



## Omega™ 4K/UHD HDMI Over HDBaseT TX/RX with USB AT-OME-EX-KIT-LT



The Atlona **AT-OME-EX-KIT-LT** is an HDBaseT extender for video up to 4K/60 4:2:0, plus embedded audio, control, and USB over distances up to 130 feet (40 meters) for 4K/UHD, and up to 230 feet (70 meters) for 1080p/60 video. Part of the Omega™ Series of integration products for modern AV communications and collaboration, the OME-EX-KIT-LT is HDCP 2.2 compliant and extends IR and RS-232 control signals. The integrated USB extension addresses the challenge of connecting between USB devices at remote locations, and is ideal for software video conferencing and touch or interactive displays. The transmitter includes a USB 2.0 host interface for a PC, plus two peripheral devices such as a speakerphone, microphone, or keyboard and mouse. The receiver provides two USB interfaces for devices such as a camera, soundbar, or display.\*

### Package Contents

- 1 x AT-OME-EX-LT-TX
- 1 x AT-OME-EX-LT-RX
- 2 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

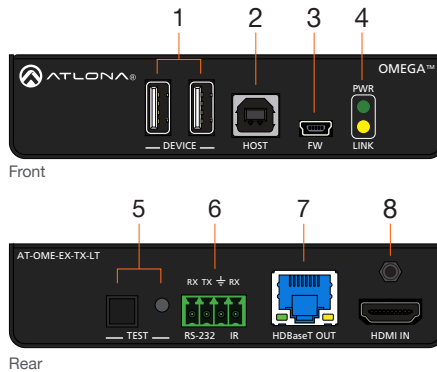


**IMPORTANT:** Visit <http://www.atlona.com/product/AT-OME-EX-KIT-LT> for the latest firmware updates.

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



## AT-OME-EX-LT-TX



### 1 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.

### 2 HOST

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

### 3 FW

Connect a mini USB-to-USB cable from this port, to a computer, to update the firmware. Refer to [Updating the Firmware \(page 10\)](#) for more information.

### 4 PWR / LINK

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

### 5 TEST

Press and release this button to test the integrity of the HDBaseT connection, between the transmitter and the receiver. If the connection is good, then the TEST LED indicator will glow bright green. Refer to [Testing the HDBaseT Connection \(page 7\)](#) 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

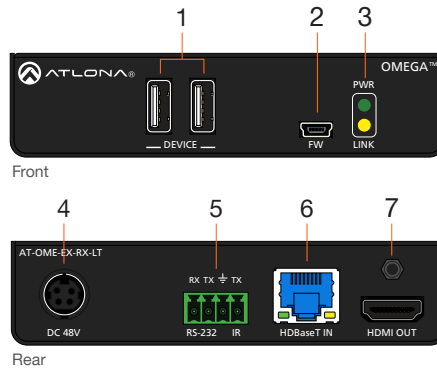
Connect a category cable from this port to the **HDBaseT IN** port of the AT-OME-EX-LT-RX or other PoE-compatible receiver.

### 8 HDMI IN

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



## AT-OME-EX-LT-RX



- 1 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.
- 2 FW**  
Connect a mini USB-to-USB cable from this port, to a computer, to update the firmware. Refer to [Updating the Firmware \(page 10\)](#) for more information.
- 3 PWR / LINK**  
The **PWR** LED indicator will glow green when the AT-OME-EX-LT-RX is powered. The **LINK** LED indicator glows yellow when a solid link is established between the AT-OME-EX-LT-TX and AT-OME-EX-LT-RX. Refer to [LED Indicators \(page 6\)](#) for more information.
- 4 DC 48V**  
Connect the included 48 V DC power supply to this power receptacle. This also supplies power to the AT-OME-EX-LT-TX.
- 5 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.
- 6 HDBaseT IN**  
Connect a category cable from this port to the **HDBaseT OUT** port of the AT-OME-EX-LT-TX. The AT-OME-EX-LT-TX is powered by the AT-OME-EX-LT-RX over HDBaseT.
- 7 HDMI OUT**  
Connect an HDMI cable from this port to the display (sink) device.



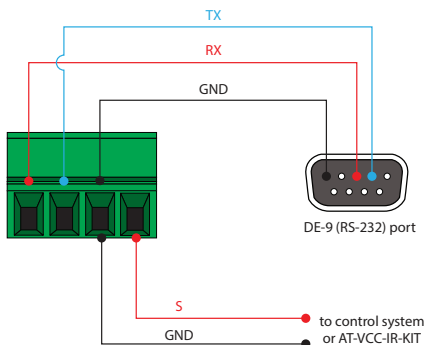
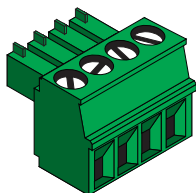
## RS-232 and IR

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.





## Installation

1. Connect a UHD/HD source to the **HDMI IN** port on the AT-OME-EX-LT-TX.
2. Connect a UHD/HD display to the **HDMI OUT** port on the AT-OME-EX-LT-RX.
3. Connect a USB cable from the host computer to the **HOST** port on the AT-OME-EX-LT-TX.
4. Connect up to two USB devices (speakerphone, etc.) to the **DEVICE** ports on the AT-OME-EX-LT-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-LT-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-LT-TX, to the **HDBaseT IN** port on the AT-OME-EX-LT-RX.
7. OPTIONAL: Connect an RS-232 cable between a control system and the **RS-232** port on the AT-OME-EX-LT-TX. Connect the RS-232 device to the **RS-232** port on the AT-OME-EX-LT-RX. Refer to [RS-232 and IR \(page 4\)](#) for more information.
8. OPTIONAL: Connect an IR emitter to the **IR** port on the AT-OME-EX-LT-TX. Connect an IR receiver to the **IR** port on the AT-OME-EX-LT-RX. Refer to [RS-232 and IR \(page 4\)](#) for more information.
9. Connect the included 48 V DC power supply to the **DC 48V** power receptacle on the AT-OME-EX-LT-RX.
10. 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	130 feet (40 meters)	230 feet (70 meters)
CAT6 / CAT6a / CAT7	130 feet (40 meters)	230 feet (70 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-LT-TX and AT-OME-EX-LT-RX provide basic information on the current status of the AT-OME-EX-KIT. The information in the table below applies to both units. Refer to [Testing the HDBaseT Connection \(page 7\)](#) for more information on the **TEST** LED indicator.

PWR		Description
Solid green		Unit is powered.
Off		Unit is not powered. <ul style="list-style-type: none"><li>• Verify that the locking connector is securely fastened to the power receptacle.</li><li>• Make sure that the power supply is connected to an active AC outlet.</li></ul>

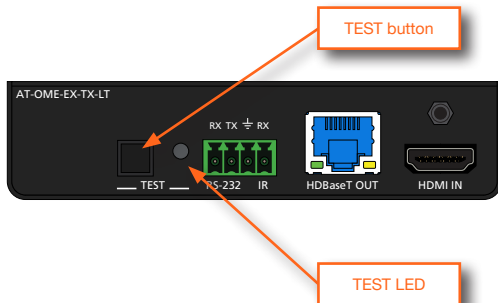
LINK		Description
Solid yellow		The link integrity between the AT-OME-EX-LT-TX and the AT-OME-EX-LT-RX is good.
Flashing yellow		Poor signal integrity between the AT-OME-EX-LT-TX and the AT-OME-EX-LT-RX. <ul style="list-style-type: none"><li>• Make sure that the category cable between the <b>HDBaseT IN</b> port on the AT-OME-EX-LT-TX and the <b>HDBaseT OUT</b> port on the AT-OME-EX-LT-RX is secure.</li><li>• 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.</li></ul>
Off		The link integrity between the AT-OME-EX-LT-TX and the AT-OME-EX-LT-RX is compromised. <ul style="list-style-type: none"><li>• Check the category cable between the <b>HDBaseT IN</b> port on the AT-OME-EX-LT-TX and the <b>HDBaseT OUT</b> port on the AT-OME-EX-LT-RX.</li></ul>

TEST		Description
Solid green		Bit Error Rate (BER) and all cable pairs are good.
Solid yellow		BER test has passed, but one or more cable pairs are not good.
Solid red		Both BER and one or more cable pair tests have failed.



## Testing the HDBaseT Connection

1. Make sure the AT-OME-EX-KIT-LT is powered. It is unnecessary to disconnect the source and display from the system.
2. Press and release the **TEST** button on the front panel of the AT-OME-EX-LT-TX.



3. During the test procedure, the TEST LED indicator will begin flashing. Once the test has completed, the LED will return one of the following states:

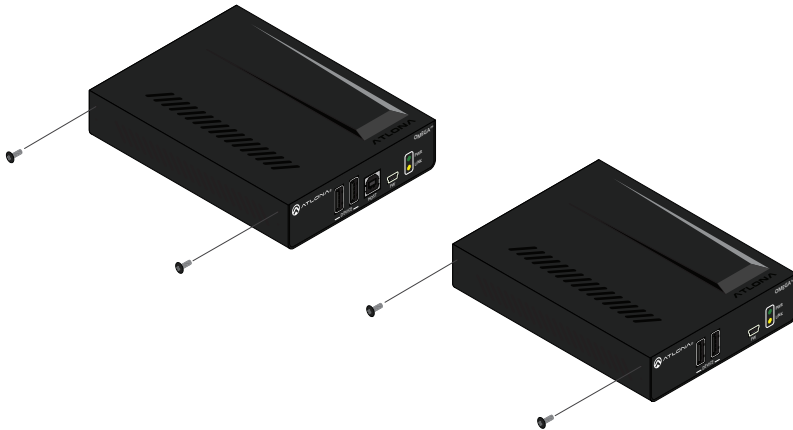
TEST LED		Description
Solid green	●	Both the Bit Error Rate (BER) and cable quality tests have passed.
Solid yellow	●	The BER test has passed, but one or more of the cable pairs has failed during the test. <ul style="list-style-type: none"><li>• Make sure that the HDBaseT cable is securely connected between the <b>HDBaseT OUT</b> and <b>HDBaseT IN</b> ports.</li><li>• Try replacing the HDBaseT cable and re-test.</li></ul>
Solid red	●	Both BER and one or more cable pair tests have failed. <ul style="list-style-type: none"><li>• Make sure that the HDBaseT cable is securely connected between the <b>HDBaseT OUT</b> and <b>HDBaseT IN</b> ports.</li><li>• Try replacing the HDBaseT cable and re-test.</li></ul>



## Mounting Instructions

Both the AT-OME-EX-LT-TX and AT-OME-EX-LT-RX provide two mounting brackets, which can be used to attach the unit to any flat surface. Use the two enclosure screws, on the sides of the unit to attach the mounting brackets.

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



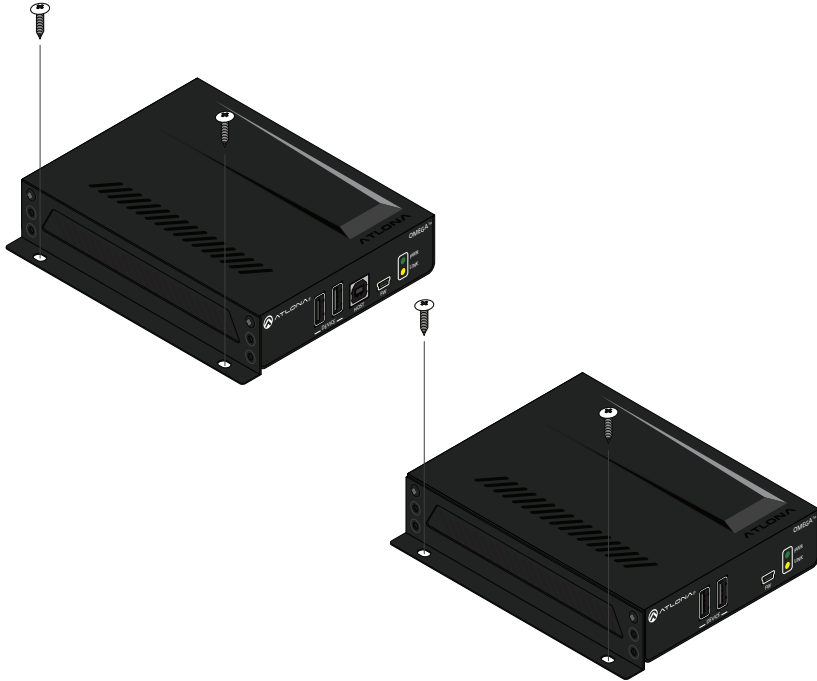
2. Position one of the mounting brackets, as shown below, aligning the holes on the side of the enclosure with one set of holes on the mounting bracket.
3. Use the screws from Step 1 to attach the mounting bracket.







4. Repeat these steps to attach the second mounting bracket to the opposite side of the 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.





## Updating the Firmware

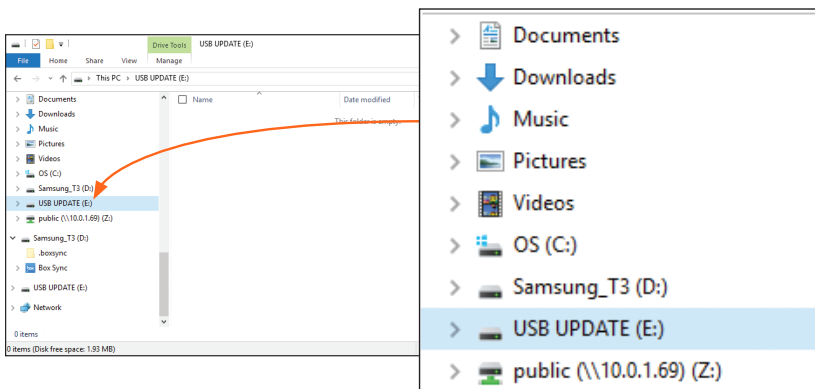
### Requirements:

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

1. Disconnect power from the unit.
2. Connect a USB-A to USB mini-B cable between the PC and the **FW** port on the unit.
3. Power the unit. If updating the AT-OME-EX-LT-TX, then make sure the AT-OME-EX-LT-RX is powered using the included power supply and a category cable is connected between the **HDBaseT** ports of both the AT-OME-EX-LT-TX and AT-OME-EX-LT-RX.
4. The USB UPDATE folder will be displayed. If this folder is not displayed, automatically, select the USB UPDATE drive from Windows Explorer.



5. Delete all files from the USB UPDATE drive, if any are present.
6. Drag-and-drop the firmware file to the drive.
7. 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.
8. Disconnect the USB cable from the unit and repeat the above steps for the AT-OME-EX-LT-RX.



**Notes**



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# Installation Guide

AT-OME-EX-KIT-LT

Version 1



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