USER MANUAL
VERSION: V1.0.0

VPX-1401
4x1: 2 Scaling Presentation Switcher

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.

COPYRIGHT NOTICE

LIABILITY NOTICE

AMX WARRANTY AND RETURN POLICY

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 make sure 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. These items should not be manufactured locally, since they are generally composed of highly resistive conductive materials to safely drain static discharges, without increasing an electrocution risk in the event of an accident.

Anyone performing field maintenance on AMX 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.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

WARNING: Do Not Open! Risk of Electrical Shock. Voltages in this equipment are hazardous to life. No user-serviceable parts inside. Refer all servicing to qualified service personnel.
Place the equipment near a main power supply outlet and make sure that you can easily access the power breaker switch.

WARNING: This product is intended to be operated ONLY from the voltages listed on the back panel or the recommended, or included, power supply of the product. Operation from other voltages other than those indicated may cause irreversible damage to the product and void the products warranty. The use of AC Plug Adapters is cautioned because it can allow the product to be plugged into voltages in which the product was not designed to operate. If the product is equipped with a detachable power cord, use only the type provided with your product or by your local distributor and/or retailer. If you are unsure of the correct operational voltage, please contact your local distributor and/or retailer.

FCC AND CANADA EMC COMPLIANCE INFORMATION:

This device complies with part 15 of the FCC Rules.
Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful 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:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Approved under the verification provision of FCC Part 15 as a Class A Digital Device.
Caution
Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this device.
CAN ICES-3 (B)/NMB-3(B)

EU COMPLIANCE INFORMATION:

Eligible to bear the CE mark; Conforms to European Union Low Voltage Directive 2006/95/EC; European Union EMC Directive 2004/108/EC; European Union Restriction of Hazardous Substances Recast (RoHS2) Directive 2011/65/EU; European Union WEEE (recast) Directive 2012/19/EU; European Union Radio and Telecommunications Terminal Equipment (R&TTE) Directive 1999/5/EC

WEEE NOTICE:

This appliance is labeled in accordance with European Directive 2012/19/EU concerning waste of electrical and electronic equipment (WEEE). This label indicates that this product should not be disposed of with household waste. It should be deposited at an appropriate facility to enable recovery and recycling.

Table of Contents

Overview

VPX-1401 is an advanced presentation switcher, allowing switching among four inputs and distribution to two outputs. It offers one VGA input with one balanced analog audio embedded, three HDMI inputs, one HDMI output to a local display, plus one balanced de-embedded analog audio output and one HDBaseT mirrored output to a remote display via a Cat X cable.

The VPX-1401 has one built-in scaler which supports up to 4K@60Hz 4:4:4 8bit. The video stream goes through the scaler first before distributing to two outputs. The scaler output can be set to fixed resolution or auto scaling. When set to auto scaling, the scaler analyzes the EDIDs of two connected displays and outputs optimum resolution for both displays.

The VPX-1401 can be set to auto switching or manual switching. The VPX-1401 can be controlled by front panel buttons, LAN control with NetLinx Studio, Telnet API and Web GUI.

Powered by HDBT 2.0 and DSC (Display Stream Compression), the VPX-1401 can transmit 4K@60Hz 4:4:4 8bit video up to 80m / 262 ft via a Shielded Cat 6a/7 cable, with USB 2.0 (Host), bidirectional RS232 and IR pass-through. HDBaseT output also features PoE (PSE) to power an HDBT receiver.

The VPX-1401 simplifies integration and installation of a small presentation system for classrooms and small offices, providing localized presentation switching support over long distances.

Features

- Provides one VGA input with balanced embedded audio, three HDMI inputs, one HDMI and HDBT mirrored outputs
- HDMI inputs, HDMI and HDBT outputs support up to 4K@60Hz 4:4:4 8bit and HDCP 2.2; VGA input supports up to 1920 x 1200@60Hz.
- Built-in scaler supports up to 4K@60Hz 4:4:4 8bit
- Supports one-way PoE to power a remote HDBT receiver
- HDBT transmits 4K@60 4:4:4 signals up to 80m/262 ft, 1080P signal up to 100m/328ft via a shielded Cat6a/7 cable.
- Transmits USB 2.0, bi-directional RS232 and IR signal over HDBT.
- Balanced de-embedded analog audio output with volume control.
- Auto-switching to the latest connected source input by detecting input signal status.
- Fast switching.
- Able to turn on/off connected displays automatically by detecting input signal status with its built-in CEC controller.
- Selection buttons on the front panel for local control and contact closures for remote keypad control.
- Supports LAN control through NetLinx Studio, Telnet API and WEB UI.

Package Contents

- 1 x VPX-1401
- 1 x DC 12V Power Adapter with US, UK and EU AC Power Cords
- 4x Phoenix Male Connector (3.5mm, 5 Pins)
- 1x Phoenix Male Connector (3.5mm, 6 Pins)
- 2 x Mounting Bracket (with Screws)

Specifications

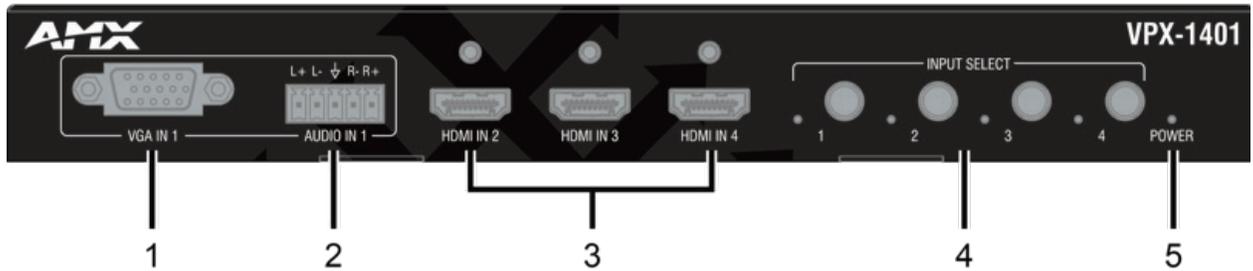| Technical	
Input	1 x VGA; 3 x HDMI
Input Signal Type	• HDMI with 4K@60Hz YUV 444, HDCP 2.2 • VGA
Input Resolution Supported	1280 x 1024 @ 75 Hz 1152 x 870 @ 75 Hz 1024 x 768 @ 60 Hz, 70 Hz, 75 Hz, 87 Hz 832 x 624 @ 75 Hz 800 x 600 @ 56 Hz, 60 Hz, 72 Hz, 75 Hz 720 x 400 @ 70 Hz, 88 Hz 640 x 480 @ 60 Hz, 67 Hz, 72 Hz, 75 Hz CEA Video Information Code (VIC) Formats: VIC = 1, 640 x 480p 59.94/60 Hz 4:3 VIC = 2, 720 x 480p 59.94/60 Hz 4:3 VIC = 3, 720 x 480p 59.94/60 Hz 16:9 VIC = 4, 1280 x 720p 59.94/60 Hz 16:9 VIC = 5, 1920 x 1080i 59.94/60 Hz 16:9 VIC = 6, 720(1440) x 480i 59.94/60 Hz 4:3 VIC = 7, 720(1440) x 480i 59.94/60 Hz 16:9 VIC = 14, 1440 x 480p 59.94/60 Hz 4:3 VIC = 15, 1440 x 480p 59.94/60 Hz 16:9 VIC = 16, Native 1920 x 1080p 59.94/60 Hz 16:9 VIC = 17, 720 x 576p 50 Hz 4:3 VIC = 18, 720 x 576p 50 Hz 16:9 VIC = 19, 1280 x 720p 50 Hz 16: 1280 x 1024 @ 75 Hz 1152 x 870 @ 75 Hz 1024 x 768 @ 60 Hz, 70 Hz, 75 Hz, 87 Hz 832 x 624 @ 75 Hz 800 x 600 @ 56 Hz, 60 Hz, 72 Hz, 75 Hz 720 x 400 @ 70 Hz, 88 Hz 640 x 480 @ 60 Hz, 67 Hz, 72 Hz, 75 Hz CEA Video Information Code (VIC) Formats: VIC = 1, 640 x 480p 59.94/60 Hz 4:3 VIC = 2, 720 x 480p 59.94/60 Hz 4:3 VIC = 3, 720 x 480p 59.94/60 Hz 16:9 VIC = 4, 1280 x 720p 59.94/60 Hz 16:9 VIC = 5, 1920 x 1080i 59.94/60 Hz 16:9 VIC = 6, 720(1440) x 480i 59.94/60 Hz 4:3 VIC = 7, 720(1440) x 480i 59.94/60 Hz 16:9 VIC = 14, 1440 x 480p 59.94/60 Hz 4:3 VIC = 15, 1440 x 480p 59.94/60 Hz 16:9 VIC = 16, Native 1920 x 1080p 59.94/60 Hz 16:9 VIC = 17, 720 x 576p 50 Hz 4:3 VIC = 18, 720 x 576p 50 Hz 16:9 VIC = 19, 1280 x 720p 50 Hz 16:9 VIC = 20, 1920 x 1080i 50 Hz 16:9 VIC = 21, 720(1440) x 576i 50 Hz 4:3 VIC = 22, 720(1440) x 576i 50 Hz 16:9 VIC = 29, 1440 x 576p 50 Hz 4:3 VIC = 30, 1440 x 576p 50 Hz 16:9 VIC = 31, 1920 x 1080p 50 Hz 16:9 VIC = 32, 1920 x 1080p 23.97/24 Hz 16:9 VIC = 33, 1920 x 1080p 25 Hz 16:9 VIC = 34, 1920 x 1080p 29.97/30 Hz 16:9 VIC = 39, 1920 x 1080i 50 Hz 16:9 VIC = 41, 1280 x 720p 100 Hz 16:9 VIC = 42, 720 x 576p 100 Hz 4:3 VIC = 43, 720 x 576p 100 Hz 16:9 VIC = 44, 720(1440) x 576i 100 Hz 4:3 VIC = 45, 720(1440) x 576i 100 Hz 16:9 VIC = 47, 1280 x 720p 119.88/120 Hz 16:9 VIC = 48, 720 x 480p 119.88/120 Hz 4:3 VIC = 49, 720 x 480p 119.88/120 Hz 16:9 800x600[8], 1024x768[8], 1280x720[8], 1280x768[8], 1280x800[8], 1280x960[8], 1280x1024[8], 1360x768[8], 1366x768[8], 1440x900[8], 1600x900[8] , 1600x1200[8], 1680x1050[8], 1920x1080[8], 1920x1200[8], 2560x1440[8], 2560x1600[8], 3840x2160P[2,3,5,8], 4096x2160P[2,3,5,8] 1 = at 23.98 Hz, 2 = at 24 Hz, 3 = at 25 Hz, 4 = at 29.97 Hz, 5 = at 30 Hz, 6 = at 50 Hz, 7 = at 59.94 Hz, 8 = 60 Hz
Maximum Pixel Clock	600MHz
Output	1 x HDMI, 1 x HDBaseT

Specifications

Technical (cont.)	
Output Signal Type	HDMI with 4K@60Hz YUV 444, HDCP 2.2
Output Resolution Supported	VESA: 800x600[8], 1024x768[8], 1280x768[8], 1280x800[8], 1280x960[8], 1280x1024[8], 1360x768[8], 1366x768[8], 1440x900[8], 1600x900[8], 1600x1200[8], 1600x1050[8], 1920x1200[8], 3840x2160[2,3,5,8], 4096x2160[2,3,5,8] and Auto Scaling SMPTE: 1280x720P[6,8], 1920x1080P[6,8] 1 = at 23.98 Hz, 2 = at 24 Hz, 3 = at 25 Hz, 4 = at 29.97 Hz, 5 = at 30 Hz, 6 = at 50 Hz, 7 = at 59.94 Hz, 8 = at 60 Hz
Control Method	• Auto switching • Front panel buttons • Contact closures • LAN (Telnet API, WEB UI) • NetLinx control
Audio	
Audio Input	1 x Balanced Analog Audio Inputs: 5-pin Phoenix Connector
Audio Output	1 x Balanced Analog Audio Output: 5-pin Phoenix Connector
Audio Format Supported	PCM 2.0
General	
Operating Temperature	0°C to 50°C (32°F to 122°F)
Storage Temperature	-10°C to 60°C (14°F to 140°F)
Humidity	5% to 85%, non-condensing
ESD Protection	Human-body Model: ±10kV (Air-gap discharge)/±5kV (Contact discharge)
Power Supply	DC 12V 5A
Power Consumption (Max)	42W
Device Dimension (W x H x D)	240mm x 30mm x 200.2mm/9.45" x 1.18" x 7.88"
Product Weight	1.35kg/2.97lb
Certification	CE, FCC, ETL, PSE, RCM

Transmission Distance

Note: Straight-through category cable wired to T568B standard is recommended

Cable Type	Cable Type	Cable Type
Shielded Cat 6a/7	100m/328 ft	1080P@60Hz
	80m/262 ft	4K@60 4:4:4
HDMI	Input/Output: 15m/50ft	1080P@60Hz
	Input: 5m/16ft Output: 10m/33ft	4K@60Hz 4:2:0
	Input/Output: 5m/16ft	4K@60Hz 4:4:4

Front Panel Description

No.	Name	Description
1	VGA IN 1	Connect to a VGA source.
2	AUDIO IN 1	Connect to an audio device for audio input, embedded with the VGA source.
3	HDMI IN (2-4)	Connect to HDMI sources.
4	INPUT SELECT	**INPUT Selection button**: Press to manually select a source as the current source input. The button function can be enabled through command control or WEB UI on NetLinx. • **1**: VGA IN 1 • **2-4**: HDMI IN 2-4 **LED**: LED is located on the left of the selection button. When the button function is enabled, pressing an input selection buttonwill light the LED Green.
5	POWER LED (Green)	On: VPX-1401 is powered on. Off: VPX-1401 is powered off.

Rear Panel Description

| No.	Name	Description
1	HDBT OUT	Connect to an HDBT receiver via a Cat 5e/6/7 cable. The port mirrors to HDMI OUT.
2	RS-232 & IR Connector	Connect to an RS232-enabled device, and an IR device.
3	HOST	Connect to the USB Host device, such as a PC.
4	HDMI OUT	Connect to an HDMI display.
5	LAN 10/100	Connect to an Ethernet device.
6	AUDIO OUT	Connect to an audio receiver for HDMI audio de-embedding output.
7	CONTACT IN	Connect pins 1-4 and ⏷ to a remote controller for switching among VGA and HDMI inputs. 1: Select VGA IN 1. 2: Select HDMI IN 2. 3: Select HDMI IN 3. 4: Select HDMI IN 4. ⏷ : Connect to Ground.
8	TALLY OUT	Connect pins 1-4 and ⏷ to a status display device such as LEDs to indicate which source is currently selected. 1: Positive signal means VGA IN is selected. 2: Positive signal means HDMI IN 2 is selected. 3: Positive signal means HDMI IN 3 is selected. 4: Positive signal means HDMI IN 4 is selected. ⏷ : Connect to Ground.
9	RESET	When VPX-1401 is powered on, use a pointed stylus to hold down the RESET button for three or more seconds, and then release it. It will reboot and restore to its factory defaults.
10	12V	Connect to the power adapter provided.

Pinout Information

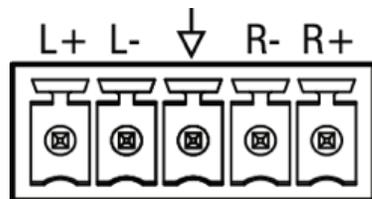The following figures show the pinouts of the Phoenix Connectors.

RS232&IR

Connects to the RS232 and IR devices with the 6-pole, 3.5mm captive screw connectors.
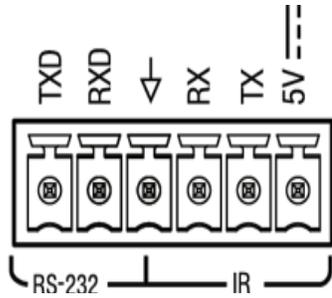
Audio IN/OUT

Connect to an audio device with the 3-pole, 3.5mm captive screw connector.

Installation

Warning: Before installation, ensure the device is disconnected from the power source.

Installation: Before installation, ensure the device is disconnected from the power source.

1. Attach the installation bracket to the enclosure using the four screws provided..
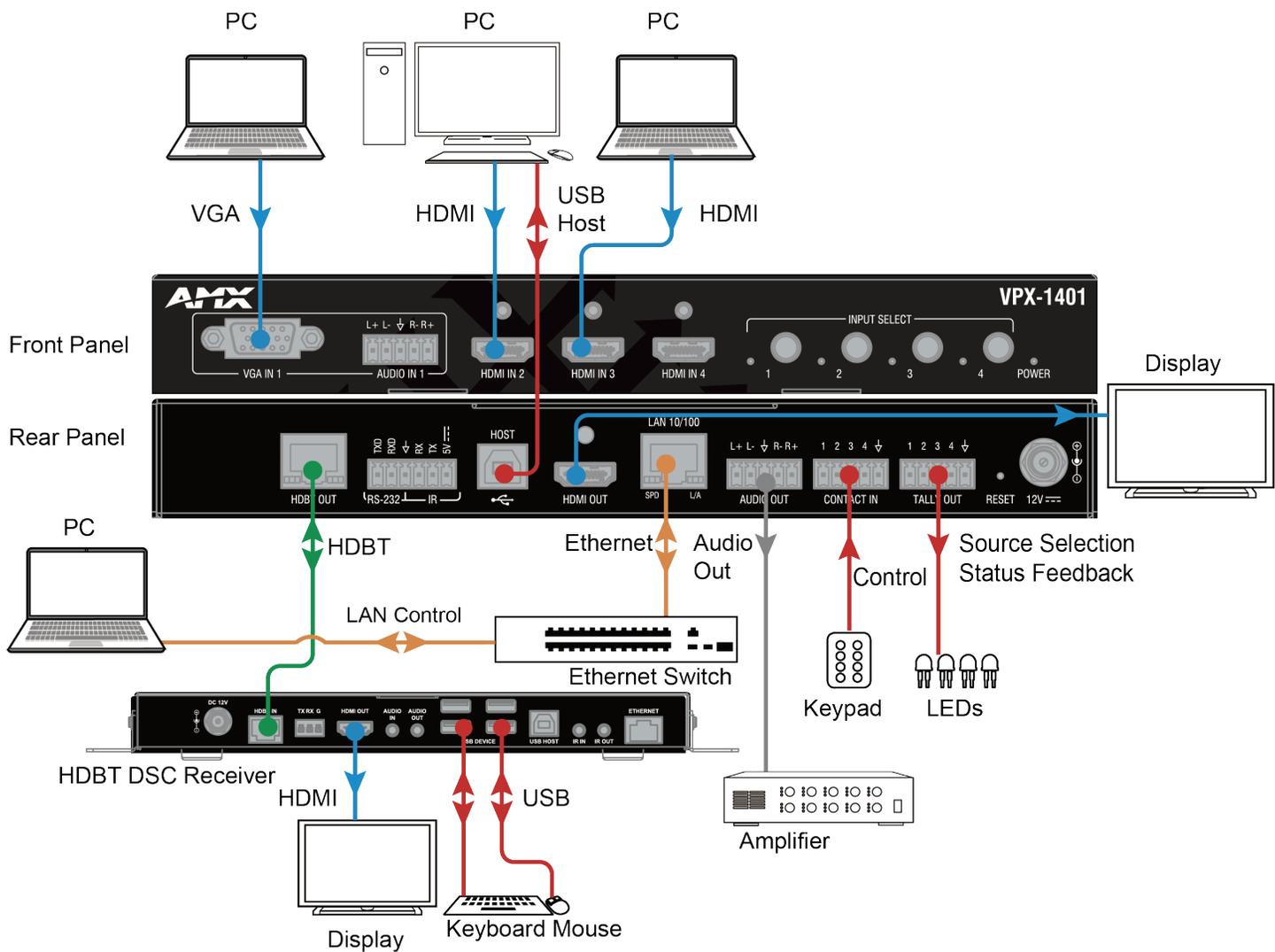2. The bracket is attached to the enclosure as shown.
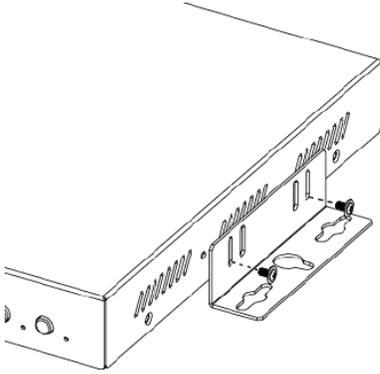
3. Repeat steps 1-2 for the other side of the unit.
4. Attach the brackets to a surface or suitable location with user supplied screws.

Wiring

Warning: Before installation, ensure the device is disconnected from the power source.

- Before wiring, disconnect the power from all devices.
- Connect and disconnect the cables with care.

1. Connect the video source
   Connect the VGA and HDMI sources (such as PC, Blu-ray player, Apple TV, 4K media player, etc) to the VGA IN and HDMI IN ports of the VPX-1401.
2. Connect HDMI OUT
   Connect an HDMI display device (such as TV, projector, LED/LCD display) to the HDMI OUT of the VPX-1401.
3. Connect AUDIO OUT
   Connect an audio receiver (e.g. an amplifier) to the AUDIO OUT of the VPX-1401.
4. Connect HDBT OUT
   Connect HDBT OUT of VPX-1401 to HDBT IN of an HDBT receiver with a Cat 5e/6/6a/7 cable.
5. Connections for additional control options:
   - LAN control (NetLinx/Telnet/Web UI): Connect a Local Area Network to the LAN port of the VPX-1401.
   - Input source switching control: Connect a keypad and LEDs to CONTACT IN and TALLY OUT ports for input switching and tally indication.
   - USB control: Connect a USB host to the VPX-1401, and USB devices to the HDBT receiver for remote KVM control.
   - RS232 pass-through: Connect an RS232 master device (or slave device) to the RS232 port of the VPX-1401, and an RS232 slave device (or master device) to the RS232 port of the remote receiver for bidirectional RS232 pass-through.
   - IR pass-through: Connect an IR emitter (or IR receiver) to the IR connector of the VPX-1401, and an IR receiver (or IR emitter) to the IR connector of the HDBT receiver for bi-directional IR pass-through.
6. Connect the power adapter provided to the VPX-1401.
   One-way PoE enables the VPX-1401 to power the remote HDBT DSC receiver along a single Cat X cable. No additional power adapter is required at the receiver.
7. Power on all attached devices.

When all connections are made and power is ON, check if all LED indicators on the VPX-1401 are normal to ensure the installation is successful. For LED indication, please refer to the Panel Description section.

PC   PC   PC

VGA   HDMI   USB Host   HDMI

Front Panel

Rear Panel

Display

PC

HDBT

Ethernet   Audio Out

Source Selection Status Feedback

LAN Control

Control

Ethernet Switch

Keypad   LEDs

HDBT DSC Receiver

HDMI   USB

Amplifier

Display   Keyboard Mouse

OSD

The VPX-1401 supports OSD (On Screen Display) to display its IP address. Follow these steps to initiate OSD:

1. Press and Hold the front panel buttons Input 1 and Input 2 for at least 3 seconds.

2. The IP address of the VPX-1401 will display at the upper right of the connected display's screen for about 15s and then disappear.
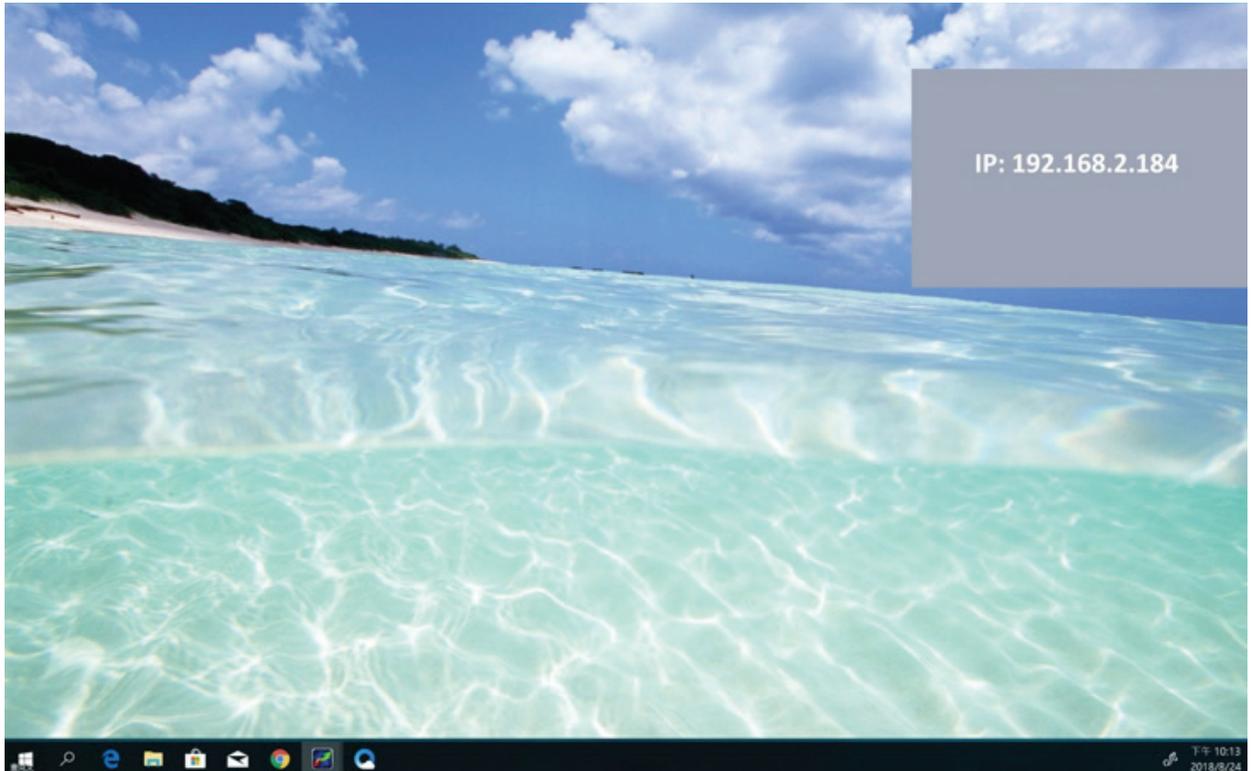
Input Source Switching

VPX-1401 supports Auto and Manual Switching among the VGA and HDMI inputs.

Auto Switching

1. When multiple sources are inserted, and power is ON for all devices, the input will be switched to the active source with the highest priority.

2. Priority: VGA IN 1 > HDMI IN 2 > HDMI IN 3 > HDMI IN 4

3. When a new source is inserted, the input will be switched to it automatically, following the Last-In-First-Out rule.

4. When the currently selected source is removed, the input will first be switched to the most recently selected port. If the port has no active source, the input will be switched to the active source with the highest priority.

Note:

• When in Auto Switching, Input Select buttons do not function. To use input select buttons, disable Auto Switching.

• The Auto Switching function is enabled by default once all devices are powered on.

• You can enable or disenable Auto Switching through command setting or WEB UI on NetLinx.

Manual Switching

If you want to select a specific input port using input selection buttons:

1. Disable Auto Switching through command setting or WEB UI on NetLinx.

2. Press the appropriate Input Select Button to select a desired input port. When an inactive port is selected, the VPX-1401 will output no signal.

IR Operation

The IR pass-through function allows emote control of the source from the display location or the display from the source location.

Control the Source

To control the source from the display location:

1.   Connect an IR emitter to IR port of the VPX-1401;

2.   Connect a broadband IR receiver to the IR IN port of an HDBT receiver.

When the connections are complete, the source can be controlled at the display location through a source remote.
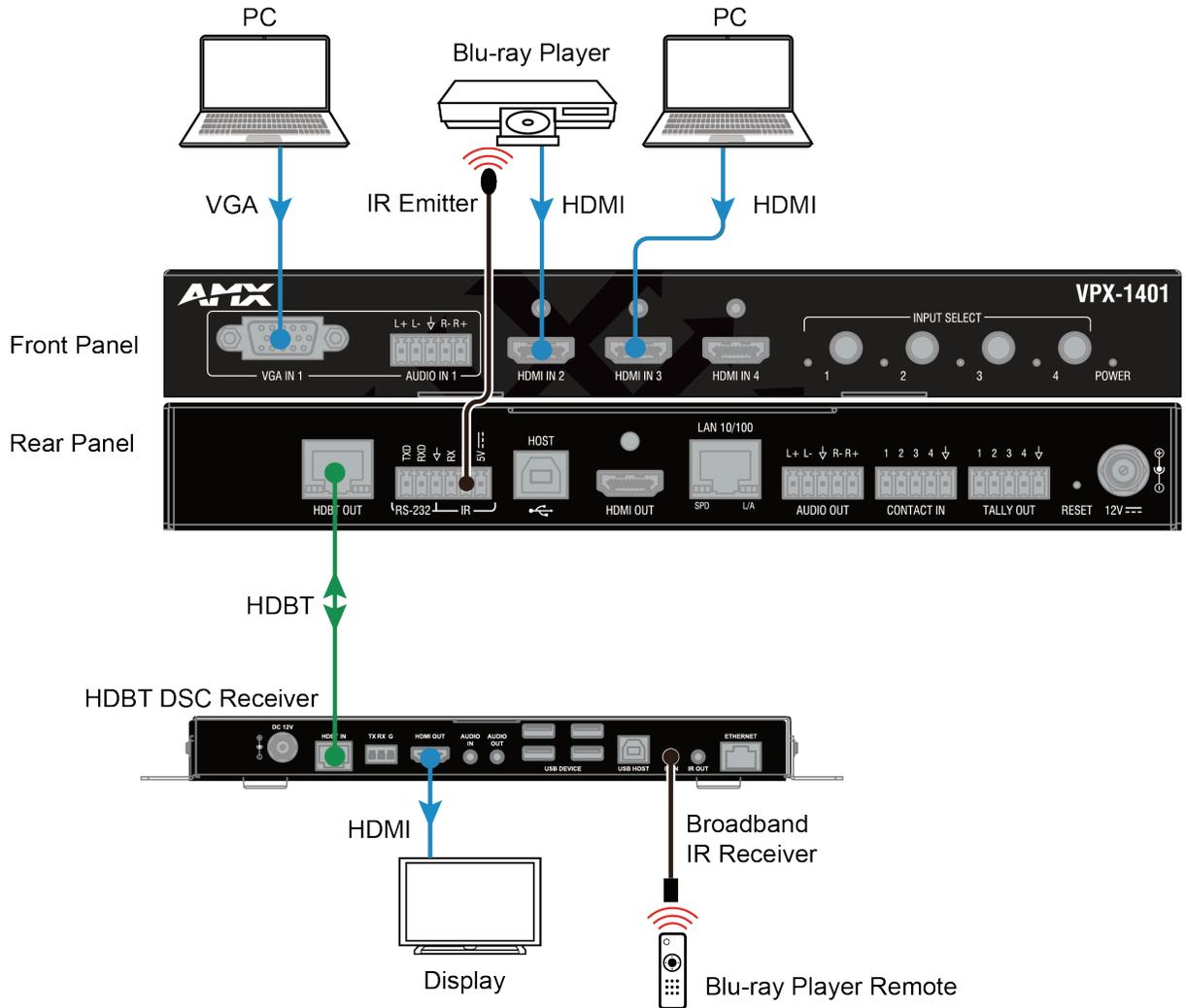
RS232 Operation

The RS232 port of the VPX-1401 can be used for bi-directional RS232 signal pass-through between VPX-1401 and an HDBT receiver.

To set up RS232 pass-through:

1. Connect an RS232 Master (or Slave) Device to the RS232 port of the VPX-1401 with an RS232 cable (See Pinout Information Section for RS232 wiring);

2. Connect an RS232 Slave (or Master) Device to the RS232 port of an HDBT receiver with an RS232 cable.

3. Connect HDBT OUT of the VPX-1401 to HDBT IN of the HDBT receiver with a Cat 5e/6/7 cable.

When the connections are complete, an RS232 signal can be passed through bi-directionally between two RS232 devices.
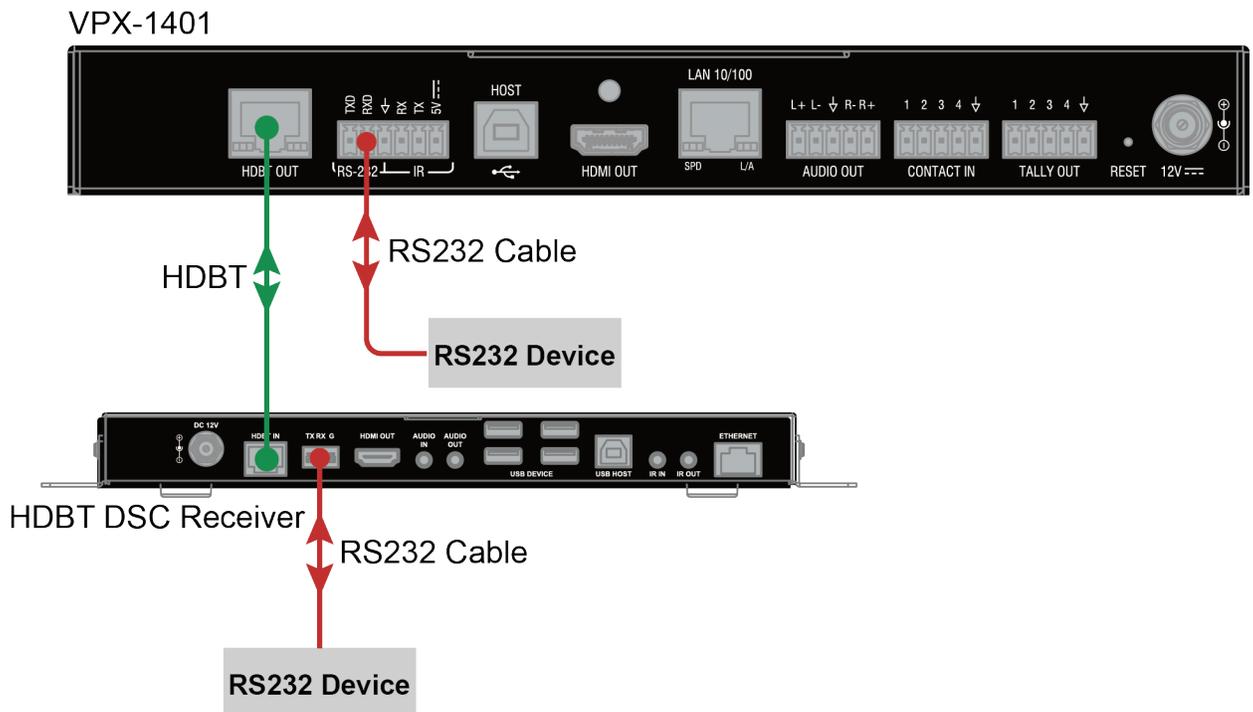
NetLinx Control

Controlling the VPX-1401 through NetLinx Studio.

Before launching the NetLinx Studio, connect the VPX-1401, PC, and control system (e.g. NX-3200) to the same network.

Device Number and Ports

Each VPX-1401 has its own Device Number (which is assigned when the unit is bound to a Control System) and the following ports.

Port 1: VGA IN 1 (AUDIO IN 1); HDMI OUT; HDBT OUT; AUDIO OUT

Port 2: HDMI IN 2

Port 3: HDMI IN 3

Port 4: HDMI IN 4

Port 5-8: Unused

Port 9: RS-232

Port 10: HOST

Port 11: IR

Port 12-21: Unused

Port 22: CONTACT IN

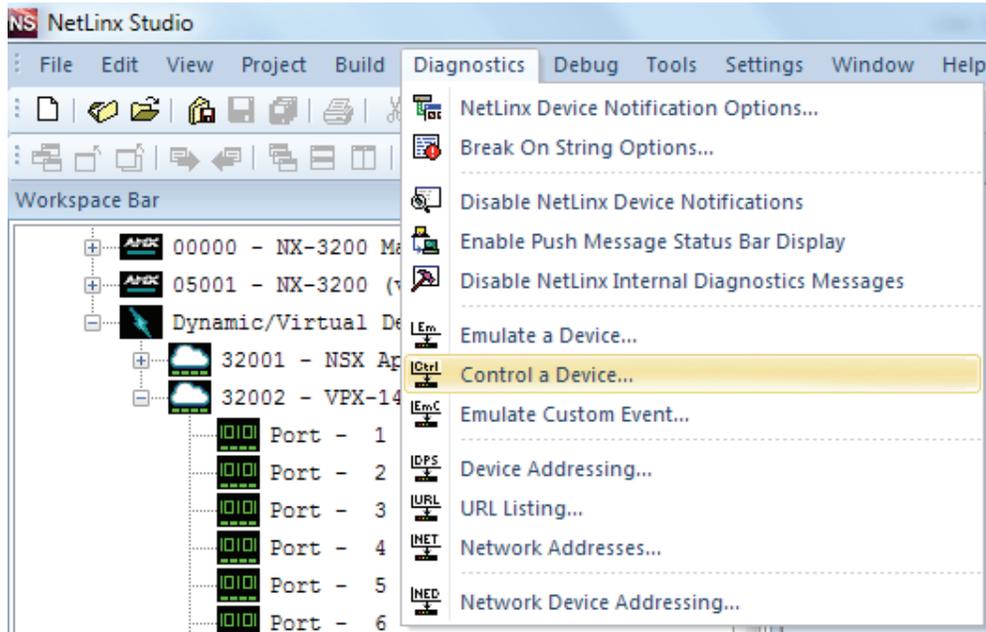Port 23: TALLY OUT

In NetLinx Studio's Online Tree, the VPX-1401 module displays its ports.
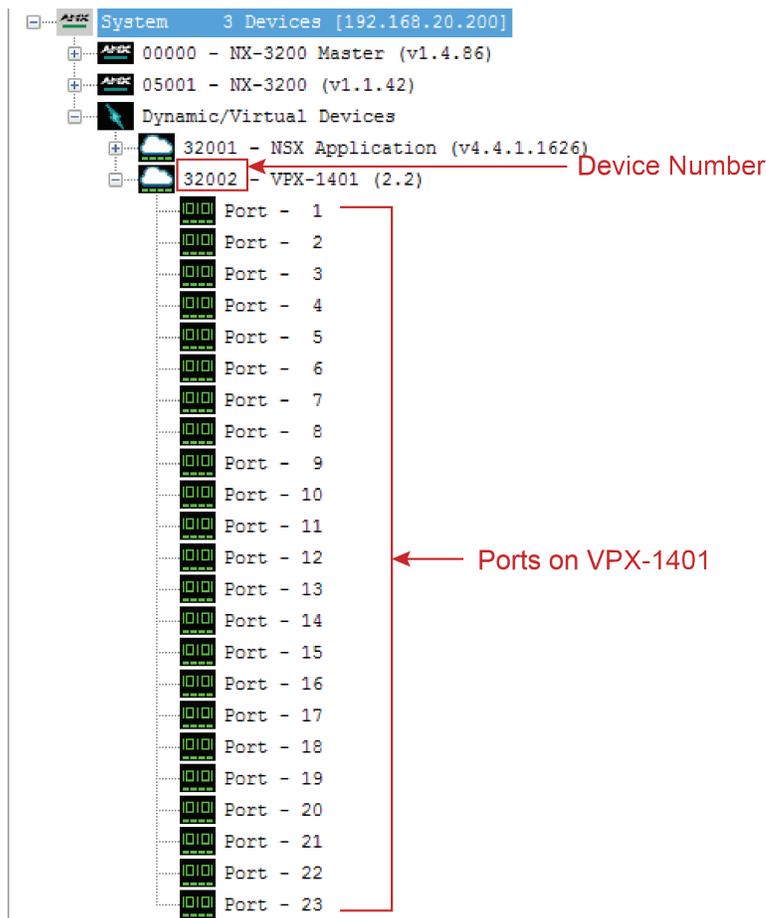
Send command to control a device

Click "**Diagnostics**" on the menu bar, select "**Control a Device**".

A window will display as follows, type the Device number, Port number, System and command respectively, and click "**Send To Device**". (For API commands, see the **Section API Command Set**.)
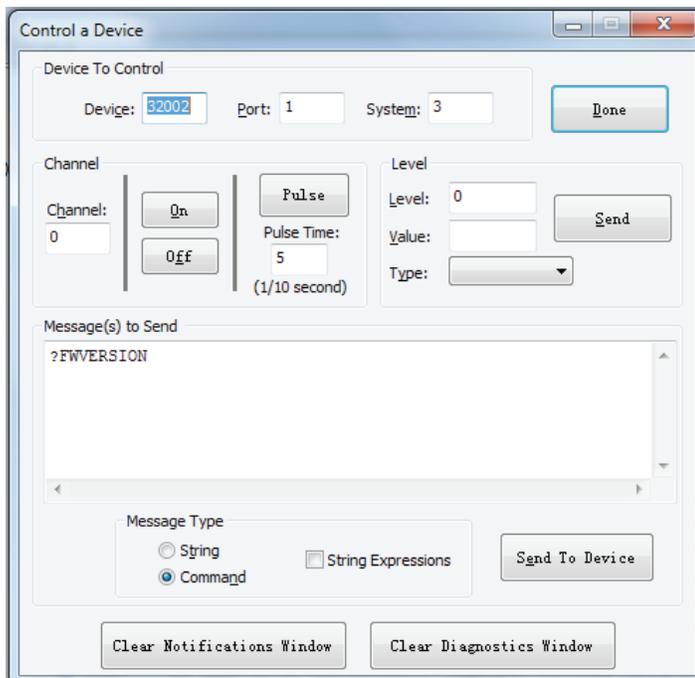
Launch Telnet Window

To launch Telnet Window,

1. Right click the Device Number in NetLinx Studio's Online Tree. Select "**TELNET Window**" – "**Launch TELENT Window via NetLinx Studio**" (or "**Launch TELENT Window via User Defined Program**").*
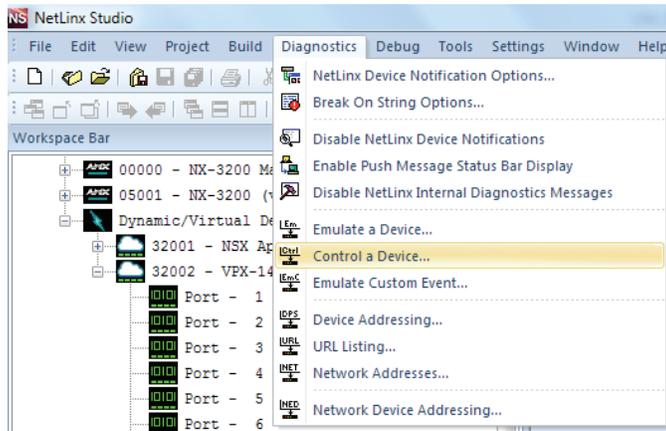
The Telnet window opens.
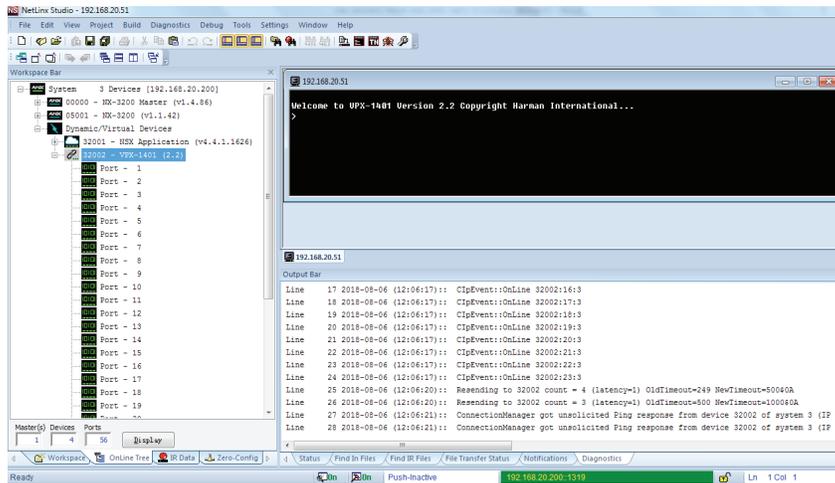
2. At the prompt (>), type the Telnet command and press Enter.

* If you select "**Launch TELENT Window via User Defined Program**", you may need to enable Telnet by completing the following:

(1) go to Start/Control Panel/Programs and Features;

(2) on the left, select "Turn Windows features on or off";

(3) select the check-boxes Telnet Client and Telnet Server, and click OK.
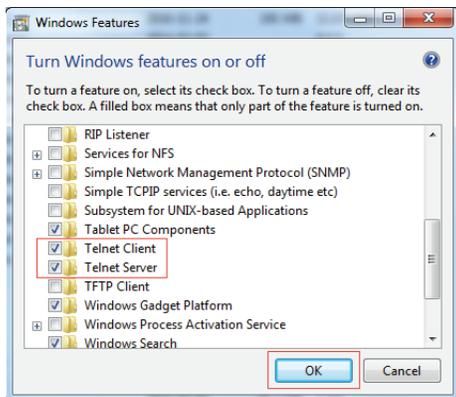
Web UI Control via NetLinx

To configure and control the device on the Web, right click the Device Number in the Online Tree Tab, choose "**Web Control Page**" – "**Launch Web Control Page via NetLinx Studio**".
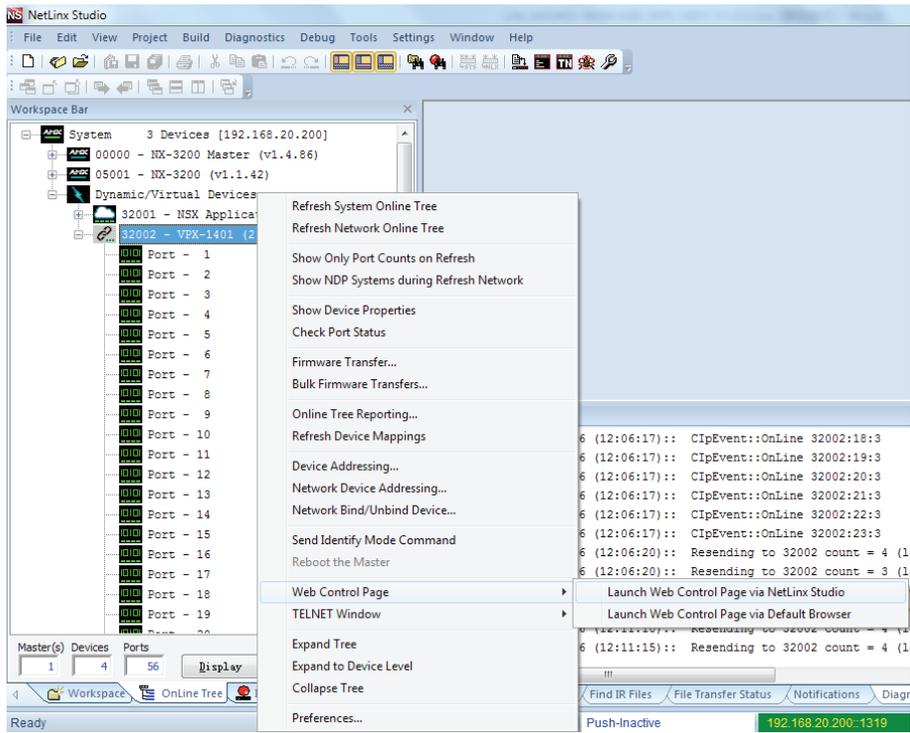
Web UI Control

The Web UI designed for the VPX-1401 allows basic controls and advanced settings of the device. The Web UI page can be accessed through NetLinx Studio.

To access the VPX-1401 Web UI:

1. Connect your PC and the LAN port of the VPX-1401 to the same local area network.

2. In NetLinx Studio's Online Tree, select "**Web Control Page**" – "**Launch Web Control Page via Default Browser**" (or select "**Launch Web Control Page via NetLinx Studio**").

   The following page will pop up. Enter the default password "admin" and click "Login".

The main screen displays as follows.
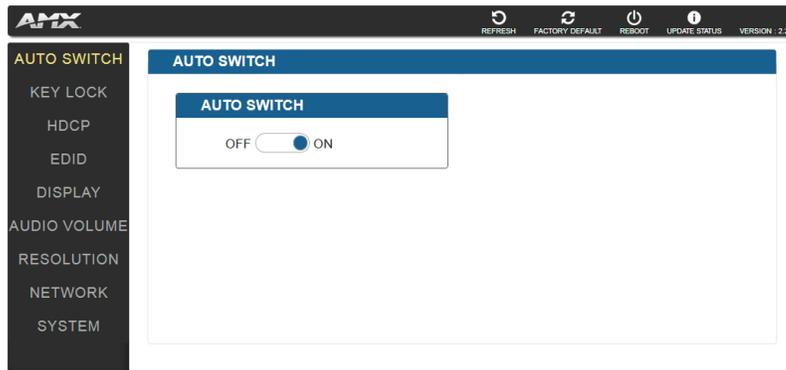
The Web UI page consists of several sections for basic and advanced settings: Auto Switch, Key Lock, HDCP Support, EDID Support, Auto Display Control, Relay Controller, Audio Output Volume, Output Resolution Setting, Network, Refresh, Factory Default, Reboot, Update Status.

Refresh

The Refresh Button is used to refresh the Web UI to the latest setting.

Factory Default

The Factory Default Button is used to reset the device to factory default settings.

To reset the device to factory default settings:

1. Click "Factory Default" button.
2. Click "OK" to proceed.
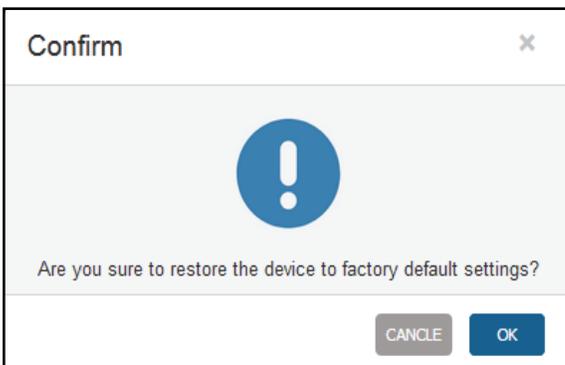
A successful reset will restore all the device settings to their factory defaults and the device will reboot automatically. Allow at least 2 minutes for the reboot to complete.

Reboot

The Reboot button is used to reboot the device.

To reboot the device:

3. Click "Reboot" button.
4. Click "OK" to proceed.
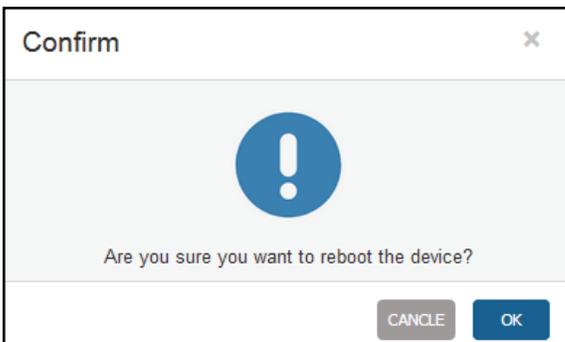
Update Status

The Update Status button   is used to view the device's firmware upgrade status.

Auto Switch

Auto Switch allows you to switch among multiple inputs without using the buttons on the front panel.

- **ON**: Click to enable Auto Switch (default setting).
- **OFF**: Click to disable Auto Switch.

Key Lock

Key Lock allows locking of the buttons on the VPX-1401 to prevent accidental or unwanted switching.

- **ON**: Click to enable Key Lock.
- **OFF**: Click to disable Key Lock (default setting).
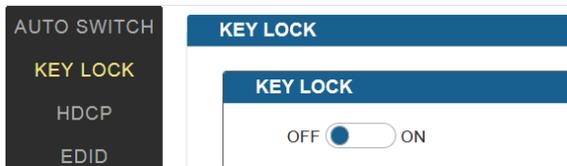
HDCP Support

HDCP Support allows you to enable or disable HDCP compatibility of each input.

- **ON**: Click to enable HDCP compatibility for the corresponding input, which will transmit HDCP protected content (default setting).
- **OFF**: Click to disable HDCP compatibility for the corresponding input, which will transmit non-HDCP protected content.
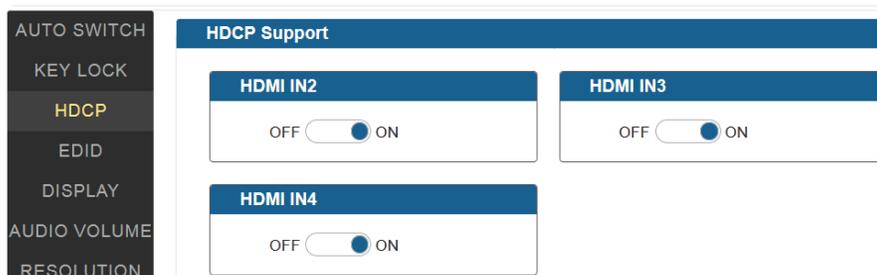
EDID Support

EDID Support allows configuration of the EDID setting of each input.

Locate the target input port and select the settings from its drop-down menu, then click "Apply" to perform the setting.

Display Control

Auto Display Control

Auto Display Control allows control of CEC-enabled displays connected to the VPX-1401 through HDMI.

- **ON**: Click to enable the Auto Display Control.
- **OFF**: Click to disable the Auto Display Control. (Default setting)
- **DELAY TIME (1~30 min)**: Click the down arrow to set the time for the display to power off automatically when no signal is present. Example: With the time set to 2 minutes, the output display will be powered off automatically when there is no signal input for 2 minutes.

The time range for Auto Display Control is 1-30 minutes.
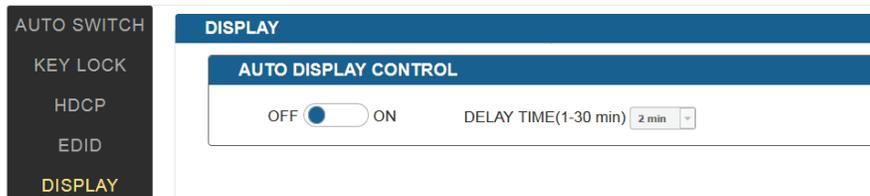
Audio Output Volume

- **Output Volume**: Move the slider to set the output audio volume.
- **Max/Min**: Move the sliders at the left and right sides of the scale to set the maximum and minimum range of the audio volume.
- **Mute**: Click to mute the audio.
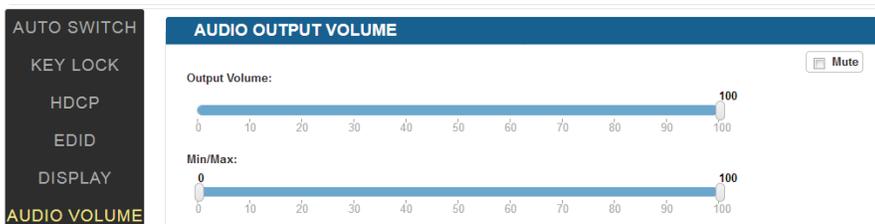
Output Resolution Setting

- **AUTO**: Click to set the output resolution to Auto mode (default setting). The output resolution may vary based on the connected display's native resolution.
- **MANUAL**: Click to set the output resolution to Manual mode. In Manual mode, click the down arrow to select a specific output resolution as required.
- **APPLY**: Click to set the output resolution to the desired setting.

Network

Device IP Mode:

- **DHCP**: When enabled, the IP address of the VPX-1401 will be assigned automatically by the connected DHCP server.
- **Static**: When the VPX-1401 fails to obtain or detect an IP address from the network to which it is connected, select "Static" to set up the IP address manually.
- **APPLY**: Click to set the network setting.

Allow 2-3 minutes for the device's LAN module to reboot and reconnect after the network setting is changed.

System

The system section is used to set the ICSP parameter, login password, Telnet/SSH On/off, Telnet Account and SSH Account.

1.   ICSP PARAMETER:
- **CONNECTION MODE**: includes four options: NDP, Auto IP, URL/TCP, URL/UDP. The default setting is NDP.
- **MASTER URL**: Input the connected master's URL.
- **SYSTEM NUMBER**: Use the Online Tree to determine the system number. By default, it is disabled to be configured.
- **DEVICE NUMBER**: Use the Online Tree to determine the device number. By default, it is disabled to be configured.

2.   LOGIN PASSWORD:

LOGIN PASSWORD:The Login Password can be changed. Default Login Password is **admin**.

3.   TELNET/SSH ACCESS

TELNET/SSH ACCESS is used to enable or disable Telnet/SSH capability. The default setting is **ON**.

Note: Reboot the device for the setting change to take effect.

4.   TELNET/SSH ACCOUNT

TELNET/SSH ACCOUNT is used to configure the user name and password of the account.

- **TELNET ACCOUNT**

The default user name and password are null.

- **SSH ACCOUNT**

The default user name is **admin**, the default password is **password**. **Note**: Reboot the device for the SSH ACCOUNT setting change to take effect.

- **APPLY**: Click to choose each of the settings.

Firmware Upgrade

The VPX-1401 uses KIT files for firmware upgrade.

Before Starting

1. Verify that you have the latest version of NetLinx Studio on your PC.

2. Download the latest firmware (KIT) file to your PC. (Place KIT files on a local drive for the fastest throughput.)

3. Verify the following:
   a) Verify that an Ethernet/RJ-45 cable is connected from the VPX-1401 to the same network as the control system.
   b) Verify the VPX-1401 unit is powered ON.

4. Launch NetLinx Studio and open the Online Tree.

5. Bind the device to the integrated Master: select and right-click the VPX-1401; from the context sensitive menu, select Network Bind/Unbind Device (be sure the check box is selected); click OK

Transferring KIT Files

1. In NetLinx Studio, choose Tools > Firmware Transfers > Send to NetLinx Device to open the "Send to NetLinx Studio" dialog.

2. Click to navigate to the target directory. The selected directory path is displayed in the Location text box. KIT files in the target directory display under File Name.
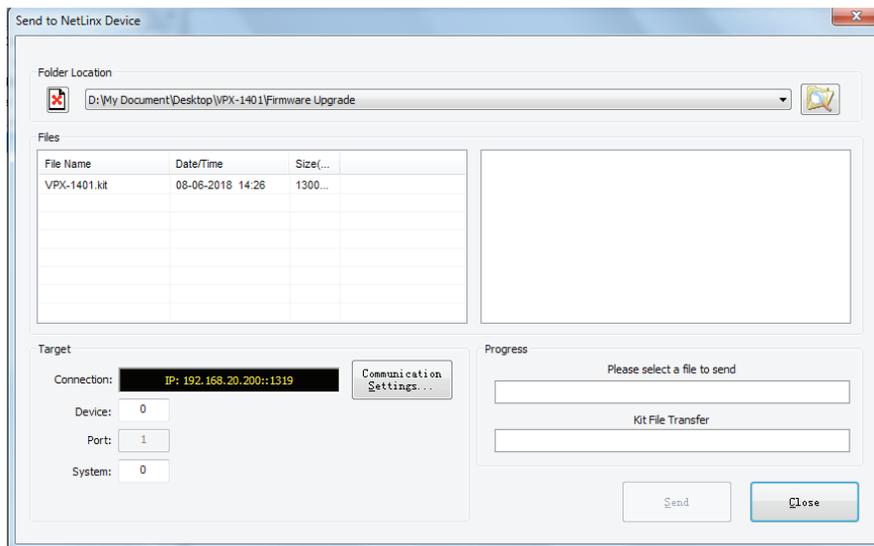
3. Select the appropriate KIT file from the File Name list.

4. Check the number of the Device to be upgraded in the Device text box.

   • The device number is 32002.

   • The system number is 3. (You can use the Online Tree to determine this)

5. Click **Send** to upgrade the firmware.

6. Click the button on Web UI page to check the upgrade status. When the process is completed, the device will restart automatically.

   Note:

   • The upgrade process will last 1 hour.

   • Do not power off the device until it has been successfully upgraded.

   • The device will restart two times to resume normal operation.
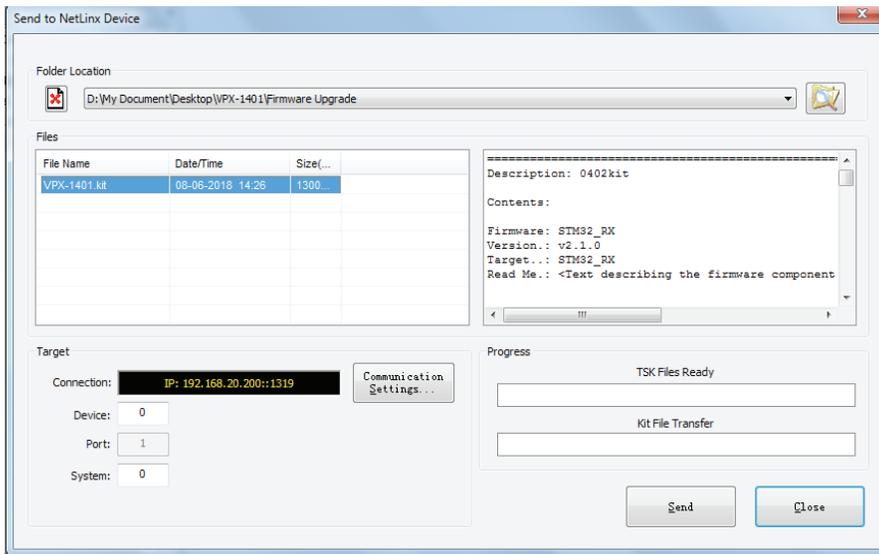
Troubleshooting

1. **Power**: Ensure all devices are powered on.

2. **Indicator**: Ensure all LED indicators of the VPX-1401 are normal according to the user manual.

3. **Devices**: Ensure picture can be shown normally when directly connecting a source to a display device.

4. **Cable**: Plug the HDMI/Cat X cable in and out or connect a different HDMI/Cat X cable. Ensure the specific cable length is within the available transmission range according to Specifications Section.

5. **Compatibility**: Test other source and display devices to determine correct compatibility.

API Command Set

NetLinx Commands

Device Port Name and Port Number

Model name	Port name	Port name
VPX-1401	VGA IN 1 (Audio in 1)	1
	HDMI IN 2	2
	HDMI IN 3	3
	HDMI IN 4	4
	RS-232	9
	IR	11
	HDMI OUT	1
	HOST	10
	HDBT OUT	1
	Audio out	1
	Contact IN	22
	Tally Out	23

NetLinx Command Set (cont.)

No.	Function Description	Syntax	Example
1	VIDIN_AUTO_SELECT To set the Auto Switch On/Off	**Command:** SEND_COMMAND <DEV>,'"VIDIN_AUTO_SELECT-<ENABLE|DISABLE>"' **Return:** VIDIN_AUTO_SELECT-<ENABLE|DISABLE>	**Command:** SEND_COMMAND <DEV>,'"VIDIN_AUTO_SELECT-DISABLE"' **Return:** VIDIN_AUTO_SELECT-DISABLE **Description:** Set Auto Switch Status off.
2	?VIDIN_AUTO_SELECT To verify the Auto Switch Status	**Command:** SEND_COMMAND <DEV>, "'?VIDIN_AUTO_SELECT"' **Return:** VIDIN_AUTO_SELECT-<ENABLE|DISABLE>	**Command:** SEND_COMMAND SWITCHER,'"?VIDIN_AUTO_SELECT"' **Return:** VIDIN_AUTO_SELECT-ENABLE **Description:** Get Auto Switch Status. The Auto Switch Status is on.
3	FP_LOCKOUT To set Key Lock On/Off	**Command:** SEND_COMMAND <DEV>,'"FP_LOCKOUT-<ENABLE|DISABLE>"' **Return:** FP_LOCKOUT-<ENABLE|DISABLE>	**Command:** SEND_COMMAND <DEV>,'"FP_LOCKOUT-DISABLE"' **Return:** FP_LOCKOUT-DISABLE **Description:** Set Key Lock off.
4	?FP_LOCKOUT To verify the Key Lock Status	**Command:** SEND_COMMAND <DEV>, "'?FP_LOCKOUT"' **Return:** FP_LOCKOUT-<ENABLE|DISABLE>	**Command:** SEND_COMMAND SWITCHER,'"?FP_LOCKOUT"' **Return:** FP_LOCKOUT-ENABLEE **Description:** Get Key Lock status. The Key Lock status is on.

5	CI<input>O<output>
	To execute a switch
		Command:
		SEND_COMMAND <DEV>, "'CI<input>O<output>"'
		
		Return:
		SWITCH-I<input>,OALL
		
		Description:
		<input>
		//{
		   1: VGA IN;
		   2: HDMI IN1;
		   3: HDMI IN2;
		   4: HDMI IN3;
		}
		<output>
		{ALL}
			Command:
			SEND_COMMAND SWITCHER,'"CI2OALL"'
			
			Return:
			SWITCH-I2,OALL
			
			Description:
			Switch HDMI IN1 to all outputs.

6	?INPUT
	To verify switch status
		Command:
		SEND_COMMAND <DEV>, "'?INPUT"'
		
		Return:
		SWITCH-L<sl>I<input>O<output>
		
		Description:
		<sl> : {ALL}.
		<input>
		//{
		   1: VGA IN;
		   2: HDMI IN1;
		   3: HDMI IN2;
		   4: HDMI IN3;
		}
		<output>
		{ALL}
			Command
			SEND_COMMAND SWITCHER,'"?INPUT"'
			
			Return:
			SWITCH-ALL,I1,OALL.
			
			Description:
			HDMI IN1 routes to all outputs

NetLinx Command Set (cont.)

No.	Function Description	Syntax	Example

7	?VIDIN_STATUS
	To verify Input signal status
		Command:
		SEND_COMMAND <DEV>,'"?VIDIN_STATUS'"
		
		Return:
		:
		VIDIN_STATUS-<status string>
		
		Description:
		input port:
		{
		   VGA IN;
		   HDMI IN1;
		   HDMI IN2;
		   HDMI IN3;
		}
		
		<status string>
		{
		   NO SIGNAL;
		   VALID SIGNAL;
		}
			Command:
			SEND_COMMAND VIDEO_INPUT_1,'"?VIDIN_STATUS'"
			
			Return:
			VIDIN_STATUS-NO SIGNAL
			
			Description:
			VGA IN Input no signal.

8	CEC_DISP_POWER To execute a display control on/off	**Command:** SEND_COMMAND <DEV>,"CEC_DISP_POWER-<ON|OFF>'" **Return**: CEC_DISP_POWER-<ON|OFF>	**Command:** SEND_COMMAND <DEV>,'"CEC_DISP_POWER-OFF'" **Return**: CEC_DISP_POWER-OFF **Description**: Execute a display control off.
9	CEC_DISP_AUTO To define the display control automatically	**Command:** SEND_COMMAND <DEV>,'"CEC_DISP_AUTO-<ON|OFF>'" **Return**: 'CEC_DISP_AUTO-<ON|OFF>	**Command:** SEND_COMMAND <DEV>,'"CEC_DISP_AUTO-OFF'" Return: CEC_DISP_AUTO-OFF Description: Define the display control automatically off.
10	?CEC_DISP_AUTO To verify the display control Status	**Command:** SEND_COMMAND <DEV>, "?CEC_DISP_AUTO'" **Return**: CEC_DISP_AUTO-<ON|OFF>	**Command:** SEND_COMMAND SWITCHER,'"?CEC_DISP_AUTO'" Return: CEC_DISP_AUTO-ON Description: Get the display control Status. The display control Status is on.

NetLinx Command Set (cont.)

No.	Function Description	Syntax	Example
11	CEC_SLEEP_TIMEOUT To define a Delay Time to control the display off when on active signal	**Command:** SEND_COMMAND <DEV>,'"CEC_SLEEP_TIMEOUT-<time>'" **Return**: CEC_SLEEP_TIMEOUT-<time> **Description**: time: {1 ~ 30}	**Command:** SEND_COMMAND <DEV>,'"CEC_SLEEP_TIMEOUT-5'" **Return**: CEC_SLEEP_TIMEOUT-5 **Description**: Set Delay Time as 5 Minutes.
12	?CEC_SLEEP_TIMEOUT To verify Delay Time to control the display off when on active signal	**Command:** SEND_COMMAND <DEV>, "'?CEC_SLEEP_TIMEOUT'" **Return**: CEC_SLEEP_TIMEOUT-<time> **Description**: time: {1 ~ 30}	**Command:** SEND_COMMAND SWITCHER,'"?CEC_SLEEP_TIMEOUT'" **Return**: CEC_SLEEP_TIMEOUT-5 **Description**: Get Delay Time to control the display off when on active signal. The Delay Time is 5 Minutes.

13	VIDIN_PREF_EDID
	To Set input EDID
		Command:
		SEND_COMMAND <DEV>,'"VIDIN_PREF_EDID-<resolution>'"
		
		Return:
		VIDIN_PREF_EDID-<resolution>
		
		Description:
		Input port:
		//{
		   VGA IN;
		   HDMI IN1;
		   HDMI IN2;
		   HDMI IN3;
		}
		
		<resolution>
		{
		For VGA Input
		   1920x1200,60
		   1920x1080,60
		   1680x1050,60
		   1600x900,60
		   1440x900,60
		   1360x768,60
		   1280x768,60
		   1024x768,60
		
		For HDMI Input
		   3840x2160,60
		   3840x2160,30
		   1920x1080,60
		   1280x720,60
		   1920x1200,60
		   1680x1050,60
		   1600x1200,60
		   1600x900,60
		   1440x900,60
		   1400x1050,60
		   1366x768,60
		   1280x1024,60
		   1280x960,60
		   1024x768,60
		   COPY
		}
			Command:
			SEND_COMMAND VIDEO_INPUT_2,'"VIDIN_PREF_EDID-1920x1200,60'"
			
			Return:
			VIDIN_PREF_EDID-1920x1200,60
			
			Description:
			Set fix EDID(1920x1200@60Hz 2CH))

NetLinx Command Set (cont.)

No.	Function Description	Syntax	Example

14	?VIDIN_PREF_EDID
	To Verify input EDID
		Command:
		SEND_COMMAND <DEV>, "'?VIDIN_PREF_EDID'"
		
		Return:
		VIDIN_PREF_EDID-<resolution>
		
		Description:
		Input port:
		//{
		   VGA IN;
		   HDMI IN1;
		   HDMI IN2;
		   HDMI IN3;
		}
		
		<resolution>
		{
		For VGA Input
		   1920x1200,60
		   1920x1080,60
		   1680x1050,60
		   1600x900,60
		   1440x900,60
		   1360x768,60
		   1280x768,60
		   1024x768,60
		
		For HDMI Input
		   3840x2160,60
		   3840x2160,30
		   1920x1080,60
		   1280x720,60
		   1920x1200,60
		   1680x1050,60
		   1600x1200,60
		   1600x900,60
		   1440x900,60
		   1400x1050,60
		   1366x768,60
		   1280x1024,60
		   1280x960,60
		   1024x768,60
		   COPY
		}
			Command:
			SEND_COMMAND VIDEO_INPUT_1,"'?VIDIN_PREF_EDID'"
			
			Return:
			VIDIN_PREF_EDID-1920x1200,60
			
			Description:
			the EDID of the Input is fix EDID 1920x1200@60Hz 2CH

15	VIDIN_HDCP
	To Set Input HDCP Compliant
		Command:
		SEND_COMMAND <DEV>, "'VIDIN_HDCP-<ENABLE | DISABLE>'"
		
		Return:
		VIDIN_HDCP-<ENABLE | DISABLE>
		
		Description:
		Input port:
		//{
		   HDMI IN1;
		   HDMI IN2;
		   HDMI IN3;
		}
			Command:
			SEND_COMMAND VIDEO_INPUT_3,"'VIDIN_HDCP-ENABLE'"
			
			Return:
			VIDIN_HDCP-ENABLE
			
			Description6
			Set HDMI IN2 HDCP Compliant.

16	?VIDIN_HDCP
	To Get Input HDCP Compliant Status
		Command:
		SEND_COMMAND <DEV>,"'?VIDIN_HDCP'"
		
		Return:
		VIDIN_HDCP-<ENABLE|DISABLE>
		
		Description:
		Input port:
		//{
		   HDMI IN1;
		   HDMI IN2;
		   HDMI IN3;
		}
			Command:
			SEND_COMMAND VIDEO_INPUT_3,"'?VIDIN_HDCP'"
			
			Return:
			VIDIN_HDCP-ENABLE
			
			Description:
			HDMI IN2 is HDCP Compliant.

No.	Function Description	Syntax	Example

17	VIDOUT_RES_REF
	To set output resolution
		Command:
		SEND_COMMAND <DEV>,'"VIDOUT_RES_REF-<horizontal>x<vertical>,<refresh-rate>"'
		
		Return:
		NULL
		
		Description:
		Variables:
		horizontal = An integer value representing the horizontal.
		vertical = An integer value representing the vertical. May have an additional qualifier such as 'i' or 'p'.
		refresh-rate = An integer value representing the refresh rate.
		
		{
		   4096x2160,60
		   4096x2160,30
		   4096x2160,25
		   4096x2160,24
		   3840x2160,60
		   3840x2160,50
		   3840x2160,30
		   3840x2160,25
		   3840x2160,24
		   1920x1200,60
		   1920x1080,60
		   1920x1080,50
		   1280x720,60
		   1280x720,50
		   1680x1050,60
		   1600x1200,60
		   1600x900,60
		   1440x900,60
		   1366x768,60
		   1360x768,60
		   1280x1024,60
		   1280x960,60
		   1280x800,60
		   1280x768,60
		   1024x768,60
		   800x600,60
		}
			Command:
			SEND_COMMAND VIDEO_OUTPUT_1,'"VIDOUT_RES_REF-1280x1024,60"'
			
			Return:
			VIDOUT_RES_REF-1280x1024,60
			
			Description:
			Set HDMI out resolution is 1280x1024@60

18	?VIDOUT_RES_REF
	To get output resolution
		Command:
		SEND_COMMAND <DEV>, '"?VIDOUT_RES_REF"'
		
		Return:
		VIDOUT_RES_REF-<horizontal>x<vertical>,<refresh-rate>
		
		Description:
		<horizontal>x<vertical>,<refresh-rate>
		{
		   4096x2160,60
		   4096x2160,30
		… …
		   1024x768,60
		   800x600,60
		
		}
			Command:
			SEND_COMMAND VIDEO_OUTPUT_1,'"?VIDOUT_RES_REF"'
			
			Return:
			VIDOUT_RES_REF-3840x2160,60
			
			Description:
			HDMI out resolution is 3840x2160@60.

19	REBOOT To cause a warm reboot	**Command:** SEND_COMMAND <DEV>, '"REBOOT"' **Return:** REBOOT Description: Cause a warm reboot.	**Command:** SEND_COMMAND 5002:1:0, '"REBOOT"' **Return:** SEND_COMMAND 5002:1:0, '"REBOOT"' **Description:** Cause a warm reboot.

NetLinx Command Set (cont.)

No.	Function Description	Syntax	Example
20	?FWVERSION To determine the system's Application Code version	**Command:** SEND_COMMAND <DEV>,'"?FWVERSION"' **Return:** FWVERSION <version-string>	**Command:** SEND_COMMAND dvRX,'"?FWVERSION"' **Return:** FWVERSION-SCALER_V1.05 FWVERSION-STM32_V1.4
21	VIDOUT_SCALE Set the scaling mode for the video output port	**Command:** SEND_COMMAND <DEV>,'"VIDOUT_SCALE-<AUTO|MANUAL>"' **Return:** VIDOUT_SCALE-<AUTO|MANUAL>	**Command:** SEND_COMMAND VIDEO_OUTPUT_1,'"VIDOUT_SCALE-AUTO"' **Return:** VIDOUT_SCALE-AUTO **Description:** Set scale mode as auto.
22	?VIDOUT_SCALE Get the scaling mode for the video output port	**Command:** SEND_COMMAND <DEV>, "'?VIDOUT_SCALE"' **Return:** VIDOUT_SCALE-<AUTO|MANUAL>	**Command:** SEND_COMMAND VIDEO_OUTPUT_1,'"?VIDOUT_SCALE"' **Return:** VIDOUT_SCALE-Auto **Description:** Scale mode as auto.
23	VIDOUT_MUTE Set the video mute mode for the video output port	**Command:** SEND_COMMAND <DEV>,'"VIDOUT_MUTE-<ENABLE|DISABLE>"' **Return:** VIDOUT_MUTE<ENABLE|DISABLE>	**Command:** SEND_COMMAND SWITCHER,'"VIDOUT_MUTE-ENABLE"' **Return:** VIDOUT_MUTE-ENABLE **Description:** Set Video mute mode is enable.

NetLinx Command Set (cont.)

No.	Function Description	Syntax	Example
24	?VIDOUT_MUTE Get the video mute mode for the video output port	**Command**: SEND_COMMAND <DEV>, "'?VIDOUT_MUTE'" **Return**: VIDOUT_MUTE<ENABLE|DISABLE>	**Command**: SEND_COMMAND SWITCHER,"'?VIDOUT_MUTE'" **Return**: VIDOUT_MUTE-DISABLE **Description**: Video mute mode is disable.
25	VIDOUT_ON Set the video on mode for the video output port	**Command**: SEND_COMMAND <DEV>,"'VIDOUT_ON-<ON|OFF>'" **Return**: 'VIDOUT_ON-<ON|OFF>	**Command**: SEND_COMMAND SWITCHER,"'VIDOUT_ON-ON'" **Return**: VIDOUT_ON-ON **Description**: Set Video on mode as on.
26	?VIDOUT_ON Get the video ON mode for the video output port	**Command**: SEND_COMMAND <DEV>, "'?VIDOUT_ON'" **Return**:' VIDOUT_ON-<ON|OFF>	**Command**: SEND_COMMAND SWITCHER,"'?VIDOUT_ON'" **Return**: VIDOUT_ON-OFF **Description**: Video on mode is disable.
27	VIDOUT_RGB Set the video color space for the video output port	Command: SEND_COMMAND <DEV>,"'VIDOUT_RGB-<ENABLE|DISABLE>'" **Return**: VIDOUT_RGB-<ENABLE|DISABLE>	**Command**: SEND_COMMAND SWITCHER,"'VIDOUT_RGB-ENABLE'" **Return**: VIDOUT_RGB-ENABLE **Description**: Set Video out color space as RGB.

No.	Function Description	Syntax	Example
28	?VIDOUT_RGB Get the video color space for the video output port	**Command:** SEND_COMMAND <DEV>, "'?VIDOUT_RGB'" **Return:** VIDOUT_RGB-<ENABLE|DISABLE>	**Command:** SEND_COMMAND SWITCHER,"'?VIDOUT_RGB'" **Return:** VIDOUT_RGB-DISABLE **Description:** Video out color space is YUV.
29	AUDOUT_MUTE Set the audio mute mode for the audio output port	**Command:** SEND_COMMAND <DEV>,"'AUDOUT_MUTE-<ENABLE|DISABLE>'" **Return:** AUDOUT_MUTE-<ENABLE|DISABLE>	**Command:** SEND_COMMAND dxDev,"'AUDOUT_MUTE-DISABLE'" **Return:** AUDOUT_MUTE-DISABLE **Description:** Set Audio mute mode as disable.
30	?AUDOUT_MUTE Get the audio mute mode for the audio output port	**Command:** SEND_COMMAND <DEV>, "'?AUDOUT_MUTE'" **Return:** AUDOUT_MUTE-<ENABLE|DISABLE>	**Command:** SEND_COMMAND dxDev, "'?AUDOUT_MUTE'" **Return:** AUDOUT_MUTE-disable **Description:** Audio mute mode is disable.
31	AUDOUT_MAXVOL Set the audio max vol for the audio output port	**Command:** SEND_COMMAND <DEV>, "'AUDOUT_MAXVOL-<value>'" **Return:** AUDOUT_MAXVOL-<value> **Description:** Variable: <value> = {0~100}	**Command:** SEND_COMMAND AUDIO_OUTPUT_1, "'AUDOUT_MAXVOL-75'" **Return:** AUDOUT_MAXVOL-75 **Description:** Set Audio max as 75.
32	?AUDOUT_MAXVOL Get the audio max vol for the audio output port	**Command:** SEND_COMMAND <DEV>, "'?AUDOUT_MAXVOL'" **Return:** AUDOUT_MAXVOL-<value> **Description:** <value> = {0~100}	**Command:** SEND_COMMAND AUDIO_OUTPUT_1, "'?AUDOUT_MAXVOL'" **Return:** AUDOUT_MAXVOL-<100> **Description:** Audio max is 100.
33	AUDOUT_MINVOL Set the audio min vol for the audio output port	**Command:** SEND_COMMAND <DEV>, "'AUDOUT_MINVOL-<value>'" **Return:** 'AUDOUT_MINVOL-<value> **Description:** <value> = {0~100}	**Command:** SEND_COMMAND AUDIO_OUTPUT_1, "'AUDOUT_MINVOL-5'" **Return:** AUDOUT_MINVOL-5 **Description:** Set Audio min as 5.

NetLinx Command Set (cont.)

No.	Function Description	Syntax	Example
34	?AUDOUT_MINVOL Get the audio min vol for the audio output port	**Command:** SEND_COMMAND <DEV>, "'?AUDOUT_MINVOL'" **Return:** AUDOUT_MINVOL-<value> **Description:** <value> = {0~100}	**Command:** SEND_COMMAND AUDIO_OUTPUT_1, "'?AUDOUT_MINVOL'" **Return:** AUDOUT_MINVOL-0 **Description:** Audio min is 0.
35	AUDOUT_VOLUME Set the audio vol for the audio output port	**Command:** SEND_COMMAND <DEV>, "'AUDOUT_VOLUME-<VALUE>'" **Return:** AUDOUT_VOLUME-<VALUE> **Description:** <value> = {0~100}	**Command:** SEND_COMMAND AUDOUT_VOLUME_1, "'AUDOUT_VOLUME-50'" **Return:** AUDOUT_VOLUME-50 **Description:** Set Audio vol as 50.
36	?AUDOUT_VOLUME Get the audio vol for the audio output port	**Command:** SEND_COMMAND <DEV>, "'?AUDOUT_VOLUME'" **Return:** AUDOUT_VOLUME-<value> **Description:** <value> = {0~100}	**Command:** SEND_COMMAND AUDOUT_VOLUME_1, "'?AUDOUT_VOLUME'" **Return:** AUDOUT_VOLUME-50 **Description:** Audio volume is 50.

Telnet/SSH Commands

No.	Command	Description	Example
1	**help**	Display all of the supported commands	**>help** cpu usage Displays the total CPU usage. date Display the current date. dns list Show the DNS configuration of this device. get ip Show the IP configuration of this device. ......
2	**cpu usage**	Display the total CPU usage usage: cpu usage	**>cpu usage** CPU usage is 25%
3	**date**	Display the current date. Usage: date	>date The current date is: Thursday, January 1, 1970

4	**get ip**	Show the IP configuration of this device.	>get ip
			
			--- Current IP Settings ---
			  Hostname: XXX
			  IP Address: 192.168.2.201
			  Netmask: 255.255.240.0
			  DHCP: false

5	**ping**	Ping an address. Address may be an IP or URL.	>ping 192.16.2.203 PING 192.16.2.203 (192.16.2.203): 56 data bytes
6	**reset factory**	Reset configuration back to factory defaults.	**>reset factory**

7	**set date**	Set the current date.	>set date
			
			Usage: set date [day] [month] [year]
			
			Arguments:
			  day integer of day of the week between 1 and 31
			  month integer of month between 1 and 12
			  year integer value of year later than 1900
			
			Example:
			  set date 01 11 2016

8	**set ip**	Setup the IP configuration of this device.	**>set ip**
			
			 --- Enter New Values or just hit Enter to keep current settings ---
			
			  Enter IP Address 192.168.2.201 192.168.2.202
			  Enter Netmask 255.255.240.0 255.255.255.0
			
			 --- New settings ---
			  IP Address 192.168.2.202
			  Netmask 255.255.255.0
			
			 Would you like to save the new settings? Y/N -> y
			
			 New settings were saved.

Telnet/SSH Commands (cont.)

No.	Command	Description	Example
9	**set time**	Set the current time.	>set time Usage: set time [hours] [minutes] [seconds] Arguments: hours integer value of hours between 0 and 23 minutes integer value of minutes between 0 and 59 seconds integer value of seconds between 0 and 59 Example: set time 13 30 00
10	**show mem**	Display the memory usage for all memory types.	>show mem RAM available: 349634560 bytes RAM total: 406167552 bytes
11	**time**	Display the current time.	>time The current time is: 11: 57: 09 PM
12	**show vs100 stats**	Display DXLink transport information (MSE values, length, etc.).	>show vs100 stats VS100 STATS: 50.
13	**echo**	Enable/disable echo of typed characters.	>echo Usage: echo [argument] Arguments: on Enable echo of typed characters off Disable echo of typed characters Example: echo on
14	**exit**	Close this terminal session.	**>exit**
15	**msg**	Enable/Disable extended diagnostic messages	>msg Usage: msg [argument] This command allows system logs to be redirected to the terminal session. There are multiple log levels, which are described below. Arguments: on Enable default [warning] system log level debug Enable all system debug messages info Enable info system log level warning Enable warning system log level error Enable error system log level off Disable system log output to terminal session Example: msg on

Telnet/SSH Commands (cont.)

No.	Command	Description	Example
16	**reboot**	Reboot the device.	**>reboot**

17	**set dns**	Set DNS service	>set dns
			
			--- Enter new values or keep current settings at the prompts ---
			
			-- Current DNS #1 --
			  Change the current value? Y/N -> y
			  Enter DNS #1 192.168.2.1
			
			-- Current DNS #2 --
			  Change the current value? Y/N -> Y
			  Enter DNS #2 192.168.3.1
			
			Would you like to save the new settings? Y/N -> Y
			
			New settings were saved...

18	**dns list**	Display the current dns.	>dns list Domain Name: amx.com DNS List: DNS #1: 192.168.2.1 DNS #2: 192.168.3.1
19	**set friendlyname**	Set friendlyname	>set friendlyname Please input friendlyname: Old friendlyname: New friendlyname: 111 Would you like to save this setting(Y/N) y Setting is ok , you should reboot that make it effective
20	**set location**	It's setting location.	>set location Please input location: Old location: New location: 333 Would you like to save this setting(Y/N) y Setting is ok , you should reboot that make it effective

21	**set connection**	Set the master connection settings	>set connection
			
			--- Enter New Values or just hit Enter to keep current settings ---
			
			Enter Mode
			  Type T for TCP/URL, U for UDP/URL, N for NDP
			  or A for Auto and then Enter: Icsp_Auto A
			Enter Master System Number: 1 1
			
			--- New settings ---
			System Number 1
			Master Port 1319
			Is this correct? Type Y or N and Enter -> Y
			Changed && Saved

22	**get connection**	Get the master connection settings.	>get connection
			
			  Connection Mode: Icsp_Auto
			  System Number: 1
			  Master Ip/URL
			  Master Port: 1319

Telnet/SSH Commands (cont.)

No.	Command	Description	Example
23	**set telnet username**	Set telnet service login username	>set telnet username Enter Telnet new username 123 Would you like to set this username (y/n) y (please set telnet password) Changed && Saved
24	**set telnet password**	Set telnet service login password	>set telnet password Enter Telnet new password 456 Would you like to set this password (y/n) y Changed && Saved
25	**set ssh username**	Set ssh service login username	>set ssh username Enter ssh new username admin admin Would you like to set this username (y/n) y Changed && Saved (you should reboot this device that make your setting active)
26	**set ssh password**	Set ssh service login password	>set ssh password Enter ssh new password password pass Would you like to set this password (y/n) y Changed && Saved (you should reboot this device that make your setting active)

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