

# **Open Music System (OMS)**

**Version 2.0**

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## **ACKNOWLEDGMENTS**

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# **PART 1: Getting Started with OMS**



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# CHAPTER 1: Overview

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## INTRODUCTION TO THE OPEN MUSIC SYSTEM™ (OMS)

The Open Music System (OMS) is a Macintosh system extension 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 the MIDI hardware in your studio. These applications no longer require their own dedicated MIDI drivers and, therefore, work with a greater variety of hardware.
- **OMS provides a central location for defining and storing a detailed description of your MIDI studio.** With OMS, you enter information about all the devices in your MIDI studio once. OMS-compatible applications then reference that setup. If you change your studio, simply inform OMS of the change and all OMS-compatible applications immediately reflect your new studio configuration.
- **OMS gives you access to hundreds of MIDI channels.** You can use OMS with either a standard Macintosh MIDI interface (such as Opcode's MIDI Translator or

Studio 3) or with multi-port interfaces (such as Opcode's Studio 4 and Studio 5, Mark of the Unicorn's MIDI Time Piece I and II, or Lone Wolf's MIDITap). OMS is like a palette from which you pick the devices and MIDI channels that you'll need. Your MIDI interface determines the number of simultaneous MIDI channels, but OMS gives it access to every device and MIDI channel in your studio.

- **OMS helps manage patch names.** Using the OMS Name Manager, you can keep track of the *names* of the sounds loaded in your devices. Since this service is part of OMS, the name information is available in any OMS-compatible application.

Since OMS is a system extension, its services are available to applications every time you start your computer. It doesn't take up much memory or control the Macintosh serial ports until an OMS-compatible application asks for its services.

## HOW TO READ THIS MANUAL

*NOTE: Macintosh and MIDI experts may be able to start using OMS simply by reading Chapter 4: Easy Setup Procedure and by following the on-line help, referring to other sections of this manual for reference.*

This manual assumes that you are familiar with basic Macintosh operations. If you're not, please read the Macintosh manual. In particular, you should be comfortable with clicking, double-clicking, dragging, choosing, selecting, scrolling, windows and pop-up menus.

Also, you should have a basic understanding of MIDI. If you don't, you may wish to purchase Opcode's Book of MIDI™ Hypercard stack or read one of the many basic MIDI reference books available.

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

This manual is divided into three parts:

- **Getting Started with OMS**—This part includes this introductory chapter, a chapter on software installation and definitions, instructions on connecting MIDI interfaces, and a quick start guide to OMS for users who don't need fine control over their studio setups.
- **Studio Setups In Detail**—This part is a detailed look at the Studio Setup procedure and discusses using the OMS Setup application.

The Name Manager, while a part of OMS, is not discussed in this manual. Refer to the manual for the specific application in which you're using the Name Manager.

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## WHAT THIS MANUAL DOESN'T COVER

OMS provides support for a wide variety of features. In order to help you find just the information that you need, Opcode provides small documents called Technical Publications that address specific topics not covered in this manual. At the time of printing, there are technical publications for:

Publication #	Pub Name
1950401	QuickTime Music OMS Driver
1950402	Using OMS with MIDI Manager
1950403	Using OMS with a MIDI Time Piece
1950404	Using OMS with a MIDI Patchbay
1950405	Special Studio Setup Techniques



Publication #	Pub Name
1950406	OMS Menu Reference
1950501	Performance Tips and Troubleshooting
1950502	Working with Opcode Applications
1950503	Glossary of Terms

Other publications will be made available in the future. To obtain a current list, or to order publications, contact Opcode technical support, or look on Opcode's online support areas. If you can download files from online services, you can download the technical publications right away.

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Phone	415-856-3333 (M-F, 9-5 Pacific Standard Time)
FAX	415-856-3331
FTP	ftp.opcode.com
World-Wide Web	http://www.opcode.com
E-mail	Opcodes@aol.com

## MANUAL CONVENTIONS

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 checkboxes 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:

“Select **Audio>Waveform Height>Tall.**”

What this means in plain English is “select the **Tall** option from the **Audio** menu’s **Waveform Height** submenu.” 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.

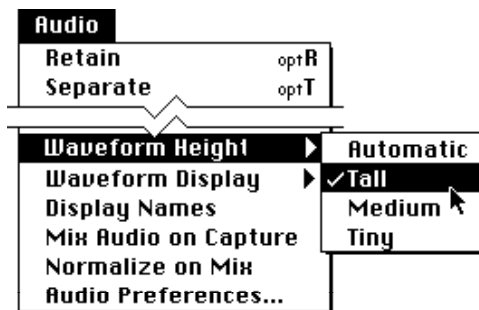


Figure 1.1: Shorthand Invocation of Menu Items

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# CHAPTER 2: Software Installation & Definitions

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## INSTALLING OMS

Your OMS disk contains an installer program that looks like this:



OMS Installer

Figure 2.1: OMS Installer icon

Double-click the installer icon to launch the installer. The installer prompts you each step of the way with yes or no questions. Answer the questions and the installer will automatically put the required files in their proper locations.

**NOTE:** *If you experience a crash when installing OMS, disable all extensions (restart the Macintosh while holding down the Shift key) and run the Installer again.*

### What's Installed

The Installer places all the necessary OMS files onto your hard disk automatically. After running the Installer and restarting your Macintosh, you can begin to use OMS.

This chapter lists exactly what files the Installer places onto your hard disk and where it places them.

If you are updating from an older version of OMS, your previous Studio Setup documents will be read by the new OMS Setup application.

**CAUTION:** *Do not relocate or rename any files or folders that the Installer places in the System Folder. You may delete unnecessary files, but some files are essential for OMS operation. See Software Definitions (pg. 8) for more information.*

Here is an overview of the OMS file layout:

- The Open Music System extension is placed into the Extensions folder.
- A folder named OMS Folder is created within the System Folder and OMS drivers are placed inside it.
- OMS applications are placed inside a folder that you name during the installation process. The default name is "OMS applications".

You can move the applications folder, but the extension and OMS Folder must remain in their initial locations.

## SOFTWARE DEFINITIONS

This section describes each file that the installer could possibly place on your hard disk. If, after reading the definition, you are sure you won't need the file, you can throw it away. For instance, if you don't have a Studio 3 interface, there is no reason to have the Studio 3 OMS Driver on your hard drive.

Future releases of OMS may add new files or features, so consult the READ ME document on your master disk for additional information.

### Drivers

OMS drivers allow OMS to work with a variety of products that either connect to the Macintosh, or live inside it. You may remove any drivers that you don't need from your hard disk. Drivers are located in the OMS Folder inside your System Folder. The following drivers are currently available:



Standard Interface OMS driver

Provides the ability for OMS to work with any standard Macintosh MIDI Interface (such as a MIDI Translator, or Studio Plus Two).



Modem/Printer OMS Driver

A serial hardware driver, designed to allow MIDI interfaces to be connected in a hardware independent fashion. At the moment it only supports the built-in modem and printer ports, but may in the future support other serial hardware.



MIDI Time Piece OMS Driver

Provides the ability for OMS to work with a Mark of the Unicorn MIDI Time Piece.



SampleCell OMS Driver

Provides the ability for OMS to work with a Digidesign SampleCell card (v1.2 or higher), without requiring MIDI Manager.



MacProteus OMS Driver

Provides the ability for OMS to work with a Digidesign MacProteus card.



Studio 3 OMS Driver

Use this driver if you have an Opcode Studio 3 MIDI interface connected to the Macintosh. It adds a special Studio 3

menu to OMS Setup that allows you to configure the interface's SMPTE functions and ports.



Studio 4 OMS Driver

This driver allows OMS to work with Opcode's Studio 4 interface.



Studio 5 OMS Driver

This driver allows OMS to work with Opcode's Studio 5 interface.



Studio Patches

This driver is the companion to the Studio 5 OMS Driver. It allows the Studio 5 to use Studio Patches. See the Studio Patches Manual for details.



OMS IAC Driver

Provides support for Inter-Application Communication.



Quicktime Music OMS Driver

Allows OMS to access the music support built in to Quicktime 2.0 and later.



MwM OMS Driver 2.2

Allows OMS to access the MacWave-Maker card.



ProSync OMS Driver

This driver allows OMS to work with Opcode's Translator ProSync interface.

## Open Music System



Open Music System

This is the system extension that routes MIDI between applications and MIDI devices. You should not remove this file from your hard disk.

## Applications



OMS Setup

OMS Setup is an application that you use to tell OMS about your MIDI studio. This information is contained and displayed in a Studio Setup document. You can create more than one Studio Setup document to

mirror more than one studio setup, but you can only use one Studio Setup document at a time.

If you change the connections in your MIDI studio or add or remove a device, use the OMS Setup application to make the corresponding changes in the Studio Setup document or create a new document that accurately represents the changes.

You should not remove this application from your hard disk.

If you have a relatively uncomplicated studio configuration, you can use OMS' "Easy Setup" feature to automatically create Studio Setup documents. See *Studio Setup Documents* (pg. 11) for more information.



Studio Patches Editor

This application allows you to create patches for Opcode's Studio 4 and Studio 5 multi-port interfaces. For more information, see the Studio Patches Manual.

## OMS Device Database



OMS Device Database

This file contains information about various MIDI devices. It partially determines which devices appear in the manufacturer/model menus in OMS Setup (Other

applications may install their own additions to OMS Device Info as separate files and, if you use Galaxy, any devices in the Galaxy Installed Modules file are added to the manufacturer/model menus). The manufacturer/model menus are discussed in Chapter 7: Defining MIDI Devices. You should not remove this file from your hard disk.

## OMS Name Manager



OMS Name Manager

The OMS Name Manager is a component of OMS that supports sharing of patch, note and control names between applications.

## Name Providers

A name provider is a module that retrieves names from an application's documents.



Galaxy Name Provider

OMS comes with this module for interfacing with Opcode's Galaxy patch librarian software.



Studio Patches Name Provider

This module allows OMS to retrieve patch names from Studio Patches documents. (See the Studio Patches manual for more information.)

## OMS Time Manager



OMS Time Manager

The Time Manager is a component of OMS that provides timing service. With this module, diverse applications can be synchronized to one clock source—OMS.

## Serial Switch



Serial Switch

The serial switch is required for the following computers: IIfx, Quadra 900, Quadra 950. If you have one of these computers, then you must use this control panel in order to use MIDI applications. Choose “Compatible” instead of “Faster” in the control panel if you’re running MIDI applications. The Serial Switch is installed automatically only if you have one of the requisite computers. If you do not use these computers, and you’ve manually installed the Serial Switch, you may remove it from your hard disk.

## Factory Names Folder

Any device that comes with default patches can list their names in a file which goes inside the Factory Names folder. These names will always be available in programs that make use of the OMS Name Manager.

## OMS Preferences Folder

Customized choices and a reference to your current Studio Setup are stored in files within this folder.

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## STUDIO SETUP DOCUMENTS

The centerpiece of OMS is the Studio Setup Document. This is a file that is created automatically by OMS, or manually by you, that contains information about:

- MIDI interface hardware physically connected to the Macintosh (eg: Studio 4 Interface, MIDI Time Piece)
- Cards inside the Macintosh (eg: Samplecell, MacProteus)
- “Virtual Devices” (eg: QuickTime Music driver)
- MIDI devices connected to MIDI interfaces (eg: drum machines, synthesizers, etc.)

You can 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 such as Vision, Galaxy, MAX, Overture and others. 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.

Remember, Easy Setup was designed to be a “quick and dirty” way to get going. If you have a complicated studio configuration (eg: devices connected via MIDI Thru jacks, or devices whose input and output port numbers aren't the same), you will need to use the OMS Setup application to create a custom Studio Setup document.

## Easy Setup vs. Custom Setup

There are two methods for defining a Studio Setup document:

- Easy Setup: this automated procedure is invoked when there is no current Studio Setup document and an OMS-compatible application is opened. Chapter 4: Easy Setup Procedure describes this method.
- Custom Setup: if you need a higher degree of control, you can use the OMS Setup application to create customized Studio Setup documents. This procedure is described in Chapter 5: Creating a New Studio Setup Document, and the rest of Part 2.



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## CHAPTER 3: Connecting your MIDI Studio

In this chapter you'll connect the various interfaces and MIDI devices in your studio. All MIDI studios are different, so the techniques discussed in this chapter are very general. You should consult the manuals that came with your MIDI devices and interfaces to set up the best MIDI studio for your needs.

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### CONNECT YOUR MIDI INTERFACE TO YOUR MACINTOSH

If you have not already done so, connect your MIDI interface to the Macintosh and your MIDI devices to the interface. Consult your interface and synthesizer manuals for more details. The following examples will aid you in connecting your devices. Follow the example that most closely resembles your MIDI studio.

If your MIDI studio is already connected, you can skip this chapter.

### Connecting a Single Port Standard MIDI Interface

This example assumes that you have a single-port standard MIDI interface connected to the Macintosh Modem port and to three MIDI synthesizers.

- ① Turn off power to both your Macintosh and your MIDI interface.
- ② Attach your MIDI interface to either the Macintosh Modem port or Printer port.

This example assumes you'll use the Modem port.

- ③ Connect standard MIDI cables from the MIDI IN connectors of each synthesizer to the MIDI OUT connectors on the Macintosh interface.
- ④ Connect a standard MIDI cable from the MIDI OUT connector of your master controller to the MIDI IN connector on the interface box.
- ⑤ Turn on your MIDI interface and your Macintosh.

Figure 3.1 illustrates a simple studio with a single port standard MIDI interface.

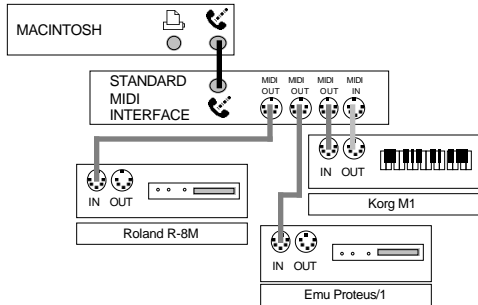


Figure 3.1: Standard One-Port MIDI Interface

## Connecting a Multi-Port Interface

This example assumes that you have a multi-port MIDI interface connected to both Macintosh serial ports.

- ① Turn off power to both your Macintosh and your interface.
- ② Connect either or both of the Macintosh serial ports to the interface.

This example assumes that you connect both.

- ③ Connect MIDI devices to like-numbered pairs of MIDI ports on the interface.
- ④ Turn on your interface and Macintosh.

Figure 3.2 illustrates a simple studio incorporating a Studio 5. Use similar connections for the Studio 4, MIDI Time Piece or other multi-port interfaces.

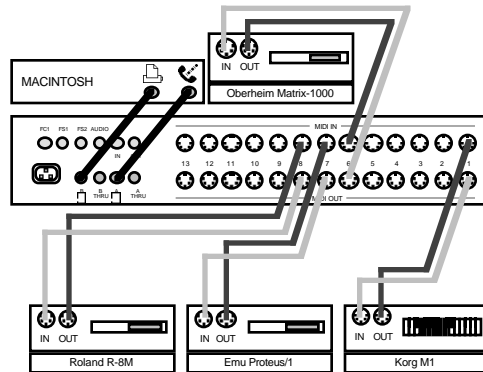


Figure 3.2: Studio 5 Two-Port Connection

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## CHAPTER 4: Easy Setup Procedure

If you're in a hurry to get started, you can use OMS' "Easy Setup" feature to quickly create Studio Setup documents.

This chapter assumes that you have hooked up your MIDI interfaces, cards and devices. If you haven't, do so now. If you don't know how, see Chapter 3: Connecting your MIDI Studio and the manuals supplied with your interfaces and devices.

Before continuing, make sure that you've restarted your Macintosh after installing OMS.

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### USING THE EASY SETUP PROCEDURE

- ① Open any OMS-compatible application, such as Vision.
- ② If AppleTalk is active, you'll see the dialog box shown in Figure 4.1.

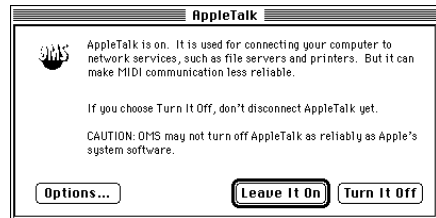


Figure 4.1: AppleTalk Alert Dialog Box

You should not use AppleTalk with MIDI applications, so...

- ③ Click **Turn it Off** in the AppleTalk Alert box to turn off AppleTalk.

You'll see the dialog box shown in Figure 4.2

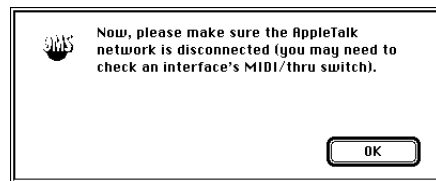
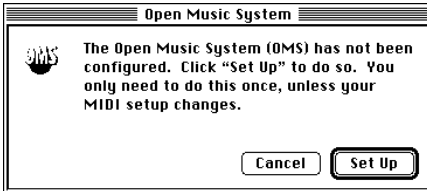


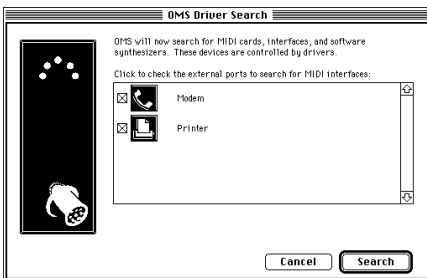
Figure 4.2: Disconnect AppleTalk Dialog Box

- ④ Disconnect your AppleTalk network and click **OK**.
- ⑤ OMS warns you that there is no current Studio Setup information.



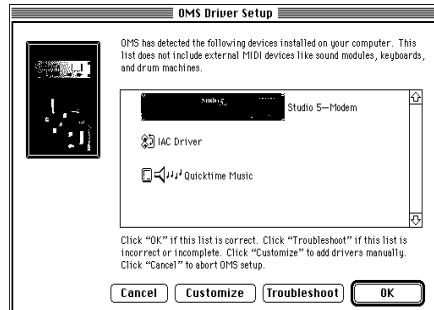
Click **Set Up** to start the Easy Setup procedure.

- ⑥ **A dialog box appears with checkboxes for both serial ports. Check the serial ports that you want OMS drivers to search for interface hardware.**



Ports without MIDI interfaces should NOT be checked. Checking non-MIDI ports can cause your computer to crash.

- ⑦ **Click Search to continue.**  
OMS asks all the installed OMS drivers to look for hardware or software that they can communicate with. When all the drivers have had their turn, the following dialog box appears:



- ⑧ **At this stage, you have four choices:**  
You can click **Cancel** to abort the entire procedure.

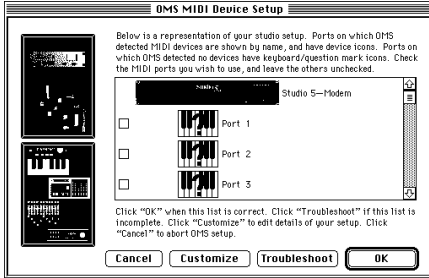
If you want to add interfaces to OMS manually, click **Customize**. You will be presented with each possible interface in turn and asked to click **Add** or **Don't Add**.

If the automatic process didn't work, you can click **Troubleshoot**. OMS will present you with some information about possible sources of trouble and offer to scan again for interfaces.

If your setup was properly identified, click **OK**.

- ⑨ **Once you have supplied a valid list of interfaces, OMS begins identifying connected devices.**

Some MIDI devices can provide information about themselves. If OMS can automatically identify a device, its name will appear in the identified device list.



It is unlikely that OMS will successfully identify all your devices. However, if you have devices that you think should have been identified, but weren't, click **Troubleshoot** to view a checklist of common problems with auto-ID.

- ⑩ **Check the ports to which MIDI devices are connected. For example, if you have devices on ports 3 and 5, make sure the boxes for ports 3 and 5 are checked before clicking **OK**.**

You have now created an “Easy Setup” Studio Setup document. OMS-compatible applications will refer to automatically identified devices by name. Ports containing devices that aren't automatically identified are named generically (eg: “Port 7”) and have all 16 MIDI channels enabled for transmitting and receiving.

Automatically created setups are given names like “Auto Setup 8/21/95, 6:53 PM”, and stored in the OMS Folder. You can open and modify them using OMS Setup



# **PART 2: Studio Setups In Detail**





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# CHAPTER 5: Creating a New Studio Setup Document

In this chapter you'll use the OMS Setup application to open a new Studio Setup document that contains device drivers for all MIDI interfaces, cards, and "virtual devices" (such as the QuickTime Music driver) that are connected to your Macintosh.

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## LAUNCHING THE OMS SETUP APPLICATION

- ① **Double-click the OMS Setup icon located on your hard disk to open the OMS Setup application.**



Figure 5.1: OMS Setup Icon

## AppleTalk

If AppleTalk is active the first time you launch OMS Setup, you'll see the dialog box shown in Figure 5.2. If AppleTalk is not active, you will not see this dialog box and can proceed to *Configuring OMS* (pg. 22).

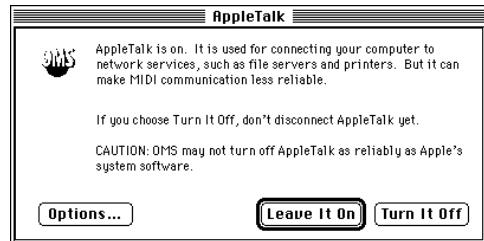


Figure 5.2: AppleTalk Alert Dialog Box

You should not use AppleTalk with MIDI applications, so...

- ② **Click **Turn it Off** in the AppleTalk Alert box to turn off AppleTalk.**

OMS Setup remembers whether you want AppleTalk on or off, and future alert boxes display your previous AppleTalk preference as the default (highlighted) button.

You'll see the dialog box shown in Figure 5.3

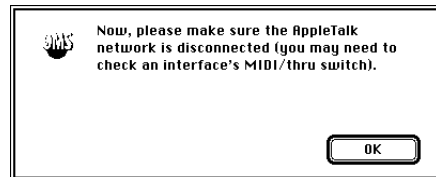


Figure 5.3: Disconnect AppleTalk Dialog Box

- ③ **Disconnect your AppleTalk network and click **OK**.**

**BACKGROUND:** *AppleTalk is the Macintosh communication protocol for local area networks (LANs). If AppleTalk is active, and LocalTalk is selected in the Network control panel, no MIDI communication can take place over the Printer port and MIDI communication is made less reliable over the Modem port.*

## CONFIGURING OMS

After double-clicking the OMS Setup application and disabling AppleTalk (if necessary), you'll see the dialog box shown in Figure 5.4.

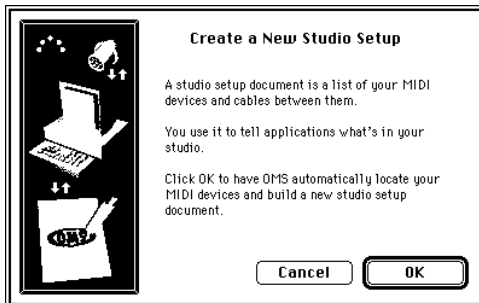
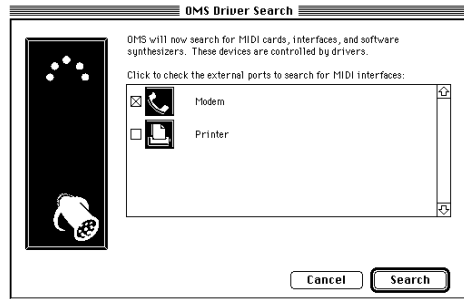


Figure 5.4: Configuring OMS Dialog

Click **OK** to proceed. The following dialog box appears:



OMS drivers will scan the ports of your machine for connected MIDI interfaces. Check the serial ports you want searched.

Click **Search** to begin. OMS asks its drivers to search the selected port(s) for MIDI interfaces and the Macintosh for MIDI cards (such as SampleCell or MacProteus) or “virtual devices” (such as the QuickTime Music driver).

When the search is complete, you will see the following dialog box:

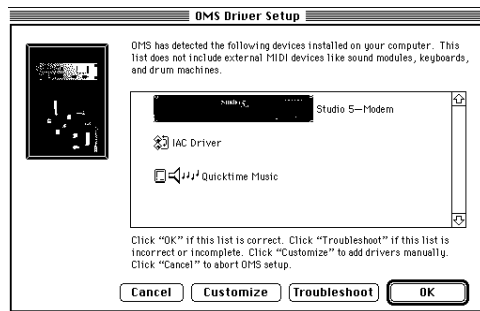


Figure 5.5: Completed search dialog box

At this stage you have four options:

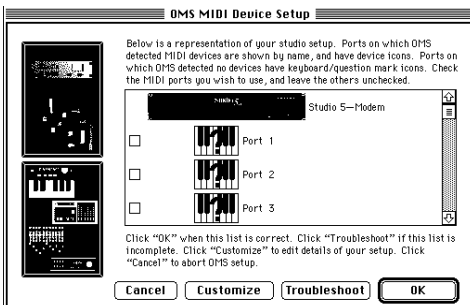
- You can click **Cancel** to abort the entire procedure.

- If you want to add interfaces to OMS manually, click **Customize**. You will be presented with each possible interface in turn and asked to click **Add** or **Don't Add**.
- If the automatic process didn't work, you can click **Troubleshoot**. OMS will present you with some information about possible sources of trouble and offer to scan again for interfaces.
- If your setup was properly identified, click **OK**.

## Device Identification

After locating the interfaces, OMS queries all possible ports for device identification. Some newer MIDI devices can tell OMS their manufacturer and model. Any devices you have that are capable of supplying this information will be automatically configured into the Studio Setup document. If nothing shows up, you have to enter the device information manually. This is discussed in Chapter 7: Defining MIDI Devices.

When the Device ID process is finished, the following dialog appears:



The four available buttons function similarly to the ones described in the Interface Search section. The following differences apply:

- **Customize** and **OK** both proceed to the normal Studio Setup document window/Studio Setup document window.

## Examples

The simple MIDI studio example shown in Figure 3.1 on page 14 produces the Studio Setup document shown in Figure 5.6.

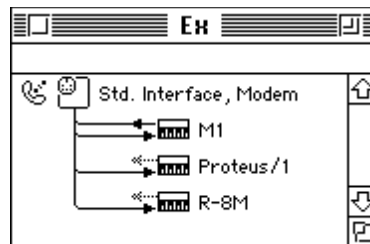


Figure 5.6: New Studio Setup Document for Figure 3.1

Similarly, the studio shown in Figure 3.2 on page 14 produces the Studio Setup document shown in Figure 5.7.

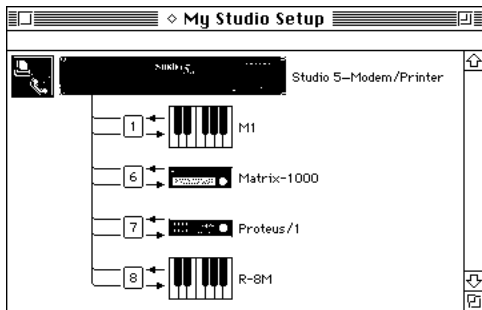


Figure 5.7: New Studio Setup Document for Figure 3.2

## SAVING THE STUDIO SETUP DOCUMENT

At this point, OMS Setup will display a directory dialog box. Use it to save your Studio Setup document with whatever name you like. The document will be saved and “made current.”

When you make a Studio Setup document current, you tell OMS that this document accurately reflects the connection and configuration of your MIDI devices. OMS applications derive their knowledge of your studio only from the current Studio Setup document. You may have several Studio Setup documents, each of which reflects different studio configurations (or studios). Only one Studio Setup docu-

ment, however, can be the current document. The current Studio Setup document is indicated by a small diamond to the left of its name (as illustrated in Figure 5.8).

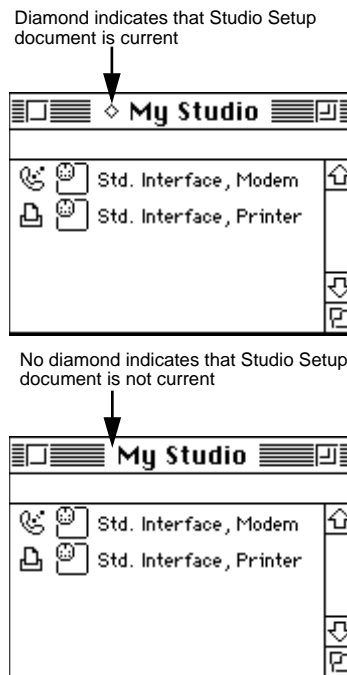


Figure 5.8: Indicating Current Studio Setup Document

## SMALL AND LARGE ICONS

OMS can display icons in a Studio Setup document in either small or large format. This is user-configurable and is controlled through the icon size parameter on the **Edit>Preferences** dialog box.

Throughout the rest of this manual we will show Studio Setup documents in the *small* icon view.

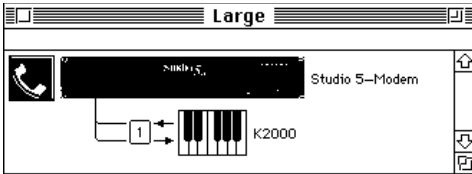


Figure 5.9: Large icon Studio Setup

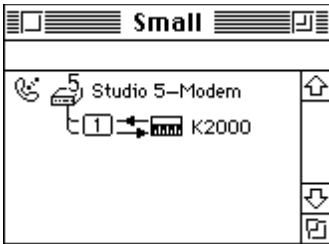


Figure 5.10: Same setup, small icon view



# CHAPTER 6: Configuring the OMS Drivers

Now that you have a Studio Setup document that recognizes all MIDI interfaces and MIDI cards attached to your Macintosh, you'll need to verify the configuration of their OMS drivers. For Opcode interfaces, check the manual that comes with the interface for details.

This chapter tells you how to configure drivers for non-OMS devices. Just read the sections, if any, that pertain to your studio, then proceed to the next chapter.

## STANDARD INTERFACE

If the Standard Interface OMS driver is in your OMS folder and one or more standard MIDI interfaces are connected to the Macintosh, you'll see a standard interface icon for each port that OMS Setup finds connected to a standard interface.

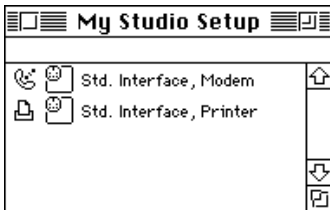


Figure 6.1: Studio Setup Document w/Standard Interfaces

- ① Double-click each interface icon in your Studio Setup document to open its port configuration dialog box.

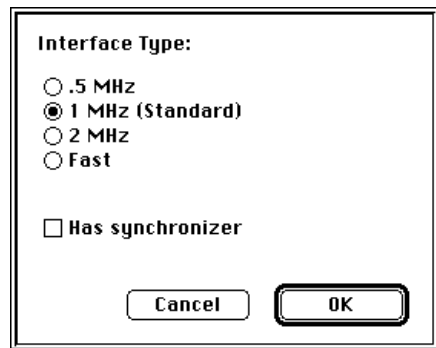


Figure 6.2: Standard Interface Configuration Dialog

- ② Select the appropriate clock frequency setting for your interface.

This is usually determined automatically. See your interface manual if you have problems.

- ③ Select "Has synchronizer" if the interface connected to this port has built-in synchronization functions.

- ④ Click **OK**.

## SAMPLECELL

OMS Setup displays one SampleCell icon for each SampleCell card found by OMS Setup.

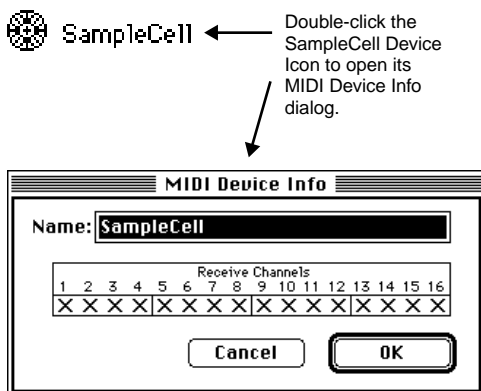


Figure 6.3: SampleCell Icon and Device Info Dialog

- ① Double-click each SampleCell icon to open its MIDI Device Info dialog box.
- ② Use this dialog box to rename the device (if desired) and to set the MIDI receive channels for each SampleCell card.

Make sure you have version 1.2 or higher of the SampleCell editor and the SampleCell driver. Remove the SampleCell MIDI Manager driver from your System Folder if you're using the OMS driver. The only time you need the original SampleCell MIDI Manager driver is if you choose to use MIDI Manager without OMS.

## MACPROTEUS

OMS Setup displays one MacProteus icon for each MacProteus card found by OMS Setup.

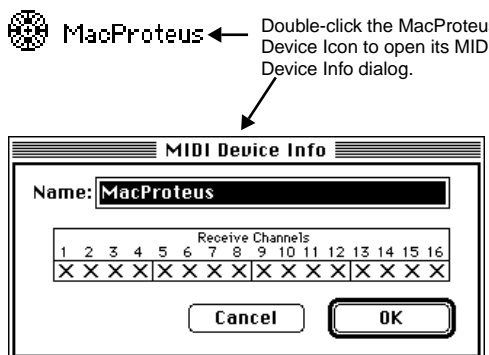


Figure 6.4: MacProteus Icon and Device Info Dialog

- ① Double-click each MacProteus icon to open its MIDI Device Info dialog box.
- ② Use this dialog box to set the MIDI receive channels for each card and to rename the device (if desired).

Keep the MacProteus MIDI Manager driver in your System Folder if you wish to use the MacProteus Front Panel application—otherwise you can remove it.

The MacProteus Batteries INIT is compatible with the OMS MacProteus driver.



# CHAPTER 7: Defining MIDI Devices

Now that you've saved a current Studio Setup document that's properly configured for your MIDI interface and cards, you'll need to define your various MIDI devices.

This chapter tells you how to use OMS Setup to define MIDI devices (such as synthesizers, MIDI effect units and MIDI controllers).

## DEFINING MIDI DEVICES

In this section, you'll define all the MIDI devices in your studio.

- ① **If the current Studio Setup document isn't already open, choose File>Open Current Studio Setup.**

New devices are connected to the first interface in the Studio Setup document automatically. You can connect new devices to some other interface or MIDI device by selecting it prior to defining the new device.

Follow through these steps for each MIDI device in your studio.

- ② **Choose Studio>New Device to open a MIDI Device Information dialog box.**

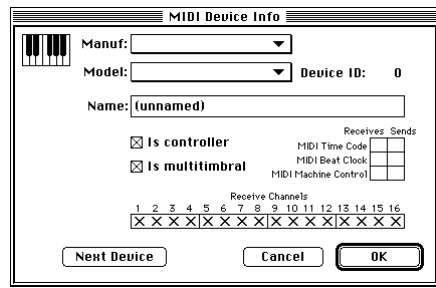


Figure 7.1: Device Info Dialog Box

- ③ **Choose a manufacturer from the pop-up Manufacturer menu by clicking the pop-up menu, dragging to the desired manufacturer and releasing the mouse.**

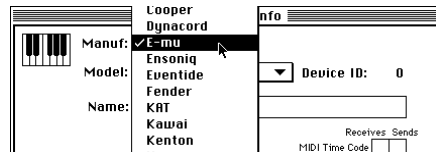


Figure 7.2: Choosing a MIDI Device's Manufacturer

- ④ **Choose a model from the pop-up Model menu by clicking the pop-up**

menu, dragging to the desired model and releasing the mouse.

For many devices, this will automatically set the “Is controller” and “Is multitimbral” boxes to their proper settings.

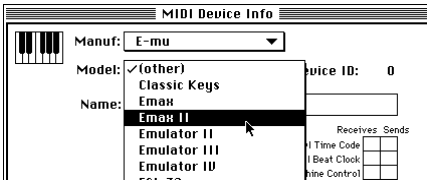


Figure 7.3: Choosing a MIDI Device's Model

If OMS doesn't list your MIDI device or if you wish to refer to the device by a different name, type a name into the Name field.

⑤ **Check the appropriate Controller and Multitimbral check boxes.**

Check the “Is controller” check box if your MIDI device sends MIDI note or control data.

Check the “Is multitimbral” check box if the MIDI device responds to MIDI on more than one channel.

⑥ **Check all the MIDI channels that will receive data.**

If the “Is multitimbral” check box is not checked, your device can receive on only one MIDI channel. If the “Is multitimbral” check box is checked, you can select multiple receive channels.

⑦ **Set the Device ID numerical to match the device ID setting of your MIDI device.**

If you'll be sending patches (or other system exclusive data) to and from a device, you'll need to set the Device ID numerical to match your unit's device ID.

The Device ID numerical is set automatically to the MIDI Receive Channel if the “Is multitimbral” check box is not checked. You can enter a different Device ID number if you wish. If you don't know how to set a numerical, see Appendix A.

⑧ **Check the appropriate MIDI Time Code check boxes.**

You need to check these boxes only if you intend to use MTC for synchronization and your MIDI Device sends or receives MIDI Time Code. Most common MIDI devices do not send or receive MIDI Time Code.

⑨ **Check the appropriate MIDI Beat Clock check boxes.**

Many modern MIDI drum machines and synthesizers with built-in sequencers are able to send and receive MIDI Beat Clock. You should check these boxes if you want to synchronize playback of these various devices. Check the “Sends MIDI Beat Clock” check box if your MIDI device receives MIDI Beat Clock and you intend to slave another device or Macintosh application to that timing data. Check the “Receives MIDI Beat Clock” check box if your MIDI device receives MIDI Beat Clock and you intend to synchronize the device to another timing source.

- ⑩ **Check the appropriate MIDI Machine Control check boxes.**

Repeat these steps for every MIDI device in your studio.

- ⑪ **Choose File>Save to save your Studio Setup document.**

**NOTE:** *If you select an interface in the Studio Setup document prior to defining a new device, the newly defined device will be connected to the selected interface. If you do not select an interface, the new device will be connected to the first interface in the Studio Setup document. For more information about manipulating device connections, see Chapter 8: Connecting Devices in the Studio Setup Document.*

## MIDI Device Example

Figure 7.4 illustrates a typical device.

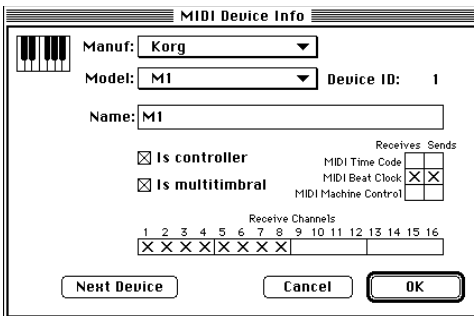


Figure 7.4: Sample Korg M1 Device Description

This example shows an M1 synthesizer. The M1 is a multitimbral instrument with an on-board sequencer. It can send and receive MIDI Beat Clock, has a keyboard for generating notes and can respond on

eight MIDI channels at once (selection of channels 1-8 was arbitrary—you can use any MIDI channels you want).

## EDITING A DEVICE

You can edit MIDI devices in your Studio Setup document. This is useful when you change a device or make a mistake. To edit a MIDI device:

- ① **Click the device to select it and choose MIDI Device Info from the Studio menu.**

Alternately, you can double-click the device icon to open its MIDI Device Info dialog automatically.

- ② **Make any necessary changes, then click the OK button.**

- ③ **Choose File>Save to save your current Studio Setup document and its changes.**

If you only want to edit a device's icon:

- ① **Select the device and choose Device Icon from the Studio menu.**

Alternately, you can option-double-click the device icon to open its Device Icon dialog box.

- ② **Choose a new icon, then click the OK button.**

- ③ **Choose File>Save to save your current Studio Setup document and its changes.**



---

## CHAPTER 8: Connecting Devices in the Studio Setup Document

In this chapter, you'll connect all the device icons in your Studio Setup document to mirror the way that actual MIDI devices are 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.*

---

### AUTOMATIC DEVICE CONNECTION

At this point in the tutorial, every OMS user will have a very different Studio Setup document. Before the tutorial proceeds, you should know a little about how devices connect in the Studio Setup document.

If an interface is not highlighted when you select New Device, the new device is added at the top of the studio setup window, “floating” unconnected to any interface. Otherwise, the device is added to the first available interface.

If the Studio Setup document doesn't reflect the connections between your MIDI devices and interfaces, you'll need to make manual device connections. Rearranging device icons in your Studio Setup document is easy, and is discussed in the following section.

---

### MANUAL DEVICE CONNECTION

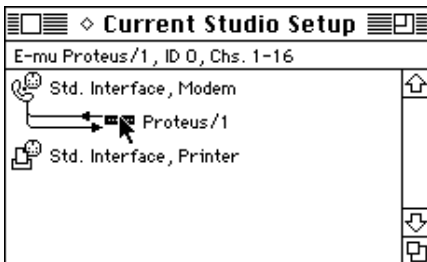
To connect a device to an interface or other MIDI device:

- ① **Click and hold the mouse on a device.**
- ② **Drag the mouse to the MIDI interface or other device to which you want it connected.**

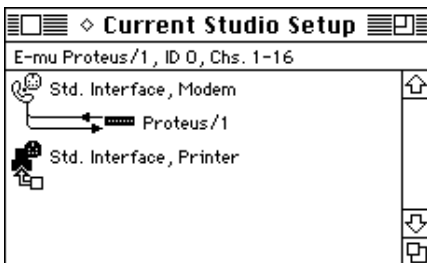
- ③ **Release the mouse when the device to which you want to connect becomes highlighted.**

Figure 7.5 shows a simple example of this process.

1. Click and hold the mouse button on the device you want to move.



2. Drag the mouse to the device to which you're connecting the dragged device.



3. Release the mouse button.

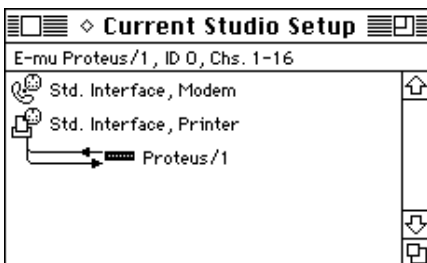


Figure 7.5: Connecting Devices Manually

Figure 7.6 illustrates some typical device connections.

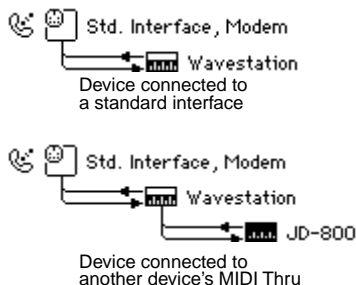


Figure 7.6: Various Device Connections

You can open a Define Device dialog box for a device by double-clicking the device icon. You can edit the name of any device in the Studio Setup document by selecting the name and typing a new name.

## DISCONNECTING CABLES

A connected device is represented by 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.

Your studio may contain some devices that have only one MIDI cable connected to them. You can represent this connection by disconnecting a cable in the Studio Setup document. To do so:

- ① **Click a cable's directional arrow to remove that cable from the Studio Setup document.**

A gray arrow remains beside the device icon, indicating where to click if you want to reconnect that cable. The right-most illustration in Figure 7.6 shows a disconnected cable.

Your studio may also contain some devices that are not connected to anything—they're in your studio, but they're not in use. You can define these devices in a Studio Setup document and still show that they're completely disconnected. To do so:

- ① **Click both cables' directional arrows to remove the cables from the Studio Setup document.**

The MIDI device is disconnected and moves automatically to the top of the Studio Setup document.

## CONNECTING DEVICES TO MULTI-PORT INTERFACES

The Studio 4, Studio 5 and MIDI Time Piece are multi-port MIDI interfaces with built-in MIDI routing abilities—they have numerous ports to which you connect MIDI devices, and can be networked for even more MIDI port pairs. Figure 7.7 illustrates a Studio Setup document containing a Studio 5 and eight MIDI devices.

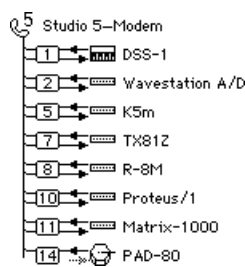


Figure 7.7: Studio 5 with Devices Connected

Port numbers for a multi-port interface are represented by small, boxed numerals in the MIDI path to each device. You must set the Studio Setup document's port numbers to match each device's multi-port interface number.

① **Select a port number by clicking it.**

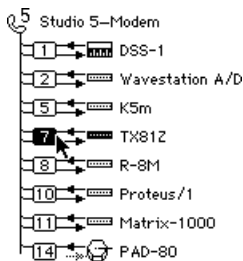


Figure 7.8: Selecting a Port Number

② **Type the number of the port pair to which that MIDI device is connected.**

You can also set a port by dragging the mouse vertically up and down while holding down the mouse button. Numerical editing is discussed in the “Working With Opcode Applications” Technical Publication.

## Multi-Port Interfaces and OMS-Compatible Applications

In general, if you choose a multi-port interface as a MIDI data source within an OMS-compatible application, only data generated by that interface (not data from the attached devices) is sent to the Macintosh. If the application needs to receive data from an attached device, you should choose that device as a MIDI data source within the OMS-compatible application. Specifically:

- **Studio 4:** In OMS-compatible applications, if you choose the Studio 4 as a MIDI data source, only timecode from the Studio 4 and MIDI beat clock from any devices connected to the Studio 4 are sent to the applica-

tion—other types of MIDI data from devices attached to the Studio 4 are not sent. Select devices by name (rather than selecting the interface) if you want to use them as non-sync MIDI sources.

- **Studio 5:** In OMS-compatible applications, if you choose the Studio 5 as a MIDI data source, only data generated by the Studio 5 (timecode, footswitches and audio events) is sent to the application—other types of MIDI data from devices attached to the Studio 5 are not sent. Select devices by name (rather than selecting the interface) if you want to use them as MIDI sources.

**NOTE:** For further details about using the Studio 4 or Studio 5 with OMS, see their respective manuals. For additional information about the MIDI Time Piece, see the MIDI Time Piece Technical Publication.



## EXAMPLES

At this point in the tutorial, the simple MIDI studio example shown in Figure 3.1 on page 14 would have the Studio Setup document shown in Figure 7.9.

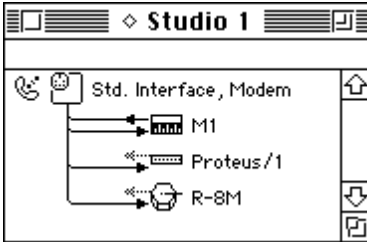


Figure 7.9: Complete Studio Setup Document for Figure 3.1

Similarly, the studio shown in Figure 3.2 on page 14 would have Studio Setup document shown in Figure 7.10.

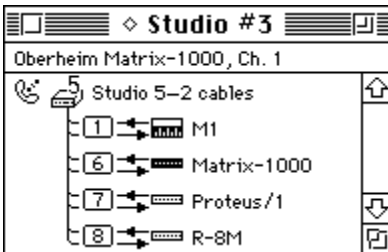


Figure 7.10: Complete Studio Setup Document for Figure 3.2



---

# CHAPTER 9: Testing your Studio Setup Document

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

---

## ENTERING TEST MODE

- ① Choose **Open Current Studio Setup** from the **File** menu if your current Studio Setup document is not active.
- ② Choose **Test Studio** from the **Studio** menu.

The Test Studio command toggles test mode on and off. When test mode is active, Test Studio will have a check next to it in the Studio menu. 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 MAC-TO-DEVICE CONNECTIONS

You can test the flow of MIDI data from the Macintosh into each of the MIDI devices.

- ① Click a MIDI device icon with the note cursor.

This sends random notes to the device on the MIDI channels to which the device listens. 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 for MIDI indicating LED's) when you click a device icon.

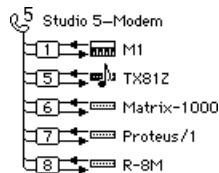


Figure 8.1: Testing MIDI Device Inputs

---

## TESTING DEVICE-TO-MAC CONNECTIONS

To test MIDI data flow from MIDI devices into the Macintosh, 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 Macintosh receives the MIDI data, a voice from the Macintosh says “MIDI received” and the line that represents the MIDI cable in the Studio Setup document flashes. The “MIDI received” message will not re-trigger more than once every five seconds, but the flashing line will continue to indicate data arrival.

*NOTE: If your Studio Setup contains MIDI merging (multiple sources into one port), the wrong arrow may flash when testing MIDI connections from devices to the Macintosh. When MIDI comes in from any of those sources, 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 Macintosh is to initiate a bulk dump from that MIDI device.

---

## LEAVING TEST MODE

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

---

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