TESmart

User Manual

100m Point-to-Point KVM Extender

EDID

HKE10SS-E25

English

TESmart

English

Preface

It's our great honor that you have chosen the KVM Extender produced by our company, TESmart Technology Co.,Ltd. In this user manual, you will learn how to operate and use this product. Please read this user manual comprehensively before use. If you have any questions, comments or suggestions, please contact us via the following email:
support@tesmart.com.

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Product Information

For more information about TESmart products and how they can help you to enjoy your job, please visit the following TESmart website or contact an TESmart Authorized Reseller.

www.tesmart.com

Contents

1. Safety Tips and Warnings

Tips: Read the safety tips and warnings for KVM Extender comprehensively before use. Use this produce in accordance with its instructions, safety tips and warnings to prevent unnecessary damage to the product and potential dangers to users.

- Keep the product away from water.
- Clean the product with dry cloth.
- Use the product in accordance with its instructions and do not block its vents.
- Keep the product away from ignition sources, such as heat sinks, heat accumulators, stovepipes and other heat production settings (including audio amplifiers).
- Do not touch the product and the power cord with wet hands so as to lower the risk of electric shock and the damage to the product. Do not let the product get wet or become damp.
- Unplug the power supply of this product in thunderstorm days or when it has been not used for a long time.
- Do not expose this product and its battery to open fire or overheating environment. Dispose the waste battery in accordance with instructions.
- Users shall not remove and repair the product without authorization.

2. Warranty Information

We warrant this product as free of defects in material and workmanship for a period of one (1) year from the date of shipment. If during the period of warranty this product proves defective under normal use, we will repair or replace this product, provided that this product has not been subjected to mechanical, electrical, or other abuse or modifications. If it fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for six (6) months from the day of reshipment to the buyer.

3. Preface

Dear users:

The KVM extender HKE10SS-E25 delivers pristine 4K@30Hz video, multi-channel audio, USB 2.0, and control data over a single CAT6 (or higher) cable up to 100 meters(328 feet), providing a lossless extension solution that surpasses traditional limitations.

Built-in Intelligent EDID Emulation and Management: Features manual optimization capabilities for communication between display devices and video sources. This effectively resolves common compatibility issues such as black screen, abnormal resolution, and audio output failure, ensuring fast handshaking, optimal picture and sound quality for every connection, thereby simplifying deployment and maintenance.

Tips: If you need to control more computers or conduct more complex and professional switching, you can also choose other products of our company. For more details, you can visit our official website: www.tesmart.com.

4. Features

- Utilizing a single standard 23AWG Cat6 cable, it enables the transmission of 4K@30Hz ultra-high-definition video, bidirectional audio, USB 2.0, control signals, up to 100 meters(328 feet).
- Bidirectional Audio: Transmits high-fidelity audio from the computer to speakers located near the remote display, and supports connecting an audio input source at the remote end, transmitting user-side audio back to the control side.
- Built-in Intelligent EDID Emulation and Management, features manual optimization capabilities for communication between display devices and video sources.
- Fully compatible with Windows, macOS, Linux, and legacy systems.
- HDCP 1.4 compliant for secured transmission of protected content.
- Achieves true zero-latency operation (<0.1ms).
- Features a locking DC power jack (5.5×2.1mm) with positive retention mechanism to prevent accidental disconnection in vibration-prone environments.
- Compliant with ATX 2.0 specification, supporting remote power-on/off control via standard 2-pin motherboard front panel header (F_PANEL POWER SW) integration.
- Single-end power supply-Adapter can be connected to TX or RX (recommended on RX).

5. Packing List

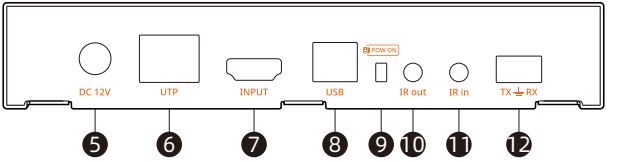
- 1 * Transmitter
- 1 * Receiver
- 1 * IR Transmitter Cable
- 1 * IR Receiver Cable
- 1 * F-PANEL POWER SW Splitter
- 2 * DC 12V Power Adapter
- 1 * User Manual
- 4 * Rack-ears

Tips: After received the product, you should check the packing list carefully to make sure that no components have been lost and no damage to the product has been caused during transportation. If you have any problems, you can contact with us.

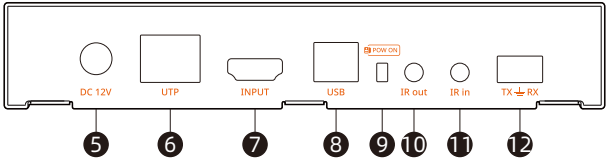
6. Panel Description

6.1 Transmitter Panel Description

ID	Name	Function
1	Audio Ports	**Audio in**: Connect to an audio source. :Connect to an audio receiver.
2	Video Signal Indicator	Green LED activation and blink regularly confirms detection of an active video signal.
3	LAN Link Status Indicator	Blue LED activation confirms a successful Ethernet connection.
4	Power Indicator	Red LED activation confirms main power input detection.

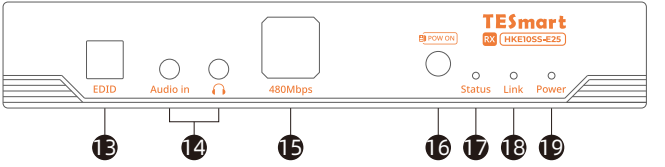


ID	Name	Function
5	DC 12V	DC 12V power supply.
6	RJ45 port	Connect to RX UTP port with Cat 6 or higher S/FTP Cable.
7	HDMI Input Port	Connect to an HDMI source.
8	USB Input Port	Connect to the same device as the HDMI source.
9	Remote Power Control Interface	Connects to the motherboard's front panel power switch header to enable remote power-on/power-off control.

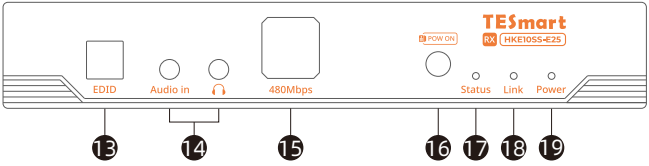


ID	Name	Function
10	IR Out Port	Connect an IR transmitter pointed at a source device (e.g., STB) at the TX location.
11	IR In Port	Connect an IR receiver to allow a IR remote control used locally at the TX unit to command the display device at the remote RX side.
12	RS232 Port	The RS-232 serial port provides bidirectional pass-through of serial data, allowing for remote configuration, monitoring, and control of connected serial devices over the extended link.

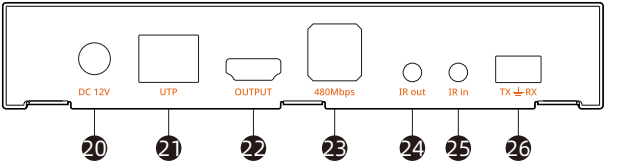
6.2 Receiver Panel Description



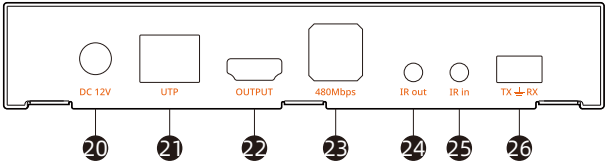
ID	Name	Function
13	EDID Switch	DIP switch for EDID management.
14	Audio Ports	**Audio in**: Connect to an audio source. :Connect to an audio receiver.
15	USB 2.0 Ports	Connect to USB 2.0 devices.



ID	Name	Function
16	Remote Power Control Button	Provides hardware-level remote power on/off/reset control, delivering equivalent functionality to physically pressing the power button.
17	Video Signal Indicator	Green LED activation and blink regularly confirms detection of an active video signal.
18	LAN Link Status Indicator	Blue LED activation confirms a successful Ethernet connection.
19	Power Indicator	Red LED activation confirms main power input detection.



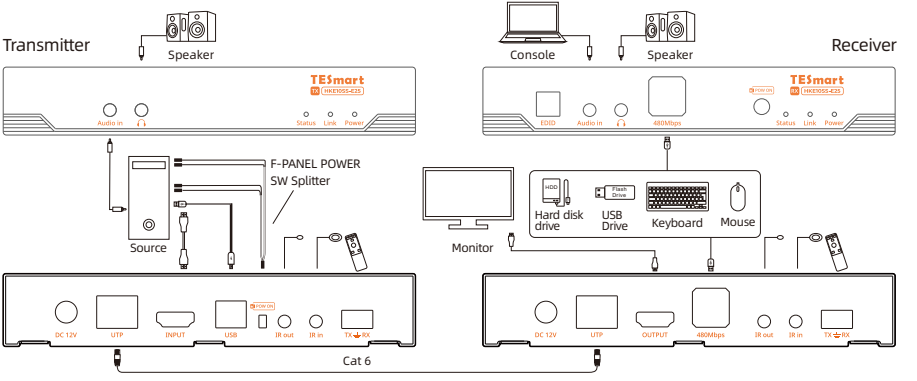
ID	Name	Function
20	DC 12V	DC 12V power supply.
21	RJ45 port	Connect to TX UTP port with Cat 6 or higher S/FTP Cable.
22	HDMI Output Port	Connect to an HDMI source.
23	USB 2.0 Port	Connect to USB 2.0 devices.
24	IR Out Port	Connect an IR transmitter attached to the display device at the RX location to command this local display from TX side.



ID	Name	Function
25	IR In Port	Connect an IR receiver at the RX location. This allows a remote control used locally at the RX unit to command the source device at the remote TX side.
26	RS232 Port	The RS-232 serial port provides bidirectional pass-through of serial data, allowing for remote configuration, monitoring, and control of connected serial devices over the extended link.

7. Connection Description

7.1 Connection Diagram



Tips: 1. Ensure connection using Category 6 (Cat6) or higher shielded network cable.
2. Please consult Page 18~20 for a description of the bidirectional infrared and audio features.

7.2 Connection Steps

1. Connect a PC to the transmitter with one USB Type-A to Type-B cable and one HDMI cable. Connect the type-B end of the USB cable to transmitter's USB connection port, and the type-A end to PC (as shown below).

2. Connect one end of S/FTP Cat 6 cable to transmitter's RJ45 port.

3. Connect the power cable to transmitter's DC 12V port and plug it to a power socket. The transmitter connection has been completed.

4. Connect receiver's HDMI output port to one display with one HDMI cable.

5. Connect external mouse, keyboard, or other USB devices to receiver's USB 3.0 port.

6. Connect the other end of the S/FTP Cat 6 cable to receiver's RJ45 port.

7. Connect the power cable to receiver's DC 12V port and plug it to a power socket.

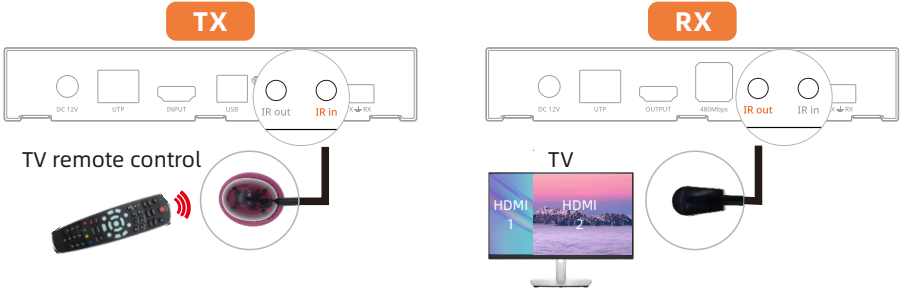
8. By now, all the connection has been completed. The Extender will begin to work if the PC is turned on.

Tips: The "Link" indicators on both transmitter (TX) and receiver (RX) units illuminate blue when network cable connection is normal. If indicators remain unlit, verify network cable integrity and connections.

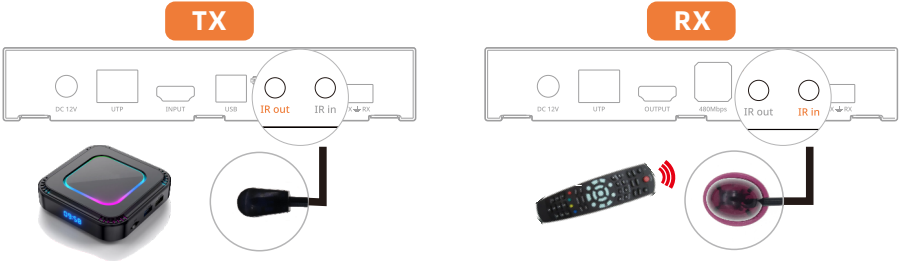
8. Function Description

8.1 Bidirectional Infrared Description

The Bidirectional IR (Infrared) function allows for the transmission of infrared control signals between the TX (Transmitter) and RX (Receiver) units. This enables centralized remote control of devices located at either end, using a single IR remote.



Signal Flow: TX-side remote control → commands → RX-side display.



Signal Flow: RX-side remote control → commands → TX-side source device.

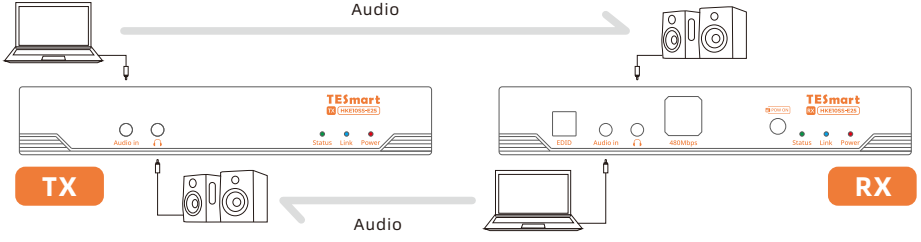
IR in Ports: Connect an IR receiver. They are signal inputs for commands from a remote control used locally at the same unit.

IR out Ports: Connect an IR transmitter. They are signal outputs that emit commands to control a device locally, based on signals received from the remote unit.

8.2 Bidirectional Audio Description

TX to RX Direction: Transmits high-fidelity audio from the computer to speakers or headphones located near the remote display, ensuring a synchronized audiovisual experience.

RX to TX Direction: Supports connecting an audio input source at the remote end, transmitting user-side audio back to the control side, enabling seamless remote interaction without barriers.



8.3 EDID Management

Built-in Intelligent EDID Emulation and Management features manual optimization capabilities for communication between display devices and video sources. This effectively resolves common compatibility issues such as black screen and abnormal resolution failure, ensuring fast handshaking, optimal picture and sound quality for every connection.

4K@30Hz EDID Mode:
Activation Method: Set Switch 2 to ON
EDID Behavior: Emulate a fixed EDID named "TESmart-UHD".
Output Resolution: Capped at a maximum of 3840×2160@30Hz.

1080P EDID Mode:
Activation Method: Set Switch 3 to ON
EDID Behavior: Emulate a fixed EDID named "TESmart-FHD".
Output Resolution: Capped at a maximum of 1920×1080@60Hz.

Intelligent EDID Mode:
Activation Method: Other all DIP switch settings
EDID Behavior: Emulates a smartly processed version of the connected display's EDID.
Output Resolution: Capped at a maximum of 3840×2160@30Hz.

8.4 Remote Power Control

The remote power control feature enables hardware-level control of connected hosts through motherboard front panel header integration. This function:

- Operates independently of OS state (including pre-boot/BIOS environments)
- Supports power-on/off/reset operations identical to physical button press

Wiring Implementation

Step 1: Attach included 2-pin DuPont connector to TX unit's REMOTE PWR port.

Step 2: Identify 2-pin power switch header (typically labeled "PWR_BTN", "F_PANEL", or "JFP1"), align wires with motherboard header:
Red wire: Connect to power switch pin
Black wire: Connect to GND pin

Step 3: Chassis Button Connection (Alternative)
Disconnect existing case power button wires, Connect TX unit's red/black wires to the corresponding terminals.

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To Enjoy Smart

HKE10SS-E25

TESmart Tech Co.,Ltd

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