

HDU-1

Small Meeting Space Connectivity Solution

Installation Manual

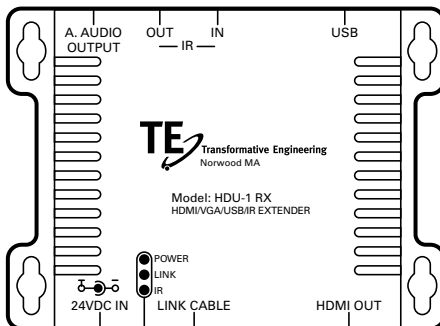
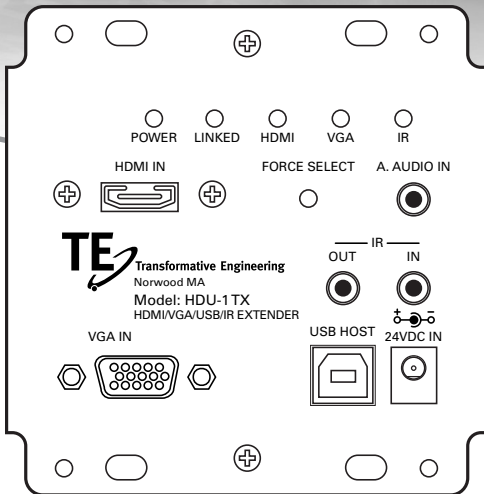




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Introduction

INTRODUCTION

Thank you for purchasing Transformative Engineering's HDU-1 HDMI/VGA/USB Solution for Classrooms, Conference Rooms and Huddle Spaces. This product incorporates many advanced technologies to accomplish switching and distribution of (1) High Definition MultiMedia Interface (HDMI), VGA, and USB sources to your display. The output is carried over a length of Category 5e/6/7 wire, utilizing HDBase-T technology, licensed here. This unique conversion of HDMI signals provides for the most reliable, stable and predictable method to transfer all HDMI requirements. More information on this technology may be found at the HDBase-T website, www.hdbaset.org. We are proud to be an early Adopter Member of the Alliance.

Proper connection and attention to limitations of this (or any other) product will result in secure, reliable, and predictable results. The most important variable to success will depend on wire chosen as the interconnection between our Transmitter and Receiver. All Category wire is not created equal. It is vital that care is taken at all times to avoid kinks, crimps, nicks, and other abuse of the wire and jacket. Also, we highly recommend that all wire be sweep tested before and after installation to insure full bandwidth is not impaired. A sweep-test generator, such as the Fluke CableIQ Qualification Tester, or its equivalent, is suggested. Please be sure to specify Category 5e, or better, cable that meets a minimum of 400MHz bandwidth. Typical high-quality Category 6 cable performs from 550-850 MHz, and Category 7 cable should pass 1GHz or more.

This product will meet our rated specifications using CAT 5e/6/7 UTP cable. It will also perform with STP (shielded twisted pair) cable as well. **MOST FAILURES OR INCONSISTENT PERFORMANCE ARE THE RESULT OF INFERIOR WIRE OR IMPROPER TERMINATIONS.** The first step in diagnosing problems with this product should center on the connection and choice of the wire used.

Please follow the instructions and diagrams shown in this Manual. Any questions should be directed to your Dealer, Distributor, or to our Technical Department. Our Contact information is:

Transformative Engineering, Inc.
194 Vanderbilt Ave.
Norwood, MA 02062-5000
Telephone: 781-769-6410
Fax: 781-255-0975

Email: info@transformativeengineering.com



Kit Contents

SAFETY INFORMATION

- Do not expose this device to water, moisture, or liquids. Possible electric shock may result as well as failure of the unit to operate.
- Do not modify or disassemble the enclosed Power Supply. Doing so will void the warranty and potentially expose the user to dangerous voltages resulting in electrical shock.
- Do not substitute or use any other Power Supply other than the enclosed unit, or a Transformative Engineering approved replacement part.
- Do not disassemble or modify either Transmitter or Receiver for any reason. There are no user serviceable parts inside. Doing so will void the manufacturer's warranty. Also, our case is an integral part of our design and is responsible for cooling and shielding. Any breach of this case will potentially cause malfunction and/or product failure.

KIT CONTENTS

- HDU-1 In-Wall or In-Table Transmitter/Controller
- (1) 24V, 1A Power Supply with outlet adapter for your region
- (1) HDBase-T Receiver
- (1) SMA- IR Adapter Cable for IR Pass-Thru
- White and Black Faceplates for Main Unit
- (1) Installation Manual

Features

FEATURE SET

- Auto selection of HDMI or VGA inputs
- HDBase-T - 30 Meters, CAT6 @ 1080p typical
- HDBase-T receiver Included
- Audio input for injection to receiver module
- Power at either side by one 24V power supply (provided)
- Diagnostic indicator lights for monitoring performance and operation
- High quality metal fabricated case for cooling, shielding, and safety



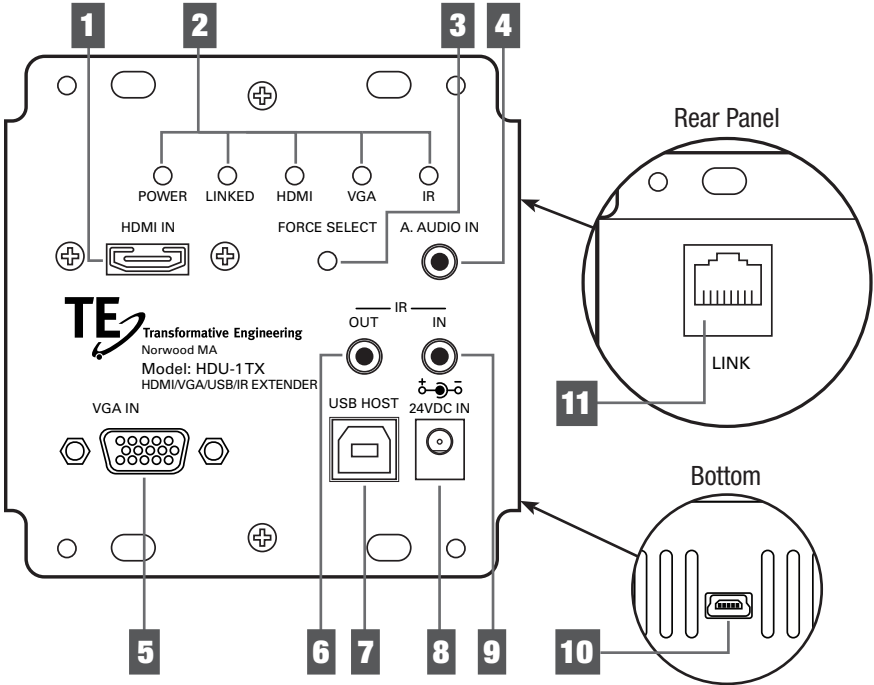
Specifications

SPECIFICATIONS

Input Signals	HDMI Version 1.0 thru 1.4a USB (Synchronous) – 2.0 compatible IR Signal – Pass Thru (Industry Compatible) IR Powered Pickup – Ring (Ground), Tip (Signal), Sleeve (+12VDC)
Video Formats Supported:	480i/576i/480p/576p/720p/1080i/1080p
Audio Formats Supported:	All HDMI Supported Formats, including DTS-HD, Dolby-HD, DVD-A, Dolby TrueHD, 8-CH LPCM
Output Signal (at Receiver):	HDMI Version 1.0 thru 1.4a USB (Synchronous) – 2.0 compatible IR Signal – Pass Thru (Xantech Compatible)
Maximum Distance (with CAT6):	30 Meters (100 Feet), @ 1080p
Power Supply (supplied):	24 VDC, 1A
Dimensions	(Transmitter) 3.6" W x 3.75" H x 1.4" D (Receiver) 4.125"W x 3.0" H x 1.0"D
Weight:	0.90 lbs (Transmitter) 0.75 lbs (Receiver)

Controller Connections

TRANSMITTER/CONTROLLER CONNECTIONS



1 HDMI In

2 Indicator Lights

3 Force Select

4 Audio In

5 VGA Input

6 IR Out

7 USB Host

8 Power In

9 IR In

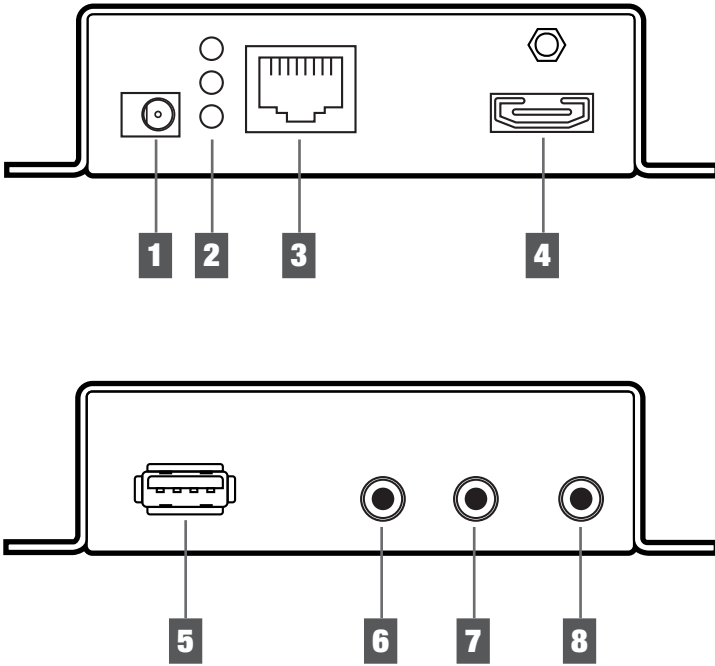
10 Mini USB (Bottom)

11 Link Out (Rear)



Receiver Connections

HDBASE-T RECEIVER CONNECTIONS



1 Power In (Alternate)

2 Indicator Lights

3 Link Cable

4 HDMI Out

5 USB

6 IR In

7 IR Out

8 Audio Output

Controller Functions

TRANSMITTER/CONTROLLER FUNCTIONS (see pg 7)

- 1 HDMI In** – This standard HDMI connection is v1.4a compatible and will pass all video and audio signals thru to the output. This device is compatible with all signals up to resolutions of 1920x1080 and 1900x1200. It is not 3D compatible.
- 2 Indicator Lights** – Shows when (a) Power is being applied to the Controller, (b) 'LINKED' when the HDBase-T Receiver is connected, and (c) 'HDMI' when the HDMI signal is selected and should result in a stable picture. HDMI light flashes when HDMI is connected, but not selected. The same is true of the VGA light. (d) When the VGA Input has been selected, and (e) When IR signals are being processed.
- 3 Force Select** – This manual button can select which input you desire routed to the HDBaseT Receiver Module. The row of indicator lights will show which input (HDMI or VGA) you have chosen. Unless a manual choice is activated, the Controller will actively select either the VGA or HDMI inputs, whichever is present. If both are present, the HDMI input has priority. Pressing the FORCE SELECT button will stop the auto-select function. To resume Auto Select, hold the FORCE button down for four seconds.
- 4 Audio In** – Designed to accept line-level (high impedance) stereo signals for transmission to the HDBase-T Receiver module. Useful for background or program music or narration, or as a program audio track.
- 5 VGA Input** – Designed to accept a standard VGA computer signal at resolutions up to 1900x1200.
- 6 IR Out** – Infra-Red pathway designed to accept an IR emitter. The insertion of this IR signal is done at the HDBase-T Receiver Module (See Page 8, Item 6). NO DONGLE IS REQUIRED AT IR OUT.
- 7 USB Host** – Connection of your USB-enabled keyboard, mouse, or webcam device. This synchronous path between the HDBaseT Receiver and the HDBaseT Transmitter will support video resolutions up to 1920 x 1080 and will support video resolutions up to 1920 x 1080.

Switcher Functions

8 Power In – This receptacle accepts the supplied 24V DC Power adapter. Do not substitute any other device or possible damage or operational defects may occur. This may optionally be powered from the HDBase-T Receiver side by connecting Power Supply to the HDBase-T Receiver (See Specifications pg 6).

9 IR In – Infra-Red pathway for sending IR commands to the HDBase-T Receiver Module. This is sent over the UTP connection and decoded within the HDBase-T Receiver. IT IS IMPORTANT TO NOTE THAT THIS IS A POWERED CONNECTION, DESIGNED FOR A “XANTECH”-TYPE PICKUP. Utilization of this pathway as a “passive” IR inserter MUST include the mini-jack dongle included in the accessory kit. IR commands coming from a control system (Crestron, Control4, etc) must be routed thru the IR dongle which is then connected to this input. FAILURE TO DO SO WILL RESULT IN NON-OPERATION OF YOUR IR. Connection of a “Xantech” –type pickup may be directly connected here (NO DONGLE) which will power the pickup and insert the IR commands.

10 Mini USB (Bottom) – For Firmware updates (provided if necessary) by Transformative Engineering. DO NOT attempt to connect this port for any other reason. Loss of all operation may result.

11 Link Out (Rear) – Connect to the Category wire for transmission of all signals between the Transmitter/Controller and the HDBase-T Receiver Modules. The length of this wire is limited to 30 Meters (100 feet) to obtain our rated specifications for performance.

HDBASE-T RECEIVER FUNCTIONS (see pg 8)

1 Power In (Alternate) – Alternatively, the Power Supply may be connected to the “24VDC IN” connection here to provide power to both the Controller and HDBase-T Receiver Modules. Only one Power Supply should be connected for both units.

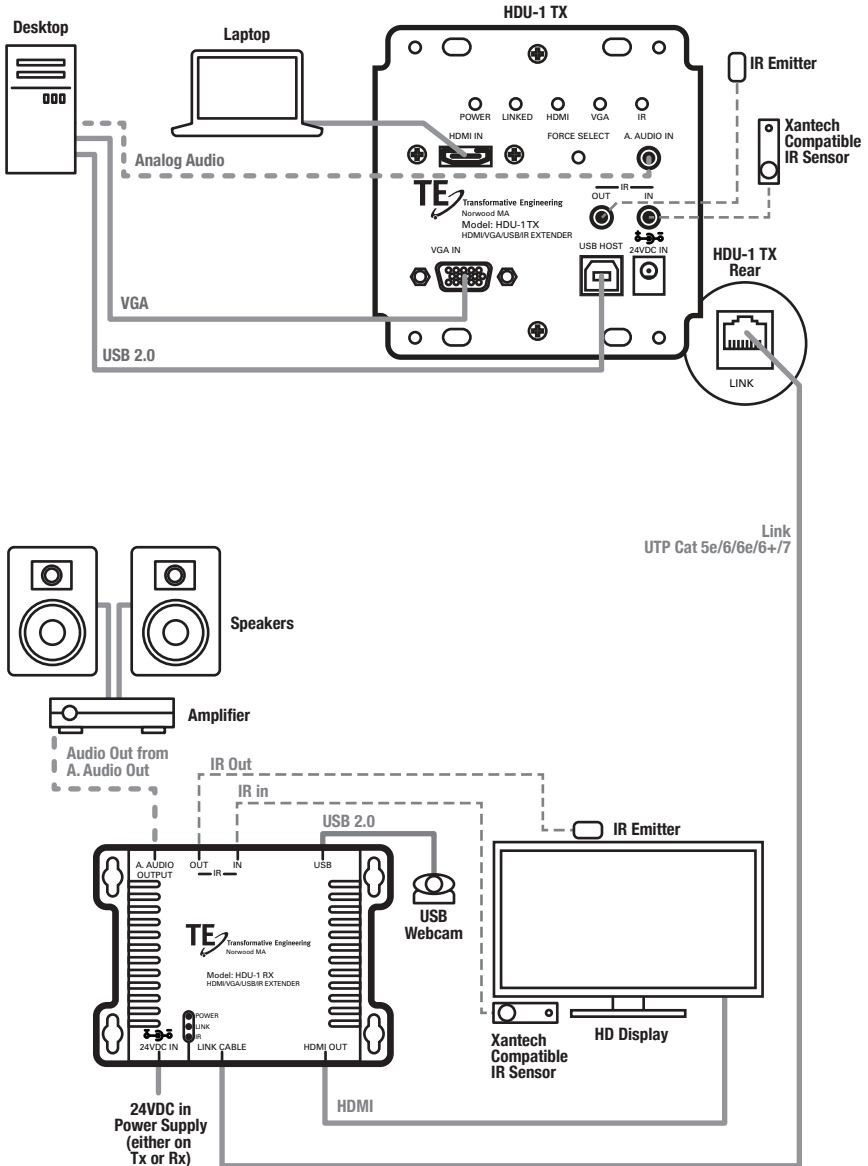
2 Indicator Lights – Indication for (a) Power acknowledged at the HDBase-T Receiver, (b) HDBase-T link established with the Controller, and (3) ‘IR’ when Infra-Red signals are being processed.

Receivers Functions

- 3 Link Cable** – RJ45 Connection for UTP (CAT5e/6/6e/6a/7) wiring to Controller. No power supply is required, as the Controller provides power over the UTP wire. (See Page 10, Item 1 for optional power input).
- 4 HDMI Out** – Standard HDMI v1.4a connection. We recommend as short an HDMI cable as necessary. HDMI Cables in excess of 4 Meters are not recommended.
- 5 USB** – For connection of your USB Client device. (See Page 9, Item 7)
- 6 IR In** – Infra-Red pathway for sending IR commands to the Switcher's IRDA OUT port. This is sent over the UTP connection and decoded within the Switcher. *IT IS IMPORTANT TO NOTE THAT THIS IS A **POWERED CONNECTION**, DESIGNED FOR A "XANTECH"-TYPE PICKUP.* Utilization of this pathway as a "passive" IR inserter MUST include the mini-jack dongle included in the accessory kit. IR commands coming from a control system (Crestron, Control4, etc) must be routed thru the IR dongle which is then connected to this input. *FAILURE TO DO SO WILL RESULT IN NON-OPERATION OF YOUR IR.* Connection of a "Xantech" –type pickup may be directly connected here (NO DONGLE) which will power the pickup and insert the IR commands.
- 7 IR Out** – Connect a "Xantech"-compatible IR Emitter here to relay the IR commands injected at the "IR In" port on the Controller (See Page 7, Item 9).
- 8 Audio Output** – Stereo signal path for audio injected at Controller Audio In (See page 7 Item 4).



Wiring Diagram



Troubleshooting & Warranty

TROUBLESHOOTING

As mentioned previously, most malfunctions can be addressed by careful examination of the Category cable terminations and suitability of the UTP cable itself. Once the “Link” lights are on, this system is operating normally. Lack of function should be traced to a failure in HDMI interconnection cables or device settings. If all this has been examined with no resolution of your problem, please contact our Technical Support Department at 781-769-6410 or via email at: info@transformativeengineering.com.

WARRANTY

Transformative Engineering, Inc. guarantees this product for Two Years from your original purchase. We guarantee performance and operation to published specifications including all parts and labor. We do not warranty against mis-use or abuse. To obtain warranty service, please contact our Technical Support Department at 781-769-6410 or via email at: info@transformativeengineering.com.



Notes



Notes



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