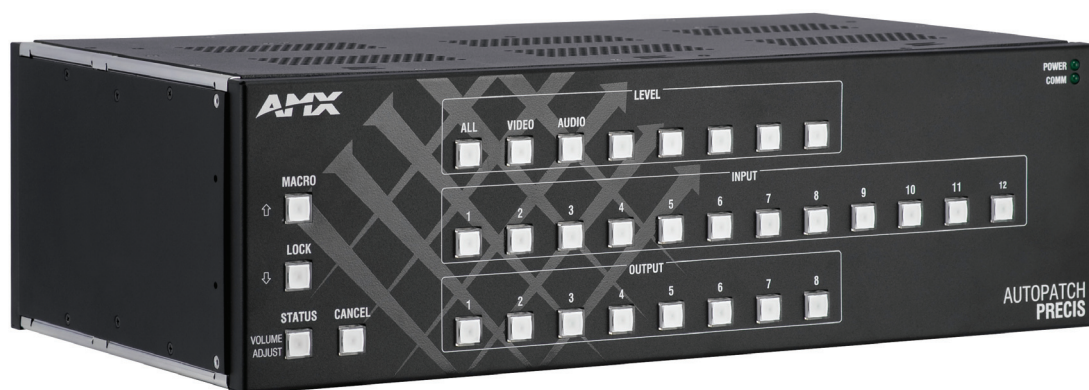




Instruction Manual

Precis HT

Distribution Matrix



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- Products will be repaired within ten (10) business days after AMX Authorized Partner approval is obtained.
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ESD Warning



To avoid ESD (Electrostatic Discharge) damage to sensitive components, make sure you are properly grounded before touching any internal materials.

When working with any equipment manufactured with electronic devices, proper ESD grounding procedures must be followed to ensure people, products, and tools are as free of static charges as possible. Grounding straps, conductive smocks, and conductive work mats are specifically designed for this purpose.

Anyone performing field maintenance on AMX AutoPatch equipment should use an appropriate ESD field service kit complete with at least a dissipative work mat with a ground cord and a UL listed adjustable wrist strap with another ground cord. These items should not be manufactured locally, since they are generally composed of highly resistive conductive materials to safely drain static charges, without increasing an electrocution risk in the event of an accident. ESD protective equipment can be obtained from 3M™, Desco®, Richmond Technology®, Plastic Systems®, and other such vendors.

Important Safety Information & Instructions

When using and installing your AMX AutoPatch product, adhere to the following basic safety precautions. For more information about operating, installing, or servicing your AMX AutoPatch product, see your product documentation.

- Read and understand all instructions before using and installing AMX AutoPatch products.
- Use the correct voltage range for your AMX AutoPatch product.
- There are no user serviceable parts inside an AMX AutoPatch product; service should only be done by qualified personnel.
- If you see smoke or smell a strange odor coming from your AMX AutoPatch product, turn it off immediately and call technical support.
- For products with multiple power supplies in each unit, make sure all power supplies are turned on simultaneously.
- Use surge protectors and/or AC line conditioners when powering AMX AutoPatch products.
- Only use a fuse(s) with the correct fuse rating in your enclosure.
- Make sure the power outlet is close to the product and easily accessible.
- Make sure the product is on or attached to a stable surface.
- Turn off equipment before linking pieces together, unless otherwise specified in that product's documentation.
- For safety and signal integrity, use a grounded external power source and a grounded power connector.
- To avoid shock or potential ESD (Electrostatic Discharge) damage to equipment, make sure you are properly grounded before touching components inside an AMX AutoPatch product.

Information et directives de sécurité importantes

Veillez vous conformer aux directives de sécurité ci-dessous lorsque vous installez et utilisez votre appareil AMX AutoPatch. Pour de plus amples renseignements au sujet de l'installation, du fonctionnement ou de la réparation de votre appareil AMX AutoPatch, veuillez consulter la documentation accompagnant l'appareil.

- Lisez attentivement toutes les directives avant d'installer et d'utiliser les appareils AMX AutoPatch.
- Le voltage doit être approprié à l'appareil AMX AutoPatch.
- Les appareils AMX AutoPatch ne contiennent aucune pièce réparable par l'utilisateur; la réparation ne doit être effectuée que par du personnel qualifié.
- Si de la fumée ou une odeur étrange se dégagent d'un appareil AMX AutoPatch, fermez-le immédiatement et appelez le Service de soutien technique.
- Veillez à ce que tous les blocs d'alimentation des appareils dotés de blocs d'alimentation multiples dans chaque unité soient allumés simultanément.
- Servez-vous de protecteurs de surtension ou de conditionneurs de lignes à courant alternatif lorsque vous mettez les appareils AMX AutoPatch sous tension.
- Placez uniquement des fusibles de calibre exact dans les boîtiers.
- Veillez à ce que la prise de courant soit proche de l'appareil et facile d'accès.
- Veillez à ce que votre appareil AMX AutoPatch soit installé sur une surface stable ou qu'il y soit fermement maintenu.
- Fermez toutes les composantes de l'équipement avant de relier des pièces, à moins d'indication contraire fournie dans la documentation de l'appareil.
- Par mesure de sécurité et pour la qualité des signaux, servez-vous d'une source d'alimentation externe mise à la terre et d'un connect d'alimentation mis à la terre.
- Pour éviter les chocs ou les dommages éventuels causés à l'équipement par une décharge électrostatique, veillez à ce le dispositif soit bien relié à la terre avant de toucher les composantes se trouvant à l'intérieur d'un appareil AMX AutoPatch.

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The United States Federal Communications Commission (in 47CFR 15.838) has specified that the following notice be brought to the attention of the users of this product.

Federal Communication Commission Radio Frequency Interference Statement:

“This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturers instructions, may cause interference to radio and television reception. It has been type-tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However there is no guarantee that interference will not occur in a particular installation. If this equipment causes interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- *Re-orient the receiving antenna*
- *Relocate the matrix with respect to the receiver*
- *Move the matrix away from the receiver*
- *Plug the matrix into a different outlet so that computer and receiver are on different branch circuits*

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the booklet, How to Identify and Resolve Radio-TV Interference Problems, prepared by the Federal Communications Commission to be helpful.”

This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock N. 004-000-00345-4.

Use shielded cables. To comply with FCC Class B requirement, all external data interface cables and adapters must be shielded.

Lithium Batteries Notice

Switzerland requires the following notice for products equipped with lithium batteries. This notice is not applicable for all AMX equipment.

Upon shipment of the products to Switzerland, the requirements of the most up-to-date Swiss Ordinance Annex 4.10 of SR 814.013 will be met by providing the necessary documents and annual reports relative to the disposal of the batteries to the Swiss Authorities.

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This manual uses the following conventions and icons to draw attention to actions or conditions that could potentially cause problems with equipment or lead to personal risk.



ESD Warning: *The icon to the left indicates text regarding potential danger associated with the discharge of static electricity from an outside source (such as human hands) into an integrated circuit, often resulting in damage to the circuit.*



Warning: *The icon to the left indicates text that warns readers against actions or conditions that could cause potential injury to themselves.*



Caution: *The icon to the left indicates text that cautions readers against actions that could cause potential injury to the product or the possibility of serious inconvenience.*

Overview & General Specifications

Applicability Notice

The information in this manual applies to Precis HT (Home Theatre) systems. For other types of Precis systems, visit www.amx.com.

Precis HT Systems

Model	Configuration	Description
FGP37-0804-A4B	8x4	Component Video (RCA) + Stereo + Digital Audio
FGP37-0804-34B	8x4	Component Video (BNC) + Stereo + Digital Audio
FGP37-1208-A4B	12x8	Component Video (RCA) + Stereo + Digital Audio
FGP37-1208-34B	12x8	Component Video (BNC) + Stereo + Digital Audio

Note: All Precis HT systems support digital volume control and have an integral Precis X/Y Control Panel.

Product Notes

The Precis HT system is contained in a single enclosure and is pre-engineered to fit both digital and analog environments. Precis HT systems route and distribute multi-zone component HDTV, analog video, and digital audio. The digital audio section supports both S/PDIF and TosLink® connectors and converts between them.

All Precis HT systems have an integral Precis X/Y Control Panel and are controllable from a variety of sources (see page 11).

Note: Because the Precis HT is available in several models and various configurations, the illustrations in this manual may differ from the model(s) you purchased.

Precis HT Features

- Ultra-Flat Response (bandwidth curve measured at a tight ± 3 dB)
- High bandwidth-linearity and low crosstalk
- Groupings and macros
- Levels (virtual matrices)
- Breakaway switching – video and audio signals can be routed separately
- RS-232 control port
- RCA or BNC video connectors
- Phoenix style stereo audio connectors, TosLink® and S/PDIF digital audio connectors
- Audio connections support balanced or unbalanced audio
- Two REMOTE (XNNet) ports for AMX AutoPatch remote control devices
- Routes Dolby Digital Surround (AC-3) and DTS
- Standard volume control for analog audio signals
- Rack mounting ears included
- Limited Warranty (see warranty at www.amx.com or on the *AMX AutoPatch CD*)
- 24-hour technical support

Precis HT Control Features

Precis HT systems support three different protocols: BCS* (Basic Control Structure), XNNet, and TCP/IP. Several different control options are available. Multiple control methods can be used on the same system.

- Simple Touch X/Y Control Panel featuring backlit buttons
- AMX control devices (for control programming information, see the instruction manual for the specific interface)
- APControl 3.0 software (free with all systems)
- APWeb (TCP/IP control via an external module)
- Supports AMX AutoPatch's simple BCS (Basic Control Structure) serial control protocol
- Supports AMX AutoPatch's XNNet protocol
- Supports third-party controllers

* BCS is sent as ASCII characters through the CONTROL port. For information on BCS commands, see the *BCS Protocol Instruction Manual* on the *AMX AutoPatch CD* or at www.amx.com.

Note: Features and specifications described in this document are subject to change without notice.

Front View

The enclosure is the structural basis of Precis HT systems. All Precis HT systems have an integral Precis X/Y Control Panel for controlling the system's switches and system attributes (FIG. 1). The control panel can also be used for system verification, redundant control, and troubleshooting. Directions for use are provided in the "Control Panel Operation" chapter on page 35.

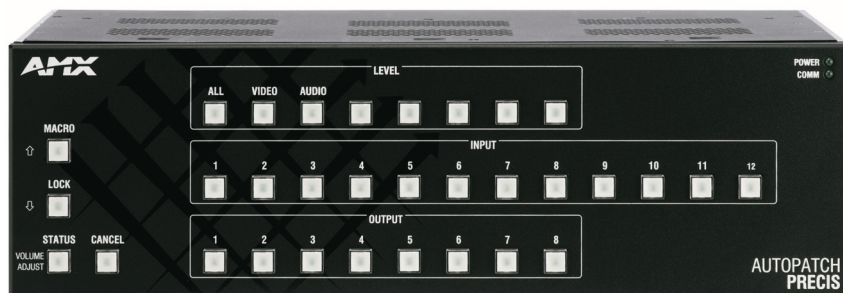


FIG. 1 Front view of Precis HT 12x8 enclosure

For additional control options, see page 12.

Rear View

The enclosure's appearance, as viewed from the rear (FIG. 2), will vary depending on the configuration.

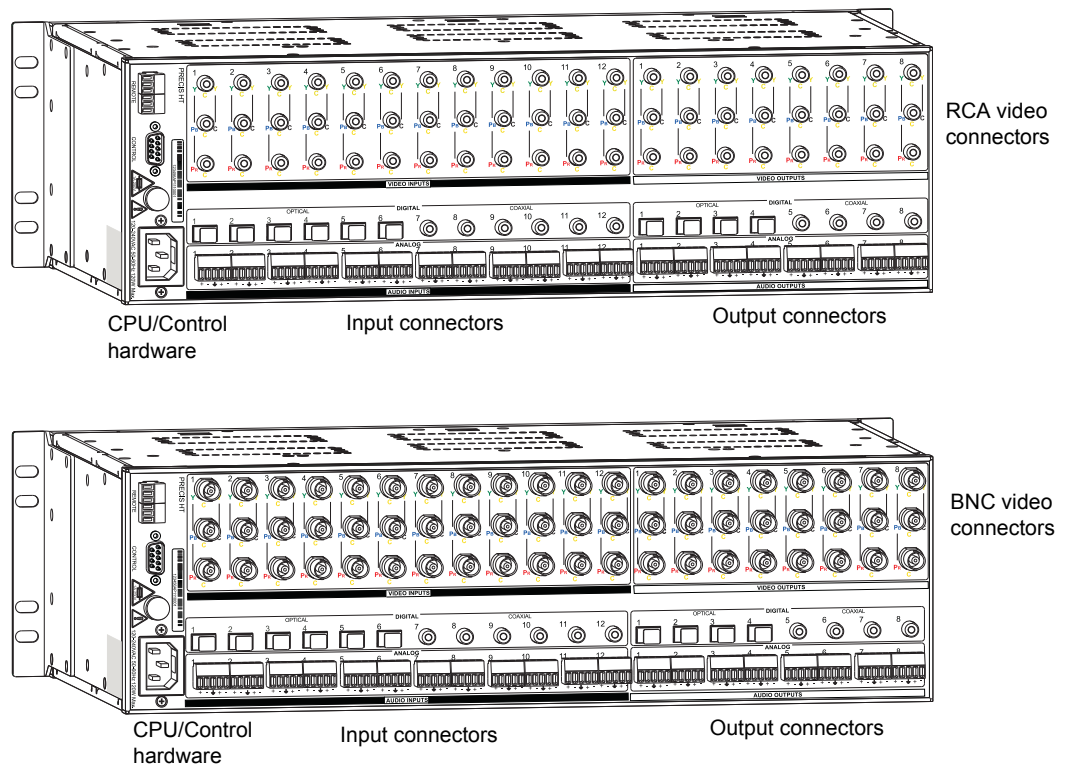


FIG. 2 PreciS HT 12x8 enclosure rear views

Rear View Components

- CPU/Control Hardware
- Power receptacle, specifications, and fuse
- System Serial Number
- Input and output connectors

The following sections briefly introduce the hardware on the rear of the enclosure.

CPU / Control Hardware

The CPU is to the left of the input connectors on the rear of the enclosure (FIG. 3).

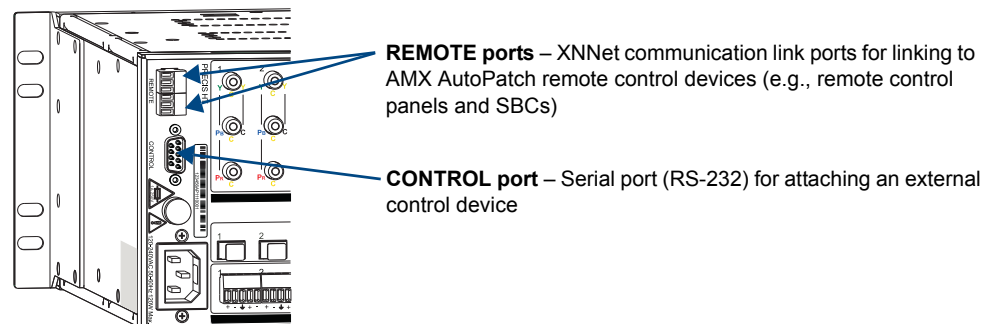


FIG. 3 CPU ports

Note: The Comm light on the front panel blinks green to indicate traffic (Ethernet or serial) on the system.

Power Receptacle & Specifications

The universal power receptacle is in the lower left hand corner on the rear of the enclosure (FIG. 4). Maximum power specifications are on the power receptacle. The power receptacle will accept all major international standard power sources. (Standard US power cords are included with all shipments within the US.)

The fuse is field serviceable (specifications: 1 amp, 250 V, 5 mm x 20 mm).

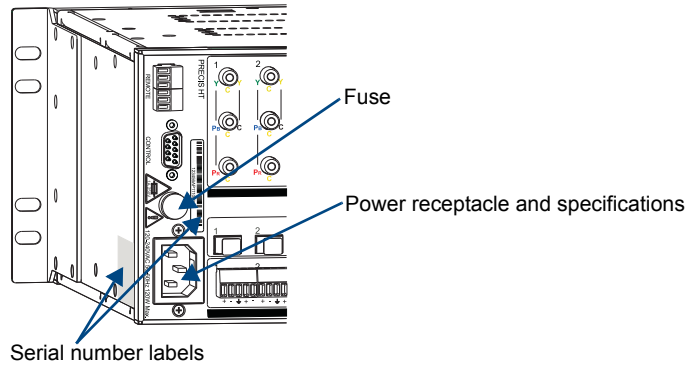


FIG. 4 Serial number labels, power receptacle, & fuse

System Serial Number

The serial number is normally located in two places on the enclosure. When viewed from the rear, one serial number label is on the CPU (FIG. 4). The second serial number label is on the left side of the enclosure at the bottom edge (near the power receptacle). The label on the side will also have the enclosure number (referred to as the chassis number). Precis HT systems are contained in a single enclosure, labeled “Chassis 1 of 1”. Before installation, we recommend recording the system’s serial number for each enclosure in the system in an easily accessible location.

Input & Output Connectors

Input and output connectors are the attachment points for source and destination devices that connect to the system. Viewed from the rear of the enclosure, the inputs (sources) are on the left side of the enclosure, and the outputs (destinations) are on the right side of the enclosure. BNC connectors are color coded; the white connectors are inputs and the black connectors are outputs. Inputs and outputs are numbered separately; the numbers are above the connector on the left.

For information on cabling/wiring the input and output connectors in your system, see “Attaching Inputs & Outputs” on page 22.

Precis HT General Specifications

General Specifications	
Parameter	Value
Approvals	CE, ETL, cETL
Humidity	0 to 90% non-condensing
Operational Temperature	32° F to 110° F (0° C to 43° C)
MTBF	87,600 hours
AC Power	100 VAC to 240 VAC single phase, 50 Hz to 60 Hz
Fuse	1 A, 250 V, 5 mm x 20 mm
Power Consumption (max.)	80 Watts
Power Consumption (typical)	57 Watts per fully loaded enclosure
Thermal Dissipation (max.)	273 BTU/hr.
Thermal Dissipation (typical)	194 BTU/hr. per fully loaded enclosure
Dimensions	
Depth	10.4 in. (26.4 cm)
Width with rack ears	18.8 in. (47.7 cm)
Width without rack ears	17.4 in. (44.2 cm)
Height	5.2 in. (13.2 cm) 3 RU
Weight	Approximately 12 lb. (5.4 kg) per enclosure

For individual signal information and specifications, see “Signal Types & Specifications” on page 33.

AMX reserves the right to modify its products and their specifications without notice.

Configuration Information & Control Options

The configuration file is stored in the CPU and contains routing and control information for an AMX AutoPatch Routing System. Each system is pre-engineered (configured) at the factory.

Configuration Information

A copy of the custom configuration file is provided on the *AMX AutoPatch CD* that ships with each system. The configuration software, XNConnect, is provided on the CD and can be used to further customize the configuration file (see “Appendix A – Managing Configuration Files” on page 45).

Unless you need to modify your system, you will not need to use any of the configuration software that is included on the CD. Always make a copy of the configuration file before modifying it.

Configuration file modifications include basic tasks, such as creating local presets, customizing input and output channel names for control display (e.g., in APWeb’s control interface), as well as advanced tasks, such as creating a joined virtual matrix. Configuration file modifications are made with XNConnect, which graphically displays the AMX AutoPatch system and its control configuration.

Control Options

Control Protocols

Precis HT systems support three different protocols: BCS (as ASCII characters sent through the CONTROL port), XNNet, and TCP/IP (with external APWeb Server Module). Several different control options are available for Precis HT systems. Multiple control methods can be used on the same system.

Front Control Panel

Precis HT systems can be controlled with the front control panel (see “Control Panel Operation” on page 35) or with one of the following external control options.

AMX Control Devices

Precis HT enclosures are compatible with a number of AMX control devices. For control programming information, see the instruction manual for the specific interface.

Control Software

Precis HT enclosures can be controlled using AMX AutoPatch software:

- APControl 3.0 – Control and scheduling
 - Uses CONTROL (serial) port located on the CPU
 - Runs on a PC connected to the CONTROL port
 - Download* from the *AMX AutoPatch CD*
- APWeb Server (TCP/IP) – Control, diagnostics, and third-party access
 - Uses CONTROL port located on the CPU for connecting to an APWeb Server Module
 - Accessed through a TCP/IP interface, such as, a web browser (e.g., Internet Explorer)
 - Contact AMX regarding limitations and conditions for operating a Precis HT on a company LAN (Local Area Network)

* If your AMX account has the required permissions, the program can be downloaded from **www.amx.com**.

BCS Serial Control Protocol

A Precis HT system can be controlled with an external serial controller that sends and receives ASCII characters via the CONTROL port. AMX AutoPatch has developed a command language, BCS (Basic Control Structure) protocol, for programming control operations and for diagnostic purposes. BCS commands* can be entered into a terminal emulation program (such as, HyperTerminal) running on a PC.

* For information on BCS commands, see the *BCS Protocol Instruction Manual* on the *AMX AutoPatch CD* or at **www.amx.com**.

Third-Party Controllers

A third-party controller can also be attached to a Precis HT enclosure via the CONTROL port. If using a third-party controller, see the controller documentation for operating instructions.

Installation & Setup

Site Recommendations

When placing the enclosure, follow the recommendations and precautions in this section to reduce potential installation and operation hazards.

Environment

- Choose a clean, dust free, (preferably) air-conditioned location.
- Avoid areas with direct sunlight, heat sources, or high levels of EMI (Electromagnetic Interference).
- To make control panel operation easier, mount the enclosure with the control panel in the rack at eye level.

Chassis Accessibility

Make sure the front panel is accessible, so that you can monitor the LED indicators. Leaving adequate clearance at the rear will allow for easier cabling and service.

Power

The source's electrical outlet should be installed near the router, easily accessible, and properly grounded. Power should come from a building branch circuit. We recommend using a dedicated line for the system's power. Use a minimum breaker current rating of 15 A for 110 V or 30 A for 230 V. To avoid an overload, note the power consumption rating of all the equipment connected to the circuit breaker before applying power.

General Hazard Precautions

These recommendations address potential hazards that are common to all installations:

Elevated Operating Temperature

The maximum rated ambient temperature for Precis HT enclosures is 110° F (43° C).

All equipment should be installed in an environment compatible with the manufacturer's maximum rated ambient temperature. In a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than the ambient room temperature.



Caution: *To protect the equipment from overheating, do not operate in an area that exceeds 110° F (43° C) and follow the clearance recommendation below for adequate airflow.*

Airflow Restriction

Precis HT enclosures are designed to adequately dissipate the heat they produce under normal operating conditions; however, this design is defeated when high-heat producing equipment is placed directly above or below an enclosure.



Caution: *To prevent overheating, avoid placing high heat producing equipment directly above or below the enclosure. The system requires a minimum of one empty rack unit above and below (three empty rack units are recommended).*

Mechanical (Rack) Loading

When installing equipment in a rack, distribute the weight to avoid uneven mechanical loading.

Circuit Overloading

When connecting the equipment to the supply circuits, be aware of the effect that overloading the circuits might have on over-current protection and supply wiring.

Reliable Earthing (Grounding)

Reliable earthing of rack-mounted equipment should be maintained. If not using a direct connection to the branch circuit (e.g., plugging into a power strip), pay particular attention to supply connections.



Caution: *For proper start up, turn on all power for the AMX AutoPatch equipment at the same time before applying power to the source and destination devices. We recommend attaching all power cords to a surge protector and/or an AC line conditioner.*

Unpacking

The Precis HT is shipped with one enclosure per shipping box. The invoice is sent separately; a packing list is attached to the outside of each box. Each box contains the following items:

- ☐ Enclosure
- ☐ Standard US power cord (if shipped within the US)
- ☐ Rack ears (with 8 screws)
- ☐ Other enclosure products as needed

The documentation in the first box includes:

- ☐ AMX AutoPatch Precis HT Quick Start Guide
- ☐ *AMX AutoPatch CD*

The shipping boxes are marked as “Chassis ___ of ___,” where the first blank is the box number and the second blank is the total number of boxes in the shipment.

Unpacking Tips

- ☐ Before fully unpacking the enclosure(s), *inspect the shipping box(es) for any signs of damage.* If a box is partially crushed or any sides have been broken open, notify the shipping agency immediately and contact your AMX representative (see the warranty on the *AMX AutoPatch CD* or at **www.amx.com**).
- ☐ Once unpacking is complete, closely check the physical condition of the enclosure.
- ☐ Collect all documentation.

Note: *Please save the original shipping container and packing materials. AMX is not responsible for damage caused by insufficient packing during return shipment to the factory. Shipping boxes are available; contact your AMX representative for details.*

Rack Installation & System Setup

The Precis HT Distribution Matrix enclosure can be mounted in a standard EIA 19 in. (48.26 cm) rack (rack ears are provided).

Important: *The system requires one empty rack unit above and below the enclosure to allow adequate airflow; three empty rack units are recommended.*

Required items for rack installation:

- ☐ Enclosure
- ☐ Standard EIA 19 in. (48.26 cm) rack
- ☐ Rack ears (with 8 screws per set)
- ☐ Screwdriver
- ☐ Screws that fit your rack for mounting the enclosure
- ☐ Power cord

Optional items for rack installation:

- ☐ Surge-protector(s) – highly recommended
- ☐ A laptop computer or PC with a null modem cable
(for communication with the Precis HT via the CONTROL port)

Installation Recommendations

- Write the system's serial number in an easily accessible location before installing the Precis HT in a rack. The system's serial number is located in two places on the enclosure; on the left rear and on the left side of the enclosure (near the power receptacle).
- Use earth-grounded power cords / system with the Precis HT.
- Attach all power cords to a single surge protector and/or an AC line conditioner.
- Apply power to the Precis HT enclosure before applying power to its source and destination devices.

Installation Procedure

A flow chart showing the installation sequence is in FIG. 5. The procedure following provides general steps with references to detailed information found in later sections of the manual.

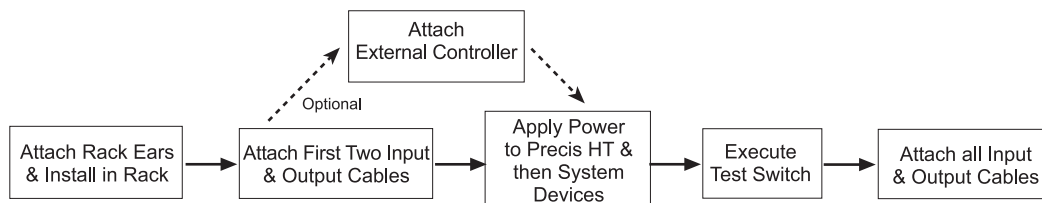


FIG. 5 Installation procedure



Caution: To prevent overheating and airflow restriction, avoid placing high-heat producing equipment directly above or below the enclosure. The system requires a minimum of one empty rack unit above and below (three empty rack units are recommended).

To install and set up a Precis HT in a rack:

1. Attach rack ears per FIG. 6.

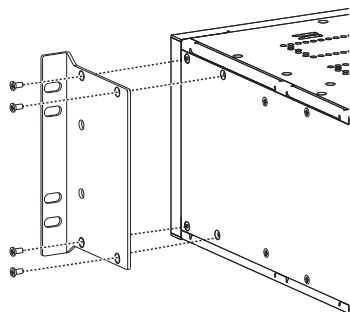


FIG. 6 Attach rack ears to sides of enclosure

2. Place the enclosure in the rack and attach front-mounting screws to hold it firmly in place (FIG. 7).

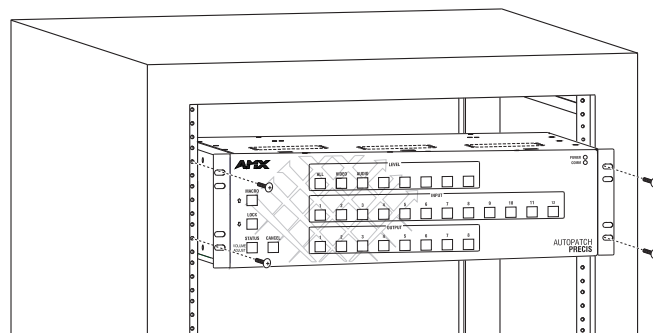


FIG. 7 Place in rack and fasten with mounting screws

Tip: When placing enclosures, keep in mind that the optimal viewing angle for a control panel is eye level.

3. Optional – Establish communication with an external control device/system; see “Attaching External Controllers” on page 18.
4. Attach *only* the first two source devices and the first destination device; see “Attaching Inputs & Outputs” on page 22.
Do not apply power to the devices until after the Precis HT has power (Step 5).

5. Apply power to the system according to the power-up procedure; see “Applying Power & Startup” on page 26.

Note: *We recommend using surge protectors and/or AC line conditioners.*

6. Execute a test switch to ensure the system is working properly; see “Executing a Test Switch” on page 28.
7. When the test switch works correctly, attach the remaining source and destination devices.

Additional Installation Options

Additional installation tasks may include the following:

- Creating custom channel names – See page 49 in “Appendix A – Managing Configuration Files”.
- Setting a control panel password – See page 52 in “Appendix A – Managing Configuration Files”.
- Creating / Defining local presets for macros – See page 50 in “Appendix A – Managing Configuration Files”.
- Creating global presets – See the *BCS Protocol Instruction Manual* on the *AMX AutoPatch CD* or at **www.amx.com**.

Attaching External Controllers

The Precis HT can be controlled externally by attaching an external control device that uses one of the communication protocols listed below:

- **BCS (Serial)** – ASCII sent over a null modem serial cable via the CONTROL port
- **XNNet** – AMX AutoPatch protocol via all ports (including serial); AMX AutoPatch control and accessory devices usually connect via the REMOTE port

Control Options

The communication protocols listed above are used for these control options:

AMX Control Device

The Precis HT is compatible with a number of AMX control devices. For control programming information, see the instruction manual for the specific interface.

AMX AutoPatch Remote Control Panels & SBCs

AMX AutoPatch remote control panels and other AMX AutoPatch control devices (SBCs and Preset SBCs) usually connect to either REMOTE port on the CPU. For instructions for attaching an external controller to a REMOTE port, see page 21. For specific information on the remote control device, see its product documentation.

APControl 3.0 (Serial)

APControl 3.0 software (for control and scheduling) runs on a PC connected to a Precis HT via the CONTROL port and is available on the *AMX AutoPatch CD*.

APWeb (TCP/IP)

The APWeb Server (for control, diagnostics, and third-party access) is accessed through a TCP/IP interface, such as, a web browser (e.g., Internet Explorer). An APWeb Server Module is required for APWeb. For setup and operation information, see the APWeb Server Module's documentation on the *AMX AutoPatch CD* and at **www.amx.com**.

Important: Contact AMX regarding limitations and conditions for operating a Precis HT on a company LAN.

XNNet Protocol (Serial)

Advanced programmers who want to design their own control programs can use AMX AutoPatch XNNet protocol. The *AMX AutoPatch CD* includes the XNNet Communication Library, an interface library that supports C, Java, and Visual Basic and has examples of the XNNet protocol in use.

BCS (Serial) Control

AMX AutoPatch has developed a command language, BCS (Basic Control Structure), for executing control operations and for diagnostic purposes. BCS commands are issued via a terminal emulation program, such as Windows® HyperTerminal. For information on BCS commands, see the *BCS Protocol Instruction Manual* on the *AMX AutoPatch CD* or at **www.amx.com**.

Third-Party Controllers (Serial)

Third-party controllers connect to the CONTROL port (RS-232) on the CPU. If using a third-party controller, see the controller documentation for setup and operating instructions.

Attaching Serial Controllers

An external serial controller is any device that can send and receive ASCII code over an RS-232 (null modem) serial cable attached to the CONTROL port on the enclosure's CPU. PCs are common serial controllers. Once a PC is attached to the Precis HT, the system can be controlled by running APControl software on the attached PC (see the *AMX AutoPatch CD*). The system can also be controlled by entering BCS commands into a terminal emulation program (e.g., HyperTerminal). For information on BCS commands, see the *BCS Protocol Instruction Manual* on the *AMX AutoPatch CD* or at www.amx.com.

PC Requirements for APControl 3.0

- ☐ Windows XP Professional® or Windows 2000®
- ☐ Java Runtime Environment (JRE): v1.4.2 or the latest version
- ☐ Minimum Hardware: 166 MHz, 128 MB RAM, 20 MB free disk space, 800x600 display
- ☐ Recommended Hardware: 2.0 GHz, 512 MB RAM, 20 MB free disk space, 1280x1024 display
- ☐ Serial port

PC Requirements for BCS

- ☐ Windows XP Professional® or Windows 2000®
- ☐ Terminal emulation program
- ☐ Serial port

RS-232 Pin Diagram

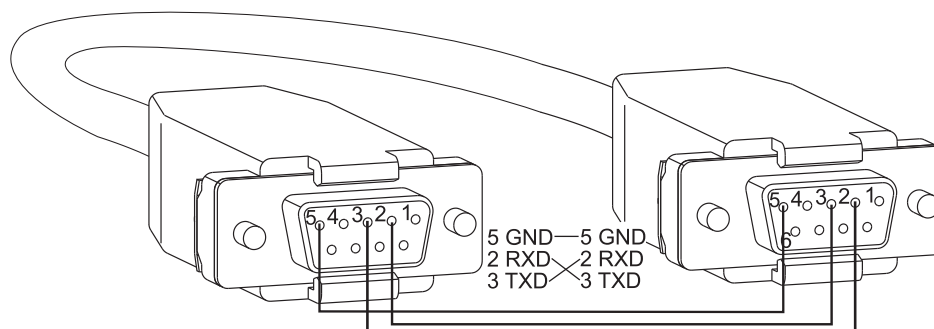


FIG. 8 RS-232 null modem pin diagram, no hardware flow control

To establish external serial control:

1. Use a null modem cable that matches the pin diagram in FIG. 8 for RS-232 without hardware flow control. AMX AutoPatch equipment requires pins 2, 3, and 5 only.

2. Plug one end of the null modem serial cable into the CONTROL port on the enclosure (FIG. 9).

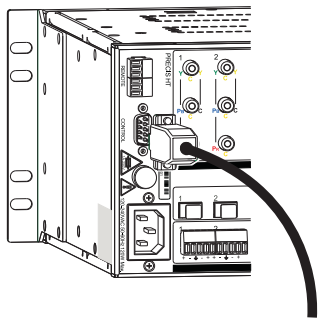


FIG. 9 Attach null modem serial cable to CONTROL port

3. Plug the other end of the serial cable into the serial port on the serial controller/device.
4. Open the serial communication software and set the port settings to match the Preci HT settings (see table to the right).
The settings on the PC serial communication software and the enclosure *must* correspond to each other. If a change is required to make them match, the PC's settings must be changed.

Precis HT CONTROL Port Settings	
Baud Rate	9600
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None



Caution: To avoid system damage, follow the power-up sequence on page 26. We recommend attaching all power cords to a surge protector and/or AC line conditioner.

5. If not already on, apply power first to the Preci HT enclosure and then to the source and destination devices (see “Applying Power & Startup” on page 26).
6. Set up and run the desired method of control:
 - **AMX Control Device** – See the specific control device documentation.
 - **APControl 3.0** – Install and open the program from the *AMX AutoPatch CD*. (If your AMX account has the required permissions, the program can be downloaded from www.amx.com.) From the APControl Launchbar menu, select System / New; select Heritage System / Next; select Manual Configuration Entry / Next; enter VMs and number of inputs and outputs; click Add VM / Next; finish Wizard instructions.
 - **Terminal emulation (HyperTerminal)** – Open the program (e.g., HyperTerminal), select the COM port, and check that the settings match those in the Preci HT CONTROL Port Settings table (see above).
Click OK.
A short splash screen appears.
7. Execute a test switch to ensure the Preci HT is working properly (see “Executing a Test Switch,” on page 28).

Attaching External XNNet Controllers

An XNNet device is any device that sends and receives XNNet protocol over the REMOTE port. AMX AutoPatch XNNet control devices include remote control panels, Single Bus Controllers (SBCs), and Preset SBCs.

The instructions below are for attaching a device to either REMOTE port, found on the CPU. For specific product information, see the individual device's documentation.

Communication Cable Requirements

- ❑ A 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. (305 m) total, including linked panels

To establish a REMOTE port connection with an XNNet device:

1. Attach one end of the XNNet link cable to the corresponding port on the device (see the individual product documentation).
2. On the enclosure's CPU, unplug one of the REMOTE (XNNet) connectors.
3. Loosen the screws on the REMOTE connector.
4. Insert the two wires of the XNNet link cable from the device into either of the REMOTE connectors leaving the center slot empty (FIG. 10).

Note that either wire can be inserted into either of the outer slots.

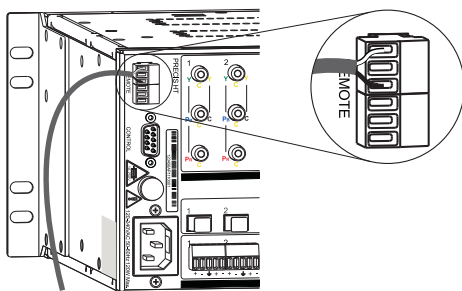


FIG. 10 Insert wires into REMOTE connector on CPU

5. Tighten both screws and plug the connector back into the CPU.
6. If not already on, apply power first to the Precis HT enclosure before applying power to the XNNet device (see “Applying Power & Startup,” page 26).
7. Execute a test switch to ensure the Precis HT is working properly (see “Executing a Test Switch,” page 28).

Attaching Inputs & Outputs

Input and output connectors are the attachment points for source and destination devices that connect to the system. Viewed from the rear of a Precis HT enclosure, the inputs (for sources) are on the left side of the enclosure, and the outputs (for destinations) are on the right side.

The number and type of connectors depend on the signal type and system configuration. Input and output connectors are numbered separately. The connector numbers are either directly above or below each connector (or connector set) and read left to right.

Before connecting all input and output cables/wires, attach only the first two inputs and outputs and execute a test switch (see page 28). Depending on the signal type (e.g., three-component signals), you may need to attach multiple input and output connectors to route the entire video signal. A typical Precis HT system uses one set of audio connectors. For information on switching both the analog and digital audio sets of connectors, see page 56.

When the test switch is successful, attach the rest of the input and output cables and wires.

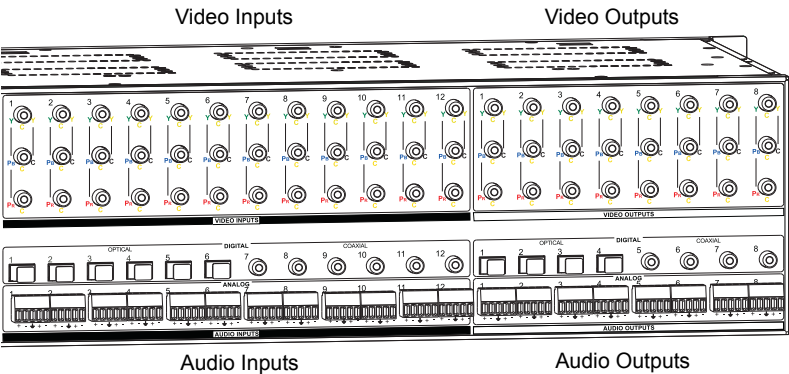


FIG. 11 Numbering starts at left for each input & output section

Signal Types

Signal types and connectors for a Precis HT enclosure could include those listed in the table below, depending on the model.

Signal Type	Connector Type
Three-component video (Y/Pb/Pr or RGsB)	RCA or BNC
Y/c	RCA or BNC
Composite video	RCA or BNC
Digital audio – TosLink & S/PDIF	Optical & Coaxial (RCA)
Analog audio – stereo (balanced or unbalanced)	Pluggable 5-position terminal block

For specifications for specific signals, see “Signal Types & Specifications” on page 33.

Cabling Video Connectors

Tip: Using lacer bars or some other type of cable management system lessens the strain from cable weight on the connectors and makes servicing the enclosures easier.

Precis HT models can be ordered with either RCA or BNC video connectors. For component signals, you will need to attach cables to all corresponding input and output connectors to route the entire signal. The examples in FIG. 12 and FIG. 13 show three video cables attached for routing a three-component signal through Output 8.

For component (wideband) video specifications, see page 33.

BNC Video Connectors

The video connectors are color coded; the white BNC connectors are inputs and the black BNC connectors are outputs.

To attach BNC cables:

1. Fasten the cable connectors onto the input and output BNC connectors.

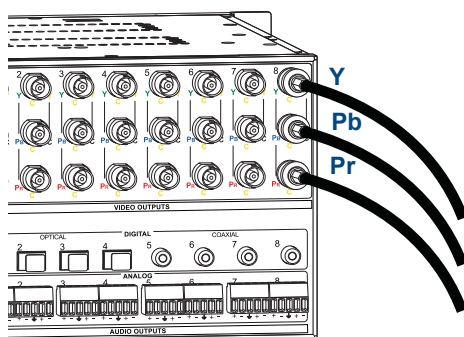


FIG. 12 Attach BNC cable onto BNC connectors

RCA Video Connectors

To attach RCA cables:

1. Insert the RCA plugs into the input and output RCA jacks.

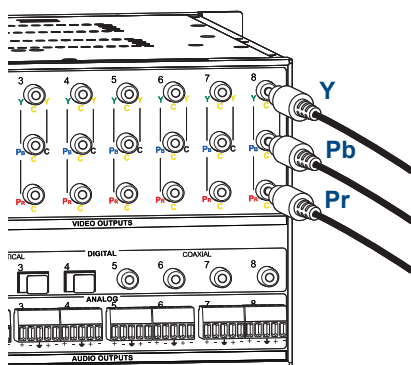


FIG. 13 Insert RCA plugs into RCA jacks

Note: To cable the Precis HT for routing Y/c signals, attach the RCA or BNC cables to the video connectors according to the screening on the rear of the enclosure.

Wiring & Cabling Audio Connectors

Note: Typically, a Precis HT system uses one set of audio connectors. For information on switching both the analog and digital audio sets of connectors (on VM 0), see page 56.

Standard Audio Connectors

The stereo audio connectors for the Precis HT are pluggable 5-position terminal block. For standard audio specifications, see page 33.

Wiring Sources & Destinations

Source and destination devices require either balanced (differential) or unbalanced (single-ended) connections. FIG. 14 illustrates options for wiring between sources and input connectors and between output connectors and the destinations. More than one option can be used in the same system. For balanced and unbalanced wiring details, see FIG. 15.

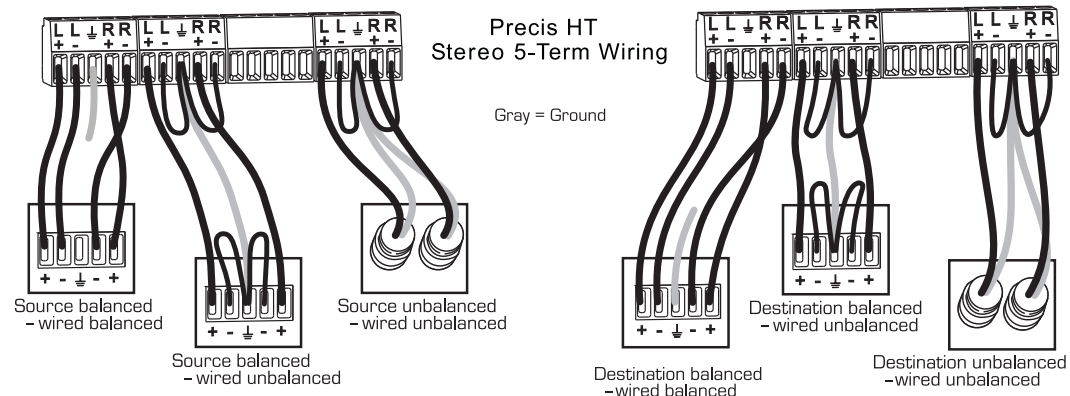


FIG. 14 Options for source-to-Precis HT-to-destination 5-Term wiring

Attaching Wires

To attach stereo audio input and output wires:

1. Unscrew the clamps on the audio connector.
2. Insert the wires and firmly re-tighten the clamps to make secure connections.
For balanced audio wire placement, see the left wiring diagram in FIG. 15.
For unbalanced audio wire placement, see the right wiring diagram in FIG. 15.

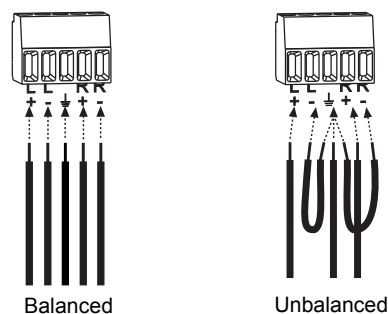


FIG. 15 Balanced & unbalanced audio wiring

Note: For stereo audio signals using twisted pair wire, connect the shield (ground) only at one end (recommend receiving end) to minimize low frequency noise.

Digital Audio Connectors

The digital audio connectors for the Precis HT are TosLink® (optical) and S/PDIF (coaxial) jacks. For digital audio specifications, see page 34.

Attaching Cables

To attach TosLink® (optical) cables:

1. Remove the protective caps from the TosLink jacks.
2. Insert TosLink plugs into the TosLink digital audio jacks (FIG. 16).

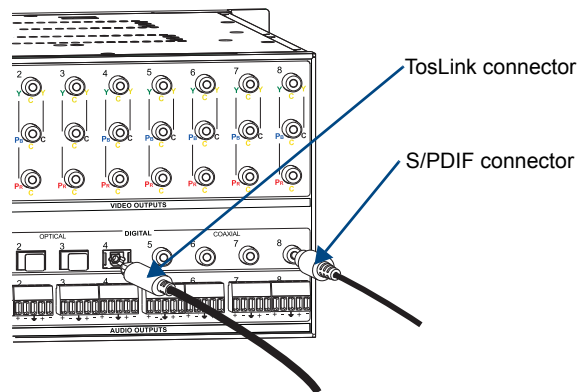


FIG. 16 Insert plugs into jacks

To attach S/PDIF (coaxial) cables:

1. Insert S/PDIF plugs into the S/PDIF digital audio jacks (FIG. 16).

TosLink® is a registered trademark of the Toshiba Corporation.

Applying Power & Startup

The enclosure's universal power receptacles will accept all major international standard power sources. Standard US power cords are provided for installations within the US. Maximum power specifications are on the power receptacle (also listed on page 11). Always use an earth-grounded power cord / system with a Precis HT.

The source electrical outlet should be installed near the Precis HT, easily accessible, and properly grounded. Power should come from a building branch circuit. We strongly recommend using a dedicated line for the system's power. Use a minimum breaker current rating of 15 A for 110 V or 30 A for 230 V. To avoid an overload, note the power consumption rating of all the equipment connected to the circuit breaker before applying power.



Caution: To avoid system damage, turn on all power for the AMX AutoPatch equipment at the same time before applying power to the system's source and destination devices. We recommend attaching all power cords to a surge protector and/or an AC line conditioner.

Power-Up Sequence

To apply power:

1. Attach the first two source and destination devices (see "Attaching Inputs & Outputs," page 22).
Do not apply power to the source and destination devices until Step 7.
2. Optional – Attach an external controller (see "Attaching External Controllers," page 18).
3. Plug the power cord into the power receptacle on the enclosure.
4. Plug the other end of the power cord(s) into a power strip (we recommend using a 30 A power strip) *that is turned off.*
5. Turn on the power strip.
The Power Indicator on the front of the enclosure illuminates (FIG. 17).

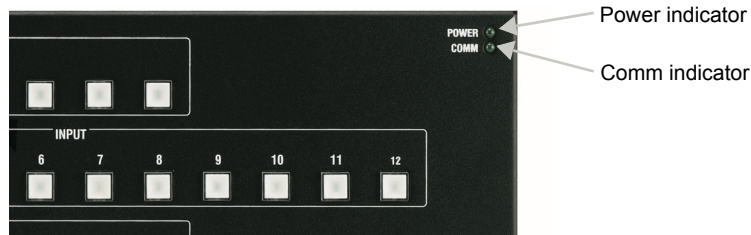


FIG. 17 Power indicator on enclosure front

6. Optional – Apply power to any external control device/system.
7. Apply power to the source and destination devices.
The Comm indicator on the front of the enclosure (FIG. 17) blinks green to indicate Ethernet traffic on the system.

For startup information on specific types of control *before* executing a test switch, see page 18. The system is ready for a test switch (see "Executing A Test Switch" on page 28).

Note: For information on checking the software and hardware versions, see page 27.

Serial Control Device Startup

If you have not already done so, attach the serial control device to the CONTROL port on the enclosure (see page 19) and open the control program.

AMX Control Devices

The Precis HT is compatible with a number of AMX control devices. For control programming information, see the instruction manual for the specific interface.

APControl 3.0

If you are using APControl 3.0, install and open the program. Follow the directions in the setup wizard. From the Launchbar menu, select Views / CrossBar and click on the crosspoints to execute switches.

APWeb

For startup information, see the *APWeb Server Module* documentation.

HyperTerminal

When power is applied to the enclosure, HyperTerminal displays a short splash screen (FIG. 18). The system is ready to disconnect the factory default switch and to execute a test switch (see page 28).

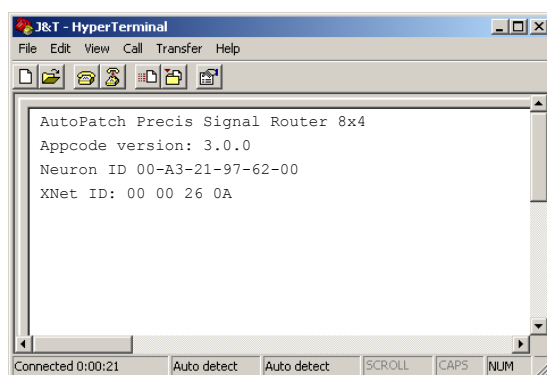


FIG. 18 Power-up splash screen example

FIG. 18 shows an example of a short splash screen (your system's splash screen may differ). The short splash screen provides the following information:

- **Appcode version** – enclosure's firmware version
- **Neuron ID** – for internal AMX AutoPatch use
- **XNet ID** – enclosure's XNNet identification number

Note: AMX reserves the right to add to the contents of the splash screen at any time, without notice.

Executing a Test Switch

Execute a test switch to verify the system is working properly before attaching *all* inputs and outputs. Aside from having signal cables (and a controller if applicable) attached, the system is ready to execute switches when it ships from the factory.

Important: *The Precis HT ships from the factory with a default switch of Input 1 to all outputs. Before executing the test switch, you will need to disconnect the factory default switch.*

The first two source and destination devices must be attached to the input and output connectors. (For specific connector information see “Attaching Inputs & Outputs” on page 22.) After the devices are connected, power *must* be applied to the enclosure first and then to the devices before executing a test switch.

You can execute a test switch from the following:

- Control panel
- AMX control device
- Control software such as APCControl 3.0 or APWeb
- BCS (Basic Control Structure) commands over an external controller
- An external third-party controller

Executing a Test Switch

Before executing the test switch, make sure the first two source devices and the first two destination devices are connected to the correct input and output connectors.

Important: *Component signals require multiple input or output connectors (e.g., an RGB signal requires three connectors). All of the signal cables for that signal (and audio if applicable) must be attached before executing the test switch.*

Control Panel

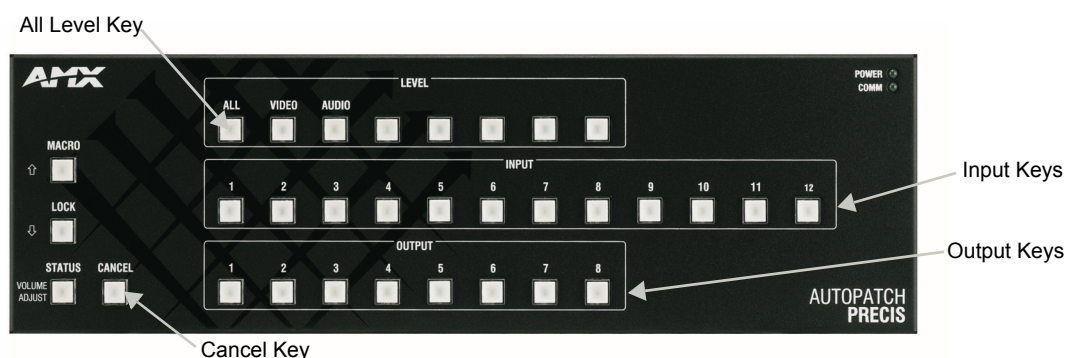


FIG. 19 Precs HT 12x8 control panel

To disconnect the factory default switch using the control panel:

1. Press the Cancel Key to place the panel in Switch mode.
All the lights on the control panel turn off.
The control panel is in Switch mode.
2. Press the All Level Key.
The All Level Key illuminates.
3. Press Input Key 1.
Input Key 1 flashes.
After a moment all the Output Keys illuminate.
4. Press each Output Key.
The Output Keys each disconnect (turn off) when pressed.

When executing a test switch, we suggest routing Input (source) 1 to Output (destination) 2 on Level 0 (All VMs).

To execute a test switch using the control panel:

1. Press the Cancel Key to place the panel in Switch mode.
2. Press the All Level Key.
The All Level Key illuminates.
3. Press Input Key 1.
Input Key 1 flashes.
4. Press Output Key 2.
When Output Key 2 illuminates, the switch is successful.
Verify that the source signal is present (visible and/or audible) at the destination.

AMX Control Device

For executing and disconnecting switches using an AMX control device, see the specific control device documentation.

APControl 3.0 or APWeb

Directions for executing and disconnecting switches using APControl 3.0 are found in its Help file.
For directions for executing switches using APWeb, see the *APWeb Instruction Manual*.

BCS Commands

To enter BCS commands, the system must be attached to a serial control device (see “Attaching External Controllers,” on page 18) running a terminal emulation program such as Windows® HyperTerminal. The settings on the PC serial communication software and the enclosure *must* correspond to each other. For settings information, see the table on page 20.

When using HyperTerminal, command characters are entered and sent to the enclosure’s CPU (the command characters appear in HyperTerminal when the enclosure responds). When all of the entered characters appear in HyperTerminal, the command has been successfully executed.

To disconnect the factory default switch using BCS commands:

1. Enter the following BCS command line:

```
DL0I1T
```

When the “T” appears, the system has successfully executed the command.

The following test switch routes Input 1 to Output 2 on Level 0.

To execute the test switch using BCS commands:

1. Enter the following BCS command line:

```
CL0I1O2T
```

When the “T” appears, the system has successfully executed the command. If any other characters appear, the command was not successful. Verify that the source signal is present (visible and/or audible) at the destination.

For a complete list of BCS commands and responses, see the *BCS Protocol Instruction Manual* on the *AMX AutoPatch CD* or at www.amx.com.

Troubleshooting

If the test switch did not execute correctly:

- ☐ Check the power indicator on the front of the enclosure.
If it is not illuminated, check the power cords.
- ☐ Verify the status of the test switch.
If using BCS commands, enter “SL0O2T”.
If “SL0O2T (1)” appears, the test switch is routed.
If the status returns as routed correctly, the system established a connection between the specified input and output connectors within the enclosure.
- ☐ Check all link and signal connections on the rear of the enclosure(s) to make sure everything is physically set up correctly.
- ☐ Check all power switches on the source and destination devices to make sure they are all turned on.
- ☐ Isolate source and destination equipment and cable problems by patching around the router using barrel connectors to check the overall signal path.
- ☐ Attempt the switch again.
If the switch still does not work, contact technical support (see page 31).

Technical Support

Before contacting technical support with a question, please consult this manual. If you still have questions, contact your AMX representative or technical support. Have your system's serial number ready. The system's serial number is normally located in two places on the enclosure; on the left rear and on the left side (near the power receptacle).

We recommend recording your system's 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

Signal Types & Specifications

This chapter contains the specifications for the video and audio signals routed by the Precis HT system. For information on cabling and wiring video and audio connectors, see “Attaching Inputs & Outputs” on page 22.

Wideband Video Specifications

Wideband Signal Specifications		
Parameter	Conditions	Value
Frequency Response	1 to All	±3 dB to 300 MHz or better
Crosstalk	f = 5 MHz	<-60 dB
Signal to Noise Ratio (SNR)	Vin = 0.7 V, 100 IRE	>65 dB
Return Loss	f = 5 MHz	<-45 dB
Input Level (max.)		±1.5 V
Input Impedance		75 ohms
Output Level (max.)		±1.5 V
Output Impedance		75 ohms
HV Sync Frequency		±3 dB to 50 MHz or better
HV Sync Crosstalk	f = 5 MHz	-70 dB
HV Sync Input		±5 V
HV Sync Output		±5 V
Connectors		RCA or BNC

Standard Audio Specifications

Standard Audio Signal Specifications		
Parameter	Conditions	Value
Frequency Response	f = 20 Hz to 20 kHz	<±0.1 dB
THD + Noise	f = 20 Hz to 20 kHz, Vin = -10 dBu to +20 dBu	<0.1%
Crosstalk	f = 20 Hz to 20 kHz, Vin = +14 dBu	<-110 dB
Signal to Noise Ratio (SNR)	f = 20 Hz to 20 kHz, Vin = +10 dBu	>80 dB
Input Level (max.)	Balanced	+27 dBu
Input Impedance		18 kohms
Input Gain Adjustment Range	Control panel or serial control adjustment	+10 dB to -10 dB
Output Level (max.)	Balanced	+27 dBu
Output Impedance		50 ohms
Output Volume Control Adjustment Range (digital)*	Control panel or serial control adjustment	+10 dB to -70 dB (mute)
Type		Balanced or unbalanced
Connectors		Pluggable 5-position terminal block

* Total of input gain plus output gain cannot exceed +10 dB.

Digital Audio (S/PDIF & TosLink®) Specifications

S/PDIF & TosLink® Digital Audio Signal Specifications		
Parameter	Conditions	Value
Resolution		16 bit to 24 bit
Sample Rate		32 kHz to 96 kHz
Connectors		TosLink, S/PDIF

AMX reserves the right to modify its products and their specifications without notice.

Control Panel Operation

Overview

All Precis HT systems have an integral Precis X/Y Control Panel for controlling the system's switches and system attributes. The control panel can also be used for system verification, redundant control, and troubleshooting.

FIG. 20 illustrates a 12x8 Precis HT Control Panel. Other models may vary slightly in appearance.

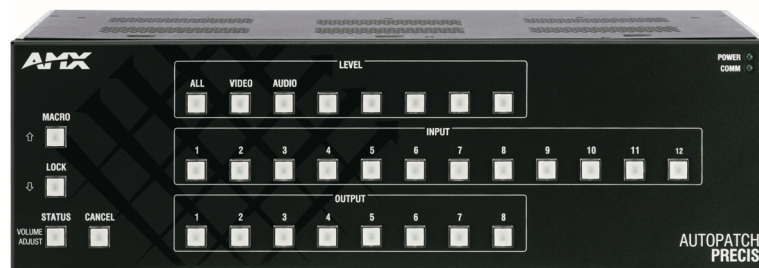


FIG. 20 12x8 control panel with digital volume control

Note: AMX AutoPatch software can also be used to control a system; for more information, see the “AMX AutoPatch CD”. In addition, AMX AutoPatch enclosures can be controlled using BCS (Basic Control Structure) commands transmitted through an external controller; see the “BCS Protocol Instruction Manual” on the CD or at www.amx.com.

Modes of Operation

A Precis HT Control Panel works in three standard modes:

- Switch (default) – use to execute switches
- Status – use to verify signal status
- Macro – use to execute a macro (a local preset pre-defined in XNConnect)

Virtual Matrices (Levels)

Precis HT models execute switches on four levels (virtual matrices):

- VM 0 (All VMs)
- VM 1 (video)
- VM 2 (digital audio)
- VM 3 (stereo audio)

Control Keys

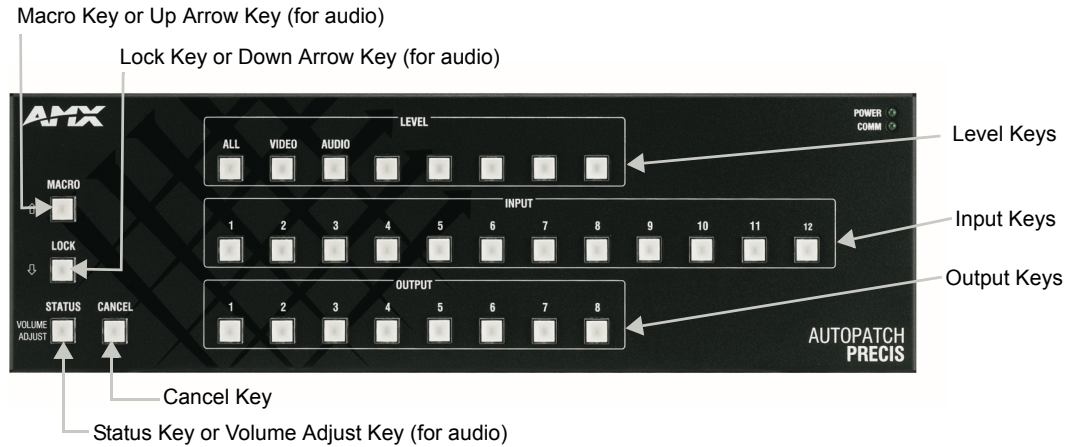


FIG. 21 Preciso HT control panel keys (dual-labeled keys can adjust audio)

Keys & Functions

- Macro Key – places the control panel in execute Macro mode
- Lock Key – locks and unlocks the control panel (password required)
- Status Key – places the control panel in Status mode
- Cancel Key – cancels an incomplete command and returns the control panel to Switch mode
- Level Keys – activate levels for switches or status queries, also used for entering macros and the password
- Input (source) Keys – select an input on the specified level, also used for entering macros
- Output (destination) Keys – select an output on the selected level, also used for entering macros

Audio Adjust Keys

These dual-function keys can be used to adjust the analog audio:

- Volume Adjust Key (Status) Key – places the control panel in Volume Adjust mode
- Up Arrow (Macro) Key – increases output volume or digital input gain
- Down Arrow (Lock) Key – decreases output volume or digital input gain

Executing & Disconnecting Switches

A switch is an active connection between an input (source) device and one or more output (destination) devices. The signals connected in a switch command are individual signals or groups of individual signals coming through the connectors on the rear of an enclosure. You can execute switches from the Control Panel using the steps below or by executing a local preset / macro (see page 40).

Switching Level

All switches are executed on a specific level (virtual matrix). Unless otherwise specified, switches are executed using the factory designated default level of All VMs (Level 0) which is associated with the farthest left Level Key. When using the default, you do not need to press a Level Key.

When executing a switch on a level other than the default, you *must* press the desired Level Key (be sure the level includes the signals you want to route).

The Level Key for the level currently in use will illuminate when you press an Input Key or an Output Key. The level can be changed by pressing the desired Level Key either before or after you press an Input Key or an Output Key.

Description of Switching / Disconnecting Operations in Switch Mode

Pressing the Cancel Key puts the control panel in Switch mode, which defaults to switching on Level 0 (All VMs). For information on changing the level, see “Switching Level” above.

- When an Input Key is pressed first, it flashes and will be used as the source for switching. A single Output Key can then be pressed (the key will illuminate) to execute the switch (and can be pressed again to disconnect the switch – the key will turn off) or multiple Output Keys can be pressed to receive the same Input (each can be pressed again to disconnect them). Additional switches and disconnects can be executed while in Switch mode.
- When an Output Key is pressed first, it flashes and is ready to accept an input signal. Press the Input Key to execute the switch. This switch remains in effect until the Input Key is pressed again (disconnecting the output from it) or another Input Key is pressed (the output receives an input signal from another source). Additional switches and disconnects can be executed while in Switch mode.

Executing a Switch

When executing switches, the flashing key is the “hot” Input or Output Key; all other commands center around that key until you change mode (press the Cancel Key), level, or select a different Input or Output Key (must be same type of key as the “hot” key).

Be sure to read the information on “Switching Level” above.

You can return to the Switch mode at any time by pressing the Cancel Key. Pressing the Cancel Key does not cancel any completed operations.

To execute a switch selecting input (source) first:

1. Press the Cancel Key.
All the lights on the control panel turn off.
The control panel is in Switch mode.
2. Press a Level Key to select a level (can be omitted when switching on the default level).
The Level Key illuminates.
3. Press an Input Key to select an input.
The Input Key flashes, and after a moment any Output Key(s) to which that signal is already routed illuminates.
4. Press an Output Key(s) to select an output(s).
The selected key illuminates as the switch is executed.

Note: Only one input signal can be routed to any given output.

To execute a switch selecting output (destination) first:

1. Press the Cancel Key.
All the lights on the control panel turn off.
The control panel is in Switch mode.
2. Press a Level Key to select a level (can be omitted when switching on the default level).
The Level Key illuminates.
3. Press an Output Key to select an output.
The Output Key flashes, and after a moment if an Input Key is already routed to it, the Input Key illuminates.
4. Press an Input Key to select an input.
The selected key illuminates as the switch is executed.

Disconnecting Inputs & Outputs

Disconnecting a switch deactivates the connection between an output (destination) device and the input (source) signal that is routed to it. An output can only be connected to one input; therefore, disconnecting an output only disconnects that connection; if the input is routed to additional outputs, those connections remain routed.

Be sure to read the information on “Switching Level” on page 37.

You can return to the Switch mode at any time by pressing the Cancel Key. Pressing the Cancel Key does not cancel any of the disconnects that were just completed.

Note: To disconnect multiple outputs from an input, use the “Press an Input Key” option in Step 3 below.

To disconnect inputs and outputs:

1. Press the Cancel Key.
All the lights on the control panel turn off.
The control panel is in Switch mode.
2. Press a Level Key to select a level (can be omitted when switching on the default level).
The Level Key illuminates.
3. Press an Input Key.
The Input Key flashes, and all the Output Keys the input is routed to illuminate.
Press the illuminated Output Key(s) to disconnect the output(s) from the input.
The Input Key continues flashing, and the output is disconnected from the input (if additional outputs are connected, they remain connected to the input until pressed).
Or
Press an Output Key.
The Output Key flashes, and the Input Key it is receiving a signal from illuminates.
Press the Input Key.
The Output Key continues flashing, and the output is disconnected from the input (the Input Key goes out). (Additional outputs may still be connected to the input).

Verifying Signal Status

Signal status can be verified to confirm that a switch has executed properly or to confirm correct routing to multiple outputs (destinations) without accidentally executing or disconnecting switches. Input status and output status both function on the Precis HT Control Panel. An output can only be connected to one input (source); therefore, verifying the status of an output will illuminate only the one input it is currently connected to. Verifying an input will illuminate all outputs currently receiving the input's signal.

If you do not select a level, the system uses the level associated with the farthest left Level Key (All VMs).

You can return to Switch mode at any time by pressing the Cancel Key.

To verify the status of a signal:

1. Press the Status Key to put the control panel in Status mode.
The Status Key illuminates and all other keys on the control panel turn off.
2. Press a Level Key to select a level (can be omitted when verifying status on the default level).
The Level Key illuminates.
3. Press an Input Key that corresponds to the input you want to check.
The selected Input Key illuminates and the Output Keys for the outputs receiving that input signal illuminate.
If no Output Keys illuminate, the signal is not routed or is not available on that level.
Or
Press an Output Key that corresponds to the output you want to check.
The Output Key illuminates, and the Input Key for the input currently routed to that output illuminates.
If no Input Key illuminates, the signal is not routed or is not available on that level.
4. Press the Status Key to return to Status mode to verify the status of additional signals.
Or
Press the Cancel Key to return to Switch mode.

Executing Macros (Local Presets)

Note: For *Precis HT* systems, the terms “macro” and “local preset” are interchangeable.

A macro (local preset) is a predetermined set of switches on a particular level (virtual matrix) that are routed simultaneously. A 12x8 *Precis HT* can execute 16 local presets per level and an 8x4 *Precis HT* can execute 12 local presets per level.

Note: An 8x4 *Precis HT* can store additional local presets up to a total of 64 across all VMs; however, the additional local presets must be accessed from a serial control device.

Local presets are not programmed (defined) at the factory. To program local presets, use XNConnect (see “Appendix A – Managing Configuration Files” on page 45 or the Help file) or contact your AMX representative (for contact information, see page 31). Once the local presets have been defined as part of the configuration file, local presets can be executed at any time during normal operation.

To execute a macro, the Control Panel must be in Macro mode with the appropriate level selected. Select a macro by pressing the Input or Output Key that corresponds to the number assigned to the local preset in XNConnect. After you have selected a macro, the Control Panel returns to Switch mode and must be returned to Macro mode before executing another macro.

Example: Execute Local Preset 13 on Level 2 using a 12x8 *Precis HT*.

Press Macro Key, then enter level and local preset within 10 seconds

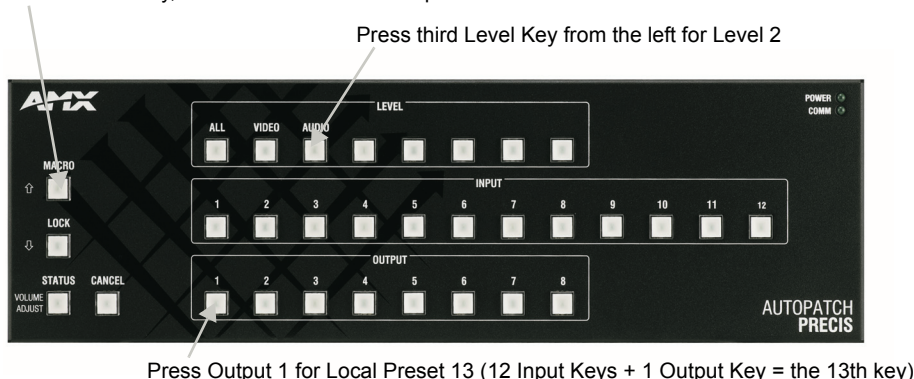


FIG. 22 Macro Key is used with a Level Key and an Input or Output Key

To execute a local preset (Local Preset 13 on Level 2 on a 12x8 *Precis HT*):

1. Press the Macro Key.
The Macro Key flashes, and all the other lights on the panel turn off.
When the Macro Key starts flashing, you have 10 seconds to enter a level and a local preset before the control panel reverts to Switch mode.
2. Press the Level Key that corresponds to the level where the local preset resides.
(The first Level Key selects Level 0; for Level 2, press the third Level Key from the left.)
The Level Key illuminates.
3. Press the Input or Output Key – counted consecutively – associated with the desired local preset.
(To select Local Preset 13, press Output Key 1; the 12 Input Keys plus the first Output Key equals the 13th key for the local preset assigned number 13 on Level 2 in XNConnect).
The Macro Key stops flashing, and all control panel lights turn off.
The switches/disconnects contained in the macro (Local Preset 13) are executed.
The control panel returns to Switch mode.
4. Repeat Steps 1 through 3 to execute additional local presets.

Note: Executing a local preset does not change any system routings that are not part of the preset.

Adjusting Audio

Precis HT models feature output volume control and digital input gain adjustment for the audio analog signals. Audio adjustments can be made using either the control panel or BCS commands sent through a serial controller. (For information on audio adjustment using BCS commands, see the *BCS Protocol Instruction Manual*.)

Note: The status of the analog audio signals can be checked only from an external serial controller via BCS commands.

When audio is adjusted for a device on one level containing audio, the adjustment remains in effect for that device on all levels switching that same type of 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.

Adjusting Output Volume

Volume control adjustments (within the volume range for the specific analog audio outputs) can be made at any time during normal operation.

The Control Panel must be in Switch mode to make audio adjustments (to return to Switch mode at any time, press the Cancel Key). Follow the steps below to adjust the output volume. Each press of an arrow key increases or decreases output volume by 1 dB if the volume is below -30 dBu, and by 0.5 dB if the volume is above -30 dBu.

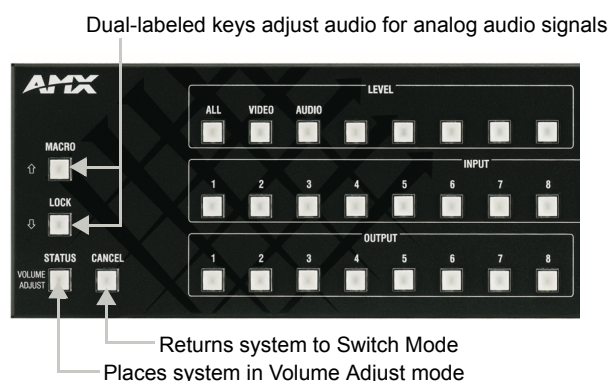


FIG. 23 Audio adjustment keys (dual-labeled keys can adjust audio)

To adjust output volume:

1. Press the Cancel Key to put the panel into Switch mode.
All the control panel lights turn off.
2. Press and hold the Volume Adjust Key for at least 2 seconds.
The Volume Adjust Key illuminates and then flashes.
The control panel is in Volume Adjust mode.
3. Press an Output Key to select the output that needs volume adjustment.
The selected Output Key illuminates, along with the Up Arrow (Macro) and Down Arrow (Lock) Keys.
4. Press and release the Up Arrow Key to increase the volume.
Or
Press and release the Down Arrow Key to decrease the volume.
The pressed key flashes and then stays illuminated.
5. Repeat Step 4 until the desired volume level is reached.
6. Press the Cancel Key to return to the Switch mode.

Note: Pressing the Cancel Key does not cancel the volume adjustments that were just entered.

Adjusting Digital Input Gain

Digital input gain control adjustment (within the gain range for the specific audio inputs) for the analog audio signals can be made at any time during normal operation. When audio is adjusted for a device on one level containing audio, the adjustment remains in effect for that device on all levels switching that same type of audio signals.



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

Purpose & Uses of Input Gain

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 sources.

To adjust digital input gain to equalize input levels:

1. Route an input to the first output.
2. Adjust the digital input gain for the input to a specific dB level (see instructions below).
3. Repeat for all inputs that will be routed to the same output.

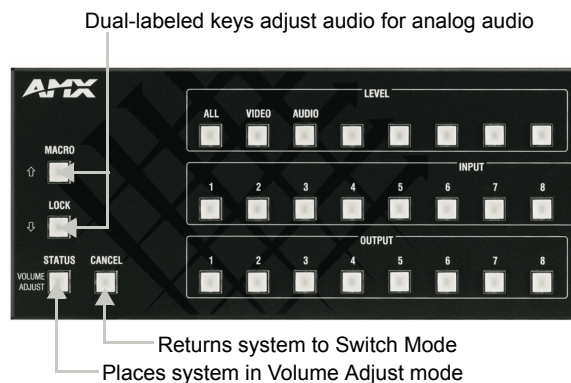


FIG. 24 Audio adjustment keys (dual-labeled keys can adjust audio)

To adjust digital input gain:

1. Press the Cancel Key to put the panel into Switch mode.
All the control panel lights turn off.
2. Press and hold the Volume Adjust Key for at least 2 seconds.
The Volume Adjust Key illuminates and then flashes.
The control panel is in Volume Adjust mode.
3. Press an Input Key to select the input that needs digital input gain adjustment.
The selected Input Key illuminates, along with the Up Arrow (Macro) and Down Arrow (Lock) Keys.
4. Press and release the Up Arrow Key to increase the digital input gain.
Or
Press and release the Down Arrow Key to decrease the digital input gain.
The pressed key flashes and then stays illuminated.
5. Repeat Step 4 until the desired input gain level is reached.
6. Press the Cancel Key to return to the Switch mode.

Note: Pressing the Cancel Key does not cancel any input gain adjustments that were just entered.

Locking & Unlocking the Control Panel

Locking the Precis HT control panel prohibits access to the system and can prevent accidental switching. While the panel is locked, BCS commands still work; however, they cannot be used to unlock the panel. The panel remains locked if the power is cycled.

The factory default password is the first five Level Keys, pressed consecutively from left to right. You can set a new password using XNConnect (see page 52) with any combination of the Level Keys.

Important: *We strongly recommend recording the password in a secure place; the Precis HT system cannot retrieve a lost password. If the password is lost while the system is locked, contact technical support (see page 31).*

After you press the Lock Key, you have 10 seconds to enter the password before the control panel reverts to its previous mode (Locked or Switch mode). If you enter the wrong password, press the Lock Key again and enter the correct password.

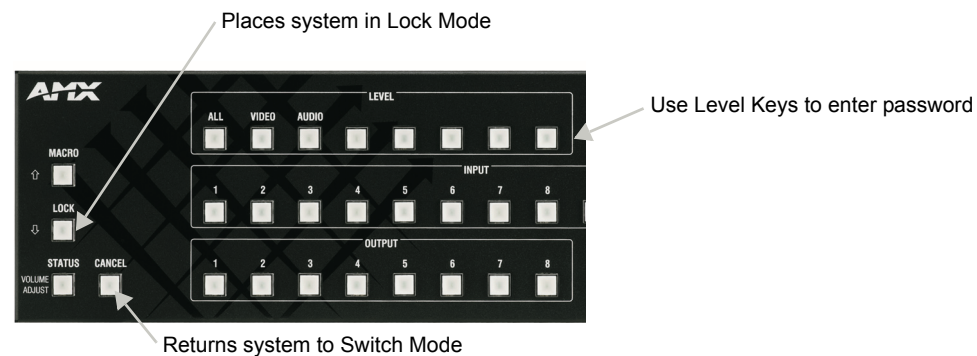


FIG. 25 Lock Key and Level Keys

To lock the control panel:

1. Press the Lock Key.
The Lock Key flashes for 10 seconds, and all the other lights on the control panel turn off.
The panel is in Lock mode.
2. While the Lock Key is flashing, enter the password using the Level Keys.
The Lock Key stops flashing and remains illuminated. All the other lights on the panel are turned off.
The control panel is locked.

To unlock the control panel:

1. Press the Lock Key.
The Lock Key flashes for 10 seconds.
The panel is in Lock mode.
2. While the Lock Key is flashing, enter the password using the Level Keys.
The Lock Key turns off. Any lights previously illuminated on the control panel turn back on.
The control panel is unlocked and in Switch mode.

Appendix A – Managing Configuration Files

Applicability Notice

This appendix applies to XNConnect version 2.8.0 (XNConnect's version information is found under its Help menu).

This appendix covers basic modifications that can be made to a configuration file using XNConnect software. Appendix B covers advanced configuration modifications. For complete coverage of XNConnect, see the Help file.

Overview

A configuration file contains system configuration information which is loaded onto the system at the factory. The enclosure's CPU references the configuration file, which defines switching behavior. The file can be modified using XNConnect (found on the *AMX AutoPatch CD*) to include custom channel names and local presets.



Caution: Use XNConnect only if you need to reload the configuration file or to modify your system's configuration from the original specifications. Make a copy of the current file every time the file is modified.

A copy of the configuration file (with an .xcl file extension) is found on the *AMX AutoPatch CD* shipped with each system. If you cannot locate the *AMX AutoPatch CD*, contact technical support (see page 31) with your system's serial number for a replacement copy of the original configuration file.

If making any modifications other than customizing channel names, setting the password, or creating local presets, provide technical support with a copy of the modified file for future support.

This appendix covers the following topics:

- Installing XNConnect
- Opening a configuration file
- Navigating the interface
- Customizing channel names (labels)
- Setting the control panel password
- Creating local presets (macros)
- Loading a configuration file

Installing XNConnect

Use this software *only* if you need to customize or change the configuration information from the original specification.

Even if XNConnect is already on your PC, install the newest version that shipped on the same CD as the configuration file. We *strongly* recommend uninstalling the old version of XNConnect before installing a new version.

System Requirements

- Windows 2000[®], Windows NT[®], or Windows XP Professional[®]
- 233 MHz processor
- Minimum of 128 MB of RAM
- 20 MB of available hard drive space
- 800x600 screen resolution (1024x768 is recommended)
- Serial port and RS-232 null modem cable

To install XNConnect from the AMX AutoPatch CD:

1. Close all other applications currently running on your PC.
2. Insert the *AMX AutoPatch CD* into your CD drive to start automatically.
If the CD does not autorun, explore the CD folder and double-click the Index.html file.
3. Select Software and find XNConnect.
4. Optional – Select Release Notes to read about the software before installation.
5. Select Install.
6. Follow the directions in the subsequent dialog boxes.

Note: If your AMX account has the required permissions, you can download the newest version of XNConnect from www.amx.com. An INI file Updater for updating XNConnect is available on the AMX website under AutoPatch Tools (an account is not required).

Opening a Configuration File

Important: Even if XNConnect is already on your PC, install the newest version that shipped on the same CD as the configuration file. We strongly recommend uninstalling the old version of XNConnect before installing a new version.

The process of modifying a configuration file starts by opening it with XNConnect. After the modifications are complete, the new configuration information *must* be loaded onto the system to implement the changes.

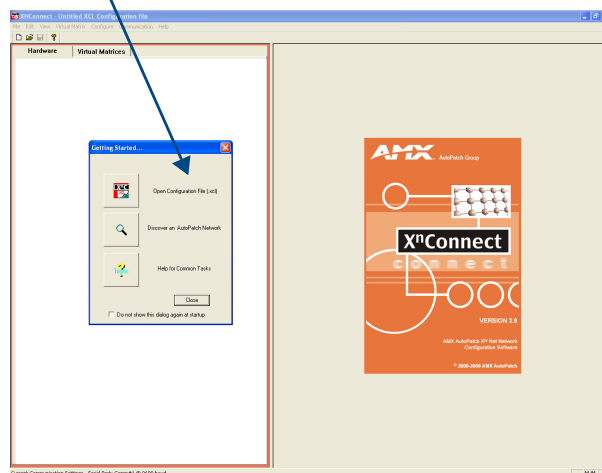


Caution: Use XNConnect *only* if you need to reload the configuration file or modify your system's configuration from the original specification. Make a copy of the original file every time the file is modified.

To launch XNConnect:

1. From the Start menu, select Programs.
2. Select AutoPatch Applications (or other file group you specified during the installation).
3. Select the XNConnect folder.
4. Select XNConnect.
The XNConnect program opens.

Getting Started dialog box



5. From the Getting Started dialog box, click Open Configuration File.
(If the dialog box does not appear, from the File menu select Open.)
6. Use the standard Open dialog box to locate and open your configuration (.xcl) file.
The default location is in the MyXCL folder on the *AMX AutoPatch CD*.
7. From the File menu, select Save As, make a duplicate copy of the file with a new name, and save it to the PC. (We *strongly* recommend making a duplicate copy every time the file is modified.)

The file is ready to be modified. If changes are made, the new file must be loaded onto the system to implement the changes (see page 53).

Navigating the Interface

XNConnect displays configuration information in two panes. The graphics are located in the left pane, and the properties of the currently selected graphic are in the right pane. At the top of the left pane are two tabs, Hardware and Virtual Matrices, for accessing the Hardware and Virtual Matrix (level) views (see below). To see the details and components of a device or a virtual matrix, click the plus “+” symbol to the left of the device or the virtual matrix.

Most configuration file modifications involve entering information in a series of dialog boxes that are accessed by right-clicking a hardware device or virtual matrix icon and selecting an option from the shortcut menu.

Tip: If you have a question regarding an open dialog box, press the F1 key for Help.

Hardware View

The Hardware view displays the system’s hardware, such as the enclosure and serial port. This is the view used when setting the control panel password.

Virtual Matrix View

Note: XNConnect refers to the levels in a Precis HT as virtual matrices.

The Virtual Matrix view displays properties of the existing virtual matrices (levels). Most common tasks are conducted from this view, including customizing channel names and creating local presets (which can be executed using the Macro Key on the control panel).

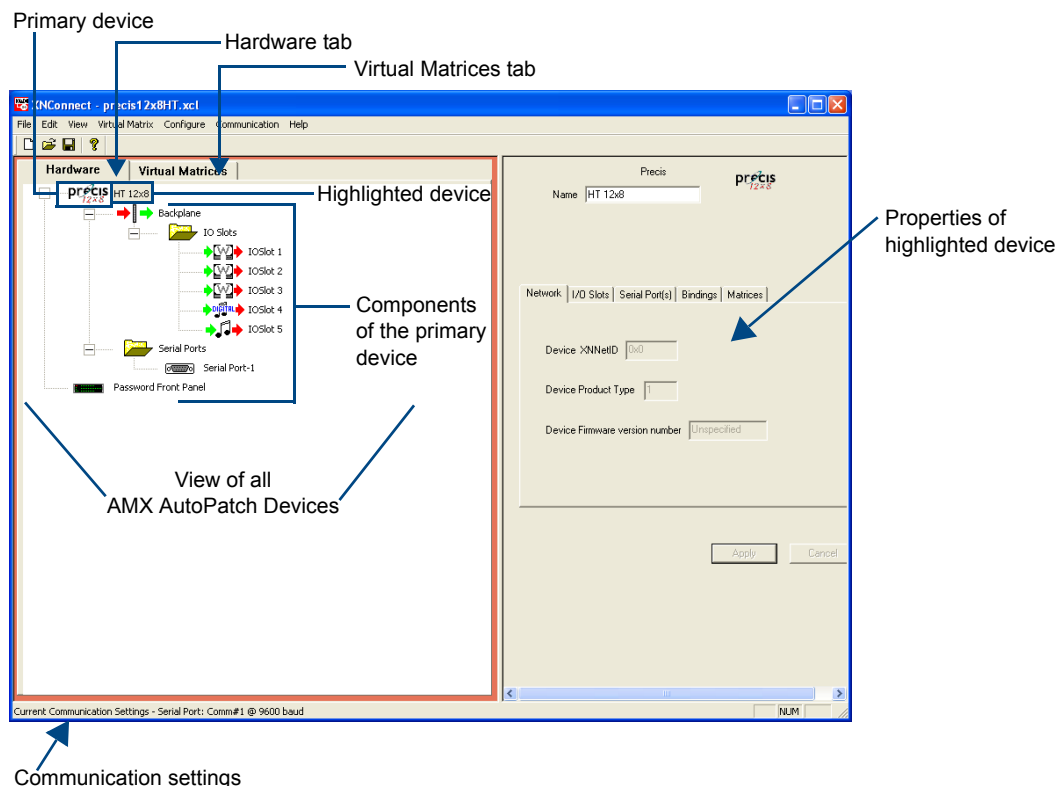


FIG. 26 XNConnect interface showing Hardware view

Modifying a Configuration File

Modifying a configuration file with XNConnect involves entering information in a field or in a series of dialog boxes. A brief look at the contents in the Help file provides a quick overview of the possible modifications.

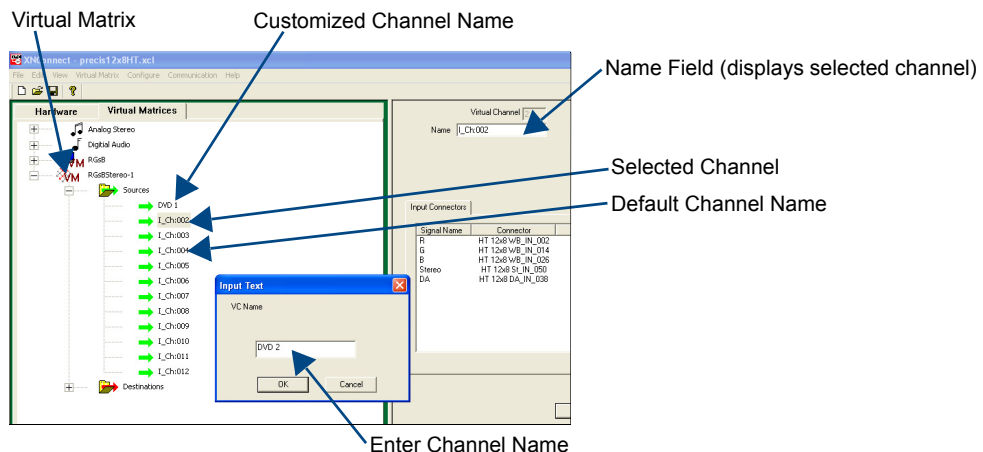
This section provides instructions for three common tasks: modifying channel names, configuring local presets, and setting the control panel password. For complete coverage of configuration related tasks, see the XNConnect Help file.

Modifying Source & Destination Channel Names

If the system is using APWeb or APControl 3.0 for control, the names for the source and destination channels displayed in the XBar or CrossBar can be customized in XNConnect. The custom names (labels) can be up to 23 characters and cannot contain the following characters: ‘ “ \ = ? < >

To customize the channel names:

1. In the Virtual Matrices view, click the “+” to the left of the Virtual Matrix.
2. Click the “+” to the left of the Sources or Destinations folder.
3. Right-click the channel you want to rename and select Change Name from the shortcut menu.
4. Enter the new name in the Input Text dialog box and click OK.
The new channel name appears in the Name field.



Note: If a channel is in more than one VM (virtual matrix), you must repeat Step 4 for the channel in each of the VMs.

5. Customize additional channels by repeating Steps 3 and 4.
6. Load the configuration file onto the system (see page 53); see Caution below.
If channel names are the only modifications that have been made to the file, select “Configure System Namespace” (found under Configure \ Configure Special – Virtual Matrix).
7. From the File menu, select Save As, make a duplicate copy of the modified file with a new name, and save it to the PC. (We *strongly* recommend making a duplicate copy every time the file is modified.)



Caution: The system must not be actively switching when loading this information onto the system.

Defining Local Presets (Macros)

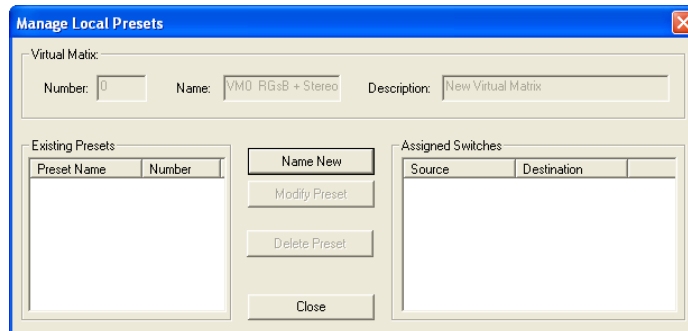
A local preset is a predetermined collection of switches on the same virtual matrix (level) to be routed simultaneously. Executing a local preset affects only those inputs and outputs specified, not the whole system. Local presets are defined using XNConnect and can be executed using the control panel or using BCS commands entered as part of a macro in APControl 3.0 or APWeb or entered in a terminal emulation program. The process for creating local presets involves three dialog boxes that cover managing, naming, and modifying presets.

The instructions below are for creating a local preset. For detailed information on modifying and deleting local presets, see the XNConnect Help file.

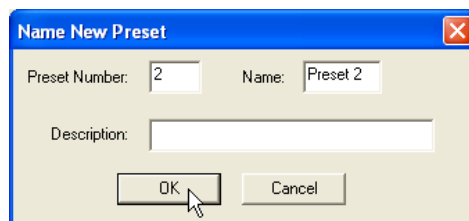
Important: If your *Precis HT* firmware (embedded software) version is earlier than v1.4.1, contact technical support (see page 31) for conditions that apply to programming local presets for a *Precis HT*. To determine the enclosure's firmware version using *HyperTerminal*, see page 27.

To create a new local preset:

1. In the Virtual Matrices view, right-click the virtual matrix (level) the preset will be created for and select Manage Local Presets from the shortcut menu.
The Manage Local Presets dialog box opens.

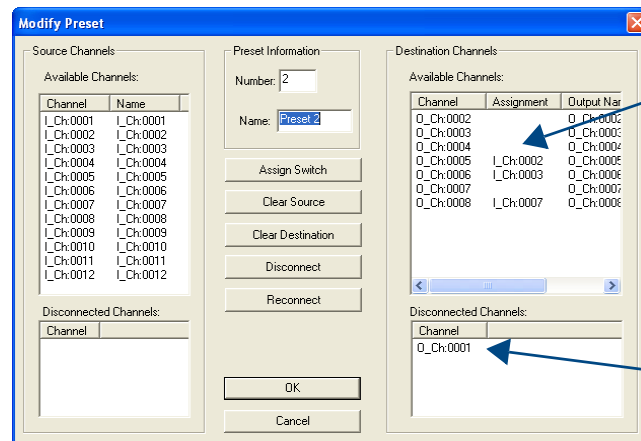


2. Click the Name New button.
The Name New Preset dialog box opens.



3. Optional – Enter a different preset number (local presets do not need to be numbered sequentially).
4. Enter a name for the new preset.
5. Optional – Enter a description (text entered in the Description field is displayed only in XNConnect).
6. Click OK.
The Modify Preset dialog box opens.

7. For the first switch, click the source channel (input) and one or more destination channels (outputs). Select multiple destination channels by holding down the Control key while selecting the channels.



The Assignment column shows three switches that will be executed as part of Preset 2:

Input 2 to Output 5

Input 3 to Output 6

Input 7 to Output 8

The Disconnected Channels box shows that Output 1 will be disconnected as part of Preset 2.

8. Click the Assign Switch button.
The input appears in the Assignment column of the Destination Channels list; the switch will execute when the local preset is executed.
9. Disconnect inputs* or outputs as part of the local preset by selecting either the source or destination channel and clicking the Disconnect button.
The input or output appears in its corresponding Disconnected Channels list; the input or output will be disconnected when the local preset is executed.
10. Repeat Steps 7, 8, and 9 for all switches and/or disconnects to be included in the preset.

Note: For information on the other buttons and preset modifications, press F1 while the Manage Local Presets dialog box is open.

11. After all switches for the preset have been assigned, click OK and then close the Manage Local Presets dialog box.
12. Define additional local presets by repeating the steps.
13. Load the configuration file onto the system (see page 53); see Caution below.
If local presets are the only modifications that have been made to the Configuration file, select “Configure All VM Local Presets” (found under Configure \ Configure Special – Virtual Matrix).
14. From the File menu, select Save As, make a duplicate copy of the modified file with a new name, and save it to the PC. (We *strongly* recommend making a duplicate copy every time the file is modified.)



Caution: The system must not be actively switching when loading this information onto the system.

* Disconnecting an input will disconnect *all* outputs it is connected to.

Setting a Password

Locking the Precis HT control panel can prevent accidental switching by disabling control access. The control panel's Level Keys (FIG. 27) are used to enter the password for locking and unlocking the control panel.

The numbers in the password correspond to the Level Keys. In order from left to right, the Level Keys represent the numbers “0” to “7.”

The factory default password is the first five Level Keys (corresponding to the digits, 0, 1, 2, 3, and 4), going from left to right. Using XNConnect, you can customize a password consisting of five digits between 0 and 7 (inclusive) that are entered on the control panel using the Level Keys.

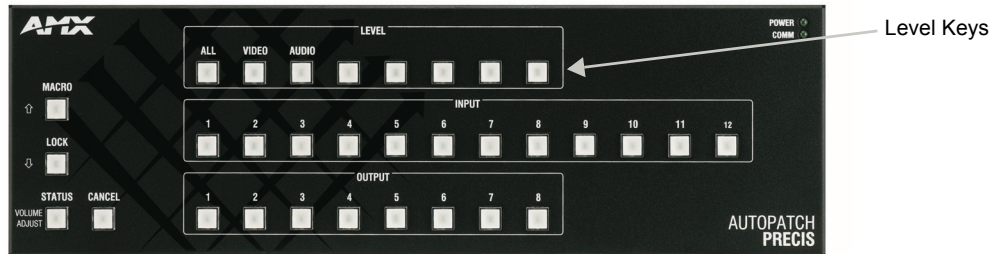


FIG. 27 Control panel level keys

For information on using the password to lock and unlock the control panel, see page 43.

To set the control panel password:

1. In the Hardware View, right-click the front panel icon.
(If the front panel icon is not displayed, double-click the Precis HT icon.)
2. From the drop-down menu, select Set Password.
The Set Control Panel Password dialog box opens.



3. Enter a single digit between zero and seven (inclusive) in each field.
4. To load the password to the system's configuration file now, check the box for Configure Password Immediately.
Click OK.

The updated password information is immediately downloaded to the system, and the new password sequence *must* be used to lock and unlock the control panel.

Or

Load the configuration file onto the system (see page 53).

If the password is the only modification that has been made to the file, select “Configure All Passwords” (found under Configure \ Configure Special – Hardware). This selection only loads control panel password configuration data to the system.

Important: *Configure All will not load password information.*

5. From the File menu, select Save As, make a duplicate copy of the modified file with a new name, and save it to the PC. (We *strongly* recommend making a duplicate copy every time the file is modified.)

Loading a Configuration File

Once modifications have been made to the configuration file, the new file must be loaded onto the system's CPU for the changes to be implemented.

There are two basic options for loading a configuration file:

- Load the entire file* using the “Configure All” option (see Caution below)
- Load part of the file using one of the “Configure Special” options

To determine which configuration option to use, see “Configure Menu Commands” in the Help file.

* The Configure All option will not load password information. For instructions on loading password information, see page 52.

When loading any part of a configuration file, the matrix switcher must not be actively switching. You may want to disconnect any external controllers to ensure that no switches are executed during the loading of the file.



Caution: Using the “Configure All” option or the “Configure All Virtual Matrices” option will erase any global presets (see the “BCS Protocol Instruction Manual” on the “AMX AutoPatch CD” or at www.amx.com) that have already been defined for the system.

To load the modified configuration file from XNConnect to the Precis HT CPU:

1. Disconnect external controllers to ensure that no switches are executed during the loading of the file. *The matrix switcher must not be actively switching when loading a configuration file.*
2. From the File menu, select Save As, make a duplicate copy of the modified file with a new name, and save it to the PC. (We *strongly* recommend making a duplicate copy every time the file is modified.)
3. Connect the Precis HT enclosure to the PC (see page 18).
4. In XNConnect, open the Communication menu; select Serial Port.
5. Open the Communication menu again; select Change Comm Settings. Check the settings for the selected port (Com 1, baud rate 9600) and adjust the port if necessary (the baud rate must be 9600).
6. Optional – Click the Test button to verify that communication has been established with the Precis HT.
Click OK.
7. From the Configure menu, select the appropriate configuration option (for an explanation of Configuration menu options, see the Help file).
Non-hardware configurations options – the system automatically reboots.
Hardware configurations options – select the appropriate configuration option and then Configure > Reboot All Devices.

Appendix B – Advanced Configuration: Modifying Virtual Matrices

Applicability Notice: This appendix applies to XNConnect version 2.8.0 (XNConnect's version information is found under its Help menu).

Overview

Your AMX AutoPatch Distribution Matrix is pre-engineered at the factory. It is ready to switch once the source and destination devices are attached. The configuration file does *not* need any advanced modification unless you want to change or add virtual matrices.

Important: *If any modifications are made to the configuration file other than customizing channel names, creating local presets, or changing the control panel password, provide technical support with a copy of the modified .xcl file for future support.*

If your configuration file needs any type of additional advanced modification, we *strongly recommend* contacting technical support (see page 31) to request a modified file or ask for assistance.



Caution: *Virtual matrix modifications are an advanced feature of XNConnect that should not be attempted unless you are extremely familiar with XNConnect and the AMX AutoPatch Distribution Matrix being configured.*

This appendix covers the task of creating a joined virtual matrix.

Important: *Save a back up copy of the existing configuration file if you find it necessary to modify the file for any reason.*

Virtual Channels & Virtual Matrices

A system's configuration allows groups of incoming signals from source devices to be routed through the system and out to destination devices. The signals are grouped into virtual input and output channels in which the channels' component signals (e.g., Y, Pb, and Pr) can be grouped into a single channel to permit the simultaneous switching of them as an aggregate signal (Y/Pb/Pr). The resulting virtual channel uses a single input or output number for control purposes.

A virtual channel is assigned to a physical connector or group of physical connectors. The signals in the virtual channels will be switched in unison (e.g., a Y signal and a c signal are each assigned to a different connector but are switched in unison).

The virtual input and output channels are then grouped into virtual matrices (VMs) that define where the virtual channels can be routed. A virtual channel on one VM cannot be routed to a virtual channel on another VM. However, a VM can be created that includes multiple VMs. The virtual channels for a Precis HT are assigned to a VM in a spanning pattern (see page 57).

Creating a Joined Virtual Matrix (Level)

Levels (virtual matrices) are defined in XNConnect and stored in the system's configuration file.

Precis HT Default VMs (Levels)

- VM 0 = all VMs
- VM 1 = video
- VM 2 = digital audio
- VM 3 = stereo audio

Normally, the Precis HT will have either digital audio or stereo audio connected. In which case, selecting VM 0 when executing switches will route audio-follow-video signals using whichever audio is connected. If the Precis HT system has both analog audio and digital audio equipment attached, a switch executed on VM 0 will include both digital and stereo audio signals with the video. To avoid this and to take advantage of the additional audio capability of the Precis HT, you can create a new joined virtual matrix that allows one of the audio VMs to be switched simultaneously with the video VM, and the other audio VM can still be switched independently.

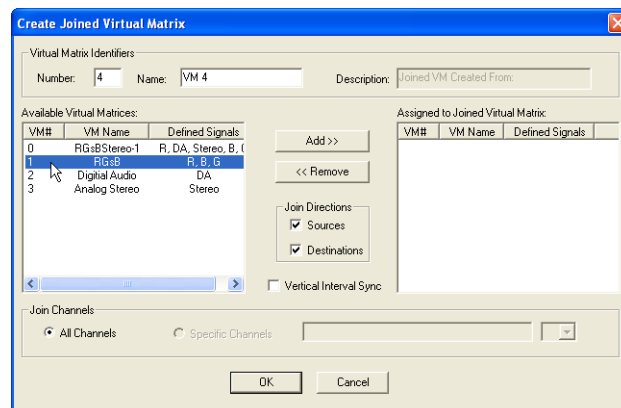
The information in the instructions below is based on the following scenario:

You want to switch RGB (VM 1) and digital audio (VM 2) together and switch analog audio (VM 3) independently. To allow video and digital audio to be switched together, create a new joined virtual matrix (VM 4) combining VM 1 and VM 2. Since analog audio is already on its own VM, no additional action is required for switching analog independently.

Note: For additional information on joining virtual matrices, see the XNConnect Help file. To access the Help file topic for an open dialog box, press F1.

To create a new virtual matrix joining RGB (VM 1) and digital audio (VM 2):

1. Launch XNConnect (see page 47).
2. In the Virtual Matrix view, from the Virtual Matrix menu, select Join Virtual Matrices.



3. Select VM 1 and click Add.
4. Select VM 2 and click Add.
5. Optional – Under Virtual Matrix Identifiers, change the number and name.
6. Check the Sources and Destinations check boxes so that both are joined in the new VM. Click OK.
7. Load the configuration file onto the system; see page 53.

8. From the File menu, select Save As, make a duplicate copy of the modified file with a new name, and save it to the PC. (We strongly recommend making a duplicate copy every time the file is modified.)



Caution: The system must not be actively switching when loading this information onto the system. You may want to disconnect any external controllers to ensure that no switches are executed during the loading of the file.

Spanning Grouping Pattern

For switching purposes, Precis HT connectors can be only be grouped into a spanning pattern, as these systems do not support sequential grouping. When a Precis HT system is configured in a spanning grouping pattern, each of the component (standard) signals in an aggregate signal is assigned to vertically adjacent connectors. The same pattern is then repeated for the outputs.

Example

In the 12x8 RGsB + Stereo system in FIG. 28, the “R” component is assigned to the first (farthest left) input connector on the first row of connectors, the “Gs” component to the first input connector on the second row, and the “B” component to the first input connector on the third row. This pattern is repeated for the output connectors. The stereo audio signals are assigned to the applicable input and output connectors.

Note: The typical system setup will use one set of audio connectors. The Precis HT system can include both analog and digital audio signals when switching on VM 0 (see page 56).

The first input channel of VM 0 (All VMs) includes all three components of the RGsB signal (the first input connectors on each row of connectors), plus the audio signal (the first stereo audio connector).

When you switch Input 1 on VM 0, the RGsB and the stereo audio signals are routed simultaneously on VM 0. Each of the twelve grouped RGsB input channels and their corresponding stereo audio input channels can be routed to any or all of the eight available corresponding output channels.

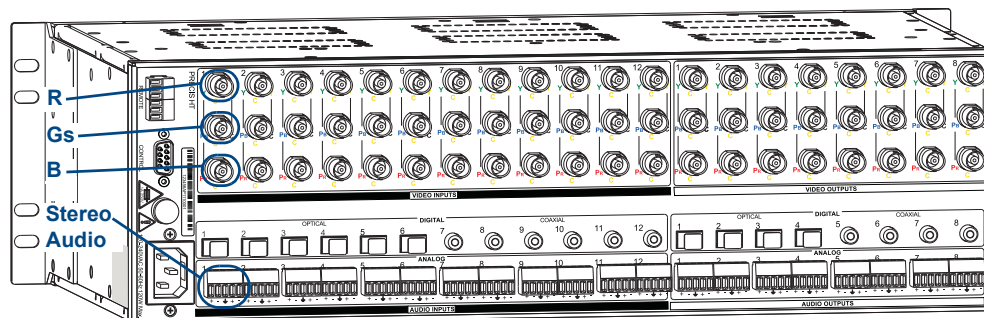
Video and audio breakaway signals can also be routed by using the pre-configured virtual matrices. In the example in FIG. 28, when you switch Input 1 on VM 1, the RGsB signal is routed. When you switch Input 1 on VM 3, the stereo audio signal is routed.

VM 0 = RGsB + Stereo Audio + Digital Audio (not connected in this example)

VM 1 = RGsB

VM 2 = Digital Audio (not connected in this example)

VM 3 = Stereo Audio



Virtual Inputs: RGsB + Stereo Audio = 1st input channel of VM 0

FIG. 28 Grouping connectors in a spanning pattern



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