



UH18

HDMI + USB + LAN Sender and Receiver

Extends uncompressed video to 100 meters

Also Extends USB, LAN, RS-232 and IR

POC powered from Sender or Receiver via UTP

Supports 4K Resolutions

Part Number	Function
UH18-S	HDBasetT Sender
UH18-R	HDBasetT Receiver

UMA1285 Rev NC

CUSTOMER
SUPPORT
INFORMATION

Order toll-free in the U.S. 800-959-6439
FREE technical support: 714-641-6607 or support@hallresearch.com
Hall Research, 1163 Warner Ave. Tustin, CA 92780
www.hallresearch.com

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FCC Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference even if it causes undesired operation.

This equipment has been designed to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

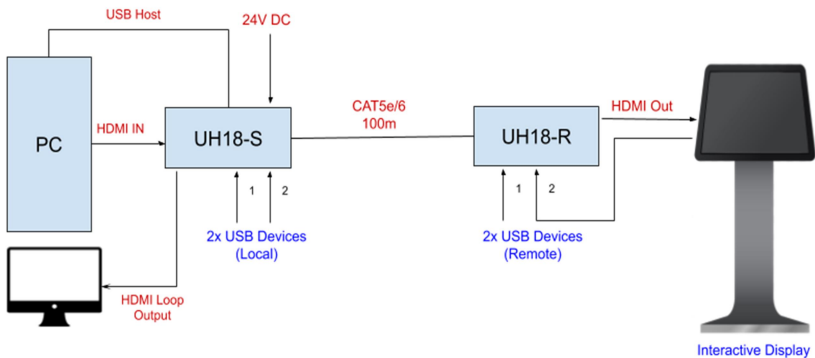
1.0 Introduction

The UH18 is an HDMI and USB 2.0 over single CAT5e/6 solution, which consists of a Sender (UH18-S) and Receiver (UH18-R).

The solution can extend 4K @ 60 Hz (UHD) Video, USB 2.0, Bidirectional-IR, RS-232 and Power on a single CAT5e/6 up to 100 meters.

The system only needs power on one side, either from the sender to the receiver or alternatively the receiver to the Sender.

The UH18's sleek design makes the installation easy behind monitors and tight spaces.



Typical Connection Diagram

1.1 Features

- Supports and extends 4K @ 60 Hz up to 100 m and 1080p @ 60 Hz up to 150 m
- HDMI 2.0, HDCP 2.2 compliant and supports HDR10
- Support LPCM 7.1, DTS-HD, Dolby-HD
- Audio Extraction on the Receiver(Analog and SPDIF)
- Fully compliant with HDBaseT 2.0 specifications
- Bi-directional IR and RS-232 Pass through
- Plug and Play Installation - takes minutes to setup
- EDID Management
- Power only on one side (Dual POC)

2.0 Package Contents

UH18-S

- (x1) UH18-S
- (x2) Side Brackets
- (x1) IR Emitter Cable
- (x1) IR Detector cable
- (x1) USB Type A to Type B
- (x1) USB micro USB to Type A
- (x1) 3 pin terminal strip
- (x1) 24 VDC Power Supply with adapters

UH18-R

- (x1) UH18-R
- (x2) Side Brackets
- (x1) IR Emitter Cable
- (x1) IR Detector cable
- (x1) 3 pin terminal strip
- (x1) 24 VDC Power Supply with adapters



3.0 Setup

3.1 Installation

- Connect **HDMI Input** on UH18-S (Sender) to your HDMI Source using an HDMI cable
- Use *USB 2.0 Type-A Male-to Type-B* cable to connect **USB 2.0** port on the Sender to your PC
- Connect Local USB devices such as KeyBoard and Mouse to USB HUB on Sender as required.
- Connect HDMI Output of the Receiver to Display

WARNING Do not block the vents on Sender and Receiver. Allow enough space around the units for air circulation to prevent units from overheating.

- Use CAT5e/6 Cables to Connect **HDBT Out** on Sender and **HDBT In** on the Receiver (UH18-R)

NOTE If you are extending more 100 Meters, Enable **Long Reach Mode** on both Sender and Receiver from the front panel.

- Use supplied **24 VDC** External Power Supply to power the device

NOTE Power supply is only needed at one end it, either at the Sender or the Receiver.

- Connect USB 2.0 devices that you want to extend to the USB Hub on the Receiver
- Connect IR Emitter to **IR Out** port and IR Detector to **IR In** port on both Sender and Receiver to extend Bidirectional IR signal
- Connect Serial Devices/Controllers to the RS-232 port as required

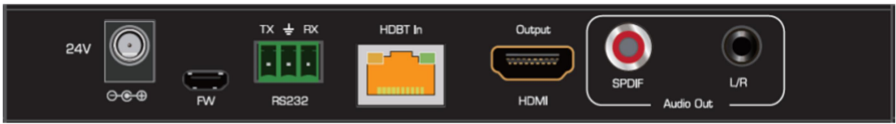
4.0 Connector and Indicator Functions

4.1 UH18-S (front and back)



IR In	Connect the IR Detector Cable to IR In port
IR Out	Connect the IR Emitter Cable to IR Out port
USB Hub	Connect any USB 2.0 Local Devices
USB 2.0	Connect to PC with USB 2.0 TypeA to B Cable
Long Reach Mode	Enable to Extend 1080p video up to 150m Disable to Extend 4K video up to 100m
Local EDID	ON – Use the EDID of display connected on sender OFF – Used the EDID of the display connected on receiver
HDMI	ON when HDMI Source is detected
PWR LED	ON when power applied to sender
24V	Connect Supplied 24V DC External Power Supply
FW	Firmware Update
RS-232	Connect 3 Pin Phoenix RS-232 Cable
HDBT Out	Use CAT5e/6 UTP Cable to connect Sender and Receiver
HDMI Input	Connect to HDMI Source using an HDMI cable
HDMI Output	Connect Sink (Display) using HDMI cable

4.2 UH18-R (front and back)



IR In	Connect the IR Detector Cable to IR In port
IR Out	Connect the IR Emitter Cable to IR Out port
USB Hub	Connect any USB 2.0/1.0 devices to extend
Long Reach Mode	Enable to Extend 1080p video up to 150m Disable to Extend 4K video up to 100m
Mute Audio	Enable to Turn OFF Audio on HDMI Output
24V	Connects to the 24V DC External Power Supply
FW	Used for firmware update
RS-232	Connect the 3 Pin Phoenix RS-232 Cable to extend Full duplex RS-232 communication
HDBT In	Use CAT5e/6 UTP Cable to connect Sender and Receiver
HDMI Output	Connect Sink (Display) using an HDMI cable
SPDIF	Connect SPDIF RCA Cable
L/R	Connect 3.5mm L/R Analog Cable

5.0 Functionalities

5.1 EDID Management

The UH18-S can pass either the Local or Remote EDID (Extended Display Identification Data) to the Video Source.

To pass the EDID of the display connected to the Local HDMI Output of the Sender, turn the **Local EDID** DIP Switch on the front panel ON.

To pass the EDID of the display connected to the HDMI Output of the Receiver, turn the Local EDID switch is OFF.

The sender remembers this EDID until a new display is connected.

Note that removing the remote display will not affect the video on the HDMI Output on the sender.

NOTE Changing the state of the front panel Local EDID dipswitch will interrupt any video currently sent through the system.

5.2 Long Reach Mode

Use the Long Reach Mode to extend video and audio beyond the 100 m range.

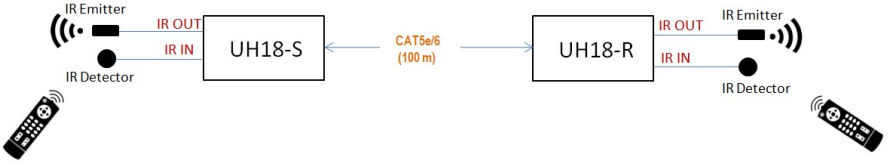
With Long reach mode, you can extend 1080p @ 60 hz video up to 150 m.



In Long Reach Mode, a custom EDID informs the source to output 1080p @ 60 hz video.

NOTE USB Devices such as WEB Cams that require isochronous transfers may not work in Long Reach Mode

5.3 IR Extension

The bi-directional IR extension is pass through. Connect the IR Detector and Emitter cables to both the Sender and Receiver to extend IR in both directions.

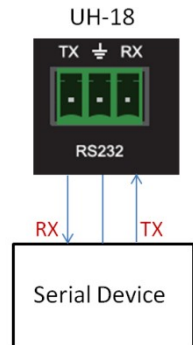


 <p>Emitter</p>	<p>Tip = Anode (+) / SIG Ring = Cathode (-) / GND Sleeve = GND</p>
 <p>Detector</p>	<p>Tip = +5 VDC / VCC Ring = SIG Sleeve = GND</p>

Note: This image is only representative, the actual cable may look different

5.4 RS-232 Extension

The RS-232 Extension in UH18 is Pass-through. The baud rate settings of the serial device connected at the Sender must match with the serial device connected at the Receiver End for successful full-duplex communication.



6.0 Troubleshooting

USB 2.0 Camera is Lagging

Check if Long Reach mode is ON.

Isochronous transfers may not work if Long Reach mode is ON.

No video on the receiver

Check the PWR led on both Sender and Receiver

Check if HDMI LED on the Sender is Turned ON

Check if the HDMI LED on the Receiver is Turned ON

Check the Cable Length

6.1 Contacting Hall Research

If you determine that your UH18 is malfunctioning, do not attempt to repair the unit instead, contact Hall Research Technical Support at 714-641-6607. To return the unit to Hall Research you must first get a Return Authorization (RMA) number. Package the unit carefully, if returning. We recommend that you use the original container.

7.0 Specifications

Video

Standards	HDMI 2.0, HDCP 1.4/2.2
Resolutions	DTV/HDTV Up to 4K @ 60 Hz YUV 4:4:4

Audio

HDMI	LPCM 2.0/5.1/7.1 channel , DTS-HD, Dolby-HD
Audio Extraction	Analog (Line Level) and SPDIF

Peripherals

RS-232	Full Duplex Pass through
USB	Supports all USB 2.0/1.0 Devices
IR	Bidirectional Pass through

General

Power Consumption	Dual POC (Power only required at one end) 14 Watts
Power Supply	24 VDC 1 A
Operational	32 to +104 °F (0 to +40° C)
Temp/Humidity	5 to 90 % RH (non-condensing)
Enclosure type	Metal (Steel)
Dimensions	6.87" (172.4 mm) W × 4.45" (113.2 mm) D × 0.95" (24 mm) H
Product weight	1.3 Lbs
Shipping weight	5.2 Lbs (Sender + Receiver)
Safety	CE
EMI/EMC	CE, FCC Class A
MTBF	90,000 hours (estimated)
Warranty	3 years parts and labor

Specifications are subject to change without notice



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