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User Manual ^[V1.0]



4K60Hz HDMI KVM Extender 70M w/ ARC, Ethernet, USB

ZT-424 | ZT-4KEX-AEU



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SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack, 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 any openings or empty slots in the unit, as you may damage parts inside the unit.
- Do not attach the power supply cabling to building surfaces.
- Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
- Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.
- To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.

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1. Introduction

This 18Gbps HDMI Extender can extend high definition video / audio signal, RS-232, bi-directional IR and internet signal, at the distance of up to 328ft / 100m between transmitter and receiver via a single CAT6a/7 cable and support resolution up to 4K2K@60Hz 4:4:4. The Transmitter supports ARC function and local audio extract. In addition, the extender is equipped with bi-directional IR pass through which allows for source and display control. It also supports USB KVM and PoC function.

The extender offers the most convenient solution for HDMI extension via a single CAT cable with long distance capability, and is the perfect solution for any application.

2. Features

- HDCP 2.2 / HDCP 1.4 and DVI 1.0 compliant
- Supports 18Gbps video bandwidth
- Video resolution is up to 4k2k@60Hz YUV 4:4:4
- The maximum transmission distance is 328ft / 100m via a single CAT6a/7 cable
- Supports ARC (Audio Return Channel) function
- With bi-directional IR, RS-232 and CEC pass-through
- Supports USB KVM function
- HDR, HDR10+, Dolby Vision and HLG function supported
- Supports PoC (Power over Cable) function
- Compact design for easy and flexible installation

3. Package Contents

- (1) × 18Gbps HDMI over HDBaseT Extender (Transmitter)
- (1) × 18Gbps HDMI over HDBaseT Extender (Receiver)
- (1) × IR Blaster Cable
- (1) × 20 ~ 60KHz IR Receiver Cable
- (4) × Mounting Ears
- (2) × 3-pin Phoenix Connector
- (1) × 24V/1A Locking Power Adapter
- (1) × User Manual

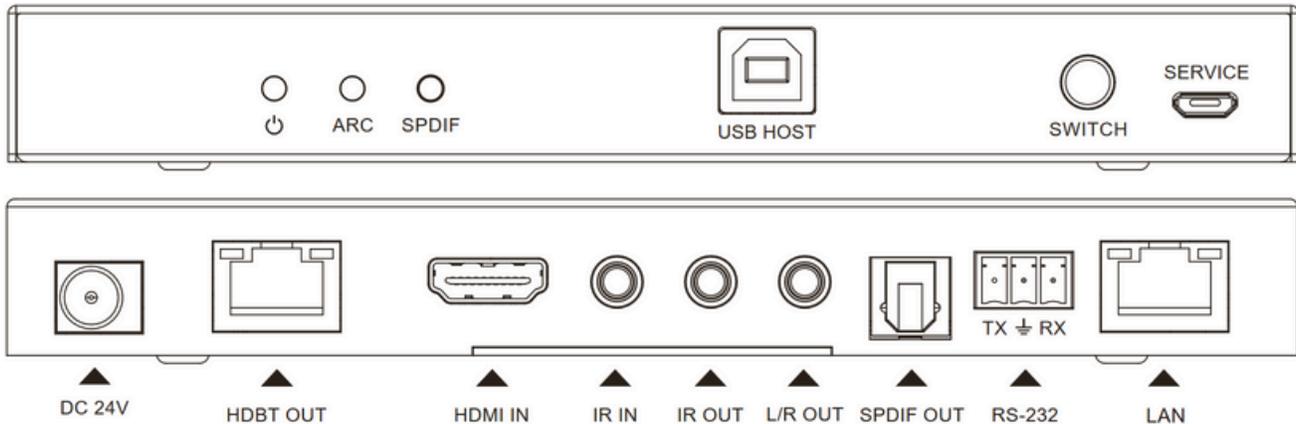
4. Specifications

Technical	
HDCP Compliant	HDCP 2.2 / 1.4
Video Bandwidth	18Gbps
Video Resolution	4K2K 50/60Hz 4:4:4 4K2K 50/60Hz 4:2:2 4K 2K 50/60Hz 4:2:0 4K 2K 30Hz 4:4:4 1080p, 1080i, 720p, 720i, 480p. 480i All PC resolutions including 1920 x 1200 8/10/12-bit (1080P60Hz, 4K30Hz, 4K60Hz YCbCr 4:2:2/4:2:0) 8-bit
Color Depth	(4K60Hz 4:4:4) RGB / YCbCr 4:4:4, YCbCr 4:2:2. YCbCr 4:2:0
Color Space	LPCM 2.0/2.1/5.1/6.1/7.1, Dolby Digital, Dolby TrueHD, Dolby Digital
HDMI Audio Formats	Plus(DD+), DTS-ES, DTS HD Master, DTS HD-HRA, DTS-X PCM 2.0
L/R Audio Formats	LPCM2.0, Dolby Digital, Dolby Digital Plus, DTS
SPDIF Audio Formats	Human body model—±8kV (Air-gap discharge) & ±4kV (Contact
ESD Protection	discharge)
Connection	
Transmitter	Inputs: 1 × HDMI Type A [19-pin female] Outputs: 1 × HDBT OUT [RJ45, 8-pin female] 1 × SPDIF OUT [S/PDIF] 1 × L/R OUT [3.5mm Stereo Mini-jack] 1 × LAN [RJ45] Control: 1 × IR IN [3.5mm Stereo Mini-jack] 1 × IR OUT [3.5mm Stereo Mini-jack] 1 × RS-232 [Phoenix jack] 1 × SERVICE [Mini-USB, Update port] 1 × USB HOST [USB Type B]
Receiver	Inputs: 1 × HDBT IN [RJ45, 8-pin female] 1 × SPDIF IN Outputs: 1 x HDMI Type A [19-pin Female]

	Control: 1 × IR IN [3.5mm Stereo Mini-jack] 1 × IR OUT [3.5mm Stereo Mini-jack] 1 × RS-232 [Phoenix jack] 1 × SERVICE [Mini-USB, Update port] 2 × USB 2.0 [USB Type A]			
Mechanical				
Housing	Metal Enclosure			
Silkscreen Color	Black			
Dimensions	Transmitter / Receiver: 165mm [W] × 88mm [D] × 18mm [H]			
Weight	Transmitter: 170g, Receiver: 165g			
Power Supply	Input: AC 100-240V 50/60Hz Output: DC 24V/1A (Locking connector)			
Power Consumption	13W (Max)			
Operation Temperature	0°C~40°C / 32°F~104°F			
Storage Temperature	-20°C~60°C / -4°F~140°F			
Relative Humidity	20%~90% RH (non-condensing)			
Resolution	Distance			
4K2K	296ft / 90m			
1080P	328ft / 100m			
Resolution / Cable Length	4K60	4K30	1080P60	
	Feet / Meters	Feet / Meters	Feet / Meters	
HDMI IN / Out	16ft / 5m	32ft / 10m	50ft / 15m	
The use of “Premium High Speed HDMI” cable is highly recommended.				

5. Operation Controls and Functions

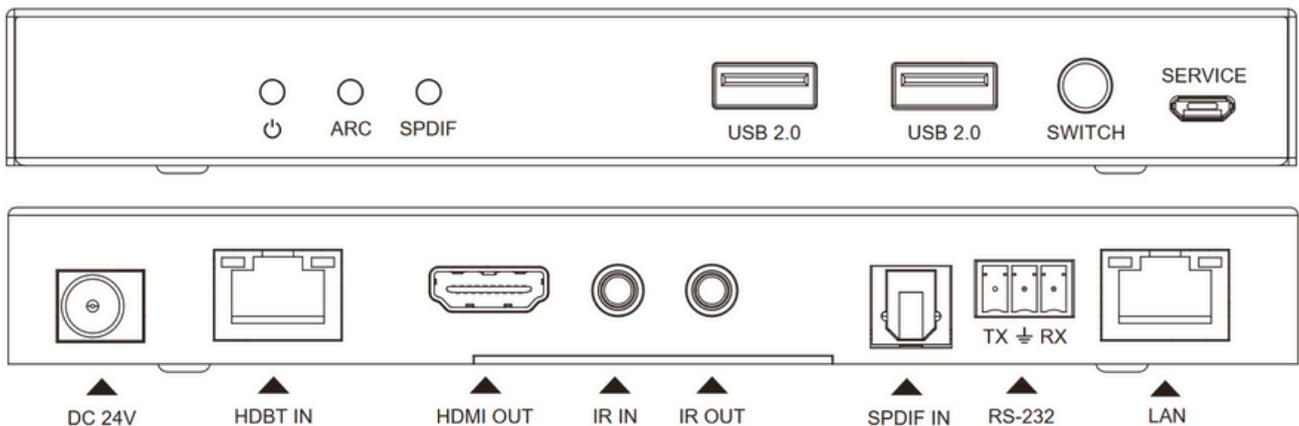
5.1 Transmitter Panel



Name	Function Description
POWER LED	Red LED is on when the Transmitter is working. LED is off when the Transmitter is on standby
ARC LED	Green LED is on when ARC function is turned on
SPDIF LED	Green LED is on when SPDIF OUT port outputs the audio signal returned from SPDIF IN on the Receiver.
USB HOST	Connects to PC for transmitting Receiver's USB data to Transmitter.
SWITCH	Press the button to switch the output audio signal source for SPDIF OUT and L/R OUT port.
SERVICE PORT	Firmware update port.
DC 24V	DC 24V input for 24V 1A power adapter. Note that the extender supports PoC function, it means that either transmitter or receiver is connected to 24V/1A power supply, the other doesn't need power supply.
HDBT OUT	RJ45 connector for connecting the HDBT IN port of Receiver with CAT 5e/6 cable.
Connection Signal Indicator (on the left side of HDBT OUT port)	<ul style="list-style-type: none"> ▪ Illuminate: Transmitter and Receiver are in good connection status. ▪ Flash: Transmitter and Receiver are in poor connection status. ▪ Dark: Transmitter and Receiver are not connected.

Name	Function Description
Data Signal Indicator (on the right side of the HDBT OUT port)	<ul style="list-style-type: none"> ▪ Illuminate: HDMI signal with HDCP. ▪ Flash: HDMI signal without HDCP. ▪ Dark: No HDMI signal.
HDMI IN	HDMI source input.
IR IN	IR input port for receiving the signal of IR remote.
IR OUT	IR output port for control of source device. This IR output signal is from IR IN port of the Receiver.
L/R OUT	3.5mm stereo connector for analog audio output.
SPDIF OUT	SPDIF connector for optical audio output.
RS-232	3-pin Phoenix connector for RS232 command transmission, supporting RS-232 command pass-through between the Transmitter and Receiver.
LAN	RJ45 connector for connecting Hub or router.

5.2 Receiver Panel



Name	Function Description
POWER LED	Red LED is on when the Receiver is working. LED is off when the Receiver is on standby
ARC LED	Green LED is on when ARC function is turned on.
SPDIF LED	Green LED is on when SPDIF OUT port outputs the audio signal returned from SPDIF IN on the Receiver.
Two USB 2.0 ports	Connect to USB device.

Name	Function Description
SWITCH	Press the button to switch the output audio signal source for SPDIF OUT and L/R OUT port.
SERVICE Port	Firmware update port.
DC 24V	DC 24V input for 24V 1A power adapter. Note that the extender supports PoC function, it means that either transmitter or receiver is connected to 24V/1A power supply, the other doesn't need power supply.
HDBT IN	RJ45 connector for connecting the HDBT OUT port of the Transmitter with CAT 5e/6 cable.
Connection Signal Indicator (on the left side of the HDBT OUT port)	<ul style="list-style-type: none"> ▪ Illuminate: Transmitter and Receiver are in good connection status. ▪ Flash: Transmitter and Receiver are in poor connection status. ▪ Dark: Transmitter and Receiver are not connected.
Data Signal Indicator (on the right side of the HDBT OUT port)	<ul style="list-style-type: none"> ▪ Illuminate: HDMI signal with HDCP. ▪ Flash: HDMI signal without HDCP. ▪ Dark: No HDMI signal.
HDMI OUT	HDMI output for display.
IR IN	IR input port for receiving the signal of IR remote.
IR OUT	IR output port for control of display device. This IR output signal is from IR IN port of the Transmitter.
SPDIF IN	SPDIF connector for optical audio input.
RS-232	3-pin Phoenix connector for RS232 command transmission, supporting RS-232 command pass-through between the Transmitter and Receiver.
LAN	Connects to Internet device such as PC or laptop.

5.3 Audio Signal Output Switching

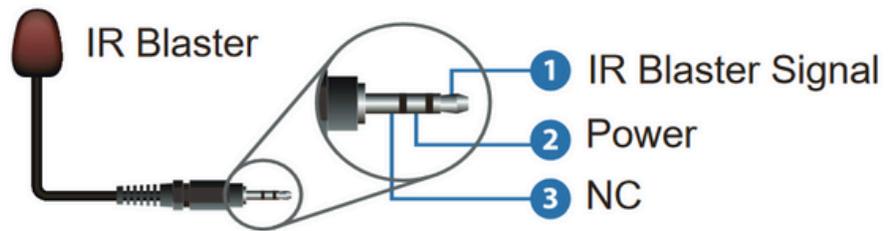
Switch the output audio signal source for SPDIF OUT and L/R OUT port via the “SWITCH” button on the panel (the corresponding LED will illuminate). The states of ARC LED and SPDIF LED indicate the audio output logic, as shown in the table below:

ARC LED	SPDIF LED	Audio Output Logic
on	off	The SPDIF OUT, L/R OUT and HDMI IN ports of the Transmitter simultaneously output the audio signal returned from HDMI (display device) on Receiver.
off	on	The SPDIF OUT and L/R OUT ports output the audio signal returned from SPDIF IN on Receiver.
off	off	The SPDIF OUT and L/R OUT ports output the audio signal extracted from the Transmitter.

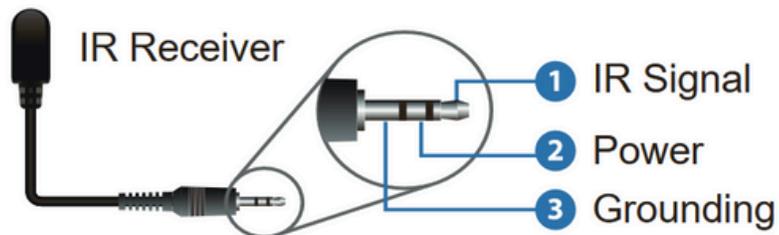
5.4 IR Pin Definition



IR BLASTER

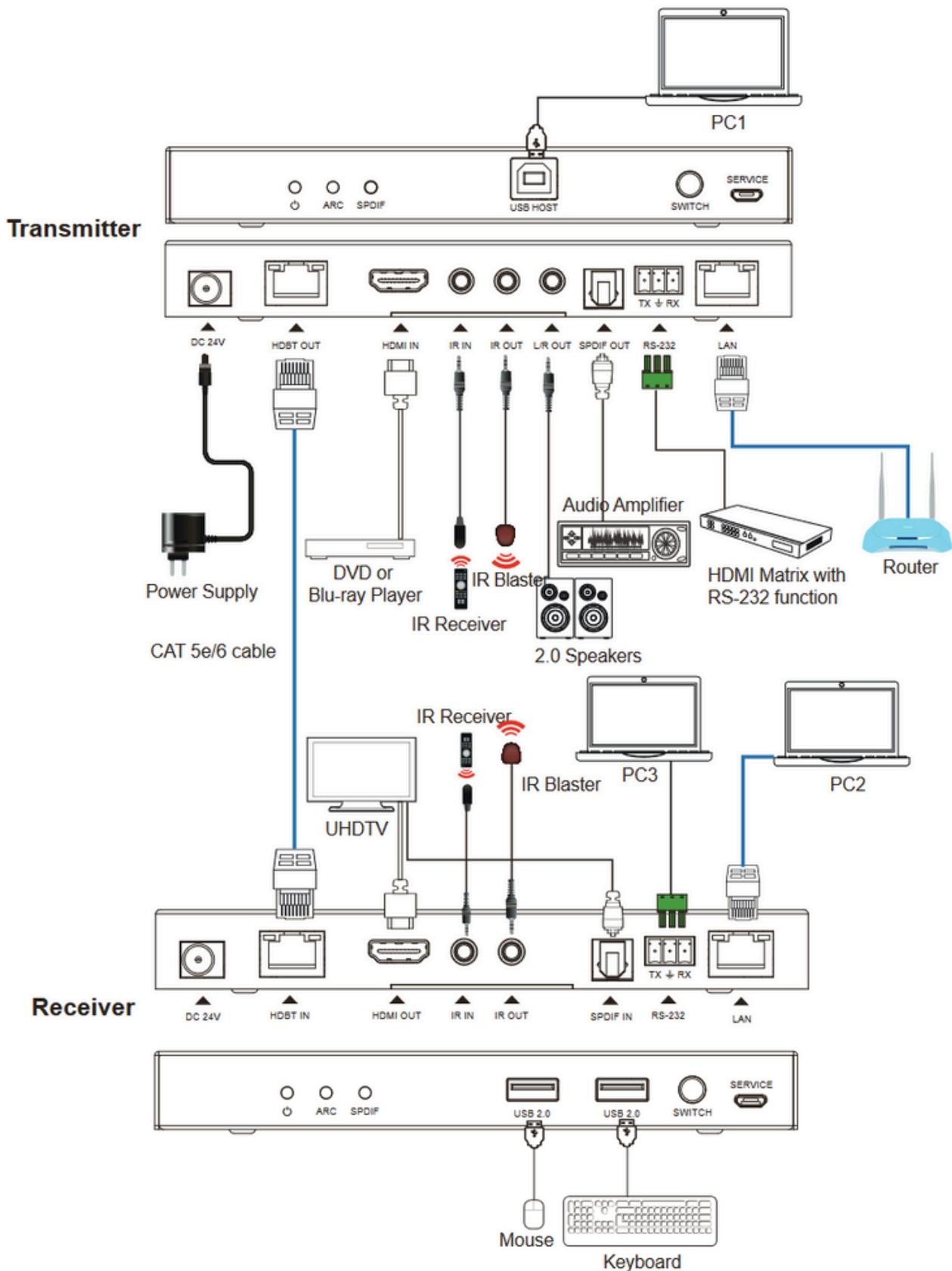


IR RECEIVER



Note: When the angle between the IR receiver and the remote control is $\pm 45^\circ$, the transmission distance is 0-5 meters; when the angle between the IR receiver and the remote control is $\pm 90^\circ$, the transmission distance is 0-8 meters.

6. Application Example



7. Maintenance

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

8. Warranty

If your product does not work properly because of a defect in materials or workmanship, our company (referred to as “the warrantor”) will, for the length of the period indicated as below, “Parts and Labor (5) Years”, which starts with the date of original purchase (“Limited Warranty period”), at its option either (a) repair your product with new or refurbished parts, or (b) replace it with a new or a refurbished product. The decision to repair or replace will be made by the warrantor.

During the “Labor” limited warranty period, there will be no charge for labor. During the “Parts” warranty period, there will be no charge for parts. You must mail-in your product during the warranty period. This Limited Warranty is extended only to the original purchaser and only covers products

purchased as new. A purchase receipt or other proof of original purchase date is required for Limited Warranty service.

9. Mail-In Service

When shipping the unit, carefully pack and send it prepaid, adequately insured, and preferably in the original carton. Include a letter detailing the complaint and provide a daytime phone and/or email address where you can be reached phone and/or email address where you can be reached.

10. Limited Warranty Limits and Exclusions

This Limited Warranty **ONLY COVERS** failures due to defects in material or workmanship and **DOES NOT COVER** normal wear and tear or cosmetic damage. The Limited Warranty **ALSO DOES NOT COVER** damages which occurred in shipment, or failures which are caused by products not supplied by warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, mis-adjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, or service by anyone other than a Factory Service center or other Authorized Servicer, or damage that is attributed to acts of God.

There are no express warranties except as listed under “Limited Warranty Coverage”. The warrantor is not liable for incidental or consequential damages resulting from the use of this product or arising out of any breach of this warranty. (As examples, this excludes damages for lost time, cost of having someone remove or re-install an installed unit if applicable, travel to and from the service, loss of or damage to media or images, data or other recorded content. The items listed are not exclusive but are for illustration only). Parts and service, which are not covered by this limited warranty, are your responsibility.



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