

### **USER MANUAL**

Ultra Slim 70m (100m HD) 4K60 4:4:4, HDR HDBaseT Extender Audio Extraction, EDID Management, Scaling & Ethernet





### **TABLE OF CONTENTS**

INTRODUCTION	. 3
FEATURES	. 3
WHAT'S IN THE BOX	. 3
SPECIFICATIONS	. 4
TRANSMITTER	. 5
ETHERNET LIGHTS & USAGE	. 7
FUNCTIONS & SETUP	. 8
EDID MANAGEMENT	. 8
COPY DEVICE EDID	. 10
RECEIVER	. 11
ETHERNET LIGHTS & USAGE	. 13
FUNCTIONS & SETUP	. 14
RS-232 CONFIGURATION	. 15
IR CONFIGURATION	. 17
IR CONNECTIONS	. 18
AUDIO EXTRACTION	. 19
STERO CABLE PREPARATION	. 20
TROUBLESHOOTING	. 21
MAINTENANCE	. 22
DAMAGE REQUIRING SERVICE	. 23
SUPPORT	. 23
\MADDANTY	2/



AVPro Edge presents its first 18Gbps over copper extender. Using ICT (Invisible Compression Technology) we have achieved what was thought to be impossible. We can deliver a virtually lossless high bandwidth 4K HDR signal with support for all signals up to 18Gbps. Deep Color and HDR Metadata remain intact making the transmission free of artifacts like banding. Other similar devices will deliver a sub-par image that has very visible banding and color shifting.

#### **Model Numbers:**

- AC-EX70-444-T ~ HDBaseT Transmitter w/IR and RS-2
- AC-EX70-444-R ~ HDBaseT Receiver w/ IR and RS-232

#### **Features**

- HDMI 2.0(a/b)
- 18Gbps Bandwidth Support (Using ICT)
- Ultra Slim (.47 inch/12mm)
- Up to 4K60 4:4:4 Support
- Full HDR Support (HDR 10 & 12 Bit)
- HDR, HDR10+ and HLG Support
- 4K --> 1080P Down-scaling for mixed systems
- EDID Management and EDID emulate
- 4K & HD Test Patterns built into Tx and Rx for troubleshooting
- Ethernet Hub Capability
- L/R Audio Extraction on Tx and Rx
- HDCP 2.2 (and all earlier versions supported)
- CEC Pass Through
- 3D Support
- 100M (330ft) on 1080P (Cat6a)
- Up to 70m (230ft) on 4K (up to 4K60 4:4:4, HDR) (Cat6a)
- Bi-directional 48v PoH (Power Over HDBaseT, only one Power Supply Needed)
- I-Pass Feature for control system "pass-through"
- 3–20v protection circuit built in for safe IR transport
- Bi Directional RS232 Transport
- LED Status, Link, Power indication lights
- Use single UTP/STP LAN cable (CAT-5E/6A) with substitute HDMI cable to achieve long distance transmission.
- Supports uncompressed PCM 2- Ch., LPCM
   5.1 & 7.1, Dolby Digital, DTS, Dolby TrueHD, DTS HD-Master Audio, Atmos on HDMI
- ESD protection circuitry (Inputs & Outputs) to 7KV
- Can Cascade

#### Whats in the box

- AC-EX70-444-T (Transmitter)
- AC-EX70-444-R (Receiver)
- 48V Power Supply (One supplied)
- 1 x IR Tx Unit
- 1 x IR Rx Unit
- 4x 3 Pin Terminal blocks for Audio and RS232 Ports
- Mounting Brackets

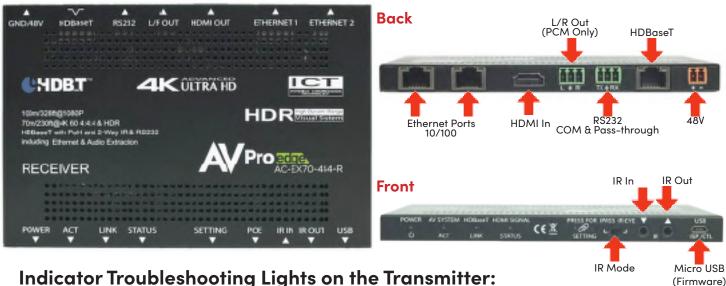
\*NOTE: Optional 3PIN to STEREO Audio Cables available for purchase "AC-CABLE-3PIN-2CH"



Video:	
Video Resolutions	Up to 4K 60Hz 4:4:4
VESA Resolutions	Up to DCI 4K (4096x2160)
	420, 422, 444 (10 and 12 Deep Color)
HDR Formats/Resolutions	HDR10, HDR10+, Dolby Vision (24/30 Frames), HLG, Dolby
	Vision
Color Space	YUV (Component), RGB
Color Space	(CSC: Rec. 601, Rec. 709, BT2020, DCI, P3 D6500)
Chroma Subsampling	4:4:4, 4:2:2, 4:2:0 Supported
Deep Color	Up to 16 bit (1080), Up to 12 bit (4K)
Down Scaling	4k (and HDR) down to 1080p
Audio:	4k (and HDR) down to 1000p
Audio.	PCM 2.0 Ch, LPCM 5.1 & 7.1, Dolby Digital, DTS 5.1,
Audio Formats Supported HDMI	Dolby Digital Plus, Dolby TrueHD, DTS-HD Master Audio,
Audio Formats Supported Fibivii	
A. E. E C A. I.E. A. A. I.C.CH. B. A.	DTS-X, Dolby Atmos
Audio Formats Supported Extracted (2CH Port)	PCM 2 Ch (No Downmix)
Distance: HDBaseT (CAT) Distance (4K)	70 Matara / 220 Foot (Cat 6a)
	70 Meters / 230 Feet (Cat 6a)
HDBaseT (CAT) Distance (Full HD)	100 Meters / 330 Feet (Cat 6a)
HDMI Lead In/Out (4K60 4:4:4)	Up to 50 Feet (using Bullet Train HDMI)
HDMI Lead In/Out (w/ AOC Cable) (4K60 4:4:4)	Up to 130 Feet (using Bullet Train AOC)
Other:	10.01 - (1) - 107-1 - 10.0 (1) - 1
Bandwidth	18 Gbps (Uses ICT above 10.2 Gbps signals)
HDCP	HDCP 2.2 and Earlier (HDCP 2.3 support with this firmware)
HDMI (TX & RX)	Time A
HDBaseT	Type A  RJ45 w/ PoH for HDBaseT Receivers
Audio (Extracted Analog) (TX & RX)	3 pin terminal block (Unbalanced) Each
IR TX (TX & RX)	3.5MM Mono (2 Conductor) Each
IR RX (TX & RX)	3.5mm Stereo (3 Conductor) Each
rs232 (TX & RX)	2 Pin Tomin I Pin I Fort
	3 Pin Terminal Block Each
power (TX & RX)	2 Pin Terminal Block Each
power (TX & RX) Ethernet (TX & RX)	
power (TX & RX) Ethernet (TX & RX) Environmentals	2 Pin Terminal Block Each 2x RJ45 Connections Each (10/100)
power (TX & RX) Ethernet (TX & RX)  Bayironmentals Operating Temperature	2 Pin Terminal Block Each 2x RJ45 Connections Each (10/100) 23 to 125°F (-5 to 51°C)
power (TX & RX) Ethernet (TX & RX) Environmentals Operating Temperature Storage Temperature	2 Pin Terminal Block Each 2x RJ45 Connections Each (10/100) 23 to 125°F (-5 to 51°C) -4 to 140°F (-20 to 60°C)
power (TX & RX) Ethernet (TX & RX) Environmental: Operating Temperature Storage Temperature Humidity Range	2 Pin Terminal Block Each 2x RJ45 Connections Each (10/100) 23 to 125°F (-5 to 51°C)
power (TX & RX) Ethernet (TX & RX) Environmentals Operating Temperature Storage Temperature Humidity Range Powers	2 Pin Terminal Block Each 2x RJ45 Connections Each (10/100)  23 to 125°F (-5 to 51°C) -4 to 140°F (-20 to 60°C) 5-90% RH (No Condensation)
power (TX & RX) Ethernet (TX & RX) Environmental: Operating Temperature Storage Temperature Humidity Range	2 Pin Terminal Block Each 2x RJ45 Connections Each (10/100)  23 to 125°F (-5 to 51°C) -4 to 140°F (-20 to 60°C) 5-90% RH (No Condensation)  12 Watts Max
power (TX & RX) Ethernet (TX & RX) Environmentals Operating Temperature Storage Temperature Humidity Range Powers	2 Pin Terminal Block Each 2x RJ45 Connections Each (10/100)  23 to 125°F (-5 to 51°C) -4 to 140°F (-20 to 60°C) 5-90% RH (No Condensation)  12 Watts Max Input: AC 100-240V ~ 50/60Hz
power (TX & RX)  Ethernet (TX & RX)  Environmental:  Operating Temperature  Storage Temperature  Humidity Range  Power:  Power Consumption (Total)  Power Supply - Matrix	2 Pin Terminal Block Each 2x RJ45 Connections Each (10/100)  23 to 125°F (-5 to 51°C) -4 to 140°F (-20 to 60°C) 5-90% RH (No Condensation)  12 Watts Max
power (TX & RX) Ethernet (TX & RX) Environmental: Operating Temperature Storage Temperature Humidity Range Power: Power: Power Consumption (Total)	2 Pin Terminal Block Each 2x RJ45 Connections Each (10/100)  23 to 125°F (-5 to 51°C) -4 to 140°F (-20 to 60°C) 5-90% RH (No Condensation)  12 Watts Max Input: AC 100-240V ~ 50/60Hz Output: DC 48V 0.5A
power (TX & RX)  Ethernet (TX & RX)  Environmental:  Operating Temperature  Storage Temperature  Humidity Range  Power:  Power Consumption (Total)  Power Supply - Matrix	2 Pin Terminal Block Each 2x RJ45 Connections Each (10/100)  23 to 125°F (-5 to 51°C) -4 to 140°F (-20 to 60°C) 5-90% RH (No Condensation)  12 Watts Max Input: AC 100-240V ~ 50/60Hz Output: DC 48V 0.5A  mm: 157 x 103 x 12
power (TX & RX) Ethernet (TX & RX) Environmental: Operating Temperature Storage Temperature Humidity Range Power: Power Consumption (Total) Power Supply - Matrix Dimensions:	2 Pin Terminal Block Each 2x RJ45 Connections Each (10/100)  23 to 125°F (-5 to 51°C) -4 to 140°F (-20 to 60°C) 5-90% RH (No Condensation)  12 Watts Max Input: AC 100-240V ~ 50/60Hz Output: DC 48V 0.5A  mm: 157 x 103 x 12 inch: 6.18 x 4.04 x 0.47
power (TX & RX) Ethernet (TX & RX) Environmental: Operating Temperature Storage Temperature Humidity Range Power: Power Consumption (Total) Power Supply - Matrix Dimensions: Dimensions (Unit Only Height/Depth/Width)	2 Pin Terminal Block Each 2x RJ45 Connections Each (10/100)  23 to 125°F (-5 to 51°C) -4 to 140°F (-20 to 60°C) 5-90% RH (No Condensation)  12 Watts Max Input: AC 100-240V ~ 50/60Hz Output: DC 48V 0.5A  mm: 157 x 103 x 12 inch: 6.18 x 4.04 x 0.47 mm: 203 x 165 x 91
power (TX & RX) Ethernet (TX & RX) Environmental: Operating Temperature Storage Temperature Humidity Range Power: Power Consumption (Total) Power Supply - Matrix Dimensions: Dimensions (Unit Only Height/Depth/Width)  Dimensions (Packaged Height/Depth/Width)	2 Pin Terminal Block Each 2x RJ45 Connections Each (10/100)  23 to 125°F (-5 to 51°C) -4 to 140°F (-20 to 60°C) 5-90% RH (No Condensation)  12 Watts Max Input: AC 100-240V ~ 50/60Hz Output: DC 48V 0.5A  mm: 157 x 103 x 12 inch: 6.18 x 4.04 x 0.47 mm: 203 x 165 x 91 inch: 8 x 6.5 x 3.6
power (TX & RX)  Ethernet (TX & RX)  Environmental: Operating Temperature Storage Temperature Humidity Range Power: Power Consumption (Total)  Power Supply - Matrix  Dimensions: Dimensions (Unit Only Height/Depth/Width)	2 Pin Terminal Block Each 2x RJ45 Connections Each (10/100)  23 to 125°F (-5 to 51°C) -4 to 140°F (-20 to 60°C) 5-90% RH (No Condensation)  12 Watts Max Input: AC 100-240V ~ 50/60Hz Output: DC 48V 0.5A  mm: 157 x 103 x 12 inch: 6.18 x 4.04 x 0.47 mm: 203 x 165 x 91



#### THE TRANSMITTER



#### Indicator Troubleshooting Lights on the Transmitter:

#### POWER - On the front:

(Red) This is an indicator that the power is connected. There are only two states for light:

- Light Is On = Power supply is connected and functioning.
- Light Is Off = Power supply is not connected or there is no power present. (In order to have power: check the power supply, USP, Outlet, etc...)

#### AV SYSTEM ACT - On the front:

(Blue) This is an indicator of activity on the link - this light will blink randomly as data is sent/ received.

#### **HDBaseT LINK - On the front:**

• (Blue) This is an indicator that that the RJ45 HDBaseT Link is stable. This light should always be SOLID.

#### **HDMI SIGNAL STATUS - On the front:**

(Blue) This indicator shows that the HDMI source is connected.

#### The states are:

- Light Is On (Solid) = Sync w/ HDMI source is correct and solid.
- Light Is Flashing = The light flashes during the sync process. If it is flashing continuously, a picture may not be present.

#### If the BLUE HDMI SIGNAL STATUS LIGHT is flashing, check the following:

- The source. Plug it directly into the display to be sure it's functioning properly.
- 2. Try a longer HDMI cable. Some HDMI cables do not sync well at shorter lengths.
- 3. Set the EDID to state #1 (See below).
- 4. If these suggestions do not work, enable the "Test Pattern" (See Below). If you see the pattern, the problem is between the source and the transmitter, please try a different source.
- 5. Contact AVProEdge if these suggestions do not work.



# Indicator Troubleshooting Lights on the Transmitter Cont.

#### LINK - Above RJ45 (HDBT) Port:

(Green) This indicator shows that the AV HDBT link between the Tx and Rx is in tact. This light should ALWAYS be solid.

If this light is flashing or not present attempt following:

- 1. Check the length. The maximum distances are 70m (230ft) on 4K and 100m (330ft) on 1080P.
- 2. Remove any coils of cable and make sure that there is not excess cabling.
- 3. Bypass all patch panels and punch-down blocks.
- 4. Re-terminate connectors. Sometimes, even if a cable tester indicates the run is valid, something may be slightly off.
  - a. Standard RJ45 ends are recommended. Pass through style types can cause interference/crosstalk
- 5. Contact AVProEdge if these suggestions do not work.

#### STATUS- Above RJ45 (HDBT) Port:

(Amber) This is an indicator showing that the power is present between the Transmitter and Receiver. This light ALWAYS BLINKS steadily indicating everything is OK. If you do not see this light, attempt the following:

- 1. Check the length. The maximum distances are 70m (230ft) on 4K and 100m (330ft) on 1080P.
- 2. Remove any coils of cable and make sure that there is not excess cabling.
- 3. Bypass all patch panels and punch-down blocks.
- 4. Re-terminate connectors. Sometimes, even if a cable tester indicates the run is valid, something may be just slightly off.
  - a. Standard RJ45 ends are recommended. Pass through style types can cause interference/crosstalk
- 5. Try powering from the Receiver instead of the Transmitter (See Receiver page for more about PoE direction).
- 6. Contact AVProEdge if these steps do not work.



### **ETHERNET LIGHTS & USAGE:**

Ethernet usage is very straight-forward. It is used for driving network communication over the HDbaseT link. The purpose of these ports is to act as a "Hub", if you plug one port into a router all the other ports on both the Tx & Rx now have access to the network.

#### **Usage Examples:**

- Supplying a hardwire Ethernet connection to video zones for on-device streaming and/or local gaming devices and players.
- Supplying server based content from a server to a remote display.
- Supplying a zone with a hardwired Ethernet connection for a Wi–Fi access–point in remote zones.

Usage is plug-&-play - the ports are always active and so long as ONE of the FOUR combined ports between the Tx and Rx is connected to the network the other three have access.

#### **Ethernet Indicator Lights:**

- AMBER This indicates and Ethernet connection is made, and the connection is stable. This should be SOLID.
- GREEN This indicates that there is activity on the line. This light flashes randomly as data
  is transmitted. If this light is steady OFF there is no data coming through or you may need to
  reset the Ethernet router.



### Functions & Setup of the Transmitter:



IR Mode Slide Switch: (On Front) This is used to select a preferred IR Mode -There are two modes:

- IR-EYE The IR Input will be configured to operate with an IR Receiver Eye.
- I-PASS The IR Input will be configured to safely operate with a direct connection from a control system using a mono or stereo 3.5mm cable. It's protected @ 3v-20v. Default mode is IR-EYE.

#### Using the Setting Button:

(On Front) The setting button can be pressed in different combinations based on what is needed. The status light on the front will flash based on the selection. The selections are in series, meaning, for example, if you are on selection 5 (listed below), you can come back later and press it again to move you to 6, 7, 8, 1, 2, etc... Using an ink pen is best to press the button.

The SETTING BUTTON is located just to the right of the to the left of the symbol.



symbol, and the SETTING INDICATOR LED is just

### **EDID Management: GEN1**

Quick press to select EDID



EDID	LED FLASHES
EDID BYPASS	1 TIME
1080P 2CH	2 TIMES
1080P 8cH	3 TIMES
4K 60 4:2:0 3D 2CH	4 TIMES
4K 60 4:2:0 3D 8cH	5 TIMES
4K 60 3D 2ch HDR	6 TIMES
4K 60 3D 8ch HDR	7 TIMES
USER EDID	8 TIMES

#### EDID Management: GEN2

(Indicated by part number AC-EX70-444-T-2)

4 LED lights on the board inside the chassis (see below) Corresponding light will be solid, the others will flash



EDID SETTINGS		
LED STATUS	1-0N 0-0FF	
1080P 2CH	1000	
1080P 8ch	0100	
4K 60 4:2:0 3D 2CH	1100	
4K 60 4:2:0 3D 8cH	1010	
4K 60 3D 2ch HDR	0110	
4K 60 3D 8ch HDR	1110	
USER EDID	0001	

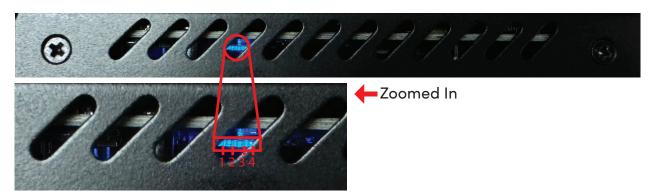


# **EDID Management: GEN3**

(If Purchased after April 2024)



4th vent hole decal side up: You can see it in multiple vent holes, just depends on the angle.



EDID	LED FLASHES
LED STATUS	1234
0:EDID_BYPASS	0001
1:1080P_2CH	0010
2:1080P_8CH	0011
3:4K60HzY420_3D_2CH	0100
4:4K60HzY420_3D_8CH	0101
5:4K60HZ_3D_2CH_HDR	0110
6:4K60HZ_3D_8CH_HDR	0111
7:User_EDID	1000



#### **COPY DEVICE EDID**

While in the USER EDID state (8), press and hold the setting button (for 4 seconds) in order to copy the EDID from the connected display or downstream device to the user EDID and it will apply automatically.

Why do this?

This is commonly used when there is a need for a specific, known EDID that the installer may prefer. It can also be used if you want to bypass an EDID of an AVR or another connected device. (IE, plug the extender kit directly into a display and COPY the EDID. Plug it back into an AVR that may not have a current/good EDID).

#### **Scaler Setting:**

While in ANY state besides the USER EDID state, press and hold the setting button (for 4 seconds) to toggle the scaler mode.

The options are:

- 1. Normal Mode(ICT Mode) --- LED Flashes 1 Time
- 2. Down Scaler Mode (4K->2K) --- LED Flashes 2 Times

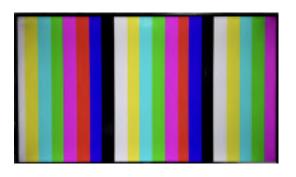
#### Functions & Setup of the Transmitter Cont:

#### **Test Pattern Generator:**

Press and hold the setting button (for 4 seconds) while powering up the transmitter. You should see the color bar pattern to the right on screen. When in this mode, you can quick press to toggle the resolution.

Quick press the setting button---Select the test pattern timing.

- 1080P --- LED Flashes 1 Time (3 sets of color bars, example to the right)
- 4K --- LED Flashes 2 Times (5 sets of color bars)
  - \* NOTE: This can be useful for checking your cabling and for troubleshooting. You can also ensure you have sufficient distance based on the resolution as well.



#### Long Range Mode:

150m (500ft) on up to 1080P 8-BIT

- 1. Enable Test Pattern Mode Press and hold settings button for 4 seconds while powering up the transmitter.
- 2. In Test Pattern Mode Press and hold the settings button for 4 seconds to enable/disable Long Range Mode
  - a. Flash Once Disabled
  - b. Flash Twice Enabled
- 3. Reboot the extender, Long Range Mode is now active.



#### THE RECEIVER



#### Indicator Troubleshooting Lights on the Receiver:

#### POWER - On the front:

(Red) This is an indicator that the power is connected. There are only two states for light:

- Light Is On = Power supply is connected and functioning.
- Light Is Off = Power supply is not connected or there is no power present. (In order to have power: check the power supply, USP, Outlet, etc...)

#### AV SYSTEM ACT - On the front:

 (Blue) This is an indicator of activity on the link - this light will blink randomly as data is sent/received.

#### HDBaseT LINK - On the front:

(Blue) This is an indicator that that the RJ45 HDBaseT Link is stable. This light should always be SOLID.

#### **HDMI SIGNAL STATUS - On the front:**

(Blue) This indicator shows that the HDMI source is connected.

#### The states are:

- Light Is On (Solid) = Sync w/ HDMI source is correct and solid.
- Light Is Flashing = The light flashes during the sync process. If it is flashing continuously, a picture may not be present.

#### If the BLUE HDMI SIGNAL STATUS LIGHT is flashing, check the following:

- 1. The source. Plug it directly into the display to be sure it's functioning properly.
- 2. Try a longer HDMI cable. Some HDMI cables do not sync well at shorter lengths.
- 3. Set the EDID to state #1 (See below).
- 4. If these suggestions do not work, enable the "Test Pattern" (See Below). If you see the pattern, the problem is between the source and the transmitter, please try a different source.
- 5. Contact AVProEdge if these suggestions do not work.



# Indicator Troubleshooting Lights on the Receivercont

LINK - Above RJ45 (HDBT) Port: (Green) This indicator shows that the AV HDBT link between the Tx and Rx is in tact. This light should ALWAYS be solid.

If this light is flashing or not present attempt following:

- 1. Check the length. The maximum distances are 70m (230ft) on 4K and 100m (330ft) on 1080P
- 2. Remove any coils of cable and make sure that there is not excess cabling.
- 3. Bypass all patch panels and punch-down blocks.
- 4. Re-terminate connectors. Sometimes, even if a cable tester indicates the run is valid, something may be slightly off.
  - a. Standard RJ45 ends are recommended. Pass through style types can cause interference/crosstalk
- 5. Contact AVProEdge if these suggestions do not work.

#### STATUS- Above RJ45 (HDBT) Port

(Amber) This is an indicator showing that the power is present between the Transmitter and Receiver. This light ALWAYS BLINKS steadily indicating everything is OK. If you do not see this light, attempt the following:

- 1. Check the length. The maximum distances are 70m (230ft) on 4K and 100m (330ft) on 1080P
- 2. Remove any coils of cable and make sure that there is not excess cabling.
- 3. Bypass all patch panels and punch-down blocks.
- 4. Re-terminate connectors. Sometimes, even if a cable tester indicates the run is valid, something may be just slightly off.
  - a. Standard RJ45 ends are recommended. Pass through style types can cause interference/crosstalk
- 5. Try powering from the Receiver instead of the Transmitter (See Receiver page for more about PoE direction).
- 6. Contact AVProEdge if these steps do not work.



#### Ethernet Lights & Usage:

Ethernet usage is very straight-forward. It is used for driving network communication over the HDbaseT link. The purpose of these ports is to act as a "Hub", if you plug one port into a router all the other ports on both the Tx & Rx now have access to the network.

#### **Usage Examples:**

- Supplying a hardwire Ethernet connection to video zones for on-device streaming and/or local gaming devices and players.
- Supplying server based content from a server to a remote display.
- Supplying a zone with a hardwired Ethernet connection for a Wi–Fi access–point in remote zones.

Usage is plug-&-play - the ports are always active and so long as ONE of the FOUR combined ports between the Tx and Rx is connected to the network the other three have access. Ethernet Indicator Lights:

- AMBER This indicates and Ethernet connection is made, and the connection is stable. This should be SOLID.
- GREEN This indicates that there is activity on the line. This light flashes randomly as data
  is transmitted. If this light is steady OFF there is no data coming through or you may need to
  reset the Ethernet router.



# Functions & Setup of the Receiver:



#### **POE Slide Switch**

(On Front)

This is used to select how you want to PoE is to be directed. There are two options (you are choosing where the power is ORIGINATING from):

- TX (Default)= You will need to power the TRANSMITTER, the receiver will be powered over the CAT Cable (Default).
- RX = You will need to power the RECEIVER, the transmitter will be powered over the CAT Cable from the receiver (This is called "Reverse Power").

#### Using the Setting Button:

(On Front) The SETTING BUTTON is located just to the left of the POE switch. This button can be used to enable/disable the built in Test Pattern Generator.

#### **Test Pattern Generator:**

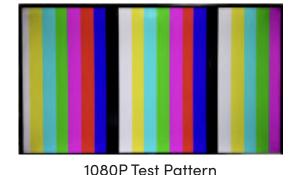
Press and hold the setting button (for 4 seconds) while powering up the receiver. If you are powering from the transmitter side, to power cycle the receiver unplug the HDBaseT Category cable. You should see the color bar pattern appear the right on screen. When in this mode, you can quick press the settings button to toggle the two resolutions. To Disable, power cycle the receiver.

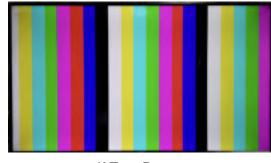
Quick press the setting button---Select the test pattern timing.

- 080P --- LED Flashes 1 Time (3 sets of color bars, example below)
- 4K --- LED Flashes 2 Times (5 sets of color bars, example below)
  - \* NOTE: This can be useful for checking your cabling and for troubleshooting. You can also ensure you have sufficient distance based on the resolution as well.

#### Test Pattern Generator (GEN-2):

Quick press the Setting button to cycle through test patterns of 1080p, 4k, and OFF. The test patterns can be used for stand-alone testing as long as the Receiver is powered. If the Receiver is powered off while the test pattern is enabled, it will still generate a test pattern once it is powered on again. Be sure to disable the test pattern on the Receiver before powering it off.





4K Test Pattern



### **RS-232 CONFIGURATION**

RS-232 can be used to pass control signals bi-directionally to & from any RS-232 compatible device. This is commonly used to route control signals in the following way:

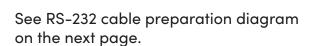
- 1. Control System --> Display/Projector (ie, Power On/Off)
- 2. Display/Projector --> Control System (ie, Display Status, Volume Status etc...)
- 3. When ultra long-range serial communication is needed (think concerts, live events). Use the extender.

The unit comes with 3 pin connectors to allow for any wire an integrator would like. The pin out configuration Left=TX, Center=Ground, Right=RX and looks like this:





This is how the cable should look. If using the AC-CABLE-3.5-DB9F (Female) or AC-CABLE-3.5-DB9M (Male), the colors will be the same. With any other cable, please follow Tx, G, Rx as shown below.





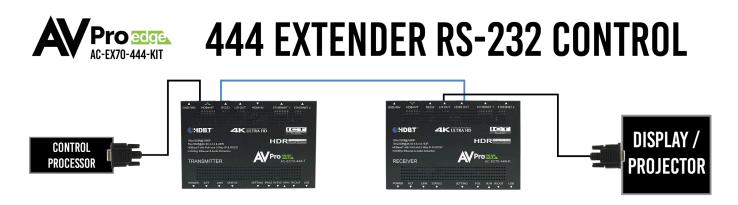


# RS-232 CABLE FOR AVPRO EDGE

IN ORDER TO CONNECT YOUR COMPTER TO THE SWITCH BY RS-232 YOU NEED TO MAKE YOUR OWN CABLE WITH ONE END A PHOENIX CONNECTOR ANI THE OTHER END A RS-232 PORT. YOUR COMPUTER DOESN'T HAVE A IS-232 INPUT, GET A USB CONVERTER (AS SHOWN BELOW), AND PLUG THE USB END TO ANY COMPUTER



#### **RS-232 Sample Application**



RS-232 CONTROL IS BI-DIRECTIONAL SO YOU ARE ABLE TO RECEIVE FEEDBACK



### IR CONFIGURATION

IR can be used in three ways:

#### 1. From Rack (Control System Direct)

- Plug a MONO 3.5mm cable into an emitter port of any control system directly into the "IR IN" port on the AC-EX40-444 Transmitter to pass IR signals directly to the remote end.
  - O NOTE Be sure the IR MODE Slide Switch is set to "I-PASS" on the Transmitter

#### 2. From Rack (Using IR-EYE)

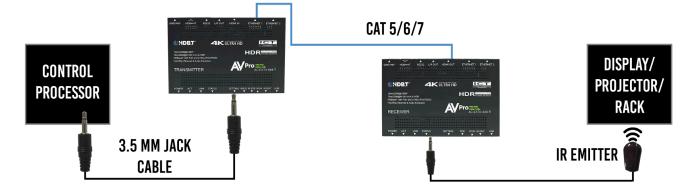
- Plug an IR-Receiver Eye into the "IR IN" of the AC-EX40-444 Transmitter in order to pass infrared signals generated from a device or IR Remote.
  - O NOTE Be sure the IR MODE Slide Switch is set to "IR-EYE" on the Transmitter.

#### 3. From Remote End

 Use an IR-Receiver Eye on the AC-EX40-444 Receiver (IR In Port) in order to send IR signals BACK to the rack and out of the TRANSMITTER IR Out Port with an emitter.

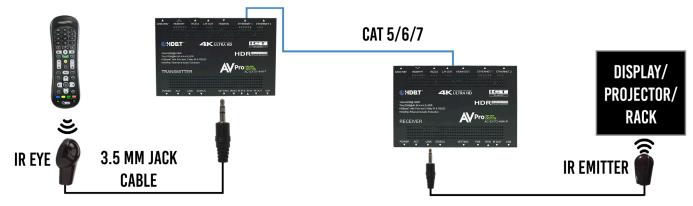


# 444 EXTENDER I-PASS IR CONTROL





# **444 EXTENDER IR CONTROL**

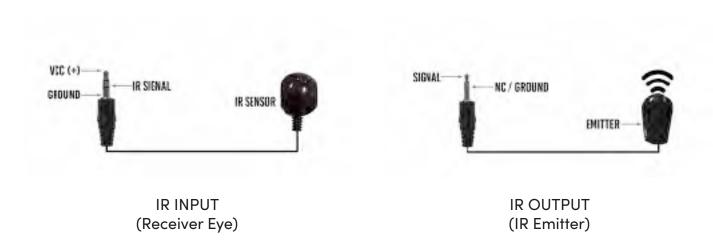




#### IR Connections to AC-EX70-444-T (Transmitter)



### IR Connections to AC-EX70-444-R (Receiver)



\*NOTE: For best results, only use the provided IR EYE's and Emitters



#### **Audio Extraction on AC-EX70-444**

A feature that is always active on the AC-EX70-444 (Tx and Rx) is Audio Extraction. This feature extracts PCM Audio (2ch) from the source device in order to be run to a separate amplifier or AVR. BOTH of the audio ports are always active (on Tx & Rx). NOTE - These ports ONLY work if the source is 2ch. If downmixing is needed, check out AC-AVDM-AUHD or AC-ADM-COTO.

#### To use the ports:

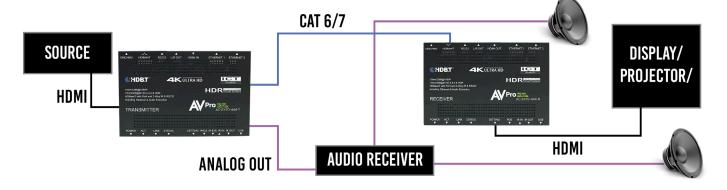
- 1. Simply plug a 3 pin terminal block into the port on the Tx or Rx (both are always active) and make your own cable assembly.
- 2. There is an option to buy pre-made unbalanced 3-pin to RCA Female cables from www.avprostore.com

NOTE: The source device needs to output PCM audio in order for the feature to work. This can be done by using the on-board EDID management or setting the source as such.

#### **Audio Extraction Routing Diagram**



# **4K60 70M EXTENDER AUDIO EXTRACTION**

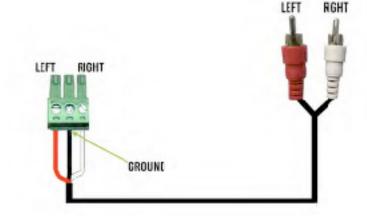




### STEREO CABLE PREPARATION



Pre-made audio cables can be purchased. The part number is: AC-CABLE-3PIN-2CH.



#### **Using Ethernet:**

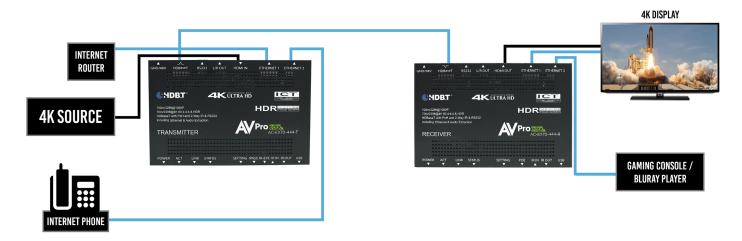
Ethernet usage is very straight-forward. It is used for driving network communication over the HDbaseT link. This of these ports as a "hub", if you plug one port into a router all the other ports on both the Tx & Rx now have access to the network.

#### Usage Examples:

- Supplying a hardwire Ethernet connection to video zones for on-device streaming and/or local gaming devices and players.
- Supplying server based content from a server to a remote display.
- Supplying a zone with a hardwired Ethernet connection for a Wi-Fi access-point in remote zones.

Usage is plug-&-play - the ports are always active and so long as ONE of the FOUR combined ports between the Tx and Rx is connected to the network the other three have access. Ethernet Indicator Lights:

- AMBER This indicates and Ethernet connection is made, and the connection is stable.
   This should be SOLID.
- GREEN This indicates that there is activity on the line. This light flashes randomly as data
  is transmitted. If this light is steady OFF there is no data coming through or you may need
  to reset the Ethernet router.





## **TROUBLESHOOTING**

- Verify Power
  - OVerify POE Switch is correct
- Verify Connections Check that all cables are properly connected
  - **OTX Indicator Troubleshooting Lights**
  - **ORX Indicator Troubleshooting Lights**
- Not passing video, this may be an EDID issue. Out of the box the default is EDID BYPASS. Try a canned EDID or copy the connected displays EDID
- IR Issues Verify correct connections
  - OVisibly flashing Emitters may not function properly, try the IR Cables that come in the box
- Extracted Audio Issues
- Verify Source is set to output 2ch PCM
  - ♦ Note: This unit does NOT downmix
- Still having issues, contact us
  - OSupport Direct
    - ♦ +1-605-977-3477
    - ♦ + 1-605-274-6055
  - OSubmit a support request ticket
    - ♦ https://support.avproedge.com/hc/en-us/requests/new



### **MAINTENANCE**

To ensure the reliable operation of this product and protect the safety of any person using or handling this device while powered, please follow the following instructions.

- Use the power supply provided. If a replacement is required, check voltage, polarity, and verify it has sufficient power to supply this device.
- Do not operate this product outside the specified temperature and humidity range in the above specifications.
- Ensure there is adequate ventilation to allow this product to operate efficiently.
- Repair of this device should only be carried out by qualified professionals as these
  products contain sensitive components that mishandling may damage.
- Use this device only in a dry environment. Do not allow liquids or harmful chemicals to come into contact with the device.
- Clean this unit with a soft, dry cloth. Never use alcohol, paint thinner, or benzene to clean this unit.



### DAMAGE REQUIRING SERVICE

The unit should be serviced by qualified service personnel if:

- The DC power supply cord or AC adapter has been damaged
- · Objects or liquids have gotten into the unit
- The unit has been exposed to rain
- The unit does not operate normally or exhibits a marked change in performance
- The unit has been dropped, or the housing has been damaged

### **SUPPORT**

If you experience any problems while using this product, refer to the Troubleshooting section of this manual before contacting Technical Support. When calling, the following information should be provided:

- Product name and model number
- Product serial number
- Details of the issue and any conditions under which the issue is occurring



### WARRANTY

#### THE BASICS

AVPro Edge warranties its products when purchased from an Authorized AVPro Edge Reseller or directly purchased from AVPro Edge. Products are guaranteed free from manufacturing defects and in sound physical and electronic condition.

AVPro Edge has developed a warranty anyone can get behind. We wanted to remove all the "red tape" from a warranty and simplify it. Our 10-YEAR NO BS warranty hinges on three conditions.

- 1. If you are having trouble, call us. We will attempt to troubleshoot your issue over the phone.
- 2. If it's broken We will advance-replace it on our dime. (We will cover return shipping, too.) Repair is also an option, but that is your decision.
- 3. We know that you know what you are doing. We will not make you go through unnecessary steps to troubleshoot a device that appears to have failed.

#### **COVERAGE DETAILS**

AVPro Edge will replace or repair a defective product (at the customer's choice). If the product is out of stock or on back order, it can be replaced with a comparable product of equal value/feature set (if available) or repaired.

Your warranty begins at receipt of the product (as confirmed by shipping firm tracking). If tracking information is unavailable, the warranty will commence 30 ARO (After Receipt of Order). The coverage continues for 10 YEARS.

#### **RED TAPE**

AVPro Edge is not responsible for untraceable purchases or those made outside an authorized channel.

If we conclude that a product or serial number has been tampered with as identified by the warranty seal or physical examination, the warranty will be void. Additionally, for excessive physical damage (beyond normal wear & tear), the warranty may be voided or pro-rated based on the extent of the damage as examined by an AVPro Edge representative.



Damage caused by what is conventionally termed an act of God is not covered. This may include natural disasters, power surges, storms, earthquakes, tornadoes, sinkholes, typhoons, tidal waves, hurricanes, or any other uncontrollable event related to nature.

Damage caused by incorrect installation will not be covered. Incorrect power supply, inadequate cooling, improper cabling, inadequate protection, and static discharge are examples.

The Authorized AVPro Edge Reseller will service products installed or sold by a third party to AVPro Edge.

This warranty does not include accessories (IR Cables, RS-232, Power Supplies, etc.). We will make an acceptable effort to source and supply replacements for defective accessories at a discounted rate as needed.

#### **OBTAINING AN RMA**

Dealers, Re-sellers, and Installers can request an RMA AVPro Edge Tech Support Rep or their Sales Engineer. Or you may email support@avproedge.com or fill out the general contact form at www. avproedge.com

End users may not request an RMA directly from AVPro Edge and will be referred back to the Dealer, Reseller, or Installer.

#### **SHIPPING**

For the USA (not including Alaska and Hawaii). Shipping is covered on advanced replacements for FedEx Ground (some expressed exceptions may apply). Defective product return shipping is covered by AVPro Edge using an emailed return label. Item must be returned within 30 days of receipt of replacement product; after 30 days, the customer will be billed. Other return shipping methods will not be covered.

The returnee will be responsible for international, Alaska, or Hawaii return shipping costs. Once the unit is scanned for return shipping, AVPro Edge will ship a new unit for replacement.



#### **Legal Stuff**

#### Limitation on Liability

The maximum liability of AVPro Global Holdings LLC under this limited warranty shall not exceed the actual purchase price paid for the product. AVPro Global Holdings LLC is not responsible for direct, special, incidental, or consequential damages resulting from any breach of warranty or condition or under any other legal theory to the maximum extent permitted by law.

Taxes, Duties, VAT, and freight forwarding service charges are not covered or paid for by this warranty.

This warranty does not cover obsolescence or incompatibility with newly invented technologies (after the manufacture of the product).

#### Obsolescence is defined as:

"Peripherals are rendered obsolete when current technology does not support product repair or remanufacture. Obsolete products cannot be re-manufactured because advanced technologies supersede original product manufacturer capabilities. Product redevelopment is not an option because of performance, price, and functionality issues."

Discontinued or out-of-production items will be credited to a current product with equal or comparable capabilities and cost at fair market value. AVPro Edge determines fair market value.

#### **Exclusive Remedy**

This limited warranty and the remedies set forth above are exclusive to the maximum extent permitted by law. Instead of all other warranties, remedies, and conditions, whether oral or written, express or implied. To the maximum extent permitted by law, AVPro Global Holdings LLC expressly disclaims any implied warranties, including, without limitation, warranties of merchantability and fitness for a particular purpose. If AVPro Global Holdings LLC cannot lawfully disclaim or exclude implied warranties under applicable law, all implied warranties covering this product, including merchantability and fitness for a particular purpose, shall apply to this product as provided under applicable law.

This warranty supersedes all other warranties, remedies, and conditions, whether oral or written, express or implied.









### Thank you for choosing AVProEdge!

Please Contact us with any questions, we are happily at your service!











AVProEdge 222 E 52nd Street N ~ Sioux Falls, SD 57104

> 1-877-886-5112 ~ 274-6055 support@avproedge.com