

## HDBTE-U70-VH User Manual



Thank you for purchasing this product. For optimum performance and safety, please read these instructions carefully before connecting, operating, or adjusting this product. Please keep this manual for future reference.

## **SURGE PROTECTION DEVICE RECOMMENDED**

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

## **SAFTY AND NOTICE**

1. The transmission distances of HDMI over UTP cables are measured using TE CONNECTIVITY 1427071-6
2. EIA/TIA-568-B termination (T568B) for CAT cables is recommended for better performance.
3. DO NOT use 568A/568B standard mixed CAT cable (cross-over cable) because there are 2 pairs swapped, this will make POE OVER-CURRENT and damage POE components. Please use straight-through CAT cable (both RJ45 headers are 568A or 568B standard).
4. It is recommended that power up the device after connections of source, sink, and CAT cable.
5. To reduce the interference among the unshielded twisted pairs of wires in CAT cable, do not run HDBaseT / Zone Cat5e/6/6a cabling with or in close parallel proximity to mains power cables. Shielded CAT cables can be used to improve EMI problems, which is worsen in long transmission.
6. Because the quality of the CAT cables has the major effect on how long the transmission limit can achieve and how good is the received picture quality, the actual transmission range is subject to one's choice of CAT cables.
7. Do not substitute or use any other Power Supply other than the enclosed unit, or a TEKVOX approved Replacement Part. Doing so will void the warranty and potentially expose the user to dangerous voltages resulting in an electrical shock.
8. Do not disassemble the device for any reason. Doing so will void the manufacturer's warranty. Also, our unique case is an integral part of the design of this unit and is responsible for cooling and circuitry shielding. Any modifications to this case will potentially cause malfunction and product failure.
9. Do not expose the device to water, moisture, or liquids. Possible electric shock may result as well as failure of the unit to operate.

## Table of Contents

1. Introduction.....	4
2. Features.....	4
3. Panel Descriptions.....	5
4. RS232 switching codes.....	7
5. RS232 Pin Assignment.....	7
6. Application Diagram.....	8
7. Specifications.....	8
8. Package Contents.....	9
9. Maintenance.....	9
10. Warranty Policy.....	9
11. Limitations of Warranty.....	9
12. Exclusive Remedies.....	10
13. RMA Policy.....	10

## Introduction

TEKVOX's **HDBTE-U70-VH-TX (Transmitter)/HDBTE-U70-VH-RX (Receiver)** is a Dual HDMI and VGA/Audio to HDBaseT Switcher Extender. It switches between HDMI and VGA/audio inputs, digitizes, and transmits via HDBaseT. Both the transmitter and receiver offer manual and RS232 switching between HDMI and VGA inputs. By using **HDBTE-U70-VH-TX** and **HDBTE-U70-VH-RX**, the transmission distance for 1080P reaches 100 meters (330ft), and 4K x2K reaches 70 meters (230ft).

**HDBTE-U70-VH-TX** and **HDBTE-U70-VH-RX** have the ability of equalization and amplification to ensure signal's transmission through long cable with POH (power over HDBaseT) without quality loss.

**HDBTE-U70-VH-TX** and **HDBTE-U70-VH-RX** was designed for simple low-cost systems in schools and businesses.

## Features

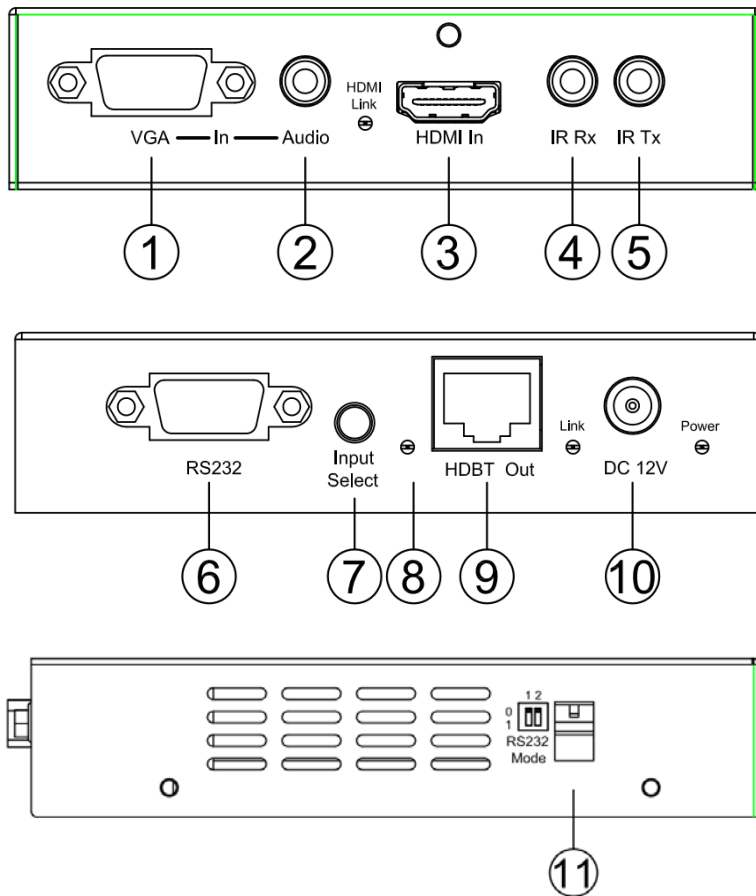
- Switching between HDMI and VGA with 3.5mm audio input, HDMI output with L/R Analog audio and Coax Digital audio outputs.
- HDMI v1.4 and HDCP compliant, support 1080p@60Hz, 3D and 4Kx2K.
- Support 1080P@60Hz or VESA: 1920x1200@60Hz up to 100m (330ft).
- Transmission distance for 4Kx2K@30Hz up to 70m (230ft).
- Support all popular VGA resolution inputs:  
640x480@60/75Hz, 720x400@70Hz, 800x600@60/75Hz, 1024x768@60/75Hz, 1152x864@75Hz, 1280x720@60Hz, 1280x768@60/75Hz, 1280x800@60/75Hz, 1280x960@60Hz, 1280x1024@60/75Hz, 1360x768@60Hz, 1366x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@60Hz, 1920x1200@60Hz
- Support Bi-Directional POH and Bi-Directional IR.
- Support EDID learning mode
- RS232 supports 4 modes: bypass through HDBaseT link(Default), control the switching between VGA and HDMI inputs, update Valens FW and update MCU FW
- With ESD Protection.

### Note :

The POH function is designed for powering compatible transmitter or receiver units of TEKVOX only.

## Panel Descriptions

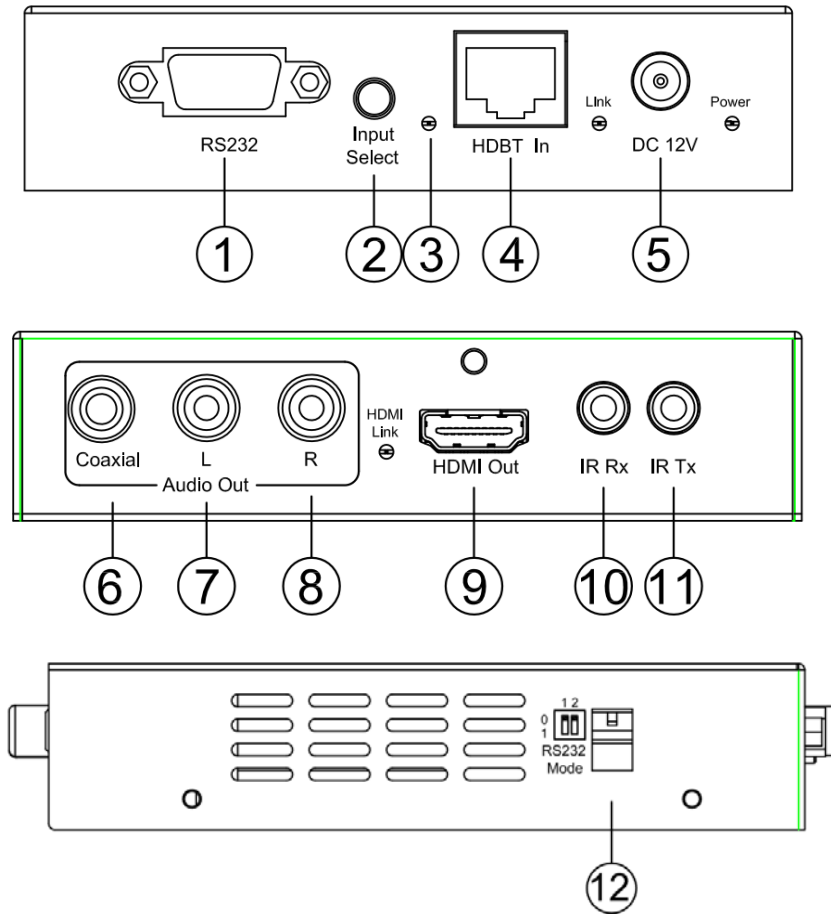
HDBTE-U70-VH-TX:



1. VGA input
2. Audio input(go with VGA input)
3. HDMI input
4. IR Receiver jack
5. IR Transmitter jack
6. RS232 port
7. Input select button
8. Inputs indicator light, red for VGA input, blue for HDMI input
9. HDBaseT output
10. DC power input
11. RS232 Mode DIP switch, mode selections as below:

DIP Position -1	DIP Position -2	Mode
0	0	RS232 pass through HDBaseT (Default)
0	1	Update Valens FW
1	0	Update MCU FW
1	1	Switch between VGA and HDMI by codes & RS232 pass through HDBaseT

HDBTE-U70-VH-RX



1. RS232 port
2. Input select button
3. Inputs indicator light, red for VGA input, blue for HDMI input
4. HDBaseT input
5. DC power input
6. Coaxial Digital Audio output, SPDIF
7. RCA L: Left channel of stereo analog audio output
8. RCA R: Right channel of stereo analog audio output
9. HDMI output
10. IR Receiver jack
11. IR Transmitter jack
12. RS232 Mode DIP switch, mode selections as below:

DIP Position -1	DIP Position -2	Mode
0	0	RS232 pass through HDBaseT (Default)
0	1	Update Valens FW
1	0	Update MCU FW
1	1	Switch between VGA and HDMI by codes & RS232 pass through HDBaseT

## RS232 switching codes for VGA and HDMI inputs

No.	Codes	Description
1	vgaselect	Switching to VGA input
2	hdmiselect	Switching to HDMI input
3	getselect	Get status of currently selected input, return message will be HDMI port or VGA port

**Note:** Codes are case sensitive. Carriage return ( 0X0D) needs to be pressed to activate the code.

## RS-232 Pin Assignment

HDBTE-U70-VH-TX/RX		Remote Control Console	
PIN	Assignment	PIN	Assignment
1	NC	1	NC
2	Tx	2	Rx
3	Rx	3	Tx
4	NC	4	NC
5	GND	5	GND
6	NC	6	NC
7	NC	7	NC
8	NC	8	NC
9	NC	9	NC

Baud Rate: 57600 bps

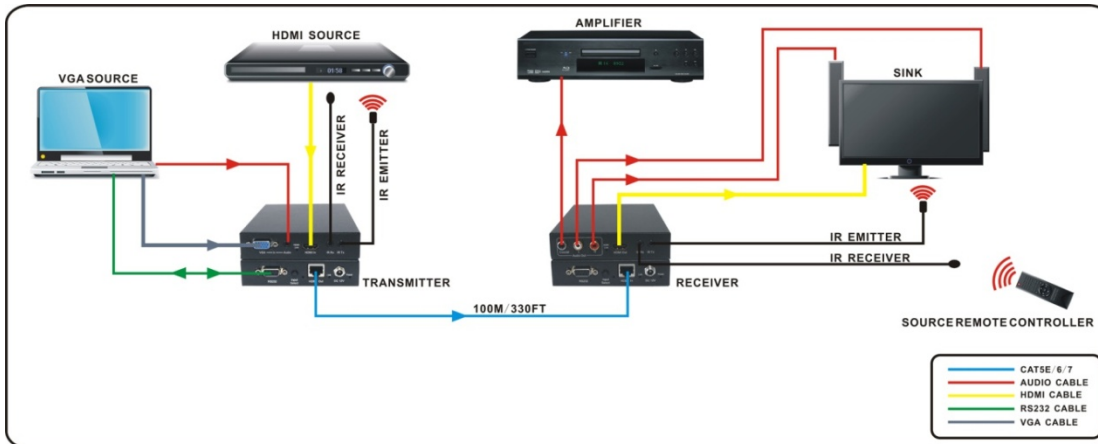
Data Bit: 8-bit

Parity: None

Stop Bit: 1-bit

Flow Control: None

## Application Diagram



## Specifications

HDBTE-U70-VH-TX:

Bandwidth:	2.97Gbps per color
Video Input Connectors:	1 x HDMI Type A, 19-pin, female, locking 1 x VGA Type A, 15-pin, female, locking
Video Output Connectors:	1x RJ-45
RS-232 serial port:	DB-9, female
IR Input ports:	1x 3.5mm stereo jack
IR Output ports:	1x 3.5mm stereo jack
Rack-Mountable:	Rack ears included
Dimensions (W x H x D):	125mm x 112mm x 27mm , without feet
Shipping Weight:	375g
Operating Temperature:	32°F to 104°F (0°C to 40°C)
Storage Temperature :	-4°F to 140°F (-20°C to 60°C)
Power Supply:	12V/2A DC

HDBTE-U70-VH-RX:

Bandwidth:	2.97Gbps per color
Video Input Connectors:	1x RJ-45
Video Output Connectors:	1 x HDMI Type A, 19-pin, female, locking
Audio Output Connectors:	3x RCA, female
RS-232 serial port:	DB-9, female
IR Input ports:	1x 3.5mm stereo jack
IR Output ports:	1x 3.5mm stereo jack
Rack-Mountable:	Rack ears included
Dimensions (W x H x D):	125mm x 112mm x 27mm , without feet
Shipping Weight:	375g
Operating Temperature:	32°F to 104°F (0°C to 40°C)
Storage Temperature :	-4°F to 140°F (-20°C to 60°C)
Power Supply:	12V/2A DC



## Package Contents

1. 1x HDBTE-U70-VH-TX
2. 1x HDBTE-U70-VH-RX
3. 1x 12V DC power supply
4. 1x IR Transmitter, 1x IR Receiver.
5. 4x mounting brackets.
6. 1x CD for Manual.

## Maintenance

Clean this unit with a soft, dry cloth. Never use alcohol, paint thinner or benzene to clean this unit.

## Warranty Policy

TEKVOX products are warranted against defects in material and workmanship for two years from the date of shipment. During the warranty period, TEKVOX will, at its option, repair or replace products that prove to be defective. Repairs are warranted for the remainder of the original warranty or a 90 day extended warranty, whichever is longer.

For equipment under warranty, the owner is responsible for freight to TEKVOX and all related customs, taxes, tariffs, insurance, etc. TEKVOX is responsible for the freight charges only for return of the equipment from the factory to the owner. TEKVOX will return the equipment by the same method (i.e., Air, Express, Surface) as the equipment was sent to TEKVOX.

All equipment returned for warranty repair must have a valid RMA number issued prior to return and be marked clearly on the return packaging. TEKVOX strongly recommends all equipment be returned in its original packaging.

TEKVOX 's obligations under this warranty are limited to repair or replacement of failed parts, and the return shipment to the buyer of the repaired or replaced parts.

## Limitations of Warranty

The warranty does not apply to any part of a product that has been installed, altered, repaired, or misused in any way that, in the opinion of TEKVOX, would affect the reliability or detracts from the performance of any part of the product, or is damaged as the result of use in a way or with equipment that had not been previously approved by TEKVOX.

The warranty does not apply to any product or parts thereof where the serial number or the serial number of any of its parts has been altered, defaced, or removed.

The warranty does not cover damage or loss incurred in transportation of the product.

The warranty does not cover replacement or repair necessitated by loss or damage from any cause beyond the control of TEKVOX, such as lightning or other natural and weather related events or wartime environments.

The warranty does not cover any labor involved in the removal and or reinstallation of warranted equipment or parts on site, or any labor required to diagnose the necessity for repair or replacement.

The warranty excludes any responsibility by TEKVOX for incidental or consequential damages arising from the use of the equipment or products, or for any inability to use them either separate from or in combination with any other equipment or products.

A fixed charge established for each product will be imposed for all equipment returned for warranty repair where TEKVOX cannot identify the cause of the reported failure.

## **Exclusive Remedies**

TEKVOX's warranty, as stated is in lieu of all other warranties, expressed, implied, or statutory, including those of merchantability and fitness for a particular purpose. The buyer shall pass on to any purchaser, lessee, or other user of TEKVOX's products, the aforementioned warranty, and shall indemnify and hold harmless TEKVOX from any claims or liability of such purchaser, lessee, or user based upon allegations that the buyer, its agents, or employees have made additional warranties or representations as to product preference or use.

The remedies provided herein are the buyer's sole and exclusive remedies. TEKVOX shall not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory.

## **RMA Policy**

When returning product to TEKVOX for any reason, the customer should fill out the official RMA form to obtain a RMA number. Without the permission or approval, TEKVOX will be no responsible for any return. This can be initiated by emailing or calling your related sales.

All requests are processed within 48 hours.

## **Standard Replacement**

For customers that agree to return defective product to TEKVOX first, a Standard Replacement option is available.

An RMA number must first be issued by sales. This RMA number will need to be referenced on the outside of the return shipment.

Upon receipt of the defective product, TEKVOX will, at its discretion, either repair or replace the product and ship it out in the most expeditious manner possible. Subject to availability, the replacement product will be shipped on the business day following receipt of the defective product.

In the event the product returned to TEKVOX has been discontinued (i.e. the product is no longer being manufactured by TEKVOX but is still under warranty), TEKVOX will, at its discretion, either repair or replace with recertified product.

### **Once you have obtained an RMA number**

After obtaining an RMA number from TEKVOX, you must send the product - freight prepaid - to TEKVOX. The TEKVOX RMA number must be prominently displayed on the outside of your package. If you send your product to TEKVOX without the RMA number prominently displayed on the outside of the package, it will be returned to you unopened.

Please use a shipping company that can demonstrate proof of delivery. TEKVOX does not accept responsibility for any lost shipments unless proof of delivery to TEKVOX is provided.

### **Please note:**

Product shipped to TEKVOX must be properly packaged to prevent loss or damage in transit.

Shipping your RMA to TEKVOX using regular mailing envelopes is not acceptable, as they do not protect the product from damage during shipping.

TEKVOX will not repair or replace a module that is shipped in such a way that the product is not properly protected.

TEKVOX will not accept any product that has been damaged as a result of accident, abuse, misuse, natural or personal disaster, or any unauthorized disassemble, repair or modification.