version: Digi-061799

Table of Contents

READ   THIS ! ...   READ   THIS ! ....

Included with DigiPatch 12x6™ are factory diskettes containing Mac and PC DigiPatch applications.   Either of these programs can be installed on your computer in the conventional manner .

FCC Class B and CE Compliance

WARNING: This equipment has been tested and found to comply with the limits for a CLASS B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions contained in this manual, may cause harmful interference to radio and television communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: 1) reorient or relocate the receiving antenna; 2) increase the separation between the equipment and the receiver; 3) connect the equipment into an outlet on a circuit different from that of the receiver; 4) consult the dealer or an experienced audio television technician.

NOTE: Connecting this device to peripheral devices that do not comply with CLASS B requirements or using an unshielded peripheral data cable could also result in harmful interference to radio or television reception.

The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

To ensure that the use of this product does not contribute to interference, it

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is necessary to use shielded I/O cables.

This product also complies with European CE requirements.

Features

The DigiPatch 12x6 is an automated patchbay which routes digital audio connections between gear equipped with S/PDIF and Adat* compatible digital audio connectors. The DigiPatch 12x6 has the following features:

- Twelve completely independent sources: six coaxial (RCA) inputs and six optical (EIAJ) inputs.

- Six targets: one coaxial output and one optical output per target.

- 50 non-volatile internal patch configurations can be programmed, stored, and recalled at any later time.

- All connections are "format neutral" and can be used for S/PDIF or Adat.

- Works with all digital audio format converters and swiss-army knives.

- Performs simple coaxial-to-optical and optical-to-coaxial translations for S/PDIF signals.

- Built-in MIDI thru function for easy hook-up to any existing MIDI setup.

- Multiple DigiPatch 2patchbays can be cascaded together for even more ins and outs.

- DigiPatch can be programmed from the front panel, or controlled remotely from a computer using DigiPatch Panel™ software for Mac or PC included with the unit.

- The perfect companion for synthesizers, HD recorders, MDMs, digital mixers, digital mic preamps, stand alone ADCs and DACs, effects processors, etc.

- Single height, full rack mount enclosure.

- Rugged all steel construction.

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* Adat is a registered trademark of Alesis Corporation

Overview

Thanks for choosing a DigiPatch to automate your digital audio routings. Like the name says, the DigiPatch 12 x 6 is a twelve by six digital audio patchbay. It has twelve completely independent inputs called sources, and six PAIRS of outputs called targets.

Patchbay connections are made from the perspective of the target. In other words, you first choose which target to edit, and then choose the source for that target. Once you have selected the sources for the desired targets you can store this setup into a program and recall it later.

If you're already using digital audio gear you'll find the DigiPatch to be very easy to operate. If you are new to digital audio (and digital audio connections) you're facing a small learning curve. The most important rule to remember is this:

Please Note: The DigiPatch is a simple switching matrix. It routes digital ones and zeros from one connector to another. It can be used for optical-to-coaxial and coaxial-to-optical conversions. It does not "decode" or "listen to" the digital audio signals. In particular, it doesn't know the difference between an S/PDIF signal and an Adat signal. It will not prevent you from making nonsensi-

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**cal connections between the two formats.**

Installation

Your DigiPatch box should contain this manual, the power transformer, and the unit itself. Save all packing materials in case you should ever want to ship the unit.

The DigiPatch takes up one space in a standard 19" equipment rack. Install it as you would any other piece of gear, but keep in mind that digital audio cable lengths should be as short as possible.

There are no special rules for deciding which of the DigiPatch's connectors to use with the various devices in your setup. You should keep in mind however, that a DigiPatch target is a PAIR of output connectors. This means that any signal that is transmitted from optical output N is also transmitted from coaxial output N. Even Adat signals!

The most straightforward approach is to keep a one-to-one relationship between devices and I/O numbers. For example: To hook up an Adat, connect optical input 1 on the DigiPatch to the Adat's digital out, then connect optical output 1 on the DigiPatch to the Adat's

digital in.

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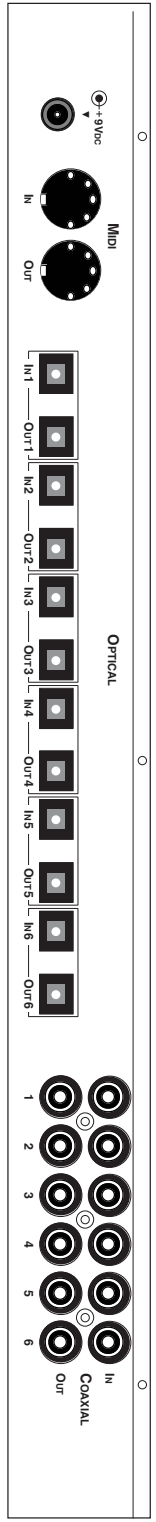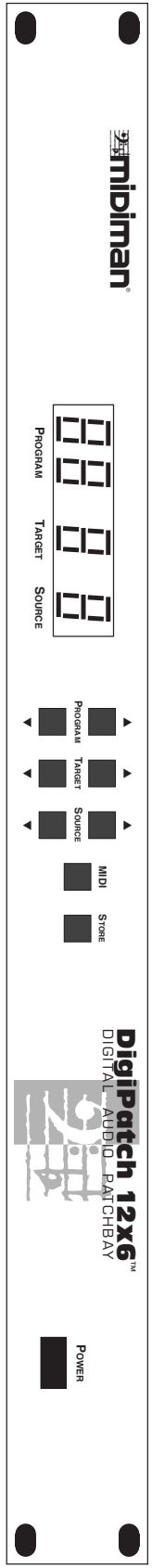
Panels - Fig. 1

Panel Description

Front Panel

1. **Program indicator:** This normally displays the current program number, but when the MIDI button is held it will display the midi channel.

2. **Target indicator:** This normally displays the current target number, but when the MIDI button is held it will display the midi thru ON / OFF status.

3. **Source indicator:** This displays the current source number. When the MIDI button is held it will go blank.

4. **Program Inc / Dec buttons:** This pair of buttons is normally used to select a new program, but when the MIDI button is held they are used to select the midi channel.

5. **Target Inc / Dec buttons:** This pair of buttons is normally used to select the current target, but when the MIDI button is held they are used to select the midi thru ON / OFF status.

6. **Source Inc / Dec buttons:** This pair of buttons is used to select the current source, but when the MIDI button is held they do nothing.

7. **MIDI button:** This button behaves like a dead-man switch. When you press and hold it the indicators and buttons perform their alternative midi functions.

8. **Store button:** When you press this button the first time it will tell the DigiPatch that you want to store the current program. If you press it a second time the DigiPatch will execute the store operation. See the Operation section for more details.

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Rear Panel

9. **Power connector:** Use only the power transformer that came with your DigiPatch.

10. **MIDI In connector:** This is a standard MIDI in jack. The DigiPatch can respond to program change and system exclusive messages.

11. **MIDI Out:** This is a standard MIDI out jack. It can also function like a standard midi thru connector if the MIDI thru feature is enabled. See the Operation section.

12. **Optical digital audio connectors:** Use these to hook up S/PDIF or Alesis Adat™ compatible devices.

13. **Coaxial digital audio connectors:** Use these to hook up S/PDIF compatible devices which use RCA type connectors.

Operation

The digital audio outputs of the DigiPatch are arranged in pairs. If you look at the unit's rear panel you will see six coaxial (RCA) outputs, and six optical outputs. Each of these like-numbered output pairs are called a **target**. For example, coaxial output 1 <u>together</u> with optical output 1 make up target 1. With DigiPatch any signal that is patched to a target appears at <u>both</u> the optical AND coaxial output of that target. In other words, the optical and coaxial outputs of a given target are paired together and not separately addressable. So DigiPatch has six selectable targets.

A **source** is any DigiPatch digital audio "input" or "receiver" on the rear panel. There are thirteen of these sources: six coaxial sources, six optical sources, and an "Off" position. Unlike targets, sources are completely independent of one another. For example: coaxial source 1 can be routed to target 1 while optical source 1 is routed to target 2.

Whenever a DigiPatch optical source is selected, a decimal point will appear next to the source indicator on the front panel. When the Off position is selected the source indicator will display "0".

The DigiPatch organizes each custom patch setup into programs. The DigiPatch will store 50 programs which are numbered 0 through 49. Each program remembers the desired source for each target. Programs can be selected using the Program Inc (▲) and Dec (▼) buttons, or from MIDI by way of MIDI program change messages.

Creating a New Patch

To create a new patch from the front panel first use the Target Inc (▲) and Dec (▼) buttons to select the target you wish a given source to go to. Next, use the Source Inc (▲) and Dec (▼) buttons to select the desired source for that target. After setting the desired source you may move to the next target you wish to activate and then select its source. Continue on in this manner until all of the targets you want activated are patched to the desired source. **IMPORTANT: If you don't want to assign a given target any source you may turn it off**

by pressing the Source Inc (▲) and Dec (▼) buttons until a "0" (for "0ff") appears in the Source window.
Whenever any kind of edit of a patch is performed a decimal point will immediately appear next to the program indicator as a reminder that the program has been modified.

After you have finished setting up all of the target and source information, you may store this patch information as an internal program. This is done by first pressing the Store button. After doing this the program indicator will flash slowly, and the source and target indicator will blank out. You now have two options. You can: 1.) store the new patch in the program location shown in the program window by simply pressing the Store button a second time; or 2.) select a different program location for this patch by pressing the Program Inc (▲) and Dec (▼) buttons until the new location is displayed and then again press the Store button. After you press the store button a second time, the program indicator will flash really fast for a moment telling you that the store process is complete.

IMPORTANT: If you have pressed the Store button once and then decide to abort the Store process you may do so by pressing any unrelated button including the MIDI button, the Source Inc and Dec buttons or the Target Inc or Dec buttons.

Editing an Existing Patch

If you have already created a patch and wish to edit it you may do so by first using the Program Inc (▲) and Dec (▼) buttons to select patch you want to edit. Now, use the Target Inc (▲) and Dec (▼) buttons to select the you want to edit. Next, use the Source Inc (▲) and Dec (▼) buttons to edit the desired source for that target. When all of the target-sources have been edited to reflect the desired changes, you can go ahead and store the edited patch by simply pressing the Store button twice. Since you have not changed the selected program number since you started editing the patch, the

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new patch information will be stored in the same program location.

Editing MIDI Receive Channel

The DigiPatch MIDI receive channel can be viewed and edited while holding down the MIDI button. As soon as the MIDI button is released the DigiPatch will revert to its normal mode of operation. In other words, the MIDI button is a "dead man" switch.

To set the MIDI receive channel that the DigiPatch will respond to first, press and hold the MIDI button. The left most digits of the display (which normally show the current program) will temporarily show the MIDI receive channel. Now, use the Program Inc (▲) and Dec (▼) buttons to select a new MIDI channel. When the desired MIDI channel is displayed simply release the MIDI button.

When a MIDI channel between 1 and 16 is selected in this manner, the DigiPatch will respond to incoming MIDI program change messages on that channel. Whenever DigiPatch receives a program change message on the correct MIDI channel it will automatically change its internal patch to that of the received program number.

If you do not want the DigiPatch to respond to incoming MIDI program change messages, set its MIDI receive channel to 00. 00 indicates that MIDI program change reception is "Off".

Turning MIDI Thru On and Off

The DigiPatch has a software MIDI thru feature that allows incoming midi messages to be re-broadcast out the DigiPatch's Midi Out port. This MIDI thru feature can be turned on and off. To do this first press and hold down the MIDI button. When you do this the digit in the center of the display, which normally shows the current target, will temporarily show the midi thru status as follows:

> 0 = software thru is off (disabled)
> 1 = software thru is on (enabled)

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You can now use the Target Inc (▲) and Dec (▼) buttons to toggle between "enabled" and "disabled."

Bulk Data Dumps via MIDI

All of the internal DigiPatch patches can be sent and saved on an external computer by way of a MIDI system exclusive bulk dump. To perform a bulk data dump from the unit first press and hold the MIDI button and then press the Store button. The DigiPatch will now transmit a series of short system exclusive messages that contain all of the DigiPatch patch information as well as internal parameters such as MIDI channel number and MIDI thru on/off status.

At any later time, when DigiPatch receives this same bulk MIDI data from a Sys Ex librarian, it will be completely reprogrammed with the same patch data and internal parameters that were in the unit when the bulk dump was performed.

Appendix 1 - Diagnostic Tests

Overview

The DigiPatch 12x6 has several built in diagnostic tests. **Important: All of these tests are performed by holding down special button combinations as the unit powers up.** After each test is complete you can either start another test, or exit the test mode and allow the unit to boot up normally.

LED and Button Test (MIDI + Program ▲)

The test begins with all LED segments (including decimal points) flashing at about two times per second. During this time each segment can be examined for blackouts, intensity differences, color matching, correct decimal point placement, unevenness between

characters, etc.

The LED test ends (and the button test begins) when any button is

Button	Number
PROG INC	**1**
TARGET INC	**2**
SOURCE INC	**3**
PROG DEC	**4**
TARGET DEC	**5**
SOURCE DEC	**6**
MIDI	**7**
STORE	**8**

pressed. Each button when pressed will display the following numbers:
During the button test, the source indicator will display the corresponding number for each button so long as it is held down (the display will be blank when no buttons are pressed).

EPROM Test (MIDI + Target ▲)

This test verifies proper operation of the DigiPatch's internal EPROM (code memory).

The result is displayed in the target indicator as follows:

$$1 = \text{success}, 0 = \text{failure}$$

EEPROM Test (MIDI + Source ▲)

This test verifies proper operation of the DigiPatch's internal EEPROM (non-volatile memory).
Important: This test is destructive and will erase all programs, MIDI settings, and edit buffer contents — so do NOT perform this test unless you have saved your patch information by way of a MIDI bulk data dump.

The result is displayed in the target indicator as follows:

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1 = success, 0 = failure

Note: This test will force the unit to rebuild the serial EEPROM contents regardless of how test mode is exited.

MIDI I/O Test (MIDI + Prog ▼)

This test requires that a midi cable be connected between the DigiPatch Midi Out jack and Midi In jack before it begins. It performs a two phase midi loop back test.

The result is displayed in the <u>target indicator</u> as follows:

1 = success, 0 = failure

Exit Test Mode and Reinitialize EEPROM (MIDI + Target ▼)

Press this button combination when powering up, or while in test mode to rebuild the serial EEPROM. **Important: This test is destructive and will erase all programs, MIDI settings, and edit buffer contents — so do NOT perform this test unless you have saved your patch information by way of a MIDI bulk data dump.**

After the process is complete the unit should boot normally with all factory programs and midi settings restored to their original settings.

Exit Test Mode (MIDI + Source ▼)

Press this button combination to exit test mode without re-initializing the serial EEPROM.

Appendix 2 - MIDI Implementation

DigiPatch 12x6™ MIDI Implemetation Chart
Software Version 1.00

Function		Transmitted	Recognized	Remarks
Basic Channel	Default	1	1	
	Changed	1 - 16	1 - 16	
Mode	Default	3	3	
	Message	x	x	
	Altered	x	x	
Note Number	True	x	x	
	Voice	x	x	
Velocity	Note ON	x	x	
	Note OFF	x	x	
After Touch	Keys	x	x	
	Channels	x	x	
Pitch Bender		x	x	
Control Change		x	x	
Program Change		0 - 49	0 - 49	can be disabled
		0 - 49	0 - 49	
System Exclusive		O	O	`
System Common	Song Pos	x	x	
	Song Sel	x	x	
	Tune	x	x	
System Real Time	Clocks	x	x	
	Commands	x	x	
Aux Messages	Local ON/OFF	x	x	
	All Notes OFF	x	x	
	Active Sensing	x	x	
	System Reset	x	x	
Notes:				

Mode 1: OMNI ON, POLY	Mode 3: OMNI ON, MONO	**O: Yes x: No**
Mode 2: OMNI OFF, POLY	Mode 4: OMNI OFF, MONO	

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Appendix 3 - Mac "Panel" Software

The Mac application — DigiPatch Panel™ — included with your unit, is a remote control program that allows you to control up to fifteen units through MIDI system exclusive messages. It requires a Mac with a 68020 processor or greater, System 7.10 or greater, and supports the following MIDI drivers:

Mark of the Unicorn's FreeMIDI version 1.2 or greater.
Opcode's Open Music System (OMS) version 2.2 or greater.
Apple's MIDI Manager 2.0.2 or greater.
Standard Modem and Printer drivers.

Operation is straightforward. There are two modes of MIDI communication:

1) **Single Ended Mode.** In this mode the computer doesn't really know (or care) about how many DigiPatch units are connected. It depends on you to tell it how may units are present, and how many Patchbay Windows to create. It transmits one-way system exclusive messages, and never waits for an acknowledge or reply. This mode is convenient when you want to control your DigiPatch unit(s) from your computer and when 'MIDI In' cables and connectors are scarce.

2) **Two Way Mode.** In this mode the computer scans for DigiPatch units using system exclusive messages, and creates a Patchbay Window for each unit it finds. Upon initialization, each window reads all programs and the edit buffer contents from its corresponding unit into the computer's memory, and saves the data into the application's preferences file (in the System Preferences folder). If no units are found, the program reverts to Single Ended Mode and creates one or more Patchbay Windows, depending on the contents of the preferences file.

In all cases, DigiPatch units should be MIDI wired in a series. That is, take the 'MIDI out' of you computer interface and plug it into the 'MIDI in' of the first DigiPatch unit. Take the ' MIDI out' of your first DigiPatch unit and connect it to the ' MIDI in' of the second, and so on. Finally, if you want to run the app in Two Way Mode, you must connect the ' MIDI out' of the final DigiPatch unit to the ' MIDI in' of your computer interface.

IMPORTANT: When you first fire up this program you may "get silly" and create way too many Patchbay Windows (if you are in single ended mode). There is no obvious way to destroy these buggers — selecting 'Close' from the File menu only hides the window until you select 'Show All' from the Windows menu.

TO PERMANENTLY ERASE A PATCHBAY WINDOW FROM THE PREFERENCES FILE:

1)   Hold down the OPTION key as you select 'Close' from the File menu, or...

2)   Press OPTION 'W'.

You will be presented with a dialog asking you to confirm your selection.

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Appendix 4 - PC "Panel" Software

The PC Windows application — DigiPatch Panel™ — included with your unit, is a remote control program that allows you to control up to fifteen units through MIDI system exclusive messages. It requires a PC with a 80386 processor or greater, Windows 3.1 or later, and supports MIDI interfaces with software drivers that adhere to the Windows multimedia extensions (MME).

To install the program onto your hard disk, run SETUP.EXE from the provided floppy. The SETUP.EXE program will ask you for a subdirectory to install the DigiPatch Panel™ program to, then uncompress and install the application. Once installed, the program's operation is straight forward. There are two modes of MIDI communication:

1) **Single Ended Mode.** In this mode the computer doesn't really know (or care) about how many DigiPatch units are connected. It depends on you to tell it how may units are present, and how many Patchbay Windows to create. It transmits one-way system exclusive messages, and never waits for an acknowledge or reply. This mode is convenient when you want to control your DigiPatch unit(s) from your computer and when 'MIDI In' cables and connectors are scarce.

2) **Two Way Mode.** In this mode the computer scans for DigiPatch units using system exclusive messages, and creates a Patchbay Window for each unit it finds. Upon initialization, each window reads all programs and the edit buffer contents from its corresponding unit into the computer's memory, and saves the data into the application's preferences file (in the System Preferences folder). If no units are found, the program reverts to Single Ended Mode and creates one or more Patchbay Windows, depending on the contents of the preferences file.

In all cases, DigiPatch units should be MIDI wired in a series. That is, take the 'MIDI out' of you computer interface and plug it into the 'MIDI in' of the first DigiPatch unit. Take the 'MIDI out' of your first DigiPatch unit and connect it to the 'MIDI in' of the second, and so on. Finally, if you want to run the app in Two Way Mode, you must connect the 'MIDI out' of the final DigiPatch unit to the ' MIDI in' of your computer interface.

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Lifetime Limited Warranty

MIDIMAN warrants that this product is free of defects in materials and workmanship under normal use so long as the product is owned by the original purchaser and that purchaser has registered his/her ownership of the product by sending in the completed warranty card.

In the event that MIDIMAN receives written notice of defects in materials or workmanship from such an original purchaser, MIDIMAN will either replace the product, repair the product, or refund the purchase price at its option. In the event any repair is required, shipment to and from MIDI-MAN and a nominal handling charge shall be born by the purchaser. In the event that repair is required, a Return Authorization number must be obtained from MIDIMAN. After this number is obtained, the unit should be shipped back to MIDIMAN in a protective package with a description of the problem and the Return Authorization clearly written on the package.

In the event that MIDIMAN determines that the product requires repair because of user misuse or regular wear, it will assess a fair repair or replacement fee. The customer will have the option to pay this fee and have the unit repaired and returned, or not pay this fee and have the unit returned unrepaired.

The remedy for breach of this limited warranty shall not include any other damages. MIDIMAN will not be liable for consequential, special, indirect, or similar damages or claims including loss of profit or any other commercial, damage, even if its agents have been advised of the possibility of such damages, and in no event will MIDIMAN's liability for any damages to the purchaser or any other person exceed the price paid for the product, regardless of any form of the claim. MIDIMAN specifically disclaims all other warranties, expressed or implied. Specifically, MIDIMAN makes no warranty that the product is fit for any particular purpose.

This warranty shall be construed, interpreted, and governed by the laws of the state of California. If any provision of this warranty is found void, invalid or unenforceable, it will not affect the validity of the balance of the warranty, which shall remain valid and enforceable according to its terms. In the event any remedy hereunder is determined to have failed of its essential purpose, all limitations of liability and exclusion of damages set forth herein shall remain in full force and effect.

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