KanexPro®

EXT-HDBTKVM100

4K HDBaseT 2.0™ Extender w/ HDMI® & USB 2.0 KVM support

Extend HDMI, USB 2.0, and RS-232 & Power over HDBaseT
up to 150 meters (492 feet)

Version: EXT-HDBTKVM100_2016V1.0

Preface

Read this user manual carefully before using this product. Pictures shown in this manual is for reference only, different model and specifications are subject to real product.

This manual is only for operation instruction only, not for any maintenance usage. The functions described in this version are updated till February 2016. Any changes of functions and parameters since then will be informed separately. Please refer to the dealers for the latest details.

All product function is valid till 2-26-2016.

Trademarks

FCC Statement

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation.

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

Any changes or modifications not expressly approved by the manufacture would void the user's authority to operate the equipment.

SAFETY PRECAUTIONS

To insure the best from the product, please read all instructions carefully before using the device. Save this manual for further reference.

- Unpack the equipment carefully and save the original box and packing material for possible future shipment
- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.
- Using supplies or parts not meeting the products' specifications may cause damage, deterioration or malfunction.
- Refer all servicing to qualified service personnel.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Do not put any heavy items on the extension cable in case of extrusion.
- Do not remove the housing of the device as opening or removing housing may expose you to dangerous voltage or other hazards.
- Install the device in a place with fine ventilation to avoid damage caused by overheat.
- Keep the module away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- Do not twist or pull by force ends of the optical cable. It can cause malfunction.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Unplug the power cord when left unused for a long period of time.
- Information on disposal for scrapped devices: do not burn or mix with general household waste, please treat them as normal electrical wastes.

Contents

1. Introduction

1.1 Introduction to EXT-HDBTKVM100

Compliant with HDMI 2.0 & HDCP 2.2, The KanexPro EXT-HDBTKVM100 is a 4K HDMI Extender set developed with the latest HDBaseT™ 2.0 technology to extend uncompressed HDMI video, audio, USB 2.0, control signals and PoH over a single CAT5e/6 cable. The PoH compliant extender comes with only one power supply, which means that, it can be powered bi-directionally from Tx to Rx or vice versa to save installers time and added cost to installing a power outlet. Ideally designed for smart displays and KVM solutions fitting digital signage markets.

Features

- Compatible with HDMI2.0, delivers high-resolution AV signal (1080p 3D, 4Kx2K@60Hz), support older compatibility (e.g. HDMI 1.4)
- Supports HDBaseT 2.0, transmit 4Kx2K signal up to 100m and 1080p signal up to 150m over single CAT5e/CAT6 cable
- EDID Pass-Thru
- HDCP2.2 compliant
- Supports CEC
- Front panel status LEDs for power, link & HDCP
- Transmission mode (100m/150m) can be switched via intuitive front panel switcher
- Bi-directional USB & RS232 control
- Bi-directional PoH (Power over HDBaseT)

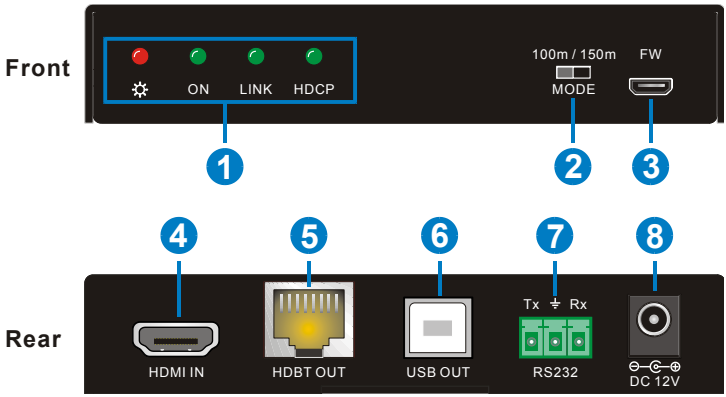
1.2 Packing List

- ✓ 1 x Transmitter (EXT-HDBTKVM100T)
- ✓ 1 x Receiver (EXT-HDBTKVM100R)
- ✓ 4 x Detachable Mounting Ears
- ✓ 8 x Screws
- ✓ 1 x Power Adapter (DC 12V 2A)
- ✓ 8 x Plastic Cushions
- ✓ 2 x RS232 cables (Phoenix to 9 Pin D-Sub)
- ✓ 1 x User manual

🕮 Please confirm if the product and the accessories are all included, if not, please contact your dealer or support@kanexpro.com

2. Panel Description

2.1 Transmitter (EXT-HDBTKVM100T)

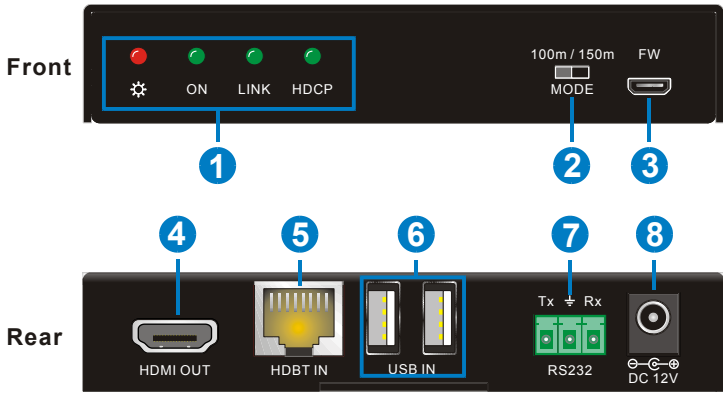


No.	Name	Description
①	Indicators	**Power**: ✓ OFF: No power ✓ RED: DC power present
		ON: Working status indicator ✓ OFF: Not operational ✓ Blinking GREEN: Normal operation
		LINK: HDBT Link status indicator ✓ OFF: No Link ✓ GREEN: Link successful ✓ Blinking GREEN: Link problem
		HDCP: HDCP compliant indicator ➢ OFF: No HDMI traffic (no picture) ➢ GREEN: Traffic with HDCP ➢ Blinking GREEN: Traffic without HDCP
②	Transmission Mode Switcher	Activate 100m/ 150m-transmission mode. ✓ 100m mode: 4Kx2K@60Hz and 1080p signals can be transmitted up to 100m ✓ 150m modes: 1080p signal can be transmitted up to 150m, but will not support 4K signals. Note: After setting switch position, the mode will not take effect until units are restarted. Please set both ends identical.
③	FW	Micro USB port, used for firmware update. Firmware update needs auxiliary equipment, please contact

		with our after-sales department for more details.
④	HDMI IN	Connect with HDMI source
⑤	HDBT OUT	Connect to the **HDBT IN** port on rear panel of the Receiver via CAT5e/ CAT6a cable, compliant with HDBT2.0 and support bi-directional PoH.
⑥	USB OUT	Type-B USB port, connect to PC to receive remote USB control
⑦	RS232	Serial port, connects with control device or device to be controlled, supports bi-directional RS232 control.
⑧	DC 12V	Connect with a DC12V 2A power adapter.

🕮 Pictures for reference only, subject to our existing products.

2.2 Receiver (EXT-HDBTKVM100R)



No.	Name	Description
①	Indicators	**Power**: ✓ OFF: No power ✓ RED: DC power present
		ON: Working status indicator ✓ OFF: Not operational ✓ Blinking GREEN: Normal operation
		LINK: HDBT Link status indicator ✓ OFF: No Link ✓ GREEN: Link successful ✓ Blinking GREEN: Link problem
		HDCP: HDCP compliant indicator ➢ OFF: No HDMI traffic (no picture)

		➢ GREEN: Traffic with HDCP ➢ Blinking GREEN: Traffic without HDCP
②	Transmission Mode Switcher	Activate 100m/ 150m-transmission mode. ✓ 100m mode: 4Kx2K@60Hz and 1080P signals can be transmitted up to 100m ✓ 150m modes: 1080P signal can be transmitted up to 150m, but do not support 4K signals. Note: After setting switch position, the mode will not take effect until units are restarted. Please set both ends identical.
③	FW	Micro USB port, used for firmware update. Firmware update needs auxiliary equipment, please contact with our after-sales department for more details.
④	HDMI OUT	Connect with HDMI display
⑤	HDBT IN	Connect to the **HDBT OUT** port on the Transmitter via CAT5e/ CAT6a cable, compliant with HDBT2.0 and support bi-directional PoH
⑥	USB IN	Type-A USB port, connect to mouse/ keyboard/ U-disk for remote USB access
⑦	RS232	Serial port, connects with control device or device to be controlled, supports bi-directional RS232 control
⑧	DC 12V	Connect with a DC12V 2A power adapter.

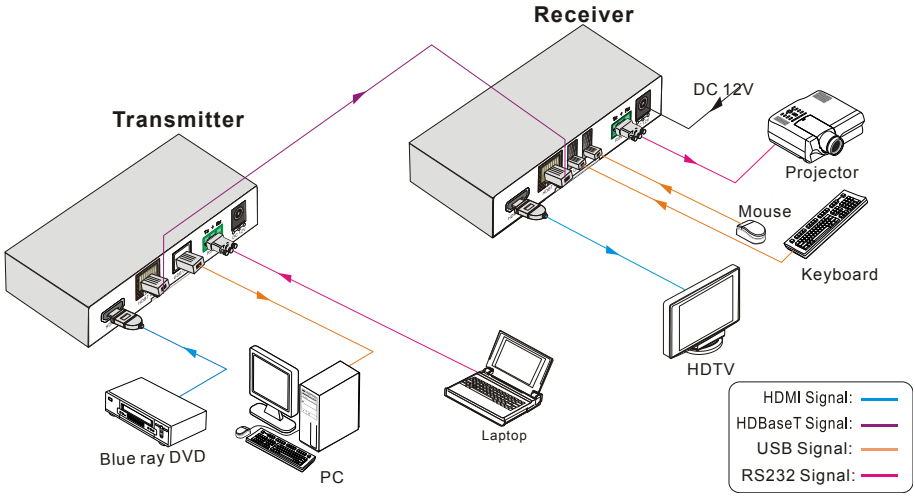
🕮 Pictures for reference only, subject to our existing products.

3. System Connection

3.1 Usage Precautions

1) System should be installed in a clean environment and should have optimal temperature and humidity.
2) All the power switches, plugs, sockets and power cords should be insulated for reliable transmission and safety.
3) All devices should be connected before powering on.

3.2 System Diagram



3.3 Connection Procedure

Step1. Connect HDMI source (such as Blu-ray or PC) to **HDMI IN** port of the transmitter with an HDMI cable.

Step2. Connect **HDBT OUT** port of the transmitter to **HDBT IN** port of the receiver through a straight-thru CAT5e/CAT6 cable.

Step3. Connect a HDMI display (such as HDTV) to **HDMI OUT** port of the receiver with HDMI cable;

Step4. When using the USB control, do the following:

a) Connect PC to the **USB OUT** port of transmitter.

b) Connect Mouse/ Keyboard to the **USB IN** port(s) port of receiver.

Step5. When using the bi-directional RS232 control, do the following:

c) Connect PC to the **RS232** port at either the transmitter or the receiver.

d) Connect a third-party device (such as projector) need to be controlled to the **RS232** port at the other end.

e) Send RS232 commands to control the third-party device. For more details about RS232 commands, please refer to the user manual for the third-party device.

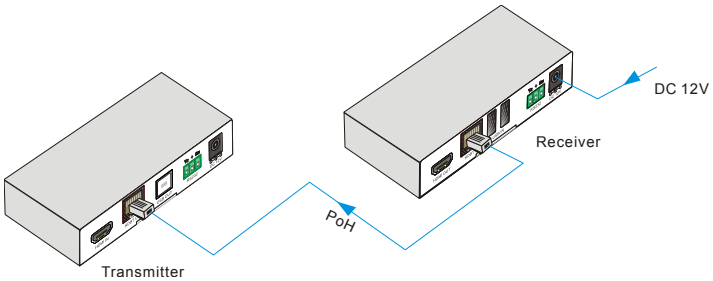
Step6. Connect with DC12V power adaptor to the power port of either Transmitter or Receiver; the other end will be powered synchronously via PoH.

1) System Diagram shown in this manual is for reference only, more specific schemes depend on real-time applications.
2) Connect HDBT ports via straight-thru CAT5e/6 cable with TIA/EIAT568B standard terminations at both ends.
3) RS232 communication protocol: Baud Rate: 9600; data bit: 8; stop bit: 1; parity: none. HDBT Transceiver receives RS232 control from devices with various baud rate (2400, 4800, 9600, 19200, 38400, 57600, 115200).
4) HDBT ports can work with existing KanexPro HDBT products that have same power supply solution.
5) Make sure the switchers on front panel are in the necessary status.
6) Reboot the device if the switcher status has changed.

3.4 PoH (Power over HDBaseT)

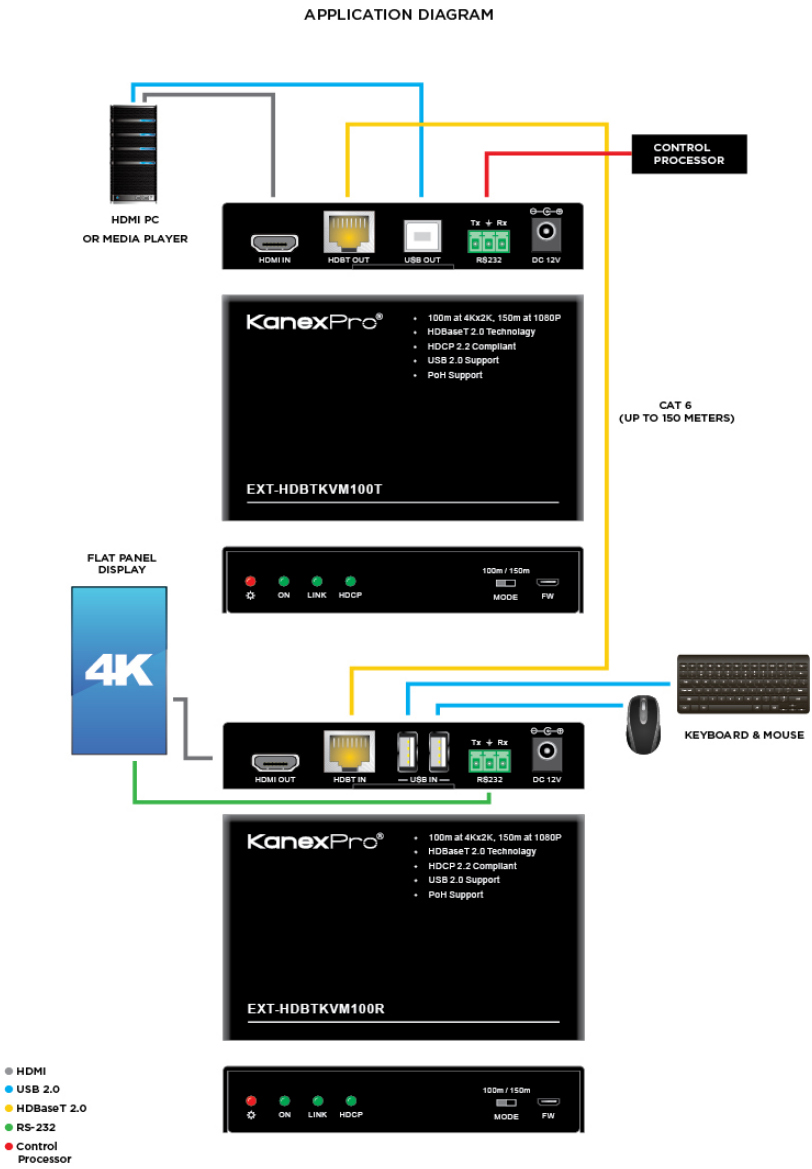
HDBaseT Transceiver boasts HDBT port, which supports PoH. Besides carrying uncompressed 1080p or 4K video signals, USB or RS-232 control signals over a single Cat 5e/Cat 6 cable, it transfers DC power over a single Ethernet cable to a distance up to 100 meters (m) bi-directionally.

Connect the DC adapter to either the transmitter or the receiver; the other end can be powered synchronously (see in the following figure):



3.5 Application

Ideal for applications such as Digital Signage where high-resolution video, audio and USB KVM function and data diagnostics can be sent back to the computer from the QSR display or vice versa.



4. Specifications

Model / Spec	EXT-HDBTKVM100T	EXT-HDBTKVM100R
Audio& Video		
Input	1 HDMI (19 pin Type-A male)	1 HDBT (RJ45 female) 2 USB IN (Type-A)
Output	1 HDBT (RJ45 female) 1 USB OUT (Type-B)	1 HDMI (19 pin Type-A male)
Other	1 RS-232 (3-pin pluggable terminal block)	
Signal Standard	HDMI2.0 & HDCP2.2	HDMI2.0 & HDCP2.2
Transmission Mode	HDBaseT 2.0	
HDMI Embedded audio	PCM/Dolby Digital/DTS/DTS-HD	
General		
EDID Management	EDID Pass-Thru	
Transmission Distance	1080p≤150m 4Kx2K≤100m	
Temperature	-20~ 65℃	
Reference Humidity	10% ~ 90%	
Power Supply	Input: 100V~240V AC; Output: DC 12V 2A	
Power Consumption	5.7w	8w
Dimension (W*H*D) (mm)	4.5”x0.86”x3.74” 116*22*95(mm)	4.5”x0.86”x3.74” 116*22*95(mm)
Weight (g)	1.78 lb. (0.8Kg)	1.78 lb. (0.8Kg)

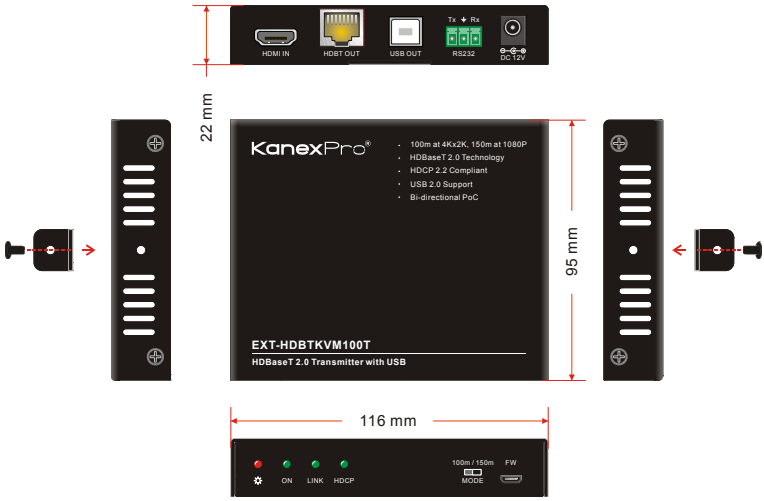
🕮 All nominal levels are at ±10%.

4.1 Supported Resolution

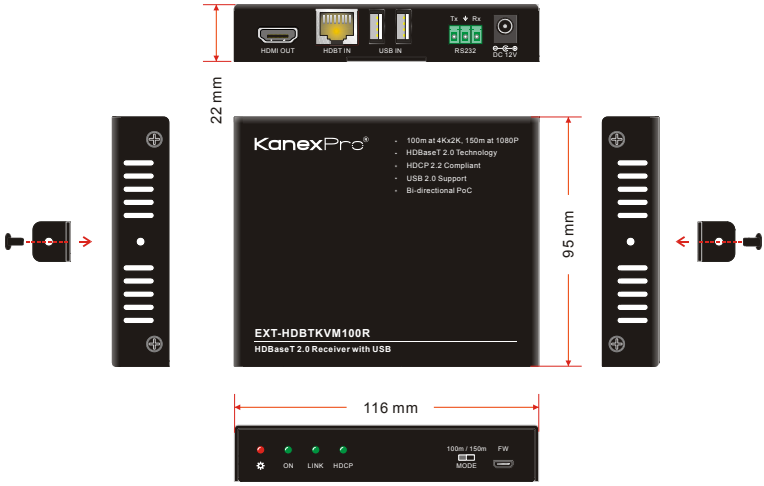
4Kx2K	4096x2160@30Hz, 3840x2160 (30Hz/24Hz/25Hz/50Hz/60Hz)
16:9	1080P 3D, 1920x1080@60Hz, 1600x900@60Hz, 1366x768@60Hz, 1280x720@60Hz, 1024x576@60Hz
16:10	1920x1200@60Hz, 1680x1050@60Hz, 1440x900@60Hz, 1360x768@60Hz, 1280x800@60Hz
4:3	1600x1200@60Hz, 1400x1050@60Hz, 1280x1204@60Hz, 1024x768@60Hz, 800x600@60Hz, 640x480@60Hz
21:9	2560x1080 (30/60Hz)

🕮 HDBaseT Transceiver supports 4K &1080p 3D HDMI signal; please use quality HDMI cables compliant with HDMI2.0 for optimum range, resolution and performance.

5. Panel Drawing



EXT-HDBTKVM100T



EXT-HDBTKVM100R