



UH1-BT **HDMI™ on Single UTP Extender with HDBaseT-Lite™**
UH-1BTX **HDMI™ on Single UTP Extender with HDBaseT™**

MINI-CAT® BRAND

**DVI or HDMI™ Extender on Single UTP Cable
To
230/330 ft (70/100 m)**

**CUSTOMER
SUPPORT
INFORMATION**

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

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FEDERAL COMMUNICATIONS COMMISSION

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.



Contents

1. Introduction.....	3
1.1 General.....	3
1.2 Features	3
2. Installation.....	4
2.1 Package Contents	4
2.2 Input and Output Connections.....	4
3. LED Indicators	5
4. Connection Block Diagram.....	6
5. Troubleshooting	6
5.1 Contacting Hall Research.....	6
5.2 Shipping and Packaging.....	6
6. Specifications	7

1. Introduction

1.1 General

Thank you for purchasing a Mini-Cat® brand HDMI™ on Catx (Unshielded Twisted Pair) extender. These compact extenders are compliant with HDBaseT™ standard and can extend DVI or HDMI™ signals to 230 or 330 ft depending on the Model number.

This User's Manual applies to the following extenders:

UH1-BT	HDMI™ on Single UTP Extender with HDBaseT-Lite™ to 230 ft
UH-1BTX	HDMI™ on Single UTP Extender with HDBaseT™ to 330 ft

The extenders are comprised of a sender (-S) and a receiver (-R) and extend all PC and HD resolutions without compression easily and reliably. Since the extenders are compliant with HDBaseT™, they can be connected to any other HDBaseT™ compliant device including sources or sinks that support the format.

The HDBaseT™ and HDBaseT-Lite™ products differ only in the maximum distance of the cable; otherwise, they are fully identical in form and function. The UH-1BT and UH-1BTX Sender and Receivers are also compatible with each other (you can connect BT and BTX senders and receivers; however the maximum distance achievable is dictated by the lowest of the two – 70m).

The extenders are HDCP compliant with pass-thru EDID, support embedded audio, Full HD, deep color (1080p@60Hz @ 48 bits/pixel), and 3D video. They can also be used to extend 4Kx2K video that is gaining popularity.

As a leader in the field of video over twisted pair extension, Hall Research's Mini-Cat® brand has set a new standard in the industry for unsurpassed quality and reliability.

1.2 Features

- Extend HDMI or DVI over single Cat 5e/6 up to 330 or 230 ft (100 or 70 m)
- Utilizes HDBaseT™ extension technology
- Full HD support 1080p deep color, 3D, and 4K x 2K
- HDCP Compliant with pass-thru EDID from sink (display) to source
- Compatible with virtually all HDTV and PC resolutions
- Supports HDMI™ Audio
- Uncompressed digital video extension guarantees 100% fidelity
- Can connect to all HDBaseT™ and HDBaseT-Lite™ compliant products
- Reliable trouble free operation
- Plug and Play, no user configuration required
- Sturdy and compact metal enclosures with mounting provisions
- Locking HDMI Connector
- Universal Power Supplies included
- 100% designed and manufactured in USA

2. Installation

2.1 Package Contents

The product is sold either as a kit (containing both a Sender and a Receiver), or each end can be purchased separately. This user manual is primarily written for the kit, but is also applicable to each end.

The kit package should contain a Sender (-S), a Receiver (-R), and two power supplies (one for each end). The power supplies are universal (100~240VAC, 50~60Hz). Model number 511-3A-161WP05, 5v @ 2.6A with 2.1mm plug.



Figure 1 – Power Supply with international switchable blades



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

2.2 Input and Output Connections

The HDMI Connectors are clearly labeled as INPUT and OUTPUT.



Figure 2 – Front and Rear Panels of Sender / Receiver

- ❑ Using a quality HDMI cable, connect the video source to the HDMI connector labeled INPUT. Hall Research recommends locking HDMI Cables such as Model C-HDMI-L-length , available in lengths from 1.5 ft to 50 ft



Figure 3 – Locking HDMI Cable

- ❑ Connect the HDMI connector labeled OUTPUT to the sink device (HDTV, Projector, etc)
- ❑ Using a Cat5e or Cat6 cable, connect the RJ45 connectors from the Sender to the Receiver.

Twisted Pair Cable Recommendations

UH-1BT	Distance	Cable Type	Gauge
	0 to 199 ft	Cat5e, Cat6, Augmented Cat6	24, 23
	200 to 230 ft	Cat6, Augmented Cat6	23

UH-1BTX	Distance	Cable Type	Gauge
	0 to 299 ft	Cat5e, Cat6, Augmented Cat6	24, 23
	300 to 330 ft	Cat6, Augmented Cat6	23

Note:

- If the CATx cable is ran adjacent to or near interfering electrical sources such as ballasts, generators, motors, etc, then Shielded Twisted Pair (STP) would be preferred instead of UTP

- ❑ Plug in the power supplies at the receiver and at the sender

3. LED Indicators



Figure 4 – LED Locations

PWR	Power. Indicates unit is powered
ACTIVITY	Firmware Running. Blinking means device firmware is running properly
LINK	UTP Link. Solid on means Sender & Receiver are communicating
HDCP	Video Status. Off = No Video, Blink = Video, Solid ON = Video + HDCP

4. Connection Block Diagram

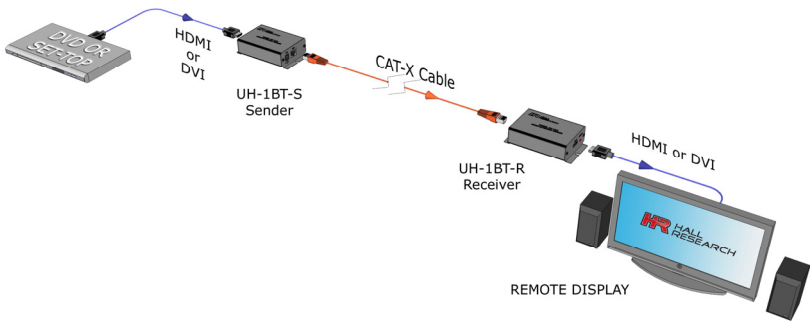


Figure 5 – Connection Block Diagram

5. Troubleshooting

If you are not getting video, check the LED status on both units. Make sure PWR is on, ACTIVITY is blinking, and LINK is ON. If there is video input, then HDCP LED should either be on or blinking. If LINK LED is not on, then check that you are conforming to “*Twisted Pair Cable Recommendations*” in section 2.2

There are no field serviceable parts or circuits in the device. Opening the device will void the warranty. If you think the device is malfunctioning, please contact Hall Research.

5.1 Contacting Hall Research

If you determine that your MINI-CAT® Brand HDMI Extender is malfunctioning, do not attempt to repair the unit; instead, contact Hall Research Technical Support at 714-641-6607.

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.

5.2 Shipping and Packaging

If you need to transport or ship your unit:

- Package it carefully. We recommend that you use the original container.
- Before you ship the units back to Hall Research for repair or return, contact us to get a Return Authorization (RMA) number.

6. Specifications

Video

Standards	DVI (single link) and HDMI (compliant with HDMI 1.4 video specifications including 12 bit color depth, 3D video and 4K support)
Signal type	TMDS
Connectors	Locking HDMI
Video Resolutions	For DVI signal VGA (640x480) thru WUXGA (1920x1200) For HDTV signal 480i through 1080p For Digital Cinema 4K (4096x2160)

Audio

Supported Formats	All HDMI Embedded Audio
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Other Signals

DDC	Pass-Thru DDC for reading EDID directly from remotely connected LCD and HDCP handshake
CEC	Pass-Thru DDC for Consumer Electronics Control compatible devices

General

Power Supply	100 VAC to 240 VAC, 50-60 Hz, external; 5 VDC, 2.6 A, regulated
Nominal Power	Sender: 2.25 watts max Receiver 4.25 watts max
Temperature/humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, non-condensing Operating: +32 to +104 °F (0 to +40 °C) / 10% to 90%, non-condensing
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) Depth excludes connectors
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)
Warranty	2 years parts and labor

Specifications are subject to change without notice



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