AT-OME-EX-RX

Omega™ HDBaseT Receiver w/USB

Instructions for Use

Version 1.0



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Version Information

This section lists document revisions.

Version	Date	Notes
1.0	October 16, 2026	Initial release.

Sales & Customer Support

Main Office (US)	Hall Research, 1234 Lakeshore Dr Suite #150, Coppell, TX 75019
Support Hours	Monday – Friday, 8:00 a.m. – 6:00 p.m. (CST)
Website	https://www.hallresearch.com
Product Page	https://www.hallresearch.com/product/AT-OME-EX-RX

IMPORTANT: Visit https://www.hallresearch.com/product/AT-OME-EX-RX for the latest firmware updates and Instructions for Use.

Warranty

To view the product warranty, use the following link: https://hallresearch.com/warranty

Important Safety Information

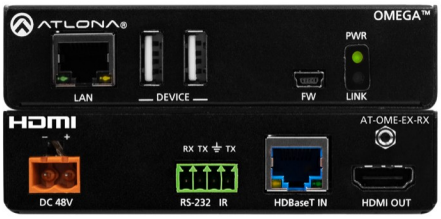
CAUTION: Risk of electric shock. Do not open the enclosure or expose it to rain or moisture. No user-serviceable parts inside. Refer servicing to qualified service personnel.

- Do not expose this apparatus to rain, moisture, dripping, or splashing, and do not place objects filled with liquids, such as vases, on the apparatus.
- Do not install or place this unit in a bookcase, built-in cabinet, or other confined space. Ensure the unit is well ventilated.
- To prevent the risk of electric shock or fire from overheating, do not obstruct the ventilation openings with newspapers, tablecloths, curtains, or similar items.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not place sources of naked flames, such as lighted candles, on the unit.
- Clean this apparatus only with a dry cloth.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Protect the power cord from being walked on or pinched, particularly at plugs.
- Only use attachments and accessories specified by the manufacturer.
- Refer all servicing to qualified service personnel.

FCC Compliance

This hardware device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Introduction



The Atlona **AT-OME-EX-RX** is an HDBaseT receiver for video up to 4K/60 4:2:0, plus embedded audio, control, Ethernet, and USB over distances up to 330 feet (100 meters). Part of the Omega™ Series of integration products for modern AV communications and collaboration, the AT-OME-EX-RX is HDCP 2.2 compliant and receives IR, RS-232, and IP control signals. With a matching HDBaseT transmitter, the integrated USB extension is ideal for software video conferencing and the use of touch or interactive displays. The AT-OME-EX-RX includes two USB interfaces for devices such as a camera or display. This receiver is ideal for use with Omega Series transmitters as well as switchers with HDBaseT outputs. Also available is the AT-OME-EX- KIT which includes the AT-OME-EX-TX and AT-OME-EX-RX.*

Package Contents

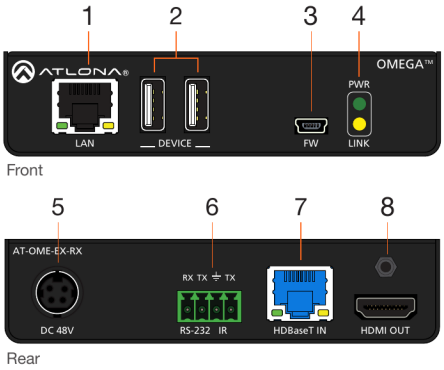
- 1 x AT-OME-EX-RX
- 1 x Captive screw connectors, 4-pin
- 2 x Mounting plates
- 4 x Mounting screws
- 1 x 48 V DC power supply
- 1 x Installation Guide



IMPORTANT: Visit https://www.hallresearch.com/product/AT-OME-EX-RX for the latest firmware updates and Instructions for Use.

The AT-OME-EX-RX is not compatible with the AT-UHD-HDVS-300 system for extending USB.

Panel Description



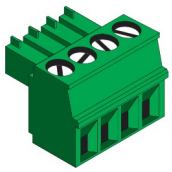
#	Name	Description
1	LAN	Connect a category cable from this port to the display (sink) device. This cable provides IP pass-through transport control to the display (sink) device, from a control system connected to the transmitter.
2	DEVICE	Connect up to two USB 2.0 devices (e.g. mouse, keyboard, etc.) to these ports. These ports provide 2.5 W per USB device.
3	FW	Connect a mini USB-to-USB cable from this port, to a computer, to update the firmware. Refer to Updating the Firmware for more information.
4	PWR / LINK	The **PWR** LED indicator will glow green when the AT-OME-EX-RX is powered. The **LINK** LED indicator glows yellow when a solid link is established between the transmitter and the AT-OME-EX-RX. Refer to LED Indicators for more information.
5	DC 48V	Connect the included 48 V DC power supply to this power receptacle.
6	RS-232 / IR	Connect the included 4-pin captive screw block to this receptacle. Refer to RS-232 and IR for more information.
7	HDBaseT IN	Connect a category cable from this port to the **HDBaseT OUT** port of the AT-OME-EX-TX or other PoE-compatible transmitter.
8	HDMI OUT	Connect an HDMI cable from this port to the display (sink) device.

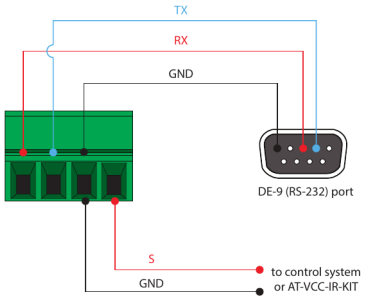
RS-232 and IR

The AT-OME-EX-RX provides pass-through transport of RS-232 protocol and/or IR over HDBaseT, which allows communication between a control system and an RS-232 or IR device. This step is optional.

1. Use wire strippers to remove a portion of the cable jacket.
2. Remove at least 3/16” (5 mm) from the insulation of the RX, TX, and GND wires for the RS-232 connection.
3. Insert the TX, RX, and GND wires into correct terminal using one of the included 4-pin captive screw connectors.
4. Repeat step 2 for the S and GND wires for the IR connection.
5. Insert the S (signal) wire in to the TX terminal and the ground wire to the GND terminal.
6. Tighten the captive screws to secure the wires in place. Do not over-tighten or use high-torque devices to prevent damage to the connector block.

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. Note that the signal (S) pin for the IR is labeled as “TX” on the port.

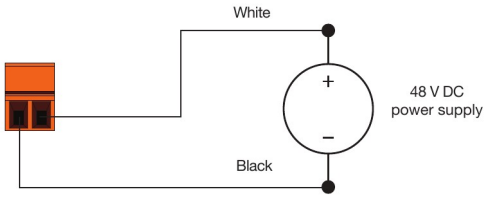




Power

1. Locate the included orange captive-screw block, and loosen the screws to allow room to insert the copper wiring.
2. Wire the included power supply to the block, as shown below. Do not use high-torque devices, when securing the wires to the captive-screw terminal block, as this may damage the screws and/or block.





Installation

1. Connect a UHD/HD display to the **HDMI OUT** port.
2. Connect up to two USB devices (mouse, keyboard, etc.) to the **DEVICE** ports. These ports provide 2.5 W per USB device.
3. Connect a category cable, from the **HDBaseT IN** port on the AT-OME-EX-RX, to the **HDBaseT OUT** port on the transmitter.
4. OPTIONAL: Connect an Ethernet cable from the **LAN** port on the AT-OME-EX-RX, to the display (sink) device. This cable provide IP pass-through transport control from a control system to the display (sink) device connected to the AT-OME-EX-RX.
5. OPTIONAL: Connect the RS-232 device to the **RS-232** port on the AT-OME-EX-RX. Refer to RS-232 and IR for more information.
6. OPTIONAL: Connect the included IR emitter to the IR port on the AT-OME-EX- RX. Refer to RS-232 and IR for more information.
7. Connect the included 48 V DC power supply to the **DC 48V** power receptacle on the transmitter.
8. Connect the power supply to an available AC outlet.

Cable Recommendation Guidelines

Refer to the tables below for recommended cabling when using Atlona products with HDBaseT. The green bars indicate the signal quality when using each type of cable. Higher-quality signals are represented by more bars.

Core	Shielding	CAT5e	CAT6	CAT6a	CAT7
Solid	UTP (unshielded)	■	■■■	■■■■	N/A
	STP (shielded)	■■	■■■■	■■■■■	■■■■■

IMPORTANT: Stranded or patch cables are not recommended due to performance issues.

Cable*	Max. Distance @ 4K	Max. Distance @ 1080p
CAT5e	295 feet (90 meters)	330 feet (100 meters)
CAT6 / CAT6a / CAT7	330 feet (100 meters)	330 feet (100 meters)

*Atlona recommends TIA/EIA 568-B termination for optimal performance.

LED Indicators

The **PWR** and **LINK** LED indicator provide basic information on the current status of the AT- AT-OME-EX-RX.

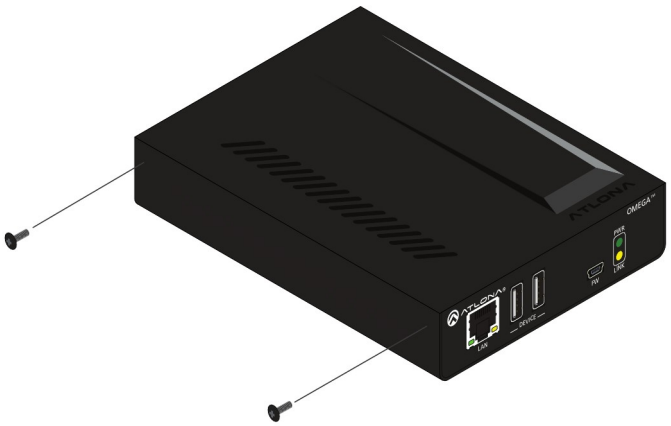
PWR	Description
Solid green	AT-OME-EX-RX is powered.
Off	AT-OME-EX-RX is not powered. • Verify that the locking connector is securely fastened to the power receptacle. • Make sure that the power supply is connected to an active AC outlet.

LINK	Description
Solid yellow	The link integrity between the transmitter and the AT-OME-EX-RX is good.
Blinking yellow	Poor signal integrity between the transmitter and the AT-OME-EX-RX. • Make sure that the category cable between the **HDBaseT IN** port on the transmitter and the **HDBaseT OUT** port on the AT-OME-EX-RX is secure. • The category cable may be compromised. Try using a different category cable. Make sure that the cable is solid core. Stranded or patch cables are not recommended.
Off	The link integrity between the transmitter and the AT-OME-EX-RX is compromised. • Check the category cable between the **HDBaseT IN** port on the transmitter and the **HDBaseT OUT** port on the AT-OME-EX-RX.

Mounting Instructions

The AT-OME-EX-RX provides two mounting brackets, which can be used to attach the AT-OME-EX-RX to any flat surface. Use the two enclosure screws, on the sides of the AT-OME-EX-RX to attach the mounting brackets.

1. Using a small Phillips screwdriver, remove the two screws from the left side of the enclosure.



2. Position one of the mounting brackets, as shown below, aligning the holes on the side of the enclosure with one set of holes on the mounting bracket.
3. Use the screws from Step 1 to attach the mounting bracket.



4. Repeat these steps to attach the second mounting bracket to the opposite side of the AT- AT-OME-EX-RX.

5. Mount the AT-OME-EX-RX to a flat surface using the oval-shaped holes, on each mounting bracket. If using a drywall surface, a #6 drywall screw is recommended.

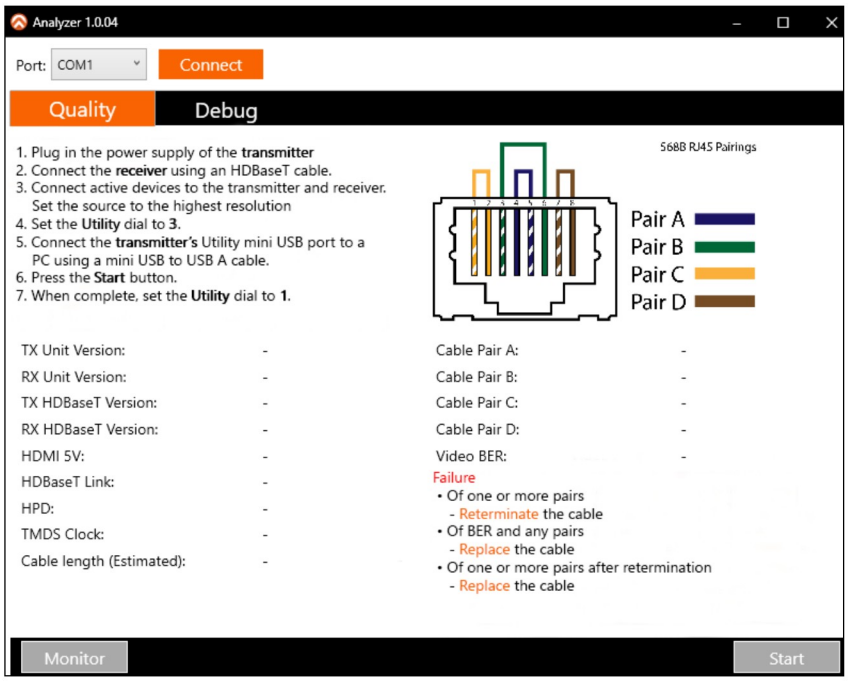


Analyzer Software

The Analyzer software provides HDBaseT testing, debugging, and firmware update utilities. The software can be downloaded from the Resource tab located at https://www.hallresearch.com/product/AT-OME-EX-RX at-ome-ex-kit/.

HDBaseT Testing

1. Launch the Analyzer software.
2. Make sure the system is powered and the transmitter and receiver are connected using the **HDBaseT OUT** and **HDBaseT IN** ports.
3. Connect an active source to the transmitter and an active display to the receiver. Set the source to the highest resolution.
4. Connect a mini-USB to USB-A cable from the **FW** port, on the transmitter, to a computer.
5. Click the **Port** drop-down list and select the COM port, then click the **Connect** button.

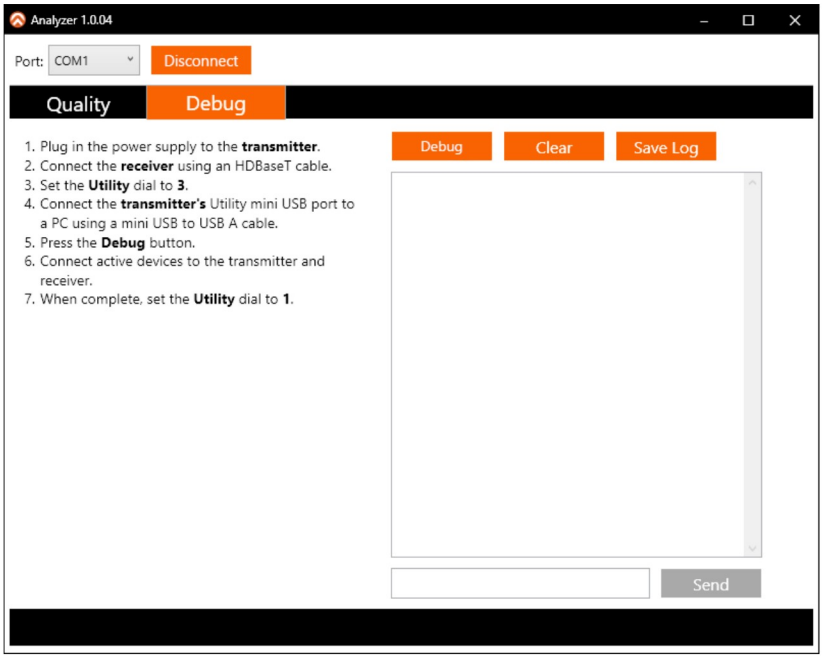


6. Click **Quality** in the menu bar.
7. Click the **Start** button in the lower-right right corner of the window. The link information and cable pairing test results will display. Follow the instructions on the Analyzer software for any pair failures.

Debug

1. Launch the Analyzer software.
2. Make sure the system is powered and the transmitter and receiver are connected using the **HDBaseT OUT** and **HDBaseT IN** ports.

3. Connect an active source to the transmitter and an active display to the receiver. Set the source to the highest resolution.
4. Connect a mini-USB to USB-A cable from the **FW** port, on the transmitter, to a computer.
5. Click the **Port** drop-down list and select the COM port, then click the **Connect** button
6. Click **Debug** in the menu bar.



7. Click the **Debug** button. Information will appear in the box field if there is any data that can be logged. The log can be saved to the local computer if needed.

Updating the Firmware

Requirements:

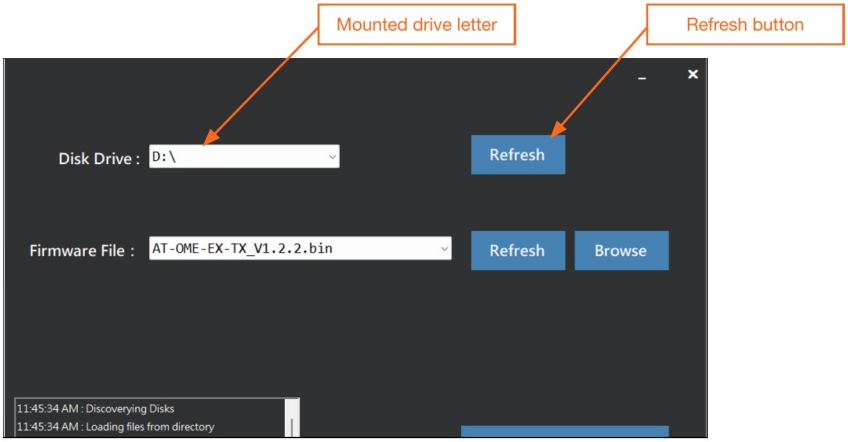
- AT-OME-EX-TX
- AT-OME-EX-RX
- Firmware file
- Computer running Windows
- USB-A to USB mini-B cable
- USB Firmware Update Tool

1. Disconnect power from the unit.
2. Connect a USB-A to USB mini-B cable between the computer and the **FW** port on the unit. Either the TX or RX can be updated first.



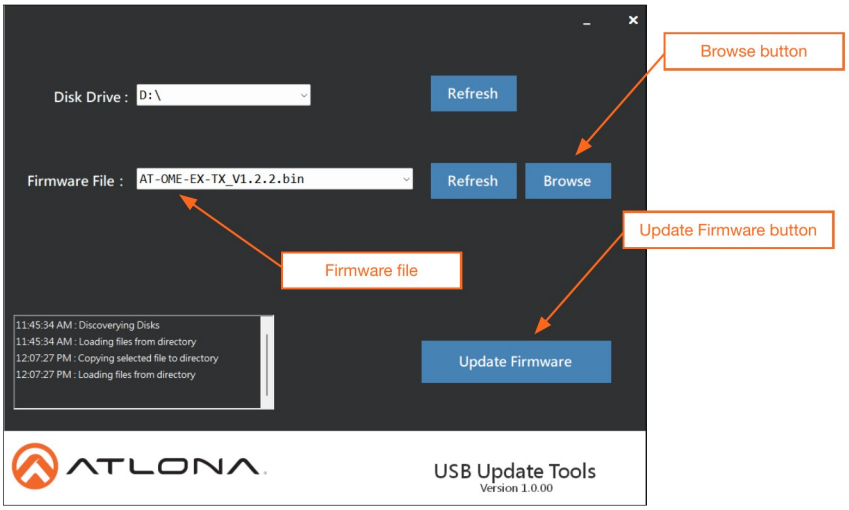
AT-OME-EX-TX AT-OME-EX-RX

3. Power the unit. If updating the AT-OME-EX-TX, then make sure the receiver is powered using the included power supply or a category cable is connected between the HDBaseT ports of both the transmitter and receiver units.
4. If a USB UPDATE folder is opened automatically, notate the drive letter and close the folder.
5. Launch the USB Update Tool.
6. The drive letter of the mounted drive for the unit will be displayed in the **Disk Drive** field. If it is not, click the **Refresh** button.



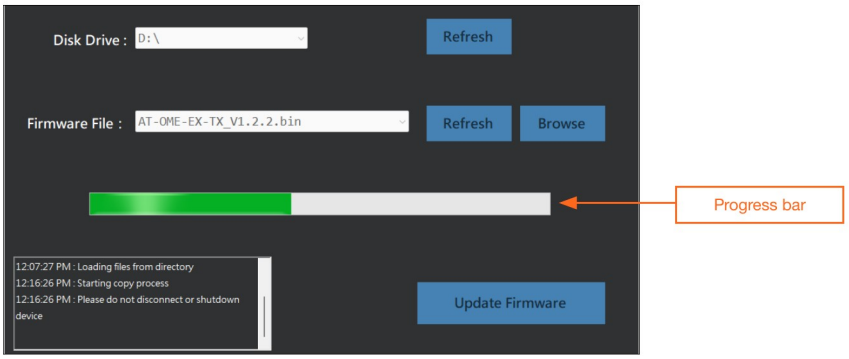
7. Click the **Browse** button and select the firmware file. Once the firmware file is selected, it will appear in the **Firmware File** field. If the firmware file is not displayed in this field, click the **Refresh** button.

8. Click the **Update Firmware** button.



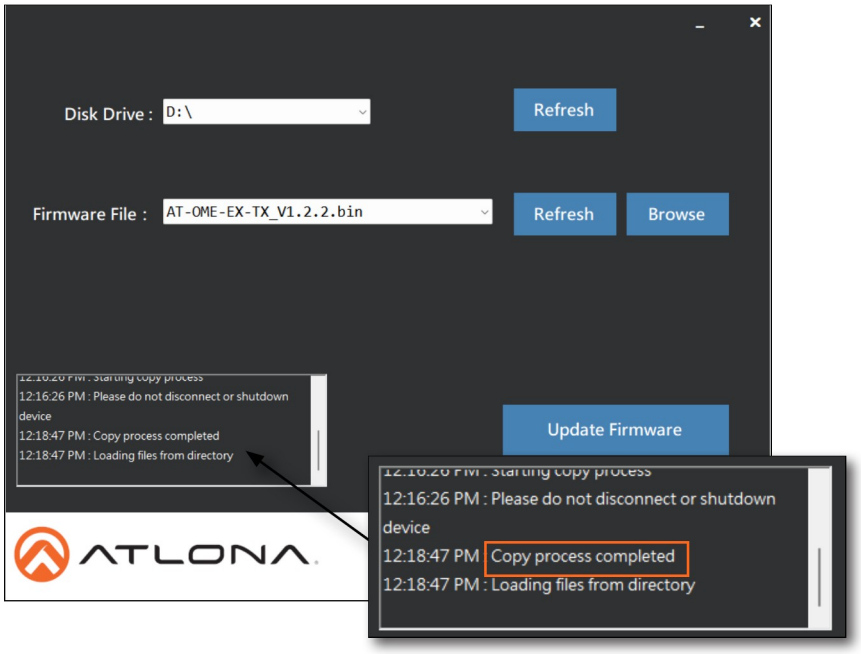
9. The firmware update process will begin and will be monitored by a progress bar.

IMPORTANT: Do not disconnect power from the unit while performing the firmware update procedure.



10. After the update process has completed, the Copy process completed message will be displayed in the message window.

The **PWR** LED indicator, on the front panel, will flash green while the unit is being updated. Do not disconnect the USB cable during the update process. When the **PWR** LED stops flashing and is solid green, the update process will be complete.



11. Repeat the above steps for each transmitter and receiver.

Specifications

Video	
Signal	Input: HDBaseT Output: HDMI
Copy Protection	HDCP 2.2
Pixel Clock	300 MHz
UHD / HD / SD	4096 × 2160 (DCI) @ 24, 30, 60 Hz (60 Hz: 4:2:0 only) 3840 × 2160 (UHD) @ 24, 25, 30, 50, 60 Hz (60 Hz: 4:2:0 only) 1920 × 1080p @ 23.98, 24, 25, 29.97, 30, 50, 59.94, 60 Hz 1920 × 1080i @ 25, 29.97, 30 Hz 1280 × 720p @ 30, 50, 59.94, 60 Hz
VESA	2560 × 2048, 2560 × 1600, 2048 × 1536, 1920 × 1200, 1680 × 1050, 1600 × 1200, 1600 × 900, 1440 × 900, 1400 × 1050, 1366 × 768, 1360 × 768, 1280 × 1024, 1280 × 800, 1280 × 768, 1152 × 768, 1024 × 768, 800 × 600, 640 × 480 — all @ 60 Hz
VESA 21:9	2560 × 1080 @ 30 Hz 4:4:4 2560 × 1080 @ 60 Hz 4:4:4 3440 × 1440 @ 30 Hz 4:4:4 3440 × 1440 @ 50 Hz 4:4:4 3840 × 1600 @ 30 Hz 4:4:4
Color Space	YUV, RGB
Chroma Subsampling	4:4:4, 4:2:2, 4:2:0
Color Depth	8-bit, 10-bit, 12-bit
Audio	
HDMI / HDBaseT Pass-Through Formats	PCM 2.0, LPCM 5.1, LPCM 7.1, Dolby® Digital, Dolby Digital Plus™, Dolby TrueHD, Dolby Atmos®, DTS® Digital Surround™, DTS-HD Master Audio™, DTS:X®
Bit Depth	Up to 24-bit
Sample Rate	32, 44.1, 48, 88.2, 96, 176.4, 192 kHz
Distance	
HDMI IN / OUT	15 ft (5 m) 30 ft (10 m)
Cat 5e	295 ft (90 m) 330 ft (100 m)
Cat 6 / 6a / 7	330 ft (100 m) 330 ft (100 m)
USB	
Signal	USB 2.0

Maximum Data Rate	120 Mbps
Internal Hubs	1 USB hub
Control	
RS-232	Pass-through from control system to sink device Baud rates: 2400, 4800, 9600, 19200, 38400, 57600, 115200
IP	Pass-through from control system to sink device; up to 100 Mbps over HDBaseT
IR	Pass-through from control system to sink device
CEC Support	Yes
Indicators	
PWR	1× LED, green
LINK	1× LED, yellow
Connectors	
HDMI OUT	1× HDMI Type A, 19-pin female
HDBaseT IN	1× RJ45
DEVICE	2× USB Type-A
LAN	1× RJ45
RS-232 / IR	1× 4-pin captive screw (1× RS-232, 1× IR)
FW	1× USB Mini-B, 5-pin female
DC 48V	1× 2-pin captive screw
Environmental	
Operating Temperature	0 to +122 °F -18 to +50 °C
Storage Temperature	-4 to +140 °F -20 to +60 °C
Operating Humidity (RH)	20% to 90%, non-condensing
Power	
Consumption	18.76 W
USB Power	2.5 W per USB device interface
External Power Supply	Input: 100–240 V AC, 50/60 Hz Output: 48 V DC, 0.83 A
Dimensions (H × W × D)	
Unit	1.02 × 4.29 × 5.00 in 26 × 109 × 127 mm

Power Supply (AT-PS-48083-D3)	1.42 × 1.81 × 4.41 in 36 × 46 × 112 mm
Weight	
Device	0.94 lb 0.43 kg
Certifications	
Device	FCC, CE, RoHS
Power Supply	FCC, CE, cULus
Compliance	
NDAA-889	Yes
TAA	Yes
Warranty	
Device	To view the product warranty, visit: hallresearch.com/warranty

Trademarks

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