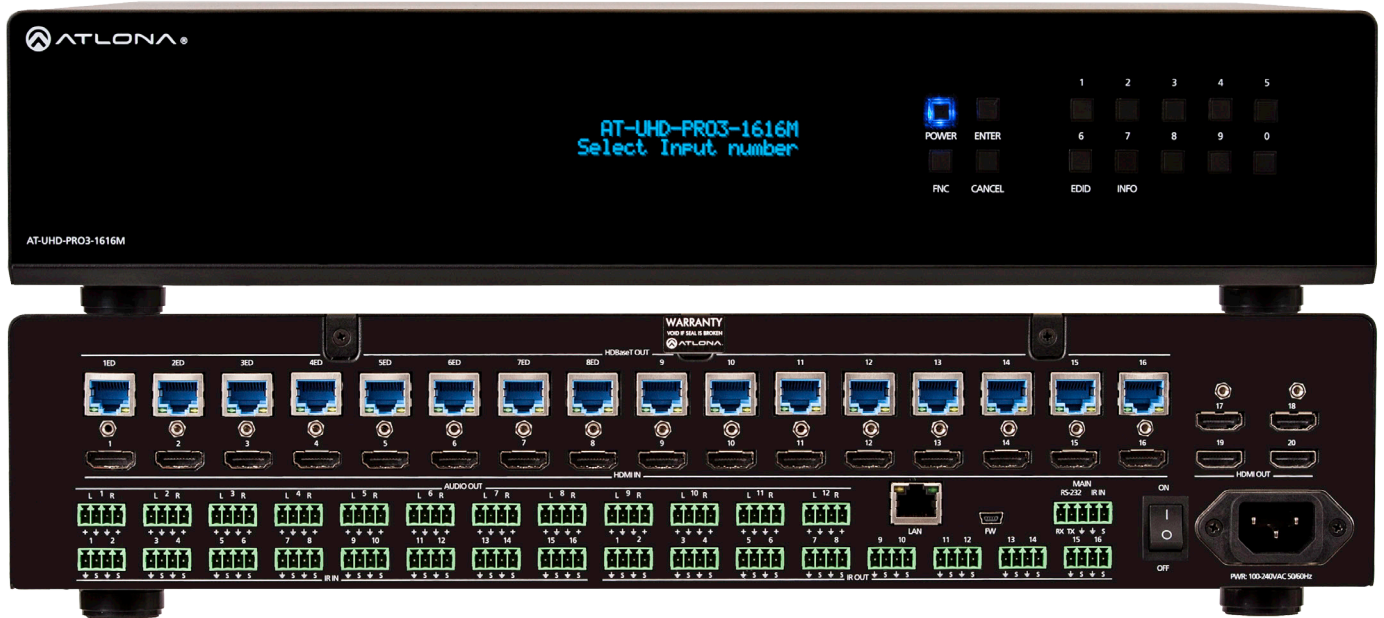


4K/UHD Dual-Distance 16x16 HDMI to HDBaseT Matrix Switcher with PoE

AT-UHD-PRO3-1616M

User Manual



Please check <http://www.atlona.com/product/AT-UHD-PRO3-1616M> for the most recent **firmware update** or **manual**.

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Introduction

The 4K/UHD Dual-Distance 16x16 HDMI to HDBaseT Matrix Switcher with PoE is a multi zone switcher with long distance and extended distance ports, multiple control options, supports HDCP 2.2, and multi-channel audio up to Dolby Atmos.

Package Contents

- 1 x AT-UHD-PRO3-1616M
- 28 x 4 pin captive screw female connector
(8 x IR IN, 8 x IR OUT, 12 x Audio OUT)
- 1 x 5 pin captive screw female connector - IR (2 pin), RS-232 (3 pin)
- 1 x IEC C13 power cable
- 1 x IR Remote control
- 1 x Pair of rack mount ears
- 1 x User Manual

Features

- Supports resolutions up to 4K (UHD) 60Hz @ chroma sub-sampling 4:2:0 8-bit
- Extended distance ports extend IR, RS-232, and audio/visual content up to 328ft over a single category cable
- Long distance ports extend IR, RS-232, and audio/visual content up to 230ft over a single category cable
- Four HDMI outputs which can be set to mirror or matrix mode
- PoE (Power over Ethernet) to power up to sixteen compatible PoE EX series receivers
(Ex. AT-UHD-EX-100CE-RX or AT-UHD-EX-70C-RX)
- EDID learning for up to 20 video display EDIDs
- Built in internal EDID mode provides 14 unique EDIDs to ensure compatibility
- Multiple control options such as RS-232, IR, TCP/IP, WebGUI, and front panel
- 2Ch audio de-embedding through captive screw ports
- Independent zone volume control, mute, and 5 band EQ for captive screw audio outputs
- HDCP 2.2 compliant
- Multi-channel audio pass through up to Dolby Digital Plus, Dolby TrueHD, DTS-HD Master Audio, and Dolby Atmos
- Supports digital audio up to 24-bit, 192 kHz
- Internal international power supply

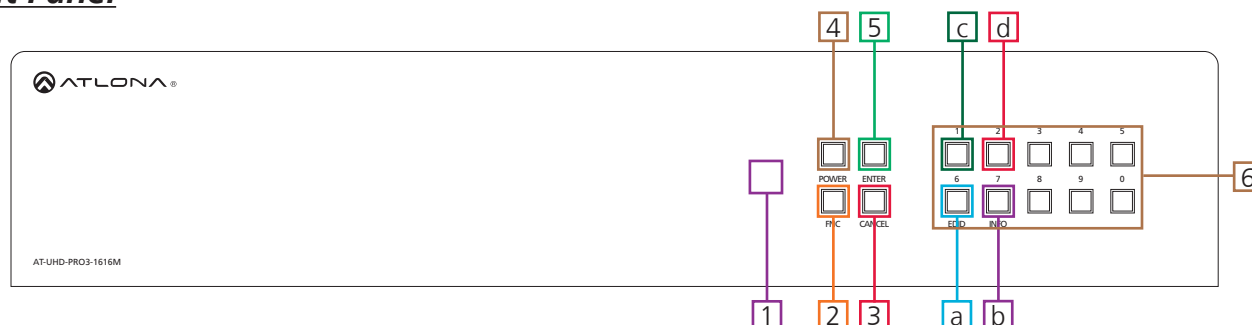
Before You Start

- Make sure when connecting a category cable a 568B termination method is used. See page 6 for more details.
- Use a component surge suppressor with line conditioning for best results.

Note: Atlona's warranty does not cover damage due to electrical disturbances. A component surge suppressor with line conditioning is highly suggested, especially in areas with electrical storms.

Panel Description

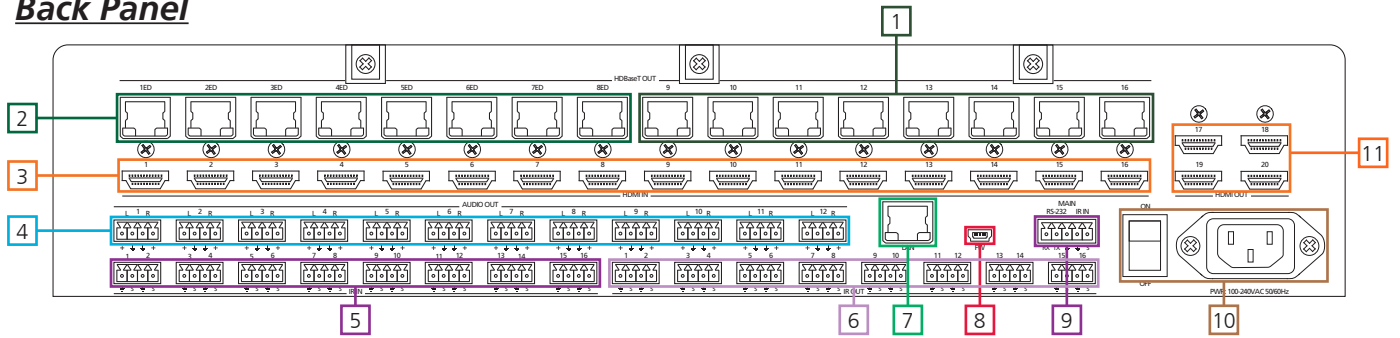
Front Panel



1. IR Receiver Window - Receives the signal from the included IR hand held remote control or 3rd party controller
2. Function (FNC) Button - Select for command options (blue backlight when selected)
 - a. **EDID:** Save/Load EDIDs to individual inputs
 - b. **INFO:** Displays the firmware, IP, and MAC address
 - c. **1:** Save a single input to all the outputs with this function
 - d. **2:** View additional matrix and zone output RS-232 baud settings
3. Cancel Button - Within the function menu use this button to go back one screen or to return to the home screen

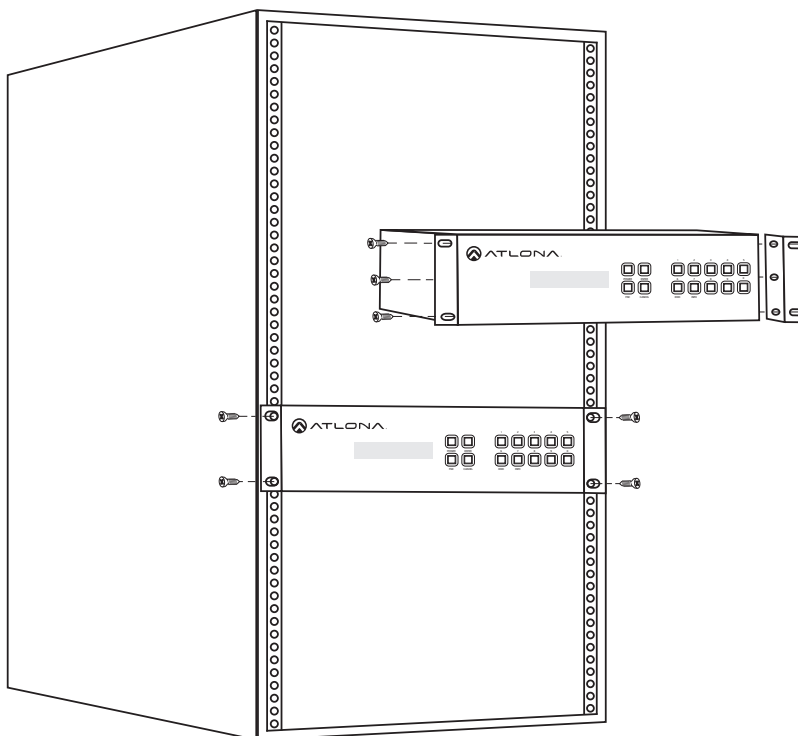
Note: You cannot power off or change functions unless you return to the home screen
4. Power Button - Cycles the power between On (blue backlight) or Standby (red backlight) mode
5. Enter Button - Use to view current status for inputs and outputs or to confirm a command
6. Number buttons - Use these buttons to select input and output paths or use with the function button to change matrix settings

Back Panel



1. Long distance HDBaseT ports - Connect to long distance EX receivers for pass through of PoE, control, and AV signals. **Ex.** AT-UHD-EX-70C-RX
2. Extended distance HDBaseT ports - Connect to extended distance EX receivers for pass through of PoE, control, and AV signals. **Ex.** AT-UHD-EX-100CE-RX
3. HDMI Input - Connect HDMI sources to these ports
Ex. DVD players, Blu-ray players, computers, game consoles, etc
4. Audio out - Captive screw analog audio breakouts for use with a sound system or multi-channel zone amplifier
5. IR IN - Use with a 3rd party IR control box to extend IR control commands to video displays over category cable
6. IR OUT - Connect IR emitter here for controlling sources
7. LAN port - Connect to a network for TCP/IP, WebGUI, and firmware updates
8. FW port - USB not enabled at this time for future functionality
9. Main system control - Connect IR or RS-232 control system to the matrix
10. Internal power supply - Connect included IEC C13 power cable from here to a power outlet.
11. HDMI outputs - Mirror to provide a local output for HD audio routing to an AVR, or matrix the ports to provide a local video output for in room displays or an HDBaseT extender set
Ex. AT-UHD-EX-100CE-KIT or AT-UHD-EX-70C-KIT

Rack Mounting



To rack mount the UHD-PRO3-1616M unit: use the rack mount ears, the 6 screws from the sides of the UHD-PRO3-1616M, and 4 rack screws.

To affix the rack mount ears, remove the three screws on each side of the UHD-PRO3-1616M and affix the rack ears to the UHD-PRO3-1616M (as shown in the picture to the left).

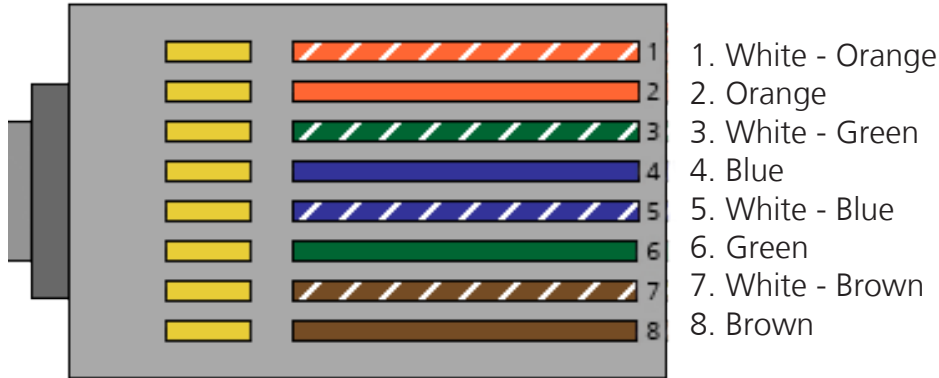
Place the UHD-PRO3-1616M in the rack, lining the holes in the rack ears with the holes in the rack. Once placed, use the rack screws to keep the unit in place. (as shown in the picture to the left)

Note: Increase the air flow as needed to maintain the recommended temperature inside the rack.

Note: Do not exceed maximum weight loads for the rack. Install heavier equipment in the lower part of the rack for stability.

Category Cable

For the category cables used in the installation of these products, please be sure to use a 568B termination as pictured below:



Use the table below to verify the best category cable for the installation.

Performance Rating		Type of LAN cable	
Wiring	Shielding	CAT5e/6	CAT6a/7
Solid	Shielded (STP/FTP)	***	****
	UnShielded (UTP)	**	N/A
Stranded - Patch cable (Not recommended)	Unshielded (UTP)	*	N/A
	Shielded (STP/FTP)	*	N/A
Termination		Please use EIA/TIA-568-B termination	

Important! 4K (UHD) signals are sensitive to cable quality and installation technique. It is recommended to use CAT6a/7 solid core cables for best results.

Note: For cable distances see the specifications on page 26

Connector

Connector type and size is very important to ensure extenders work correctly. Please use the matching cable type with the correct RJ45 connector.

CAT5e and CAT6 cables should use only CAT5e RJ45 connectors

CAT6a cables should use only CAT6a connectors

CAT7 cables should use only CAT7 connectors

Using the wrong size of connectors may result in interference causing loss of signal.

Important! "EZ RJ45 connectors" are not recommended with HDBaseT extenders. Doing so may result in stray EMI/RFI signals to be picked up and interfere with audio and video transmission.

Analog Audio

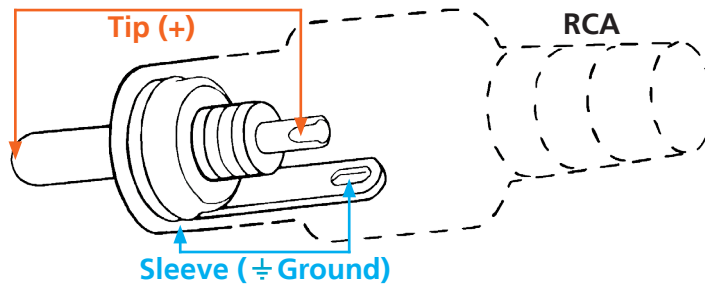
A captive screw analog audio connector is provided to ensure a more reliable and secure connection. The captive screw connector supports unbalanced audio output.

Audio is broken out from the selected HDMI input. If HDMI source 3 (**Ex.** set top box) is selected then both the corresponding HDBaseT port and analog audio port will output the set top box audio. Audio must be 2Ch PCM or the analog audio port will pass no audio.

Note: Analog audio ports will mirror the corresponding HDBaseT output port

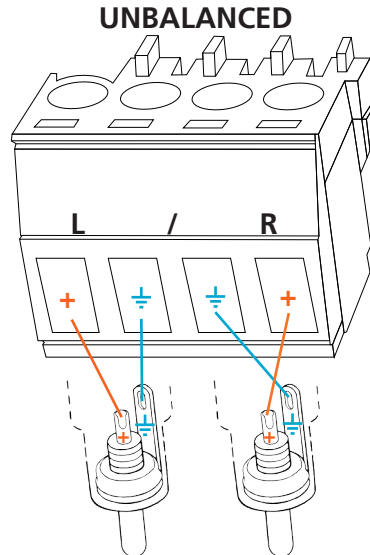
Ex. Analog output 2 will mirror HDBaseT output 2

Unbalanced audio connections use two wires for connection with consumer audio components.



Note: Pin outs may vary, please refer to the audio device's manual to ensure a correct connection.

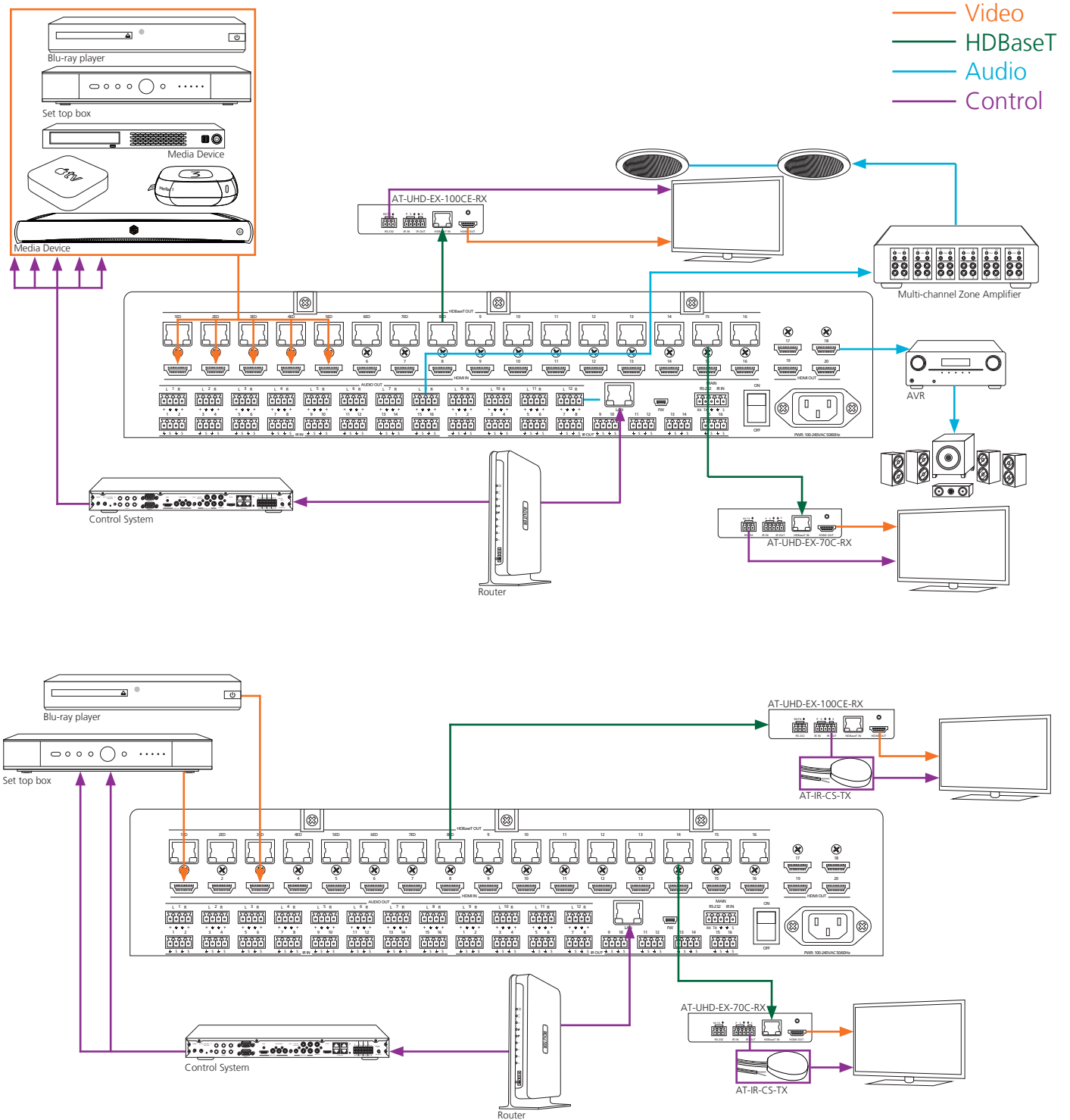
Important! When terminating cables, please ensure exposed adjacent wires do not touch. This may result in a short that can damage connected devices.



For an easier and time saving solution for analog audio, the optional Atlona Captive Screw Ready 2 Channel Unbalanced Audio Cable (AT-LC-CS-2CH-2M) features pre-stripped wires at one end and RCA connectors at the other end. Purchase these at <http://www.atlona.com>

To connect these, use the red wire in the right positive port, the white wire in the left positive port, and the black can be placed in either ground port.

Connection Diagram



Note: These products are meant for indoor use only. Do not install or connect the products to any outdoor components.

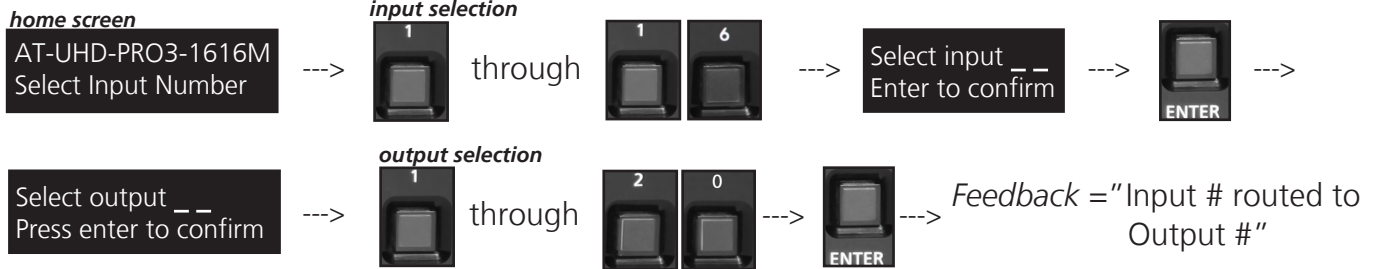
Matrix Front Panel Functions

The AT-UHD-PRO3-1616M's front panel has 3 functions: I/O control, EDID, and matrix settings. The following sections go over step by step setup & control.

I/O Control

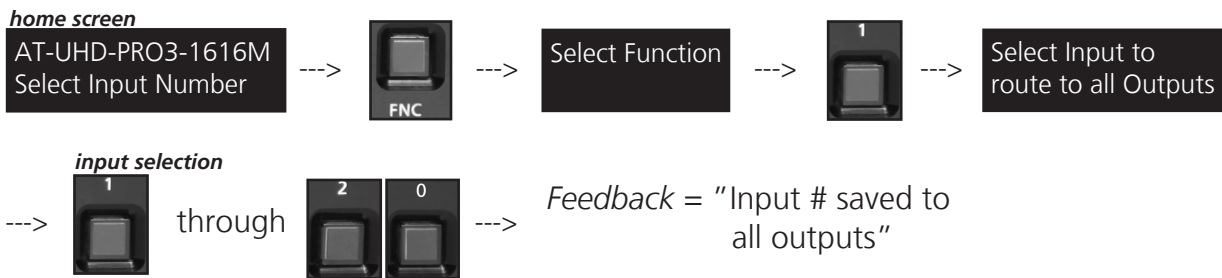
To **route** an input to an output

I.E. Input 1 to output 2



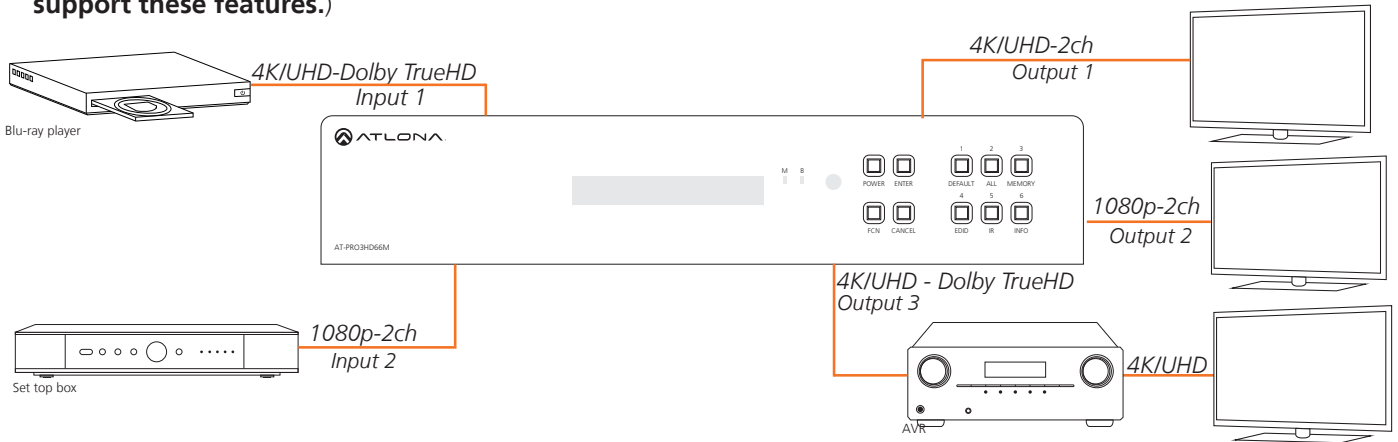
To **route** one input to all outputs

I.E. Input 1 to output 1 through 20



EDID Set Up

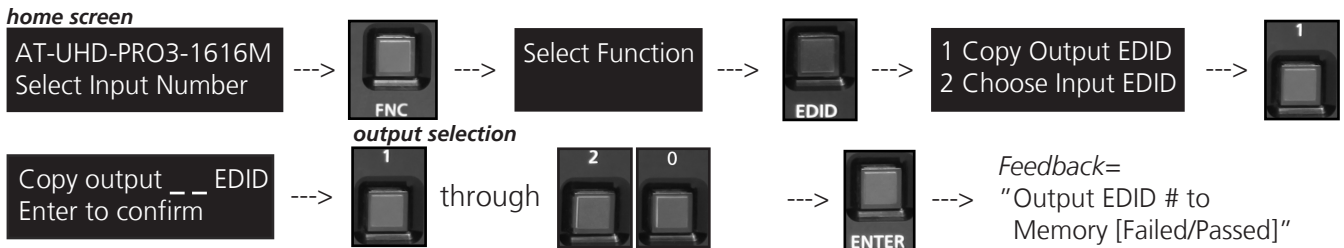
When the matrix is completely connected and turned on it will load the **default EDID**, which is the highest common native resolution of the connected devices. (i.e. In the diagram below the default would be 1080p with 2ch audio. **Multi-channel audio and 3D are not enabled on default mode, unless all devices support these features.**)



On default, all devices in the diagram will work at 1080p. If a device is not syncing or a different resolution is required, internal EDID or EDID copy and load should resolve these issues. The UHD-PRO-1616M can copy and store up to 20 EDIDs to memory.

Step 1: copy an EDID

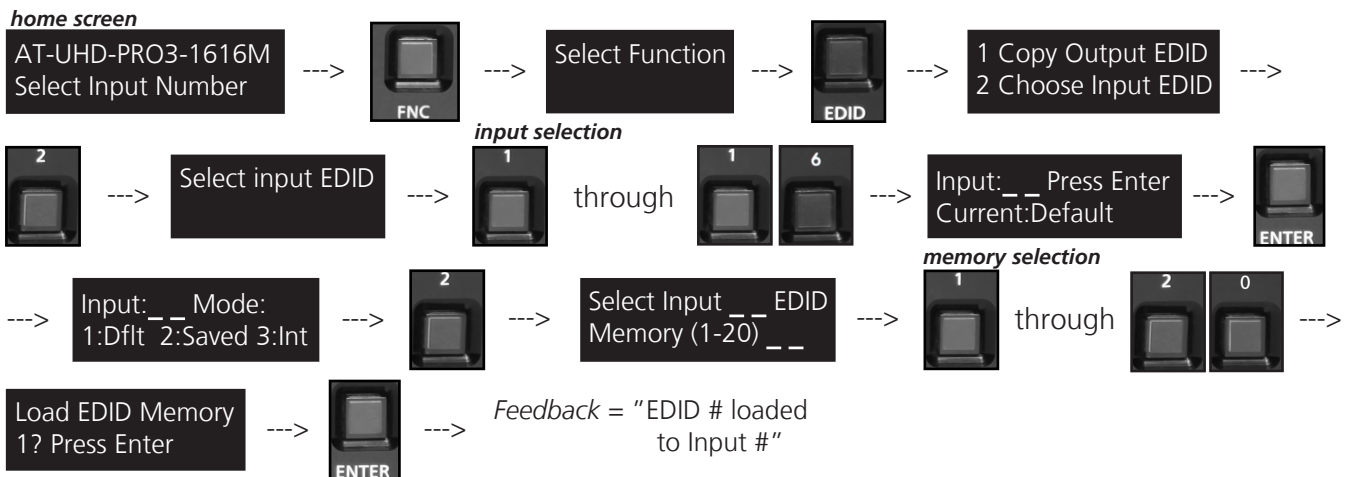
Before an EDID can be loaded to an input, it must first be copied to the matrix's memory. Each display's EDID can be saved individually to one of the matrix's twenty preset EDID memories.



Step 2: load a copied EDID to an input

Once EDIDs have been copied to memory they can be loaded to a specific input.

Note: (refer to the diagram above) Using the EDID of output 3 with input 1 will enable 4K/UHD and Dolby TrueHD to pass. With these settings, output 2 will receive no audio or video and output 1 will receive no audio.

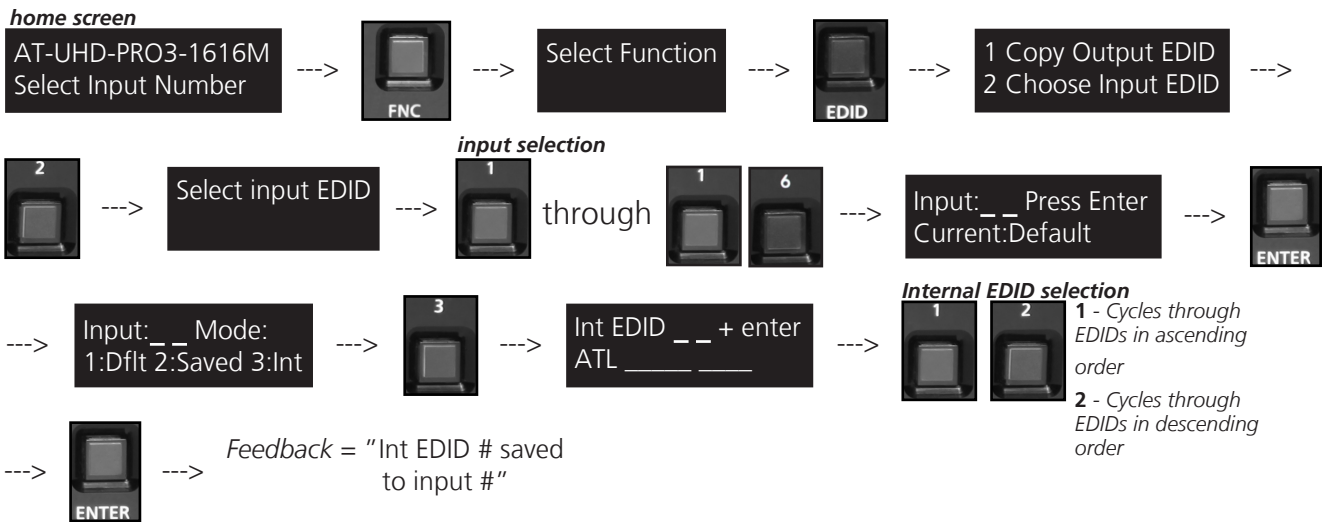


Step 3: Load an internal EDID to an input

If the first two steps don't produce the correct resolution or audio configuration, the fourteen internal EDIDs should resolve the issue.

<i>Internal EDID options</i>	<i>Front panel display readout</i>
EDID 1: 1080P 2CH audio	ATL 1080P 2CH
EDID 2: 1080P HD multi-channel audio 7.1*	ATL 1080P Multi CH
EDID 3: 1080P Dolby Digital/DTS 5.1	ATL 1080P DD
EDID 4: 1080P 3D 2CH audio	ATL 1080P 3D 2CH
EDID 5: 1080P 3D HD multi-channel audio 7.1*	ATL 1080P 3D MultiCH
EDID 6: 1080P 3D Dolby Digital/DTS 5.1	ATL 1080P 3D DD
EDID 7: 720P 2CH audio	ATL 720P 2CH
EDID 8: 720P Dolby Digital/DTS 5.1	ATL 720P DD
EDID 9: 1280x800 RGB 2CH audio	ATL 1280x800 RGB 2CH
EDID 10: 1366x768 RGB 2CH audio	ATL 1366x768 RGB 2CH
EDID 11: 1080P DVI**	ATL 1080P DVI
EDID 12: 1280x800 DVI**	ATL 1280x800 RGB DVI
EDID 13: 3840x2160 2CH audio	ATL UHD 2CH
EDID 14: 3840x2160 multi-channel audio 7.1*	ATL UHD MultiCH

- * Recommended EDID for AVR use
- ** Recommended EDID for DVI projectors use



RS-232 and TCP/IP commands:

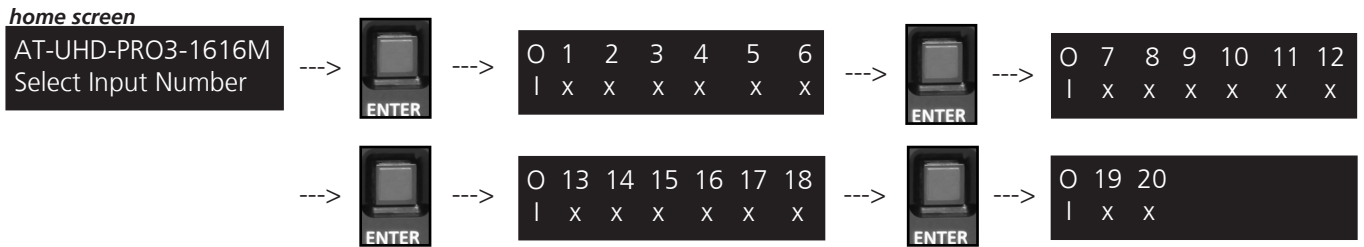
To access different EDIDs through RS-232 or TCP/IP, the following commands must be used.

Command	Feedback	Description
EDIDMSetX default	EDIDMSetX default	Sets the EDID of an input to the default EDID Ex. EDIDMset2 default - sets input 2 to default
EDIDMSetX saveY	EDIDMSetX saveY	Sets the EDID of an input to the previously saved EDID memory Ex. EDIDMset1 save3 - sets input 1 to EDID memory 3
EDIDMSetX intZ	EDIDMSetX intZ	Sets the EDID of an input to one of the internal EDIDs Ex. EDIDMset3 int6 - sets input 3 to the internal EDID - 1080p 3D Dolby Digital 5.1

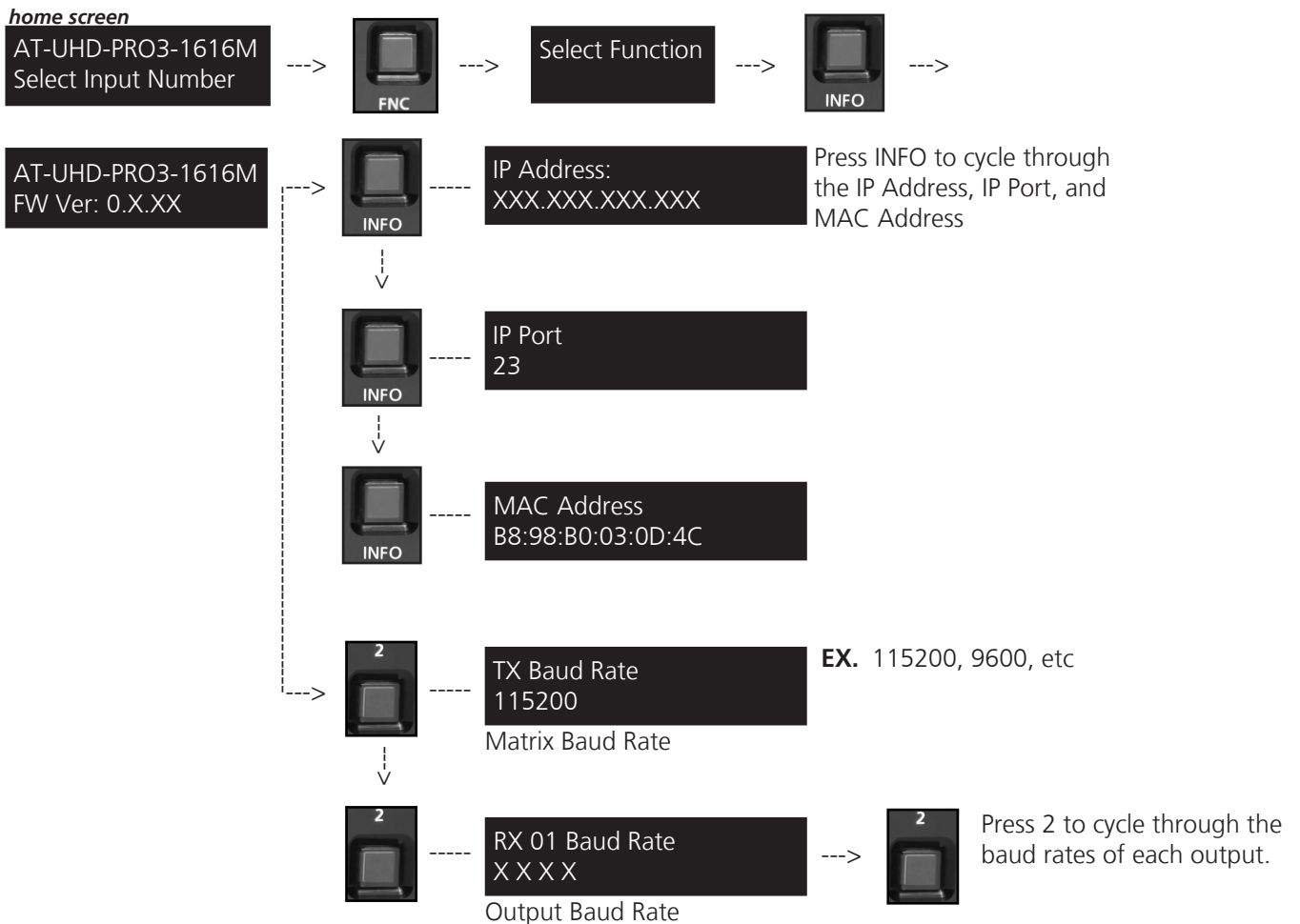
Matrix Status

When installing or troubleshooting it's important to verify settings, or be able to come back to a project and see how it was set up. The AT-UHD-PRO3-1616M matrix settings are viewable through the front panel display. View current I/O settings, firmware version, IP, MAC Address, and the RS-232 baud rates of not just the matrix but output zones as well.



View current I/O settings



View Firmware/Baud Rate settings



Factory Reset

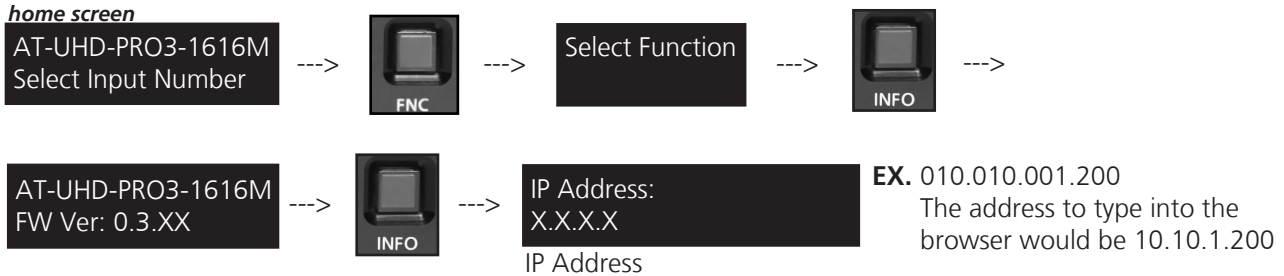
Press and hold the  and  buttons for 5 seconds for the factory reset to occur

Note: The matrix will not display any signs of the reset. Please wait 5 additional seconds and resume normal operation

LAN

For convenience, the matrix comes with DHCP default on. This ensures the matrix IP will not override another device.

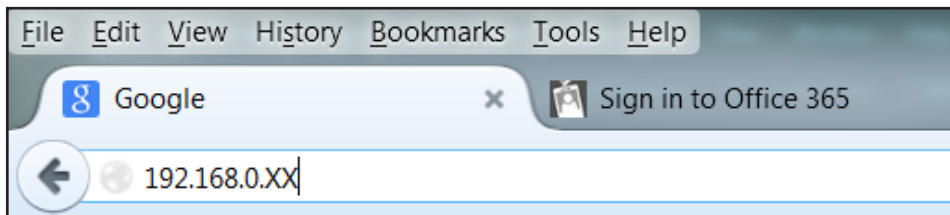
To find the matrix IP:



Browser WebGUI

Atlona has created an easy to use WebGUI for changing settings and controlling the matrix.

To begin, plug a LAN cable into the matrix and your network router, then type the IP address of the matrix into a web browser (as seen below).



Important: If any stability issues are experienced, disable any anti-virus or firewall that may be interfering with network communication to the Matrix. Once set up is done and the matrix GUI is no longer being used, the firewall and anti-virus can be re-enabled.



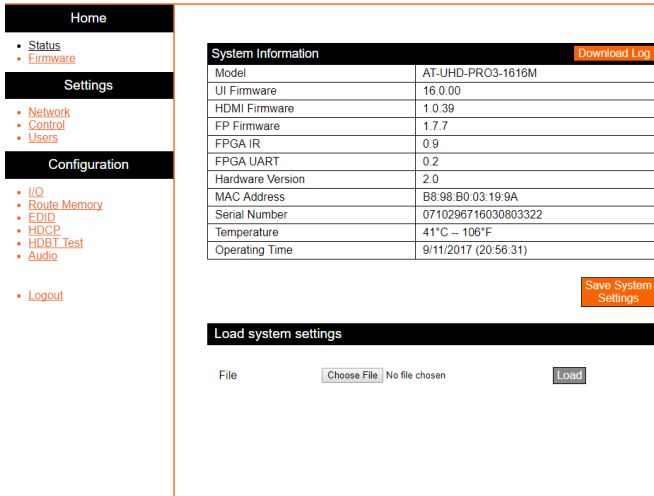
Admin Login

User name

Password

A login screen will appear (this is the same log in for admin and general users). For the first log in (and future admin changes) the username is "root" and password is "Atlona".

Note: Admin password can be changed within the WebGUI (see page 16).



The screenshot shows the Atlona WebGUI interface. On the left is a navigation menu with sections: Home, Settings (Status, Firmware), Configuration (I/O, Route Memory, EDID, HDCP, HDBT Test, Audio), and Logout. The main content area is titled 'System Information' and contains a table with the following data:

System Information		Download Log
Model	AT-UHD-PRO3-1616M	
UI Firmware	16.0.00	
HDMI Firmware	1.0.39	
FP Firmware	1.7.7	
FPGA IR	0.9	
FPGA UART	0.2	
Hardware Version	2.0	
MAC Address	B8.98.B0.03.19.9A	
Serial Number	0710296716030803322	
Temperature	41°C -- 106°F	
Operating Time	9/11/2017 (20:56:31)	

Below the table are buttons for 'Save System Settings' and 'Load system settings'. The 'Load system settings' section includes a file input field with 'Choose File' and 'No file chosen' buttons, and a 'Load' button.

The home page will allow the user to see the general system information, download the matrix log, and save/load system settings. The information displayed will help figure out if the matrix is up to date, how long it has been running, and other key information.

The Download Log button is for Atlona Tech Support Team only. Tech Support may request the log be sent to them for more in depth troubleshooting.

Note: To save the log, press the “Download Log” button. The file will automatically save to the “download” folder.

Save System Settings will backup the current settings of: network, users, I/O labels, and the current I/O settings of the matrix. If the matrix requires a factory reset, the backed up settings can be loaded onto the matrix.

Note: To save the system settings, press the “Save System settings” button. The file will automatically save to the download folder. The file can be renamed (using a project name may make the file easier to find later) but the file extension should not be altered (altering the extension may corrupt or make the file unusable).

Note: To load the system settings, click the browse button on the WebGUI. Once the search folder displays, select the file and press the load button. A progress bar will display to make it easier to know when the upload is complete. If a restart is required, a prompt will display.

Home

- Status
- Firmware

Settings

- Network
- Control
- Users

Configuration

- I/O
- Route Memory
- EDID
- HDCP
- HDBT_Test
- Audio

• Logout

Firmware Status

Matrix	
UI Firmware	16.0.00
HDMI	1.0.39
FP	1.7.7
FPGA UART	0.9
FPGA IR	0.2
HDBaseT TX VS100	13092110
HDBaseT TX VS10	23092110

HDBaseT Receivers	
Out 1: Output_1	No Link
Out 2: Output_2	No Link
Out 3: Output_3	No Link
Out 4: Output_4	No Link
Out 5: Output_5	No Link
Out 6: Output_6	No Link
Out 7: Output_7	No Link
Out 8: Output_8	No Link
Out 9: Output_9	No Link
Out 10: Output_10	No Link
Out 11: Output_11	No Link
Out 12: Output_12	No Link
Out 13: Output_13	No Link
Out 14: Output_14	No Link
Out 15: Output_15	No Link
Out 16: Output_16	No Link

Firmware Update

Matrix
File No file chosen

HDBaseT Receiver
 No file chosen

The firmware page displays the matrix, HDBaseT transmitter chips, and HDBaseT receivers firmware version and provides an easy way to update.

Download the most current firmware from <http://atlona.com/UHD-PRO3-1616M.html>. Once the firmware is on the computer use the browse button to select the correct file. Press the update button and a progress bar will display. If a restart is required, the WebGUI will display a prompt.

Home

- Status
- Firmware

Settings

- Network
- Control
- Users

Configuration

- I/O
- Route Memory
- EDID
- HDCP
- HDBT_Test
- Audio

• Logout

Network Settings

System Secure (SSH) ON OFF

DHCP ON OFF

IP Address

Subnet

Gateway

Telnet Port

HTTP Port

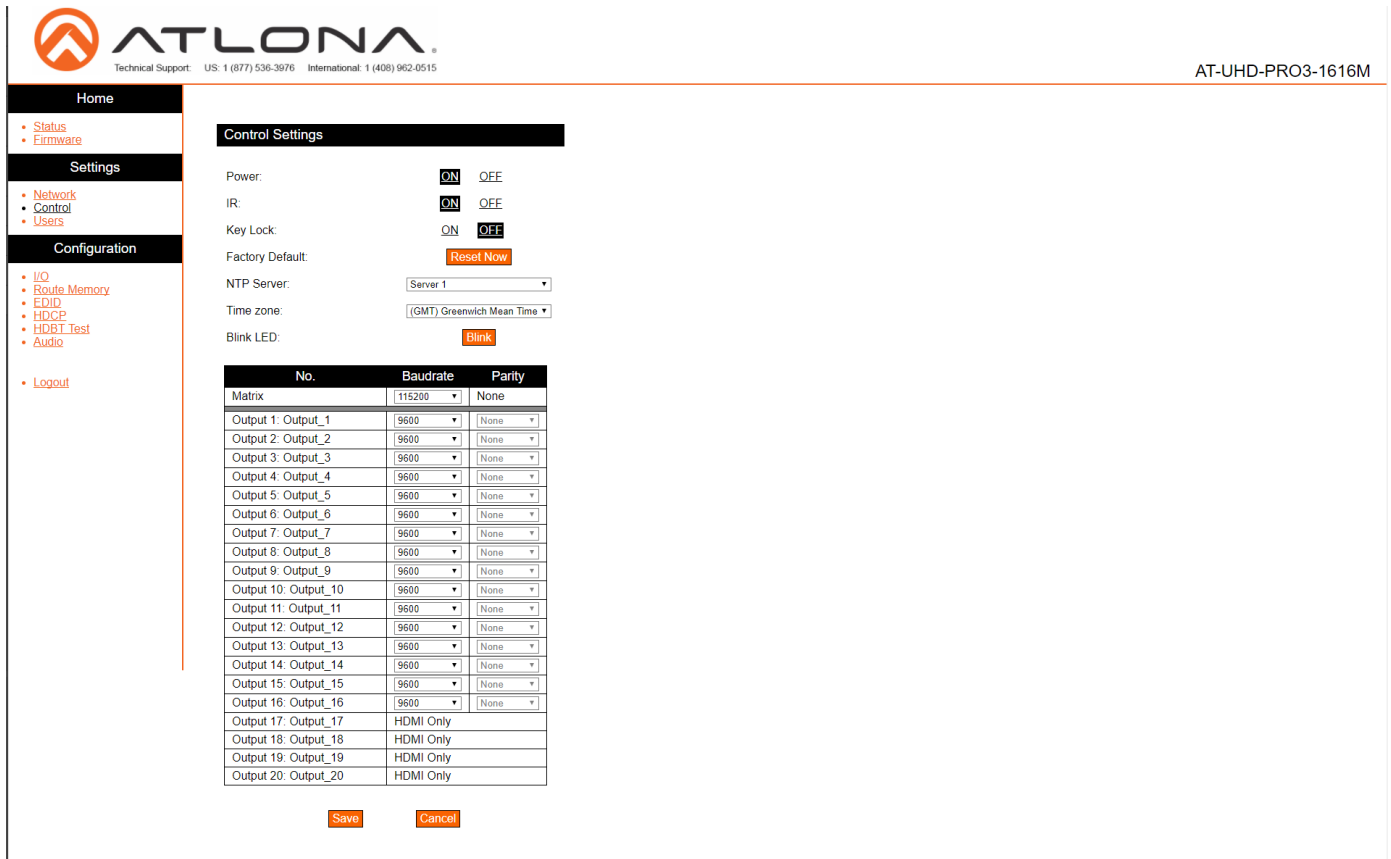
IP Timeout

Hostname

Telnet Login Mode ON OFF

The network page enables the matrix IP settings to be altered. If a static IP is required, then DHCP needs to be turned off. Once off, the settings will be available to change.

Login mode, when on, will request a password whenever a control device is connected to the matrix.



Technical Support: US: 1 (877) 536-3976 International: 1 (408) 962-0515

AT-UHD-PRO3-1616M

Control Settings

Power: ON OFF

IR: ON OFF

Key Lock: ON OFF

Factory Default:

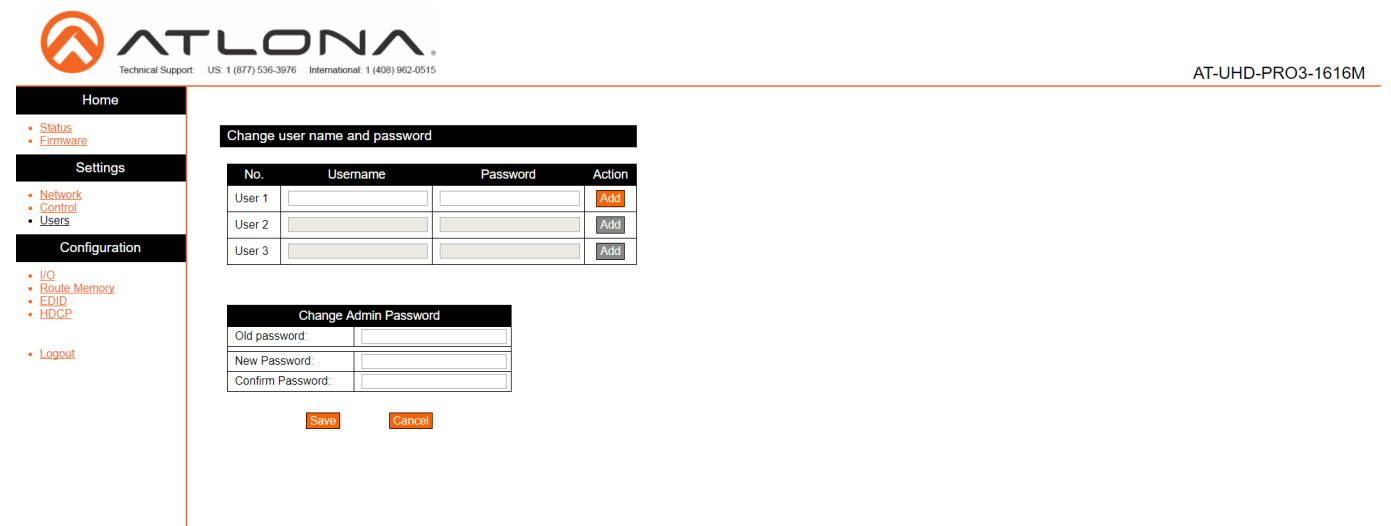
NTP Server:

Time zone:

Blink LED:

No.	Baudrate	Parity
Matrix	115200	None
Output 1: Output_1	9600	None
Output 2: Output_2	9600	None
Output 3: Output_3	9600	None
Output 4: Output_4	9600	None
Output 5: Output_5	9600	None
Output 6: Output_6	9600	None
Output 7: Output_7	9600	None
Output 8: Output_8	9600	None
Output 9: Output_9	9600	None
Output 10: Output_10	9600	None
Output 11: Output_11	9600	None
Output 12: Output_12	9600	None
Output 13: Output_13	9600	None
Output 14: Output_14	9600	None
Output 15: Output_15	9600	None
Output 16: Output_16	9600	None
Output 17: Output_17	HDMI Only	
Output 18: Output_18	HDMI Only	
Output 19: Output_19	HDMI Only	
Output 20: Output_20	HDMI Only	

The control page will allow simple functions to be changed. Turn the matrix on/off, IR front panel receiver window on/off, and front panel key lock on/off. The time zone and baud rates (for matrix and zone outputs) can be altered as well.



Technical Support: US: 1 (877) 536-3976 International: 1 (408) 962-0515

AT-UHD-PRO3-1616M

Change user name and password

No.	Username	Password	Action
User 1	<input type="text"/>	<input type="text"/>	<input type="button" value="Add"/>
User 2	<input type="text"/>	<input type="text"/>	<input type="button" value="Add"/>
User 3	<input type="text"/>	<input type="text"/>	<input type="button" value="Add"/>

Change Admin Password

Old password:

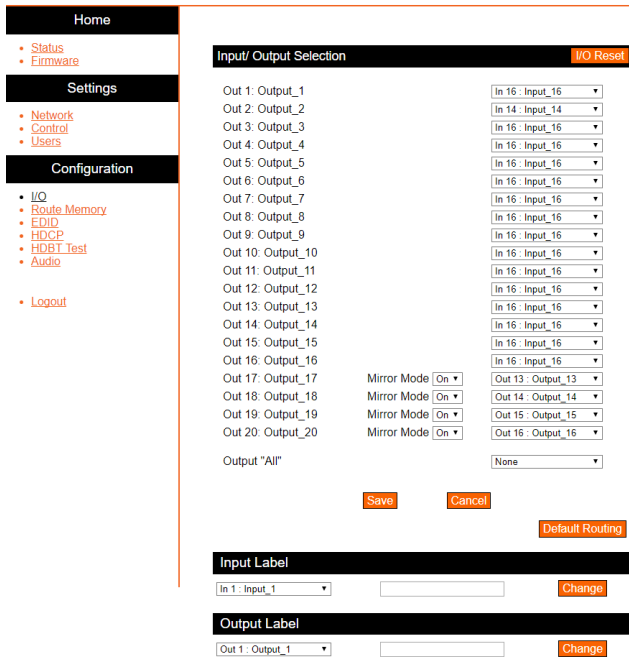
New Password:

Confirm Password:

The Users page allows non-admin users to be added or the admin username and password to be changed.

Only 3 non-admin users can be added. Type in the username and password to the fields and press add. Users will not have the ability to access this page.

Admin password (default username="root" and password="Atlona") can also be changed. Be sure to write this information down as admin is the only profile allowed to add/remove users.



Note: Default label is Input_X or Output_X.
Labels will follow corresponding ports.
Ex. Input 6 will default to label Input_6

The I/O page makes an easy way to set up input and output routing and labeling.

The inputs and outputs have the option for labeling to help make routing and switching simpler. Label each input and output individually. Select what source or zone that is to be labeled, type the name in the box, and press change.

Note: Labels are limited to 16 characters and no spaces

I/O routing includes mirror mode for the HDMI ports.

Mirror Mode:

On - HDBaseT outputs are selectable from the drop down menu. The HDMI port will output the same audio and video of the selected HDBaseT output

Off (Matrix Mode) - Any of the connected inputs are selectable from the drop down menu. The HDMI port will output audio and video from the source to a local display.

Home

- [Status](#)
- [Firmware](#)

Settings

- [Network](#)
- [Control](#)
- [Users](#)

Configuration

- [I/O](#)
- [Route Memory](#)
- [EDID](#)
- [HDCP](#)
- [HDBT Test](#)
- [Audio](#)

• [Logout](#)

Route Memory (this will *not* change the current I/O selection) Memory Reset

Preset select: M1 : Preset_1 ▼

Out 1: Output_1	In 1: Input_1 ▼
Out 2: Output_2	In 2: Input_2 ▼
Out 3: Output_3	In 3: Input_3 ▼
Out 4: Output_4	In 4: Input_4 ▼
Out 5: Output_5	In 5: Input_5 ▼
Out 6: Output_6	In 6: Input_6 ▼
Out 7: Output_7	In 7: Input_7 ▼
Out 8: Output_8	In 8: Input_8 ▼
Out 9: Output_9	In 9: Input_9 ▼
Out 10: Output_10	In 10: Input_10 ▼
Out 11: Output_11	In 11: Input_11 ▼
Out 12: Output_12	In 12: Input_12 ▼
Out 13: Output_13	In 13: Input_13 ▼
Out 14: Output_14	In 14: Input_14 ▼
Out 15: Output_15	In 15: Input_15 ▼
Out 16: Output_16	In 16: Input_16 ▼
Out 17: Output_17	Out 13: Output_13 ▼
Out 18: Output_18	Out 14: Output_14 ▼
Out 19: Output_19	Out 15: Output_15 ▼
Out 20: Output_20	Out 16: Output_16 ▼

Mirror Mode On ▼
 Mirror Mode On ▼
 Mirror Mode On ▼
 Mirror Mode On ▼

Save
Cancel

Memory label

M1 : Preset_1 ▼ change

Memory Selection (this will change the current I/O selection)

M1 : Preset_1 ▼ Select

The Route Memory page provides set up, labeling, and configuration of up to 20 preset memories for fast and easy control.

Set Up

- Select Route Memory # from the 'Preset Select' drop down menu
- Set the input/output routes
- Save to memory
- Label the route memory preset
- Repeat as needed until all route memories are saved

Note: Switching does not occur during the set up and labeling of route memory.

To apply route memory to the matrix: Select the route memory # from the memory selection drop down menu and press the 'Select' button.

- Home
- Status
- Firmware
- Settings
- Network
- Control
- Users
- Configuration
- I/O
- Route Memory
- EDID
- HDCP
- HDBT Test
- Audio
- Logout

EDID (Extended display Identification data) EDID Reset

Output	Output EDID	EDID Memory
1 : Output_1		none
2 : Output_2		none
3 : Output_3		none
4 : Output_4		none
5 : Output_5		none
6 : Output_6		none
7 : Output_7		none
8 : Output_8		none
9 : Output_9		none
10 : Output_10		none
11 : Output_11		none
12 : Output_12		none
13 : Output_13		none
14 : Output_14		none
15 : Output_15		none
16 : Output_16		none
17 : Output_17		none
18 : Output_18		none
19 : Output_19		none
20 : Output_20		none

Save Cancel

Input	EDID Selection
1 : Input_1	ATL 1080P 2CH
2 : Input_2	ATL 1080P 2CH
3 : Input_3	ATL 1080P 2CH
4 : Input_4	ATL 1080P 2CH
5 : Input_5	ATL 1080P 2CH
6 : Input_6	ATL 1080P 2CH
7 : Input_7	ATL 1080P 2CH
8 : Input_8	ATL 1080P 2CH
9 : Input_9	ATL 1080P 2CH
10 : Input_10	ATL 1080P 2CH
11 : Input_11	ATL 1080P 2CH
12 : Input_12	ATL 1080P 2CH
13 : Input_13	ATL 1080P 2CH
14 : Input_14	ATL 1080P 2CH
15 : Input_15	ATL 1080P 2CH
16 : Input_16	ATL 1080P 2CH

Save Cancel

- Default
- ATL 1080P 2CH
- ATL 1080P Multi CH
- ATL 1080P DD
- ATL 1080P 3D 2CH
- ATL 1080P 3D MultiCH
- ATL 1080P 3D DD
- ATL 720P 2CH
- ATL 720P DD**
- ATL 1280x800 RGB 2CH
- ATL 1366x768 RGB 2CH
- ATL 1080P DVI
- ATL 1280x800 RGB DVI
- ATL 4K30 2CH
- ATL 4K30 MultiCH
- ATL 4K60 2CH
- ATL 4K60 MultiCH
- Memory 1
- Memory 2
- Memory 3
- ATL 1080P 2CH

The EDID page is used for saving EDIDs, loading EDIDs, or using internal EDIDs on the input ports. Each output will have an individual EDID that can be saved to memory. The matrix has 20 available EDID memory presets. Each display EDID can be saved to the corresponding memory number. **Ex.** Output 2 to EDID memory 2. Once saved, the EDIDs can be loaded to the input to ensure compatibility.

Internal EDIDs can also be loaded to inputs. There are 14 internal EDIDs. The list can be found on page 11.

Home

- Status
- Firmware

Settings

- Network
- Control
- Users

Configuration

- I/O
- Route Memory
- EDID
- HDCP
- HDBT Test
- Audio

• Logout

HDCP

Output Port	Status
1 : Output_1	No Connection
2 : Output_2	Non-Compliant
3 : Output_3	No Connection
4 : Output_4	Non-Compliant
5 : Output_5	Non-Compliant
6 : Output_6	Non-Compliant
7 : Output_7	Non-Compliant
8 : Output_8	No Connection
9 : Output_9	No Connection
10 : Output_10	Non-Compliant
11 : Output_11	No Connection
12 : Output_12	No Connection
13 : Output_13	Compliant 2.2
14 : Output_14	Compliant 2.2
15 : Output_15	Compliant 2.2
16 : Output_16	No Connection
17 : Output_17	No Connection
18 : Output_18	No Connection
19 : Output_19	No Connection
20 : Output_20	No Connection

The HDCP page provides a quick way to see whether a display is HDCP compliant or not and the version supported. This page will give multiple status readouts: No Connection, Compliant 1.X, Compliant 2.X, and Non-Compliant.

Home

- Status
- Firmware

Settings

- Network
- Control
- Users

Configuration

- I/O
- Route Memory
- EDID
- HDCP
- HDBT Test
- Audio

• Logout

HDBT Test

HDBT Zone: Select Channel Start

Sequence Number:

TX Version:

RX Version:

HDBT Link:

HDMI Sv:

HPD:

TMDS Clock:

Cable length (Estimated):

Video Quality (Video BER):

Cable Quality Pair A:

Cable Quality Pair B:

Cable Quality Pair C:

Cable Quality Pair D:

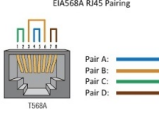
Test Instructions

1. Select HDBT Zone
2. Connect active HDMI source (DVD etc...)
3. Ensure source and sink are operating
4. Click the Start button

Use highest source resolution without exceeding 4K@60Hz 4:2:0

- If the BER and Cable quality all pass, the system is functioning as expected.
- If BER passes but one or more of the Cable pairs fail, the cable is compromised and may require retermination.
- If BER and one or more of the Cable pairs fails, the cable should be reterminated. If this does not fix the issue, the cable may need to be replaced.

EIA568A R45 Pairing

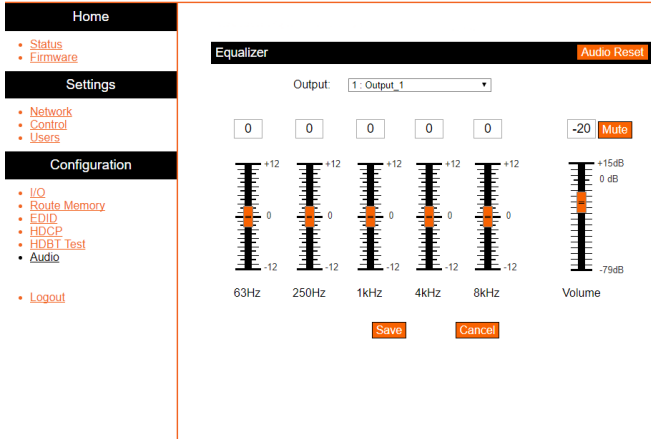


T568A

The HDBT page provides testing of Ethernet cables connected to the HDBaseT port on the matrix. To perform an HDBaseT test, do the following:

1. Select the desired HDBaseT port from the HDBT Zone drop-down list.
2. Connect an active HDMI source to the matrix.
3. Ensure that the source and sink are operating correctly.
4. Click the Start button.

Refer to the Test Instructions on this page for information on interpreting the test results.



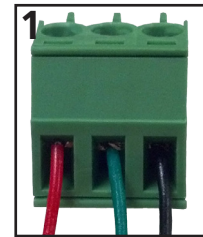
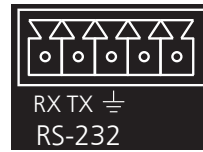
The screenshot displays the 'Equalizer' configuration page. On the left sidebar, the 'Configuration' section is expanded to show 'Audio'. The main panel features an 'Output' dropdown menu set to '1: Output_1'. Below this are five frequency sliders: 63Hz, 250Hz, 1kHz, 4kHz, and 8kHz. Each slider has a scale from -12 to +12 dB and is currently positioned at 0. To the right of these is a 'Volume' slider with a scale from -79dB to +15dB, also set to 0. A 'Mute' button is located next to the volume slider. At the bottom of the sliders are 'Save' and 'Cancel' buttons. An 'Audio Reset' button is positioned in the top right corner of the equalizer panel.

The audio page supports adjustment of 5 band EQ for the analog audio outputs ensuring the best audio performance for each zone. 5 band frequency options at 63Hz, 250Hz, 1kHz, 4kHz, and 8kHz as well as zone output volume and mute.

RS-232

Connection

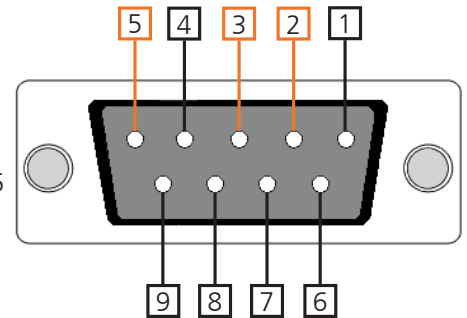
RS-232 pin out will be determined by the RS-232 cable and will connect as Rx (receiver), Tx (transmitter), and \perp (ground). (See picture 1)



Wire color will differ by cable manufacturer.

RS-232 is often connected through a DB 9-pin to captive screw connector. The pins will have functions associated with them, some will be unassigned.

Note: Typical DB9 connectors use pin 2 for TX, pin 3 for RX, and pin 5 for ground. On some devices functions of pins 2 and 3 are reversed.



Set Up

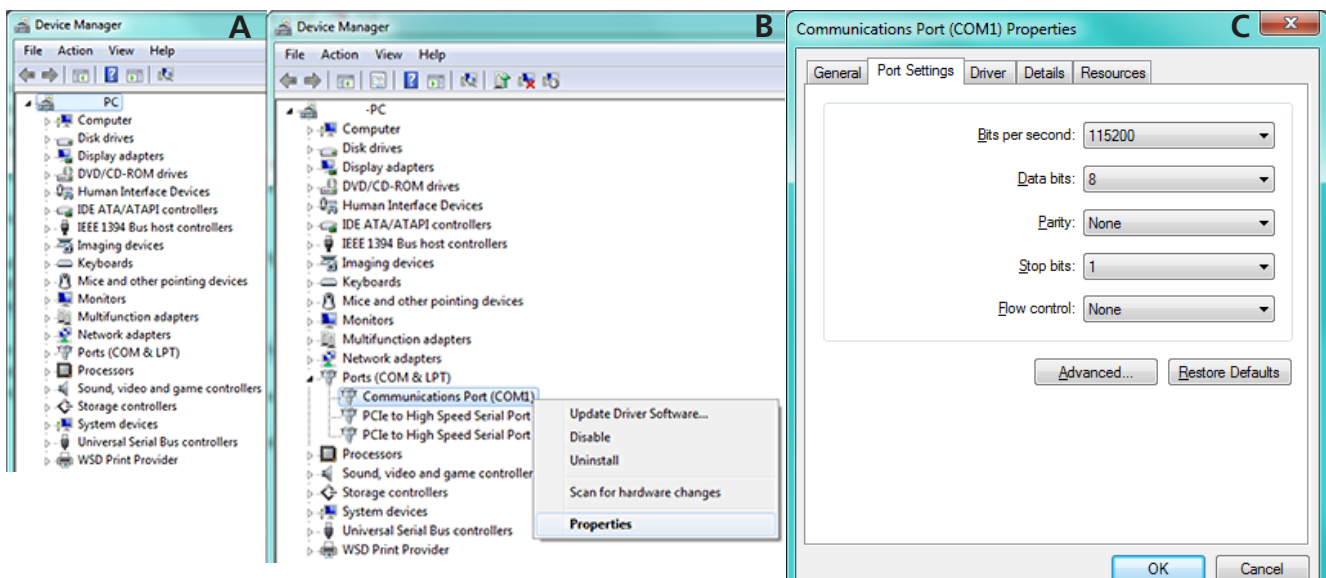
To set up the RS-232 hyperterminal (if not using 3rd party software) use the following steps:

1. Connect the UHD-PRO3-1616M to a PC using a DB9 to USB cable
 - a. Remove the DB9 connector, strip and connect the wires to the included captive screw connector (as explained above), then connect the captive screw connector to the matrix
2. Go to the Device Manager folder (see picture A)
3. Find the UHD-PRO3-1616M COM port and right click with a mouse and select properties (see picture B)

NOTE: If unsure which COM port is the UHD-PRO3-1616M, unplug the cable and plug it back in. It will disappear and reappear on the COM port list.

4. Under the properties menu select the port settings tab and update the menu to the **UHD-PRO3-1616M default settings of:** Bits Per Second: 115200, Data Bits: 8, Parity: None, Stop Bits: 1 and Flow Control: None. (see picture C)

Set up is done and any hyperterminal program may be used to control the UHD-PRO3-1616M now.



RS-232 & TCP/IP Control Commands

The command codes are case sensitive, do not change capitalization, spacing, or lettering.

Command	Feedback	Description
PWON	PWON	Power on
PWOFF	PWOFF	Power off
PWSTA	PWx	Will display the power status of the matrix Ex. Power is on, feedback will be PWON
Version	Firmware #	Brings up the current firmware version
Type	Model #	Brings up the model information
Lock	Lock	Locks the front panel of the matrix so no buttons are active
Unlock	Unlock	Unlocks the front panel of the matrix, enabling the buttons again
All#	x1AVx1,x2AVx2,...	Resets all inputs to corresponding outputs Ex. input 1 to output 1, input 2 to output 2, input 3 to output 3, etc
x1\$	x1\$	Turns off output channel Ex. to turn off output 3 = x3\$
x1All	x1All	Sets selected input to all outputs Ex. x3All would set input 3 to all
x1AVx2 Ex. x3AVx7	x1AVx2 Ex. x3AVx7	Switch input to output Ex. input 3 to output 7
x1AVx2,x3,x4 Ex. x3AVx1,x4	x1AVx2,x3,x4 Ex. x3AVx1,x4	Switch input to multiple outputs Ex. Switch input 3 to output 1 and 4
MirrorHdmiX OutY	MirrorHdmiX OutY	Mirror the HDMI output port with an HDBaseT output port Ex. Mirror HDMI 6 with Output 1: MirrorHdmi6 Out1
UnMirrorX Ex. UnMirror6	UnMirrorX Ex. UnMirror6	Removes the chosen HDMI port from mirror mode Ex. Unmirror HDMI 6 and no longer follows an HDBaseT output
VOUTX + Ex. VOUT2 +	VOUTX (YY) Ex. VOUT2 (-70)	Turns the volume of the chosen output (X) up one step Ex. Turn the volume up from level -71dB to -70dB on analog output 2
VOUTX - Ex. VOUT3 -	VOUTX (YY) Ex. VOUT3 (12)	Turns the volume of the chosen output (X) down one step Ex. Turn the volume down from level 13dB to 12dB on analog output 3
VOUTX (YY) Ex. VOUT1 (-50)	VOUTX (YY) Ex. VOUT1 (-50)	Set the volume of the chosen output (X) to a specific (YY) level Ex. Set the volume to -50dB on output 1
VOUTX sta	VOUTX (YY)	Displays the current volume level of the chosen output (X)
VOUTMuteX Y Ex. VOUTMute2 on	VOUTMuteX Y Ex. VOUTMute2 on	Mute the volume level of the chosen analog output Y=on,off,sta Ex. Mute the volume of analog output 2
IROFF	IROFF	Disables the front panel IR receiver window
IRON	IRON	Enables the front panel IR receiver window
Statusx1	x7AVx1	Shows what input is connected to selected output
Status	x1AVx1,x2AVx2, x3AVx4,	Displays which inputs are currently connected to which outputs
SaveY Ex. Save2	SaveY Ex. Save2	Saves I/O route settings for future use, preset options 0 to 8
RecallY Ex. Recall2	RecallY Ex. Recall2	Recalls saved I/O route settings for the chosen preset number
ClearY Ex. Clear2	ClearY Ex. Clear2	Erases the saved I/O route settings for the chosen preset number
Mreset	Mreset	Sets matrix back to the default settings
RS232zoneX[command] Ex. RS232zone1[PWRO]	RS232zoneX[command] Ex. RS232zone1[PWRO]	Send commands to devices connected to the receiver RS-232 ports. Commands are the same as the ones stated in this table. X = zone # Ex. Turning the power on for the device connected in zone 1

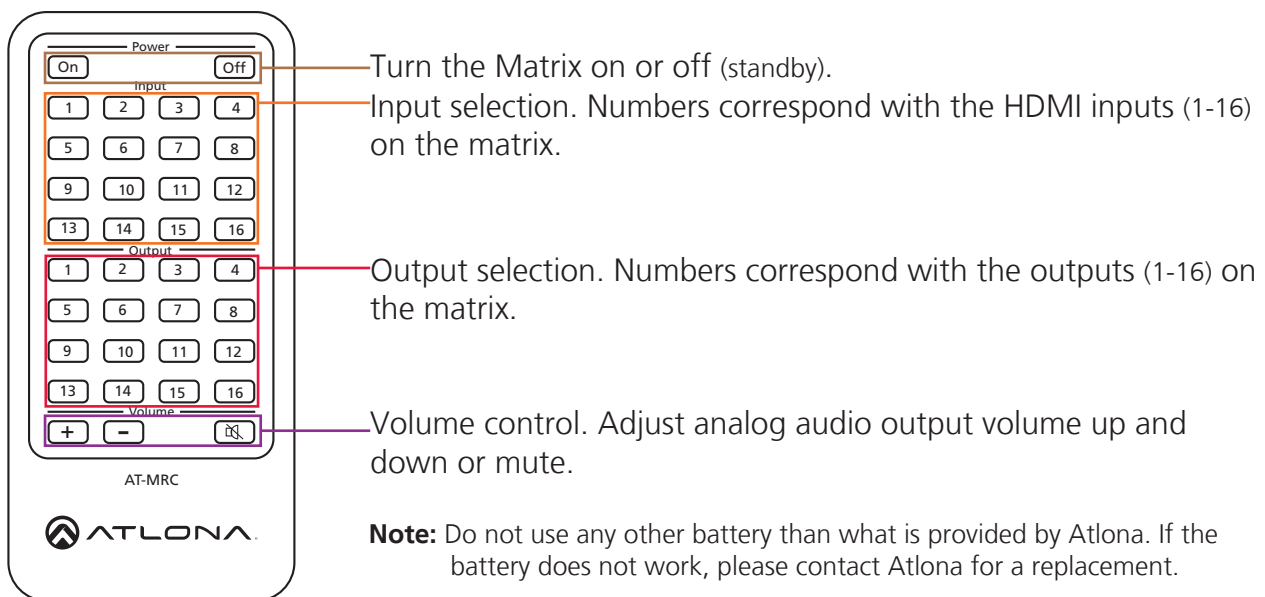
Each command or feedback is terminated with a carriage return.

Note: If the command fails or is incorrect the feedback should be "Command FAILED"

To help with zone troubleshooting the matrix will broadcast "#*PORTXX_[feedback]" when receiving any feedback from any zone.

Command	Feedback	Description
IPCFG	IP Addr : x.x.x.x Netmask : x.x.x.x Gateway : x.x.x.x IP Port: x.x.x	Displays IP address configuration
IPTimeout XX	IPTimeout XX (Ex. IPTimeout120)	Determines amount of seconds of inactivity before TCP/IP disconnects
IPQuit	IPQuit	Logs out of TCP/IP
IPAddUser	TCP/IP username & password list: - user password - user password - user password	Will display a list of users
IPAddUser X Y	TCP/IP user was added	Add a user for TCP/IP control. X=User Y=Password Ex. IPAddUser Atlona 1234 (User=Atlona 1234=Password)
IPDelUser X	TCP/IP user was deleted	Delete a user from TCP/IP X=User (Ex. IPDelUser Atlona)
IPDHCP sta	IPDHCP sta Ex. IPDHCP on	Displays the status of DHCP
IPDHCP on	IPDHCP on	Turns DHCP on
IPDHCP off	IPDHCP off	Turns DHCP off
IPStatic X Y Z	IPStatic address netmask gateway	Sets a static IP address Ex. IPStatic 192.168.1.1 255.255.255.0 192.168.1.200
IPPort	IPPort Y	Set the TCP/IP port (ex. IPPort 230)
IPLogin sta	IPLogin sta Ex. IPLogin on	Displays IPLogin status Ex. IPLogin is on
IPLogin on	IPLogin on	Enables IPLogin
IPLogin off	IPLogin off	Disables IPLogin
Broadcast sta	Broadcast sta	Displays broadcast mode status
Broadcast on	Broadcast on	Enables broadcast mode
Broadcast off	Broadcast off	Disables broadcast mode

IR Remote Control

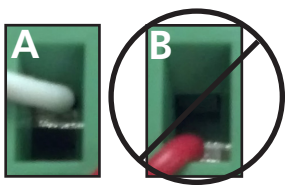


Captive Screw

Captive screw connectors are an added feature on the UHD-PRO3-1616M matrix. The captive screw connectors allow you to cut cables down to a suitable length, reducing cable clutter while providing a more reliable connection.

Connecting

When connecting the cables to the female captive screw connector it is important that the wires be terminated correctly. The female captive screw connector has a contact plate at the top and must have the wires touching it for signal to pass. When wired correctly (see picture A) the signal will pass, incorrectly (see picture B) no signal will pass.



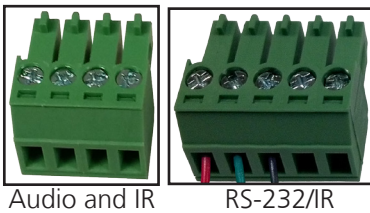
The captive screw connectors have a contact bar that is adjusted to compress the wire against the top contact plate. Use the screws at the top of the connector to compress the wire against the contact plate.



Clockwise
Turn the screws clockwise to raise the contact bar to the upper contact plate and hold the wires in place.



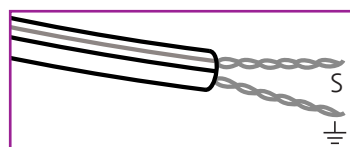
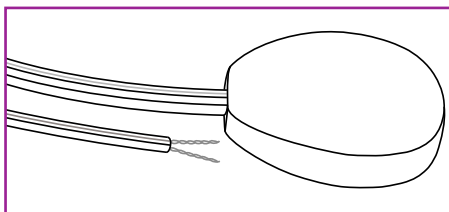
Counter Clockwise
Turn the screws counter clockwise to lower the contact bar to release the wires.



Two types of female captive screw connectors have been included: 4 pin (IR and Audio) and 5 pin (RS-232/IR).

The wires of the emitter is marked to differentiate pin outs.

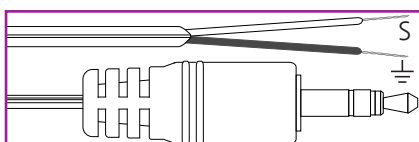
Note: To view pin outs of audio and RS-232, see pages 7 and 22.



Signal (S)
Ground (⊥)

The IR emitter (AT-IR-CS-TX sold separately) has two wires: signal and ground. Signal will have a solid line and ground will be blank. The IR emitter will plug into the IR OUT ports.

Note: One AT-IR-CS-TX is included with the AT-UHD-EX-70C-RX (receiver) and AT-UHD-EX-100CE-RX (receiver).



Signal (S)
Ground (⊥)

There are two wires on the IR captive screw ready cable (AT-LC-CS-IR-2M sold separately): signal and ground. The signal wire is red and ground wire is black. The IR cable will plug into the IR IN ports and connect to third party control systems.

Specifications

Video Resolutions

Video	4096x2160@24/25/30/50*/60Hz*, 3840x2160@24/25/30/50*/60Hz* (UHD), 2048x1080p, 1080p@23.98/24/25/29.97/30/50/59.94/60Hz, 1080i@50/59.94/60Hz, 720p@50/59.94/60Hz, 576p, 576i, 480p, 480i	
VESA	2560x2048, 2560x1600, 2048x1536, 1920x1200, 1680x1050, 1600x1200, 1600x900, 1440x900, 1400x1050, 1366x768, 1360x768, 1280x1024, 1280x800, 1280x768, 1152x768, 1024x768, 800x600, 640x480	
Color Space	YUV, RGB	
Chroma Subsampling	4:4:4, 4:2:2, 4:2:0*	
Color Depth	8-bit, 10-bit, 12-bit	

Audio

Analog Out	PCM 2Ch (de-embedded)	
HDMI/HDBaseT Out	PCM 2Ch, LPCM 5.1, LPCM 7.1, Dolby Digital, DTS 5.1, Dolby Digital Plus, Dolby TrueHD, DTS-HD Master Audio, Dolby Atmos	
Sample Rate	32kHz, 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz	
Bit Rate	up to 24-bit	

Distance

<u>Ports 1-8:</u>		
CAT5e/6 @ 4K	up to 70 meters	up to 230 feet
CAT6a/7 @ 4K	up to 100 meters	up to 328 feet
CAT5e/6 @ 1080p	up to 100 meters	up to 328 feet
<u>Ports 9-16:</u>		
CAT5e/6 @ 4K	up to 35 meters	up to 115 feet
CAT6a/7 @ 4K	up to 40 meters	up to 130 feet
CAT5e/6 @ 1080p	up to 60 meters	up to 197 feet
CAT6a/7 @ 1080p	up to 70 meters	up to 230 feet
<u>HDMI IN/OUT</u>		
4K	up to 5 meters	up to 15 feet
1080p	up to 10 meters	up to 30 feet

Signal Support

Bandwidth	10.2 Gbps
CEC	No
HDCP	2.2

Temperature

Operating	0°C to 40°C	32°F to 104°F
Storage	-40°C to 70°C	-40°F to 158°F
Ambient	0°C to 70°C	32°F to 158°F
Humidity	20 to 90% non-condensing	

Power

Consumption	350W
Idle Consumption	250W
Supply	AC100~240V 50/60Hz

Dimension

H x W x D w/feet	99.02 x 439.74 x 301.63 (mm)	3.90 x 17.31 x 11.88 (inch)
H x W x D w/rack ears	88.63 x 482.60 x 301.63 (mm)	3.49 x 19.00 x 11.88 (inch)
Rack Unit	2U	

Weight

Device	6.21 kg	13.70 lbs
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Certification

Product	CE, FCC, RoHS, RCM, TUV
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*4096x2160@50/60Hz & 3840x2160@50/60Hz supported @ chroma subsampling 4:2:0 8-bit only

Safety Information

Safeguards



To reduce the risk of electric shock, do not expose this product to rain or moisture



If the wall plug does not fit into your local power socket, hire an electrician to replace your obsolete socket.



Do not modify the wall plug. Doing so will void the warranty and safety features.



This equipment should be installed near a grounded socket outlet and the device should be easily accessible in the case it requires disconnection.

Precautions

FCC regulations state that any unauthorized changes or modifications to this equipment, not expressly approved by the manufacturer, could void the user's authority to operate this equipment.

In the event of an electrostatic discharge this device may automatically turn off. If this occurs, unplug the device and plug it back in.

Protect and route power cords so they will not be stepped on or pinched by anything placed on or against them. Be especially careful of plug-ins or cord exit points from this product.

Avoid excessive humidity, sudden temperature changes or temperature extremes.

Keep this product away from wet locations such as bathtubs, sinks, laundries, wet basements, fish tanks, and swimming pools.

Use only accessories recommended by Atlona to avoid fire, shock, or other hazards.

Unplug the product before cleaning. Use a damp cloth for cleaning and not cleaning fluid or aerosols. Such products could enter the unit and cause damage, fire, or electric shock. Some substances may also mar the finish of the product.

Never open, remove unit panels, or make any adjustments not described in this manual. Attempting to do so could expose you to dangerous electrical shock or other hazards. It may also cause damage to your product. Opening the product will void the warranty.

Do not attempt to service the unit. Disconnect the product and contact your authorized Atlona reseller or contact Atlona directly.

Atlona, Inc. (“Atlona”) Limited Product Warranty Policy

Coverage

Atlona warrants its products will substantially perform to their published specifications and will be free from defects in materials and workmanship under normal use, conditions and service.

Under its Limited Product Warranty, Atlona, at its sole discretion, will either:

- A) repair or facilitate the repair of defective products within a reasonable period of time, restore products to their proper operating condition and return defective products free of any charge for necessary parts, labor and shipping
- OR**
- B) replace and return, free of charge, any defective products with direct replacement or with similar products deemed by Atlona to perform substantially the same function as the original products
- OR**
- C) refund the pro-rated value based on the remaining term of the warranty period, not to exceed MSRP, in cases where products are beyond repair and/or no direct or substantially similar replacement products exist.

Repair, replacement or refund of Atlona’s products is the purchaser’s exclusive remedy and Atlona’s liability does not extend to any other damages, incidental, consequential or otherwise.

This Limited Product Warranty extends to the original end-user purchaser of Atlona’s products and is non-transferrable to any subsequent purchaser(s) or owner(s) of these products.

Coverage Periods

Atlona’s Limited Product Warranty Period begins on the date of purchase by the end-purchaser. The date contained on the end-purchaser’s sales or delivery receipt is the proof purchase date.

Limited Product Warranty Terms – New Products

- 10 years from proof of purchase date for hardware/electronics products purchased on or after June 1, 2013
- 3 years from proof of purchase date for hardware/electronics products purchased before June 1, 2013
- Lifetime Limited Product Warranty for all cable products

Limited Product Warranty Terms – Refurbished (B-Stock) Products

- 3 years from proof of purchase date for all Refurbished (B-Stock) hardware and electronic products purchased on or after June 1, 2013

Remedy

Atlona recommends that end-purchasers contact their authorized Atlona dealer or reseller from whom they purchased their products. Atlona can also be contacted directly. Visit www.atlona.com for Atlona’s contact information and hours of operation. Atlona requires that a dated sales or delivery receipt from an authorized dealer, reseller or end-purchaser is provided before Atlona extends its warranty services. Additionally, a return merchandise authorization (RMA) and/or case number, is required to be obtained from Atlona in advance of returns.

Atlona requires that products returned are properly packed, preferably in the original carton, for shipping. Cartons not bearing a return authorization or case number will be refused. Atlona, at its sole discretion, reserves the right to reject any products received without advanced authorization. Authorizations can be requested by calling 1-877-536-3976 (US toll free) or 1-408- 962-0515 (US/international) or via Atlona’s website at www.atlona.com.

Exclusions

This Limited Product Warranty excludes:

- Damage, deterioration or malfunction caused by any alteration, modification, improper use, neglect, improper packing or shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature.
- Damage, deterioration or malfunction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by Atlona to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product.
- Equipment enclosures, cables, power supplies, batteries, LCD displays, and any accessories used in conjunction with the product(s).
- Products purchased from unauthorized distributors, dealers, resellers, auction websites and similar unauthorized channels of distribution.

Disclaimers

This Limited Product Warranty does not imply that the electronic components contained within Atlona's products will not become obsolete nor does it imply Atlona products or their electronic components will remain compatible with any other current product, technology or any future products or technologies in which Atlona's products may be used in conjunction with. Atlona, at its sole discretion, reserves the right not to extend its warranty offering in instances arising outside its normal course of business including, but not limited to, damage inflicted to its products from acts of god.

Limitation on Liability

The maximum liability of Atlona under this limited product warranty shall not exceed the original Atlona MSRP for its products. To the maximum extent permitted by law, Atlona is not responsible for the direct, special, incidental or consequential damages resulting from any breach of warranty or condition, or under any other legal theory. Some countries, districts or states do not allow the exclusion or limitation of relief, special, incidental, consequential or indirect damages, or the limitation of liability to specified amounts, so the above limitations or exclusions may not apply to you.

Exclusive Remedy

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Other Conditions

Atlona's Limited Product Warranty offering gives legal rights, and other rights may apply and vary from country to country or state to state. This limited warranty is void if (i) the label bearing the serial number of products have been removed or defaced, (ii) products are not purchased from an authorized Atlona dealer or reseller. A comprehensive list of Atlona's authorized distributors, dealers and resellers can be found at www.atlona.com.

Atlona, Inc Product Registration

Thank you for purchasing this Atlona product. - We hope you enjoy it and will take an extra few moments to register your new purchase.

Registration creates an ownership record if your product is lost or stolen and helps ensure you'll receive notification of performance issues and firmware updates.

At Atlona we respect and protect your privacy, assuring you that your registration information is completely secure. Atlona product registration is completely voluntary and failure to register will not diminish your limited warranty rights.

To register go to: <http://www.atlona.com/registration>