INSTRUCTION MANUAL

AVX-400 TWISTED PAIR PRESENTATION SWITCHER

AVX-400

AV FOR AN IT WORLD

IMPORTANT SAFETY INSTRUCTIONS

1. READ these instructions.
2. KEEP these instructions.
3. HEED all warnings.
4. FOLLOW all instructions.
5. DO NOT use this apparatus near water.
6. CLEAN ONLY with dry cloth.
7. DO NOT block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. DO NOT install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. DO NOT defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. PROTECT the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. ONLY USE attachments/accessories specified by the manufacturer.

12. USE ONLY with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. UNPLUG this apparatus during lightning storms or when unused for long periods of time.
14. REFER all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. DO NOT expose this apparatus to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the apparatus.
16. To completely disconnect this apparatus from the AC Mains, disconnect the power supply cord plug from the AC receptacle.
17. Where the mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
18. DO NOT overload wall outlets or extension cords beyond their rated capacity as this can cause electric shock or fire.

The exclamation point, within an equilateral triangle, is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electrical shock to persons.

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: To reduce the risk of fire or electrical shock, do not expose this apparatus to rain or moisture.

WARNING: No naked flame sources - such as candles - should be placed on the product.

WARNING: Equipment shall be connected to a MAINS socket outlet with a protective earthing connection.

WARNING: To reduce the risk of electric shock, grounding of the center pin of this plug must be maintained.

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Enova AVX-400 Twisted Pair Presentation Switcher

Overview

The Enova AVX-400 Twisted Pair Presentation Switcher (**FG1350-01**) is a four input, multi-format active presentation switcher with auxiliary line level audio input. The AVX-400 (FIG. 1) is a twisted pair switcher with basic projector/display control via RS-232, but with external control of the switcher via RS-232 or AxLink. This presentation switcher incorporates the following:

- External serial or AxLink control
- Projector or display control via RS-232
- Integrated multi-format Cat5 audio/video switcher
- Audio mixer with an auxiliary line input facility
- Audio volume and tone control
- Built-in audio amplifier

FIG. 1 Enova AVX-400 Twisted Pair Presentation Switcher (Front and Rear Panels)

The presentation switcher presents the respective output for the VGA/RGB, component, and composite video sources. All sources remain in their native formats and resolutions. The selected video source is presented with its related audio, and mixed with the auxiliary line input. Master volume of the program sound is available for adjustment by external control.

The system is suitable for use within a 1-50m range (3.2'-165'), however, you can possibly work outside this range by using a low skew cable (do not use nanoskew cable). There is control for video gain and video equalization for each input to compensate for cable length and allow optimization of each source. The switchers contain a stereo 10W per channel built-in audio amplifier with 7-band graphic equalization.

Specifications

The following table lists the specifications for the presentation switcher:

AVX-400 Twisted Pair Presentation Switcher Specifications	
Power	12VDC, 4.4A supply See the *Power Connector* section on page 8 for information about current draw.
Audio Amplifier	Stereo 10W per channel with 7-band graphic equalization
Enclosure	Metal with black matte finish
Front Panel Components:	
Source Select Button	1 button for toggling through the 4 inputs with each press
Source Select LED Indicators	4 LED indicators which show which source has been selected
Source Inputs (INPUTS 1-4)	4 RJ-45 connectors for source audio and video. Maximum cable distance for these ports is 1-50m (3.2'-165').
LINE IN Auxiliary Audio Input	1 3.5mm Phoenix (5-pin) connector for use with external audio equipment such as radio microphones and mixers.
AxLink Device DIP Switches	1 set of 8 DIP switches for setting the address of an AxLink device
AxLink Port	1 3.5mm Phoenix (4-pin) connector that provides data to external control devices and allows the AVX-400 to be controlled from a Master. A green AxLink LED indicates the state of the AxLink port. **NOTE:** *The AVX-400 cannot be powered by this port or use the port to power other devices.*
RS-232 Control Port	1 3.5mm Phoenix (3-pin) connector that provides data to external control devices and allows the AVX-400 to be controlled from RS232 controller.
Configuration Port (PROG)	1 type-B USB connector for configuring the switcher via DCS software.
Power Connector	1 3.5mm Phoenix (2-pin) connector
Rear Panel Components:	
RS-232 Display Control	1 male DB9 connector used to control a projector or display from the AVX-400-SP
Audio Amplifier Output	1 5.0mm Phoenix (4-pin) connector capable of delivering 2x10W into 8 ohm variable stereo audio amplifier.
Line Level Audio Output	1 3.5mm Phoenix (5-pin) connector provides the mixed audio at Line Level
Composite Output	1 RCA (Y) connector for connecting to a display device
VGA/RGB Output	1 HD-15 connector for connecting to a display device
Component Output	1 HD-15 connector for connecting to a display device. You can use breakout cable CC-HD15M-RCA3M (**FG10-2170-03**) to connect to 3 x RCA Phono Sockets.
Operating Environment:	Storage Temperature: -10° C to 70° C (14° F to 158° F) Operating Temperature: 0° C to 40° C (32° F to 104° F) Operating Relative Humidity: 5% to 85% non-condensing
Dimensions (HWD):	1.75" (4.45cm) x 9" (22.86cm) x 6" (15.24cm) HWD
Weight:	2.57 lbs (1.17 kg)
Certifications:	FCC Class B, CE, and IEC60950
Included Accessories:	• 2 5-pin 3.5mm Phoenix connectors, for line-in/out • 1 4-pin 3.5mm Phoenix connector, for AxLink • 2 2-pin 5 mm Phoenix connectors, for speakers • 1 RS-232 3-pin 3.5mm Phoenix connector • 1 PSR.4.4, 13.5 VDC, 4.4 A Power Supply with 3.5 mm Phoenix Connector with Retention Screws (**FG423-46**) • Enova AVX-400 Presentation Switcher Installation Guide (93-1350-01) • 1 Suppression Ferrite

Continued ↴

AVX-400 Twisted Pair Presentation Switcher Specifications	
Optional Accessories:	• UPX-HDMI+A-DE HDMI Pass Through Universal Transmitter Decor Style Wallplate (US) (**FG1402-53-DW/DB**) • UPX-CS+A-DE Composite Universal Transmitter Decor Style Wallplate (US) (**FG1402-50-DW/DB**) • UPX-CS+A-UK Composite Universal Transmitter Wallplate (UK) (**FG1402-50-KW/KB/KA**) • UPX-CS+A-EU Composite Universal Transmitter Wallplate (EU) (**FG1402-50-EW/EB/EA**) • UPX-RGB+A-DE RGB Universal Transmitter Decor Style Wallplate (US) (**FG1402-51-DW/DB**) • UPX-RGB+A-UK RGB Universal Transmitter Wallplate (UK) (**FG1402-51-KW/KB/KA**) • UPX-RGB+A-EU RGB Universal Transmitter Wallplate (EU) (**FG1402-51-EW/EB/EA**) • UPX-CN+A-DE Component Universal Transmitter Decor Style Wallplate (US) (**FG1402-52-DW/DB**) • UPX-CN+A-UK Component Universal Transmitter Wallplate (UK) (**FG1402-52-KW/KB/KA**) • UPX-CN+A-EU Component Universal Transmitter Wallplate (EU) (**FG1402-52-EW/EB/EA**) • AC-SMB Surface Mounting Bracket (**FG525**) • CC-HD15 Male to HD-15 Male cable (**FG10-2170-01**) • CC-HD15 Male to 3 RCA3 Male cable (**FG10-2170-03**)

Wiring and Device Connections

AVX-400 Front and Rear Components

FIG. 2 displays the components on the front panel of the AVX-400.

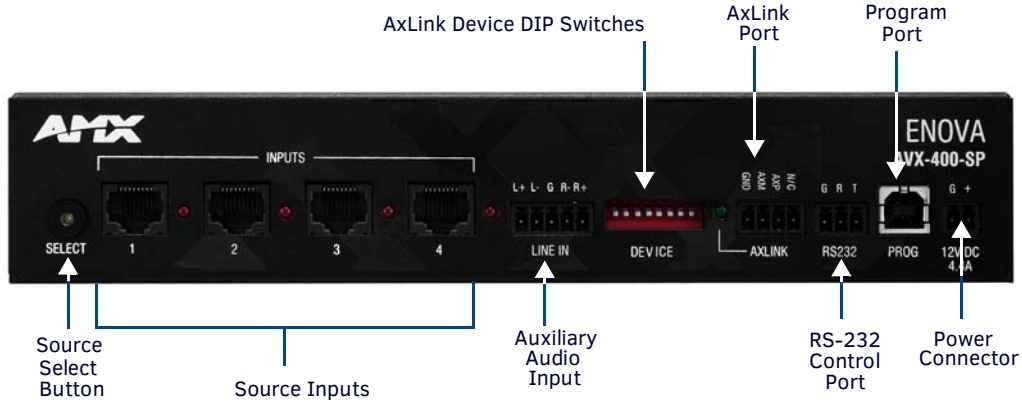


FIG. 2 AVX-400 Front Panel Components

FIG. 3 displays the components on the rear panel of the AVX-400.

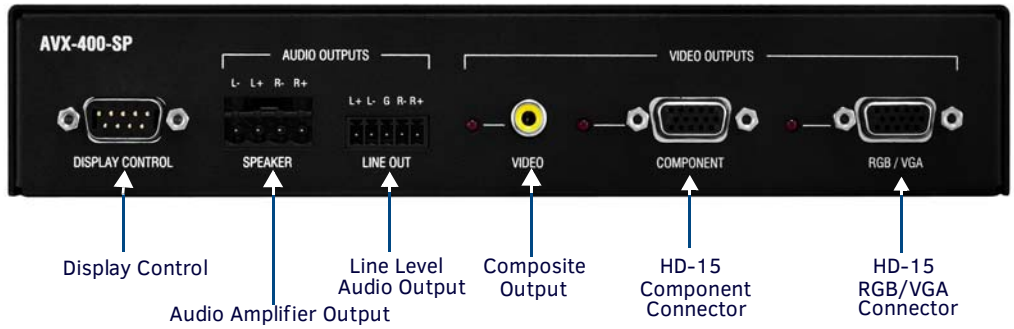


FIG. 3 AVX-400 Rear Panel Components

Front Panel Components

The following sections describe the options on the front panel of the AVX-400.

Source Select Button (SELECT)

FIG. 4 Source Select Button

The AVX-400 includes one source select button you can press repeatedly to select one of the four input sources. When you press the SELECT button, the first input source is selected. Pressing it again selects the next valid input, and so on. The LED indicator beside the selected input turns on to show which source you have selected. The select button does not function when you are working in Priority mode.

Source Inputs (INPUTS 1-4)

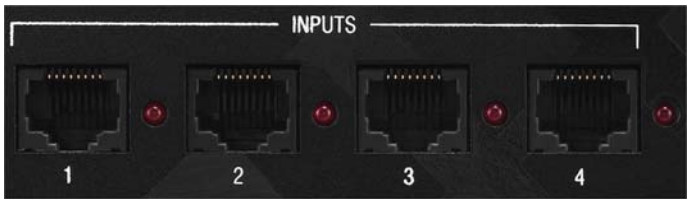


FIG. 5 Source Inputs

The Source inputs can accept video from devices such as PCs, DVD players, satellite receivers, and video conference systems. You can use the Source Input ports to connect Cat5/5e/6 cables to the port on a wall input plate which then connects to an input device via composite, component, VGA, or HDMI connector. The LED beside each port lights red when its associated port is active.

NOTE: *Use Cat5/5e/6 cable only for the source input connections. Using Cat5 crossover cable may damage the presentation switcher.*

NOTE: *You can use only one HDMI pass-through wallplate per AVX-400.*

The following table lists the pinouts, signals, and pairing associated with the Source Input connector.

Source Input Wiring

RJ45 Pin #	568A Termination		A/V Signals				568B Termination	
	Color	Pair #	RGB	YPbPr	CVBS	S-Video	Color	Pair #
1		3	Red +	Y +	CVBS S1 +	Y +		2
2		3	Red -	Y -	CVBS S1 -	Y -		2
3		2	Blue +	Pr +	CVBS S3 +	C +		3
4		1	Green +	Pb +	CVBS S2 +			1
5		1	Green -	Pb -	CVBS S2 -			1
6		2	Blue -	Pr -	CVBS S3 -	C -		3
7		4	Audio, Data, Power +	Audio, Data, Power +	Audio, Data, Power +	Audio, Data, Power +		4
8		4	Audio, Data, Power -	Audio, Data, Power -	Audio, Data, Power -	Audio, Data, Power -		4

When connecting to a wall input plate, use Cat5/5e/6 cable to connect from the source input on the switcher to the RJ-45 connector on the wall input plate (FIG. 6).

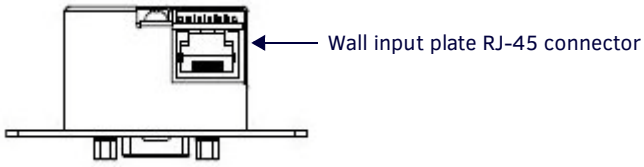


FIG. 6 Wall Input Plate Connector

- Wallplate cabling is suitable for use within a 1-50m range (3.2'-165'), however, you can possibly work outside this range by using a low skew cable.
- Do not use nanoskew cable, as the cable can cause audio data bleeding into the video.

NOTE: *AMX has evaluated several types of category cable for use with UPX wall plates. Of the cable types tested, CAT-5e offers optimal performance for UPX analog signal routing and AMX recommends Belden part number 1583a for best performance. CAT-6 category cable however has demonstrated wide variance in performance across manufacturers and cable part numbers, and therefore AMX recommends that customers needing to install CAT-6 cable pre-test the desired cable model with UPX wall plates at the desired lengths prior to installation. AMX is currently evaluating additional Cat-6 and Cat-7 model numbers for compatibility, and will publish recommended model numbers upon results of the evaluation.*

LINE IN

FIG. 7 LINE IN Input

The LINE IN input is capable of delivering audio to mix into the program sound. This input is designed for use with external audio equipment such as radio microphones and mixers. Connect the positive and negative terminals for the left and right channels on the source audio input to the labeled wire terminals on the switcher. The center terminal on the switcher accepts a grounding wire. For unbalanced sources, you can use the R+, L+, and Ground connections (FIG. 8). You can connect a microphone to this input using a preamplifier.

Source and destination devices require either balanced (differential) or unbalanced (single-ended) connections. FIG. 8 illustrates options for wiring between sources and input connectors and between output connectors and the destinations. More than one option can be use in the same system.

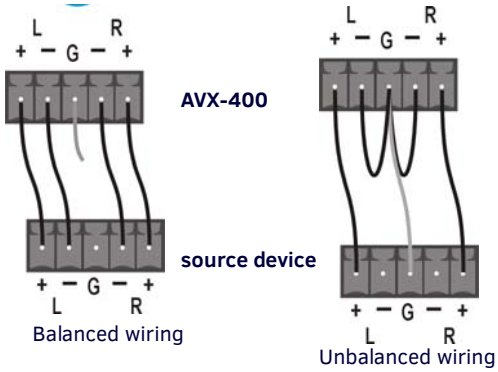


FIG. 8 Stereo 5-Terminal Wiring

FIG. 9 provides details for wiring from an audio input to a non-5 terminal audio source or destination, such as an RCA connector. Positive and ground wires connect to the source or destination connector.

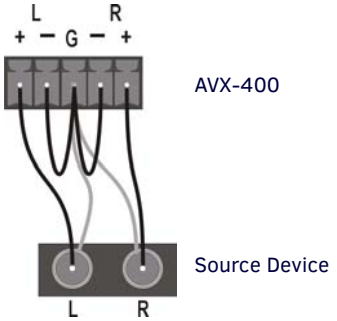


FIG. 9 Non 5-Terminal Audio Source And Destination Wiring

AXLINK

FIG. 10 AxLink Port

All AVX-400 units have an AxLink port and adjacent status LED (FIG. 10). This port allows the unit to be controlled from any AxLink Master such as a NetLinx NI Controller. A green LED shows AxLink data activity. When the AxLink port is operating normally, blink patterns include:

- **Off** - No power, or the controller is not functioning properly.
- **1 blink per second** - Normal operation.
- **3 blinks per second** - AxLink bus error. Check all AxLink bus connections.

NOTE: *The AVX-400 cannot be powered by this port or use the port to power other devices.*

To use the 4-pin 3.5 mm mini-Phoenix (female) captive-wire connector for data communication and power transfer, the incoming PWR and GND cable from the 12 VDC-compliant power supply must be connected to the AxLink cable connector going to the Integrated Controller. FIG. 11 shows the wiring diagram. Always use a local power supply to power the Integrated Controller unit.

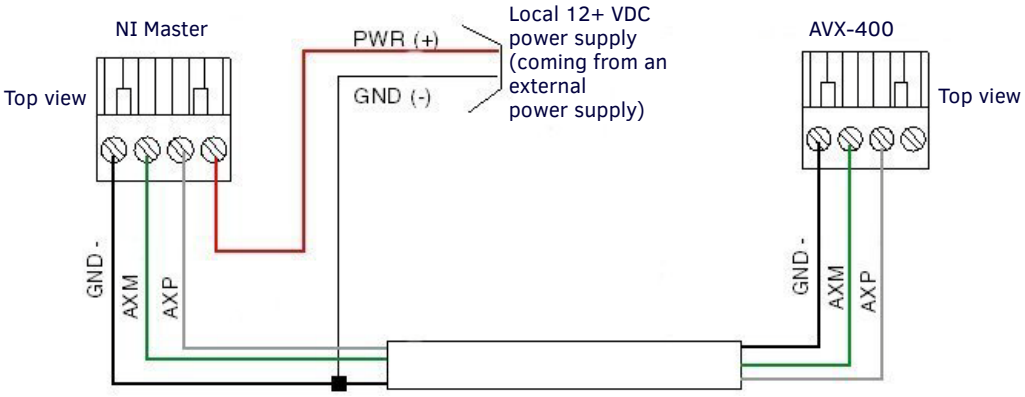


FIG. 11 4-pin Mini-Phoenix Connector Wiring Diagram (Using External Power Source)

NOTE: *When connecting an external power supply, do not connect the wire from the PWR terminal (coming from the external device) to the PWR terminal on the Phoenix connector attached to the Controller unit. Make sure to connect only the AXM, AXP, and GND wires to the Controller's Phoenix connector when using an external power supply.*

Make sure to connect only the GND wire on the AxLink/PWR connector when using a separate 12 VDC power supply. Do not connect the PWR wire to the AxLink connector's PWR (+) opening.

NOTE: *If the Master does not recognize that the AVX-400 is online again after you reboot the AVX-400, re-seat the AxLink connection or reset the Master.'*

DEVICE DIP Switches

FIG. 12 DEVICE DIP Switches

The 8-position AxLink DEVICE DIP switch sets the AxLink identification number for your AxLink device. Make sure the device number matches the number assigned in the software program. The following table describes the values on the AxLink DEVICE DIP switch.

AxLink DEVICE DIP Switch Settings								
Position	1	2	3	4	5	6	7	8
Value	1	2	4	8	16	32	64	128

RS232

FIG. 13 RS232 Control Port

The RS232 control port is a bi-directional serial port used for display control via a PC or Novara ControlPad. Currently, the AVX-400 supports the Novara SP-08-AX 8-button keypad. The port uses a 3-pin 3.5mm Phoenix connector, and supports 9600 baud communications only. When communicating via RS-232, connect the wiring as shown in FIG. 14.

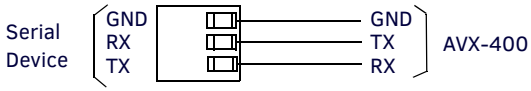


FIG. 14 RS-232 Wiring

When using a Novara SP-08-AX 8-Button keypad, connect the AVX-400 to the RS232 output port on the keypad. Consult the documentation for the Novara SP-08-AX 8-Button keypad for more information on the location of the RS232 port on the unit. The following table lists the default button commands for the Novara SP-08-AX 8-Button keypad:

Novara SP-08-AX 8-Button Keypad Defaults	
Button	Default
1	Switch to Input 1
2	Switch to Input 2
3	Switch to Input 3
4	Switch to Input 4
5	Increase volume
6	Decrease volume
7	Hold for 3 seconds to turn on the programmed projector, and hold 3 seconds again to turn it off.
8	Mute all (video and sound)

Configuration Port (PROG)

FIG. 15 Configuration Port

The AVX-400 contains one low-speed type-B USB connection located on the front of the unit. Use a standard USB cable to establish a connection between the device and your PC's USB port. This connection enables you to program the switcher by using AMX DCS software. See the *AMX DCS Software* section on page 14 for more information.

Power Connector

FIG. 16 Power Connector

The AVX-400 uses a 12 VDC-compliant power supply to provide power to the switcher through the front 2-pin 3.5 mm mini-Phoenix power connector. Use the power requirements information described in the product's Specifications table to determine the power draw. The incoming PWR and GND cable from the power supply must be connected to the corresponding locations within the power connector.

The current draw for the AVX-400 with no input plates is 750mA. The following table lists the current draw for each type of input wallplate you can connect to the AVX-400.

Wallplate Current Draw	
Component	160mA
VGA	140mA
Composite	110mA
HDMI	98mA

You can use this information to determine the overall current draw of the AVX-400 and its components. To illustrate, an AVX-400 with 2 VGA wallplates, 1 Component wallplate, and 1 Composite wallplate draws:

750 + 140 + 140 + 160 + 110 = 1.3A

NOTE: *The above equation does not take into account an audio source, which can increase the draw by up to 1A depending on frequency and volume.*

NOTE: *This unit should only have one source of incoming power. Using more than one source of power to the Controller can result in damage to the internal components and a possible burn out. Apply power to the unit only after installation is complete.*

Preparing Captive Wires

You will need a wire stripper and flat-blade screwdriver to prepare and connect the captive wires.

NOTE: *Never pre-tin wires for compression-type connections.*

1. Strip 0.25 inch (6.35 mm) of insulation off all wires.
2. Insert each wire into the appropriate opening on the connector (according to the wiring diagrams and connector types described in this section).
3. Tighten the screws to secure the wire in the connector. Do not tighten the screws excessively doing so may strip the threads and damage the connector.

Wiring a Power Connection

To use the 2-pin 3.5mm mini-Phoenix connector with a 12 VDC-compliant power supply, the incoming PWR and GND cables from the external source must be connected to their corresponding locations on the connector (FIG. 17). Follow these steps to wire a power connection:

1. Insert the PWR and GND wires on the terminal end of the 2-pin 3.5 mm mini-Phoenix cable. Match the wiring locations of the +/- on both the power supply and the terminal connector.
2. Tighten the clamp to secure the two wires. Do not tighten the screws excessively. Doing so may strip the threads and damage the connector.
3. Verify the connection of the 2-pin 3.5 mm mini-Phoenix to the external 12 VDC-compliant power supply.

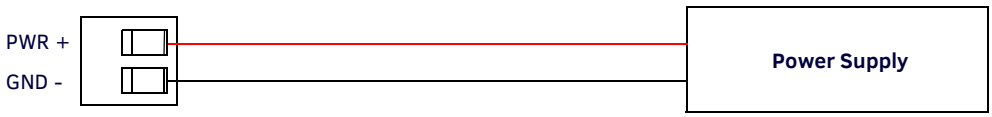
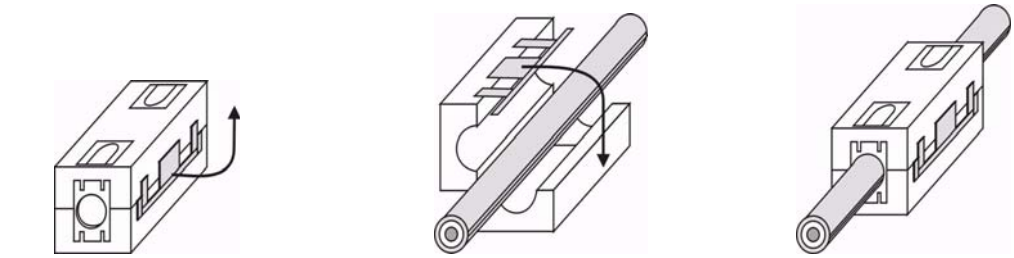


FIG. 17 2-pin Mini-Phoenix Connector Wiring Diagram (Direct Power)

Installing a Suppression Ferrite

NOTE: *If you are in a location with 240V of power, you must clip the supplied Suppression Ferrite around the Power cable (no tools required).*

FIG. 18 demonstrates how to install a suppression ferrite.



1. Release the latch to open the plastic enclosure.
2. Insert the power cable and close the enclosure.
3. Installation complete.

FIG. 18 Installing the Suppression Ferrite

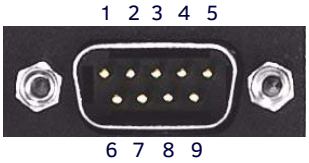
Rear Panel Components

The following sections describe the options on the rear panel of the AVX-400.

DISPLAY CONTROL

FIG. 19 Display Control Connector

The DISPLAY CONTROL connector is used for controlling a display device such as a projector or large screen LCD. FIG. 20 shows the connector pinouts for the rear DISPLAY CONTROL connector. The DISPLAY CONTROL port supports most standard RS-232 communication protocols for data transmission. This figure gives a visual representation of the wiring specifications for the DISPLAY CONTROL connector.



RS-232 pinouts (male connector)
Pin 2: RX signal
Pin 3: TX signal
Pin 5: GND

FIG. 20 RS-232 DB9 (Male) Connector Pinouts for the Rear Display Control Connector

The table below provides information about the connector pins, signal types, and signal functions. This table's wiring specifications are applicable to the rear DISPLAY CONTROL connector on the switcher.

RS-232 Display Control Wiring Specifications

Pin	Signal	Function	RS-232
1			
2	RXD	Receive data	X
3	TXD	Transmit data	X
4			
5	GND	Signal ground	X
6			
7			
8			
9			

SPEAKER

FIG. 21 Speaker Output

The SPEAKER output is capable of delivering 2x10W into 8 ohm amplified variable stereo audio. The output level can be adjusted by serial or AxLink commands.

LINE OUT

FIG. 22 Line Out Output

The LINE OUT output provides the mixed program and line input sources at a variable line level output. It is designed for use with external audio equipment such as induction loop systems, recording devices, or video conferencing systems.

Destination devices require either balanced (differential) or unbalanced (single-ended) connections. FIG. 23 illustrates options for wiring between output connectors and the destinations.

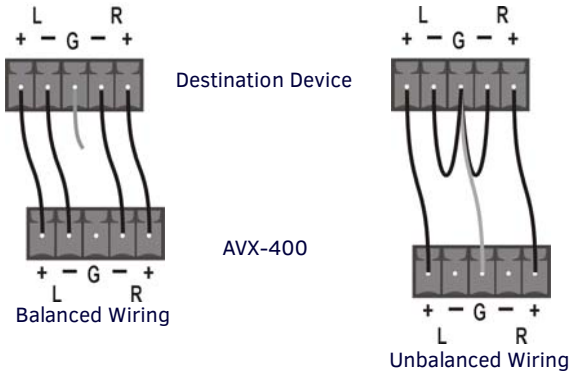


FIG. 23 Stereo 5-Terminal Wiring

Composite Output (VIDEO)

FIG. 24 Composite Output

The composite output enables you to use a composite cable (RCA Y) to send video to a display device like a projector. Attach the composite cable to the composite video connector on the rear of the presentation switcher and run the other end of the cable to the Composite connector (normally yellow) on the display device or to a Composite wall input plate. If you connect the port to a wall input plate, use an RJ-45 cable to connect the port on the rear of the wall input plate to one of the source input ports on the front of the switcher.

HD-15 Output Connectors

FIG. 25 HD-15 Output Connectors

Each AVX-400 has two HD-15 output connectors. The outputs enable you to use an HD-15 to COMPONENT or HD-15 to RGB/VGA cable to send video to a display device such as a projector or large screen monitor. The output device displays video from source input devices routing through the AVX-400. There is one output each for COMPONET and RGB/VGA sources.

The following table lists the pinout configuration for HD-15 connector to RGB/VGA connectors:

Video Output HD-15 Connector Pinouts

Pin	Signal	Function
1	Red	Red signals
2	Green	Green signals
3	Blue	Blue signals
4	N/C	
5		
6	RGND	Red analog ground
7	GGND	Green analog ground
8	BGND	Blue analog ground
9		
10	SGND	Synchronization analog ground
11		
12		
13	HSYNC	Horizontal synchronization signal
14	VSYNC	Vertical synchronization signal
15		

NOTE: *You can use breakout cable CC-HD15M-RCA3M (FG10-2170-03) to connect to 3 x RCA Phono Sockets.*

The following table lists the pinout configuration for HD-15 connector to Component connectors:

HD-15 to Component Pinouts

VGA Pin	Component Signal
1	Pr signal
2	Y signal
3	Pb signal
4	
5	
6	Pr - Return
7	Y - Return
8	Pb - Return
9	
10	
11	
12	
13	
14	
15	

Mounting the Presentation Switcher

The AVX-400 can be mounted onto a flat surface or mounted under a table. Attach the mounting brackets from the optional mount kit (**FG525**) to the sides of the switcher as shown in FIG. 26 to mount the unit to any flat surface. FIG. 26 displays the mounting brackets set to attach to the underside of a table. To surface-mount the unit, attach the mounting brackets with the flat side toward the bottom of the unit.

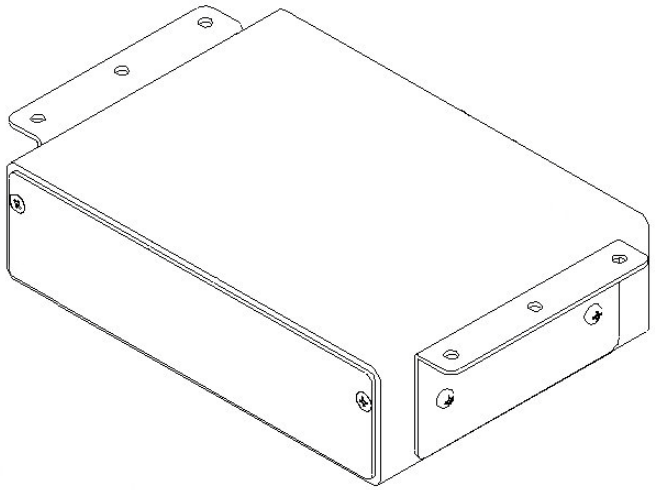


FIG. 26 AVX-400 Presentation Switcher with Optional Mounting Brackets.

Configuration

AMX DCS Software

You can configure the AVX-400 and its functionality by using AMX DCS software (FIG. 27). The top of the window displays the device image of the front panel of the Enova AVX-400, and displays which inputs are valid by highlighting the source input. Clicking on a highlighted port on the device image changes the active input. (This does not work if you are working in Priority mode unless there are no active inputs on the AVX-400.) The active source input is indicated by the illuminated red LED beside the source input.

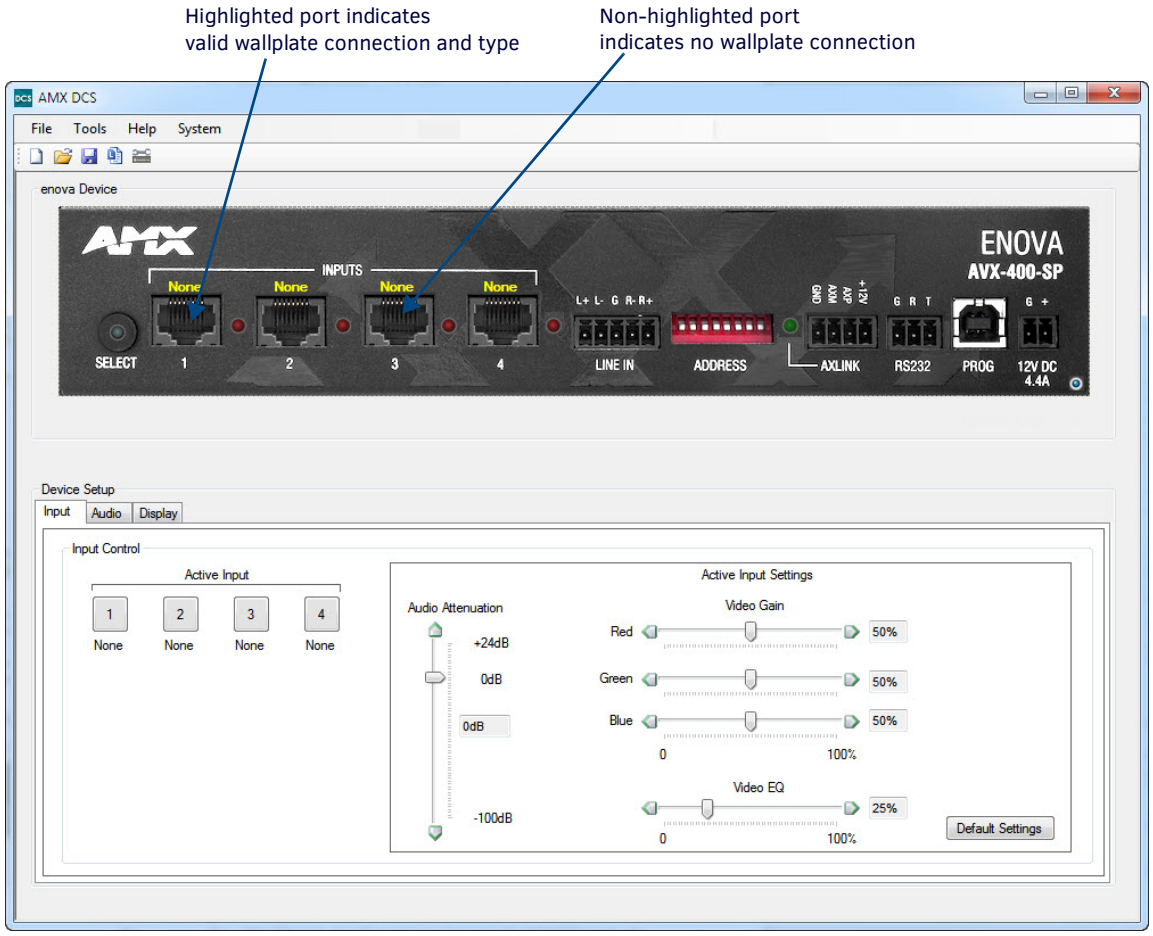


FIG. 27 AMX DCS Main Screen

NOTE: *The DCS application is intended for configuration purposes and not for real-time use. In most cases, after configuring your system, you will not need to return to use the DCS application unless you have a configuration change to your system.*

Supported Operating Systems

The AMX DCS application is compatible with the following operating systems:

- Windows XP Service Pack 3 Professional (US English)
- Windows XP Service Pack 3 Professional (French)
- Windows XP Service Pack 3 Professional (Spanish)
- Windows XP Service Pack 3 Professional (German)
- Windows XP Service Pack 3 Professional (Japanese)
- Windows 7 Home Premium (32-bit) (US English)
- Windows 7 Home Premium (32-bit) (French)
- Windows 7 Home Premium (32-bit) (Italian)
- Windows 7 Home Premium (32-bit) (German)
- Windows 7 Home Premium (32-bit) (Spanish)
- Windows 7 Home Premium (32-bit) (Flemish)
- Windows 7 Home Premium (32-bit) (Russian)
- Windows 7 Home Premium (32-bit) (Greek)
- Windows 7 Home Premium (32-bit) (Chinese)
- Windows 7 Home Premium (32-bit) (Arabic)
- Windows 7 Home Premium (32-bit) (Portuguese)
- Windows 7 Home Premium (32-bit) (Turkish)

Input tab

The bottom half of the DCS window features the Device Setup options. The Device Setup area consists of three tabs: Input, Audio and Display. The Input tab (FIG. 27) enables you to select a source input and adjust its audio and video settings. The following options appear on the Input tab:

Input Tab Options	
Active Input	Click each button to view the corresponding audio and video settings for the input device.
Audio Attenuation	Use the slider to set the attenuation of the audio for the selected input. You can preset the attenuation between the range of +24dB to -100dB.
Video Gain	Use the sliders to set the red, blue, and green levels for the video output of the selected input. You can set each individual level between 0 and 100%.
Video EQ	Use the slider to set the equalization of the video for the selected input. You can set the level between 0 and 100%.
Default Settings	Resets the Audio Attenuation, Video Gain, and Video EQ to their default values.

The available options vary according to the type of source input you select.

- Component and VGA inputs have audio attenuation, all RGB video gain, and video EQ settings.
- Composite inputs have audio attenuation and composite video gain settings.
- HDMI inputs only have the audio attenuation setting available.

Audio tab

The Audio tab (FIG. 28) enables you to adjust its audio in and out settings.

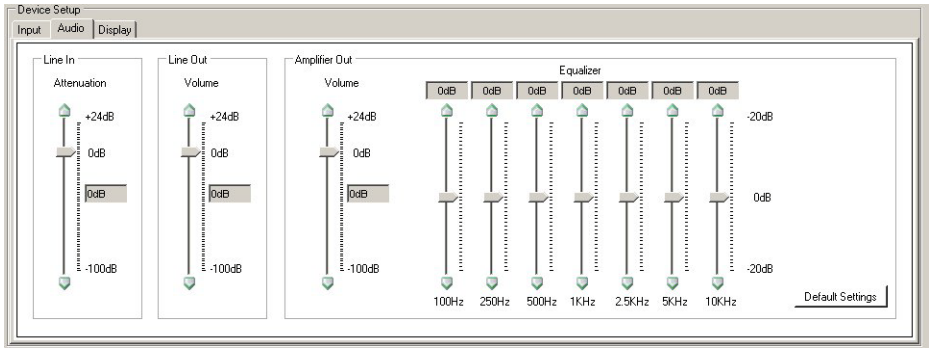


FIG. 28 Device Setup - Audio Tab

The following options appear on the Audio tab:

Audio Tab Options	
Line In - Attenuation	Use the slider to preset the attenuation of the audio for the line in device. You can set the attenuation between the range of +24dB to -100dB.
Line Out - Volume	Use the slider to preset the volume of the audio for the line out device. You can set the volume between the range of +24dB to -100dB.
Amplifier Out - Volume	Use the slider to preset the volume of the audio for the amplifier out device. You can set the volume between the range of +24dB to -100dB.
Amplifier Out - Equalizer	Use the sliders to set the equalizer settings for the amplifier out device. You can set the levels for the 100Hz, 250Hz, 500Hz, 1KHz, 2.5 KHz, 5KHz, and 10KHz frequencies. You can set each level between the range of +20dB to -20dB.
Default Settings	Press this button to reset all Amplifier Out settings to 0dB.

Display tab

The Display tab (FIG. 29) enables you to select a display output and establish input display settings.

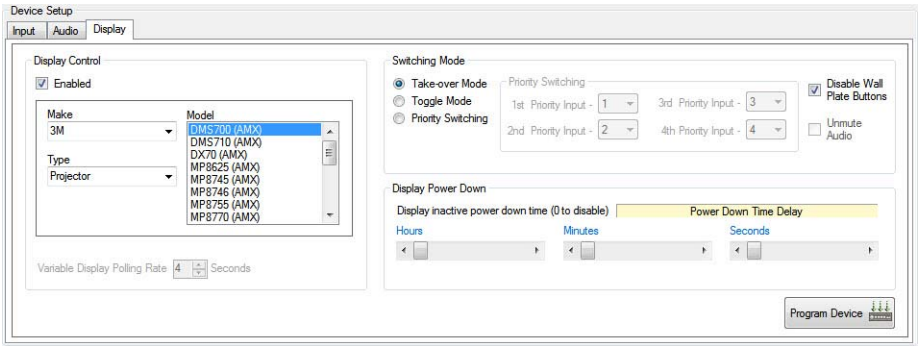


FIG. 29 Device Setup - Display Tab

The following options appear on the Display tab:

Display Tab Options	
Enabled	Click the check box to enable display control. Display control enables you to select a display to use for the output from your source inputs. Enabling display control makes the options for Make, Type, Model, and Display Power Down available.
Make	Select the manufacturer of the device you want to use.
Type	Select the type of device you want to use.
Model	Select the device model you want to use.
Variable Display Polling Rate	Use the up-and-down arrow buttons to allow only one command to execute in the set number of seconds.
Switching Mode	Click an option button to indicate the method you want to use to switch between source inputs. You can choose from Take-over Mode, Toggle Mode, and Priority Switching.
Take-over Mode	With Take-over mode, if you press the button on a wallplate connected to source input 1, then source input 1 becomes the active input. The same applies to source inputs 2, 3, and 4.
Toggle Mode	With toggle mode, if you press the button on any of the wallplates, then the selected video input changes to the next available input. For example, if you have all four inputs connected to video sources, pressing any button on any wallplate causes the active input to toggle from 1 to 2 to 3 to 4 to 1. If you only have inputs 1, 2, and 3 connected, the toggle sequence will be 1 to 2 to 3 to 1.
Priority Switching	Enables you to establish a priority order for displaying each input. The input device with the highest priority will always be sent to the output display as long as the input device remains powered on. When the power to the highest priority input device is turned off, the signal from the next active input device appears on the output display. These options are not available unless you select Priority Switching as the Switching Mode. See the *Priority Switching* section on page 17 for more information.
Disable Wall Plate Buttons	Click the check box to disable source input switching via wallplate button. With this option enabled, you cannot change inputs while in take-over or toggle modes, and you cannot power up or power down the display device. This option disables all wallplate button functions.
Unmute Audio	Click the check box to unmute the audio when a wallplate button is pressed. This option in unavailable in Toggle Mode.
Display Power Down	Use the sliders to set the number of hours, minutes, or seconds (or some combination of the three) before the display device powers down. Using the Hours slider disables the Seconds slider. Set the time to 0 to disable power down. HDMI devices cannot be shut down using this feature. Devices sourced from the HDMI input cannot be powered down using this option.
Program Device	Sends the current configuration to the presentation switcher. You must click this button for any configuration changes to take effect.

Enabling Display Control

Display control enables you to select a display to use for the output from your source inputs. A display can be any type of video output device. After enabling display control, you can select a make, type, and model of display. If your display is not available from the options menus, see the *Device Library Manager* section on page 18 for information on adding your specific device to the device library. Perform these steps to enable display control:

1. Click the **Display** tab on the AMX DCS window.
2. Click the **Enabled** check box to enable display control.
3. Select a **Make**, **Type**, and **Model** display from their respective fields.
4. Click **Program Device** to send the display device's commands to the presentation switcher.

Priority Switching

Priority switching enables you to establish a priority order for displaying each input device. The input device with the highest priority will always be sent to the output display as long as the input device remains powered on. When the power to the highest priority input device is turned off, the signal from the next active input device appears on the output display.

For example, you have a DVD player set at priority 1, a PC at priority 2, and a VCR at priority 3. If the PC is always powered on, it's output is sent to the display provided the DVD player is currently powered off. When the DVD player is powered on, its output is immediately sent to the display. Powering off the DVD player returns the PC's output to the display. The VCR's output is only sent to the display if it is powered on, and the DVD player and PC are both powered off.

NOTE: *With Priority Switching enabled, the display device shuts down if it is not receiving any input signals. If all priority devices are powered off, the display device also powers off. The display device powers on again once the first video signal is applied. HDMI Passthru Wallplates have no ability to detect a video signal, therefore priority switching is not available if an HDMI wallplate is present.*

To set up priority switching:

1. In the Device Setup area, click the **Display** tab (FIG. 29).
2. Click the **Priority Switching** option button in the Switching Mode section.
3. Use the options menus in the Priority Switching area to indicate the priority order for each input device. The number you select from the drop-down menu is the source input number on the presentation switcher. For example, if you want source input 3 to have the highest priority, select 3 for the first priority input.
4. Click **Program Device** to send the new settings to the presentation switcher.

Setting the Inactive Display Power Down

You can use the DCS software to set an amount of time for a display to be inactive before it shuts down to save power. There must be no active inputs on the AVX-400 for the display power down to occur. This feature is not available for HDMI input sources. Perform these steps to set the inactive display power down:

1. Click the **Display** tab on the AMX DCS window.
2. Enable display control. See the *Enabling Display Control* section on page 16 for more information.
3. Use the **Hours**, **Minutes**, and **Seconds** sliders to indicate the amount of time you want the display to be inactive before powering down.
4. Click **Program Device** for the changes to take effect.

Setting the Communication Speed

The AVX-400 enables you to set the communication speed between DCS and the AVX-400. DCS sets the speed that is applicable for the firmware version of the AVX-400, but it also allows you to override the speed setting. Default speed is supported by all firmware versions, but High speed is only supported by firmware version 2.0 or higher.

You can change the communication speed by selecting **COM Speed - Default** or **COM Speed - High** from the Tools menu.

Device Library Manager

The Device Library Manager (FIG. 30) enables you to add, import, and modify information about individual devices you can configure with DCS software. You can modify the device's serial connection settings and provide hexadecimal values, where needed, for executable and status commands. The Device Library Manager is accessible by selecting Device Library Manager from the File menu on the main DCS window.

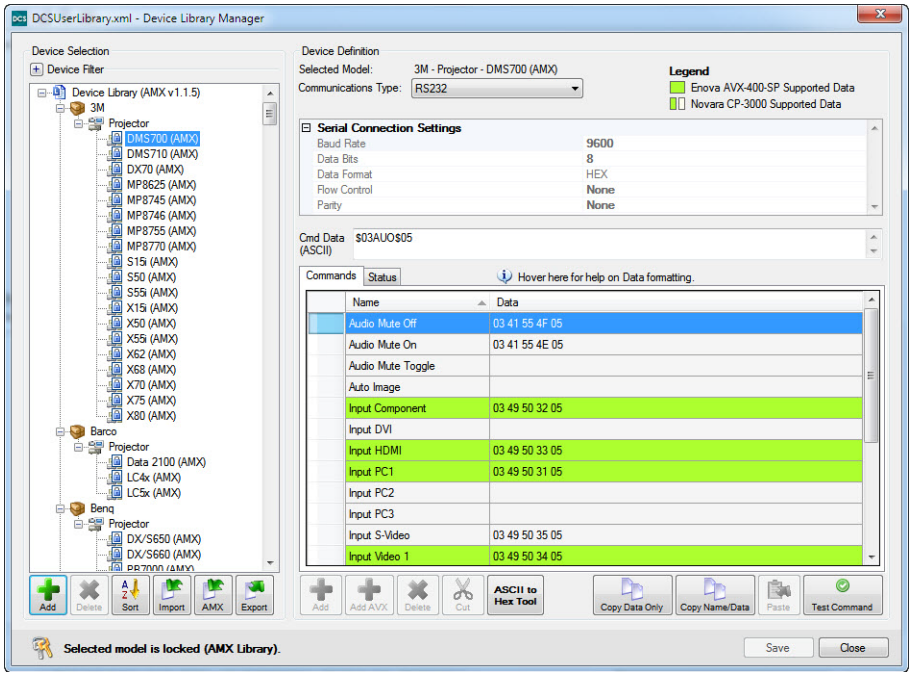


FIG. 30 Device Library Manager

The following options appear on the Device Library Manager window:

Device Library Manager Options	
Device Selection	
Device Filter	The Device Filter option opens to reveal three filtering options to help narrow your search for a specific device. You can filter by Manufacturer, Device Type, or Communications.
Add	Add a new device to the library. The Manufacturer can be a new manufacturer or you can select a previously-defined entry from the drop-down list. Similarly, the Device Type can be a new entry or you can select a previously-defined entry from the drop-down list. Manufacturer and Device Model entries are limited to 20 characters while Device Type is limited to 40 characters. Once the device is added it will be populated and selected in the library tree.
Delete	Delete the selected device.
Sort	Sort the devices alphabetically.
Import	Allows you to import Novara or Solecis legacy library files (one-by-one) and add their device definitions to the library. You can also import a previously exported .xml library file.
AMX	Click to open a web browser which navigates to www.amx.com so you can download a device library file.
Export	Allows you to select an existing device model from the tree and export its definition to a file in .xml format. This feature allows you to share devices with others. Once exported you can import the definition and add it to the library (assuming it does not already exist).
Device Definition	
Selected Model	The name of the selected device. This information is view-only.
Communications Type	The type of connection for the device. A different set of commands can be saved for each communication type. RS-232 and IP communications have a commands and status section whereas Infrared has only a command section. RS-232 is the only option available for the AVX-400 presentation switcher.
Serial Connection Settings	Displays the Baud Rate, Data Bits, Data Format, Flow Control, Parity, and Stop Bits for the device. You can change most of these options, if necessary. You cannot change any field that appears dimmed.

Continued ↴

Device Library Manager Options	
Cmd Data (ASCII)	When you select a record from the commands/status table, this field shows the ASCII representation of the data. This information is view-only, however, you can select and copy the information.
Command/Status Table	The command/status table displays all the commands/status for a selected communication type. Command/status names must be unique. Each cell in the Name and Data columns can be edited by clicking twice on the cell (once for row selection and once for editing). The table can be sorted in ascending or descending order by clicking on the Name or Data columns. In the command/status table for RS232, the data field is displayed in hex format separated by spaces. The only exception is literal values which can be present at the end of the hex string. When you click a value to edit it, the hex portion of the data transforms into ASCII. Non-printable characters remain in hex, but are appended with the '$' character. If a literal string is present at the end of the value, it is surrounded by quotes. To define non-printable characters like 0D, simply enter $0D. To define the $ character, enter $$.
Commands	Lists the available executable commands for the current device. If the device has a compatible hexadecimal value for an individual command, the hexadecimal value appears in the Data column. You can enter a value for each command in the Data column, if available. Consult the manual included with your device for more information. Commands specific to the AVX-400 appear in green.
Status	Lists the available status commands for the current device. If the device has a compatible hexadecimal value for an individual command, the hexadecimal value appears in the Data column. You can enter a value for each command in the Data column, if available. Consult the manual included with your device for more information.
Add	Adds a space for a new command in the above list. You can add the name of the command and its hexadecimal value in the Name and Data fields, respectively.
Add AVX	Add a new AVX executable command for the current device. You can add up to 16 AVX-only commands to a device. Each command specific to the AVX-400 appears in green in the Commands column. AVX-only commands always begin with "AVX_". If you remove this prefix from the command name, AMX DCS will no longer view the command as AVX-only. AVX-only command names have a limit of 10 characters. Command names are case-sensitive. **NOTE:** *If you create more than 16 AVX-only commands, DCS only accepts the first 16 commands.*
Delete	Deletes the selected command.
Cut	Removes the selected command from the command list and stores its information on the local clipboard for copying.
ASCII to Hex Tool	Opens a tool which helps convert ASCII text into hexadecimal code.
Copy Data Only	Copies the data from a selected record from the command/status table into memory. The data can then be pasted onto a command or into any model's command/status table.
Copy Name/Data	Copies a selected record from the command/status table into memory. The record can then be pasted into any model's command/status table as long as the name is unique.
Paste	Once a selected record from the command/status table is cut or copied press this button to paste the record into any model's command/status table as long as the name is unique.
Test Command	Click to launch the Test Command Tool so you can send commands and view feedback from the receiving device.

Adding a Device to the Device Library

If the provided device library does not contain the device you are using, you can add the device to the library manually. Perform the following steps to add a device to the device library:

1. From the File menu, select **Device Manager Library**. The Device Library Manager window opens.
2. In the Device Selection area, click the **Add** button. The Add Device dialog opens (FIG. 31).

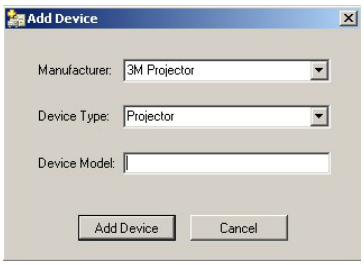


FIG. 31 Add Device Dialog Box

3. From the Manufacturer options menu, select a device manufacturer.
4. From the Device Type options menu, select the type of device you want to add.

5. Enter the name of the device in the Device Model field.
6. Click **Add Device** to add the device to the device library.
7. Click **Save** to save the Device Library.

Modifying Devices in the Device Library

To modify a device's connection and command information, perform the following steps:

1. Select the device from the Device Selection tree. Its connection and command information appears in the right pane.
2. Change the device's serial connection settings by clicking the individual option and selecting a new value from the available list.
3. For any commands that require programming, click the field under the Data column for the corresponding command, and enter the hexadecimal code required for the command. Consult the manual included with your device for more information.

NOTE: *DCS maintains a separate clipboard from the Windows clipboard. Thus, using Windows shortcuts to cut, copy, and paste may not work as expected. Use the Cut, Copy Data, and Paste buttons in AMX DCS when editing in the Device Library.*

Importing a Device Library

1. From the File menu, select **Device Manager Library**. The Device Library Manager window opens.
2. In the Device Selection area, click the **Import** button.
3. Navigate to a directory containing Novara (*.plr, *.prr) or Solecis (*.txt) device libraries and select a library file. The Import Legacy Library dialog opens (FIG. 32).

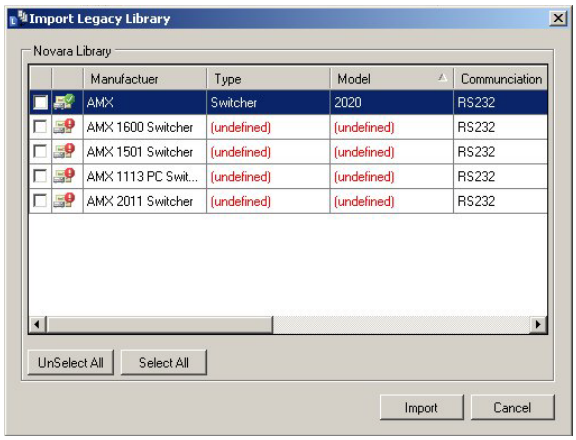


FIG. 32 Import Legacy Library Dialog

4. Select the libraries your want to import, and click **Import**.

NOTE: *If any of the fields in the device library are undefined, you must rename the device to define all fields before importing the library. See the Renaming a Device* section on page 20 *for more information.*

5. Click **OK** to confirm the libraries have been imported. The devices now appear in the Device Selection list.

Renaming a Device

When importing a device library, if any of the fields in the device library are undefined, you must rename the device to define all fields before importing the library.

1. Import a device library that contains undefined fields.
2. Right-click the device with undefined fields, and select **Rename Device(s)**. The Rename Device Libraries dialog opens (FIG. 33).

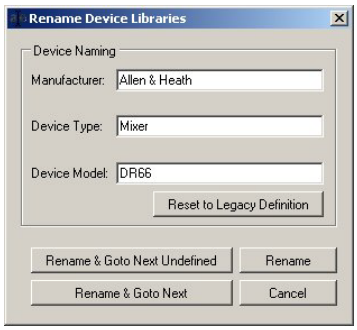


FIG. 33 Rename Device Libraries Dialog

3. Enter the appropriate information in the undefined fields.
4. Click **Rename**. The Rename Device Libraries dialog closes, and you can now import the device library.

ASCII to Hex Tool

Use the ASCII to Hex tool to convert ASCII text to a hexadecimal value for device commands. The following options appear in this window:

ASCII to Hex Options	
ASCII	Enter ASCII text in this field.
ASCII to Hex button	Click this button to convert the ASCII text to Hex.
HEX	Displays the Hex equivalent of the ASCII text.
Add Control Characters	Select an ASCII control character from the menu to add it to the HEX field. A list of ASCII control characters appears on the bottom right of the screen.
Copy Hex	Click to copy the Hex value into memory.
Clear Hex	Click to clear the HEX field.
Close	Click to close the window.

Perform the following steps to use the ASCII to Hex tool:

1. Enter text in the ASCII field.
2. Click **ASCII to Text**. The hexadecimal version of the text appears in the HEX field.
3. Click **Copy Hex** to copy the hexadecimal text to the clipboard.
4. Click **Close** to return to the Device Library Window.
5. Select a command, and click **Paste** to insert the data into the command/status table.

Test Command Tool

The Test Command Tool enables you to test a created command by sending the commands directly to a display device that is directly connected to the PC via serial port. When using the Test Command Tool, you can send commands and view feedback from the receiving device.

NOTE: *To use this tool, you must directly connect the SERIAL port on your PC to the device. See the RS-232* section on page 12 *for wiring and connection information.*

FIG. 34 displays the Test Command Tool (Send Command thru COM to Device window).

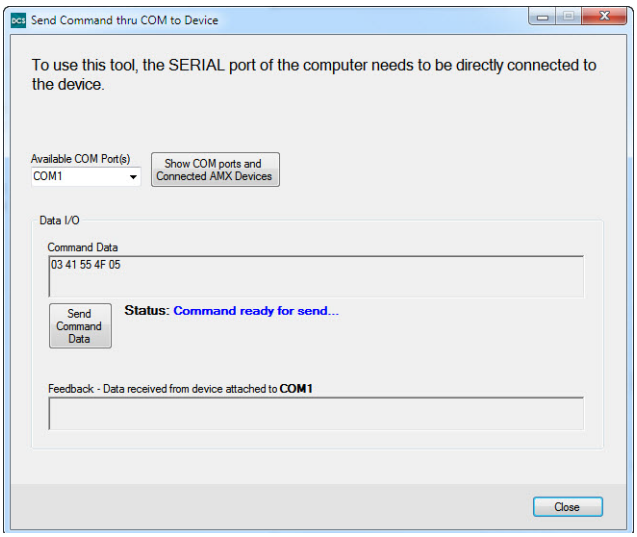


FIG. 34 Test Command Tool

The following options appear in this window:

Test Command Tool Options	
Available COM Port(s)	The available ports on the connected device. Click the Show COM ports and Connected AMX Devices button to refresh the list of available ports.
Show COM Ports and Connected AMX Devices	Click to refresh the list of available COM ports.
Command Data	The command data in hexadecimal format to the send to the device. This data is copied from the Data column for the command in the Device Library Manager. You cannot change this data from this window. You can only change it from the Device Library Manager.
Send Command Data	Click to send the command data to the connected device.
Feedback	This area displays any feedback received from the receiving device.
Close	Click to close the window.

Perform these steps to use the Test Command Tool:

1. Open the Device Library Manager.
2. Select a device, then select a command for the device.
3. Click **Test Command**. The Test Command Tool opens.
4. Select the COM port on the PC which is connected to the device to which you want to send the test command.
5. Click **Send Command Data** to transmit the command data to the device. Any information returned from the device appears in the Feedback area.

Updating Firmware

AMX DCS software provides a simple interface for updating your AVX-400 with the latest available version of firmware. You must use a .bin file to upgrade the firmware through AMX DCS software. The latest firmware files can be found at the Tech Center at www.amx.com.

You can access the Firmware Update tool by selecting **Firmware Update** from the File menu in the DCS software. Selecting this option opens the Enova Firmware Update window (FIG. 35).

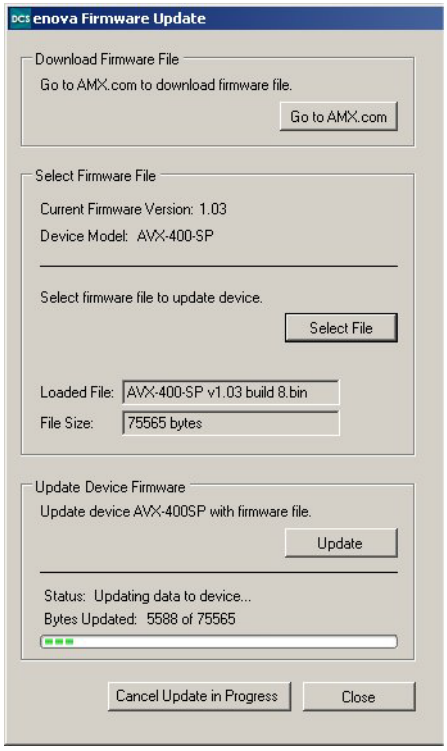


FIG. 35 Enova Firmware Update Window

The following options appear on this window:

Enova Firmware Update Window Options	
Go to AMX.com	Click to open a browser and navigate to AMX.com. At AMX.com, you can download the latest firmware for the device.
Current Firmware Version	Displays the current firmware version for the device. This information is view-only.
Device Model	The device model of the unit you are updating. This information is view-only.
Select File	Click to browse and locate the latest firmware file on a local or network drive.
Loaded File	The latest firmware file. This information only appears after you select firmware file to use for updating. This information is view-only.
File Size	The size of the loaded firmware file. This information is view-only.
Update	Click to begin updating the firmware for the device.
Status	The current state of the firmware update process. This information is view-only.
Bytes Updated	The current number of bytes of data that have been updated. This information is view-only.
Cancel Update in Progress	Click to cancel the current firmware update. This button is only active when a firmware update is in progress.
Close	Closes the window.

Perform these steps to update the firmware for your device:

1. From the File menu, select **Firmware Update**. The Enova Firmware Update window opens (FIG. 35).
2. Click **Go to AMX.com**. A web browser opens and navigates to www.amx.com.
3. Click **Tech Center** on the main page at AMX.com.
4. Locate and download the latest firmware version (.bin) for your device. Make note of the location to which you save the firmware file. When the download is complete, return to the Enova Firmware update window.
5. Click **Select File**, navigate to the location the firmware file was saved, and select the file.
6. Click **Update**. The firmware for the device is updated with the latest version.
7. Click **Close** to close the window and return to the AMX DCS window.

NOTE: *Remove all HDMI inputs from the AVX-400 if you are going to downgrade your firmware to a previous version. You will be unable to select or change inputs from the select button on the AVX or from DCS until you remove the HDMI input.*

Programming

AxLink Channels

Each AxLink device contains 255 channels numbered 1-255. The AxLink channels for the AVX-400 are defined in the table below.

AxLink Channels	
Channel	Description
24	Amplifier volume up when the channel is on.
25	Amplifier volume down when the channel is on.
26	Amplifier mute toggles when the channel turns on.
124	Balanced volume up when the channel is on.
125	Balanced volume down when the channel is on.
126	Balanced mute toggles when the channel turns on.
199	Amplifier mute when the channel is on.
200	Balanced mute when the channel is on.
210	Video mute toggles when the channel turns on.
211	Video mute when the channel is on.

AxLink Levels

Each AxLink device contains 8 levels numbered 1-8. Levels are a means of applying a value to a physical element on the device.

The value of each level ranges from 0 to 255 with a level of 128 being 0dB.

Values between 0 to 127 relate to -100 to -0.5dB. These values are scaled so the 128 values handle the 200 audio levels at 0.5dB resolution.

The values of 129 to 255 are scaled to fit the audio level of 0.5 to 24dB.

The AxLink Levels for the AVX-400 are defined in the table below.

AxLink Levels	
Level	Description
1	Amplifier volume
2	Balanced volume
3	Input 1 attenuation
4	Input 2 attenuation
5	Input 3 attenuation
6	Input 4 attenuation
7	Auxiliary input attenuation

AxLink Commands

The following table lists the AxLink commands for the AVX-400:

AxLink Commands	

"'CI<I#>O<O#>' "	Sets the active input.
	Syntax:
	`SEND_COMMAND <DEV>,"'CI<I#>O<O#>'"`
	Variables:
	I# = input number, 1-4 = Inputs 1-4 - a value of 0 means no input (disconnect)
	O# = output port number
	Example 1:
	`SEND_COMMAND dv2,"'CI2O1'"`
	Connect input 2 to output 1.

DOF	Turns off the display Syntax: `SEND_COMMAND <DEV>,"'DOF'"`
DON	Turns on the display Syntax: `SEND_COMMAND <DEV>,"'DON'"`

Continued ↴

AxLink Commands	

?DST	Queries the display status; returns the current display status.
	Syntax:
	`SEND_COMMAND "'?DST'"`
	Sample Output:
	`"DST-<A|B|C|D|E>"`
	A = power: (0=unknown, 1=on, 2=off, 3=warming, 4=cooling)
	B = input: (0=unknown, 1=PC, 2=component, 3=composite, 4=HDMI)
	C = lamp time: (0=unknown)
	D = filter time: (0=unknown)
	E = temperature: (0=unknown)
	One possible output is `DST-<ERROR>`. You may receive this response for one of the following reasons:
	• The AVX-400 does not have any display information programmed in it from the DCS application (DCS library).
	• The AVX-400 cannot communicate with the display after several attempts.
	• The AVX-400 is in pass-thru mode.
	• The baud rate configured for the display information (DCS library) is below 1200 or above 115200.

?FILTER	Queries the filter/volume status of the display; returns the current filter or volume status. Syntax: `SEND_COMMAND "'?FILTER"` Sample Output: "Filter = xxxx" where xxxx = filter If the system filter/volume cannot be determined: "Filter = Unknown"

?GCT	Queries the connected input types; returns the connected input types.
	Syntax:
	`SEND_COMMAND "'?GCT'"`
	Sample Output:
	`"GCT-<A|B|C|D>"`
	ABCD are inputs 1-4.
	0=No connection
	1=PC
	2=COMPONENT
	3=COMPOSITE
	4=HDMI

?INPUT-1	Queries the current active source input; returns the current active source input. Syntax: `SEND_COMMAND "'?INPUT-1'"` Sample Output: "SWITCH-LALLI<x>01" where <x> is the source input number.
?INPUT PROPERTY-1	Queries the current input type driving the output; returns the current input driving the output. Syntax: `SEND_COMMAND "'?INPUTPROPERTY-1'"` Sample Output: "Input = PC" "Input = Component" "Input = Composite" "Input = HDMI" If the video input cannot be determined: "Input = Unknown"
?LAMPTIME	Queries the lamp status of the display; returns the current lamp status. Syntax: `SEND_COMMAND "'?LAMPTIME'"` Sample Output: "Lamp = xxxx" where xxxx = number of hours If the system lamp time cannot be determined: "Lamp = Unknown"

Continued ↴

AxLink Commands	
PTOFF	Turns off passthru mode. Syntax: `SEND_COMMAND <DEV>,"'PTOFF',"`
PTON	Turns on passthru mode. Syntax: `SEND_COMMAND <DEV>,"'PTON',"`
?PWR	Queries the power status of the display; returns the current power status. Syntax: `SEND_COMMAND "'?PWR'"` Sample Output: "Power = On" "Power = Off" "Power = Warming" "Power = Cooling" If the system's power cannot be determined: "Power = Unknown"

RXOFF	Disable the transmission of incoming received characters to the Master. This option is disabled by default.
	Syntax:
	`SEND_COMMAND <DEV>,"'RXOFF'"`
	Example:
	`SEND_COMMAND dvRXRS232,"'RXOFF'"`
	Stops the Rx serial device from transmitting received characters to the Master.

RXON	Enables sending incoming received characters to the Master. This command is automatically sent by the Master when a 'CREATE_BUFFER' program instruction is executed. The end device does not transmit characters to the Master unless this command is activated on the device. The AVX-400 must be in passthru mode to execute this command.
	Syntax:
	`SEND_COMMAND <DEV>,"'RXON'"`
	Example:
	`SEND_COMMAND dvRXRS232,"'RXON'"`
	Sets the Rx serial port to transmit received characters to the Master.

SET BAUD	Set the serial communication parameters.
	Syntax:
	`SEND_COMMAND <DEV>,"'SET BAUD <baud>,<parity>,<data>,<stop>'"`
	Variables:
	baud = baud rates are: 115200, 57600, 38400, 19200, 9600, 4800, 2400, 1200.
	parity = N (none), O (odd), E (even).
	data = 7 or 8 data bits.
	stop = 1 and 2 stop bits.
	Example:
	`SEND_COMMAND dvRXRS232,"'SET BAUD 9600,N,8,1'"`
	Sets the display port's communication parameters to 9600 baud, no parity, 8 data bits, 1 stop bit.

SSW	Simulates pressing the select switch. Pressing the source select button activates the next valid source input. This command simulates a single pressing of the source select button on the presentation switcher. Syntax: `SEND_COMMAND "'SSW'"`
?TEMP	Queries the temperature status on the display; returns the current temperature status. Syntax: `SEND_COMMAND "'?TEMP'"` Sample Output: "Temperature = xxxx" where xxxx = temperature If the system temperature cannot be determined: "Temp = Unknown"

AxLink Strings

The following table lists the AxLink strings for the AVX-400:

AxLink Strings	

SEND_STRING	Sends a command or query to the display device. The AVX-400 must be in passthru mode to execute this command.
	Syntax:
	`SEND_STRING <DEV>,"'<text>'"`
	Variable:
	text = The message you want to send
	Example:
	`SEND_STRING dvRXRS232,"'Power On'"`

Serial Commands

The following table lists the serial commands for the AVX-400. All commands are followed by a carriage return.

Serial Commands	
AMT	Toggle amplifier mute Syntax: `AMT`
ASM	Turns on the amplifier mute Syntax: ASM

ATA	Sets the auxiliary input attenuation to the specified level.
	Syntax:
	`ATA=<attenuation>`
	Variable:
	attenuation = the attenuation setting between -100 and 24
	Example:
	`ATA=12,$0D`

ATI	Sets the attenuation for a source input to a specific level.
	Syntax:
	`ATI<input>=<attenuation>`
	Variable:
	input = source input (1-4)
	attenuation = the attenuation setting between -100 and 24
	Example:
	`ATI3=12,$0D`
	Sets the attenuation on source input 3 to 12.

ATT?	Queries for the attenuation levels for each channel; returns the attenuation level for all channels.
	Syntax:
	`ATT?,$0D`
	Sample Output:
	`1=-34dB`
	`2=-41.5dB`
	`3=-49.5dB`
	`4=-30.5dB`
	`Aux=-11dB`

AUM	Turns off the amplifier mute Syntax: `AUM`

Continued ↴

Serial Commands	

BGN	Sets the blue gain level for a source input.
	NOTE: *This command cannot be implemented on HDMI Passthru wallplates.*
	Syntax:
	`BGN<input>=<gain>`
	Variable:
	input = source input (1-4)
	gain = the blue gain level setting between 0 and 220
	NOTE: *The number you enter for the gain setting should correspond to a percentage between 0 and 100. For example, a gain setting of 110 corresponds to a percentage of 50.*
	Example:
	`BGN2=55,$0D`
	Sets the blue gain level on source input 2 to 55, or 25%.

BMT	Toggle the balanced mute Syntax: `BMT,$0D`
BSM	Turns on the balanced mute Syntax: `BSM,$0D`
BUM	Turns off the balanced mute Syntax: `BUM,$0D`

DCM	Triggers a dynamic user command. AMX advises you to place the AVX in passthru mode prior to executing a dynamic user command. Putting the AVX in passthru mode disables interrogation, and thereby eliminates the possibility of the polling commands interfering with the dynamic commands you send. Because of this, the AVX does not filter the responses back from the device, and extra data may be delivered to you.
	Syntax:
	`DCM$0D<text>`
	Variables:
	text = The name of the dynamic command to trigger
	Example:
	`DCM$0DAMX_FREEZE`
	NOTE: *The dynamic command has to be in the device library for the command to trigger.*

DOF	Turns off the display Syntax: `DOF,$0D`
DON	Turns on the display Syntax: `DON,$0D`

DST?	Queries the display status; returns the current display status.
	Syntax:
	`DST?`
	Sample Output:
	`"DST-<A|B|C|D|E>"`
	A = power: (0=unknown, 1=on, 2=off, 3=warming, 4=cooling)
	B = input: (0=unknown, 1=PC, 2=component, 3=composite, 4=HDMI)
	C = lamp time: (0=unknown)
	D = filter time: (0=unknown)
	E = temperature: (0=unknown)
	One possible output is `DST-<ERROR>`. You may receive this response for one of the following reasons:
	• The AVX-400 does not have any display information programmed in it from the DCS application (DCS library).
	• The AVX-400 cannot communicate with the display after several attempts.
	• The AVX-400 is in pass-thru mode.
	• The baud rate configured for the display information (DCS library) is below 1200 or above 115200.

Continued ↴

Serial Commands	

FLT?	Queries the filter/volume status of the display; returns the current filter or volume status.
	Syntax:
	`FLT?,$0D`
	Sample Output:
	`"Filter = xxxx"`
	where xxxx = filter
	If the system filter/volume cannot be determined:
	"Filter = Unknown"

FWV?	Queries the firmware version of the AVX-400; returns the current firmware version.
	Syntax:
	`FWV?,$0D`
	Sample Output:
	`v1.24`

GCT?	Queries the connected input types; returns the connected input types.
	Syntax:
	`GCT?,$0D`
	Sample Output:
	`1=PC$0D`
	`2=COMPOSITE$0D`
	`3=NO INPUT$0D`
	`4=COMPONENT$0D`

GGN	Sets the green gain level for a source input.
	NOTE: *This command cannot be implemented on HDMI Passthru wallplates.*
	Syntax:
	`GGN<input>=<gain>`
	Variable:
	input = source input (1-4)
	gain = the green gain level setting between 0 and 100
	NOTE: *The number you enter for the gain setting should correspond to a percentage between 0 and 100. For example, a gain setting of 110 corresponds to a percentage of 50.*
	Example:
	`GGN1=55,$0D`
	Sets the green gain level on source input 1 to 55, or 25%.

INP	Activates the indicated source input.
	Syntax:
	`INP<input>`
	Variable:
	input = source input (1-4)
	Example:
	`INP1,$0D`
	Activates source input 1.

INP?	Queries the current active source input; returns the current source input.
	Syntax:
	`INP?,$0D`
	Sample Output:
	`INPUT=1`

LAMP?	Queries the lamp status of the display; returns the current lamp status.
	NOTE: *This command cannot be implemented on HDMI Passthru wallplates.*
	Syntax:
	`LAMP?,$0D`
	Sample Output:
	`"Lamp = xxxx"`
	where xxxx = number of hours
	If the system lamp time cannot be determined:
	"Lamp = Unknown"

MMD	Sets mono mode. In mono mode, the left and right inputs are mixed together and presented on both left and right output channels. Syntax: `MMD,$0D`

Continued ↴

Serial Commands	
MUT	Toggles the audio/video mute. **NOTE:** *This command cannot be implemented on HDMI Passthru wallplates.* Syntax: `MUT,$0D`

PBD	Sets the display port baud rate.
	Syntax:
	`PBD<baud>,<parity>,<data>,<stop>`
	Variables:
	baud = baud rates are: 115200, 57600, 38400, 19200, 9600, 4800, 2400, 1200.
	parity = N (none), O (odd), E (even).
	data = 7 or 8 data bits.
	stop = 1 or 2 stop bits.
	Example:
	`PBD115200,N,8,1`
	Sets the display port's baud rate to 115200 baud, no parity, 8 data bits, 1 stop bit.
	NOTE: *The AVX-400 does not send a response to this command.*

PDI	Returns from passthru mode; re-enables interrogation. Syntax: `PDI,$0D`
PEN	Puts the AVX-400 into passthru mode; disables all interrogation. Syntax: `PEN,$0D`

PSS	Sends a text string to the display port
	Syntax:
	`PSS$0D<text>`
	Variable:
	text = The message you want to send to the display port.
	Example:
	`PSS$0DPower On`

PWR?	Queries the power status of the display; returns the current power status.
	Syntax:
	`PWR?,$0D`
	Sample Output:
	`"Power = On"`
	`"Power = Off"`
	`"Power = Warming"`
	`"Power = Cooling"`
	If the system's power cannot be determined:
	"Power = Unknown"

RGN	Sets the red gain level for a source input. This command also applies to the Composite Video Gain on a composite UPX wallplate when you have one connected to the AVX-400.
	NOTE: *This command cannot be implemented on HDMI Passthru wallplates.*
	Syntax:
	`RGN<input>=<gain>`
	Variable:
	input = source input (1-4)
	gain = the red gain level setting between 0 and 100
	NOTE: *The number you enter for the gain setting should correspond to a percentage between 0 and 100. For example, a gain setting of 110 corresponds to a percentage of 50.*
	Example:
	`RGN3=165,$0D`
	Sets the red gain level on source input 3 to 165, or 75%.

SMD	Sets stereo mode Syntax: `SMD,$0D`
SMT	Turns on the audio/video mute Syntax: `SMT,$0D`

Continued ↴

Serial Commands	
SSW	Simulates pressing the select switch. Pressing the source select button activates the next valid source input. This command simulates a single pressing of the source select button on the presentation switcher. Syntax: `SSW,$0D`

TEMP?	Queries the temperature status of the display; returns the current temperature status.
	Syntax:
	`TEMP?,$0D`
	Sample Output:
	`"Temperature = xxxx"`
	where xxxx = temperature
	If the system temperature cannot be determined:
	"Temp = Unknown"

TON	Set an individual tone band to a specified level.
	Syntax:
	`TON<band>=<level>`
	Variable:
	band = tone band (1-7): (1=100Hz, 2=250Hz, 3=500Hz, 4=1KHz, 5=2.5 KHz, 6=5KHz, 7=10KHz)
	level = the decibel level setting between -20 and 20
	Example:
	`TON4=-6,$0D`
	Sets the 1KHz tone band to -6dB.

TON?	Queries the current tone band settings; returns the current tone band settings.
	Syntax:
	`TON?`
	Sample Output:
	`1=18dB`
	`2=10dB`
	`3=2dB`
	`4=-6dB`
	`5=1dB`
	`6=10dB`
	`7=15dB`

TON+	Increase the tone band by 0.5dB
	Syntax:
	`TON<band>+`
	Variable:
	band = tone band (1-7): (1=100Hz, 2=250Hz, 3=500Hz, 4=1KHz, 5=2.5 KHz, 6=5KHz, 7=10KHz)
	Example:
	`TON3+,$0D`
	Increases the 500Hz tone band by 0.5dB.

TON-	Decrease the tone band by 0.5dB
	Syntax:
	`TON<band>-`
	Variable:
	band = tone band (1-7): (1=100Hz, 2=250Hz, 3=500Hz, 4=1KHz, 5=2.5 KHz, 6=5KHz, 7=10KHz)
	Example:
	`TON6-,$0D`
	Decreases the 5KHz tone band by 0.5dB.

UMT	Turns off the audio/video mute. **NOTE:** *This command cannot be implemented on HDMI Passthru wallplates.* Syntax: `UMT,$0D`

Continued ↴

Serial Commands	

VEQ	Sets the video EQ for the source input
	NOTE: *This command cannot be implemented on HDMI Passthru wallplates.*
	Syntax:
	`VEQ<input>=<eq>`
	Variable:
	input = source input (1-4)
	eq = the EQ level setting between 0 and 120
	NOTE: *The number you enter for the EQ setting should correspond to a percentage between 0 and 100. For example, an EQ setting of 60 corresponds to a percentage of 50.*
	Example:
	`VEQ4=30,$0D`
	Sets the EQ level on source input 4 to 30, or 25%.

VEQ?	Queries the video EQ values for all inputs; returns all video EQ values for all source inputs.
	Syntax:
	`VEQ?`
	Sample Output:
	`EQ1=25`
	`EQ2=35`
	`EQ3=50`
	`EQ4=0`
	NOTE: *The number you enter for the EQ setting should correspond to a percentage between 0 and 100. For example, an EQ setting of 60 corresponds to a percentage of 50.*

VGN?	Queries the video gain values for all inputs; returns the video gain values for all source inputs. This command also applies to the Composite Video Gain on a composite UPX wallplate when you have one connected to the AVX-400.
	Syntax:
	`VGN?,$0D`
	Sample Output:
	`R1=110`
	`G1=110`
	`B1=110`
	`R2=110`
	`G2=110`
	`B2=110`
	`R3=140`
	`G3=140`
	`B3=140`
	NOTE: *The number for the gain setting corresponds to a percentage between 0 and 100. For example, a gain setting of 110 corresponds to a percentage of 50.*

VID?	Queries the current active source input; returns the current input driving the output.
	Syntax:
	`VID?`
	Sample Output:
	`"Input = PC"`
	`"Input = Component"`
	`"Input = Composite"`
	`"Input = HDMI"`
	If the video input cannot be determined:
	"Input = Unknown

VLA	Sets the amp volume to a specified setting in decibels.
	Syntax:
	`VLA=<volume>`
	Variable:
	volume = the amp volume level setting between -100 and 24dB
	Example:
	`VLA=20,$0D`
	Sets the balance out volume level to 20dB.

VLA+	Increase amp volume by 0.5dB. When the amplifier volume reaches its maximum level, the AVX-400 responds with "MAX". Syntax: `VLA+,$0D`

Continued ↴

Serial Commands	
VLA-	Decrease amp volume by 0.5dB. When the amplifier volume reaches its minimum level, the AVX-400 responds with "MIN". Syntax: `VLA-,$0D`

VLB	Sets the balance out volume to a specified setting in decibels.
	Syntax:
	`VLB=<volume>`
	Variable:
	volume = the balance out volume level setting between -100 and 24dB
	Example:
	`VLB=11,$0D`
	Sets the balance out volume level to 11dB.

VLB+	Increase balance out volume by 0.5dB. When the balance out volume reaches its maximum level, the AVX-400 responds with "MAX". Syntax: `VLB+,$0D`
VLB-	Decrease balance out volume by 0.5dB. When the balance out volume reaches its minimum level, the AVX-400 responds with "MIN". Syntax: `VLB-,$0D`
VMT	Toggle video mute Syntax: `VMT,$0D`

VOL	Sets amp and balance out volume to the same setting.
	Syntax:
	`VOL=<volume>`
	Variable:
	volume = the volume level setting between -100 and 24dB
	Example:
	`VOL=5,$0D`
	Sets the volume level to 5dB.

VOL?	Queries the current amp and balance out volume levels; returns the current volume levels.
	Syntax:
	`VOL?`
	Sample Output:
	`A=20dB`
	`B=11dB`

VOL+	Increases the volume by 0.5dB Syntax: `VOL+,$0D`
VOL-	Decreases the volume by 0.5dB Syntax: `VOL-,$0D`
VSM	Turns on the video mute. **NOTE:** *This command cannot be implemented on HDMI Passthru wallplates.* Syntax: `VSM,$0D`
VUM	Turns off the video mute. **NOTE:** *This command cannot be implemented on HDMI Passthru wallplates.* Syntax: `VUM,$0D`

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