HALL RESEARCH

USER'S MANUAL

UH-1D

HDMI over Single Cat6 Extender kit

Extends uncompressed Full-HD (1080p) to 130 ft (40m)
Provides local HDMI loop-output on the transmitter
EDID learn button to store and emulate EDID from any display
3.5mm analog and RCA digital audio outputs
Extends IR in both directions

UMA1231 Rev n/c

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TRADEMARKS USED IN THIS MANUAL

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FCC RADIO FREQUENCY INTERFERENCE STATEMENT

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been designed to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are intended to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

RoHS Compliant

1.0 Introduction

The UH-1D is a member of the video over twisted pair extension line from Hall Research. This economical and easy to install extension kit uses only a single UTP (Cat6) cable to extend Full HD 1080p HDMI signals to over 130 ft (40m),or 720p/1080i to 170 ft (52m). The product is comprised of a sturdy and compact Sender and a corresponding Receiver.

The UH-1D offers several unique features such as a local HDMI output (loop) on the Sender for connection to a local monitor, and EDID management capability with ability to learn and emulate EDID from any display.

In addition to the HDMI video output, the Receiver provides both digital audio (SPDIF) as well as analog (stereo L/R) outputs for connection to audio equipment.

The UH-1D allows connection of an IR detector and an IR emitter cable to each end. This provides the ability to extend IR signals in either direction. For example, when an IR detector is connected to the remote Receiver and IR emitter is connected to the sender, the user, from the remote TV end, can control the source using an IR remote. IR cables are sold separately.

The devices have L-shaped brackets on each end for easy surface mounting and they feature locking HDMI connectors to secure compatible locking cables such as Hall Research C-HDMI-L series cables.

2.0 Features

- Uses only one Cat5e/6 cable to extend HDMI without compression
- Can extend Full HD (1080p) to 130 ft (40m)
- Provides local HDMI loop-output on the transmitter for connection to local monitor or to another UH-1D sender
- EDID learn button (to store and emulate EDID from any display)
- Supports HDCP
- Receiver provides both 3.5mm analog and RCA digital audio outputs
- Can extend IR in both directions (IR cables are sold separately)

2.1 Package Contents

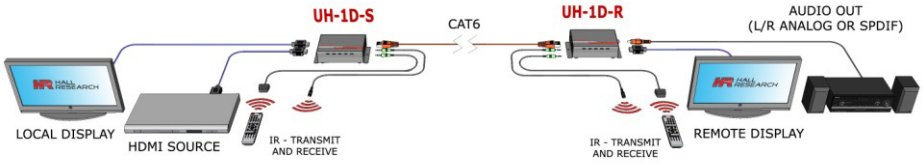
1x UH-1D-S (sender)
1x UH-1D-R (receiver)
2x 5vDC power supplies (one for each end)
1x User's Manual

**All packages are carefully inspected prior to shipment. However if you think that you are missing an accessory, please contact Hall Research Support for further assistance.*

Use only regulated 5v DC supply (center positive) as supplied with the unit.

3.0 Installation

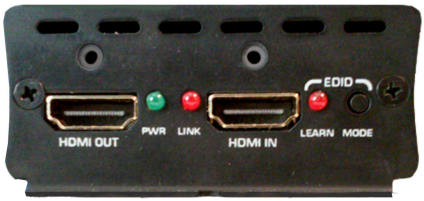
The following diagram illustrates a typical setup. Note that the IR cables are optional and should be ordered separately.



Installation diagram showing all possible connections

3.1 Sender Connections

The input side of the sender unit is shown below. Connect the video source to the connector labeled HDMI IN. Optionally connect a local TV or another Sender unit to the connector labeled HDMI OUT.



Video input and output on the Sender

Connect a Category 5e/6 cable to the opposite end's RJ45 connector and plug in the included power supply.

3.2 Receiver Connections

The output side of the receiver unit is shown below. Connect the video source to the connector labeled HDMI OUT. Optionally connect any audio device to the analog or digital audio outputs.

The default EDID in the Sender device reports the following supported audio formats to the source:

PCM 2 channel at 32KHz, 44.1KHz, and 48 KHz @ 16, 20, or 24 bits

If the source pays attention to the EDID and sends 2-channel audio the analog audio output will have 2 channel stereo outputs. However, if the source decides to send multi-channel compressed bitstream audio such as Dolby or DTS, then the Analog output is not present. In that case, use the RCA digital SPDIF output, which is active regardless of the audio format.

Video and Audio output on the Receiver

Connect a Category 5e/6 cable to the opposite end's RJ45 connector and plug in the included power supply.

3.3 IR Remote Extension

The UH-1D allows connection of an IR detector and an IR emitter cable to each end. This provides the ability to extend IR signals in either direction. For example, when an IR detector is connected to the remote Receiver and IR emitter is connected to the sender, the user from the remote TV end can control the source using an IR remote. IR cables are sold separately.

IR connectors on the Sender and Receiver

IR Detector Cable is Hall Research P/N CIR-DET-P2

This detector cable has a Red LED that glows when connected properly.
Tip = Data | Ring = +5V | Sleeve = Gnd
Do not substitute any other detector cable as this may not work, your substitute IR detector cable may also get damaged.

IR Emitter Cable is Hall Research P/N CIR-EMT (recommended) you can also use CIR-EMT2. Please check Hall Research website for further information.

4.0 Operation

The product is Plug-n-Play meaning that when connected as described in the previous section, everything typically works with no issues.

If you have any issues such as no image or an image that is not centered or partially cut off etc, on the connected TVs, it maybe that the generic default EDID is not suitable for your source or TV. In that case, if the TV works when directly connected to the Video Source, we recommend, "learning" the EDID from your display (to substitute it for the default built in EDID).

4.1 Learning and Emulating EDID

By default, the LEARN EDID light is off. This means that the unit is using a generic default internal EDID for the source that includes various PC and TV resolutions that the UH-1D can support.

If your specific TV does not support some of the resolutions that the default EDID reports to the source, you can "learn" the EDID from the TV used by following the steps below:

1. Plug the TV to the Sender's HDMI OUTPUT port (the HDMI input can be left disconnected, it does not matter)

2. Press and hold the MODE button for 3 seconds. The LEARN light will blink a few times, indicating that the device has learned your TV's EDID, and will stay on, indicating that it is emulating the new EDID for the source

To go back to the default EDID, press and hold the MODE button for 3 seconds. Just tapping the MODE button will not change the EDID mode. This design feature ensures that if a user inadvertently pushes the button the mode will not change.

Notice *If you try to learn EDID and a TV is not connected to the HDMI OUTPUT, the unit will not learn any EDID and will continue using the default EDID.*

The Sender will remember its EDID mode when power is disconnected.

If you Exit the Learn & Emulate mode, the sender will forget the learned EDID. To go back, you have to Re-learn the EDID

5.0 Specifications

Video

Standards	DVI (single link) and HDMI (compliant with HDMI 1.4 video specifications including 12 bit color depth and 3D video - 4K video is not supported)	
Signal type	TMDS	
Connectors	Locking HDMI	
Video Resolutions	For DVI signal	VGA (640x480) thru WUXGA (1920x1200)
	For HDTV signal	480i through 1080p

Audio

Supported Formats	All HDMI Embedded Audio pass through to HDMI output and Digital audio output. Analog audio output only supports 2 channel uncompressed audio

General

Power Supply	100 VAC to 240 VAC, 50-60 Hz, external; 5 VDC, 2.6 A, regulated
Nominal Power	Sender: 3.25 watts max Receiver: 2.25 watts max
Temperature/humidity	Operating: +32 to +104 °F (0 to +40 °C) / 10% to 90% Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%
Cooling	Convection
Mounting	End plates have L bracket with hole for surface mounting
Enclosure type	Metal (Steel ends and Aluminum extrusion)
Dimensions	1.18" H x 2.75" W x 3.85" D (30mm H x 70mm W x 98mm D)
Product weight	Product - 0.75 lb (0.35 kg) Shipping - 1.5 lbs (0.70 kg)
Vibration	ISTA 1A in carton (International Safe Transit Association)
Safety	CE
EMI/EMC	CE, FCC Class A
MTBF	90,000 hours (Calculated Estimate)

Specifications are subject to change without notice

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