Omega™ 4K/UHD
HDMI Over HDBaseT TX/RX with USB, Control, and PoE
AT-OME-EX-KIT

The Atlona **AT-OME-EX-KIT** is an HDBaseT extender for video up to 4K/60 4:2:0, plus embedded audio, control, Ethernet, and USB 2.0 over distances up to 330 feet (100 meters). Part of the Omega™ Series of integration products for modern AV communications and collaboration, the OME-EX-KIT is HDCP 2.2 compliant and extends IR, RS-232, and IP control signals. The integrated USB extension is ideal for software video conferencing and the use of touch or interactive displays. The OME-EX-TX transmitter includes a USB host port for a PC, plus two peripheral devices such as a speakerphone, microphone, or keyboard and mouse. The OME-EX-RX receiver provides two USB 2.0 interfaces for devices such as a camera or display. The transmitter and receiver are available separately, for use with other Omega Series integration products.*

Package Contents

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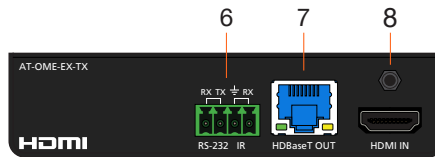8 x Mounting screws
1 x 48 V DC power supply
1 x Installation Guide

⚠️ **IMPORTANT**: Visit http://www.atlona.com/product/AT-OME-EX-KIT for the latest firmware updates and User Manual.

* Both the AT-OME-EX-TX and AT-OME-EX-RX are not compatible with the AT-UHD-HDVS-300 system for extending USB.
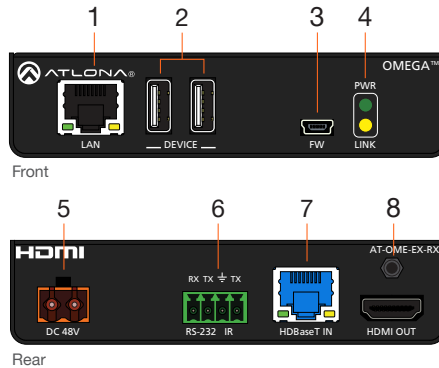
AT-OME-EX-TX
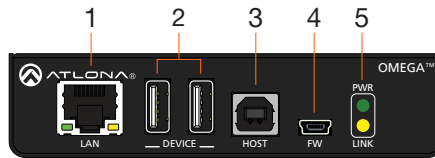
Front

Rear

1   LAN
Connect a category cable from this port to a network switch. This cable provide IP pass-through transport control from a control system to the display (sink) device connected to the AT-OME-EX-RX.

2   DEVICE
Connect up to two USB devices (e.g. mouse, keyboard, etc.) to these ports. These ports provide 2.5 W per USB device interface.

3   HOST
Connect a USB cable from this port to the host computer.

4   FW
Connect a mini USB-to-USB cable from this port, to a computer, to update the firmware. Refer to Updating the Firmware (page 11) for more information.

5   PWR / LINK
The **PWR** LED indicator will glow green when the AT-OME-EX-TX is powered. The AT-OME-EX-RX supplies power to the AT-OME-EX-TX over HDBaseT. The **LINK** LED indicator glows yellow when a solid link is established between the AT-OME-EX-TX and AT-OME-EX-RX. Refer to LED Indicators (page 6) for more information.

6   RS-232 / IR
Connect the included 4-pin captive screw block to this receptacle. Refer to RS-232 and IR (page 4) for more information.

7   HDBaseT OUT
Connect a category cable from this port to the **HDBaseT IN** port of the AT-OME-EX-RX or other PoE-compatible receiver.

8   HDMI IN
Connect an HDMI cable from this port to the source device.

AT-OME-EX-RX

Front

Rear

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 AT-OME-EX-TX.

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 (page 11) 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 AT-OME-EX-TX and AT-OME-EX-RX. Refer to LED Indicators (page 6) 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 (page 4) for more information.

7   HDBaseT IN
Connect a category cable from this port to the **HDBaseT OUT** port of the AT-OME-EX-TX. The AT-OME-EX-TX is powered by the AT-OME-EX-RX over HDBaseT.

8   HDMI OUT
Connect an HDMI cable from this port to the display (sink) device.

RS-232 and IR

The AT-OME-EX-KIT 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.

TX
RX
GND

DE-9 (RS-232) port

S
GND
to control system
or AT-VCC-IR-KIT
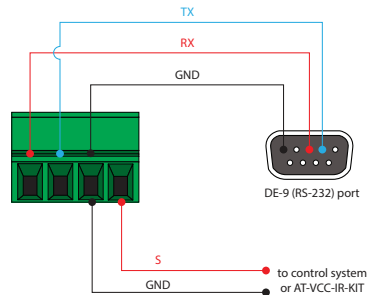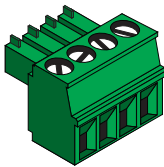
Power

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.

White

+
−

48 V DC
power supply

Black
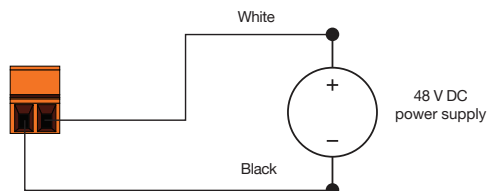
Installation

1. Connect a UHD/HD source to the **HDMI IN** port on the AT-OME-EX-TX.

2. Connect a UHD/HD display to the **HDMI OUT** port on the AT-OME-EX-RX.

3. Connect a USB cable from the host computer to the **HOST** port on the AT-OME-EX-TX.

4. Connect up to two USB devices (speakerphone, etc.) to the **DEVICE** ports on the AT-OME-EX-TX. These ports provide 2.5 W per USB device interface.

5. Connect up to two USB devices (mouse, keyboard, etc.) to the **DEVICE** ports on the AT-OME-EX-RX. These ports provide 2.5 W per USB device interface.

6. Connect a category cable, from the **HDBaseT OUT** port on the AT-OME-EX-TX, to the **HDBaseT IN** port on the AT-OME-EX-RX.

7. OPTIONAL: Connect an Ethernet cable from the **LAN** port, on the AT-OME-EX-TX to a network switch. This cable provide IP pass-through transport control from a control system to the display (sink) device connected to the AT-OME-EX-RX. Connect an Ethernet cable from the **LAN** port, on the AT-OME-EX-RX, to the display (sink) device.

8. OPTIONAL: Connect an RS-232 cable between a control system and the **RS-232** port on the AT-OME-EX-TX. Connect the RS-232 device to the **RS-232** port on the AT-OME-EX-RX. Refer to RS-232 and IR (page 4) for more information.

9. OPTIONAL: Connect the included IR emitter to the **IR** port on the AT-OME-EX-RX. Refer to RS-232 and IR (page 4) for more information.

10. Connect the included 48 V DC power supply to the **DC 48V** power receptacle on the AT-OME-EX-RX.

11. Connect the power supply to an available AC outlet.

Cable Recommendation Guidelines

Refer to the tables below for recommended cabling when using Altona 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 indicators on both the AT-OME-EX-TX and AT-OME-EX-RX provide basic information on the current status of the AT-OME-EX-KIT. The information in the table below applies to both the AT-OME-EX-TX and AT-OME-EX-RX.

PWR		Description
Solid green	●	Unit is powered.
Off	○	Unit 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 AT-OME-EX-TX and the AT-OME-EX-RX is good.
Blinking yellow	☀	Poor signal integrity between the AT-OME-EX-TX and the AT-OME-EX-RX. • Make sure that the category cable between the **HDBaseT IN** port on the AT-OME-EX-TX 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 AT-OME-EX-TX and the AT-OME-EX-RX is compromised. • Check the category cable between the **HDBaseT IN** port on the AT-OME-EX-TX and the **HDBaseT OUT** port on the AT-OME-EX-RX.

Mounting Instructions

Both the AT-OME-EX-TX and AT-OME-EX-RX include mounting brackets, which can be used to attach the unit to any flat surface. Use the included screws to attach the mounting brackets.

1.   Using a small Phillips screwdriver, remove the two screws from the side of the enclosure.
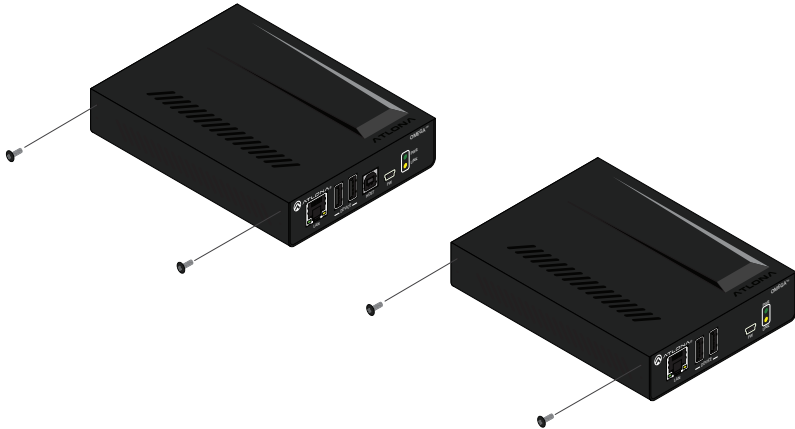
2.   Position one of the mounting brackets, as shown below, aligning the holes on the side of the enclosure with one set of holes on the mounting bracket.

3.   Use the screws from Step 1 to attach the mounting bracket, plus two additional screws (included) to complete the installation. Four screws should be used to secure each mounting bracket, as shown below.
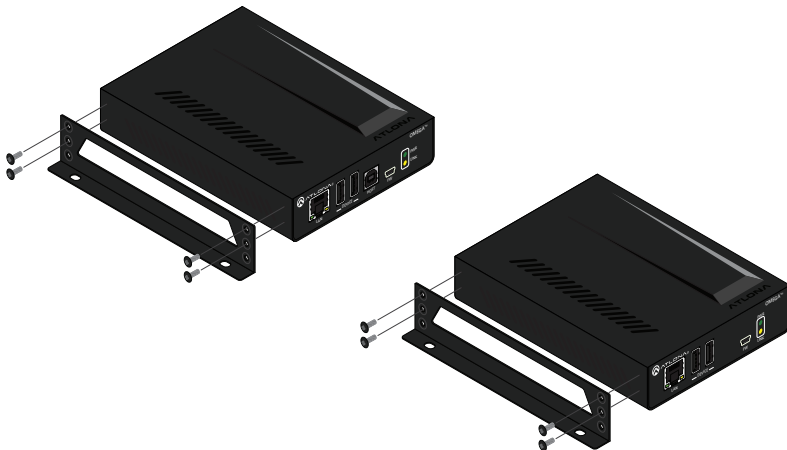
4. Repeat Steps 1 through 3 to attach the second mounting bracket to the opposite side of the unit.

5. Mount the unit to a flat surface using the oval-shaped holes, on each mounting bracket. If using a drywall surface, a #6 drywall screw is recommended.
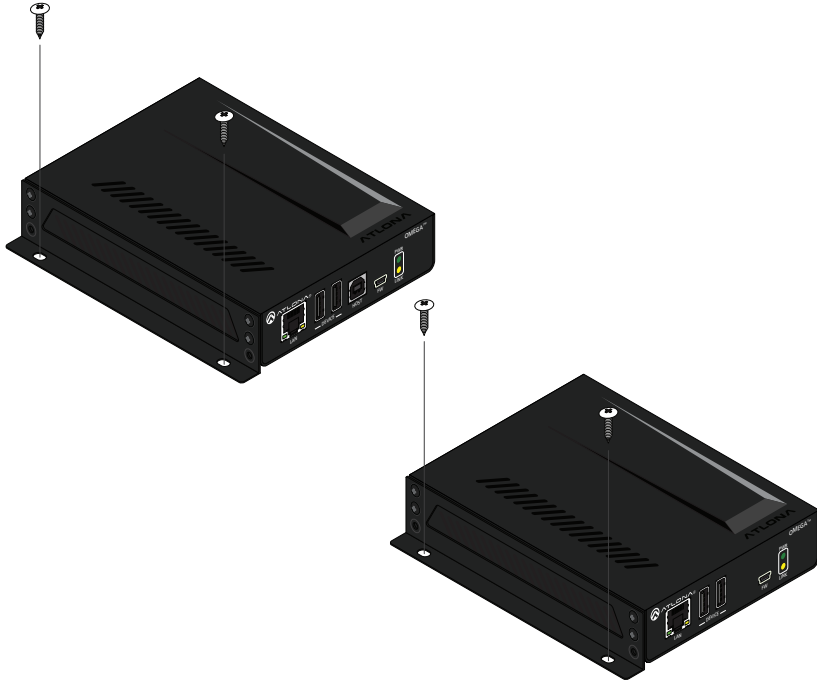
Analyzer Software

The Analyzer software provides HDBaseT testing and debugging. The software can be downloaded from the Resource tab located at https://atlona.com/product/at-ome-ex-kit/.

HDBaseT Testing

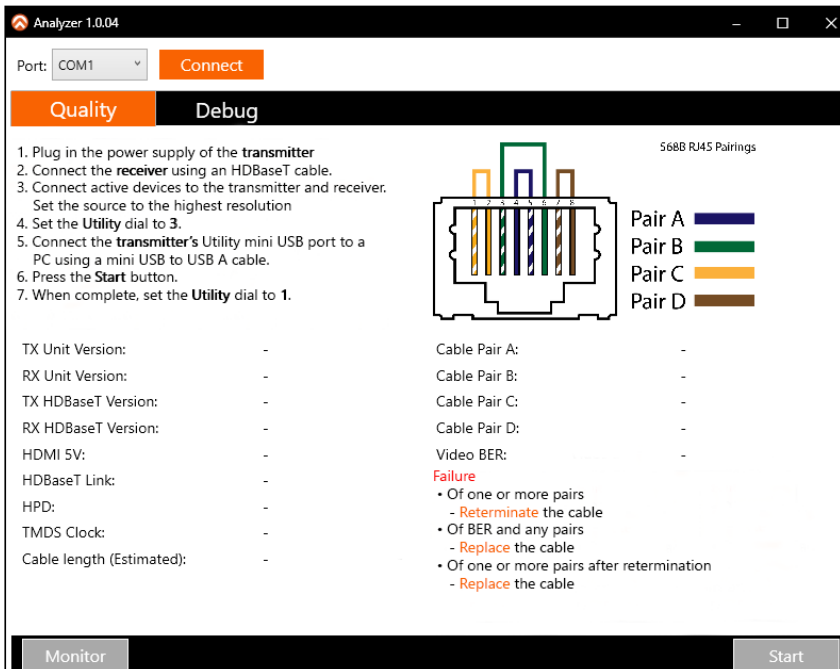1. Launch the Analyzer software.

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.

Analyzer 1.0.04

Port: COM1   Connect

Quality   Debug

1. Plug in the power supply of the **transmitter**
2. Connect the **receiver** using an HDBaseT cable.
3. Connect active devices to the transmitter and receiver.
   Set the source to the highest resolution
4. Set the **Utility** dial to **3**.
5. Connect the **transmitter's** Utility mini USB port to a PC using a mini USB to USB A cable.
6. Press the **Start** button.
7. When complete, set the **Utility** dial to **1**.

568B RJ45 Pairings

Pair A
Pair B
Pair C
Pair D

TX Unit Version:	-
RX Unit Version:	-
TX HDBaseT Version:	-
RX HDBaseT Version:	-
HDMI 5V:	-
HDBaseT Link:	-
HPD:	-
TMDS Clock:	-
Cable length (Estimated):	-

Cable Pair A:	-
Cable Pair B:	-
Cable Pair C:	-
Cable Pair D:	-
Video BER:	-

Failure
• Of one or more pairs
  - Reterminate the cable
• Of BER and any pairs
  - Replace the cable
• Of one or more pairs after retermination
  - Replace the cable

Monitor   Start

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.
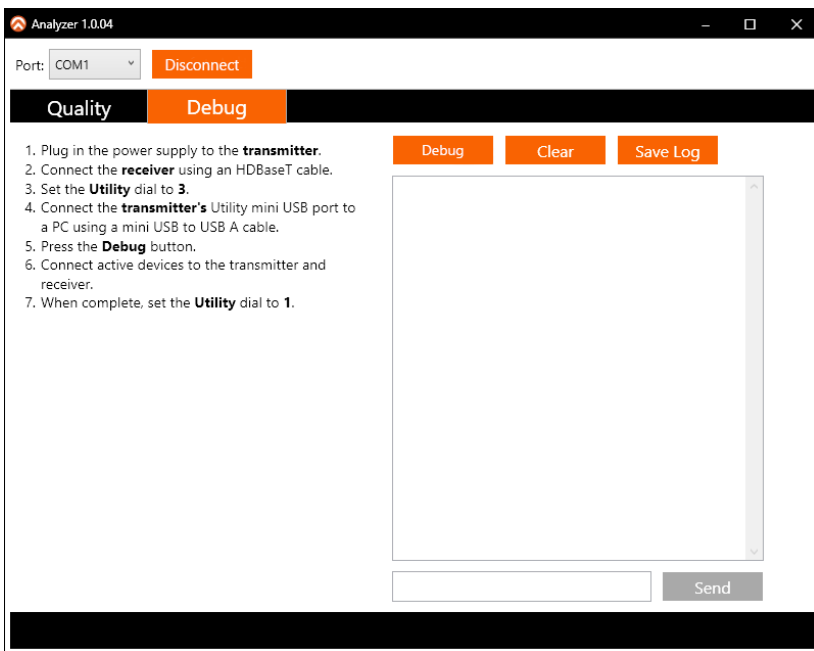
Debug

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.
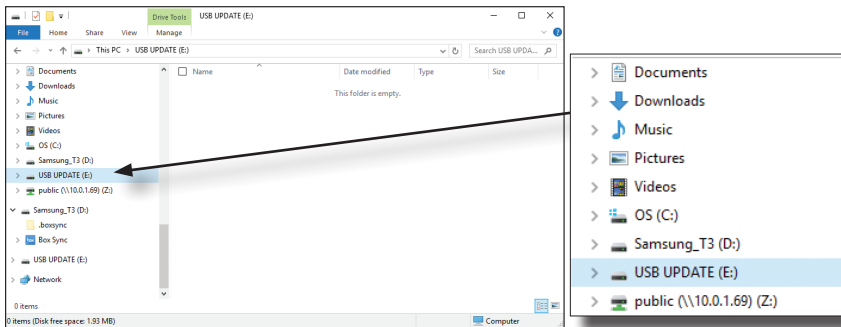
Updating the Firmware

Requirements:

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

> **NOTE:** The procedure outlines the update process for the AT-OME-EX-TX. However, the same procedure applies to the AT-OME-EX-RX. The AT-OME-EX-TX and AT-OME-EX-RX can be updated in any order. The update process, for each unit, can take up to five minutes to complete.

1. Download the AT-OME-EX-KIT firmware from the Atlona website.

2. Extract the contents of the .zip file to the desired folder on your computer.

3. Disconnect power from the unit.

4. Connect a USB-A to USB mini-B cable between the PC and the **FW** port on the unit.

5. Power the unit. If updating the AT-OME-EX-TX, then make sure the AT-OME-EX-RX is powered using the included power supply and a category cable is connected between the **HDBaseT** ports of both the AT-OME-EX-TX and AT-OME-EX-RX.

6. The USB UPDATE folder will be displayed. If this folder is not displayed, automatically, select the USB UPDATE drive from Windows Explorer.

7. Delete all files from the USB UPDATE drive, if any are present.

8. Drag-and-drop the firmware file to the drive.

9. 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.

10. Disconnect the USB cable from the unit and repeat the above steps for the AT-OME-EX-RX.

Warranty

To view the product warranty, use the following link or QR code:

https://atlona.com/warranty/.

English Declaration of Conformity

The English version can be found under the resources tab at:

https://atlona.com/product/at-ome-ex-kit/.

Chinese Declaration of Conformity 中国RoHS合格声明

由SKU列出於:

https://atlona.com/about-us/china-rohs/.

HDMI
HIGH-DEFINITION MULTIMEDIA INTERFACE

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