MIDI PATCHER

8 X 8 ROUTING SYSTEM WITH MEMORY

Operation Manual
1.00

Edited by Don Bird

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PREFACE

360 Systems has been in the business of providing unique and useful products for the modern Musician and Composer for over 16 years. We rely on feedback from our customers to help us continue the development of innovative and affordable products that best meet their needs. Please feel free to address any comments you may have regarding 360 Systems and its present or future products to:

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8 x 8 MIDI PATCHER

Operation Manual

1.00

1. INTRODUCTION

The 360 Systems MIDI Patcher is an intelligent 8 in, 8 out MIDI routing matrix capable of memorizing up to 100 custom MIDI patch configurations that are instantly accessible either through the front panel buttons or via MIDI program change commands. Along with routing information, each internal patch may also contain a "mapping" of user-defined program change messages that will be sent out selected MIDI outputs when the patch is activated. This mapping feature may be disabled globally without affecting the stored list.

2. DEFINITION OF TERMS

The Midi patcher performs some rather complicated MIDI functions. Before a discussion of its operation, we would like to define the following terms that will be used throughout this manual:

ROUTING - refers to the current MIDI input to MIDI output assignments. Each of the 8 MIDI outputs may have any one of the 8 MIDI inputs assigned to it, or may be turned off.

PATCH - refers to a MIDI routing configuration along with related set-up information that is stored internally to the MIDI Patcher. A patch is a snapshot of the current parameters that are saved in non-volatile memory. The patcher can memorize and recall 100 different patches, numbered 0 through 99.

PROGRAM CHANGE - refers to messages that are stored as part of a patch and are sent by the MIDI patcher when a patch is recalled. These are MIDI program change messages that can be used to automatically and simultaneously change patches in all MIDI slaves that are connected to the MIDI Patcher.

MAPPING - refers to the act of sending the above program changes when a patch is recalled. Mapping may be enabled (program changes will be sent when patches are recalled) or disabled (program changes will not be sent when patches are recalled). Disabling the Mapping feature does not affect the list of program changes saved with the patch, it only prevents them from being sent.

3. SETTING UP

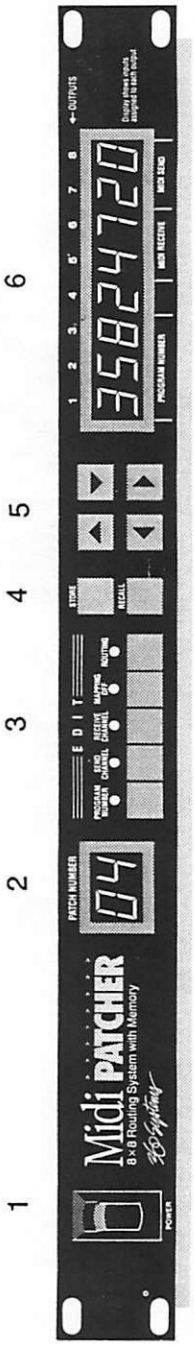
Connect the MIDI Patcher power cable to a standard grounded wall outlet. Versions are available for 100, 120, 230 and 240 volts.

The rear panel of the MIDI Patcher has 8 MIDI input and 8 MIDI output connectors. Using standard 5-pin MIDI cables, simply connect up to 8 MIDI controllers (MIDI output devices) to the MIDI Patcher inputs, and up to 8 MIDI slaves (MIDI input devices) to the MIDI Patcher outputs. You will now be able to connect any slave to any controller without touching your MIDI cables.

4. PROGRAMMING THE MIDI PATCHER

4.0 FRONT PANEL DESCRIPTION (see fig. 1)

The front panel of the MIDI Patcher consists of a power switch(1), a two digit patch number display(2), 5 "edit mode" buttons with associated LED indicators(3), store and recall buttons(4), 4 data entry buttons(5), and an 8-digit routing/mapping display(6).



4.1 GENERAL DESCRIPTION

When the MIDI Patcher is first turned on, the system will recall whatever patch was in effect when the unit was previously turned off, and will default to Routing Mode, i.e. it will be as if the ROUTING button had been pushed.

The term "Edit Mode" is used to describe the various states the MIDI Patcher may be in with respect to the information that appears in the display and the functions that are being modified using the Data Entry buttons.

The MIDI Patcher has four edit modes:

1. Routing
2. Program Change
3. Send Channel
4. Receive Channel

NOTE: Mapping Off is not a "mode" per se, but a "function" that is either enabled or disabled.

4.2 DATA ENTRY BUTTONS

The Data Entry buttons consist of UP, DOWN, LEFT and RIGHT arrow buttons and are used to select and modify the various features of the MIDI Patcher. As a general rule, the LEFT and RIGHT arrow buttons are used to select output channels for editing while the UP and DOWN arrow buttons are used to edit the values appearing in the display. All four buttons have an auto-repeat feature: Pressing and holding the button for approximately 1/2 second will cause it to repeat in rapid succession. This allows "scrolling" through patch numbers, program numbers, etc.

4.3 EDIT MODE BUTTONS

4.3.0 Routing Edit Mode

Routing mode is entered automatically when the MIDI Patcher is first turned on, or by pressing the ROUTING button on the front panel. The Routing indicator (LED) will be illuminated.

In this mode the Routing/ Mapping display shows the current MIDI input-to-output configuration and the Data Entry buttons allow this configuration to be modified. Each 7-segment LED in the Routing/Mapping display corresponds to an Output port on the rear of the MIDI Patcher. Numbers 1 through 8 that appear on the front panel *above* the Routing/Mapping display represent the eight MIDI Output ports similarly numbered on the rear panel. Numbers that appear in the Routing/Mapping display itself, correspond to the similarly numbered MIDI Input ports on the rear panel of the MIDI Patcher. When a number 1 through 8 appears in the display, it indicates which Input port has been routed to the Output port who's number appears on the front panel above. The appearance of a single decimal point in the Routing/Mapping display indicates which output is "edit ready".

An input-output assignment may be edited by first moving the decimal point to the desired output using the L EFT or RIGHT arrow buttons, then selecting the desired input number using the UP and DOWN arrow buttons. The input number choices for each output are 1-8 or off, indicated by a hyphen ("-").

EXAMPLE: To connect input 4 to output 8, first enter Routing mode by pressing the ROUTING button. Select output number 8 by using either the L EFT or RIGHT arrow button to move the decimal point to the 8th digit, corresponding to output 8. Then use the UP and DOWN arrow buttons to modify the 8th digit so that it displays "4". Input 4 is now patched to output 8 and will stay that way until modified using the same procedure or until a patch is recalled that contains a different assignment for output number 8.

4.3.1 Program Number Edit Mode

The mapping feature of the MIDI Patcher can be used to send a unique MIDI program change message out each of the 8 outputs whenever an internal patch is recalled. A patch therefore not only contains MIDI routing assignments but also contains this mapping information; namely 8 MIDI program numbers and channel numbers (1 MIDI program number and 1 MIDI channel number for each of the 8 outputs).

Program Number mode is used to edit the MIDI program numbers that will be sent by the mapping feature, and is entered by pressing the PROGRAM NUMBER button. The Program Number indicator (LED) will be illuminated.

In this mode the routing/mapping display indicates a MIDI program number and channel number that will be sent to the output indicated by the position of the decimal point. Note that this display shows a program number/channel number pair for only one output at a time; other outputs may be accessed by using the LEFT and RIGHTarrow buttons to move the decimal point. The program number may be modified for each of the 8 outputs using the UP and DOWN arrow buttons. Program Numbers 0 through 127 may be used. (The channel number is modified by entering the Send Channel mode described below.)

As an added convenience, whenever the program number is changed using the UP or DOWN arrow buttons, the MIDI Patcher will actually transmit the program change to the specified output on the indicated MIDI channel. This allows you to immediately "hear" the program you've selected by playing the slave while changing the program number from the MIDI Patcher.

EXAMPLE: To select MIDI program number 32 to be sent to output number 3 upon patch recall, first enter Program Number mode by pressing the PROGRAM NUMBER button. Select output number 3 by pressing either the LEFT or RIGHT arrow button until the decimal point appears in the 3rd digit. Then press and hold the UP or DOWN arrow button until the program number reads "32". Play a note on the slave to verify that this is the desired program number.

4.3.2 Send Channel Edit Mode

Send Channel mode is used to edit the MIDI channel numbers on which the program change messages will be sent by the mapping feature, and is entered by pressing the SEND CHANNEL button. The Send Channel indicator (LED) will be illuminated.

In this mode the routing/mapping display shows exactly the same information as in the Program Number mode described above; namely the MIDI program number and channel that will be sent to the output number indicated by the position of the decimal point. The only difference is that the UP and DOWN arrow buttons will now modify the MIDI channel number. The choices are 1 - 16 or "OF". When set to "OF", no program change message will be sent to that output, regardless of the program number selected.

Note that in this mode, the MIDI Patcher does not transmit a program change, since it is the MIDI channel number that is being modified and not the program number. You must return to Program Number mode if you want to transmit a program number and "audition" it.

EXAMPLE: To select MIDI program number 32 to be sent to output number 3 on MIDI channel 1 upon patch recall, first perform the program number selection as in the previous example. Then enter the Send Channel mode by pressing the SEND CHANNEL button. Note that the display does not change and the decimal point remains in the same position. Then use the UP or DOWN arrow buttons until the channel number reads "1". In this manner, you may bounce freely between Program Number and Send Channel modes without losing your place.

4.3.3 Receive Channel Edit Mode

The MIDI Patcher responds to several incoming MIDI messages. The Receive Channel mode allows selection of the input number that the MIDI Patcher "listens to" as well as the MIDI channel number it will recognize on that input, and is entered by pressing the RECEIVE CHANNEL button. The Receive Channel indicator (LED) will be illuminated.

In this mode the routing/mapping display contains a MIDI channel number along with a decimal point indicating the input "port" selected to receive incoming messages. (Do not get confused by this alternate use of the decimal point! In all other modes, the decimal point indicates an output number that is being viewed/edited - in this mode it indicates an input number.) The LEFT and RIGHT arrow buttons may be used to position the decimal point on the digit corresponding to the desired input number. The UP and DOWN arrows may be used to select the MIDI channel number. The choices are 1 - 16, "OF", or omni, indicated by a small "o". When the receive channel is set to "o", the MIDI Patcher will respond to all channels on the specified input.

EXAMPLE: To set the MIDI Patcher to respond to patch change messages on input number 2 and MIDI channel 16, first enter Receive Channel mode by pressing the RECEIVE CHANNEL button. Press the UP or DOWN arrow buttons until the channel number reads "16". Then press the LEFT or RIGHT arrow button until the decimal point appears in the 2nd digit. This setting will remain in effect until modified using the same procedure or until a patch is recalled that contains a different setting.

5. STORING AND RECALLING PATCHES

5.0 GENERAL

In the previous section we saw how to modify the various operating parameters of the MIDI Patcher from the front panel. These parameters are:

1) MIDI routing configuration
2) Mapping feature definitions
3) MIDI Patcher receive input and MIDI channel numbers

All changes made from the front panel take effect immediately, so that the displays always indicate exactly what the MIDI Patcher is doing at the moment. It may be convenient to think of these parameters as residing in an "edit buffer" - all modifications from the front panel operate on the values stored in this edit buffer, and the edit buffer always represents what the MIDI Patcher is currently doing.

Storing a patch is simply saving the contents of this edit buffer into non-volatile memory for instant recall at a later time. The MIDI Patcher is able to memorize up to 100 unique patches, and patches may be recalled either from the front panel buttons or via MIDI program change messages.

5.1 STORING A PATCH

After modifying the edit buffer using the procedures outlined in the previous section (4. Programming The Midi Patcher), the current settings may be saved as a patch by first pressing the STORE button. This may be done from any of the edit modes. A decimal point will appear in the left-hand digit of the 2-digit Patch Number display to indicate that the MIDI Patcher is in "Store Pending" mode.

While in Store Pending mode, the UP and DOWN arrow buttons may be used to select a patch number in which to store the current contents of the edit buffer. A second push of the STORE button will cause the MIDI Patcher to actually perform the Store operation to the displayed patch number; over-writing whatever was there. The decimal point will then disappear from the Patch Number display and the MIDI Patcher will return to whatever edit mode it was in prior to the operation. Pressing any other button while in Store Pending mode will abort the Store operation and similarly return to edit mode.

SOMETHING TO KEEP IN MIND: Whenever the left-hand decimal point in the Patch Number display is illuminated, you can be sure that the MIDI Patcher is indeed in Store Pending mode and that pressing the STORE button at this point will overwrite whatever is in the displayed patch number with the current contents of the edit buffer.

EXAMPLE: To store the current contents of the edit buffer as patch number 24, first enter Store Pending mode by pressing the STORE button once. Observe that the decimal point in the left-hand digit of the Patch Number display is illuminated. Press and hold the UP or DOWN arrow button until the patch number reads "24". Finally, press the STORE button a second time to complete the operation.

5.2 RECALLING A PATCH

A patch may be recalled in either of two ways: by using the front panel RECALL button or via MIDI program change commands. Response to a MIDI program change command is immediate, while the front panel recall operation is a 2-step procedure that allows for "previewing" patches. That is, you may examine the contents of a patch without actually recalling it and thus losing the current edit buffer contents.

5.2.0 Recalling a Patch Using MIDI Program Change Commands

When a MIDI program change is received by the MIDI Patcher on the input number and MIDI channel that match the current settings under Receive Channel edit mode and if the program number is in the range of 0-99, the MIDI Patcher will immediately recall that patch, displaying the new Patch number in the Patch Number display. The unit will also switch to Routing mode (if not in this mode already) so that the Routing/Mapping display will show the MIDI routing configuration of the new patch. This new patch is ready to be used immediately.

5.2.1 Recalling a Patch Using the Recall Button

Using the RECALL button to access a previously stored patch is a 2-step operation. From any edit mode, press the RECALL button once. The decimal point appears in the right-hand digit of the patch number display to indicate the MIDI Patcher is in Recall Pending mode.

Recall Pending mode is unique in that it is really a "patch preview" mode. In otherwords, when the MIDI Patcher is in Recall Pending mode, the routing/mapping display shows the values and settings corresponding to the indicated patch rather than the current contents of the edit buffer. This feature allows you to view the contents of a patch before you actually load it into the edit buffer.

Once in Recall Pending mode, use the UP and DOWN arrow buttons to step through and display the contents of any or all patches.

The values displayed in this mode will depend on which edit mode the MIDI Patcher was in when the RECALL button was pressed. If in Routing mode, pressing RECALL once will allow you to preview routing assignments; if in Send Channel mode, pressing RECALL will allow you to preview MIDI program numbers and channels for the mapping feature, and so on.

Once the desired patch number is displayed, pressing the RECALL button a second time will cause the MIDI Patcher to actually perform the Recall operation. Overwriting the contents of the edit buffer with those of the indicated patch. The decimal point will disappear from the Patch Number display and the MIDI Patcher will return to whatever edit mode it was in prior to the start of the Recall operation.

*** IMPORTANT ***

Two things to remember: First, whenever the right-hand decimal point in the patch number display is illuminated, the MIDI Patcher is in Recall Pending mode and the contents of the routing/mapping display reflect what is in the indicated patch number, which is not necessarily what is in the edit buffer and therefore not what the MIDI Patcher is actually doing. Secondly, the receive channel and input number that the MIDI Patcher "listens to" are stored as part of a patch. Therefore, **IF A PATCH IS RECALLED FROM A MIDI CONTROLLER THAT CHANGES EITHER THE MIDI CHANNEL OR INPUT NUMBER, YOU WILL NOT BE ABLE TO ISSUE FURTHER PATCH CHANGES FROM THAT CONTROLLER.** The controller will have, in effect, disconnected itself from the MIDI Patcher. This allows you to dynamically switch master controllers without touching the MIDI Patcher, but it does require that you think ahead.

6. MAPPING OFF

6.0 DISABLING THE MAPPING FEATURE

The mapping feature of the MIDI Patcher may be disabled using the MAPPING OFF button. Pressing this button will "toggle" the state of the Mapping Off indicator (LED). When the Mapping Off indicator is illuminated, the MIDI Patcher will not send program change messages when patches are recalled. The list of program changes stored with each patch will not be effected, they will just not be used.

This feature is not saved as part of a patch definition but is "global", meaning that it affects all patches simultaneously. It may be changed externally using MIDI controller number 30 (1E hex). Controller data values greater than 68 (44 hex) will disable mapping, while controller data values less than 58 (3A hex) will enable mapping. The Mapping Off indicator will reflect these changes.

7. OTHER FEATURES

7.0 MIDI PATCH DUMPS

The MIDI Patcher allows the entire 100 internal patches to be both "uploaded" to and "downloaded" from an external MIDI device using MIDI System Exclusive messages. This feature allows you to define and preserve many more than the 100 internal patches by using an external storage device to save and restore groups of 100 patch definitions.

Patch memory may be uploaded to an external device in either of 2 ways. First, pressing the RECEIVE CHANNEL button while already in Receive Channel edit mode (i.e., with the Receive Channel indicator LED already illuminated) will cause the MIDI Patcher to immediately transmit a Bulk Patch Data System Exclusive message. Alternatively, sending a Patch Dump Request System Exclusive message to the MIDI Patcher will cause it to wait approximately 1/2 second and then transmit the same Bulk Patch Data System Exclusive message. The Data is sent on the same port number that the Receive input port is assigned to (i.e., If the Receive input is assigned to port #3 the System Exclusive dump is sent from output port #3).

Similarly, when the MIDI Patcher receives the Bulk Patch Data System Exclusive message on the input that matches the current setting under Receive Channel edit mode, it transfers the contents of this message directly to patch memory, overwriting whatever was there. The new patches are immediately ready for use.

NOTE: See Appendix II for the MIDI data format for these messages.

7.1 ALL NOTES OFF FEATURE

The MIDI Patcher will transmit the MIDI All-Notes-Off message on all MIDI channels to all 8 outputs upon request. This request may either be from the front panel or from a MIDI controller message that arrives on the input and channel number that match the current settings under the Receive Channel edit mode.

To request the All-Notes-Off message from the front panel buttons, simply press the ROUTING button while already in Routing edit mode (i.e., with the Routing indicator LED already illuminated.).

The All-Notes-Off sequence will also be initiated whenever the MIDI Patcher receives MIDI controller number 94 (5E hex) with the data equal to 127 (7F hex).

7.2 INITIALIZING PATCH MEMORY

The internal patch storage memory of the MIDI Patcher may be initialized to default values by turning on the power while pressing the STORE button. *BE CAREFUL* ! Doing this wipes out any patches that may have been previously stored. Make sure that any patches you wish to preserve have been saved using the Bulk Patch Data upload feature described above.

Default values are as follows:

All Program Numbers (all outputs, all patches) set to 0
All Send Channels (all outputs, all patches) set to "OF"
All Midi Receive Channels (all inputs, all patches) set to "o"
(omni receive) input port #1

Patch 0: all outputs routed to input 1
Patch 1: all outputs routed to input 2
Patch 2: all outputs routed to input 3
Patch 3: all outputs routed to input 4
Patch 4: all outputs routed to input 5
Patch 5: all outputs routed to input 6
Patch 6: all outputs routed to input 7
Patch 7: all outputs routed to input 8
Patch 8: all outputs routed to input 0
Patch 9: all outputs routed to input 1

...and so on...

7.3 VERSION NUMBER DISPLAY FEATURE

The software revision number of the MIDI Patcher will appear in the routing/mapping display whenever the power is turned on while pressing the ROUTING button. The message will remain until any button is pressed.

EXAMPLE: Press and hold ROUTING button while turning power on. Display will indicate:
360 r1.00 (360 Systems revision 1.00)

7.4 LED DISPLAY TEST FUNCTION

Holding RECALL whenever the power is turned on, then releasing RECALL, will cause the displays to cycle through all numbers and decimal positions until RECALL is pressed again and released.

PLEASE READ THIS

8. IMPORTANT INFORMATION REGARDING OPERATION OF THE MIDI PATCHER

The MIDI Patcher is a powerful tool that we are convinced will prove itself to be an indispensable part of your MIDI setup. However, as with any MIDI processor that either modifies data or, in this case dynamically changes MIDI connections, improper use of the MIDI Patcher may cause some unwanted side-effects. It is important to realize this is not a problem with the MIDI Patcher, but a direct result of what you may be asking it to do.

First of all, whenever the MIDI Patcher's routing assignments are changed, either by editing them in Routing edit mode or by recalling an internal patch, the effect is just as if you unplugged your MIDI cables and reconnected them in a new configuration (albeit much faster). If any MIDI data is passing through the MIDI Patcher when this occurs, you stand a very good chance of losing or destroying that data by cutting it off prematurely. Therefore, when changing routing assignments, follow the same rules as when unplugging and plugging in MIDI cables - make sure nothing important is passing through those inputs and outputs.

The MIDI Patcher also occasionally transmits its own MIDI messages, such as program changes for the mapping feature, bulk patch data system exclusive messages and upon request, all-notes-off messages. When sending these messages, the MIDI Patcher must momentarily "steal" the output on which it is to transmit, yet it can't know if that output is currently in use. Therefore, if MIDI data is being routed through that output at the instant the MIDI Patcher transmits; that data may be lost or destroyed. (The MIDI Patcher's message will be unaffected.) Usually, the MIDI Patcher requires the use of a given output for such a short time that this is not a problem, but it is important to keep in mind.

For example, if while recalling a patch with the Mapping feature ON there is mod-wheel data being routed through output 0 at the very instant the patch is recalled, a single mod-wheel message may be destroyed when the MIDI Patcher momentarily "steals" that output. Any slave connected to output 0 will correctly receive the program change message sent by the MIDI Patcher and subsequent mod-wheel messages. The slave may, however, indicate a MIDI data error as a result of the single damaged mod-wheel message. In summary, to avoid unwanted side-effects, *do not change settings on the MIDI Patcher while anything important is passing through it.*

APPENDIX I - ERROR CODES

0 = Battery Low.
Non-volatile RAM needs replacement. Contact 360 Systems. If possible, perform a System Exclusive patch dump to insure preservation of existing patches.

1 = Memory ID byte incorrect.
Possible damage to patch data. Check patches or re-load using System Exclusive patch dump.

2 = System Exclusive receive error.
Received data incomplete. Re-transmit data.

APPENDIX II - MIDI SPECIFICATION

All received Midi data passed through verbatim.

Received Data - Channel Voice Messages

Program Change
status = 1100nnnn
0ppppppp p = 0 to 99

Mapping On/Off
status = 1011nnnn
0ccccccc c = Controller No. 30 (1Eh)
0vvvvvv v < 3Ah = Mapping ON (led Off)
v > 44h = Mapping OFF (led On)

Remote All Notes Off
status = 1011nnnn
0ccccccc c = Controller No. 94 (5Eh)
0vvvvvv v = 127

nnnn = 0 to 0Fh (Midi Channel 1 to 16)

Transmitted Data - Channel Voice Messages

Program Change
status = 1100nnnn
0ppppppp p = 0 to 127

nnnn = 0 to 0Fh (Midi Channel 1 to 16)

Transmitted Data - Channel Mode Messages

All Notes Off
status = 1011nnnn n = 0 to 0Fh All Notes Off to all Channels
0ccccccc c = 123 (7Bh) All Notes Off
0vvvvvv v = 0

Transmitted Data - System Exclusive Messages

Transmitting All Patches

F0h	System Exclusive
00h	360 Systems ID number
00h	
1Ch	
01h	Device number, 01h = 8x8 Patcher
01h	Command byte, 01h = Transmitting All Patches
data	Patch data (see note below)
F7h	End of System Exclusive

Received Data - System Exclusive Messages

Request All Patches

F0h	System Exclusive
00h	360 Systems ID number
00h	
1Ch	
01h	Device number, 01h = 8x8 Patcher
00h	Command byte, 00h = Request All Patches
F7h	End of System Exclusive

Receive All Patches

F0h	System Exclusive
00h	360 Systems ID number
00h	
1Ch	
01h	Device number, 01h = 8x8 Patcher
01h	Command byte, 01h = Receive All Patches
data	Patch data (see note below)
F7h	End of System Exclusive

Note:

-- Data format --

Program Number 0

Output Port #1	Data Range	
byte 0 = Input port	0 - 8	0 = Off
byte 1 = Transmit Midi Channel	0 - 10h	0 = Off
byte 2 = Midi Patch Number	0 - 7Fh	

bytes 3 thru 23 Output Ports #1 thru #8
(same format as Port #1)

byte 24 = Midi receive port 0 - 7 0 = Port 1

byte 25 = Midi receive channel 0 - 11H
0 = Omni
1 - 10h = Midi Channel 1 - 16
11h = Off

bytes 26 thru 51 = Program Number 1 data

bytes 52 thru 2600 = Program Numbers 2 thru 99
(same format as Program 0)

How to get the most out of Midi

Midi PATCHER

8 × 8 Routing System with Memory



If you unplug and reconnect Midi cables every time you work with Midi gear; or worse yet, if you don't use the Midi connections at all–you're missing out on the full creative potential Midi has to offer.

Connect the ins and outs of your Midi devices to the MIDI PATCHER and create a network that provides central control of your entire Midi system. Determine which instruments will control others by simply pushing a button. Now, all tasks that once would have been done by hand can be accomplished within seconds, and without manual labor–allowing the fragile creative process to flow uninterrupted.

- **Save time and eliminate confusion.**
- **Assign controllers** (keyboards, sequencers, etc.) **to slaves** (drum machines, sound modules, effects, etc.) **in any configuration.**
- **Memorize and recall complex setups at the touch of a button.**
- **Audition sound combinations and effects settings.**
- **View all routing assignments on a large, easy-to-read display.**

360 Systems

ROUTING

All Midi routing is created with four arrow buttons and displayed on large LED's. Turn various modules "on" or "off," drive some modules with a sequencer, others with a keyboard–and much, much more. There's no reason to waste time with manual switching or connecting cables by hand. With MIDI PATCHER, a total of 100 different routing combinations can be stored in non-volatile memory and recalled instantly.

DISPLAY

MIDI PATCHER's clear display and logical front panel controls make it easy to create and store simple or complex patches. Large seven-segment LED's indicate routing assignments for controllers and slaves at a glance–from up close or across the stage.

PATCH MAPPING

When it takes hours to create just the right combination of sounds and effects, it shouldn't take hours to recreate them. Use the MIDI PATCHER to memorize sound and effects combinations and recall them instantly.

Audition and select up to eight separate patch change commands on individual Midi channels, then store them as completed "patch maps." 100 different patch maps can be stored in MIDI PATCHER's internal memory and recalled using either

front panel controls or remote Midi patch change commands.

MIDI PATCHER's other features include...

Midi System Exclusive Data Dumps. Initiate data dumps from the front panel of the MIDI PATCHER. Transfer groups of 100 patches to and from external storage devices. Save an infinite number of setups and access them within seconds.

Receive Midi patch change commands on any input and Midi channel. Different settings may be memorized for each preset to enable rapid controller changes without the use of front panel controls. MIDI PATCHER will respond to patch changes from different controllers on different presets.

"All Notes Off" function included. Prevent stuck notes from ruining a performance. Initiate command from front panel or via Midi controller number.

Disable Patch Mapping at the touch of a button. Globally defeat transmission of program changes when a preset is selected. Initiate command from front panel or via Midi controller number.

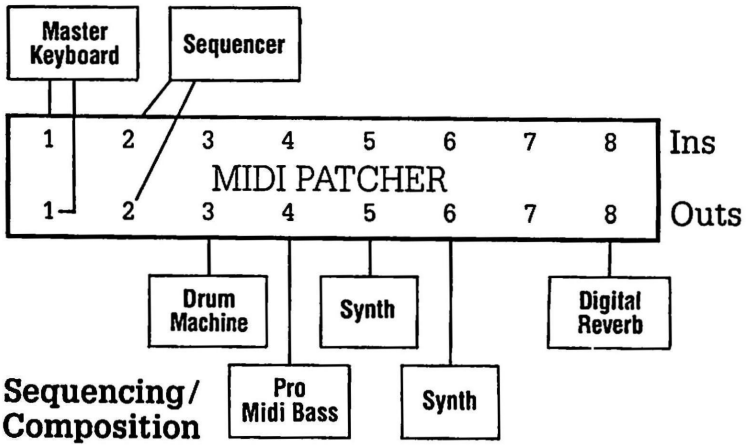
Preview the contents of any patch before selecting it.

Copy routings, sound and effects configurations to multiple locations.

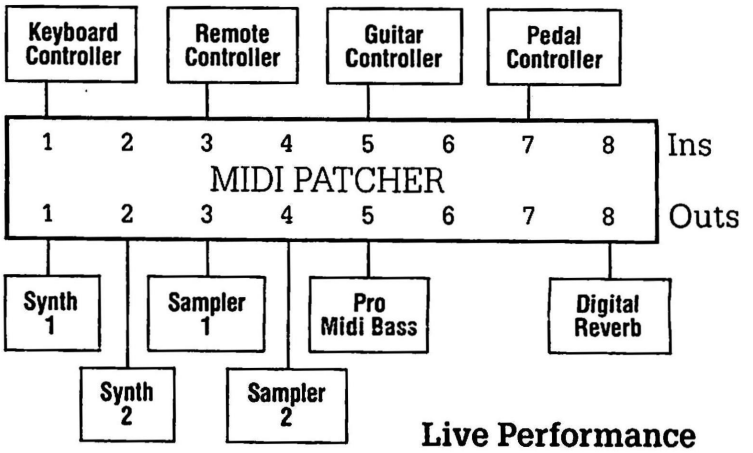
NOW YOU CAN use Midi to its full creative potential whether you have a couple of keyboards or a complete Midi studio. MIDI PATCHER helps you get more out of Midi than you ever thought possible. See it at better keyboard stores everywhere.

Specifications: 8 Midi Inputs, 8 Midi Outputs (5 pin DIN), Presets: 100 user-programmable (00-99). Memory: Non-volatile, battery backed RAM. Midi Receive Channel: Off, 1–16, Omni (Programmable per preset). Midi Program Number Send: 0–127 (8 per preset). Midi Send Channel: Off, 1–16 (8 per preset). Power: Standard AC wall plug (grounded). MADE IN USA

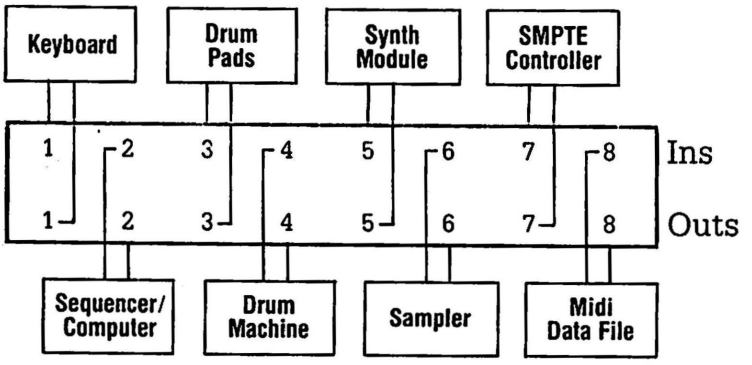
Here are just a few possible applications...



Sequencing/ Composition



Live Performance



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Specifications subject to change without notice.

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