RED·ATOM®

HDMI 2.0 Extender

40M 4K30 4:4:4/4K60 4:2:0 HDBaseT

Introduction

The **RED-EXT-4K-HDBASET** is an HDMI extender featuring HDBaseT technology, allowing for the extension of 4K HDR HDMI signals up to 40 Meters. Equipped with Bi-directional POC and IR extension the **RED-EXT-4K-HDBASET** makes extension easy by transmitting video, control, and power over a single piece of Category cable.

Features:

- HDMI 2.0b
- Max Resolution 4K30 4:4:4/4K60 4:2:0
- Up to 40M (Cat6a) at 4K
- Up to 70M (Cat6a) at 1080p
- Single Bi-Directional Power Supply / POC
- IR Emitter and Receiver included
- HDR Capability
- HDCP 1.X/2.2 Support
- CEC Pass-Through
- 12V IR Support

Specifications

Video:

- Video Resolutions: Up to 4K30 4:4:4
- VESA Resolutions: Up to 4096x2160 (DCI 4K)
- Chroma Supported: 4:4:4, 4:2:2, 4:2:0, RGB (Limited and Full)
- Deep Color: Up to 16 Bit (1080p), Up to 12 Bit (4K)

Audio:

- LPCM (Up to 192KHz 24 bit): 2.0, 5.1, 7.1
- Dolby: Dolby Digital, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos
- DTS: DTS 6.1 ES, DTS HRA, DTS Master Audio, DTS:X

HDBaseT Distance (CAT 6A):

- 4K Resolutions: 40 meters (131 feet)
- 1080p Resolutions: 70 meters (230 feet)

Dimensions:

- Block Size: 4" x 2.75" x .75" (WxLxH) each

Included in the Box:

- Transmitter
- Receiver
- IR Receiver
- IR Emitter
- Power cord
- Mounting brackets

Panel Descriptions

Transmitter Front Panel:

- SERVICE USB input — For service & firmware updates only; **Do not use.**
- IR Transmitter input
- IR Receiver input
- HDMI IN input
- SYNC LED
  - Light On — HDMI Source is Active on the HDMI input
  - Light Off — HDMI Source is not Active, or HDMI input does not sense active HDMI Source

Transmitter Back Panel:

- HDBT OUT category cable input
- ACTIVITY LED
  - Light On — Transmitter is sending the signal to the Receiver
  - Light Off — Transmitter is not sending a signal
- DC/12V — power supply input
- Power LED
  - Light On — Power Supply/POC Connected and Unit is operating
  - Light Off — Power Supply is not connected, or no power is present

Panel Descriptions

Receiver Front Panel:

- SERVICE USB input — For service & firmware updates only; **Do not use.**
- IR Transmitter input
- IR Receiver input
- HDMI OUT input
- SYNC LED
    Light On — HDMI Source is Active on the HDMI input
    Light Off — HDMI Source is not Active, or HDMI input does not sense
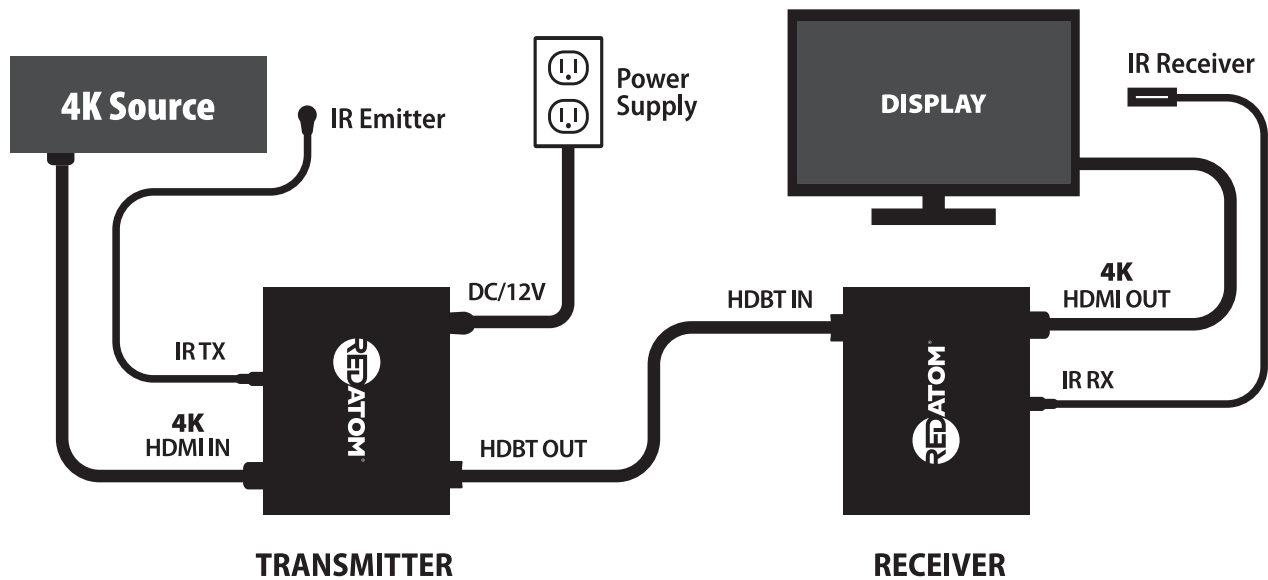   active HDMI Source

Receiver Back Panel:

- HDBT IN category cable input
- ACTIVITY LED
    Light On — Receiver has an active signal from the Transmitter
    Light Off — Receiver does not have an active signal from the Transmitter
- DC/12V — power supply input
- Power LED
    Light On — Power Supply/POC Connected and Unit is operating
    Light Off — Power Supply is not connected, or no power is present

Connections and Operations

1. Connect an HDMI input source into the RED-EXT-4K-HDBASET Transmitter HDMI IN input

2. Connect an HDMI from a display into the RED-EXT-4K-HDBASET Receiver HDMI OUT input

3. Connect a single Category 5e/6/7 cable to the Transmitter HDBT OUT input, then connect the other end of the category cable to the Receiver HDBT IN input

4. Insert the DC end of the power supply into either the Transmitter or the Receiver of the RED-EXT-4K-HDBASET — the opposite unit does not need to be plugged in as it features Power over Cable (PoC)

5. The units automatically power up when plugged in

Connection Diagram:

IR Configuration

IR communication can be sent two ways:

1. Downstream (from Transmitter)

    a. Plug an IR Receiving Eye directly into the IR RX port of the Transmitter to pass infrared signals to the IR TX port on the Receiver

    b. Connect an IR Emitter or Direct IR Input to the IR TX port of the Receiver

2. Upstream (from Receiver)

    a. Plug an IR Receiving Eye into the IR RX port of the Receiver to pass infrared signals to the IR TX port on the Transmitter

    b. Connect an IR Emitter or Direct IR Input to the IR TX Port of the Transmitter

Troubleshooting

No power LED
- Ensure power supply unit is sending proper voltage
- If using POC, ensure that the unit sending POC is connected to power
- If using POC, try powering the unit directly to ensure unit operates stand alone

No HDMI LED
- Plug Source directly into Display to ensure operability
- Change the resolution of the source device to 1080p or 4K30 (No HDR)
- Set a canned EDID; Source may require power cycle
- Swap HDMI cable between Transmitter and Source
  — *HDMI Handshakes with cables under 2 meters may not sync properly*

No HDBaseT Extension
- Check the connecting cable length as the Max Distances are 40M at 4K or 70M at 1080p; HDBaseT recommends Cat 6A; Cat 6 and Cat 5e may experience a 5-20% loss of distance
- Remove excess service loops and bundles of cable. HDBaseT recommends up to 6 runs of Cat cabling in a single bundle
- Bypass all patch-panels and punch down blocks
- Re-terminate connectors; IP continuity testers may indicate correct pinouts, however, HDBaseT signals are transmitted differently than ethernet signals

RECEIVER

No power LED
- Ensure power supply unit is sending proper voltage
- If using POC, ensure that the unit sending POC is connected to power
- If using POC, try powering the unit directly to ensure unit operates stand alone

No HDMI LED
- Plug Source directly into Display to ensure operability
- Change the resolution of the source device to 1080p or 4K30 (No HDR)
- Set a canned EDID; Source may require power cycle
- Swap HDMI cable between Receiver and Source
  — *HDMI Handshakes with cables under 2 meters may not sync properly*

No HDBaseT Extension
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- Bypass all patch-panels and punch down blocks
- Re-terminate connectors; IP continuity testers may indicate correct pinouts, however, HDBaseT signals are transmitted differently than ethernet signals

Troubleshooting (continued)

IR TRANSMISSION
- The Visible IR Emitters can be used to ensure signal is being sent from one point to the other

Warranty Information

- This warranty applies to US Residents who purchase from an authorized RED ATOM Dealer. RED ATOM media distribution products are covered against defects in materials and workmanship for 1 year from date of purchase.
- Within the warranty period, RED ATOM will repair or replace the defective component or product, at its sole discretion.
- **For warranty service:**

  — For RED ATOM media distribution products that were professionally installed, contact your installer directly.

  — For all other service requests, contact RED ATOM at info@redatomproducts.com.
- For all warranty service requests, you must supply a copy of your original receipt and installation service order if applicable. If your product must be shipped to RED ATOM for inspection, you will be responsible for the shipping charges. For warranty replacements, RED ATOM will ship product back to you for free.
- RED ATOM disclaims any liability for modifications, improper installations, accidental damage, or failure to follow care instructions provided by RED ATOM. To the maximum extent permitted by law, RED ATOM disclaims any other warranties, expressed or implied, including warranties of fitness for a particular purpose and warranties of merchantability. RED ATOM will not be liable for any damages arising out of the use of, or inability to use, RED ATOM. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Specifications are subject to change without prior notice.

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