

## 4K HDR HDMI Over HDBaseT TX/RX Kit

AT-HDR-EX-70-2PS



The Atlona **AT-HDR-EX-70-2PS** is an HDBaseT transmitter/receiver kit for high dynamic range (HDR) formats. The kit is HDCP 2.2 compliant and supports 4K/UHD video @ 60 Hz with 4:4:4 chroma sampling, as well as HDMI data rates up to 18 Gbps. The HDR-EX-70-2PS provides HDMI transmission up to 230 feet (70 meters) for 1080p video, and up to 130 feet (40 meters) for 4K HDR over CAT6a/7 cable. This extender kit features visually lossless compression with no latency to enable HDR and 4K/60 4:4:4 video signal extension over HDBaseT. The HDR-EX-70-2PS delivers a cost-effective solution for HDMI extension, with locally powered transmitter and receiver endpoints as well as surface mounting hardware for discreet installation.

The HDR-EX-70-2PS is ideal for residential applications with the latest as well as emerging 4K/UHD and HDR sources and displays. It is compatible with all video resolutions, audio formats, and color space formats supported in the HDMI 2.0a specification, plus the ability to pass metadata for HDR content. The HDR-EX-70-2PS includes Atlona's award-winning 10 year limited product warranty and customer support services, so that integrators can specify, purchase, and install with confidence.

### Package Contents

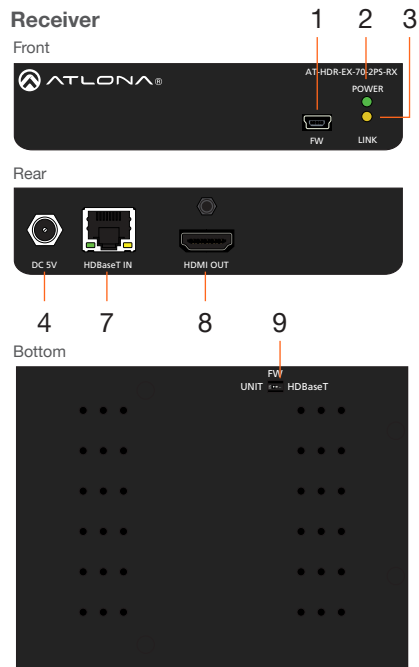
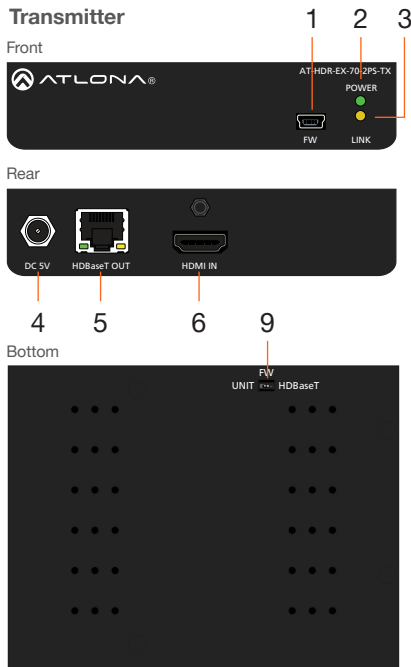
- 1 x AT-HDR-EX-70-2PS-TX
- 1 x AT-HDR-EX-70-2PS-RX
- 4 x Mounting brackets
- 8 x Mounting screws
- 2 x 5 V DC power supplies
- 1 x Installation Guide



**IMPORTANT:** Visit <http://www.atlona.com/product/AT-HDR-EX-70-2PS> for the latest firmware updates and Installation Guide.



## Panel Descriptions



- 1 **FW**  
Connect a mini-USB to USB-A type cable from this port to a computer, to update the firmware. Refer to **Updating the Firmware**, on page 5, for more information.
- 2 **POWER**  
This LED indicator glows solid green when the unit is powered. Refer to **LED Indicators**, on page 4, for more information.
- 3 **LINK**  
This LED indicator indicates the link status between the transmitter and the receiver. Refer to **LED Indicators**, on page 4, for more information.
- 4 **DC 5V**  
Connect the included power supply to this power receptacle.
- 5 **HDBaseT OUT**  
Connect an Ethernet cable from this port to the **HDBaseT IN** port on the receiver.
- 6 **HDMI IN**  
Connect an HDMI cable from this port to a UHD/HD source.
- 7 **HDBaseT IN**  
Connect an Ethernet cable from this port to the **HDBaseT OUT** port on the transmitter.
- 8 **HDMI OUT**  
Connect an HDMI cable from this port to an UHD/HD display.
- 9 **FW (UNIT / HDBaseT)**  
Set this switch to the **UNIT** position to update the firmware. Refer to **Updating the Firmware**, on page 7, for more information. For normal operation or for HDBaseT cable testing, set to the **HDBaseT** position. See **Testing HDBaseT Signal Integrity**, on page 5, for more information.



## Installation

1. Connect a UHD/HD source to the **HDMI IN** port on the AT-HDR-EX-70-2PS-TX.
2. Connect a UHD/HD display to the **HDMI OUT** port on the AT-HDR-EX-70-2PS-RX.
3. Connect an Ethernet cable, from the **HDBaseT OUT** port on the AT-HDR-EX-70-2PS-TX, to the **HDBaseT IN** port on the AT-HDR-EX-70-2PS-RX.
4. Connect each of the included 5 V DC power supplies to the **DC 5V** locking power receptacles on both the AT-HDR-EX-70-2PS-TX and AT-HDR-EX-70-2PS-RX.

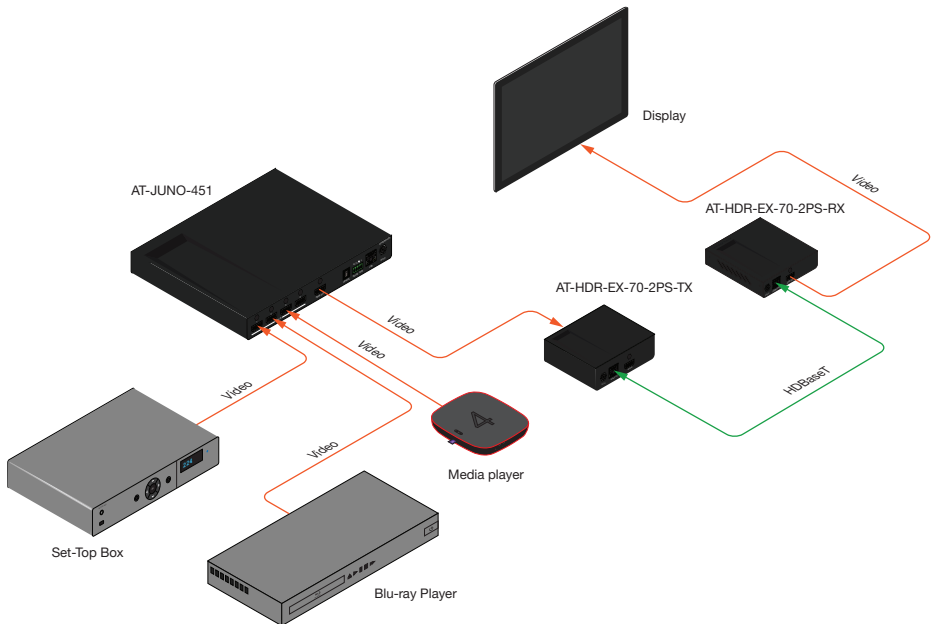
Do not over-tighten or apply high-torque devices to the locking connector. Doing so may damage the power receptacle and/or locking connector.

5. Connect each of the power supplies to an available AC outlet.



**IMPORTANT:** The DIP switch, on the bottom of both the transmitter and receiver, must be set to **HDBaseT** mode for normal operation.

## Connection Diagram





## LED Indicators

The **POWER** and **LINK** LED indicator on the transmitter and receiver unit provides basic information on the current status of the AT-HDR-EX-70-2PS. The information in the table below applies to both the transmitter and receiver unit.

POWER	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 transmitter and the receiver is good.
Blinking yellow	No HDMI cable is connected between the source and the transmitter or between the display (sink) and the receiver. <ul style="list-style-type: none"><li>• Check the HDMI cable connection between the <b>HDMI IN</b> port on the transmitter and the source device.</li><li>• Check the HDMI cable connection between the <b>HDMI OUT</b> port on the receiver and the display (sink).</li><li>• Try connecting another HDMI cable between the source and transmitter and/or between the display and the receiver.</li></ul>
Off	The link integrity between the transmitter and the receiver is compromised. <ul style="list-style-type: none"><li>• Check the Ethernet cable between the <b>HDBaseT IN</b> port on the transmitter and the <b>HDBaseT OUT</b> port on the receiver.</li></ul>



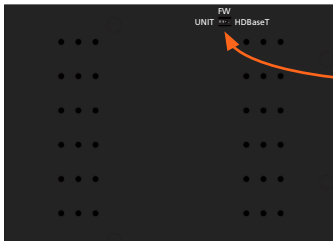
## Testing HDBaseT Signal Integrity

The AT-HDR-EX-70-2PS Analyzer is a free, downloadable software application that is used to test the signal integrity of HDBaseT cables. The software is available from Atlona.com, on the AT-HDR-EX-70-2PS product page.

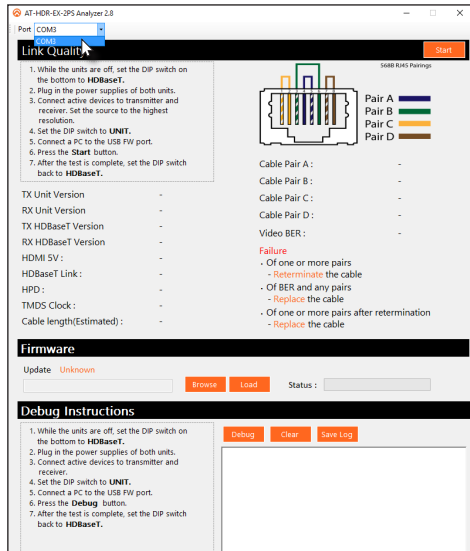
### Requirements

- AT-HDR-EX-70-2PS-TX / AT-HDR-EX-70-2PS-RX
- AT-HDR-EX-70-2PS Analyzer software
- Computer running Microsoft Windows®
- USB-A to mini-B cable

1. Download and run the AT-HDR-EX-2PS Analyzer.exe file. The software comes with a ConnectorTool.dll file. The DLL file must exist in the same folder as the executable, in order for the software to run.
2. Disconnect power from both the transmitter and receiver.
3. Verify that the DIP switch, on the bottom of the unit, is set to the **HDBaseT** position, as shown below.



4. Reconnect power to both the transmitter and receiver. Make sure that a signal is passing between the transmitter and the receiver.
5. Set the DIP switch to the **UNIT** position.
6. Connect a USB-A to USB mini-B cable from the computer to the **FW** port on either the transmitter or the receiver.

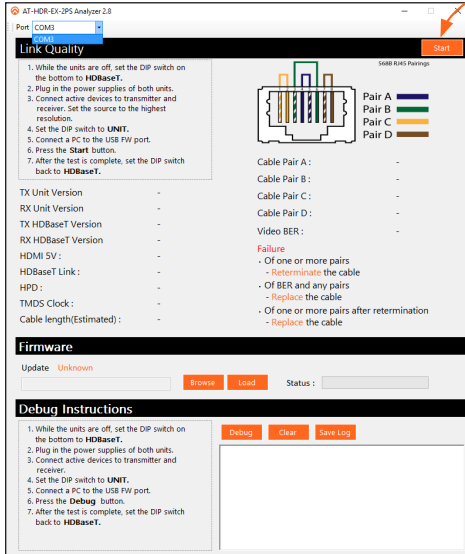




When performing an HDBaseT test, connecting to either the transmitter or receiver will provide the same results.

7. Launch the AT-HDR-EX-70-2PS Analyzer software.
8. Click the **Start** button.

Start button



- If the HDBaseT link integrity is good, then all tests will display as “Pass”.
  - If any part of the HDBaseT cable fails, then a numerical value, in decibels, will be displayed next to the associated pair, under the **Signal Quality** section. These values can be reported to Atlona Technical Support Engineers to help resolve possible issues.
9. After testing is complete, set the DIP switch on the bottom of the unit to the **HDBaseT** position.

## 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 (sheilded)	■■	■■■■■	■■■■■■■	■■■■■■■
Recommended Bandwidth (MHz)		350	500	600	800



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

Cable*	Max. Distance @ 4K	Max. Distance @ 1080p
CAT5e / CAT6	115 feet (35 meters)	200 feet (60 meters)
CAT6a / CAT7	130 feet (40 meters)	230 feet (70 meters)

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

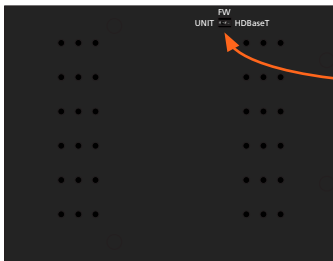
## Updating the Firmware

The follow procedure outlines the firmware update procedure and applies to both the transmitter and receiver. Both the AT-HDR-EX-70-2PS firmware and analyzer software will be required for this process and are available from [Atlona.com](http://Atlona.com) on the AT-HDR-EX-70-2PS product web page.

### Requirements

- AT-HDR-EX-70-2PS-TX / AT-HDR-EX-70-2PS-RX
- AT-HDR-EX-70-2PS Analyzer software
- Firmware file
- Computer running Microsoft Windows®
- USB-A to mini-B cable

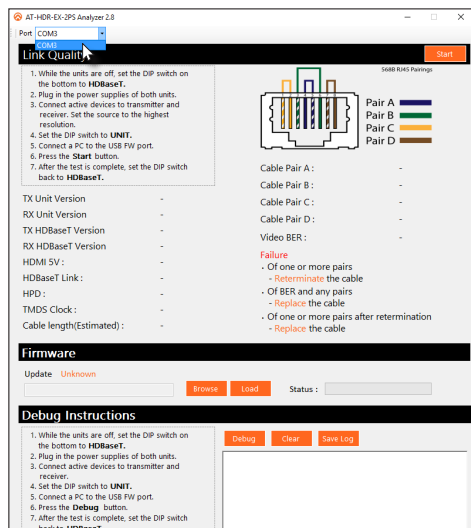
1. Download and run the AT-HDR-EX-2PS Analyzer.exe file. The software comes with a ConnectorTool.dll file. The DLL file must exist in the same folder as the executable, in order for the software to run.
2. Disconnect power from the unit.
3. Set the DIP switch, on the bottom of the unit, to the **UNIT** position, as shown below.



4. Connect a USB-A to USB mini-B cable from the computer to the **FW** port on the AT-HDR-EX-70-2PS.
5. Launch the AT-HDR-EX-70-2PS Analyzer software.

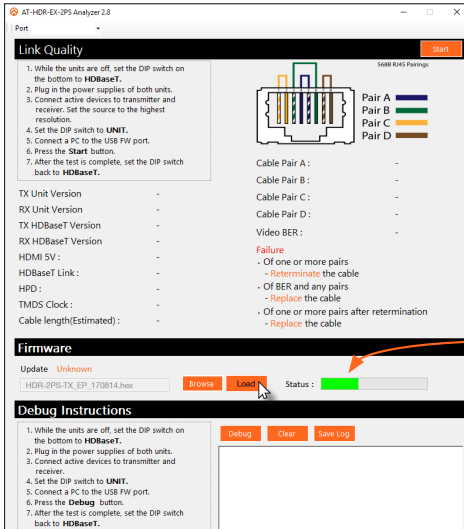


6. Select the proper COM port from the drop-down list, in the top-left corner of the software screen.





7. Extract the firmware, from the archive file, to the Windows desktop or other folder.
8. Click the **Browse** button within the AT-HDR-EX-70-2PS Analyzer software. The **Open** file dialog box will be displayed.
9. Select the proper firmware file from the location specified in step 6:  
  
 Transmitter: HDR-2PS-TX\_[version].hex  
 Receiver: HDR-2PS-RX\_[version].hex
10. Click the **Open** button on the dialog box.
11. Click the **Load** button, within the AT-HDR-EX-70-2PS Analyzer software, to begin the firmware update procedure.
12. During the update process, the current progress will be displayed in the progress bar.



Progress bar

13. Once the upgrade process is complete, set the DIP switch, on the bottom of the unit, to the **HDBaseT** position.



**IMPORTANT:** The DIP switch, on the bottom of both the transmitter and receiver, must be set to **HDBaseT** mode to resume normal operation.

14. Repeat steps 2 though 13 for the other unit(s).





## Mounting Instructions

The AT-HDR-EX-70-2PS encoder includes two mounting brackets and four mounting screws, which can be used to attach the unit to any flat surface.

1. 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.
2. Use the enclosure screws to secure the mounting bracket to the enclosure.
3. Repeat the above steps to attach the second mounting bracket to the opposite side of the unit.



4. Mount the unit using the oval-shaped holes, on each mounting bracket. If using a drywall surface, a #6 drywall screw is recommended.



**NOTE:** Mounting brackets can also be inverted to mount the unit under a table or other flat surface.

