next to the M1 to “3”.

- **Default Program:** Every MIDI patchbay needs one internal program that's designed to 1) transfer MIDI data from any MIDI controller to your PC, and 2) transfer MIDI data from the PC to every MIDI device. This is called the "default" program. Set the Default Program numerical to match the MIDI program number of the patchbay's internal "default" program.
 - **Program Numbers:** You should program your MIDI patchbay such that each MIDI device has its own patchbay program that sends MIDI data *only* to that device and receives MIDI data *only* from that device. Set each Program Number numerical to match the MIDI program number that does this in the patchbay's internal memory.
- ☆ *IMPORTANT: See the Technical Publication named "Using OMS with a MIDI Patchbay" for detailed information about patchbay programming, Studio Setup configuration, and using multiple MIDI patchbays.*

USING MULTIPORT MIDI INTERFACES

A multiport MIDI interface is basically a MIDI interface and patchbay in a single box. A classic example is the Opcode Music Quest 8Port/SE.

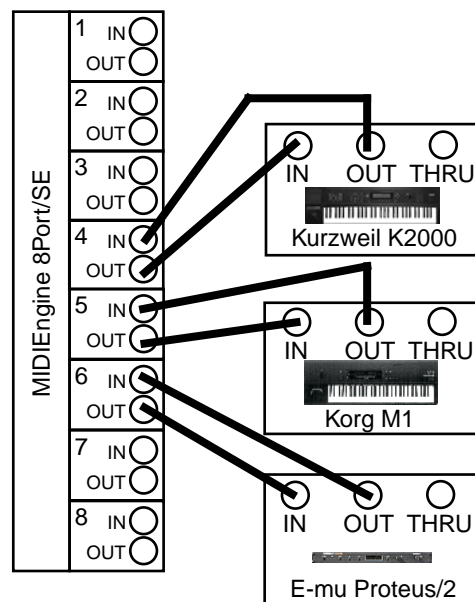


Figure 29: Studio With Multiport MIDI Interface

[Figure 30](#) shows a Studio Setup document for the MIDI studio shown in [Figure 29](#).

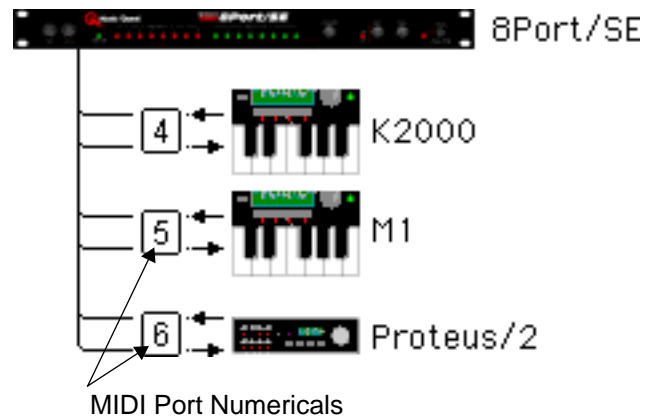


Figure 30: Studio Setup with Multiport MIDI Interface

Make sure you set the MIDI Port numericals to mirror the physical ports used on your MIDI interface. For example, if your M1 is connected to Port 5 on the 8Port/SE, set the M1's MIDI Port numerical to "5" in the Studio Setup document.

CREATING A "DO NOTHING" PATCH

If you use a programmable multiport MIDI interface, it's important to program a "do nothing" patch into its internal memory. Since MIDI sequencing programs perform their own MIDI routing and thruing operations, your multiport interface needs a program that does NO internal MIDI routing of its own—this is called the "do nothing" patch.

For example, a “do nothing” patch in the 8Port/SE would look as shown in [Figure 31](#).

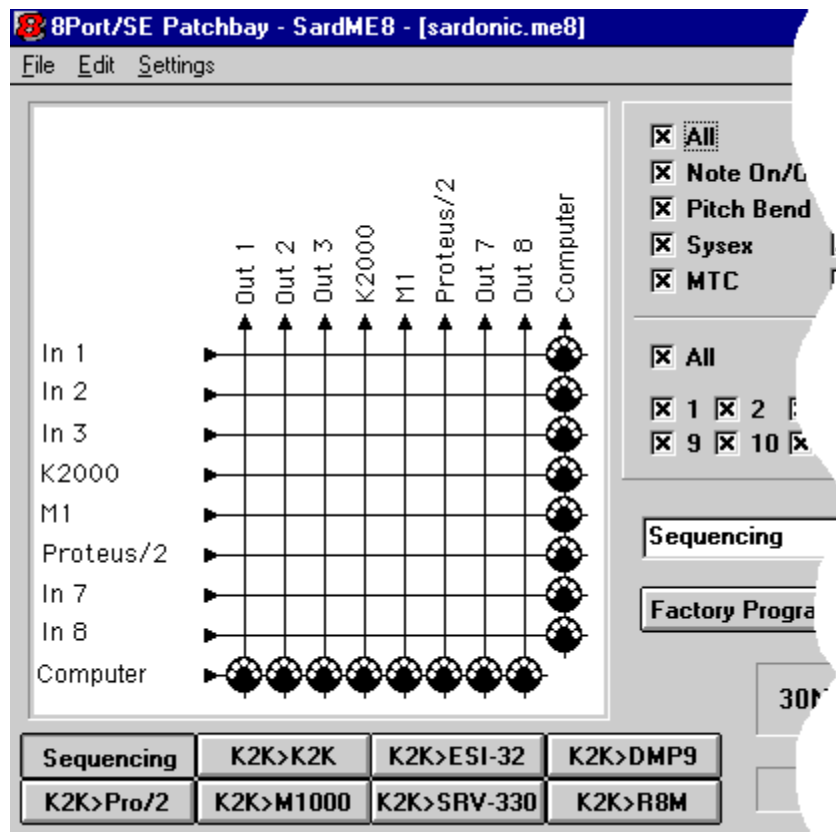


Figure 31: 8Port/SE’s “Do Nothing” Sequencing Patch

Notice that only the computer is used to transfer MIDI data between devices—there are no internal MIDI routings defined.

CH 6: TESTING YOUR STUDIO SETUP DOCUMENT

OMS Setup provides a test mode to check the accuracy of your Studio Setup document.

ENTERING TEST MODE

To enter test mode:

- ① Choose **File>Open Current Studio Setup** if your current Studio Setup document is not active.
- ② Select **Studio>Test Studio**.

The **Test Studio** command toggles test mode on and off. When test mode is active, the **Test Studio** option will have a check next to it. Also, the cursor in the Studio Setup document will change to an eighth note when it's over a MIDI device or interface icon.

TESTING PC-TO-MIDI DEVICE CONNECTIONS

To test the flow of MIDI data from the PC into each of your MIDI devices:

- ① Click a MIDI device icon with the note cursor.
This sends random notes to the device on the MIDI channels on which the device receives. To make sure the notes are audible, a MIDI volume message sets every channel's volume to 127. Listen for a cacophony of notes (or watch your device's MIDI indicator LED).

TESTING MIDI DEVICE-TO-PC CONNECTIONS

To test MIDI data flow from MIDI devices into the PC, each device must be able to generate MIDI data. On controller instruments just strike a key, pluck a string or hit a pad. When the PC receives the MIDI data, the line connecting the two devices blinks.

☆ *NOTE: If your Studio Setup contains MIDI merging (multiple sources into one port), the wrong arrow may flash when testing MIDI connections from devices connected to the merger. When MIDI arrives from a merged source, only one of them is going to flash, and it won't necessarily be the one that really sent the data.*

For devices that have no keyboard, the best way to test MIDI data flow to the PC is to initiate a bulk dump from that MIDI device.

EXITING TEST MODE

- ① Choose **Studio>Test Studio** to turn-off OMS Setup's test mode.