

HDMI on Dual UTP Extender

Extend HDMI™ on 2 Cat6 Cables



UH-2D	Kit of UH-2D-S (Sender) and UH-2D-R (Receiver)
UH-2D-S	HDMI on 2 UTP Sender
UH-2D-R	HDMI on 2 UTP Receiver
UH-2D-S-DP	HDMI on 2 UTP Sender Decora® Wallplate

**SUPPORT &
ORDERING
INFORMATION**

For technical support, Call **714-641-6607** or fax **714-641-6698**
Order by phone: **toll-free** in the U.S. **800-959-6439**
Web site: www.hallresearch.com
Hall Research, 1163 Warner Ave. Tustin, CA 92780

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FCC RADIO FREQUENCY 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
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HDMI™

HIGH-DEFINITION MULTIMEDIA INTERFACE

1. Introduction

Hall Research's Model UH-2D is a member of the Hall Research HD-Cat™ video extension product line. The HD-2D extender kit uses two Cat6 cables to extend high definition video well beyond the limitations of HDMI cable. The Sender and Receiver set support HDCP, Deep-Color, 3D and can achieve a distance of up to 170 ft @ 1080i/720p or 130 ft @ 1080p resolution.

A single power supply is provided that can be plugged at either end for easy installation. The extender equalizes TMDS video using state of the art technology for a crisp image, and buffers the DDC channel for error free EDID and HDCP operation that help prevent image dropouts. The extender can also extend single link DVI video from any PC.

The HD-Cat™ family of products are designed and manufactured in the USA. They offer a reliable and low-cost alternative to HDBaseT extenders for shorter distances.

The HD-2D extender is typically sold as a kit, however senders and receivers are also separately available for purchase. There is also a single-gang Decora® style wall-plate of the sender side.

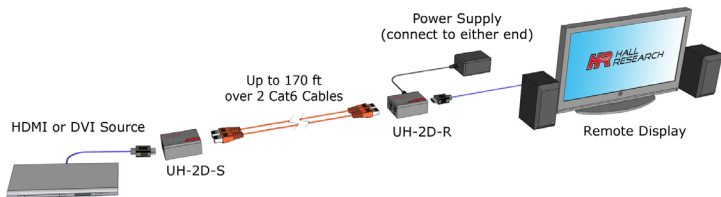


Figure 1 – Block Diagram

HDMI™ over Dual UTP Extender

2. Features

- Use Cat5e or Cat6 cables to extend high definition HDMI™ audio video signals
- Can drive cables to 170 ft @ 1080i/720p or 130ft @ 1080p on 2 Cat6 cables
- Supports DVI-D single link extension with optional adapter cables
- Only one power supply needed for the setup
- Buffers DDC (Display Data Channel) for reliable operation of HDCP and EDID
- Compact enclosure measuring 2.6 x 2.6 x 1.1 inch
- Includes a universal power supply and HDMI input cable!

3. Installation

Refer to figure 1 above. Place the sender by the video source. Use the supplied HDMI™ cable connect the source to the sender (if you need to use a longer cable please make sure it is high quality as poor cables can cause image drop-outs).

Use (2) Cat6 cables to connect the sender to the receiver. You can use UTP (unshielded) or STP (shielded) cables. In most instances UTP works well, but for electrically noisy environments, STP is recommended. The RJ 45 connectors are labeled as PORT A and PORT B. Make sure to not cross the connections as this may cause damage to the unit or the power supply.



HDMI Side



RJ45 Side

Figure 2 – Input and Output sides

Plug in the power supply (included) into the receiver or the sender whichever is more convenient for your setup. Please note that when the UH-2D-S-DP wall-plate is used, the power supply must be plugged into the receiver as there is no power jack on the wall-plate.

Turn on the display and the video source.

Note about Twisted-Pair Cables

The UH-2D is designed for operation with standard Cat6 cables (TIA/EIA 568B wiring). You can use Cat5e cables also if the distance between sender and receiver is 90 ft or less. Shielded Cat6 (STP) can also be used; in fact, STP cables offer the best performance and provide immunity to poor grounding or external noise. Avoid using Zero-skew or low skew cables. The low skew cables work well for analog video extension, but are suitable for digital signals

3. Troubleshooting

Both the sender and the receiver have LED status indicators that can assist you in determining the causes of potential problems.



Figure 3 – LED indicators

On both sides POWER indicated that the UH-2D circuit has power. If either side's power indicator is off, you need to check the power supply connection.

On both sides DISPLAY indicates that the UH-2D is detecting a connected display (Hot Plug Detection). If it is off, the HDMI connection from the Receiver to the LCD is problematic, or the LCD needs to be turned on.

On the Sender there is a SOURCE indicator, this means that the video source is on (checks 5v coming from the source). On the Receiver there is a VIDEO indicator, this means that the video clock is being detected and proper video signal is being received and sent to the LCD.

There are no field serviceable parts in the device. If you think that the device is malfunctioning, please first try the following steps:

- Check to make sure you haven't crossed the 2 Cat6 cables
- Check the video connections
- Unplug the power supply and re-attach it

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- ❑ Connect the display directly to the source and make sure you can get a picture without the extender. If so then using the menus of the video source try to set the output resolution to a low one (such as 480p) to start with. Insert the extender and verify that you get an image, if so; then set the resolution to the next higher value (such as 720p). Continue this process until you get the highest possible resolution without loss of image or audio.

3.1 Contacting Hall Research

If you determine that your extender is malfunctioning, do not attempt to repair the unit. The unit contains no user serviceable equipment. Opening the unit will void the warranty. Contact the Hall Research Technical Support department at 714-641-6607 or support@hallresearch.com to obtain a RMA (Return Authorization) number.

Before you do, make a record of the history of the problem. We will be able to provide more efficient and accurate assistance if you have a complete description.

4. Specifications

Supported Resolutions:	PC from VGA to WUXGA, HDTV from 480i to 1080p
Max Cable Length:	Using Cat6: 130 ft (40m) at 1080p, 170 ft (52m) at 1080i or below
Dimensions:	2.6 x 2.6 x 1.1 inch (66 x 66 x 28 mm)
Enclosure:	Black Plastic ABS-94VO, UL File#56070
Weight:	0.5 Pounds (225 g)
Input Power:	5v DC at 2A max.
Operating Temperature:	0 ~ +50 °C
Storage Temperature:	-10 ~ +70 °C



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