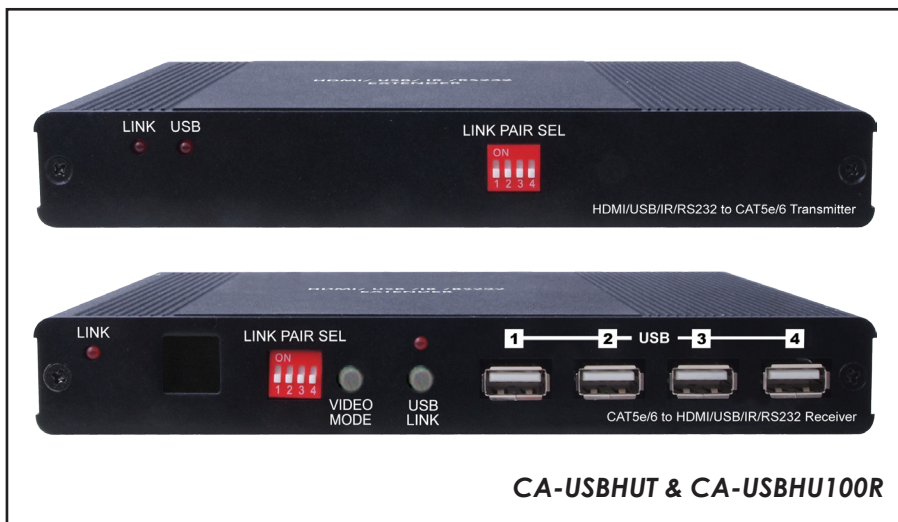# CA-USBHUT & CA-USBHU100R

Multi-functioning HDMI/USB/ RS-232 & IR over single CAT5e/6 Transmitter and Receiver Extender Box

Operation Manual

LINK   USB

LINK PAIR SEL

ON
1 2 3 4

HDMI/USB/IR/RS232 to CAT5e/6 Transmitter

LINK

LINK PAIR SEL

ON
1 2 3 4

VIDEO
MODE

USB
LINK

1 ─── 2 ─ USB ─ 3 ─── 4

CAT5e/6 to HDMI/USB/IR/RS232 Receiver

CA-USBHUT & CA-USBHU100R

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Safety Precautions

Please read all instructions before attempting to unpack or install or operate this equipment, and before connecting the power supply. Please keep the following in mind as you unpack and install this equipment:

➢ Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
➢ To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
➢ Never spill liquid of any kind on or into this product.
➢ Never push an object of any kind into this product through module openings or empty slots, as you may damage parts.
➢ Do not attach the power supply cabling to building surfaces.
➢ Do not allow anything to rest on the power cabling or allow it to be abused by persons walking on it.
➢ To protect the equipment from overheating, do not block the slots and openings in the module housing that provide ventilation.

Revision History

Version No	Date	Summary of Change
VR0	20110330	Preliminary Release
VR1	20110609	Add EDID Function
VR2	20110913	WUXGA @ RB
VR3	20120204	Power adaptor, Dimensions & Weight
VR4	20120416	IR Frequency & Distance

Table of Contents

1. Introduction

With HDMI & USB over CAT5e/6 connectivity are becoming popular nowadays. The growing need for their flexibility has likewise risen in demand. The HDMI & USB over a CAT5e/6 transmitter and receiver box solution is developed for any household and/or commercial environment. This pair of devices allows HDMI and or USB host device to send data within a 100-meters distance while offering expandability for up to 4 USB outputs to perform tasks. In addition, this pair of devices can also save data from the output port devices or allow remote control through the display side even when there's 100 meters apart separating the devices. Furthermore, this pair of devices includes extra functions like IR, line-out and microphone features that allows user to enjoy control over distance and audio sound over favor audio equipments. Moreover, the device allowing user with cascade with the same family type of device to extend the transmission distance up to as long as it demand and without signal loss or delay, or with multi pairs of the extender box up to 16 for matrix usage from a IP for data sharing within the connected device of sources and displays. The HDMI & USB over a CAT5e/6 transmitter and receiver box are the ideal choices to your HDMI & USB extension and data sharing needs.

2. Applications

- HDMI, USB, RS-232 & IR Extender
- Broadcasting system over single CAT5e/6
- Multimedia display and multi-data sharing
- Long distance data sending with cascade
- Matrix network system
- System control over RS-232 and equipment control over IR
- KVM control

3. Package Contents

- HDMI & USB over single CAT5e/6 Transmitter
- HDMI & USB over single CAT5e/6 Receiver
- 5V / 3A DC power supply x 2
- IR Blaster x 1
- Operation manual

4. System Requirements

● Input HDMI and or USB source equipment such as DVD, Blu-Ray player and or PC/Notebook with connection cables.
● Output display such as HD TV, monitor and active speaker or amplifier with connection cables.
● CAT5e/6 cable up to 100Ms in between of transmitter and receiver.

5. Features

● HDMI v1.2 and HDCP v1.1 compliant
● Support USB 2.0 high-speed devices
● Operate with USB 2.0 high speed host controllers
● True plug and play without any driver installation required
● Display and control of the host device and source equipment
● Save and share data into a separate room
● Tested CAT5 cable distance of up to 100 meters or cascade up to as long it require or link up to 16 pairs for matrix system
● Supports digital display output resolution up to 1920 x 1080@60Hz & WUXGA@RB
● Automatic display mode detection and DDC synchronization
● Simple set up with easy to use
● LED indicators for easy viewing
● Data transmission rate 1G bit/s
● Can cascade over Giga Ethernet hub base on TCP/IP

6. Specifications

Transmitter

Input Port	1 x USB (B type)
	1 x HDMI
	1 x IR Blaster
	1 x RS-232
Output Port	1 x RJ45

Receiver

|	
Input Port	1 x RJ45
	1 x 3.5Ø Audio In
Output Ports	4 x USB (A type)
	1 x HDMI
	1 x RS-232
	1 x IR Receiver
	1 x 3.5Ø Audio Out
ESD Protection	Human body model: ± 10kV (air-gap discharge)
	± 6kV (contact discharge)
Power Supply	5V / 3A (US/EU standards, CE/FCC/UL certified)
Dimensions (mm)	180 (W) x 110 (D) x 25 (H) / each
Weight(g)	382 / Transmitter, 384 / Receiver
Chassis Material	Aluminum
Silkscreen Color	Black
Operating Temperature	0˚C ~ 40˚C / 32˚F ~ 104˚F
Storage Temperature	-20˚C ~ 60˚C / -4˚F ~ 140˚F
Power Consumption	5W / Transmitter, 12W / Receiver
Relative Humidity	20~90% RH (non condensing)

7. Operation Controls and Functions

7.1 Transmitter's Front Panel

LINK   USB

LINK PAIR SEL

HDMI/USB/IR/RS232 to CAT5e/6 Transmitter

① ②   ③
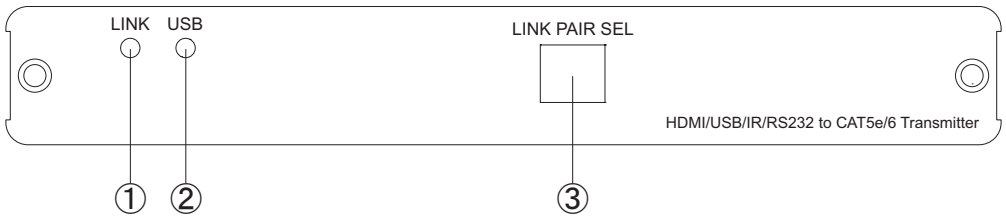
① This LED will illuminate when the transmitter is linked with receiver's signal.
② USB LED: This LED will illuminate when the transmitter has linked with receiver's USB signal. User are only able to control the USB in (the source device) when this LED is not illuminated.
③ LINK PAIR SELECT: This dip switch allows user with matrix setting for link up to 16 pairs of the devices with single IP router. Each pair must have the same dip switch setting in order to pair to the right device setting. The factory default setting is at 0000.

7.2 Transmitter's Rear Panel
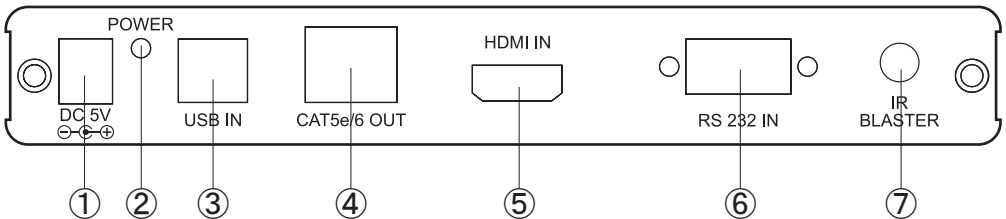
POWER

HDMI IN

DC 5V   USB IN   CAT5e/6 OUT   RS 232 IN   IR BLASTER

① ②   ③   ④   ⑤   ⑥   ⑦

① DC 5V: Plug the DC power supply into the unit and connect the adaptor to AC wall outlet. Power LED will illuminate when the power is on.
② Power LED: The red LED will illuminate when the device is connected with power.
③ USB IN: This slot is to connect with PC/Notebook for input source signal with USB B type cable.
④ CAT5e/6 OUT: This slot is to connect with CAT5e/6 cable with receiver side's CAT5e/6 input.
⑤ HDMI IN: This slot is to connect with input source such as DVD or Blu-ray player with connection cable.
⑥ RS 232 IN: This slot is to connect with D-Sub 9pin female null moden cable from PC's system for controlling both the input source and output display over RS-232.
⑦ IR BLASTER: This slot is to connect with IR blaster cable included in the package for IR signal sending and controlling the HDMI input source equipment.

7.3 Receiver's Front Panel
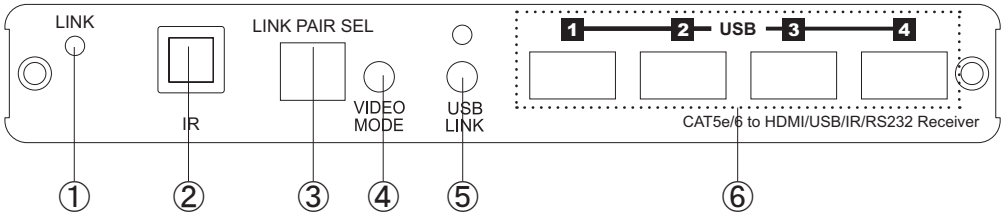
① Link LED: The LED red will illuminate when the device has received output display's single and input source's data.

② IR: receiver: This IR reciever can accept IR signal of the HDMI input source device with frequency between 30~50Hz and can send the signal over CAT5e/6 to transmitter side to control the input source equipment.

③ LINK PAIR SELECT: This dip switch allows user with matrix setting for link up to 16 pairs of the devices with single IP router. Each pair must have the same dip switch setting in order to pair to the right device setting. The factory default setting is at 0000.

④ VIDEO MODE: Press this button to switch in between the video and graphic mode. The OSD will display your selection every time when the button is pressed.
For EDID update: Connect both transmitter and receiver box together with CAT5e/6 cable and power on the transmitter side, then press this button constantly before powering on the receiver side. The LINK LED will light up instantly and go disappear, when the LED is light up again with blinking this button may be released. Under multiple link of receivers the EDID update will always be stored with the last update setting.

⑤ LINK button: Press this button once or twice to allow the receiver to be link up or unlink with the transmitter and the OSD will show "Starting USB" or "Stopping USB" on the HDMI output display.
Under multiple link of receivers on a single transmitter, press it for 3sec to get the host control of USB on the receiver. When the LED illuminate it means the device has obtain the USB authority.

⑥ USB 1~4: These slots are for users to connect with keyboard, mouse, HDD, USB flash drive and…etc. for USB hub function and KVM usage.

7.4 Receiver's Rear Panel
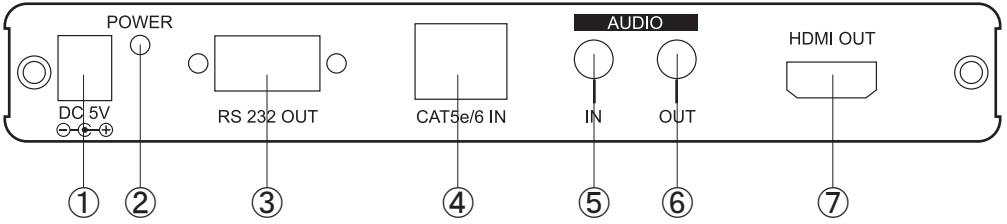
① DC 5V: Plug the DC power supply into the unit and connect the adaptor to AC wall outlet. Power LED will illuminate when the power is on.
② Power LED: The red LED will illuminate when the device is connected with power.
③ RS 232 OUT: This slot is to connect with D-Sub 9pin female null moden cable from PC's system for controlling both the input source and output display over RS-232.
④ CAT5e/6 IN: This slot is to connect with CAT5e/6 cable with transmitter side's CAT5e/6 output
⑤ AUDIO IN: This slot is for extra audio input source signal to be connected with 3.5Ø phone jack cable.
⑥ AUDIO OUT: This slot is for external audio output equipment to be connected with active speaker and connection cable.
⑦ HDMI OUT: This slot is to connect with output display such as HD TV or monitor with connection cable.

8. D-Sub 9 Pin Definitions

Pin	Define
1	N/C
2	RX
3	TX
4	N/C
5	GND
6	N/C
7	N/C
8	N/C
9	N/C

* RS-232 transmission format:
   Baud Rate: 115200bps
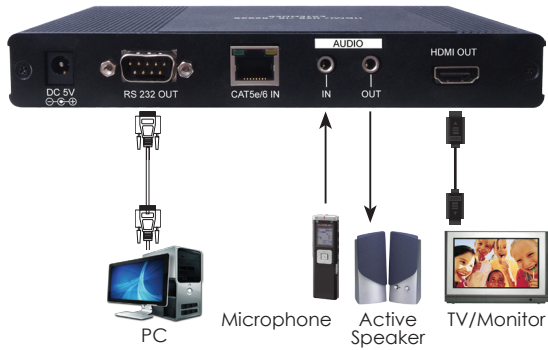   Data Bit: 8 bits
   Parity: None
   Stop Bit: 1 bit
   Flow Control: None

9. *Connection and Installation*

Transmitter's Rear Panel

Notebook

100m

HDMI IN

DVD
or

Blu-ray

PC or Notebook

3m

7m

60°

3m

100m or

IP Router

100m

Receiver's Rear Panel

PC

Microphone

Active
Speaker

TV/Monitor

AUDIO

HDMI OUT

Receiver's Front Panel

LINK

LINK PAIR SEL

VIDEO
MODE

USB
LINK

USB

1 2 3 4

CAT5e/6 to HDMI/USB/IR/RS232 Receiver

60°

3m

7m

3m

Keybord Mouse HDD Flash

7

Acronyms

A

Acronym	Complete Term
CAT6	Catergory 6 Cable
HDCP	High-bandwidth Digital Content Protection
HDMI	High-Definition Television
USB	Universal Serial Bus