Patch Mate™

Programmable Switcher with HUSH™

Version 1.2

OWNER'S MANUAL

HUSH ™ licensed by HUSH SYSTEMS

May be covered by one or more of the following:
U.S. Patents # 4538297, 4647876, 4696044,
4745309, 4881047, 4893099.
Other patents pending.
Foreign patents pending.

ROCKTRON
GUITAR RACK TECHNOLOGY

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1. GENERAL INFORMATION

INTRODUCTION...

The Rocktron Patch Mate™ is a programmable switching system designed with Bob Bradshaw to allow musicians more control over their equipment. The Patch Mate™ has nine stereo loops/ controls and one stereo channel of HUSH™, HUSH Systems' patented noise reduction. Each of the nine loops on the Patch Mate™ consist of four stereo jacks: IN, SEND, RETURN and OUT. Each loop can be configured as a mono loop, a stereo loop or a latching control function. The Patch Mate™ is totally transparent, as it uses relays to route the audio with no circuitry in the audio path to add noise or degenerate the signal.

PRECAUTIONS...

NOTE: IT IS VERY IMPORTANT THAT YOU READ THIS SECTION TO PROVIDE YEARS OF TROUBLE FREE USE. THIS UNIT REQUIRES CAREFUL HANDLING.

All warnings on this equipment and in the operating instructions should be adhered to and all operating instructions should be followed.

Do not use this equipment near water. Care should be taken so that objects do not fall and liquids are not spilled into the unit through any openings.

DO NOT ATTEMPT TO SERVICE THIS EQUIPMENT. THIS EQUIPMENT SHOULD BE SERVICED BY QUALIFIED SERVICE PERSONNEL ONLY. DO NOT REMOVE THE COVER FROM THIS EQUIPMENT AT ANY TIME. DO NOT MAKE ANY INTERNAL ADJUSTMENTS OR ADDITIONS TO THIS EQUIPMENT AT ANY TIME. DO NOT TAMPER WITH INTERNAL ELECTRONIC COMPONENTS AT ANY TIME. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY VOID WARRANTY SERVICE TO THIS EQUIPMENT, AS WELL AS CAUSING SHOCK HAZARD.

POWER REQUIREMENTS...

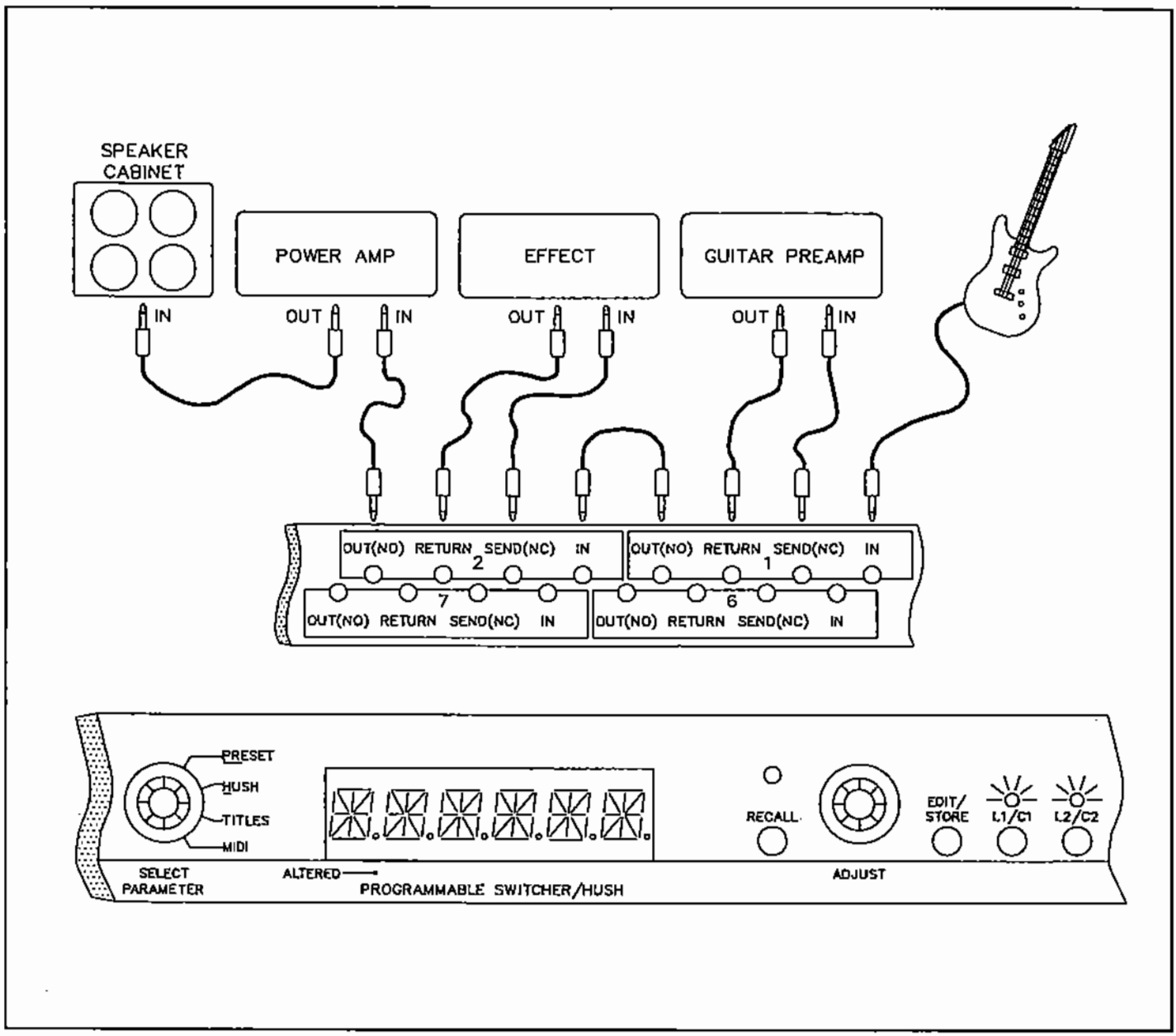
This unit accepts power from the 9VAC/1500mA adaptor supplied with the unit. This 9V RMS AC voltage is internally processed by a voltage doubler, thus generating a +/-15V to maintain the headroom and sound quality of professional, studio quality equipment. Using an external power source such as this minimizes excessive noise and hum problems often associated with internal transformers, giving the user optimal performance.

OPERATING TEMPERATURE...

Do not expose this unit to excessive heat. This unit is designed to operate between 32F and 104F (0C and 40C). This unit may not function properly under extreme conditions.

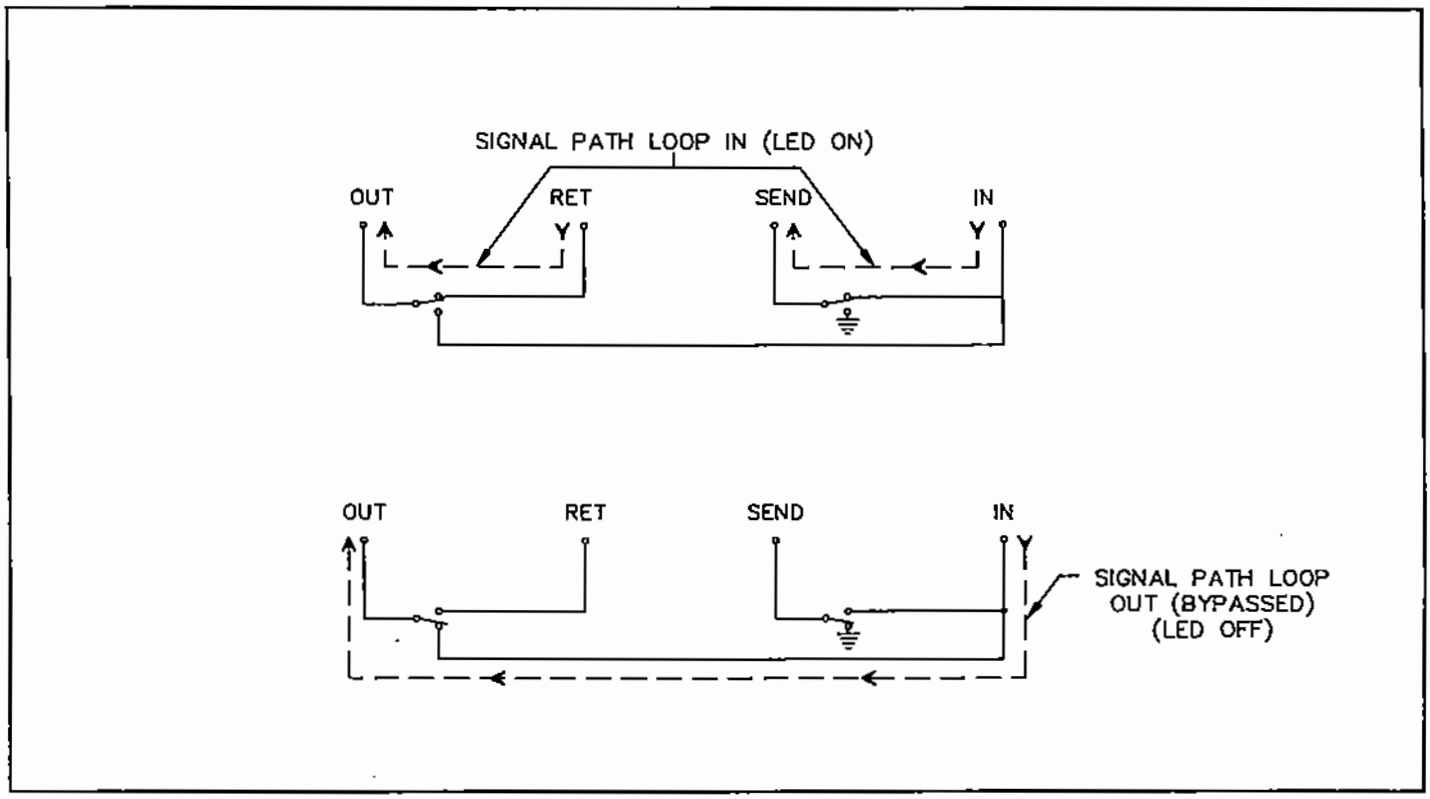
2. PATCH MATE™ QUICK SETUP

There are many different setup applications for the Patch Mate™. Here is a quick and simple setup that can be used for most applications.

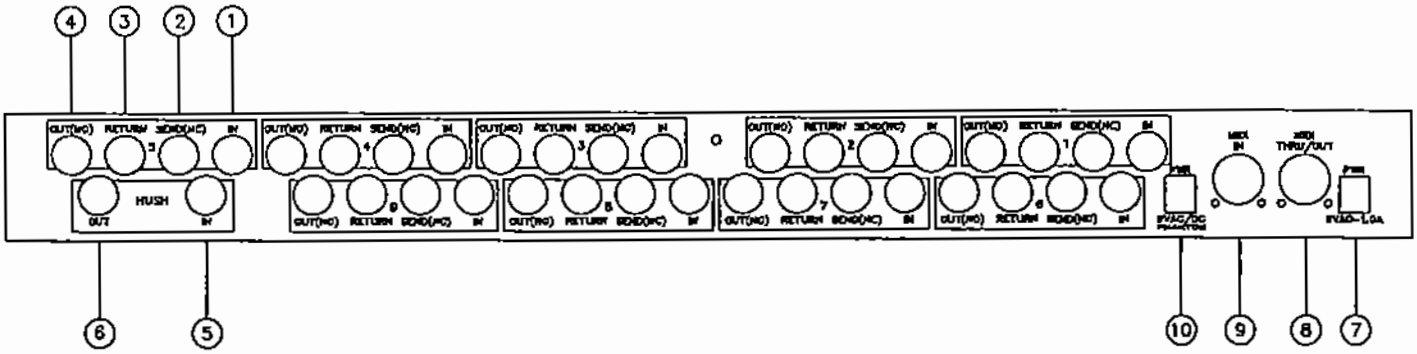


Both loops in this setup are used as mono loops. By pressing the L1/C1 button on the front of the Patch Mate™, the preamp in Loop 1 is switched in and out of the signal path . By pressing the L2/C2 button the effect in Loop 2 is switched in and out of the signal path. For this simple setup the effects are placed in each loop using the SEND and RET jacks, and the routing of effects is determined by patch cords in the IN and OUT of each loop used. No 'normalling' of one loop to the next exists, each loop is separate from the others. For other loop configurations check Appendix B.

A brief diagram of a loop is shown below. For a detailed diagram of a loop check Appendix A.



3. REAR PANEL DESCRIPTION



(1)...*LOOP IN* jacks:

These are standard 1/4" stereo jacks that are used to provide input to the audio path for each particular loop.

(2)...*LOOP SEND* jacks:

These are standard 1/4" stereo jacks that are used to provide an audio input to an external device, or used as a normally closed latching control function. This allows these jacks to control devices which have footswitchable functions.

(3)...*LOOP RETURN* jacks:

These are standard 1/4" stereo jacks that accept the audio output of any external device.

(4)...*LOOP OUT* jacks:

These are standard 1/4" stereo jacks that provide an output of the audio signal for each individual loop. These jacks are also used as the normally open latching control function. This allows these jacks to control devices which have footswitchable functions.

(5)...*HUSH™ IN* jack:

This standard 1/4" stereo jack provides input to the stereo HUSH™ circuitry. The HUSH™ circuitry may be inserted into the audio path at any point, but it is recommended to be inserted into as the last loop before routing to the power amplifier for maximum noise reduction.

(6)...*HUSH™ OUT* jack:

This standard 1/4" stereo jack provides output from the stereo HUSH™. This jack must be patched into the input of the stage or loop, for the continuation of the audio signal.

(7)...*PWR* jack:

This jack accepts power from the 9VAC/1500mA adaptor supplied with the unit. This 9V RMS AC voltage is internally processed by a voltage doubler, thus generating a +/- 15V to maintain the headroom and sound quality of professional, studio quality equipment. Using an external power source such as this minimizes excessive noise and hum problems often associated with internal transformers, giving the user optimal performance.

(8)...*MIDI THRU/OUT* jack:

This standard 5 pin DIN connector passes on the MIDI information that is received at the MIDI IN jack to other MIDI-compatible devices via a MIDI cable.

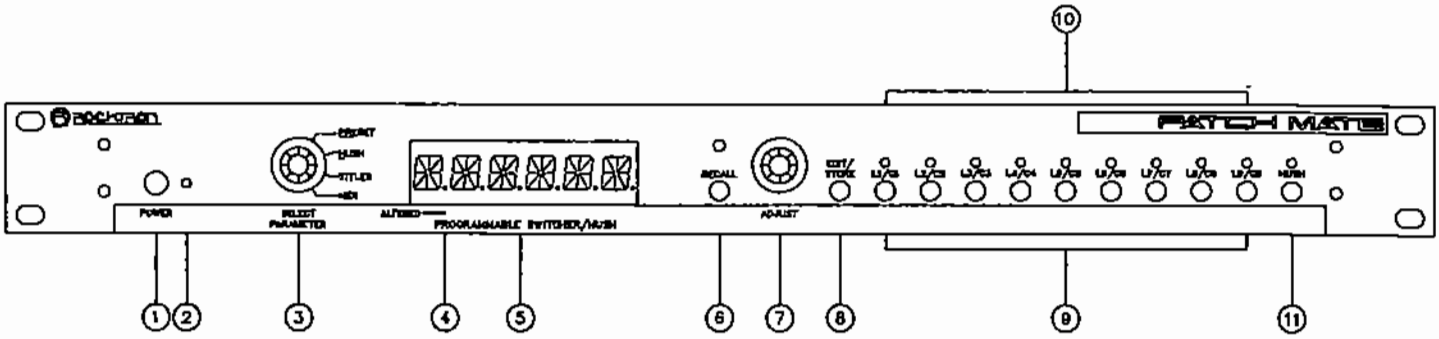
(9)...*MIDI IN* jack:

This 7 pin DIN connector receives MIDI information from the device which is transmitting the MIDI commands for the Patch Mate™ to execute.

(10)...*PHANTOM POWER* jack:

This jack offers the ability to power the Rocktron MIDI Mate Foot Controller from a 7 pin MIDI cable which connects from the MIDI Mate to the MIDI IN jack on the rear panel of the Patch Mate™, eliminating the need to find an AC outlet near where the footpedal would be placed during a performance or the need to run an extension cord out to the MIDI Mate. Instead of inserting the adaptor into the MIDI Mate POWER jack, plug it into the PHANTOM POWER jack on the Patch Mate™. This will power the MIDI Mate through pins 6 and 7 of the MIDI cable connecting the two units. A 7 pin MIDI cable must be used, and can be ordered through your Rocktron dealer (7 pin MIDI cable M7).

4. FRONT PANEL DESCRIPTION



(1)...*POWER* switch

(2)...*POWER ON/OFF* LED:

When lit, indicates the Patch Mate™ is powered and ready for operation.

(3)...*PARAMETER SELECT* control:

4 positions (Preset, HUSH™, Titles and MIDI options) full counterclockwise to full clockwise.

Preset: preset number and title, 128 total presets available.

HUSH™: HUSH™ noise reduction setting, adjustable from -70dB to 0dB.

Titles: Allows editing of preset titles.

MIDI Options: Includes MIDI Mapping Status, Program Mapping, Controller Mapping, MIDI Program Change Channel and MIDI Control Change Channel.

(4)...*ALTERED* indicator:

The ALTERED indicator is the first decimal point of the first character of the display. When this decimal point is lit (only in HUSH™ setting), it is indicating that the HUSH™ value displayed is not the HUSH™ value stored with the current preset.

(5)...*DISPLAY* panel:

The Display panel consists of 6 alphanumeric characters of 14 segments each. On initial power up the LED display will go through a brief segment test, to indicate that all characters are operating correctly.

(6)...*RECALL* button:

The RECALL button's function is dependant on the position of the SELECT PARAMETER control.
When the SELECT knob is in the "PRESET" position, the RECALL button will recall the preset flashing on the display.
When the SELECT knob is in the "HUSH™" position, the RECALL button is used to toggle between the stored value and the altered value.
When the SELECT knob is in the "TITLES" position, the RECALL button has no function.

When the SELECT knob is in the "MIDI" position, the RECALL button allows the MIDI options to be stepped through.

(7)...*ADJUST* control:

The ADJUST control's function is dependant on the position of the SELECT PARAMETER control.
When the SELECT knob is in the "PRESET" position, the ADJUST knob can be used to choose a preset.
When the SELECT knob is in the "HUSH™" position, the ADJUST knob is used to change the value of the programmable HUSH™ threshold setting.
When the SELECT knob is in the "TITLES" position, the ADJUST knob is used to choose a character in the preset title.
When the SELECT knob is in the "MIDI" position, the ADJUST knob allows changes to be made to the different MIDI options.

(8)...*EDIT/STORE* button:

The EDIT/STORE button's function is dependant on the position of the SELECT PARAMETER control.
When the SELECT knob is in the "PRESET" or "HUSH™" positions, the EDIT/STORE button is used to store the current HUSH™ and loop settings into a preset.
When the SELECT knob is in the "TITLES" position, the EDIT/STORE button is used to store the current character and to start editing the next character.
When the SELECT knob is in the "MIDI" position, the EDIT/STORE button can store the preset that the Patch Mate is currently in to be the "power on" preset (or the preset which is recalled when the unit is turned on). The EDIT/STORE button is also used to store the different MIDI options in memory.

(9)...*LOOP/CONTROL* buttons:

The LOOP/CONTROL buttons allow the corresponding loop/control to be switched from one status to another.

(10)...*LOOP/CONTROL* LEDS:

The LOOP/CONTROL LEDS show the status of each loop/control.
An unlit LED means the loop/control is out, or the control function is at its normal setting. This means that a normally open contact (NO) is open, or a normally closed (NC) contact is closed.
A lit LED means the loop is in, or the control function is opposite its normal setting. A normally open (NO) contact is now closed, and a normally closed (NC) contact is now open.

(11)...*HUSH*™ button AND LED:

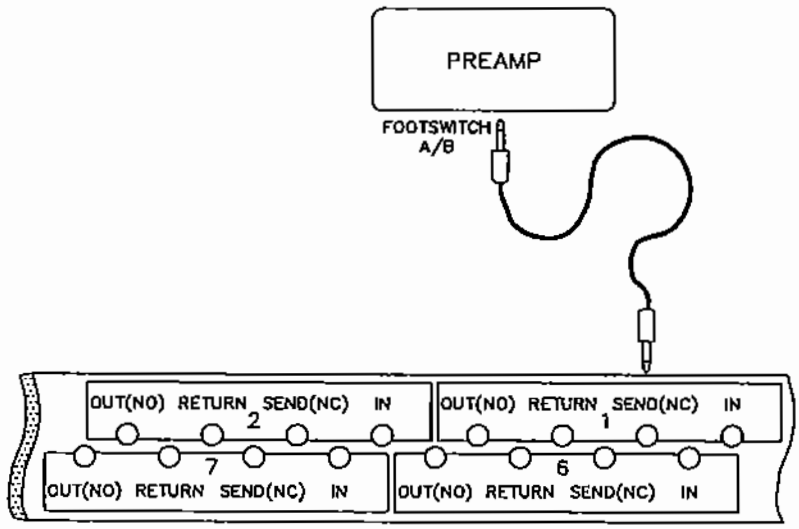
The HUSH™ button allows the programmable HUSH™ to be inserted into the signal path where it is patched in.
When the HUSH™ LED is off, the HUSH™ circuitry is bypassed.
When the HUSH™ LED is on, the HUSH™ circuit is now active where it is patched into the signal path.

5. CONTROL FUNCTIONS

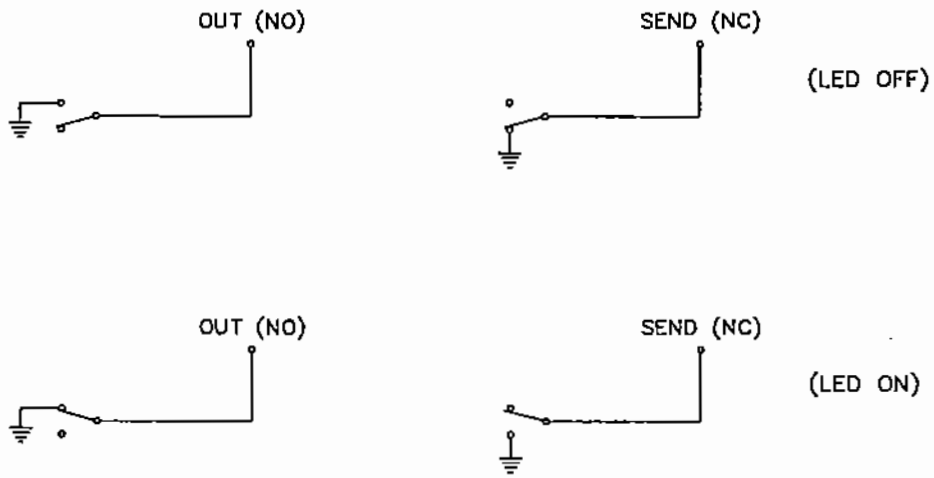
Because each loop on the Patch Mate™ consists of only relays, with no buffers in the signal path, a loop may be used as an audio loop or as a latching control function. A common use for a control function is for channel switching (bypassing) anything that is accessible through a device's footswitch jack. Each loop on the Patch Mate™ has two jacks that are used for control functions. The SEND jack is used as a normally closed control function and the OUT jack is used as a normally open control function. Do not insert any plugs into the IN or RET jacks when using a loop as a control function.

A quick setup illustration showing a loop used as a control function is shown below.

Example of a Loop Used as a Control Function:



Schematic Diagram of a Loop Used as a Control Function:



Note: *It is not recommended to use both the normally open and the normally closed control functions of the same loop (for two different devices), as doing so may cause grounding problems.*

6. OPERATING THE PATCH MATE™

Patch in the desired devices to be switched in and out by the Patch Mate™ using the QUICK SETUP diagram or a configuration shown in Appendix B (or make up your own configuration).

!!WARNING!! *DO NOT INSERT THE OUTPUT OF ANY POWER AMPLIFIER INTO ANY JACK ON THE PATCH MATE™. THIS MAY DAMAGE THE PATCH MATE™ AND THE AMPLIFIER.*

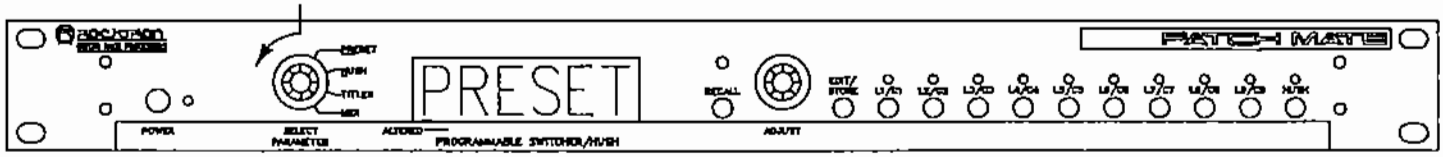
A. TO STORE NEW PRESETS

All 128 presets can be copied over.

STEP 1: Turn on or off the desired loops/controls.

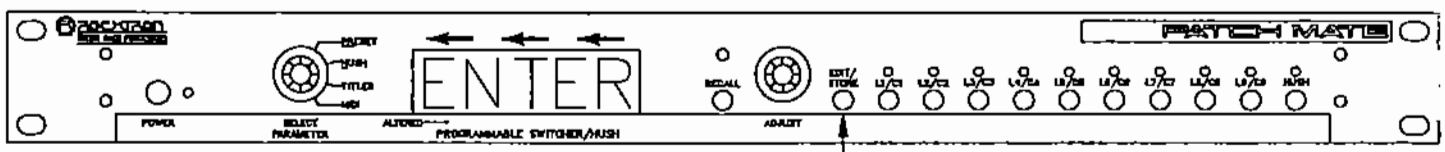
STEP 2: Make sure the SELECT knob is in the "PRESET" or the "HUSH™" position. If the HUSH™ circuit is to be patched in for this preset the HUSH™ threshold may be set now also (see SETTING HUSH™ THRESHOLD section).

A. TURN COUNTER CLOCKWISE TO "PRESET".



STEP 3: Press the EDIT/STORE button to initiate the store procedure. "ENTER PRESET" will scroll across the display, then the current preset number and title will flash on the display.

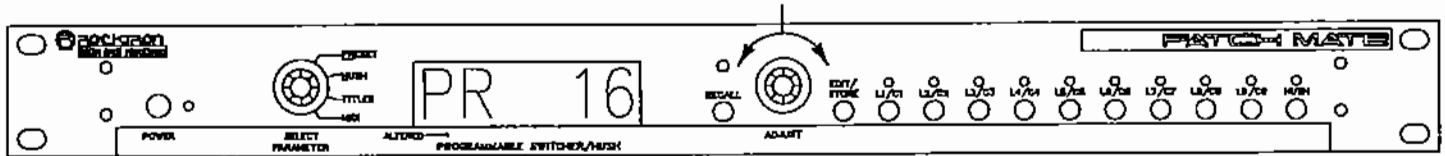
B. SCROLLS "ENTER PRESET".



A. PRESS TO START STORE PROCEDURE

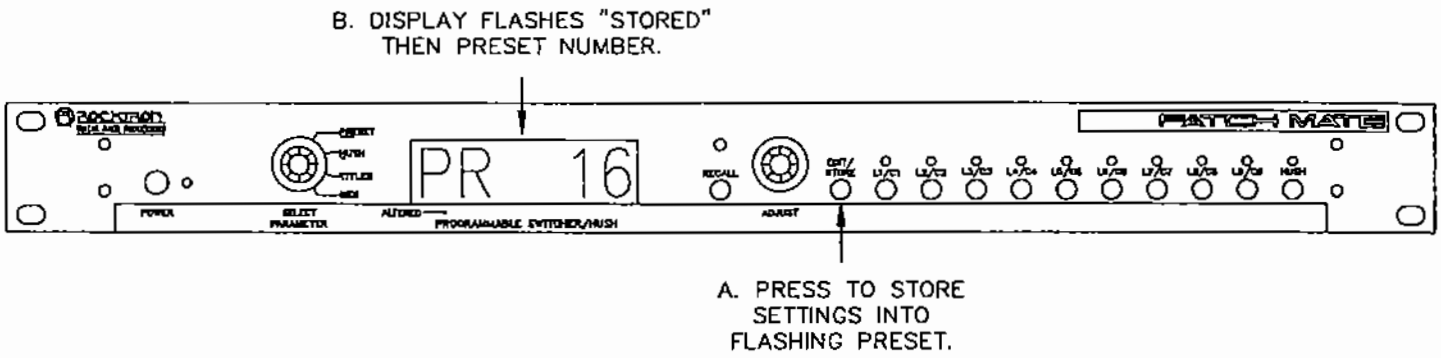
STEP 4: Use the ADJUST knob to select the preset that the current settings are to be stored into.

A. SELECT PRESET TO STORE INTO.

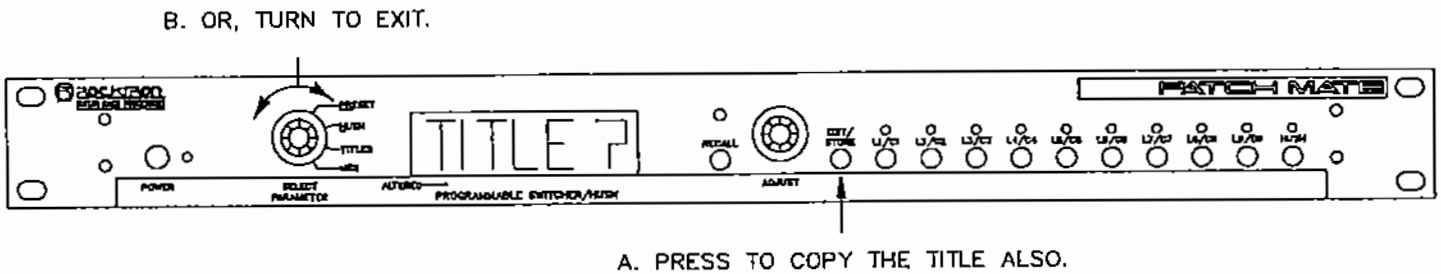


B. SELECTED PRESET FLASHES ON DISPLAY

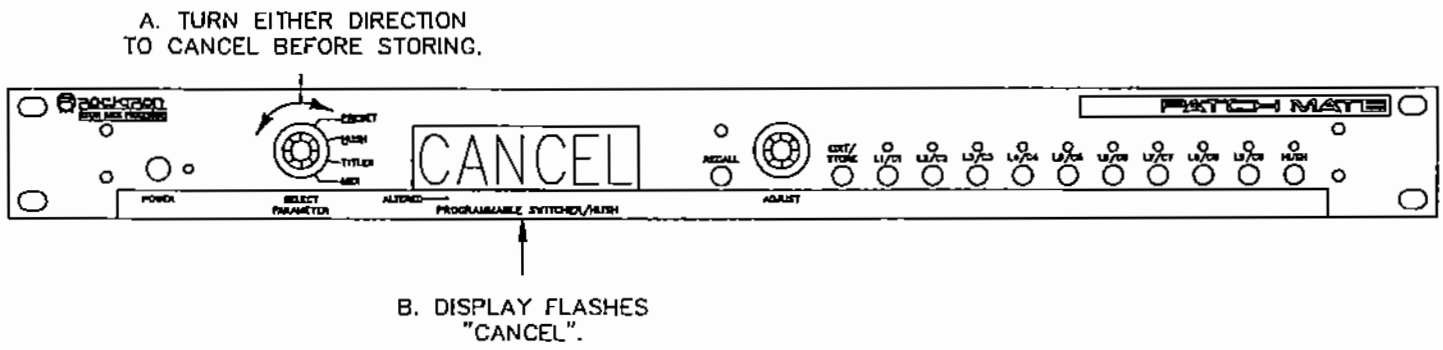
STEP 5: Press the EDIT/STORE button to store the current setting into the preset that is flashing on the display. "STORED" will be displayed.



STEP 6: The Display will now show "TITLE?". This allows you the option of copying the title of the preset you are copying from. If you wish to copy the title, press EDIT/STORE again. If not, turn the SELECT PARAMETER control to exit.

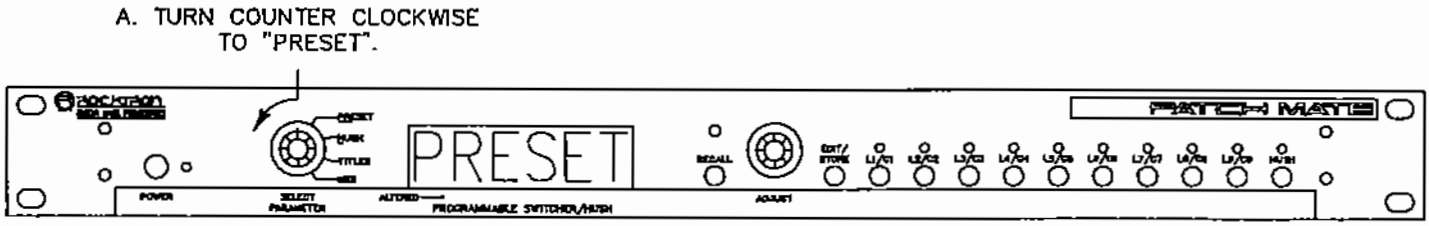


NOTE: *The SELECT knob may be turned (in either direction) to cancel the store procedure once it has been initiated.*

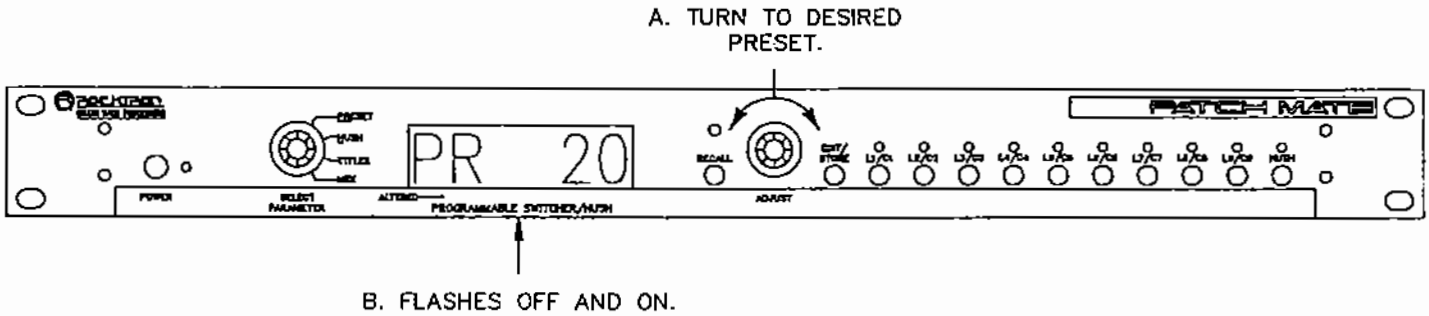


B. RECALLING A STORED PRESET

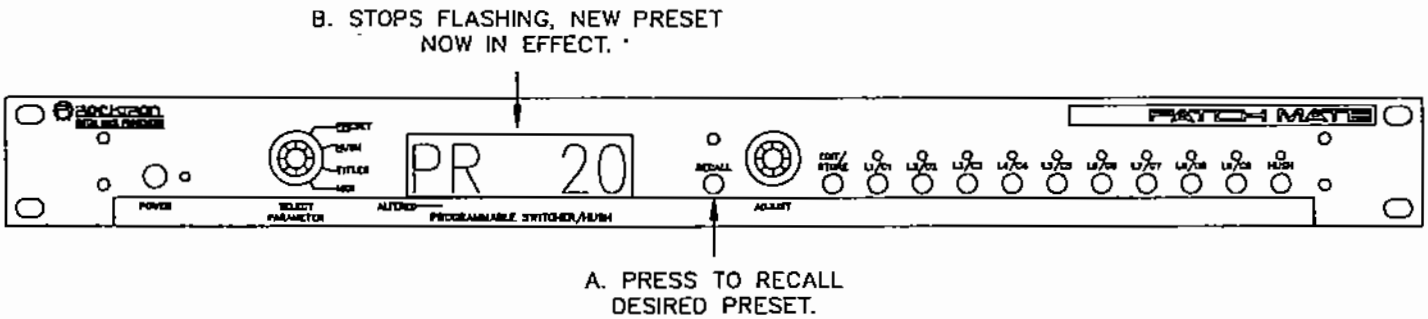
STEP 1: Turn the SELECT knob fully counter clockwise. This position is PRESET. The display will flash "PRESET" then "PR" and the current preset number, then the preset title will appear.



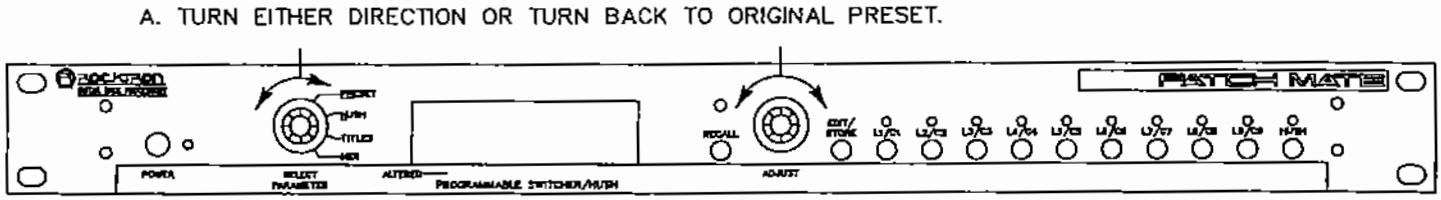
STEP 2: Turn the ADJUST knob to the desired preset to be recalled. The preset number and title will flash.



STEP 3: Press the RECALL button to recall the flashing preset. The preset number and title will continue to flash until the RECALL button is pressed. No change in preset will take place until the RECALL button is pressed.



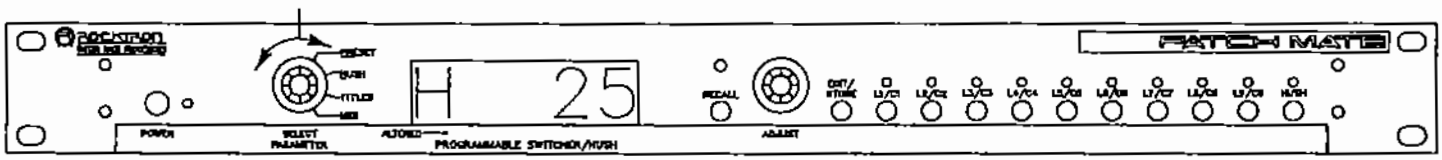
NOTE: *To cancel the recall mode, either turn the ADJUST knob back to the original preset, or turn the SELECT knob in either direction.*



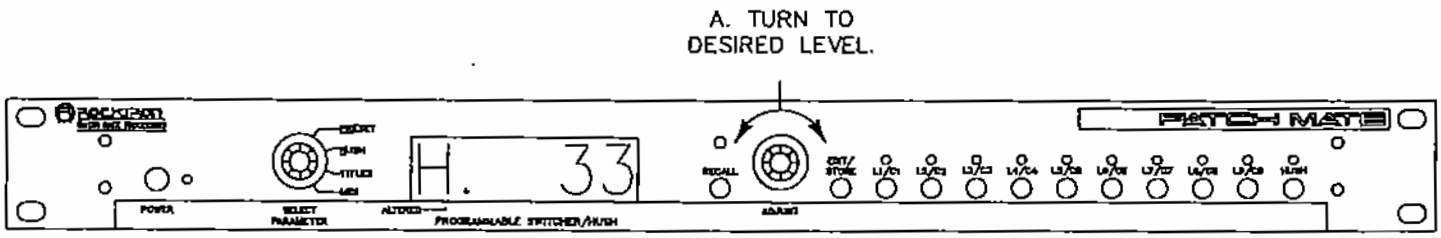
C. SETTING THE HUSH™ THRESHOLD

HUSH™ is HUSH Systems' single-ended noise reduction system. The Patch Mate™ offers a stereo HUSH™ loop which may be inserted at any point in the signal chain to remove all extraneous background noise. Higher amounts of noise will require a higher threshold setting. To set the HUSH™ threshold it is recommended to have the HUSH™ patched into the audio signal path and have the HUSH™ circuitry switched in (HUSH™ LED lit). This will allow the user to hear the changes being made to correctly set the HUSH™ threshold level.

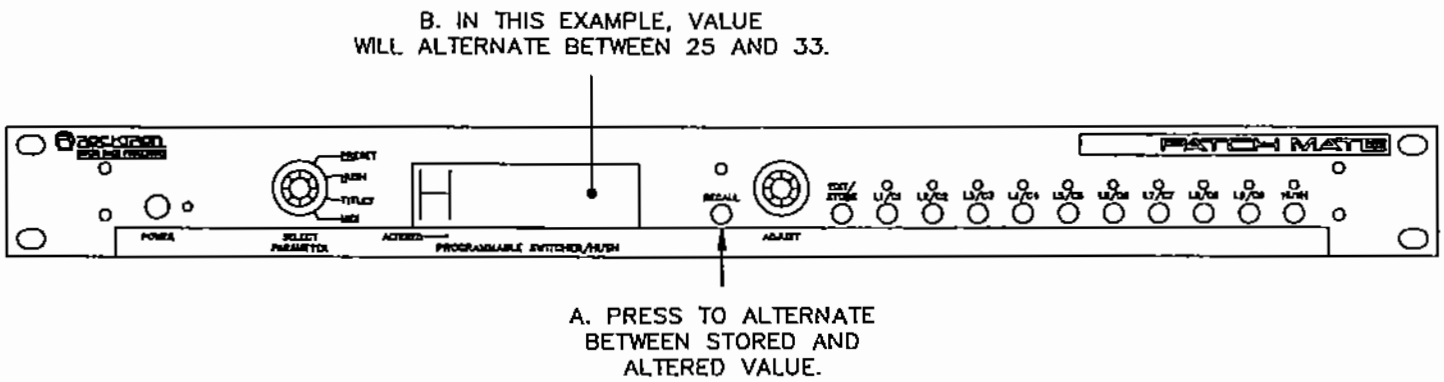
STEP 1: Turn the SELECT knob to the HUSH™ position. "HUSH" will flash on the display, then "H" and the current HUSH™ threshold setting will be displayed. This threshold setting is for both channels of HUSH™.



STEP 2: Turn the ADJUST knob to the desired threshold level.



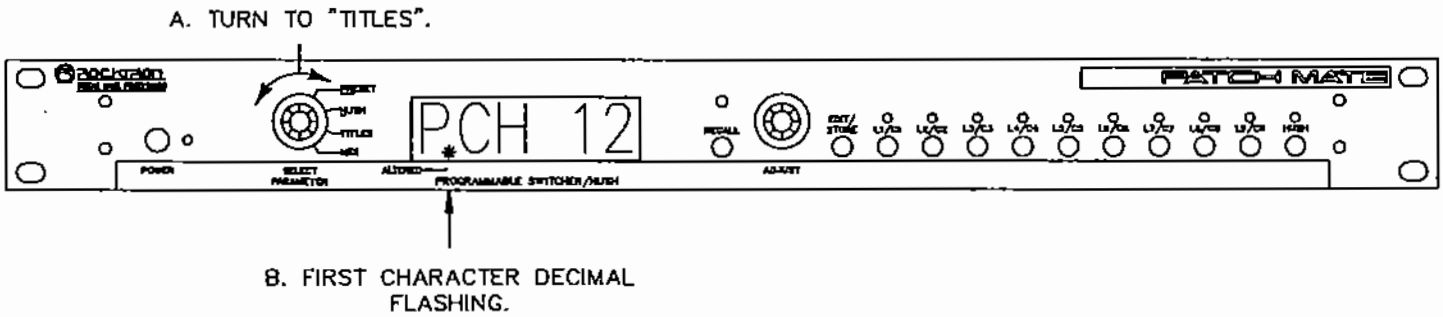
NOTE: *The RECALL button will allow the Patch Mate™ to alternate between the stored threshold level and the altered threshold level while in the HUSH™ position.*



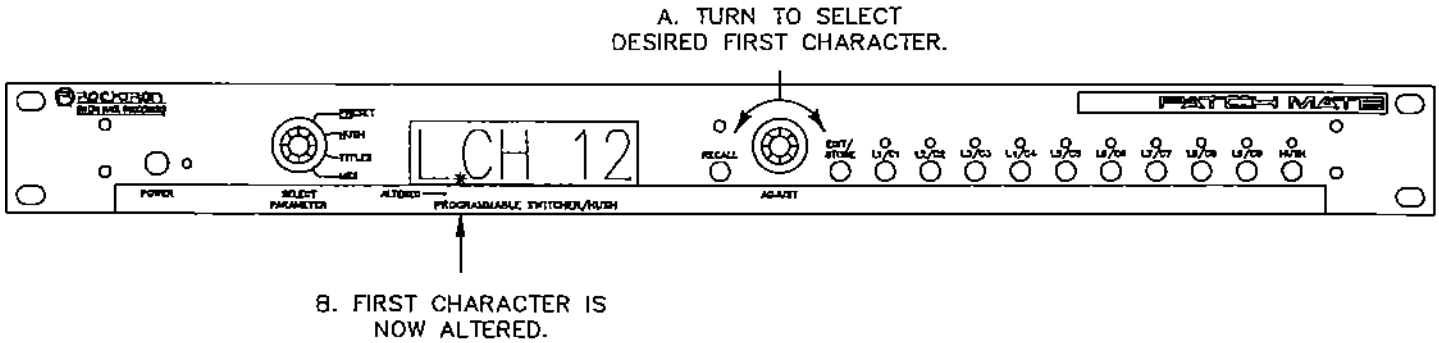
D. EDITING A PRESET TITLE

All preset titles can be modified. To edit the title of a given preset, that preset must be recalled (see RECALLING A STORED PRESET).

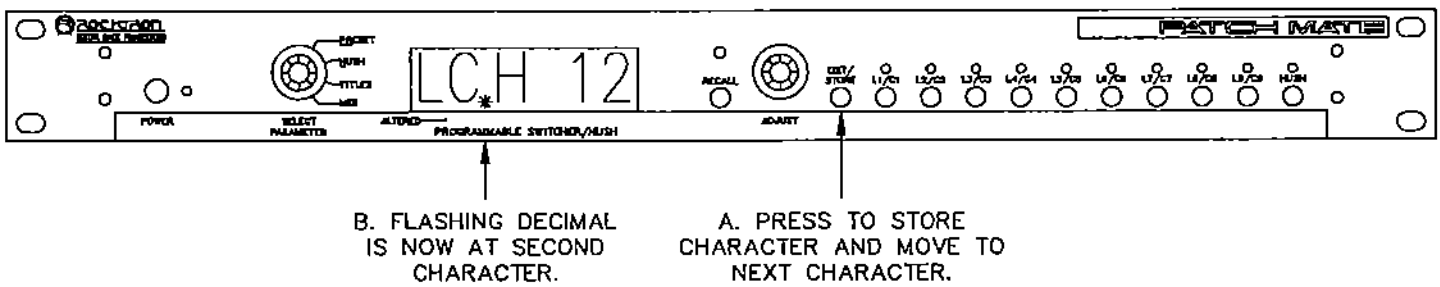
STEP 1: Turn the SELECT knob to the "TITLES" position. "TITLES" will flash on the display, then the current preset title will appear with the decimal point of the first character flashing.



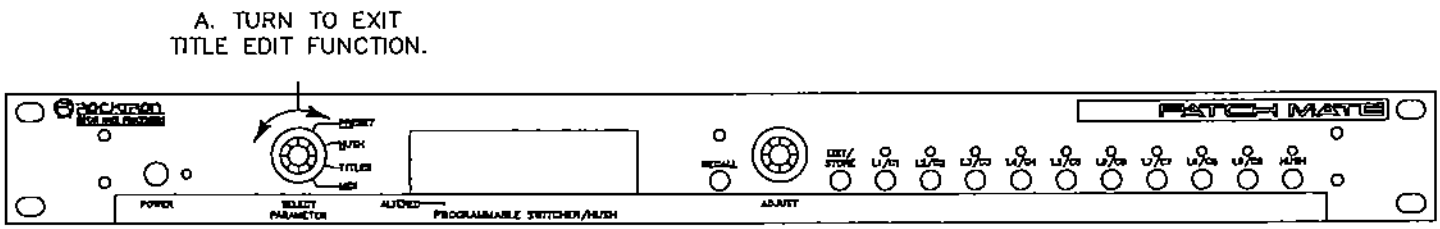
STEP 2: Turn the ADJUST knob to change the first character of the title.



STEP 3: When the desired character is selected, press the EDIT/STORE button to store that character and start editing the next character. Each time the EDIT/STORE button is pressed, the flashing decimal point will advance to the next character.



NOTE: *To end title editing, turn the SELECT PARAMETER knob to a different position.*



E. FACTORY REINITIALIZATION

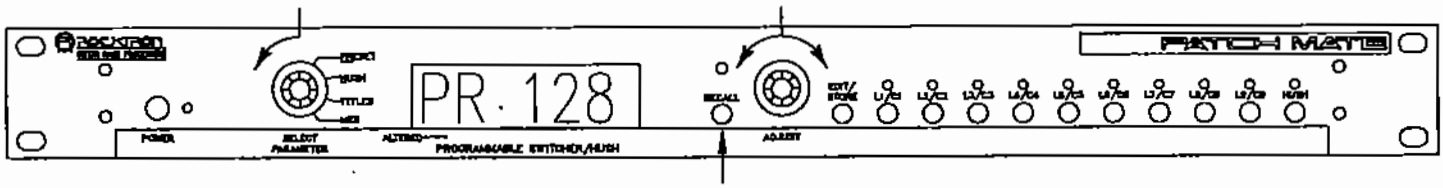
This procedure allows you to restore the Patch Mate™ memory to it's original condition as it was shipped from Rocktron.

!! CAUTION !!
This procedure will permanently erase all user presets.

STEP 1: To perform the Factory Reinitialization procedure, first recall preset# 128.

A. TURN TO "PRESET".

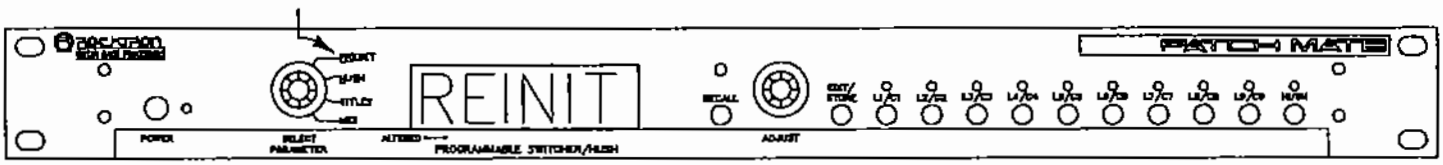
B. SELECT PRESET #128.



C. PRESS TO RECALL PRESET #128.

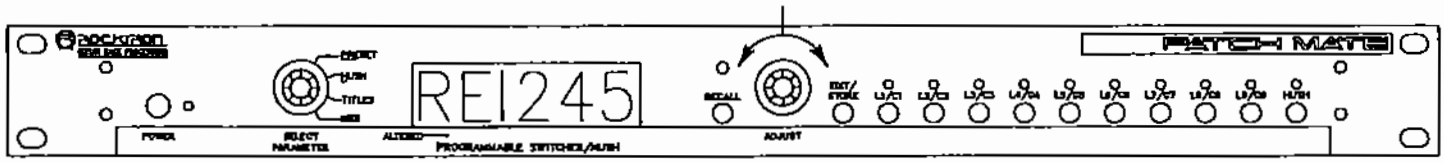
STEP 2: Turn the SELECT PARAMETER knob clockwise until "REINIT" is displayed. This position is only available in preset# 128.

A. TURN CLOCKWISE TO "REINIT".

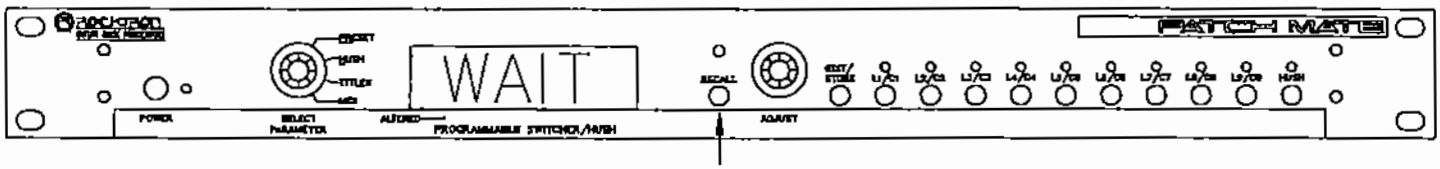


STEP 3: Turn the ADJUST control until the number 245 is displayed.

A. TURN TO THE NUMBER "245".



STEP 4: ***Pressing the EDIT/STORE button at this time will erase all user programs at this time.*** Press the EDIT/STORE button. The message "WAIT" will be displayed while the presets, titles, mappings, etc. are being reset to the original factory condition.



A. PRESS TO REINITIALIZE.

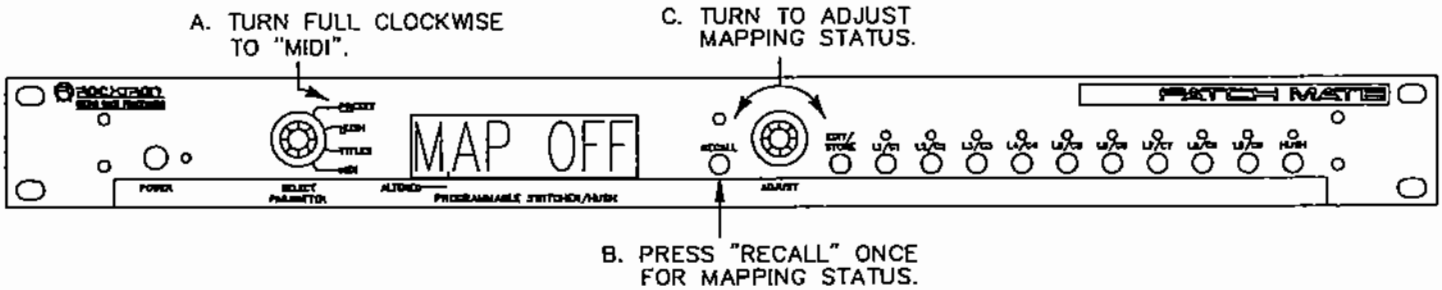
NOTE: All of the user settings are now erased and the message "ERR 0" should be displayed after the reinitialization is complete. If any message but "ERR 0" is displayed, the unit may not have reinitialized properly. Once the reinitialization has been completed, turn the SELECT PARAMETER control to exit the function.

7. RECALLING MIDI OPTIONS

The most clockwise position of the SELECT PARAMETER control is MIDI. The MIDI options available are as follows: mapping status, program mapping, controller mapping, MIDI Program Change Channel and MIDI Control Change channel. These options may be stepped through by pressing the RECALL button repeatedly. At each option the status can be viewed. By turning the SELECT PARAMETER control while in any mode but the program mapping or controller mapping modes, you will exit the MIDI options.

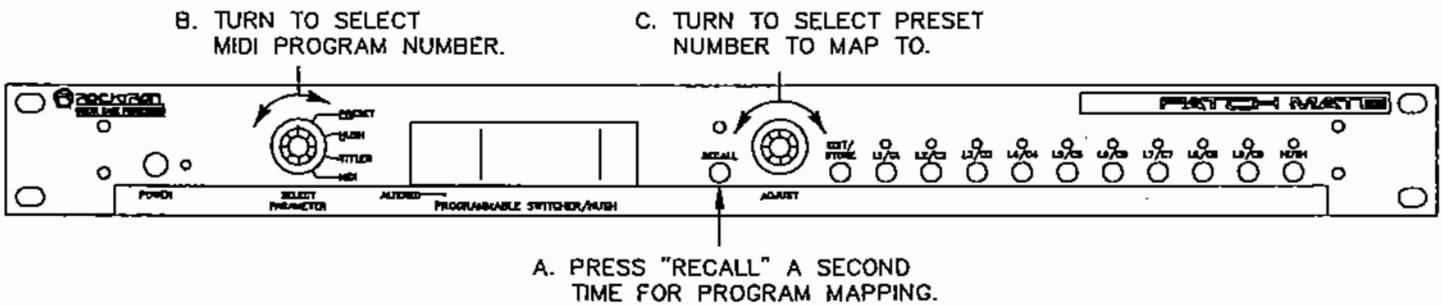
A. MAPPING STATUS

Mapping status turns the program mapping ON or OFF. When the program mapping is OFF and a MIDI program change is initiated, the preset number recalled is the program number sent via MIDI. When the program mapping is ON and a MIDI program change is received, the program number sent via MIDI is mapped to a preset number and that preset is recalled by the Patch Mate™. The program mapping status may be changed by turning the ADJUST control and pressing the EDIT/STORE button. The changed status will remain in effect until it is changed again, even after the unit is powered down.



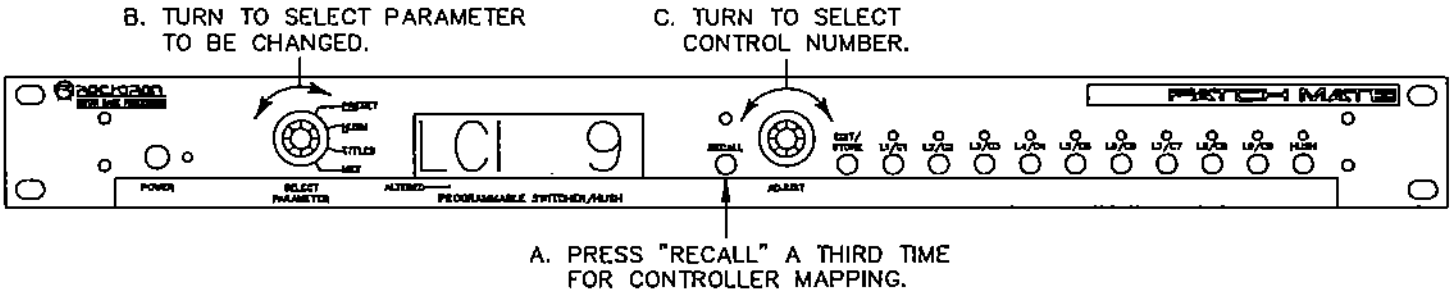
B. PROGRAM MAPPING

The program mapping is initially programmed for a one to one correspondence (that is, MIDI program number nine is mapped to preset nine, ten to ten, etc.). The program mapping may be changed by selecting the MIDI program number via the SELECT PARAMETER control, then by selecting the preset number to map to via the ADJUST control. The preset number may also be turned to the OFF position, thereby not responding to the corresponding MIDI program change. Once the desired preset number is selected, press the EDIT/STORE button to save the change for each altered mapping. The mapping change must be STORED before the Patch Mate™ will respond to it.



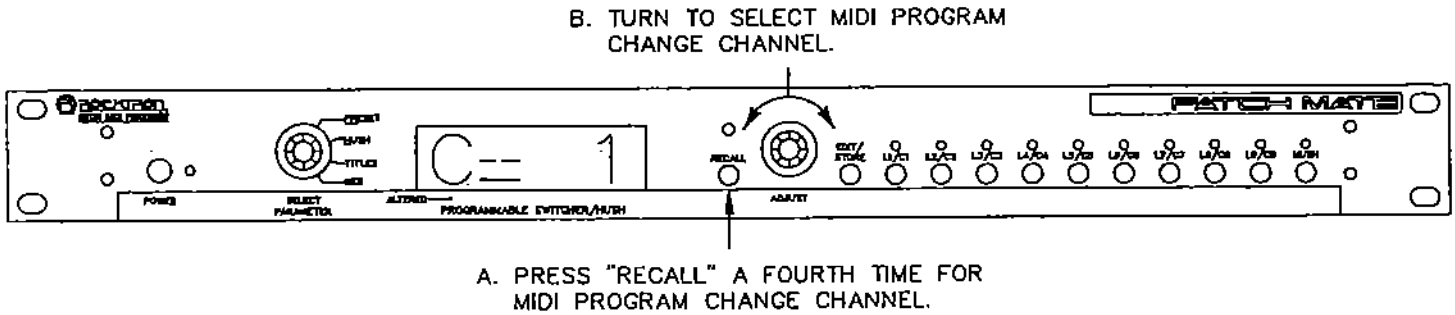
C. CONTROLLER MAPPING

The controller mapping will map a Patch Mate™ loop/control to a MIDI controller number, starting at controller zero through controller 120, or OFF. The controller mapping may be changed by selecting the parameter via the SELECT PARAMETER control, then by selecting the control number via the ADJUST control. The control number may also be turned to the OFF position, thereby not letting that loop/control respond to any MIDI controller change. Once the desired control number is selected, press the EDIT/STORE button to save the change for each altered mapping. The mapping change must be STORED before the Patch Mate™ will respond to it.



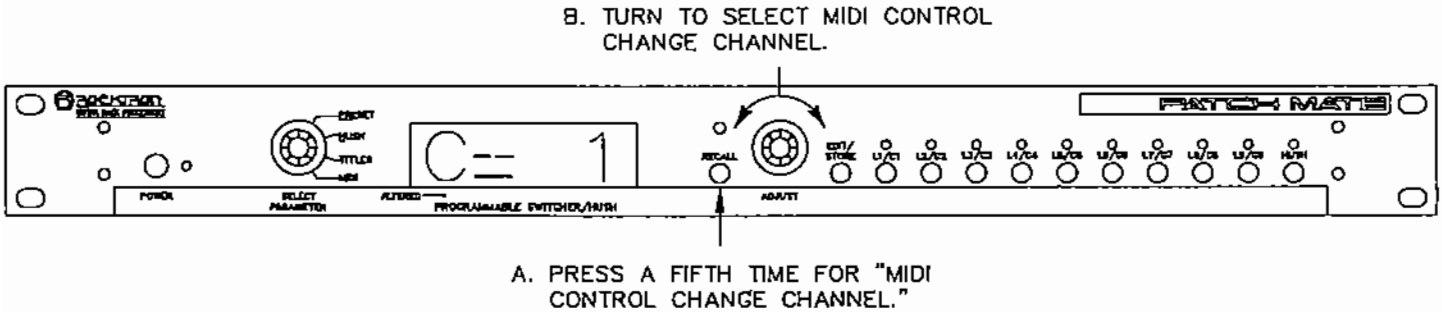
D. MIDI PROGRAM CHANGE CHANNEL

The MIDI Program Change Channel is the channel that the Patch Mate™ will receive program changes on. To immediately change the channel, turn the ADJUST control to the desired channel. The channel may be set to 1-16, OMNI (receives on all channels) or to the OFF position (not allowing the Patch Mate™ to receive any MIDI program Changes). The changed channel need not be stored before the Patch Mate™ will respond to it. This change will remain in effect until it is changed again, or until the unit is turned off. If desired, press the EDIT/STORE button to save the change for the next time the unit is turned on. Be sure that the MIDI channel of the Patch Mate™ matches the MIDI channel of the transmitting device you wish to receive MIDI program changes from.

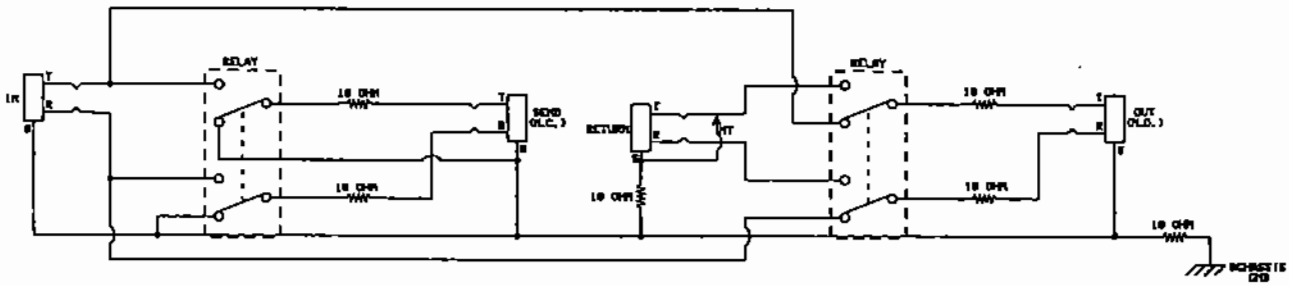


E. MIDI CONTROL CHANGE CHANNEL

The MIDI Control Change Channel is the channel that the Patch Mate™ will receive control changes on. To immediately change the channel, turn the ADJUST control to the desired channel. The channel may be set to 1-16, OMNI (receives on all channels) or to the OFF position (not allowing the Patch Mate™ to receive any MIDI Control Changes). The changed channel need not be stored before the Patch Mate™ will respond to it. This change will remain in effect until it is changed again, or until the unit is turned off. If desired, press the EDIT/STORE button to save the change for the next time the unit is turned on. Be sure that the MIDI channel of the Patch Mate™ matches the MIDI channel of the transmitting device you wish to receive MIDI control changes from.



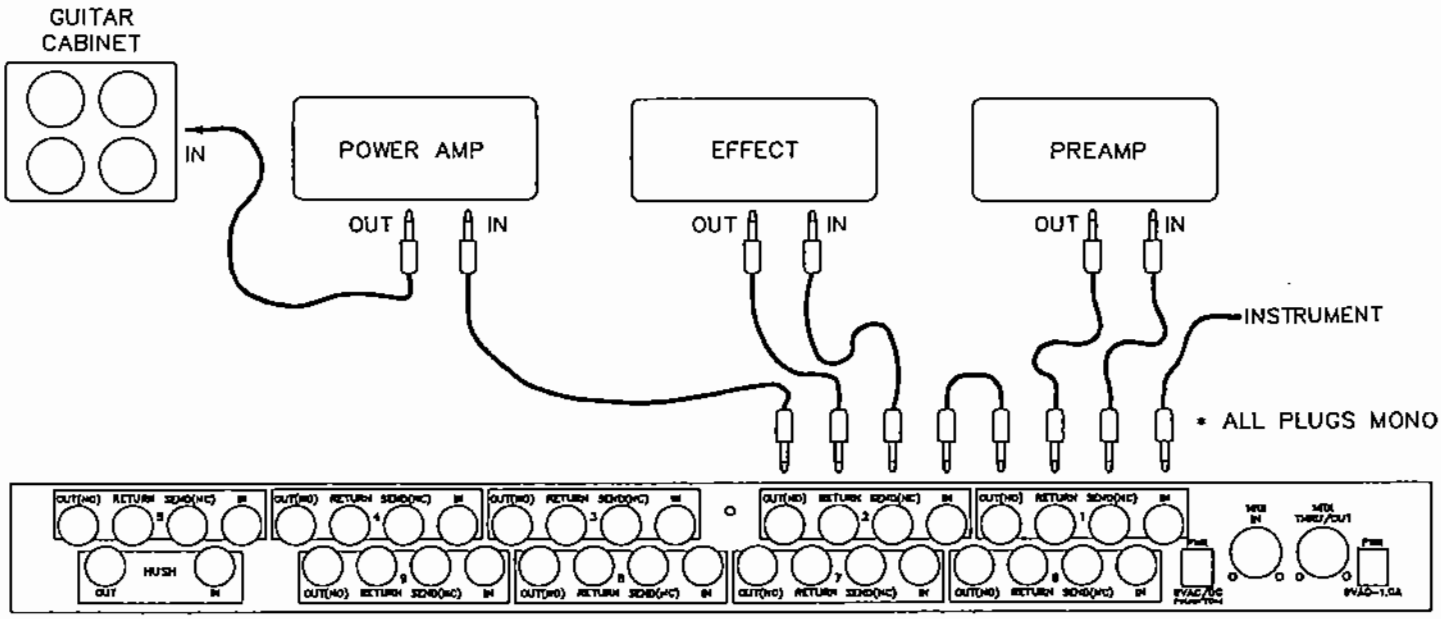
8. APPENDIX A
LOOP SCHEMATIC



9. APPENDIX B
OTHER LOOP CONFIGURATIONS FOR SPECIAL EFFECTS

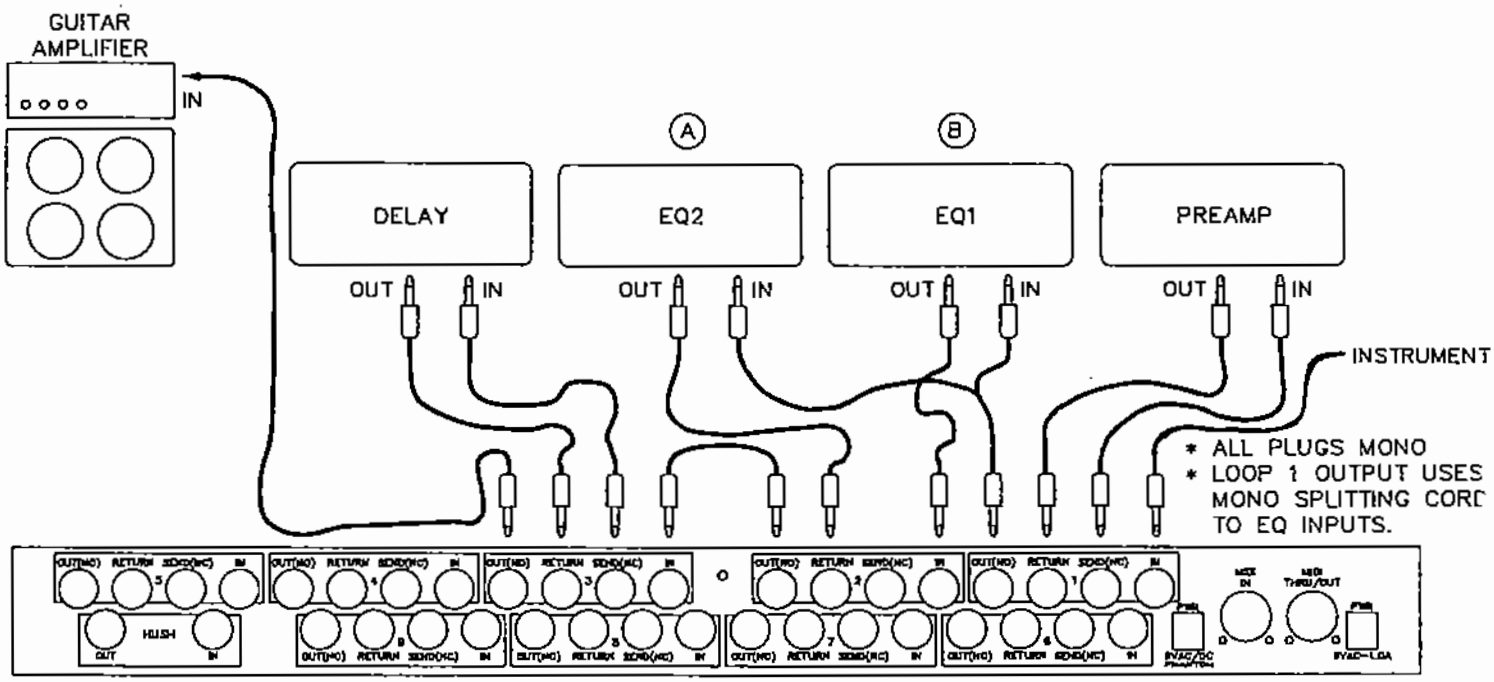
1. DEVICE IN/BYPASS CONFIGURATION

This configuration is the most common. The device is patched in through the SEND and RETURN jacks and is either in the signal path (LED on) or bypassed (LED off).



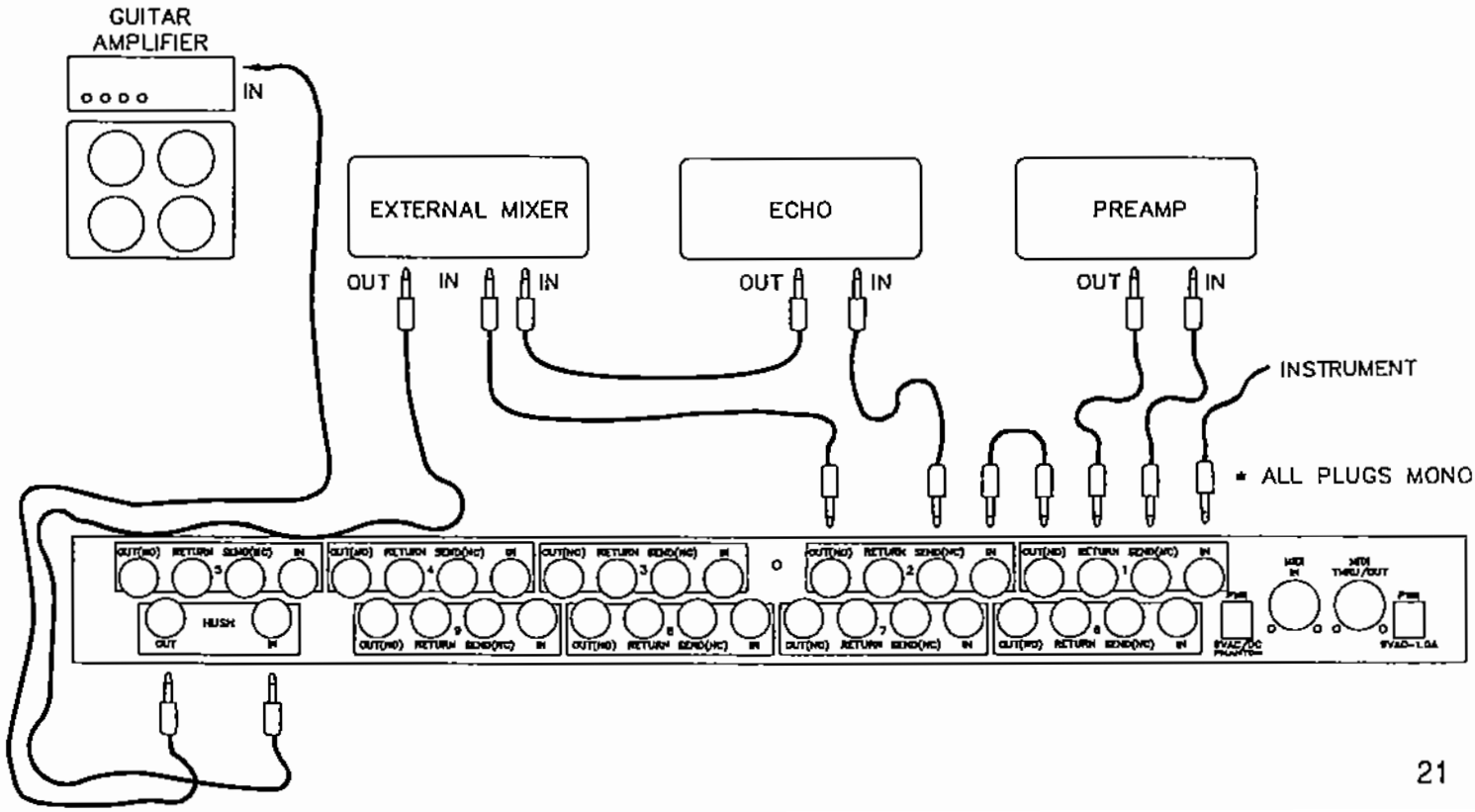
2. DEVICE A/B CONFIGURATION

This configuration allows either device "A" or "B" to be in the signal path at any given time. One of the two devices will always be in the signal path.



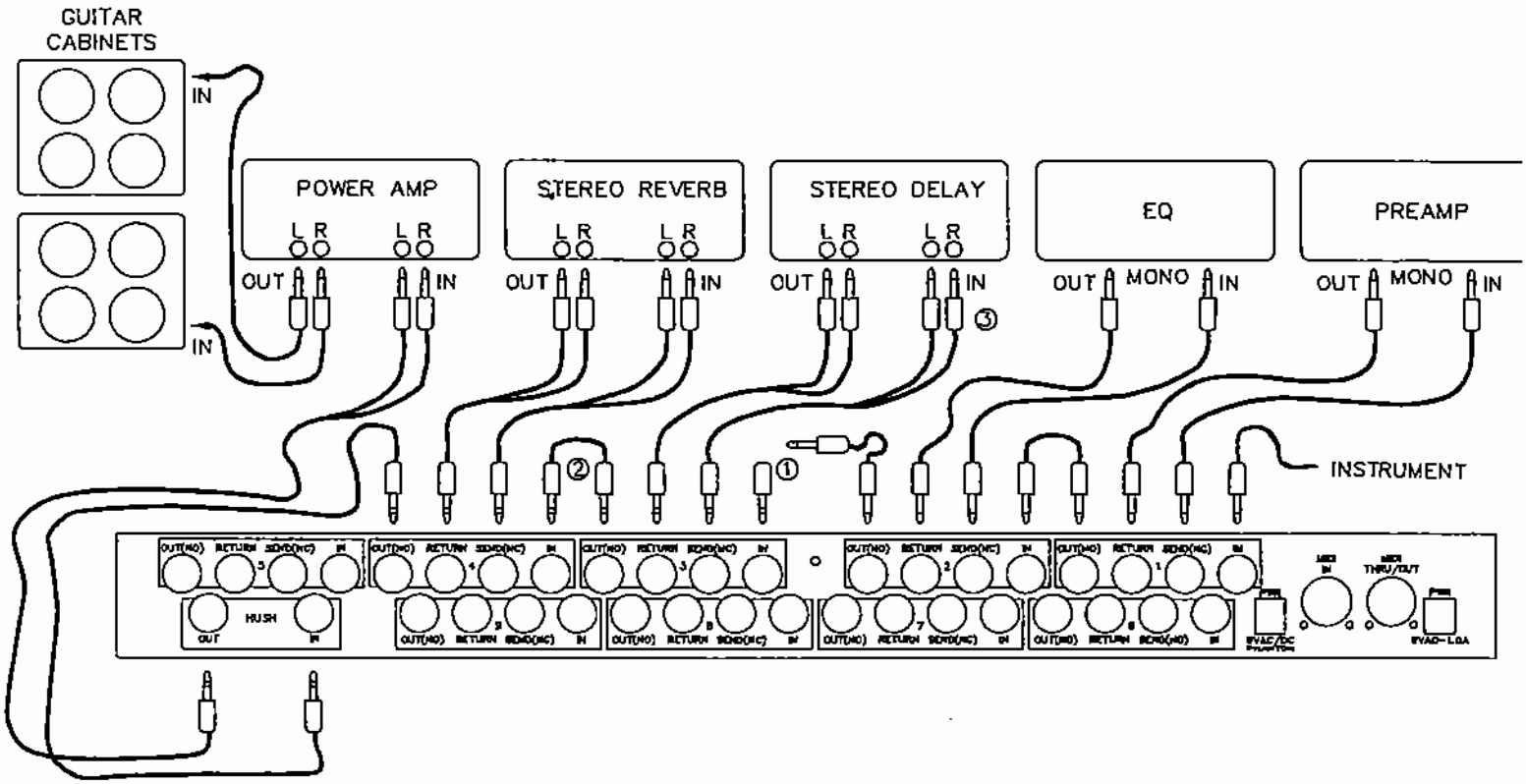
3. DEVICE INPUT MUTE CONFIGURATION

This configuration allows the input to a device to be muted when the loop is taken out (LED off), while the output of the device continues. For example, if the device is an echo, the echo effect would continue to die out naturally when switched out, rather than muting the effect as would happen in the IN/BYPASS CONFIGURATION.



4. STEREO APPLICATION

Shows how to setup a stereo system using both mono and stereo loops.

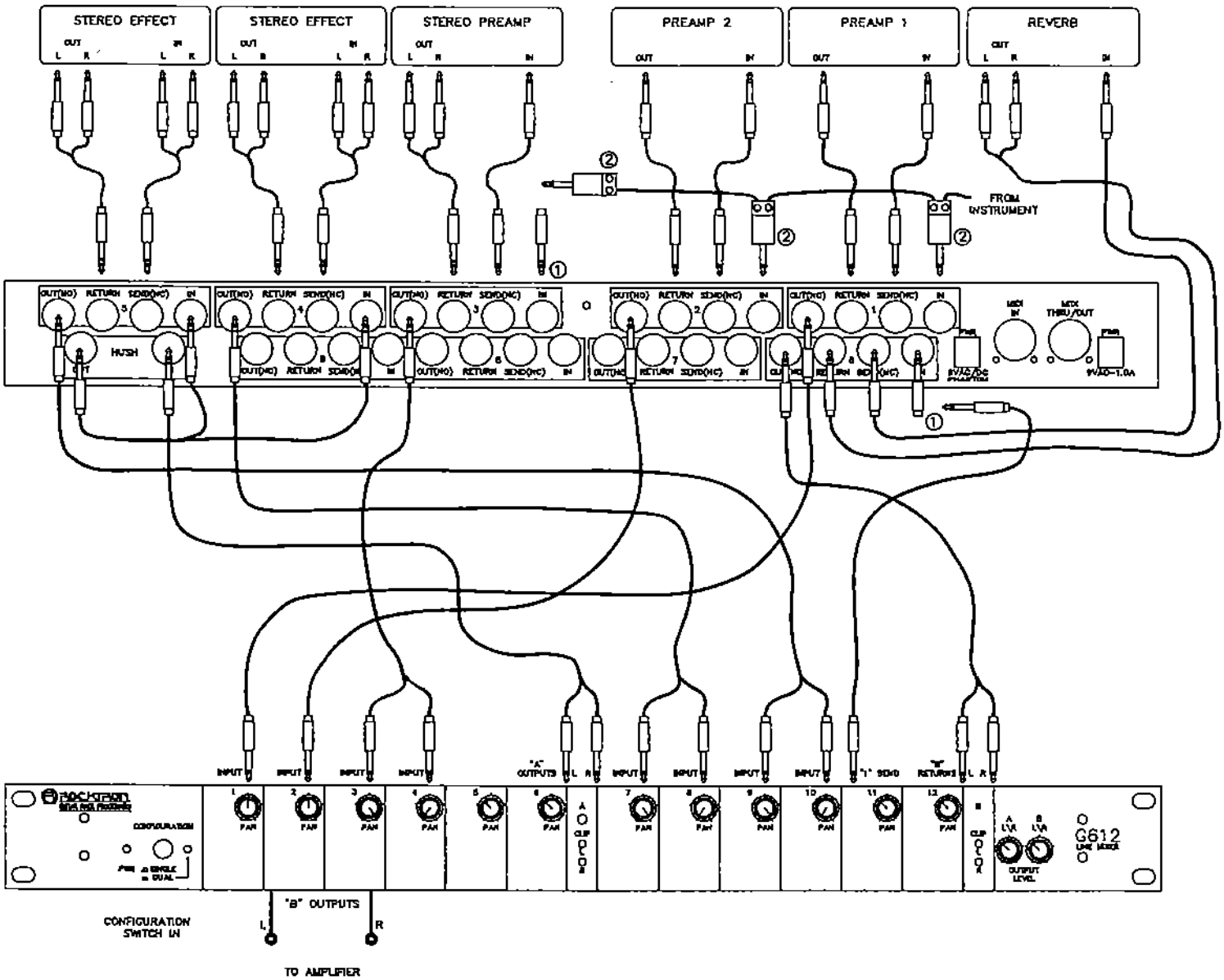


1. Note mono to split-mono adaptor used to feed the two inputs of the stereo delay. This adaptor must be used to feed the inputs of a stereo loop from the output of a mono loop. This adaptor is available from Rocktron (Rocktron Part# 006-0119), contact your local Rocktron dealer for information.

2. Note stereo to stereo cables used to patch stereo loops.

3. Note stereo-splitting cords used to patch each stereo effect's inputs and outputs into the Patch Mate™.

5. COMMON CONFIGURATION UTILIZING MULTIPLE PREAMPS AND A MIXER.



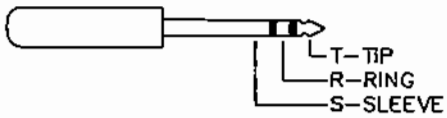
A Note on Configuring your Patch Mate™ ...

Always remember when setting up your Patch Mate™ system that to always get a stereo output from a stereo loop, a stereo input to the loop must be used. For example, if a given loop has a mono input, mono send, stereo return and stereo output, this loop will produce a stereo output when the loop is switched in, but will only produce a mono output when the loop is switched out. This is because only a mono signal is seen at the loop's input. We recommend in this case using a mono-to-stereo splitting adaptor (see note 1 in the above diagram) from the output of the previous loop to the input of this loop to provide a stereo output. The mono-to-stereo adaptor is available from Rocktron through your local Rocktron Dealer.

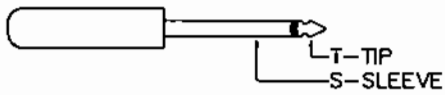
Note 2 in the above diagram denotes a mono adaptor which allows for multiple adaptors to be chained together, thus allowing the same input signal (in this case, the instrument output) to be connected to three different loops. This adaptor is available at most electronics oriented stores (such as Radio Shack - part# 274-309).

10. APPENDIX C
CABLES

1/4" STEREO PLUG

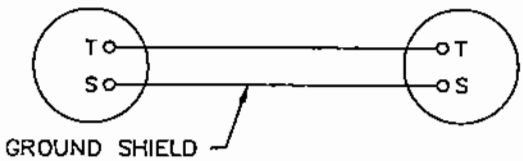


1/4" MONO PLUG



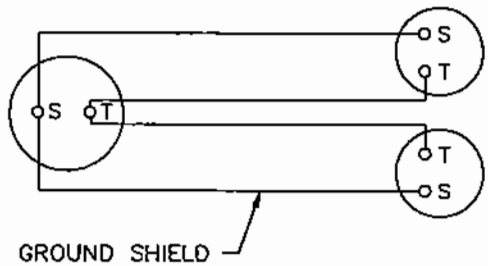
MONO CORD

1/4" MONO PLUG 1/4" MONO PLUG



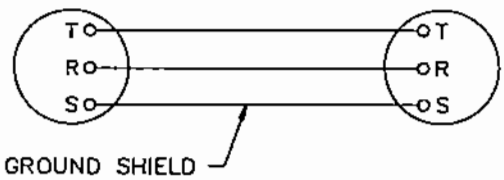
MONO SPLITTING CORD

ALL 1/4" MONO PLUGS



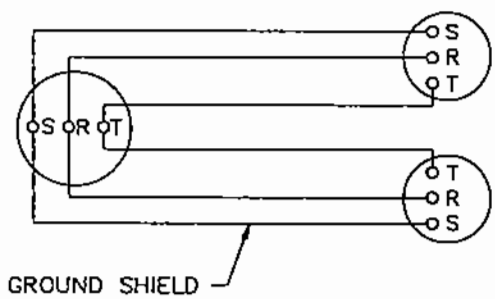
STEREO CORD

ALL 1/4" STEREO PLUGS

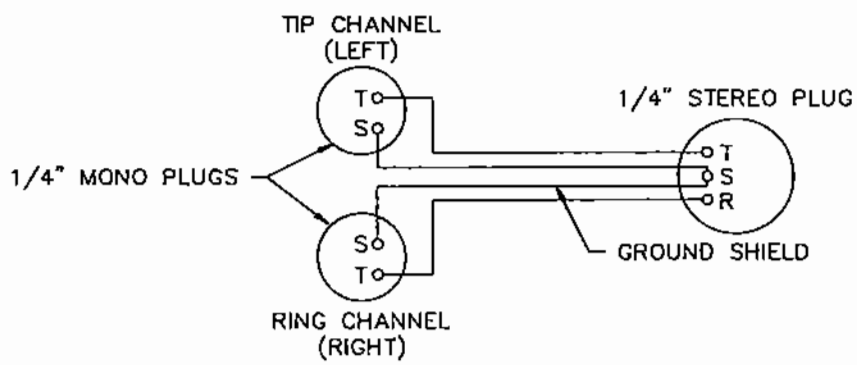


STEREO SPLITTING CORD

ALL 1/4" STEREO PLUGS



STEREO TO TWO MONO 'Y' CORD



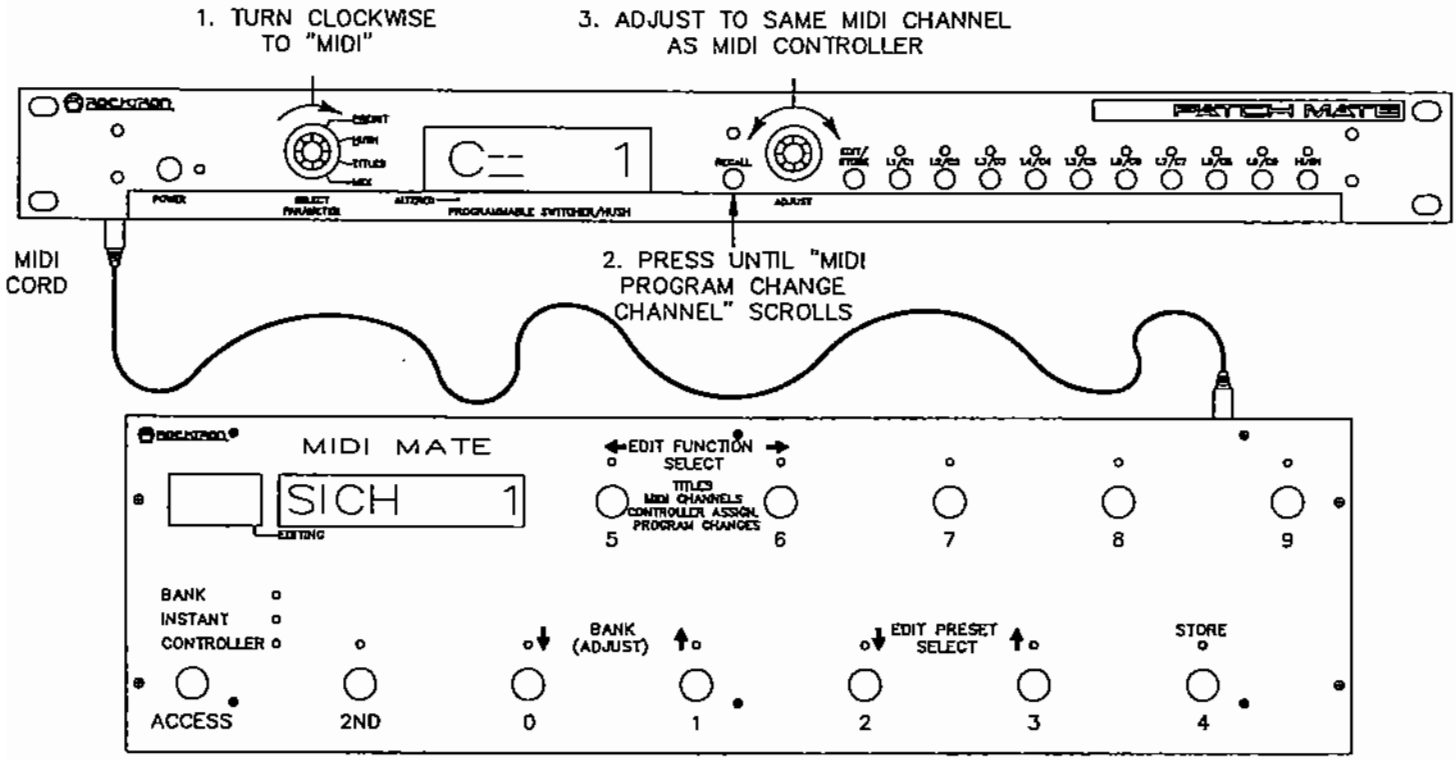
11. APPENDIX D

USING THE PATCH MATE™ WITH THE MIDI MATE™

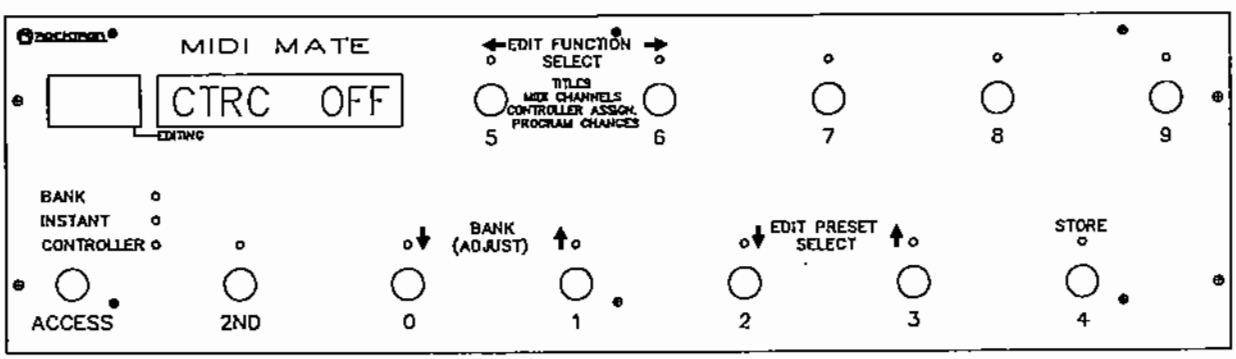
The Rocktron MIDI Mate™ was designed to give the Rocktron Patch Mate™ added flexibility and features. The MIDI Mate™ may be set up to act as a remote control for the Patch Mate™. The MIDI Mate and Patch Mate™ together make up a very dynamic switching system combination. There are two ways to configure the MIDI Mate™/Patch Mate™ system, depending on indivdual needs.

USING THE PATCH MATE™ AS A MIDI PROGRAM CHANGE RECEIVER

STEP 1: Set the Patch Mate™'s MIDI Program Change channel to match that of a MIDI Mate™ program MIDI channel ("S1CH, "S2CH" or "S3CH"). If another MIDI transmitter is used, match it's transmitting channel with the Patch Mate™'s MIDI channel.



STEP 2: Set the MIDI Mate™'s controller MIDI channel (CTRC) to "OFF" if the MIDI Mate™ is not sending ON/OFF control changes to any devices.

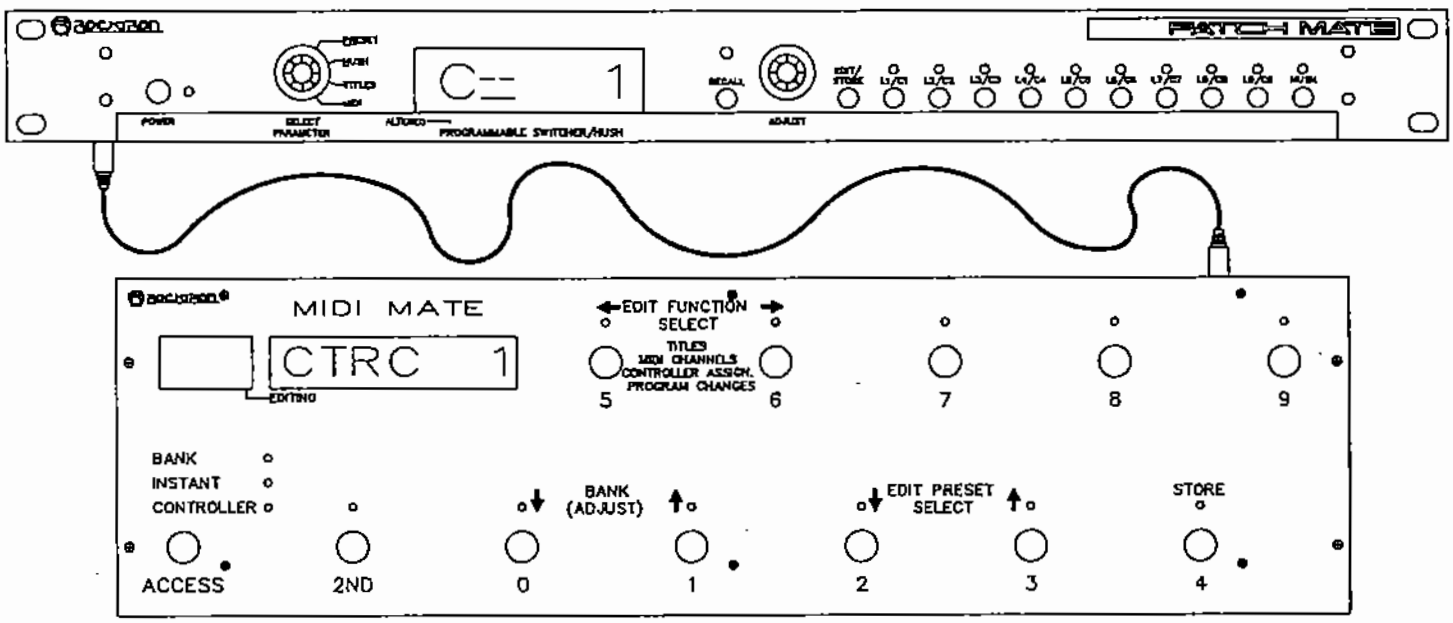


STEP 3: Set the Patch Mate™ Control Change Channel to "OFF".

NOTE: Now the Patch Mate™ will recall the preset sent by the MIDI Mate™ (or MIDI transmitting device). The configuration of on and off loops/controls stored in the Patch Mate™ is recalled. Be careful that the MIDI Mate™'s controller channel (CTRC) DOES NOT match the Patch Mate™'s MIDI channel. Be careful when using a MIDI Mate™/Patch Mate™ system with the Patch Mate™ MIDI channel set to OMNI. If the Patch Mate™ is receiving both program changes and control changes from the MIDI Mate™, the control changes will be the last command received and the Patch Mate™ may not appear to be recalling the correct preset.

MIDI MATE™ ACTS AS REMOTE FOR PATCH MATE™

STEP 1: Set the MIDI Mate™ controller MIDI channel (CTRC) to match the Patch Mate™ Control Change Channel.



STEP 2: The MIDI Mate™ and Patch Mate™ controller assignments must match, as in the example shown below. The exact numbers used don't matter as long as the control numbers match.

CONTROLLER ASSIGNMENTS

MIDI Mate™	Number	*Patch Mate™*
PDL	8	HUSH™ Threshold
SWO	9	HUSH™ In/Out
SW1	10	L1/C1
SW2	11	L2/C2
SW3	12	L3/C3
SW4	13	L4/C4
SW5	14	L5/C5
SW6	15	L6/C6
SW7	16	L7/C7
SW8	17	L8/C8
SW9	18	L9/C9

To assign SW0-9 on the MIDI Mate™ :

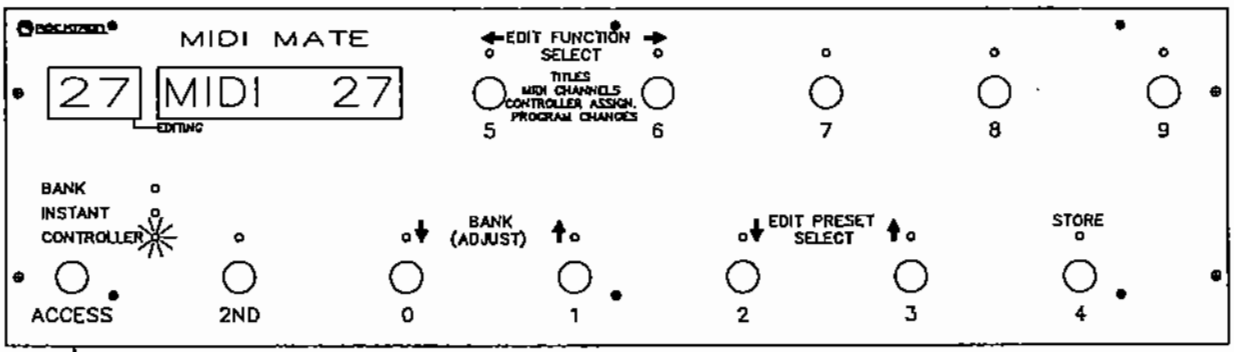
1. Press the 2nd button to turn on the 2nd LED.

2. Press the EDIT FUNCTION SELECT <— button twice, or until "CONTROLLER ASSIGNMENT" scrolls across the display. Wait for the scrolling to finish.

3. Use the ADJUST buttons to select the desired control number.

4. Press the EDIT FUNCTION SELECT —> button to advance to the next controller.

5. Press the 2nd button to exit the edit mode.



ASSIGN MIDI MATE TO "CONTROLLER" ACCESS MODE BY PRESSING "ACCESS" BUTTON

STEP 3: Set the MIDI Mate™ to the "CONTROLLER ACCESS MODE".

STEP 4: Now by pressing the "0" button on the MIDI Mate™, the HUSH™ on the Patch Mate™ is switched in and out. By pressing the "1" button on the MIDI Mate™, L1/C1 on the Patch Mate™ is switched. The LED on the MIDI Mate™ also matches the corresponding LED on the Patch Mate™. So now the status of the Patch Mate™ is shown by the MIDI Mate™, while the MIDI Mate™ is in the controller access mode.

STEP 5: Turn ON (or OFF), from the MIDI Mate™, the desired loops/controls of the Patch Mate™ for the current MIDI Mate™ program.

STEP 6: Once the correct configuration of on and off loops/controls is set, it MUST BE STORED IN THE *MIDI MATE™*. To do this press the "2nd" button on the MIDI Mate™ until the 2nd LED is lit. Then press the stored button on the MIDI Mate™. Now every time the MIDI Mate™ is changed to the current preset, the correct configuration of loops/controls is sent to the Patch Mate™, in the form of control changes.

NOTE 1: All programming of patches for the Patch Mate™ is now done through the MIDI Mate™ and stored in the MIDI Mate™. The Patch Mate™ does not receive any program changes from the MIDI Mate™, so the Patch Mate™ preset and title will not change, only the setting of loops/controls will change (according to what is stored in the MIDI Mate™).

NOTE 2: The on/off control status for each button of the MIDI Mate™ is factory set to the off position. This means that if the status for a loop/control is desired to be "on" it must be stored "on" in the MIDI Mate™ for that preset and every preset that the loop/control is desired to be "on".

12. SPECIFICATIONS

MAXIMUM INPUT LEVEL	+20dBu (HUSH loop +11dBu)
MAXIMUM OUTPUT LEVEL	No gain in loops (input = output)
NOISE FLOOR	-120 dBu "A"- weighted (each loop)
TOTAL HARMONIC DISTORTION plus NOISE	.005% @ 0dBu (1KHz) .0017% @ +10dBu (1KHz) .001% @ +15dBu (1KHz)
FREQUENCY RESPONSE	+/-.1 dBu 20Hz-30KHz (each loop)
CROSS TALK	-108 dBu @ 1KHz (tip to ring) -81 dBu @ 20KHz (tip to ring)
POWER REQUIREMENTS	9VAC 1116mA
DIMENSIONS	19" x 1 3/4" x 6"

Note: 0dBu = 0.775V RMS

13. MIDI IMPLEMENTATION CHART

DATE: March 29, 1991 MODEL: Patch Mate™ VERSION: 1.2

	FUNCTION	RECOGNIZED	REMARKS
BASIC	DEFAULT	1-16	Separate Program Change Channel
CHANNEL	CHANGED	1-16	and Control Change Channel.
MODE	DEFAULT	X	
	MESSAGES	X	
	ALTERED	X	
NOTE	TRUE VOICE	X	
NUMBER			
VELOCITY	NOTE ON	X	
	NOTE OFF	X	
AFTER	KEY'S	X	
TOUCH	CHANNEL	X	
PITCH BEND		X	
CONTROL		O	8 = HUSH THRESHOLD
CHANGE*		O	9 = HUSH
		O	10 = L1/C1
		O	11 = L2/C2
		O	12 = L3/C3
		O	13 = L4/C4
		O	14 = L5/C5
		O	15 = L6/C6
		O	16 = L7/C7
		O	17 = L8/C8
		O	18 = L9/C9
PROGRAM	TRUE NUMBER	O	
CHANGE**			
SYSTEM			
EXCLUSIVE		X	
SYSTEM	SONG POSITION	X	
COMMON	SONG SELECT	X	
	TUNE REQUEST	X	
SYSTEM	CLOCK	X	
REAL TIME	COMMANDS	X	
AUXILARY	LOCAL ON/OFF	X	
MESSAGES	ALL NOTES OFF	X	
	ACTIVE SENSING	X	
	SYSTEM RESET	X	

*THE PARAMETERS MAY BE ASSIGNED TO ANY CONTROL NUMBER FROM 0 - 120, OR THEY MAY BE ASSIGNED TO BE "OFF".

**PROGRAM MAPPING ALSO AVAILABLE.

O : YES
X : NO

FORM # 180 - 12/91
PART# 098-0078B