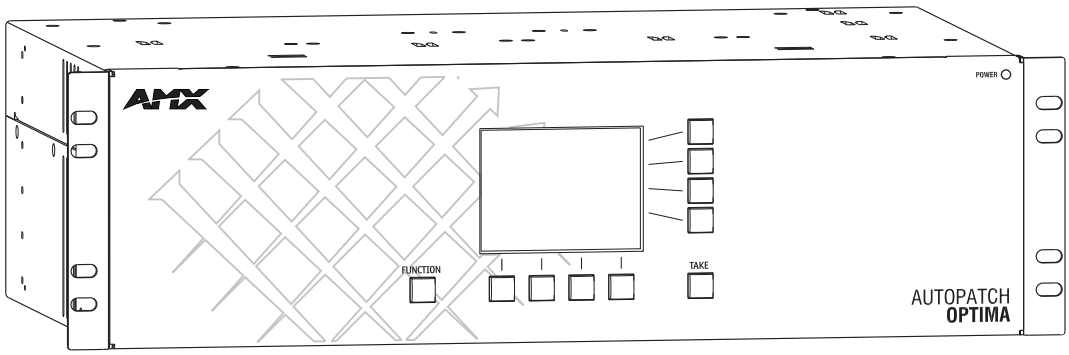
Instruction Manual

CP-20A

Control Panel



AutoPatch Control Panel

Release: 2/29/2008

Contents

Introduction

Applicability Notice

The information in this manual applies to the CP-20A Control Panel, which comes with many of the Modula pre-configured systems or can be ordered as a remote control panel or as part of a Modula or Optima custom system.

Pre-Configured Systems

The CP-20A can be part of a pre-configured system made up of a Modula 3 RU or 4 RU. All Modula pre-configured systems are numbered FGP34-xxxx-xxx (e.g., FGP34-1644-616).

Remote Control Panel

The CP-20A Remote Control Panel (Sales # FG1090-258) can be ordered as a separate unit to control an Optima, Modula, or 8Y-3000 system.

Custom Systems

The CP-20A can be ordered as an option for Optima 3 RU, Modula 3 RU and 4 RU, and 8Y-3000 custom systems.

Custom Systems	
Enclosures	**Control Panel Sales #**
8Y-3000	FG1043-216
Modula 3 RU	FG1034-243
Modula 4 RU	FG1034-246
Optima 3 RU	FG1046-213

Overview

The CP-20A is used for controlling the system's switches and system attributes. Although control panels are optional, we recommend one per system for system verification, redundant control, and troubleshooting.

FIG. 1 illustrates an Optima Distribution Matrix with a CP-20A Control Panel. Other models may vary slightly in appearance.

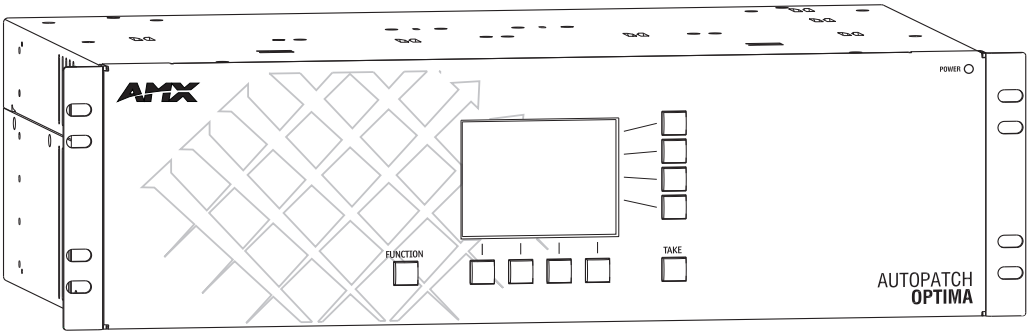


FIG. 1 CP-20A Control Panel on an Optima

Note: *AMX AutoPatch enclosures can also be controlled using BCS (Basic Control Structure) commands transmitted through an external controller; for more information, see the BCS Protocol Instruction Manual on the AMX AutoPatch CD or at* ***www.amx.com****.*

Keys & Functions

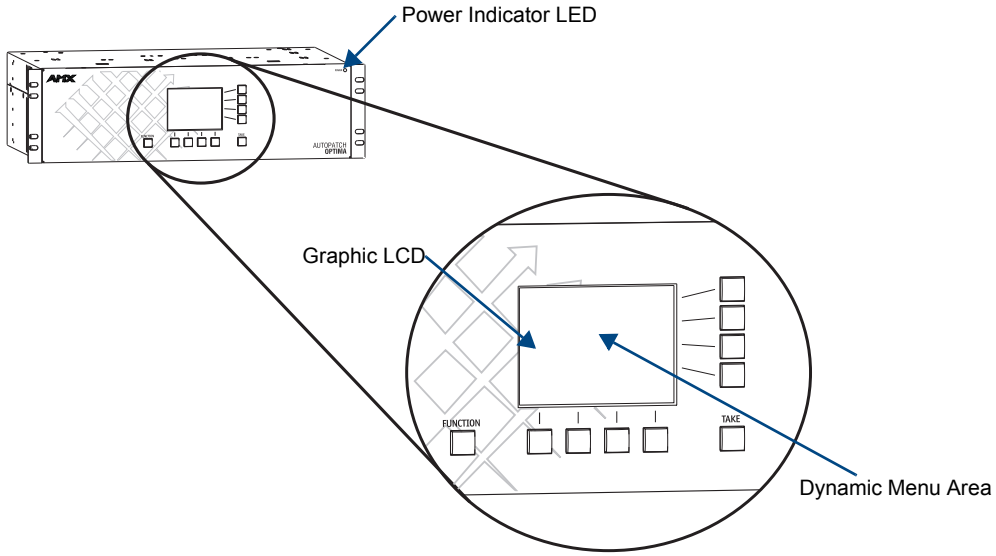


FIG. 2 Close-up view of a CP-20A Control Panel

Graphic LCD

An LCD with a backlight displays instructions and selection entry fields. The backlight automatically turns off after 15 minutes of inactivity. Press any key to reactivate the light.

Note: *To adjust the contrast of the LCD, see "Adjusting LCD Contrast" on page 27.*

Dynamic Menu Area

The menu displays different command options across the bottom of the LCD, depending on which screen is active. These options can be accessed using the corresponding dynamic menu keys. The menu options are multilevel with the ability to display custom input (source) and output (destination) names (labels). The default channel name (e.g., O_Ch:0003 for Output 3) appears unless the name has been modified in the configuration file* using XNConnect (for more information, see the XNConnect Help file).

* The configuration file (.xcl file) contains routing and control information for a system and is modified with XNConnect, which graphically displays the file. Both the configuration file and XNConnect are on the *AMX AutoPatch CD*.

Dynamic Menu Keys

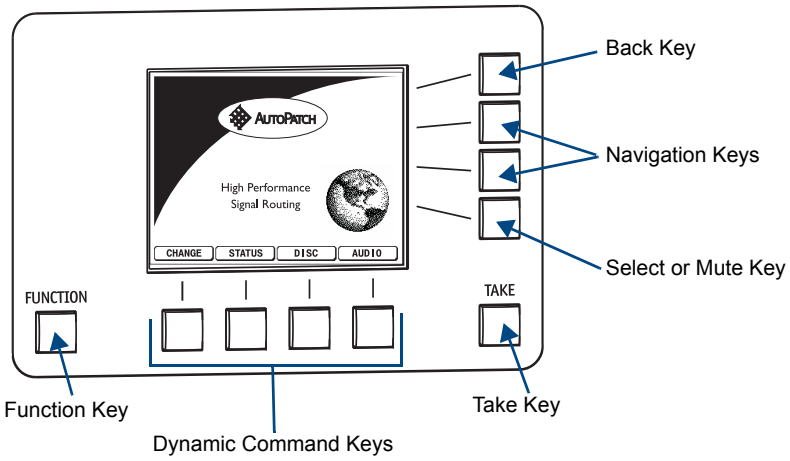


FIG. 3 Command & menu keys

The keys select commands and settings. Each menu key lines up with a different section of the dynamic menu area. The four keys across the bottom select commands and settings which will vary according to the screen displayed on the LCD.

The four keys on the right side of the LCD are used to scroll through lists, adjust sliders, select an action, or return to the previous screen. The associated commands on the right side of the Dynamic Menu Area vary by screen and include the following:

- Back key – Use to return to the last screen. This key will *not* undo a completed operation.
- Arrow keys – Use to scroll through lists and adjust sliders. When scrolling, press and hold an arrow key to increase scrolling speed. When at the bottom of a list, press the down key to access the top of the list. When at the top of a list, press the up key to access the bottom of the list. Scrolling from the bottom of a list may sometimes be more efficient depending on the matrix size.
- Select key – Use to enter a selection. This key will *not* execute operations.

Function Key

The Function key accesses the Main Menu screen. From the Main Menu, the Function key accesses additional menu options. From any other screen, it returns to the Main Menu.

Take Key

The Take key functions much like the Enter key on a computer keyboard. Pressing the Take key instructs the system to execute a selected operation. Prior to pressing the Take key, the individual operation component(s) must be selected by pressing the Select key.

CP-20A operations combine the following four basic tasks:

- To choose a command – Press the dynamic menu key along the bottom that corresponds with the command you want to choose.
- To locate values for fields (such as virtual matrix, input, output, and preset values) – Press the dynamic menu keys on the right that correspond to the arrows.
- To enter a selection – Press the Select key. (The key that corresponds to the Select option on the dynamic menu area is found on the right.)
- To execute an operation – Press the Take key.

Executing Switches

A switch is an active connection between an input (source) device and one or more output (destination) devices. The signals routed in a switching operation are individual signals or groups of individual signals coming through the connectors on the rear of an enclosure. Executing a preset is a quick way to execute multiple switches at a time. For information on presets, see page 18.

Switches are executed on the default virtual matrix unless otherwise specified. When specifying a virtual matrix, be sure it includes all the signals you want to route. The number of the virtual matrix (VM) that operations are currently being performed on is displayed in the upper-right of the display. If you need to change the virtual matrix, see “Changing the Virtual Matrix” on page 8.

You can return to the Main Menu screen at any time by pressing the Function key.

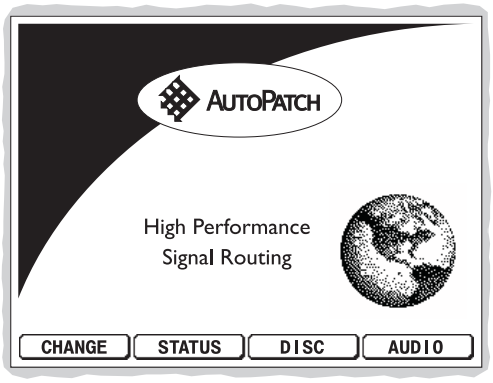
Note: *In each switch command, you can enter multiple output signals, but only one input signal. However, you must select the input first in order to select multiple outputs. The Take key must be pressed for the switch operation to execute.*

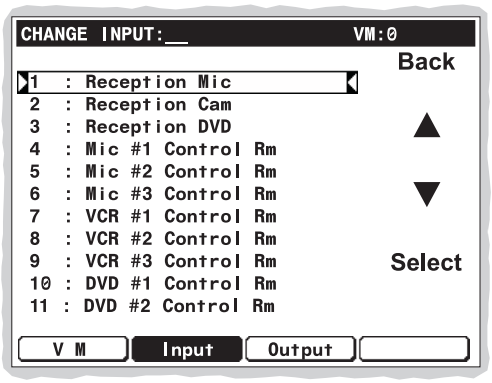
Executing Switches – Selecting Input First

The example below routes Input **33: Satellite Dish** to Output **6: Reception Monitor** on Virtual Matrix 0.

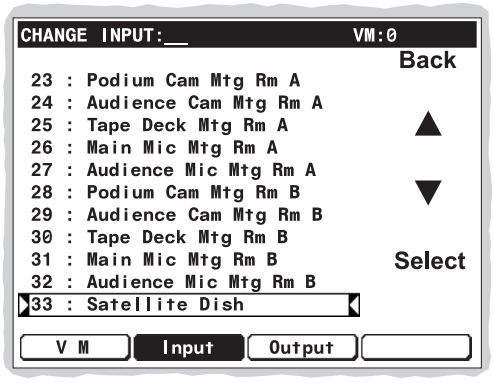
To execute a switch selecting Input first:

1. At the Main Menu screen, choose the Change command.
   If the Change command is not available, press the Function key to view additional Main Menu options.
   The Change Input screen appears, displaying the available input options.

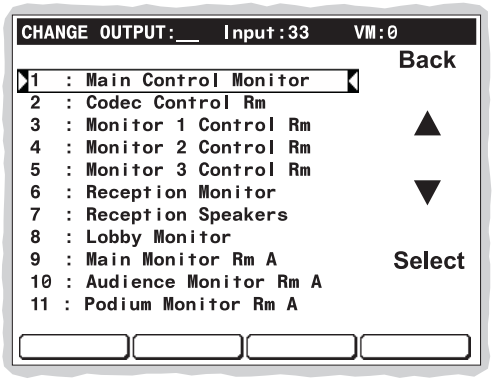




2. Locate Input **33: Satellite Dish** by scrolling through the list using the arrow keys. (Press and hold an arrow key to scroll quickly.)

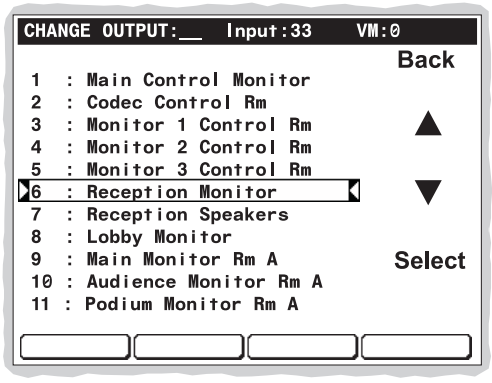


3. Press the Select key.
   The Change Output screen appears, displaying the available output options.

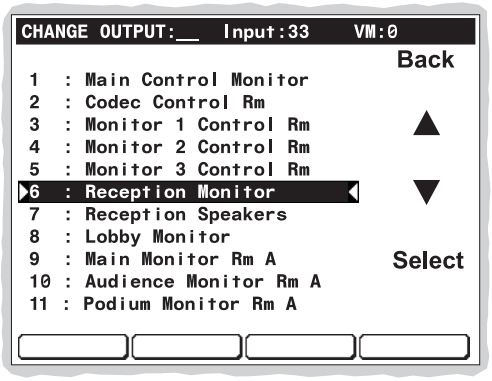


Note: *If other outputs are already routed to the selected input, they are highlighted on the Change Output screen.*

4. Locate Output **6: Reception Monitor** by scrolling through the list using the arrow keys.



5. Press the Select key.
   Output **6: Reception Monitor** is highlighted.



Note: *You can select multiple outputs by scrolling through the list and pressing the Select key. The Select key functions as a toggle switch, selecting and unselecting outputs in the list each time it is pressed. Any outputs that are already routed to the selected input are highlighted. Unselecting an output(s) results in its disconnection when the Take key is pressed.*

6. Press the Take key to execute the operation.
   The switch from Input **33: Satellite Dish** to Output **6: Reception Monitor** occurs as soon as the Take key is pressed.
   The system returns to the Change Input screen.

7. Make additional switches.
   Or
   Press the Function key to return to the Main Menu screen.

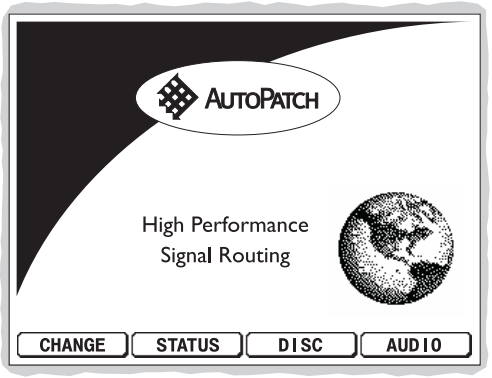
Executing Switches – Selecting Output First

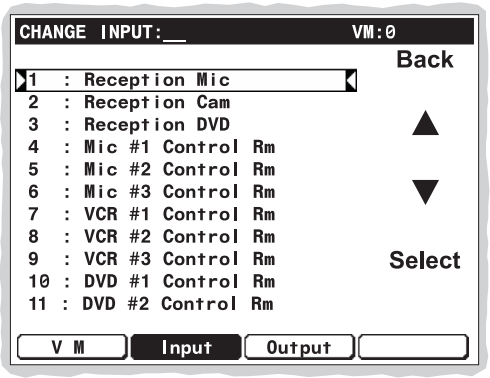
You can execute a switch by selecting one output first; however, to select multiple outputs you must use the "Selecting Input First" method (see page 4).

The example below routes a signal to Output **15: Main Monitor Rm B** from Input **10: DVD #1 Control Rm** on Virtual Matrix 0.

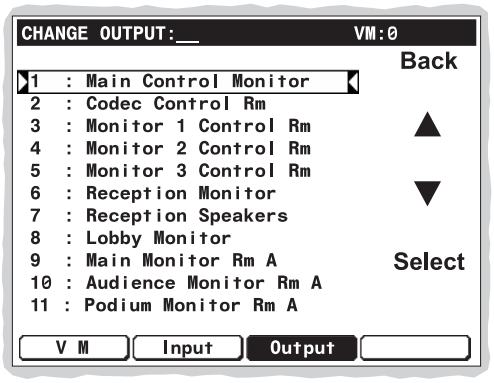
To execute a switch selecting output first:

1. At the Main Menu screen, choose the Change command.
   If the Change command is not available, press the Function key to view additional Main Menu options. The Change Input screen appears.

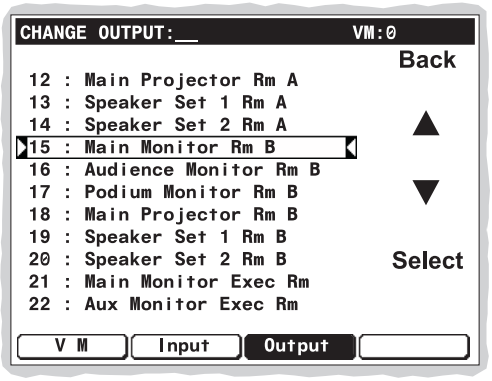




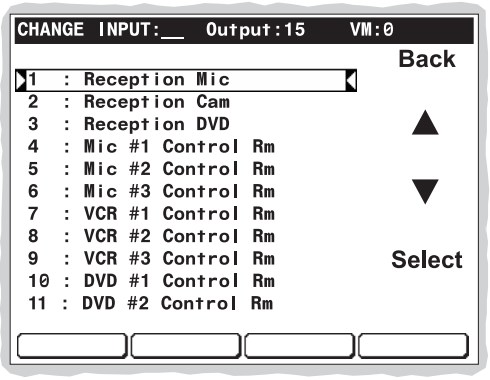
2. Choose the Output command from the bottom of the screen.
   The Change Output screen appears, displaying the available output options.



3. Locate Output **15: Main Monitor Rm B** by scrolling through the list using the arrow keys. (Press and hold an arrow key to scroll quickly.)

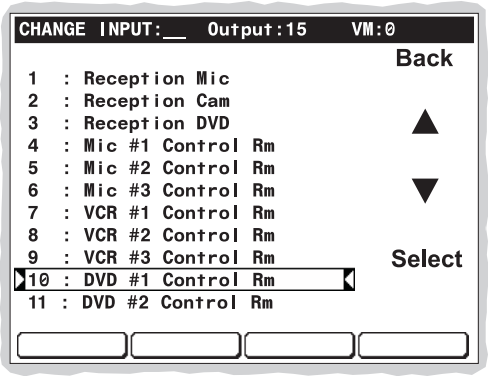


4. Press the Select key.
   The Change Input screen appears, displaying the available input options.

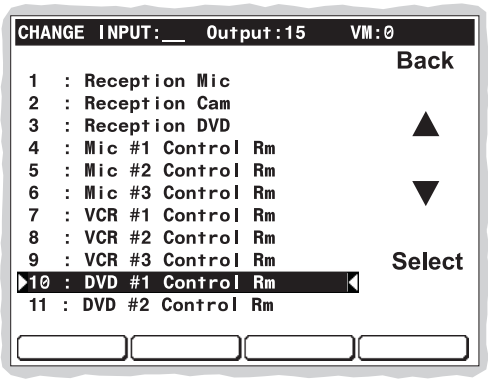


Note: *If an input is already routed to the selected output, it is highlighted on the Change Input screen.*

5. Locate Input **10: DVD #1 Control Rm** by scrolling through the list using the arrow keys.



6. Press the Select key.
   Input **10: DVD #1 Control Rm** is highlighted.



7. Press the Take key to execute the operation.
   The switch to Output **15: Main Monitor Rm B** from Input **10: DVD #1 Control Rm** occurs as soon as the Take key is pressed.
   The system returns to the Change Output screen.
8. Make additional switches.
   Or
   Press the Function key to return to the Main Menu screen.

Changing the Virtual Matrix

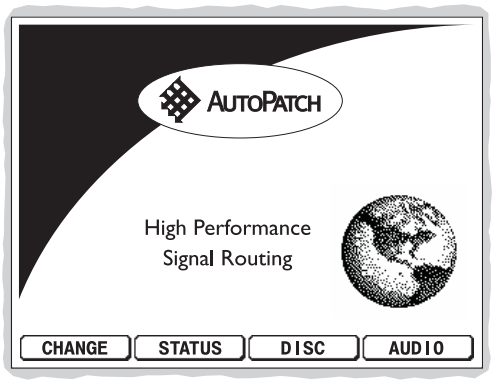
Virtual matrices are defined in XNConnect and stored in the system's configuration file (see the XNConnect Help file). Systems usually have a virtual matrix that contains all signals, so that any input can be routed to any or all outputs. The same system may have other VMs that switch only audio signals or only video signals.

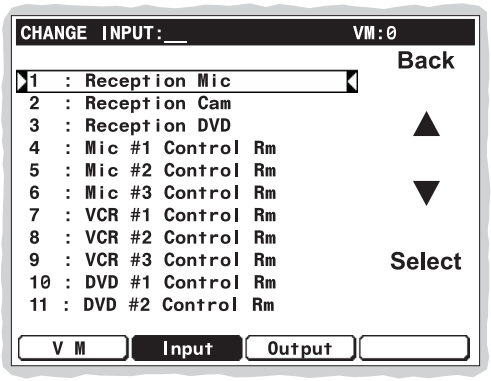
Occasionally you may need to execute switches (or other operations) on a virtual matrix other than the current virtual matrix. Changing the virtual matrix does not change the default virtual matrix. The system will revert to switching on the default virtual matrix when the power is cycled.

The example below gives the steps for changing from routing signals on the "Audio follow Video," virtual matrix, to routing on the "Audio, Stereo" virtual matrix that switches only audio signals. Although this example accesses the VM (Virtual Matrix) option from the Change menu, this option can be selected from most of the command menus found along the bottom of the screen.

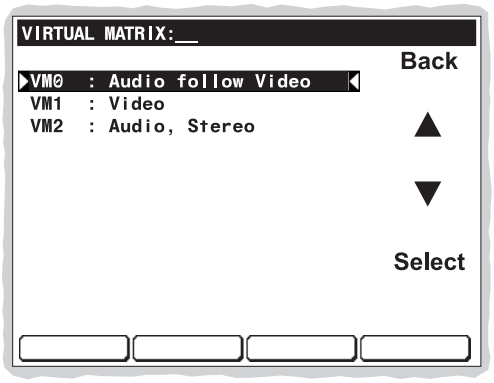
To change the virtual matrix:

1. At the Main Menu screen, choose the Change command.
   If the Change command is not available, press the Function key to view additional Main Menu options.
   The Change Input screen appears.

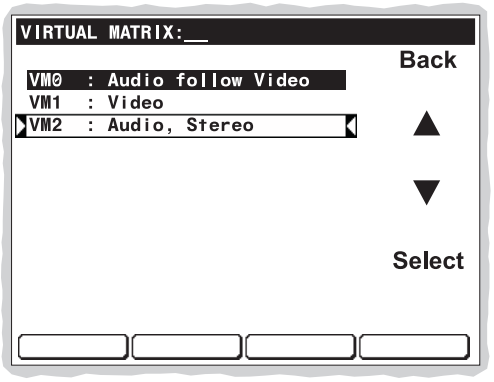




2. Choose the VM command from the bottom of the screen.
   The Virtual Matrix screen appears with the current VM highlighted.



3. Locate **VM2: Audio, Stereo** by scrolling through the list using the arrow keys.



4. Press the Select key to enter the selection and return to the previous screen.
   The system will execute all operations on **VM2: Audio, Stereo** until another VM is selected or the power is cycled.

Disconnecting Switches

Disconnecting a switch deactivates the connection between an input (source) signal and one or more output (destination) devices. Disconnecting an input disconnects all outputs receiving that source signal. You can disconnect a switch by selecting either inputs or outputs from the CP-20A Control Panel.

You can return to the Main Menu screen at any time by pressing the Function key.

If you need to change the virtual matrix, see “Changing the Virtual Matrix” on page 8.

Note: *You can select multiple inputs or outputs by scrolling through the list and pressing the Select key. The Select key functions as a toggle switch, selecting and unselecting inputs or outputs in the list each time it is pressed. The Take key must be pressed for the disconnect operation to execute.*

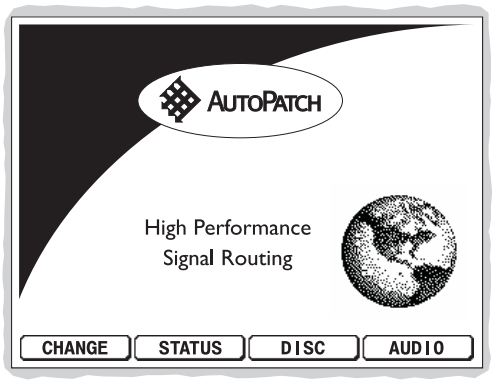
Disconnecting an Input

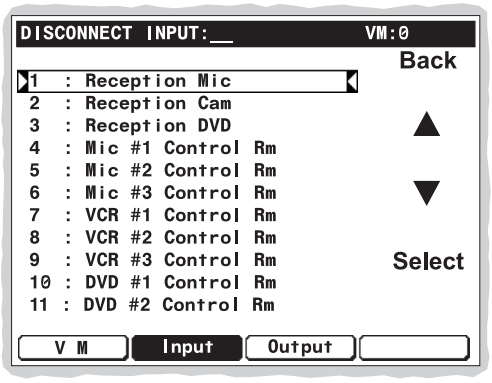
Caution: *Disconnecting an input disconnects all outputs receiving that source signal even if a specific output(s) is selected at the same time.*

The example below disconnects Input **27: Audience Mic Mtg Rm A**, on Virtual Matrix 0 from all outputs it is routed to.

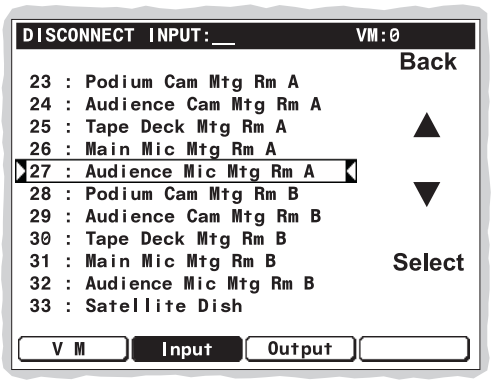
To disconnect an input:

1. At the Main Menu screen, choose the Disc (Disconnect) command.
   If the Disc command is not available, press the Function key to view additional Main Menu options.
   The Disconnect Input screen appears, displaying the available input options.

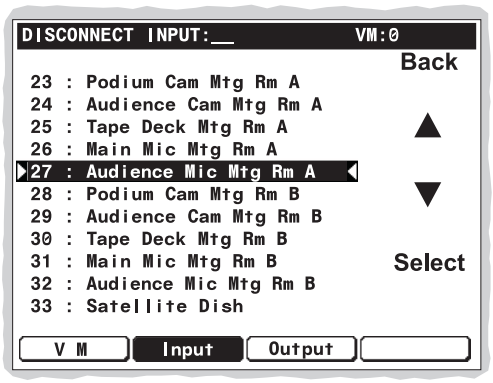




2. Locate Input **27: Audience Mic Mtg Rm A** by scrolling through the list using the arrow keys. (Press and hold an arrow key to scroll quickly.)



3. Press the Select key.
   Input **27: Audience Mic Mtg Rm A** is highlighted.
   (Additional disconnects can be selected at this time.)



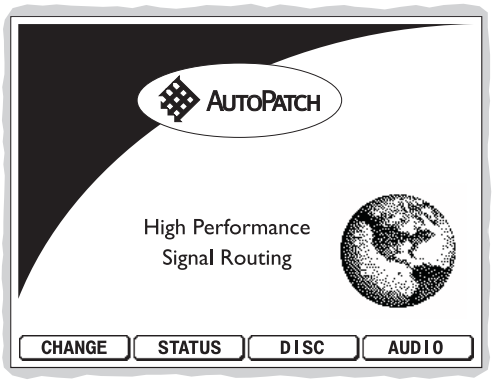
4. Press the Take key.
   Input **27: Audience Mic Mtg Rm A** and all outputs connected to it are disconnected as soon as the Take key is pressed.
   The system returns to the Disconnect Input screen.
5. Press the Function key to return the Main Menu screen.

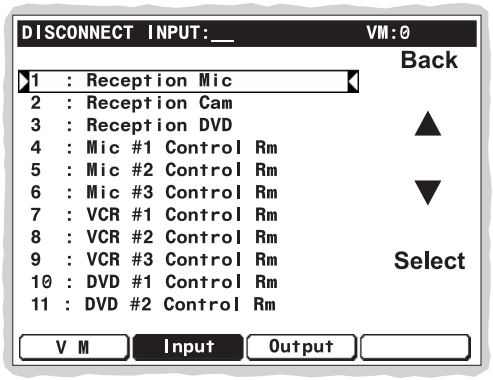
Disconnecting an Output

The example below disconnects Output **22: Aux Monitor Exec Rm** on Virtual Matrix 0 from its input.

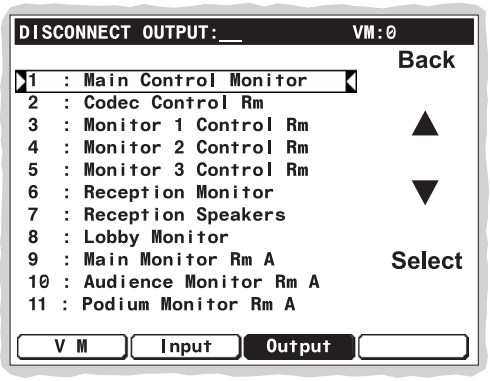
To disconnect an output:

1. At the Main Menu screen, choose the Disc (Disconnect) command.
   If the Disc command is not available, press the Function key to view additional Main Menu options.
   The Disconnect Input screen appears.

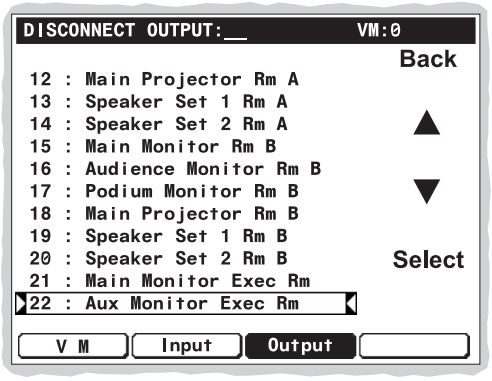




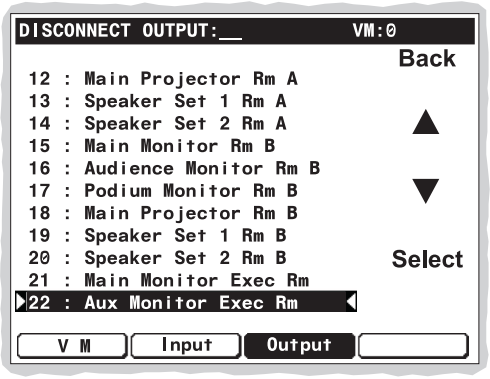
2. Choose the Output command from the bottom of the screen.
   The Disconnect Output screen appears, displaying the available outputs.



3. Locate Output **22: Aux Monitor Exec Rm** by scrolling through the list using the arrow keys. (Press and hold an arrow key to scroll quickly.)



4. Press the Select key.
   Output **22: Aux Monitor Exec Rm** is highlighted.
   (Additional disconnects can be selected at this time.)



5. Press the Take key.
   Output **22: Aux Monitor Exec Rm** is disconnected from its input as soon as the Take key is pressed.
   The system returns to the Disconnect Output screen.
6. Press the Function key to return the Main Menu screen.

Verifying Signal Status

Signal status can be verified to confirm that a switch has executed properly or to confirm correct routing to multiple outputs. Input status and output status both function on the CP-20A Control Panel. An output can only be connected to one input; therefore, verifying the status of an output will display only the one input it is currently connected to.

You can return to the Main Menu screen at any time by pressing the Function key.

If you need to change the virtual matrix, see “Changing the Virtual Matrix” on page 8.

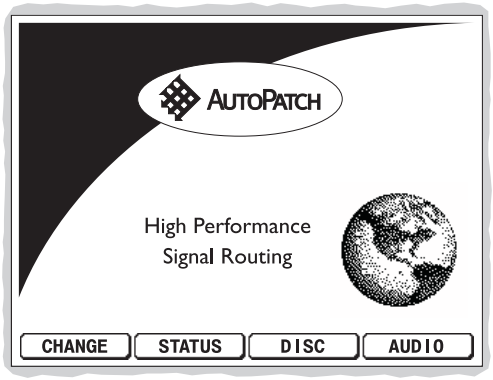
Verifying Input Status

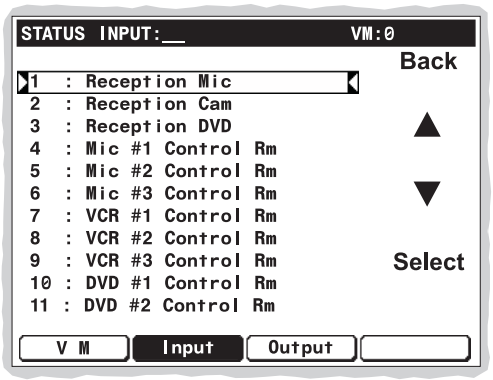
The example below verifies the signal status for Input **31: Main Mic Mtg Rm B** on Virtual Matrix 0.

Note: *If you choose to check the status of an input, all the outputs that are connected to it will be listed.*

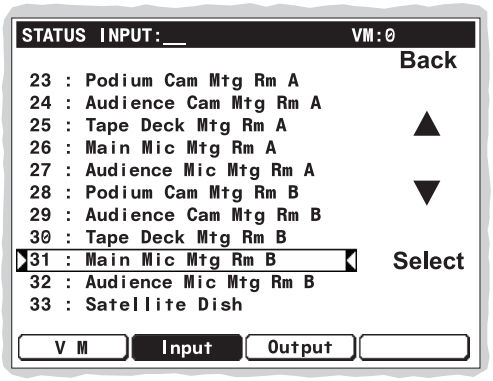
To verify the signal status of an input:

1. At the Main Menu screen, choose the Status command.
   If the Status command is not available, press the Function key to view additional Main Menu options.
   The Status Input screen appears, displaying the available inputs.

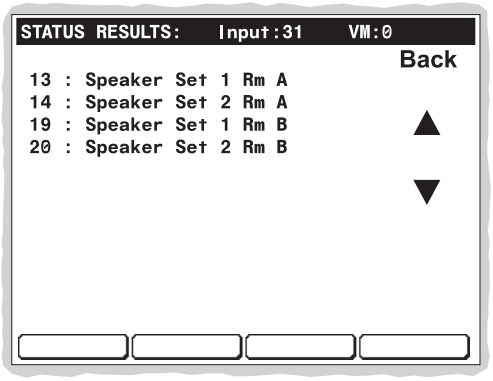




2. Locate Input **31: Main Mic Mtg Rm B** by scrolling through the list using the arrow keys. (Press and hold an arrow key to scroll quickly.)



3. Press the Select key to enter the selection.
   The Status Results screen appears listing the outputs, **13: Speaker Set 1 Rm A**, **14: Speaker Set 2 Rm A**, **19: Speaker Set 1 Rm B**, and **20: Speaker Set 2 Rm B**, that are connected to the input being verified.



Note: *If the screen is full, more outputs than the ones displayed may be active. Use the arrow keys to scroll to check for additional active outputs.*

4. Press the Back key to return to the Status Input screen to verify the status of additional signals.
   Or
   Press the Function key to return to the Main Menu screen.

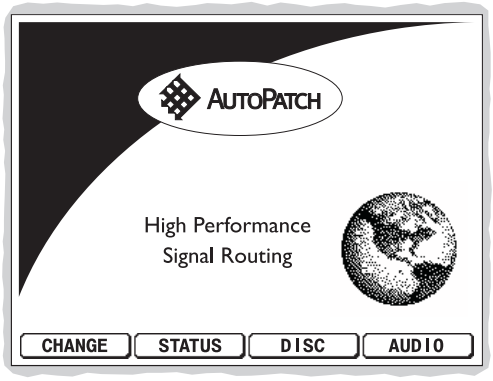
Verifying Output Status

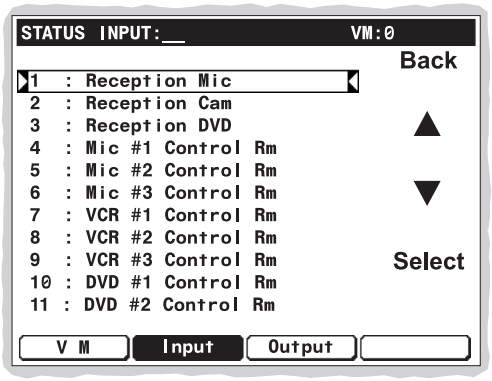
The example below verifies the signal status for Output **20: Speaker Set 2 Rm B** on Virtual Matrix 0.

Note: *Checking the status of an output will not show other outputs connected to same input.*

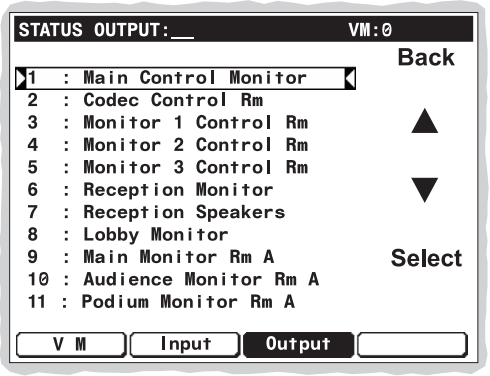
To verify the signal status of an output:

1. At the Main Menu screen, choose the Status command.
   If the Status command is not available, press the Function key to view additional Main Menu options.
   The Status Input screen appears.

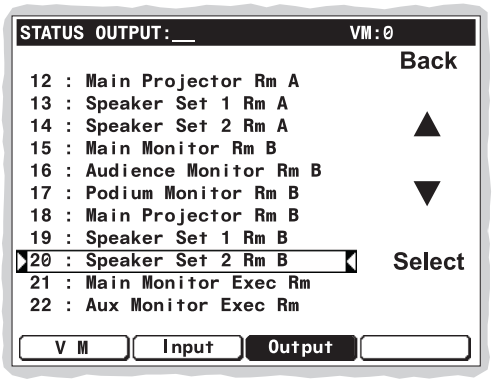




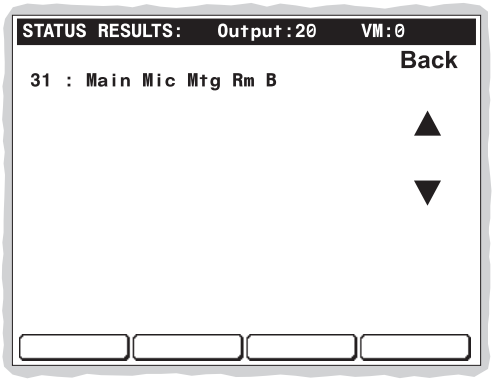
2. Choose the Output command from the bottom of the screen.
   The Status Output screen appears, displaying the available output options.



3. Locate Output **20: Speaker Set 2 Rm B** by scrolling through the list using the arrow keys. (Press and hold an arrow key to scroll quickly.)



4. Press the Select key to enter the selection.
   The Status Results screen appears, displaying the Input, **31: Main Mic Mtg Rm B**, routed to the output being verified.



5. Press the Back key to return to the Status Output screen to verify the status of additional signals.
   Or
   Press the Function key to return to the Main Menu screen.

Executing Presets

Global & Local Presets

Global and local presets are predefined sets of switches that can be easily executed.

Local Presets

At the time of this publication, local presets cannot be executed using the CP-20A Control Panel. Local presets are defined in XNConnect (see the XNConnect Help file) and can be executed using BCS commands. More information on local presets and other operations executed with BCS commands can be found in the *BCS Protocol Instruction Manual* available on the *AMX AutoPatch CD* or at **www.amx.com.**

Global Presets

Global presets allow you to replicate an entire system state. The system state includes all current signal routings (regardless of the number of virtual matrices involved) and any digital gain and/or volume settings. A global preset number is assigned to a system state during runtime using the CP-20A Control Panel (or BCS commands) and stored by the system. That system state can then be restored at any time by selecting the assigned global preset number.

Note: *Global presets cannot be defined (created) in XNConnect.*

The CP-20A stores up to 64 global presets and displays 64 numbers. Since the panel can be used to operate different types of matrix switchers, check the product documentation for any limitations to the number of supported global presets.

We strongly recommend keeping track of the number used and the system's routing state for each global preset. If another system state is assigned a previously used number, the former state will be automatically overwritten.

Caution: *If the system is reconfigured, global presets may be lost, depending on the method used to load the new configuration file (see the XNConnect Help file).*

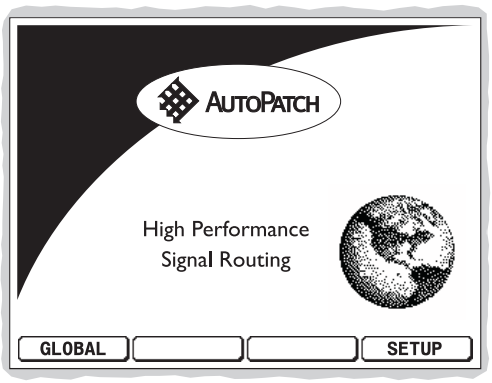
The example on page 19 defines the current system state as **`3: Global Preset 3`**.

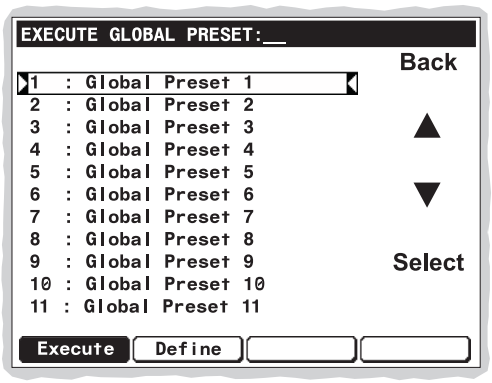
The example on page 21 executes **`3: Global Preset 3`**, which restores the system to the state it was in when the global preset was defined.

Defining Global Presets

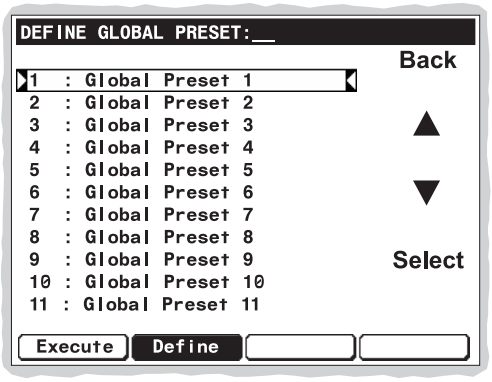
To define a global preset:

1. Route the system to the desired state.
2. At the Main Menu screen, choose the Global command.
   If the Global command is not available, press the Function key to view additional Main Menu options.
   The Execute Global Preset screen appears.



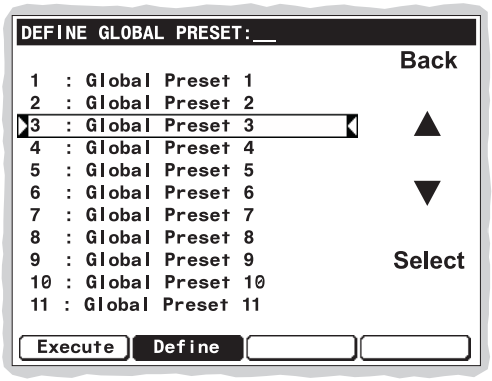


3. Choose the Define command from the bottom of the screen.
   The Define Global Preset screen appears. A complete list of numbers is displayed, regardless of whether or not a system state has been assigned to each number.

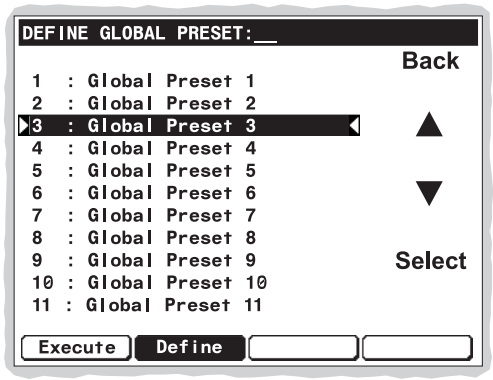


Note: *If another system state is assigned a previously used number, the former state will be automatically overwritten.*

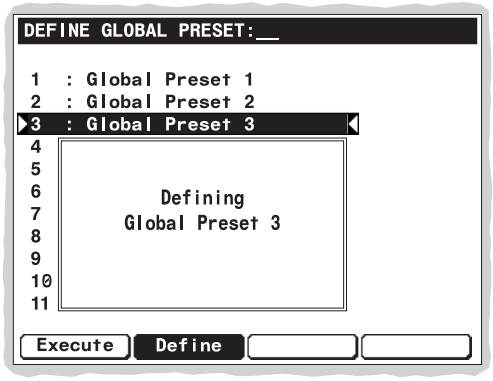
4. Locate **3: Global Preset 3** by scrolling through the list using the arrow keys. (Press and hold an arrow key to scroll quickly.)



5. Press the Select key.
3: Global Preset 3 is highlighted.



6. Press the Take key.
The current system state can now be recalled at any time by executing **3: Global Preset 3**.
The system returns to the Define Global Preset screen.

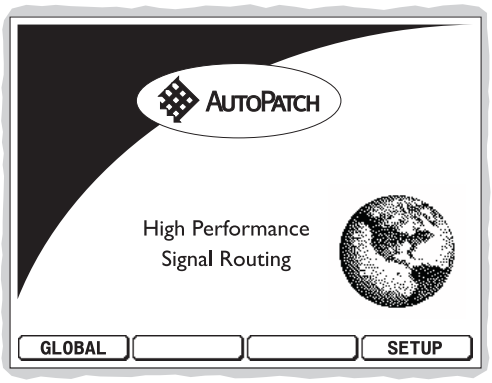


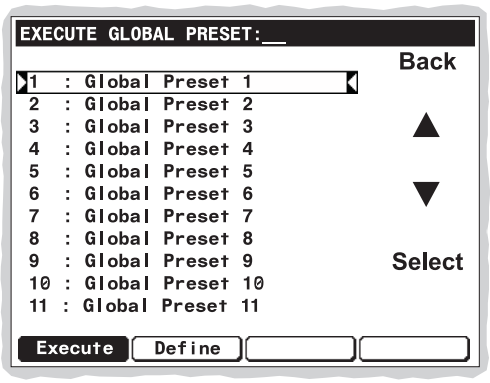
7. Press the Function key to return to the Main Menu screen.

Executing Global Presets

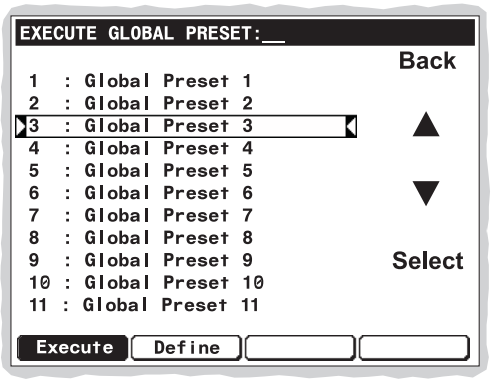
To execute a global preset:

1. At the Main Menu screen, choose the Global command.
   If the Global command is not available, press the Function key to view additional Main Menu options.
   The Execute Global Preset screen appears displaying a list of global preset numbers. (The list includes all preset numbers regardless of whether or not a system state is assigned to the number.)

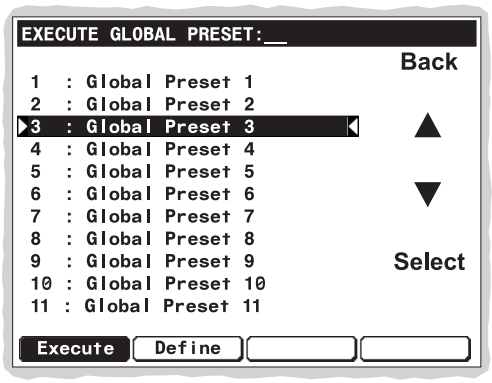




2. Locate **3: Global Preset 3** by scrolling through the list using the arrow keys. (Press and hold an arrow key to scroll quickly.)



3. Press the Select key.
   3: Global Preset 3 is highlighted.



4. Press the Take key.
   3: Global Preset 3 is executed when the Take key is pressed.*
   The system returns to the Execute Global Preset screen.

5. Press the Function key to return to the Main Menu screen.

Note: *Status is not invalidated by global presets.*

* The Executing Global Preset message appears even if the selected preset number does not include any routing information, i.e., the preset does not correspond to a predefined system state.

Adjusting Audio

Some audio boards in AMX AutoPatch Distribution Matrices offer optional volume control and digital input gain adjustment features. If your system contains these boards, output volume or digital input gain can be adjusted using either the CP-20A control panel or BCS commands sent through a serial controller. For more information on audio adjustment using BCS commands, see the *BCS Protocol Instruction Manual*.

When volume or digital input gain is adjusted for a device on one virtual matrix, the adjustment remains in effect for that device on all virtual matrices switching audio signals.

Important: *For AMX AutoPatch systems, the total through-system gain (the amount of input gain plus the amount of output gain) specified for any input/output routing path cannot exceed 10 dBr. If you enter a volume (gain) command that exceeds 10 dBr when it is combined with the gain of an input, the command will be accepted (and will be indicated in status results) but will not result in an audible difference of more than 10 dBr.*

You can return to the Main Menu screen at any time by pressing the Function key.

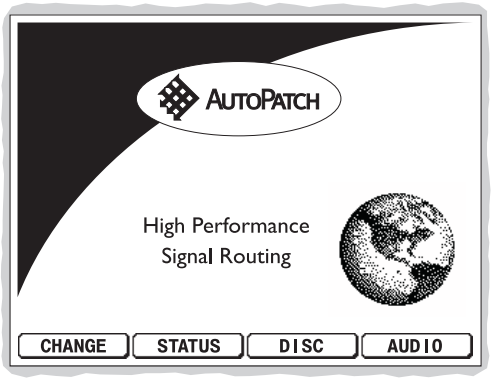
Adjusting Output Volume

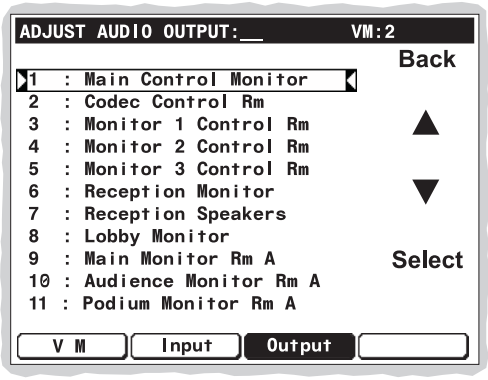
If your system has volume control, adjustments (within the volume range for the specific audio output board) can be made at any time during normal operation. When audio is adjusted for a device on one virtual matrix, the adjustment remains in effect for that device on all virtual matrices switching audio signals.

The example below adjusts the volume for Output (destination) **13: Speaker Set 1 Rm A** on Virtual Matrix 2.

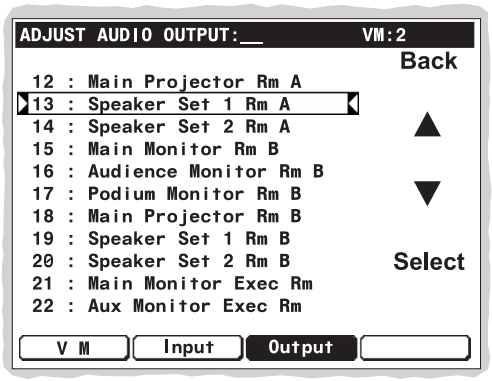
To adjust the volume:

1. At the Main Menu screen, choose the Audio command.
   If the Audio command is not available, press the Function key to view additional Main Menu options.
   The Adjust Audio Output screen appears, displaying the available output options.

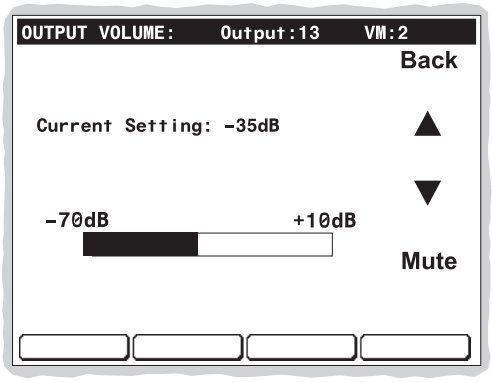




2. Locate Output **13: Speaker Set 1 Rm A** by scrolling through the list using the arrow keys. (Press and hold an arrow key to scroll quickly.)



3. Press the Select key to enter the selection.
   The Output Volume screen appears displaying the current volume setting and the volume range available for the specific audio board.



4. Adjust the volume using the arrow keys. The volume audibly changes as you adjust it.

Note: *To mute or unmute the volume, press the Mute or Unmute key on the right side of the screen.*

5. When finished, select the Back key to return to the previous screen.
   Or
   Press the Function key to return to the Main Menu screen.

Adjusting Digital Input Gain

If your system has digital input gain control, adjustments (within the gain range for the specific audio input board) can be made at any time during normal operation. When audio is adjusted for a device on one virtual matrix, the adjustment remains in effect for that device on all virtual matrices switching audio signals.

Caution: *We strongly recommend that digital input gain adjustments be made only by a qualified dealer.*

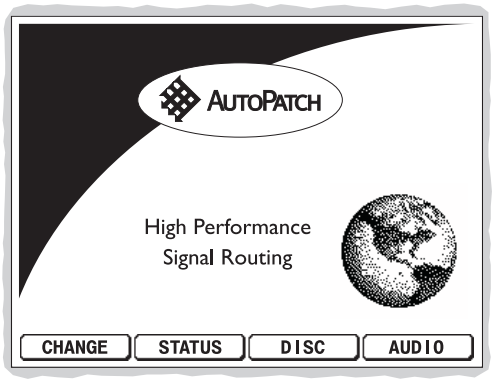
The purpose of controlling input gain (the nominal level of the signal from the source device) is to allow source signals of various amplitudes to be equalized before they are routed and the volume is adjusted. Equalizing source levels provides a consistent reference for volume adjustments and eliminates jumps when routing a new source to a destination.

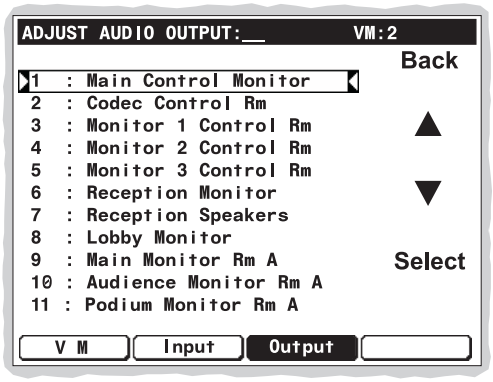
Typical uses for input gain include switching consumer and professional grade audio equipment (whose levels can vary noticeably) in the same matrix switcher. Input gain adjustment is also used for equalizing amplitudes between balanced and unbalanced source inputs.

The following example adjusts the input gain for Input (source) **26: Main Mic Mtg Rm A** on Virtual Matrix 2.

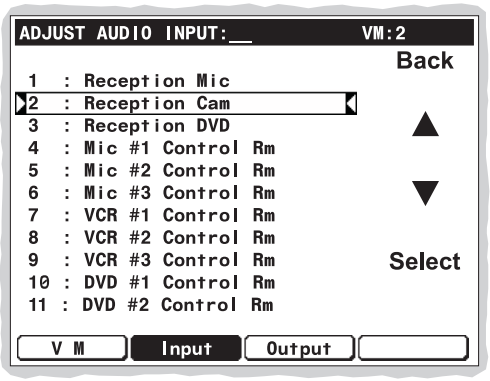
To adjust input gain to equalize input levels:

1. At the Main Menu screen, choose the Audio command.
   If the Audio command is not available, press the Function key to view additional Main Menu options.
   The Adjust Audio Output screen appears.

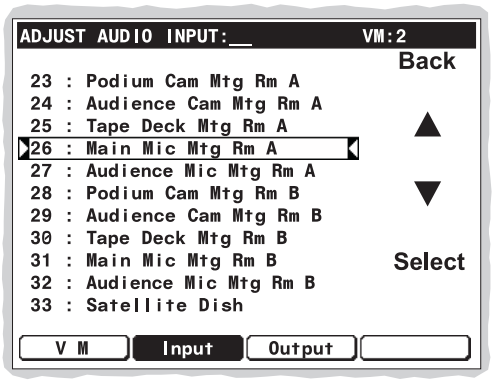




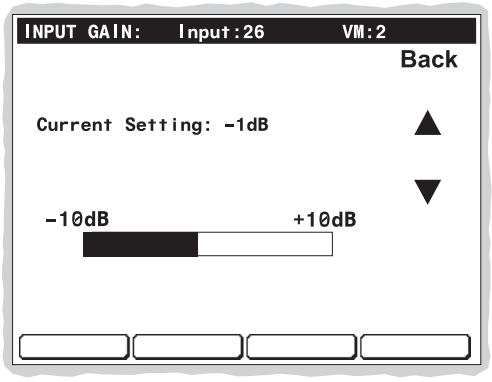
2. Choose the Input command from the bottom of the screen.
   The Adjust Audio Input screen appears, displaying the available input options.



3. Locate Input **26: Main Mic Mtg Rm A** by scrolling through the list using the arrow keys. (Press and hold an arrow key to scroll quickly.)



4. Press the Select key to enter the selection.
   The Input Gain screen appears displaying the current input gain setting and the input gain range available for the specific audio board.



5. Adjust the input gain using the arrow keys.
6. When the adjustment is complete, select the Back key to return to the previous screen.
7. Repeat Steps 3 through 5 for all inputs that will be routed to the same output.
8. When finished, press the Function key to return to the Main Menu screen.

Adjusting LCD Contrast

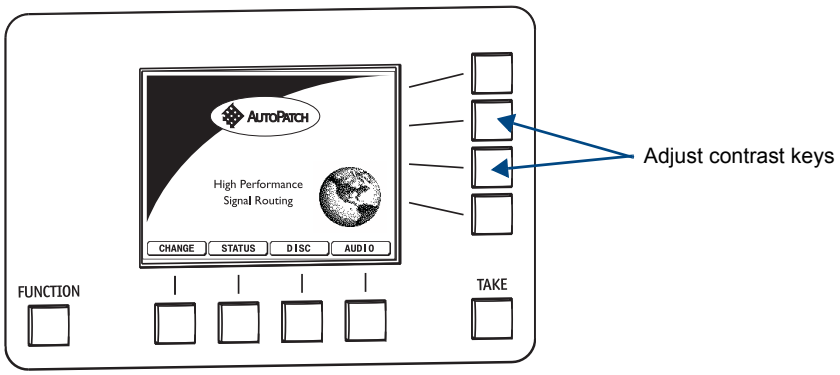
The LCD's contrast can be adjusted from either the Main Menu screen or the Setup screen.

Note: *We recommend installing the control panel at or above eye level for optimum viewing.*

Adjusting Contrast – Main Menu

To adjust the LCD contrast from the Main Menu screen:

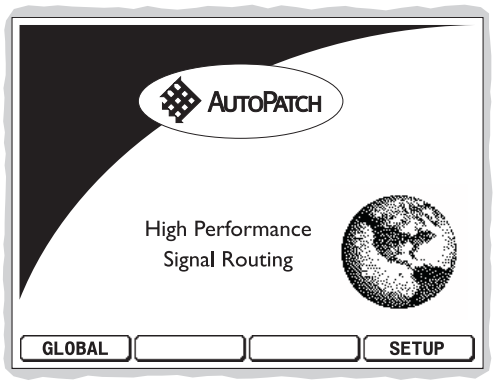
1. If the Main Menu screen is not visible, press the Function key.
2. Press the second key from the top on the right side of the screen to lighten the LCD.
   Or
   Press the third key from the top on the right side of the screen to darken the LCD.

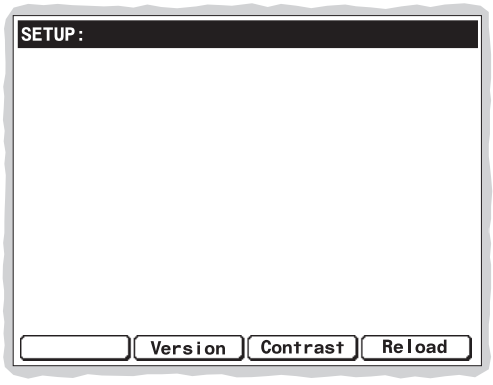


Adjusting Contrast – Setup

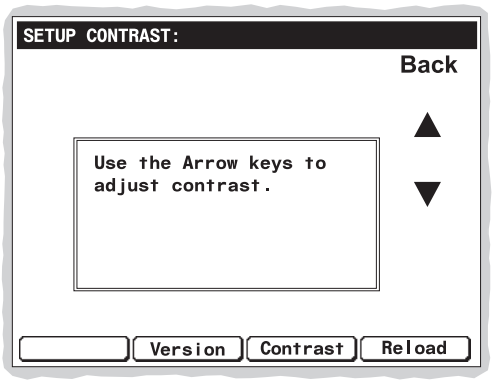
To adjust the LCD contrast from the Setup screen:

1. At the Main Menu screen, choose the Setup command.
   If the Setup command is not available, press the Function key.
   The Setup screen appears.





2. Choose the Contrast command.
   The Setup Contrast screen appears.



3. Press the Arrow keys to adjust the contrast.
4. Press the Function key when finished to return to the Main Menu screen.

Reloading Configuration File

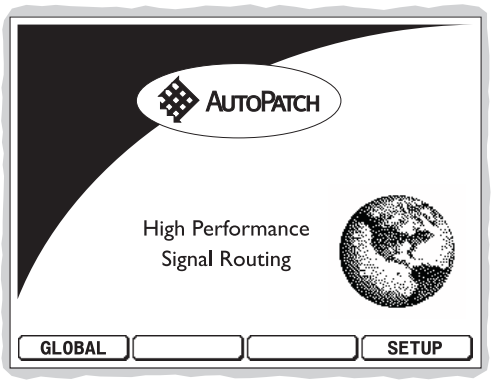
A configuration file (.xcl file) is a text file containing a system's routing and control information that has been previously downloaded to the CPU in your matrix switcher before shipment. Each enclosure's CPU references this information during any type of switching operation. Unless the configuration file has been modified, you will not need to reload it. Two of the most common configuration file modifications are creating custom names (labels) and defining local presets. For more information on configuration files and how to modify them, see the matrix switcher's Instruction Manual.

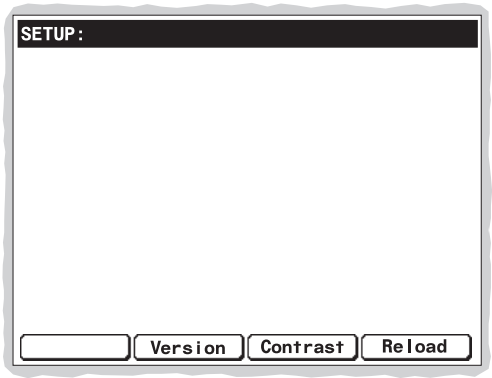
If the configuration file has been changed, it must be downloaded to your enclosure's CPU (see the matrix switcher's Instruction Manual) and then uploaded to the control panel.

To upload the new configuration file from the enclosure's CPU to the CP-20A control panel, follow the instructions below.

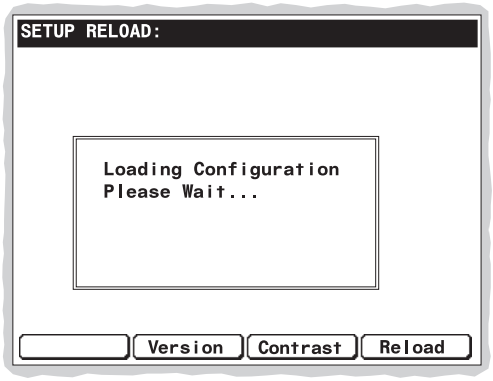
To upload a configuration file to the control panel:

1. At the Main Menu screen, choose the Setup command.
   If the Setup command is not available, press the Function key to view additional Main Menu options.
   The Setup screen appears.





2. Choose the Reload command.
   The system discovers the VMs and reloads the configuration file.



When the reload is finished, the system returns to the Main Menu screen.

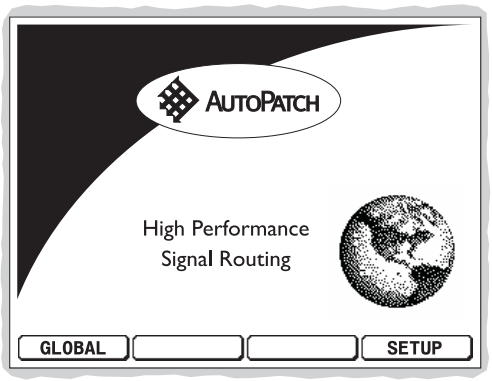
Checking Software Version

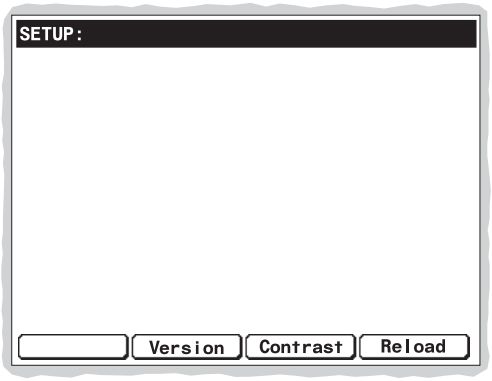
Use the following steps to check the software version of the CP-20A Control Panel.

Checking Software – Setup

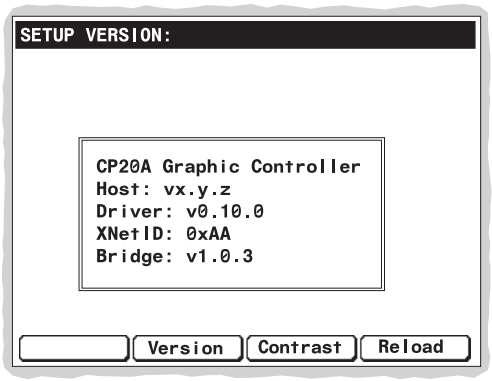
To check the software version:

1. At the Main Menu screen, choose the Setup command.
   If the Setup command is not available, press the Function key to view additional Main Menu options.
   The Setup screen appears.





2. Choose the Version command.
   The Setup Version screen appears; see the explanation below.



3. Press the Function key to return to the Main Menu screen.

Setup Version Screen

The Setup Version screen provides the following information:

- Host – software version of the initial operating system (IOS) for the control panel
- Driver – control panel's firmware version
- XNet ID – control panel's XNNet device number
- Bridge – version of the communication link from the control panel to the enclosure's CPU

Installing a CP-20A Remote

This section covers rack installation for the CP-20A Remote Panel, as well as instructions for linking multiple panels. When the installation is complete, perform a test switch to verify the system is working properly (see page 36).

General Specifications

Specifications	
Parameter	**Value**
Cable	Two-conductor, 20 AWG, 7/28 strand cable with a drain wire or shield, such as Alpha 2412C (customer supplied) Maximum length of cable: 1,000 ft (304 m) total, including linked panels
Power	+9 V @ ≥ 500 mA
Humidity	0 to 90% non-condensing
Dimensions	1.0 in. (2.54 cm) depth 19.0 in. (48.26 cm) width with mounting ears 5.2 in (13.21 cm) height, 3 RU
Weight	Approximately 2 lb. (0.91 kg) per panel

Rear View

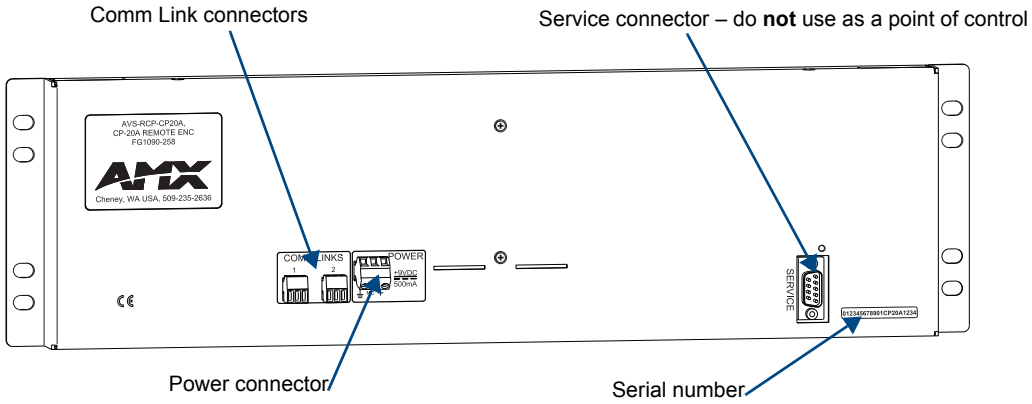


FIG. 4 Rear view of CP-20A Remote Panel

Caution: *The Service connector is not to be used as a point of control. It should only be used for service as directed by technical support.*

Connecting to an AMX AutoPatch Router

Communication Cable Requirements

- ❑ Two-conductor, 20 AWG, 7/28 strand cable with a drain wire or shield, such as Alpha 2412C (customer supplied)
- ❑ Maximum length of cable: 1,000 ft. (304.8 m) total, including linked panels

To connect the CP-20A Remote to an AMX AutoPatch Router:

1. On the CP-20A Remote, unplug one of the Comm Link connectors.
2. Loosen the two outer screws on the connector.
3. Insert the two wires of the XNNet link cable into the two outer slots of the connector, leaving the center slot empty (FIG. 5).
   Note that either wire can be inserted into either of the outer slots.

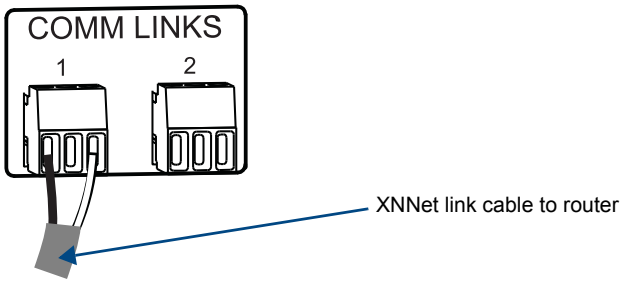


FIG. 5 Insert the wires into a Comm Link

4. Tighten both screws and plug the connector back into the Comm Link.
5. On the router's CPU, unplug the XNNet connector (for XNNet connector location, see the router documentation).
6. Loosen the two outer screws on the connector.
7. Insert the two wires from the CP-20A Remote into the two outer slots of the connector from the CPU, leaving the center slot empty (FIG. 6).
   Note that either wire can be inserted into either of the outer slots.
8. Tighten the screws and plug the connector back into the CPU.

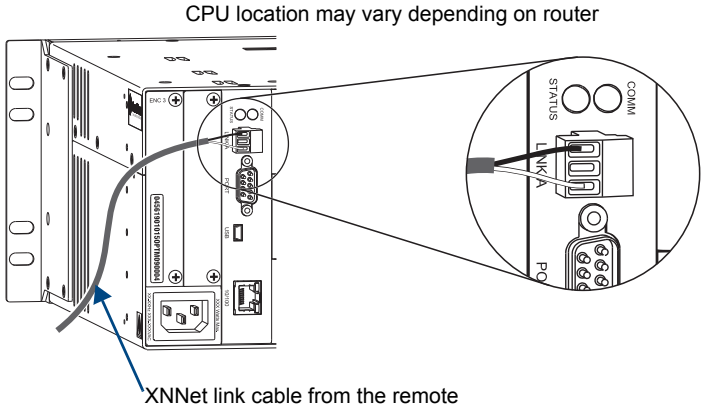


FIG. 6 Insert the wires into the XNNet connector on the CPU (Optima shown)

Applying Power

Power Requirements

- ❑ +9 volt DC with at least 500 mA

Important: *Always use a UL approved power source. Be sure to check the power source documentation for information specific to that power source.*

Power is applied to the CP-20A Remote Panel by connecting to the terminal block connector. If you use the (optional) AMX AutoPatch wall transformer, the side of the wire with the white stripe is positive and the other side is the ground. Acceptable power for the controller is +7 to +9 V DC @ 500 mA.

To wire the power connector on the CP-20A Remote:

1. Unplug the power connector on the CP-20A Remote.
2. Loosen the two outer screws and insert the power cable wires (FIG. 7).
3. Tighten both screws and plug the connector back into the remote panel.

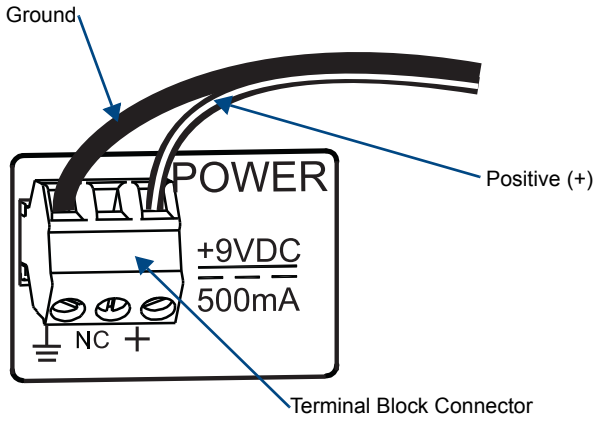


FIG. 7 Insert the wires and tighten screws

4. Place the CP-20A Remote in a rack or other permanent installation location before applying power.

Rack Installation

CP-20A Remote Panels are designed to fit in a standard EIA 19 in. (48.26 cm) rack.

Once the CP-20A Remote is wired, follow the rack installation instructions below. If linking multiple panels, see “Linking Multiple Panels” on page 35 before installing the panels in a rack.

Note: *The optimum viewing angle for the screen is eye level.*

To install the CP-20A Remote in a rack:

1. Insert the wired panel through the rear of the rack.
2. Attach the panel with front-mounting screws to hold it firmly in place (FIG. 8).

Tip: *For a multi-panel system, you may find it easier to install the top panel first and move down from there.*

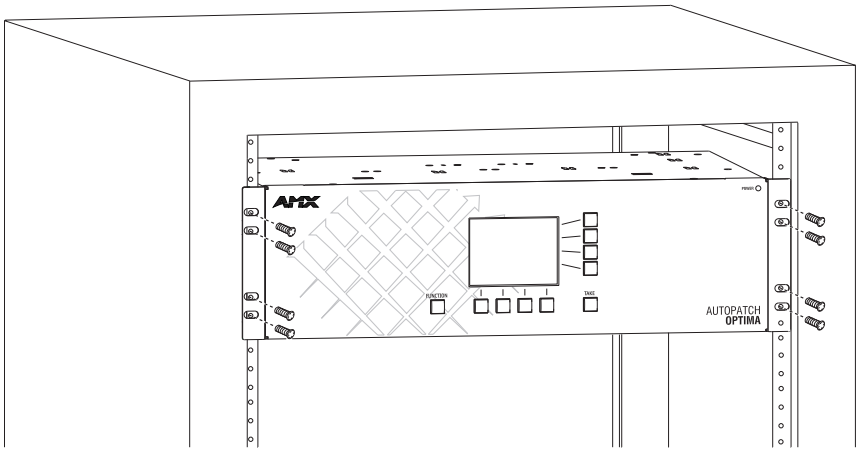


FIG. 8 Place in rack and fasten with mounting screws

3. Apply power to the panel(s).
4. Wait briefly for the system to establish communication with the remote panel.

We recommend completing the installation by performing a test switch to make sure the system is working properly (see page 36).

Note: *If the CP-20A remote panel was not part of the original system, the current configuration file must be uploaded to the remote; for instructions, see page 29.*

Linking Multiple Panels

CP-20A Remote Panels can be linked together in a daisy chain to create multiple control points for a single system.

Note: *If any of the linked CP-20A remote panels were not part of the original system, the current configuration file must be uploaded to the remote; for instructions see page 29.*

Cable Requirements

- ❑ Two-conductor, 20 AWG, 7/28 strand cable with a drain wire or shield, such as Alpha 2412C (customer supplied)
- ❑ Total distance of the cable runs cannot exceed 1,000 ft. (304.8 m)

Power Requirements

- ❑ +9 volt DC with at least 500 mA

Important: *Always use a UL approved power source. Be sure to check the power source documentation for information specific to that power source.*

To link CP-20A Remote Panels to each other:

1. Connect the first panel to the AMX AutoPatch Router using one of the Comm Links (see page 32 for instructions).
2. Attach an XNNet link cable to the other Comm Link on the first panel (follow the same procedure used when connecting to the AMX AutoPatch Router).

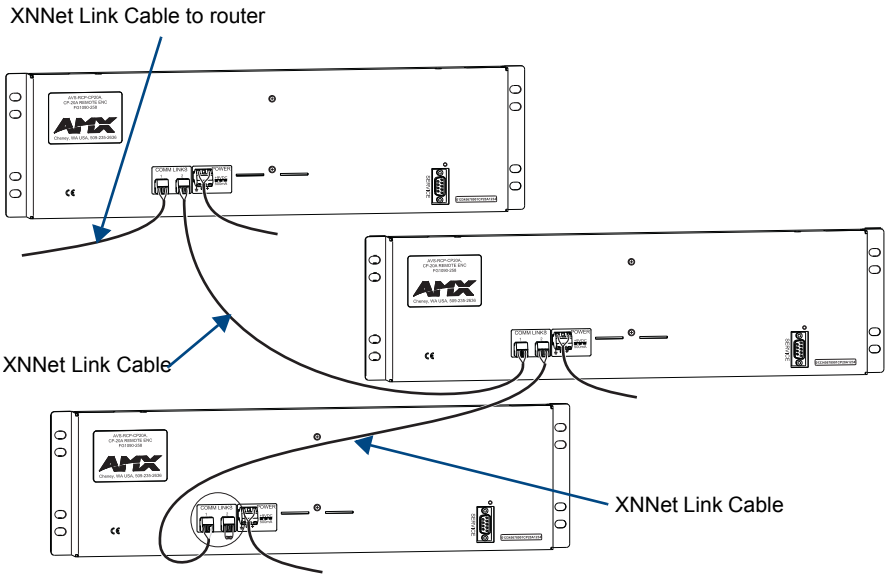


FIG. 9 Comm Links connected in a daisy chain

3. Attach the other end of the XNNet link cable to a Comm Link on the next panel.
4. Repeat Steps 2 and 3 for any additional panels to be linked.
5. Wire the power connectors on each of the CP-20A Remote Panels.
6. Place the panels in a rack(s) or in other permanent installation locations.
7. Apply power from each of the power sources.

We recommend completing the installation by performing a test switch to make sure the system is working properly (see below).

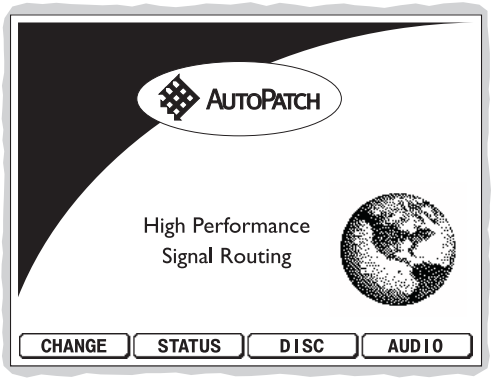
Note: *If the panel is experiencing difficulties, insert a 120 ohm resistor in the outer contacts of the unused Comm Link on the last remote of a large daisy chain and tighten the screws. If problems persist, contact technical support (for contact information, see page 39).*

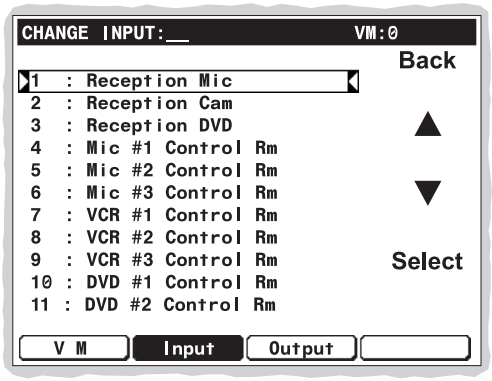
Completing the Installation

We recommend completing the installation by executing a test switch routing Input 1 to Output 2 on the level designated by the enclosure's "Connector Guide."

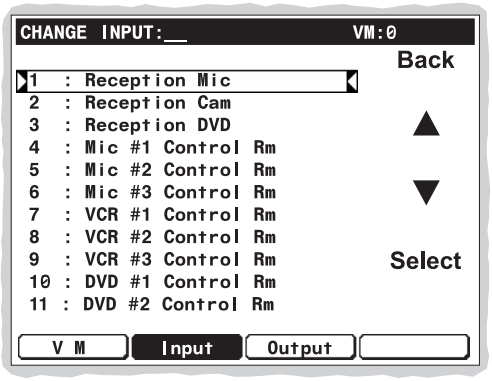
To execute a test switch:

1. At the Main Menu screen, choose the Change command.
   If the Change command is not available, press the Function key to view additional Main Menu options.
   The Change Input screen appears, displaying the available input options.

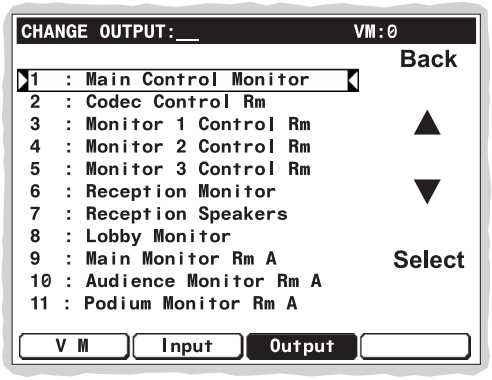




2. Locate Input 1 by scrolling through the list using the arrow keys.
   (Press and hold an arrow key to scroll quickly.)

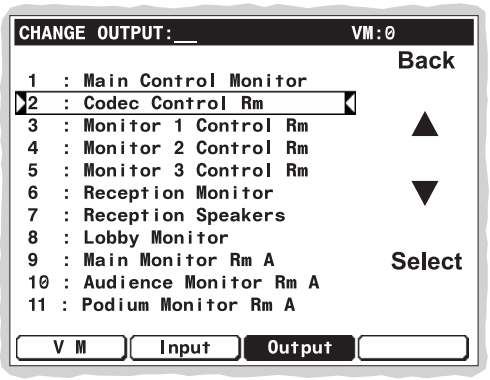


3. Press the Select key.
The Change Output screen appears, displaying the available output options.

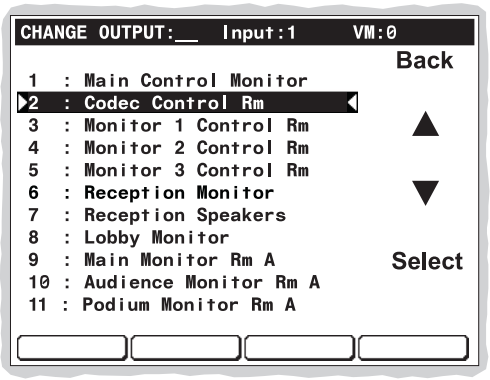


Note: *If other outputs are already routed to the selected input, they are highlighted on the Change Output screen.*

4. Locate Output 2 by scrolling through the list using the arrow keys.



5. Press the Select key.
Output 2 is highlighted.



6. Press the Take key to execute the operation.
The switch from Input 1 to Output 2 occurs as soon as the Take key is pressed.
The system returns to the Change Input screen.

If the system is not working properly, check all system connections and retry the test switch before contacting technical support, (for contact information, see page 39).

System Error Codes

This section provides an overview of common error codes that can appear on a CP-20A Control Panel. The table below lists the error code, the name of the code, the meaning of the code, and some basic troubleshooting strategies (additional troubleshooting strategies are included on page 39). The codes in the table are not intended to be comprehensive. If an error code appears that is not listed, note the specific number and contact technical support (page 39).

The first letter of the error code indicates the following:

- ❑ E = Error
- ❑ W = Warning
- ❑ A = Alarm* (requires immediate attention)
- ❑ I = Information*

* Because these codes very rarely appear, they are not included in the table.

Most Common System Error Codes			
Error Code	**Name**	**Meaning**	**Troubleshooting Strategies**
E01000A	Enclosure timeout error	One or more of the enclosures in a multi-enclosure system did not acknowledge a control operation command.	❑ Resend the command. ❑ Check the Status LED on the rear of each enclosure. If any are red, contact technical support. ❑ Check the power indicators. ❑ Check the link connectors between enclosures.
EFF8002	Transaction timeout error	The operation was not completed before the timer expired.	❑ Resend the command. ❑ Check the power indicators. ❑ Check the link connections in multi-enclosure systems. ❑ Check that the virtual matrix used in the command was valid.
E01DFFF	Missing hardware support error	The hardware does not support the command, e.g., an audio request was made on a VM that does not switch audio.	❑ Resend the command on a virtual matrix that supports the operation, e.g., send the audio request on the audio VM. ❑ Call technical support to verify that the hardware supports the command.
W010005	Sync timeout warning	The system did not receive the vertical interval sync signal. Note that the switch occurred, but not at the sync interval.	❑ Resend the command. ❑ Check the sync cable connections. ❑ Check the HyperTerminal splash screen to verify that sync is enabled (see the Vertical Interval Sync Board documentation). ❑ Check that the sync signal from the generator is being received by the vertical interval sync board. ❑ Power the system down and check sync board alignment and seating.

Troubleshooting

Error codes can appear either on the control panel or in a terminal emulation program, such as HyperTerminal.

When you are using a control panel, one of the most common troubleshooting strategies is to resend the command to see if the error was simply a timeout error.

When you are using BCS (Basic Control Structure) commands, one common troubleshooting strategy is to enter the command again. Often the command has simply been entered incorrectly (e.g., omitting an output in a Change command). In other cases, the command has specified a value that is not valid (e.g., entering a decibel value in an adjust volume command that is outside the volume range for the audio board).

Technical Support

Before contacting technical support with a question, please consult this supplement. If you still have questions, contact your AMX representative or technical support. Have your serial number (normally located on the rear of the enclosure) ready.

We recommend recording your serial number in an easily accessible location.

AMX Contact Information

- 3000 Research Drive, Richardson, TX 75082
- 800.222.0193
- 469.624.8000
- Fax 469.624.7153
- Technical Support 800.932.6993
- www.amx.com

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