



**AC-EX70-444-KIT**

**USER MANUAL**

**ULTRA SLIM 18G<sub>BPS</sub> 4K60 4:4:4 100M HDMI VIA HDB<sub>ASET</sub>  
EXTENDER KIT**

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# IMPORTANT SAFETY INSTRUCTIONS

Before installing, configuring, and operating the devices and other vendor equipment, AVPro Edge strongly recommends that each dealer, integrator, installer, and all other necessary personnel access and read all the required technical documentation, which can be located by visiting [AVProEdge.com](https://www.avproedge.com).

Read and understand all safety instructions, cautions, and warnings in this document and the labels on the equipment.

## SAFETY CLASSIFICATIONS IN THIS DOCUMENT

|                                                                                                     |                                                                                                                      |
|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
|  <b>NOTE:</b>      | Provides special information for installing, configuring, and operating the devices and equipment.                   |
|  <b>TIP:</b>       | Provides suggestions and considerations for installing, configuring, and operating the devices and equipment.        |
|  <b>IMPORTANT:</b> | Provides special information that is critical for installing, configuring, and operating the devices and equipment.  |
|  <b>CAUTION:</b>   | Provides special information for avoiding situations that may cause damage to the devices and equipment.             |
|  <b>WARNING:</b>   | Provides special information for avoiding situations that may cause physical danger to the installer, end user, etc. |

## ELECTRICAL SHOCK PREVENTION

|                                                                                                                   |                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
|  <b>ELECTRIC SHOCK:</b>          | Provides special information that is critical for installing, configuring, and operating the devices and equipment. |
|  <b>ELECTRICAL DISCONNECT:</b> | Provides special information for avoiding situations that may cause damage to the devices and equipment.            |

## WEIGHT INJURY PREVENTION

|                                                                                                           |                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>WEIGHT INJURY:</b> | Installing some of the devices and equipment requires two installers to ensure safe handling during installation. Failure to use two installers may result in injury. |
|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## SAFETY STATEMENTS

Follow all of the safety instructions listed below and apply them accordingly. Additional safety information will be included where applicable.

- 1 Read and keep these instructions.
- 2 Heed and follow all warnings.
- 3 Clean devices and equipment only with a dry cloth.
- 4 Do not use the devices near water or expose them to rain and moisture.
- 5 Do not block any ventilation openings.
- 6 The devices and their accessories should never be exposed to open flames or excessive heat.
- 7 Only use attachments and accessories specified by the manufacturer.
- 8 Install in accordance with the manufacturer's instructions.
- 9 Do not install near any heat sources, such as radiators, heat registers, stoves, or other apparatus that produce heat.
- 10 Do not defeat the safety purpose of the polarized / 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 wide blade, or third prong, are provided for your safety.
- 11 Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the devices.
- 12 Unplug the devices during lightning storms or when unused for long periods of time.
- 13 To reduce the risk of electrical shock or damage to the devices and their operators, never handle or touch the devices and power cord with damp or wet hands.
- 14 To reduce the risk of injury, some of the devices and equipment may require two installers to ensure safe handling during installation. Failure to use two installers may result in injury.
- 15 Refer all servicing to qualified service personnel. Servicing is required when the devices have been damaged in any way, such as the power cord or plug is damaged, liquid has been spilled, objects have fallen into the devices, the devices have been exposed to rain or moisture, do not operate normally, or have been dropped.

# INTRODUCTION

The AC-EX70-444-KIT was one of the first HDMI-over-HDBaseT extension kits on the market to transmit 4K/60fps 4:4:4 video signals. HDR10, plus dynamic metadata formats such as Dolby Vision, HDR10+, and Hybrid Log Gamma, are transported over Cat6A copper cabling at 18Gbps, as image fidelity remains damage-free from source to display. Employing AVPro Edge's proprietary Invisible Compression Technology algorithm, ICT, 4K/60fps signals containing high dynamic range video enhancements with high-bitrate audio codecs, remain unaltered and artifact-free from the transport process.

## FEATURES

- HDBaseT Spec 2.0 Technology for uncompressed video and audio with near-zero latency
- Extends 4K HDMI signals up to a distance of 100m over Category 6A cable using ICT Mode
- Extends uncompressed 4K60 4:4:4 video with HDR up to 100 meters over Category 6A cable
- Supports VESA resolutions up to DCI 4K (4096 x 2160)
- Supports HDR formats at 4:2:0, 4:2:2, 4:4:4 (10- and 12-bit deep color) HDR10, HDR10+, Dolby Vision (24/30 fps), and HLG
- Supports HDMI audio formats including Dolby Digital, DTS 5.1, Dolby Digital Plus, Dolby TrueHD, DTS-HD Master Audio, DTS:X, Dolby Atmos
- I-PASS feature for control system "pass-through"
- Bidirectional RS-232 Transport
- Test Pattern Generation
- LED Status, Link, and Power indicator lights

## PRODUCT OVERVIEW

### BOX CONTENTS

- (1x) AC-EX70-444 (Transmitter)
- (1x) AC-EX70-444 (Receiver)
- (1x) 48V Power Supply
- (2x) 3-Pin Terminal Block Connector for RS-232 Ports
- (1x) 3.5mm Mono IR Emitter
- (1x) 3.5mm Stereo IR Eye
- (4x) Mounting Brackets
- (8x) Mounting Screws



## TECHNICAL SPECIFICATIONS

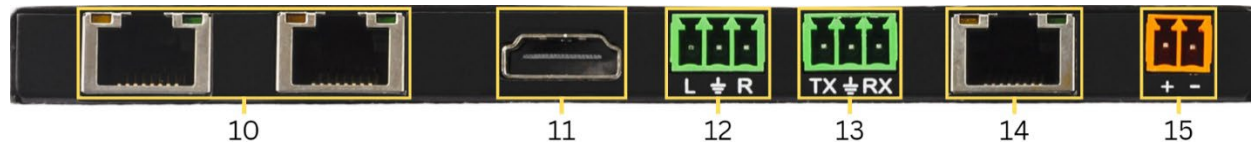
| VIDEO:                                                                              |                                                                                                                               |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| VIDEO RESOLUTIONS                                                                   | UP TO 4K 60HZ 4:4:4                                                                                                           |
| HDR FORMATS/RESOLUTIONS                                                             | 420, 422, 444 (10 AND 12 DEEP COLOR)<br>HDR10, HDR10+, DOLBY VISION, HLG                                                      |
| COLOR SPACE                                                                         | YUV (COMPONENT), RGB<br>(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 TO 1080P                                                                                                                   |
| AUDIO:                                                                              |                                                                                                                               |
| AUDIO FORMATS SUPPORTED HDMI                                                        | PCM 2.0 CH, LPCM 5.1 & 7.1, DOLBY DIGITAL, DTS 5.1, DOLBY DIGITAL PLUS, DOLBY TRUEHD, DTS-HD MASTER AUDIO, DTS-X, DOLBY ATMOS |
| AUDIO FORMATS SUPPORTED EXTRACTED (2CH PORT)                                        | PCM 2 CH                                                                                                                      |
| DISTANCE:                                                                           |                                                                                                                               |
| HDBASET (CAT) DISTANCE (4K)                                                         | 100 METERS / 330 FEET (CAT 6A)                                                                                                |
| HDMI IN/OUT (4K60 4:4:4)                                                            | UP TO 50 FEET (USING BULLET TRAIN HDMI)                                                                                       |
| HDMI IN/OUT (W/ AOC CABLE) (4K60 4:4:4)                                             | UP TO 130 FEET (USING BULLET TRAIN AOC)                                                                                       |
| OTHER:                                                                              |                                                                                                                               |
| BANDWIDTH                                                                           | 18 GBPS (USES ICT ABOVE 10.2 GBPS SIGNALS)                                                                                    |
| HDCP                                                                                | HDCP 2.3 AND EARLIER                                                                                                          |
| PORTS:                                                                              |                                                                                                                               |
| HDMI (TX & RX)                                                                      | TYPE A                                                                                                                        |
| HDBASET                                                                             | RJ45 W/ POH FOR HDBASET RECEIVERS                                                                                             |
| AUDIO (EXTRACTED ANALOG) (TX & RX)                                                  | 5 PIN TERMINAL BLOCK (BALANCED)                                                                                               |
| IR TX (TX & RX)                                                                     | 3.5MM MONO (2 CONDUCTOR)                                                                                                      |
| IR RX (TX & RX)                                                                     | 3.5MM STEREO (3 CONDUCTOR)                                                                                                    |
| RS232 (TX & RX)                                                                     | 3 PIN TERMINAL BLOCK EACH                                                                                                     |
| POWER (TX & RX)                                                                     | 2 PIN TERMINAL BLOCK EACH                                                                                                     |
| ETHERNET (TX & RX)                                                                  | 2X RJ45 CONNECTIONS EACH (10/100)                                                                                             |
| FIRMWARE (TX & RX)                                                                  | USB C                                                                                                                         |
| ENVIRONMENTAL:                                                                      |                                                                                                                               |
| OPERATING TEMPERATURE                                                               | 23 TO 125°F (-5 TO 51°C)                                                                                                      |
| STORAGE TEMPERATURE                                                                 | -4 TO 140°F (-20 TO 60°C)                                                                                                     |
| HUMIDITY RANGE                                                                      | 5-90% RH (NO CONDENSATION)                                                                                                    |
| POWER:                                                                              |                                                                                                                               |
| POWER CONSUMPTION (TOTAL)                                                           | 12 WATTS MAX                                                                                                                  |
| POWER SUPPLY                                                                        | INPUT: AC 100-240V ~ 50/60HZ<br>OUTPUT: DC 48V 0.5A                                                                           |
| DIMENSIONS:                                                                         |                                                                                                                               |
| DIMENSIONS (UNIT ONLY LENGTH/WIDTH/HEIGHT)                                          | MM: 103 X 157 X 12<br>INCH: 4.04 X 6.18 X 0.47                                                                                |
| DIMENSIONS (PACKAGED LENGTH/WIDTH/HEIGHT) (KIT)                                     | MM: 165 X 203 X 91<br>INCH: 6.5 X 8 X 3.6                                                                                     |
| WEIGHT (UNIT)                                                                       | 0.4 LBS (0.13 KG)                                                                                                             |
| WEIGHT (PACKAGED)                                                                   | 2 LBS (0.90 KG)                                                                                                               |
| *SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE. MASS & DIMENSIONS ARE APPROXIMATE |                                                                                                                               |

# TRANSMITTER FRONT AND REAR PANEL OVERVIEW

## AC-EX70-444-T (Transmitter) – Front Panel



## AC-EX70-444-T (Transmitter) – Rear Panel



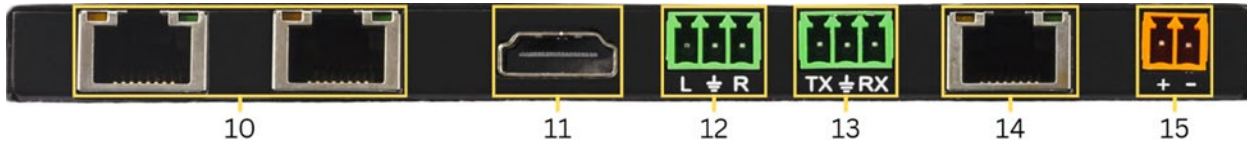
|    |                    |                                                                                                                                                                                                                                                                                                                                                                                                            |
|----|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | POWER              | <ul style="list-style-type: none"> <li>RED LED status indicator light</li> <li>Illuminates once power is connected and functioning</li> </ul>                                                                                                                                                                                                                                                              |
| 2  | AV SYSTEM ACT      | <ul style="list-style-type: none"> <li>BLUE LED status indicator light</li> <li>Illuminates randomly as data is sent/received.</li> </ul>                                                                                                                                                                                                                                                                  |
| 3  | HDBASET LINK       | <ul style="list-style-type: none"> <li>BLUE LED status indicator light</li> <li>Illuminates once the RJ45 HDBaseT Link is stable.</li> </ul>                                                                                                                                                                                                                                                               |
| 4  | HDMI SIGNAL STATUS | <ul style="list-style-type: none"> <li>BLUE LED status indicator light</li> <li>Illuminates once the HDMI source is connected.</li> </ul>                                                                                                                                                                                                                                                                  |
| 5  | SETTINGS BUTTON    | <ul style="list-style-type: none"> <li>Toggle switch for cycling through the test pattern modes, Dipswitch #5 needs to be set to 1 or on.</li> </ul>                                                                                                                                                                                                                                                       |
| 6  | IPASS/ IR EYE      | <ul style="list-style-type: none"> <li>IR Mode Slide Switch used to select a preferred IR IN Mode</li> <li>IR-EYE - The IR Input will be configured to operate with an IR Receiver Eye.</li> <li>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.</li> </ul> |
| 7  | IR IN              | <ul style="list-style-type: none"> <li>3.5mm mono jack (TS) IR Receiver port</li> <li>Sends IR signals downstream to the IR output of the specified endpoint</li> </ul>                                                                                                                                                                                                                                    |
| 8  | IR OUT             | <ul style="list-style-type: none"> <li>3.5mm mono jack (TS) IR transmitter port</li> <li>Sends IR signals downstream to the specified endpoint(s)</li> </ul>                                                                                                                                                                                                                                               |
| 9  | ISP/CTL            | <ul style="list-style-type: none"> <li>USB Type C female connector port</li> <li>Proprietary servicing port for AVPro Edge technical assistance</li> </ul>                                                                                                                                                                                                                                                 |
| 10 | ETHERNET           | <ul style="list-style-type: none"> <li>8-pin RJ-45 female, 10/100 Ethernet connection port</li> <li>Supports standard PoH (Power over HDBaseT)</li> </ul>                                                                                                                                                                                                                                                  |
| 11 | HDMI IN            | <ul style="list-style-type: none"> <li>19-pin HDMI Type A female connector port</li> <li>Source device input for HDMI connection</li> </ul>                                                                                                                                                                                                                                                                |
| 12 | L/R OUT            | <ul style="list-style-type: none"> <li>Extracted audio for optical fiber connection</li> <li>Supported audio includes PCM 2.0 Ch</li> </ul>                                                                                                                                                                                                                                                                |
| 13 | RS232              | <ul style="list-style-type: none"> <li>3-pin terminal block connector port</li> <li>Control port for serial RS-232 connection</li> </ul>                                                                                                                                                                                                                                                                   |
| 14 | HDBT OUT           | <ul style="list-style-type: none"> <li>8-pin RJ-45 female connector port</li> <li>Long-range HDBaseT extension for Category 6A connection</li> <li>Power over HDBaseT (PoH), only one endpoint device requires local power</li> </ul>                                                                                                                                                                      |
| 15 | 48V POWER          | <ul style="list-style-type: none"> <li>48V 0.5A 2-pin terminal block connector to locally power Transmitter</li> </ul>                                                                                                                                                                                                                                                                                     |

# RECEIVER FRONT AND REAR PANEL OVERVIEW

## AC-EX700-444-R (Receiver) – Front Panel



## AC-EX700-444-R (Receiver) – Rear Panel



|    |                    |                                                                                                                                                                                                                                                                                                                                                                                                       |
|----|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Power              | <ul style="list-style-type: none"> <li>RED LED status indicator light</li> <li>Illuminates once power is connected and functioning</li> </ul>                                                                                                                                                                                                                                                         |
| 2  | AV System ACT      | <ul style="list-style-type: none"> <li>BLUE LED status indicator light</li> <li>Illuminates randomly as data is sent/received.</li> </ul>                                                                                                                                                                                                                                                             |
| 3  | HDBaseT Link       | <ul style="list-style-type: none"> <li>BLUE LED status indicator light</li> <li>Illuminates once the RJ45 HDBaseT Link is stable.</li> </ul>                                                                                                                                                                                                                                                          |
| 4  | HDMI Signal Status | <ul style="list-style-type: none"> <li>BLUE LED status indicator light</li> <li>Illuminates once the HDMI source is connected.</li> </ul>                                                                                                                                                                                                                                                             |
| 5  | Settings Button    | <ul style="list-style-type: none"> <li>Toggle switch for cycling through the test pattern modes.</li> </ul>                                                                                                                                                                                                                                                                                           |
| 6  | TX/RX POE          | <ul style="list-style-type: none"> <li>POE Slide Switch used to select how you want PoE to be directed</li> <li>TX (Default)= You will need to power the Transmitter; the receiver will be powered over the CAT Cable (Default).</li> <li>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").</li> </ul> |
| 7  | IR IN              | <ul style="list-style-type: none"> <li>3.5mm mono jack (TS) IR Receiver port</li> <li>Sends IR signals downstream to the IR output of the specified endpoint</li> </ul>                                                                                                                                                                                                                               |
| 8  | IR OUT             | <ul style="list-style-type: none"> <li>3.5mm mono jack (TS) IR transmitter port</li> <li>Sends IR signals downstream to the specified endpoint(s)</li> </ul>                                                                                                                                                                                                                                          |
| 9  | ISP/CTL            | <ul style="list-style-type: none"> <li>USB Type C female connector port</li> <li>Proprietary servicing port for AVPro Edge technical assistance</li> </ul>                                                                                                                                                                                                                                            |
| 10 | Ethernet           | <ul style="list-style-type: none"> <li>8-pin RJ-45 female, 10/100 Ethernet connection port</li> <li>Supports standard PoH (Power over HDBaseT)</li> </ul>                                                                                                                                                                                                                                             |
| 11 | HDMI IN            | <ul style="list-style-type: none"> <li>19-pin HDMI Type A female connector port</li> <li>Source device input for HDMI connection</li> </ul>                                                                                                                                                                                                                                                           |
| 12 | L/R OUT            | <ul style="list-style-type: none"> <li>Extracted audio for optical fiber connection</li> <li>Supported audio includes PCM 2.0 Ch</li> </ul>                                                                                                                                                                                                                                                           |
| 13 | RS232              | <ul style="list-style-type: none"> <li>3-pin terminal block connector port</li> <li>Control port for serial RS-232 connection</li> </ul>                                                                                                                                                                                                                                                              |
| 14 | HDBT OUT           | <ul style="list-style-type: none"> <li>8-pin RJ-45 female connector port</li> <li>Long-range HDBaseT extension for Category 6A connection</li> <li>Power over HDBaseT (PoH), only one endpoint device requires local power</li> </ul>                                                                                                                                                                 |
| 15 | 48V POWER          | <ul style="list-style-type: none"> <li>48V 0.5A 2-pin terminal block connector to locally power Transmitter</li> </ul>                                                                                                                                                                                                                                                                                |

# WIRING AND CONNECTIONS

## HDMI CABLES

The AC-EX70-444-KIT uses the standard 19-pin HDMI female connector port for the inputs and outputs.



### NOTE:

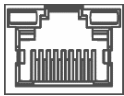
Ensure all HDMI cables and devices can support the signal being sent. For maximum performance, a Premium High Speed HDMI cable rated for 18Gbps will be more than sufficient for signal transport if every device in the system can handle the signal.

### TIP:

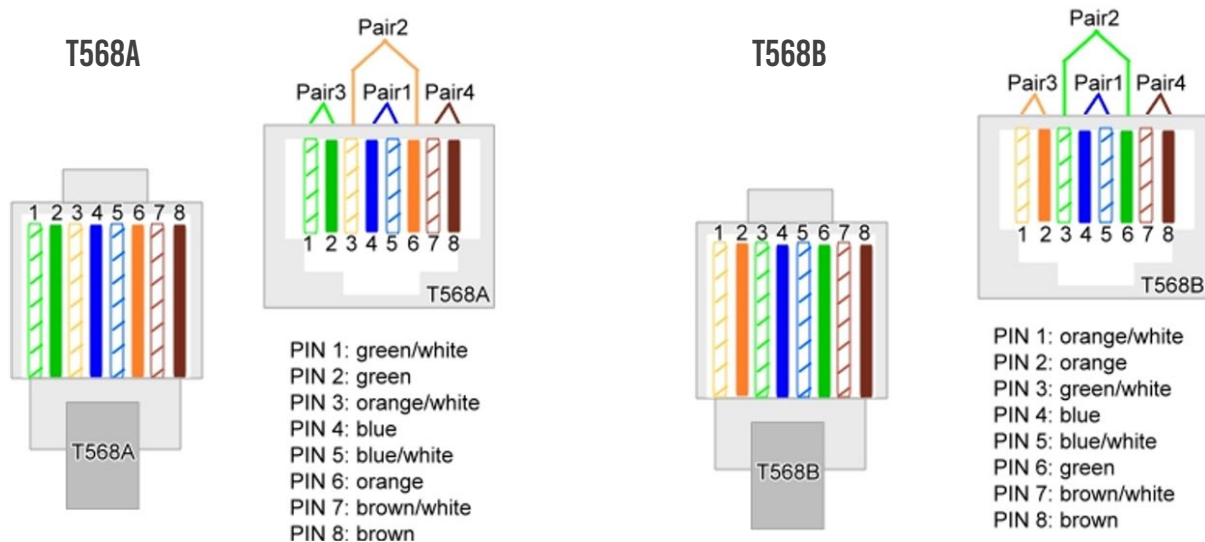
Ensure your HDMI cable is the correct length. The current HDMI specification calls for cables to be between 2 to 10 meters (6.6 to 33 feet). Smaller wire cables may be unable to transmit higher bandwidth signals like 4K60 over distances of even 5 meters (16 feet).

## HDBaseT LINK WIRING

The HDBT input and output ports on both the Transmitter and Receiver utilize HDBaseT 5Play™ Technology and feature PoH (Power over HDBaseT) for supplying power to either the Transmitter or Receiver. For maximum performance, the recommended cabling is Category 6A or Category 7 STP, all other performances cannot be guaranteed.



The recommended termination is based on TIA/EIA T568A or T568B standards for the wiring of the twisted pair cables.



## USB PORTS

Both the Transmitter and Receiver have one USB Type C port that functions as a servicing port for AVPro Edge technical assistance in the event of testing and troubleshooting.

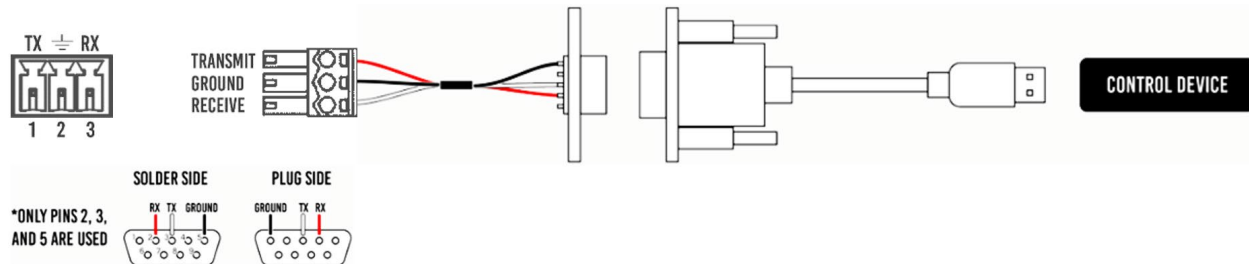


TYPE C

## RS-232 WIRING AND CONTROL

The RS-232 control ports on both the Transmitter and Receiver are used to pass bidirectional control signals to and from any RS-232 compatible device.

Serial control connections are made using the provided 3-pin terminal block connector. The wire slips into the hole and locks with a screw located on top of the connector.



Wiring for this port uses a 3-pin terminal block connector to DB9 where only pins 2, 3, and 5 are used. If the devices do not have a DB9 port, a USB to DB9 adapter may be required.

For RS-232 control, use a null modem serial cable adapter and set the serial communications to:

Baud: 57600, no parity, 8 data bits, 1 stop bit, with no handshaking.

Add a carriage return (Enter key) after each command when using direct commands. The unified command list (ASCII) can be located by entering the help command: **H** followed by a carriage return.

## IR WIRING

Both the Transmitter and Receiver feature three 3.5mm jack ports for IR control. IR connections are made using the provided 3.5mm IR Emitter and IR Eye.



# CONNECTING THE DEVICES

- 1 Connect the HDMI source device to the Transmitter's HDMI IN port.
- 2 Connect the HDMI output device to the Receiver's HDMI OUT port.
- 3 Connect a Category 6A cable between the HDBT OUT port on the Transmitter to the HDBT IN port on the Receiver.
- 4 Connect the 48V power supply to the 2-pin power connector port on either the Transmitter or Receiver.
- 5 Power on the HDMI source and output devices.

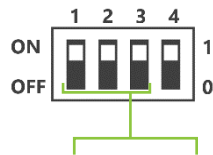
## SETTINGS AND FUNCTIONALITY

### EDID SETTINGS

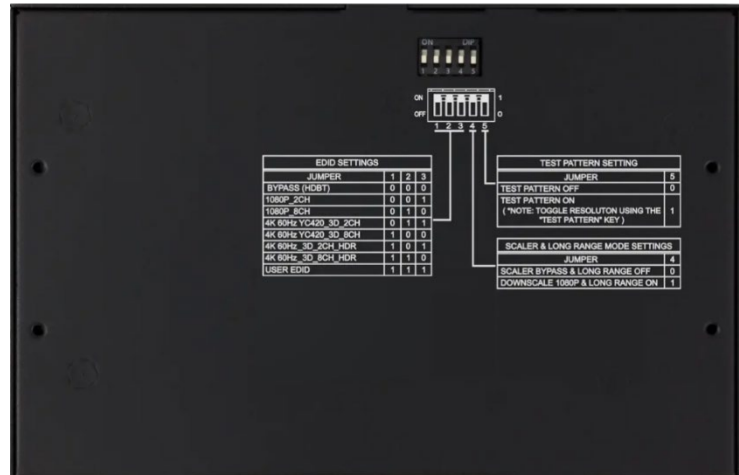
EDID is managed by using the dipswitches located on the bottom panel of the Transmitter. Select an EDID from the *EDID Settings* list and flip the dipswitches to the selected EDID setting.

1 = Up (on)

0 = Down (off)



| EDID JUMPER SETTINGS  | 1 | 2 | 3 |
|-----------------------|---|---|---|
| BYPASS (HDBT)         | 0 | 0 | 0 |
| 1080P 2CH             | 0 | 0 | 1 |
| 1080P 8CH             | 0 | 1 | 0 |
| 4K 60Hz YCC420 3D 2CH | 0 | 1 | 1 |
| 4K 60Hz YCC420 3D 8CH | 1 | 0 | 0 |
| 4K 60Hz 3D 2CH HDR    | 1 | 0 | 1 |
| 4K 60Hz 3D 8CH HDR    | 1 | 1 | 0 |
| USER EDID             | 1 | 1 | 1 |



To copy the EDID from the connected device, ensure the downstream device is powered on, then set the EDID dipswitches to the USER EDID setting 1 1 1 (all up) on the Transmitter. This will copy and store the connected device's EDID to the USER EDID slot.

#### NOTE:

The extenders will retain only one copied EDID at a time on the USER EDID setting. If a new EDID is copied by using the EDID dipswitches or API commands, it will overwrite the previously copied USER EDID setting. Powering the extenders off/on or using one of the other different EDID presets will not overwrite the USER EDID setting.

# TEST PATTERN GENERATOR

## TRANSMITTER SETTINGS

The transmitter can generate a color bar test pattern using dipswitch 5, to enable the test pattern generator flip the dipswitch up ("on" or "1"). Press the Setting button to cycle through test patterns: 1080p, 4K, and off.



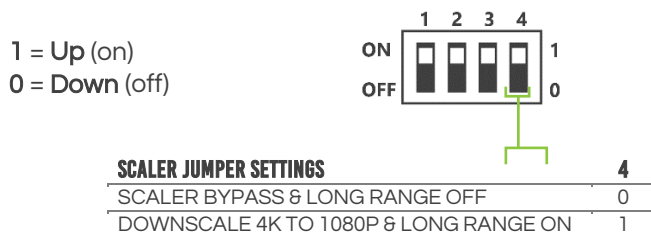
## RECEIVER SETTINGS

Quickly press the Setting button to cycle through test patterns: 1080p, 4K, and Off. Test patterns can be used for stand-alone diagnostics as long as the receiver is powered. If the receiver is powered off while a test pattern is active, the pattern will resume automatically upon power-up. To prevent this, disable the test pattern before powering off the receiver.



## SCALER & LONG-RANGE MODE SETTINGS

Incoming 4K signals can be downscaled to 1080p on the Transmitter by using the dipswitches located on the bottom panel of the Transmitter.



## IR CONTROL

IR can be used in three ways:

- 1 FROM RACK (CONTROL SYSTEM DIRECT):** Connect a 3.5mm mono jack (TS) cable into an emitter port of any control system directly into the IR IN on the transmitter to pass IR signals directly to the remote end.
  - a. NOTE - Be sure the IR MODE Slide Switch is set to "I-PASS" on the Transmitter
- 2 FROM RACK (USING IR-EYE):** Connect the provided IR receiver eye cable into the IR IN port of the transmitter to pass infrared signals generated from a device or IR remote.
  - a. NOTE - Be sure the IR MODE Slide Switch is set to "IR-EYE" on the Transmitter
- 3 FROM REMOTE END:** Connect the provided IR receiver eye cable into the IR IN port on the receiver to send IR signals back to the rack and out of the transmitter's IR OUT port with an emitter.

## AUDIO EXTRACTION/EXTENSION

The AC-EX70-444 (Tx and Rx) features a continuously active audio extraction function that outputs 2-channel PCM audio from the source device for use with an external amplifier or AVR. Both audio output ports on the transmitter and receiver always remain active.

**NOTE** - These ports ONLY work if the source is 2ch. If downmixing is needed, check out AC-AVDM-V3 or AC-DAC-CO2

## ETHERNET EXTENSION

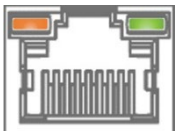
Ethernet usage is very straightforward; it is designed for driving network communication over the HDBaseT link. The purpose of these ports is to act as a “hub”, meaning if one port is plugged into a router then the other port on either the Transmitter or Receiver will have access to the network.

Other examples of Ethernet usage include:

- Supplying a hardwired Ethernet connection to video zones for on-device streaming and/or local gaming devices and players.
- Providing 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.

The ports are always active so long as one of the Ethernet ports on either the Transmitter or Receiver is connected to the network, the other port will also have access.

## ETHERNET INDICATOR LIGHTS



### LEFT LED (AMBER)

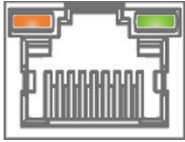
Indicates a stable Ethernet connection is made. This light should always be a solid amber.

### RIGHT LED (GREEN)

Indicates there is online activity. This light flashes randomly as data is transmitted. If it is not illuminating, then there is no data coming through or the router may need to be reset.

# HDBT STATUS INDICATOR LIGHTS

The HDBaseT ports feature status indicator LEDs on both the Transmitter and Receiver for showing active connections while troubleshooting.



## LEFT LED (AMBER) – Status

Indicates there is power present between the Transmitter and Receiver. Steady blinking amber indicates normal operations. If this LED is not illuminated, check the following:

- Verify cable length is within the maximum distance of 100m (330ft).
- Remove any coils of cable and ensure there is no excess cabling.
- Bypass all patch panels and punch-down blocks.
- Re-terminate connectors ends. Use standard RJ-45 connectors, avoid using push-through or “EZ” type ends, as these have exposed copper wiring at the tips that can cause signal interference.
- Contact AVPro Edge Technical Support if these suggestions do not work.

## RIGHT LED (GREEN) – Link

Indicates there is an active link between the Transmitter and Receiver. Solid green indicates the Transmitter and Receiver have been identified and are communicating with each other. If this LED is not illuminated, check the following:

- Verify cable length is within the maximum distance of 100m (330ft).
- Remove any coils of cable and ensure there is no excess cabling.
- Bypass all patch panels and punch-down blocks.
- Re-terminate connectors ends. Use standard RJ-45 connectors, avoid using push-through or “EZ” type ends, as these have exposed copper wiring at the tips that can cause signal interference.
- Try locally powering the Receiver instead of the Transmitter.
- Contact AVPro Edge if these suggestions do not work.

# COMMAND LIST

| Command                       | Action                                                 |
|-------------------------------|--------------------------------------------------------|
| H                             | Help                                                   |
| STA                           | Show Global System Status                              |
| SET RBT                       | Reboot Device                                          |
| SET RST                       | Reset to Factory Defaults                              |
| SET ADDR xx                   | Set System Address to xx {xx = [00~99] (00 = Single)}  |
| GET ADDR                      | Get System Address                                     |
| GET STA                       | Get System Status                                      |
| GET HW REV                    | Get Hardware Revision                                  |
| GET IN1 SIG STA               | Get Input 1 Signal Status                              |
| GET OUT1 TP CAB LEN           | Get HDBaseT Output 1 Cable Length (in meters)          |
| <b>Output Setup Commands:</b> |                                                        |
| SET OUT1 EXA EN/DIS           | Set Ex-Audio Output Enable/Disable                     |
| SET OUT1 TP POE y             | Set Output POE Mode {y = [0~1] (0 = Auto, 1 = Force)}  |
| GET OUT1 EDID DATA            | Get Output EDID Data                                   |
| GET OUT1 EXA                  | Get Ex-Audio Output Enable/Disable Status              |
| GET OUT1 TP POE               | Get Output POE Mode {x = 1}                            |
| <b>Input Setup Commands:</b>  |                                                        |
| SET IN1 EDID CY OUT1          | Copy Output 1 EDID to Input 1 (User_EDID)              |
| SET IN1 EDID U1 DATAz         | Write EDID to User Buffer of Input 1 {z = [EDID Data]} |
| GET IN1 EDID                  | Get Input 1 EDID Index                                 |
| GET IN1 EDID y DATA           | Get Input 1 EDID y Data {y = [1~7]}                    |

# TROUBLESHOOTING

- Verify Power – Check that the power supply is properly connected and is outputting 48V.
- Verify Connections – Check that all cables are properly connected and/or terminated where applicable.
- Verify Terminations – Ensure you are using a minimum of CAT 6A UTP or STP without breaks such as keystones, punch downs, or other interconnectors. Field terminatable plugs are recommended.
- Black Screen When Switching Sources – Use a minimum of a 2 meter (6.6 feet) HDMI cable between the source/sink device and the extender's HDMI port.
- No Picture – Try setting a canned EDID from the Transmitter. See [EDID Settings](#).
- IR Not Passing – Ensure the provided IR cables are being utilized and are connected to the appropriate port. See [IR Control](#).

# MAINTENANCE

To ensure reliable operation of these devices as well as protecting the safety of any person using or handling these devices while powered, observe the following instructions:

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

# DAMAGE REQUIRING SERVICE

The devices should be serviced by qualified personnel if:

- The DC power supply cord or AC adapter has been damaged
- Objects or liquids have breached the interior of the devices
- The devices have been exposed to rain or moisture
- The devices do not operate normally or exhibit a marked change in performance
- The devices have been dropped or the housing is damaged

# SUPPORT

Should you experience any problems using this product, first refer to the [Troubleshooting](#) section of this manual before contacting AVPro Technical Support. When calling in, 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 that are purchased from all authorized AVPro Edge resellers or direct purchases. Products are guaranteed to be free from manufacturing defects and are of sound physical and electronic condition.

AVPro Edge has developed a warranty that anyone can get behind. We really wanted to take all the “red tape” out of a warranty and just make it simple. Our 10 Year No BS Warranty hinges on 3 elements:

- If you are having trouble, call us. We will attempt to troubleshoot your issue over the phone.
- If it's broken, we will replace it in advance on our dime and we'll also cover the return shipping. Repair is an option too, but it's YOUR call.
- We know you know what you are doing. We will not make you go through unnecessary steps to troubleshoot an extender.

## COVERAGE DETAILS

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

Your warranty begins at receipt of product (as confirmed by shipping firm tracking). If tracking information is unavailable for any reason, 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 that were made outside of an authorized channel.

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

Damaged caused by “acts of God” are not covered. They include natural disasters, power surges, storms, earthquakes, tornados, sink holes, typhoons, tidal waves, hurricanes, or any other uncontrollable event related to nature.

Damage caused by in correct installation will not be covered. Incorrect power supply, inadequate cooling, improper cabling, inadequate protection, static discharge are examples of this.

Products installed or sold by a third party to AVPro Edge will be serviced by the authorized AVPro Edge reseller. Accessories (IR cables, RS-232, power supplies, etc.) are not included in the warranty. We will make acceptable efforts to source and supply replacements for defective accessories at a discounted rate as needed.

## OBTAINING AN RMA

Dealers, resellers, and installers can request an RMA from an AVPro Edge Technical Support representative or Sales Engineer. Or you may email [support@avproedge.com](mailto:support@avproedge.com) or fill out the general contact form at [www.avproedge.com/contact](http://www.avproedge.com/contact).

End users may not request an RMA directly from AVPro Edge and will be referred back to the dealer, reseller, or installer.

## SHIPPING

For 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. Items must be returned within 30 days of receipt of the replacement product, after 40 days the customer will be billed. Other return shipping methods will not be covered.

For international (and Alaska and Hawaii) return shipping costs will be the responsibility of the returnee. Once the unit is scanned for return shipping AVPro Edge will ship the new replacement unit.

## 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 other freight forwarding service charges are not covered or paid for by this warranty.

Obsolescence or incompatibility with newly invented technologies (after manufacture of product) is not covered by this warranty. Obsolescence is defined as:

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

Discontinued or out-of-production items will be credited at fair market value towards a current product of equal or comparable capabilities and cost. Fair market value is determined by AVPro Edge.

## EXCLUSIVE REMEDY

To the maximum extent permitted by law, this limited warranty and the remedies set forth above are exclusive and in lieu 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 specifically disclaims any and all 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, then all implied warranties covering this product, including warranties of 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.