TESmart

User Manual

100m Dual Monitor KVM Extender

HKE10SS-PD25

English

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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 DL6950-based KVM Extender System revolutionizes remote workstation control by delivering dual independent 4K@60Hz video streams alongside USB 2.0/3.0 peripherals over shielded Cat6a cabling, enabling flawless remote workstation control at distances up to 100 meters (328 ft). This solution provides:

True Dual-Monitor Extension: Drive two 4K displays (3840×2160 @60Hz each) with perfect pixel accuracy.

Industrial-Grade Signal Integrity: Requires S/FTP Cat6a (Double-Shielded) cabling for full 100m performance.

Deterministic Sub-Frame Latency: <8ms per display for time-sensitive applications.

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

- Utilize a single 23AWG S/FTP Cat6a (Shielded/Foiled Twisted Pair) cable to deliver uncompromised high-resolution video, USB, and peripheral extension up to 100m (328 feet).
- Leveraging its proprietary DL3 encoding technology, the DL6950 efficiently transmits the 4K@60Hz (3840×2160) signal with 4:4:4 chroma subsampling.
- The transmitter (TX) connects to the host via a single USB-A to B cable, simultaneously transmitting video, audio, USB peripheral data, and remote power control signals.
- Fully compatible with Windows, macOS, Linux, and legacy systems through native OS drivers.
- HDCP 2.2 compliant for secured transmission of protected content.
- Achieves true zero-latency operation (<0.1ms), delivering a user experience indistinguishable from direct local connections.
- Full USB 2.0/3.0 peripheral support (printers, storage, etc.) with plug-and-play operation.
- 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.

5. Packing List

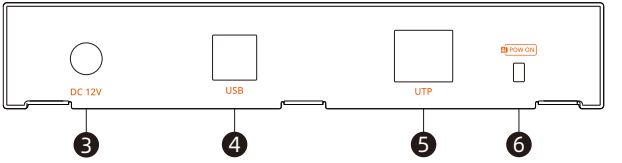
- 1 * Transmitter
- 1 * Receiver
- 1 * F-PANEL POWER SW Splitter
- 2 * DC 12V Power Adapter
- 1 * User Manual
- 4 * Rack-ears

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

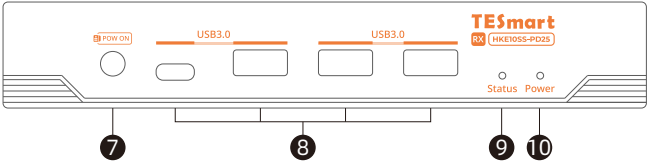
6.1 Transmitter Panel Description

ID	Name	Function
1	USB Signal Indicator	Blue LED activation confirms successful USB handshake completion.
2	Power Indicator	Red LED activation confirms main power input detection.

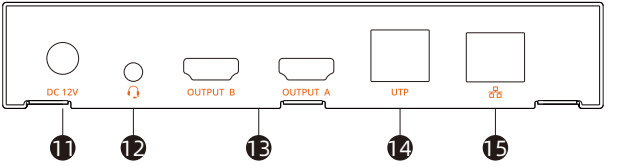


ID	Name	Function
3	DC 12V	DC 12V power supply.
4	USB Host Connection port	Connect to PC host.
5	UTP port	Connect to RX UTP port with Cat 6A S/FTP Cable.
6	Remote Power Control Interface	Connects to the motherboard's front panel power switch header to enable remote power-on/power-off control.

6.2 Receiver Panel Description



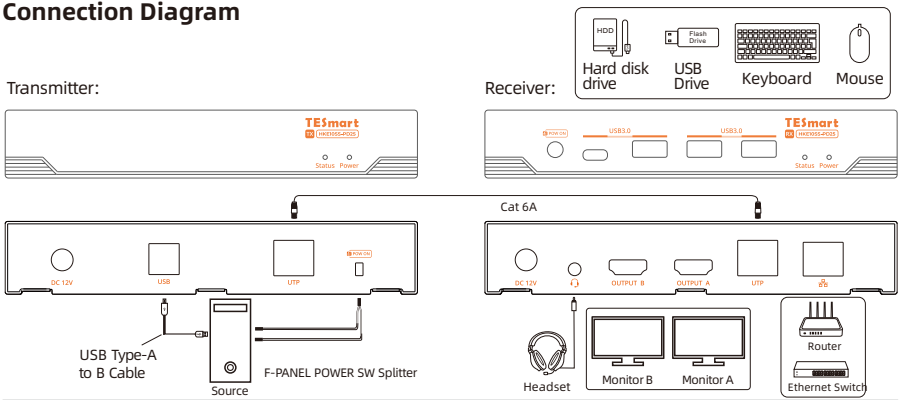
ID	Name	Function
7	Remote Power Control Button	Provides hardware-level remote power on/off/reset control, delivering equivalent functionality to physically pressing the power button.
8	USB 3.2 Gen 1 Ports	Connect to USB 3.0 devices.
9	USB Signal Indicator	Blue LED activation confirms successful USB handshake completion.
10	Power Indicator	Red LED activation confirms main power input detection.



ID	Name	Function
11	DC 12V	DC 12V power supply.
12	3.5mm Audio and MIC	Integrated microphone and L/R audio output.
13	HDMI Outputs	Connect to 2 HDMI displays for video output.
14	UTP Port	Connect to TX UTP port with Cat 6A S/FTP Cable.
15	LAN port	Connect to ethernet router or switch.

7. Connection Description

7.1 Connection Diagram



Tips: 1. Ensure connection using Category 6a (Cat6a) or higher shielded network cable.

2. The device operates exclusively in direct point-to-point mode, as its signal protocol does not support intermediary network switch connectivity.

7.2 Connection Steps

1. Connect a PC to the transmitter with one USB Type-A to Type-B 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).

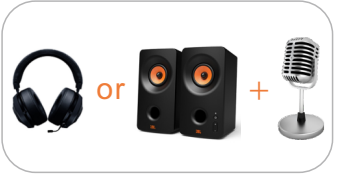
2. Connect one end of S/FTP Cat 6A cable to transmitter's RJ45 port.

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 two HDMI output ports to two display with two HDMI cables.

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

6. Connect external audio device to KVM's L/R out port.



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

8. Use 1 network cable, one end is connected to the RJ45 port, the other end is connected to a switch or a router.

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

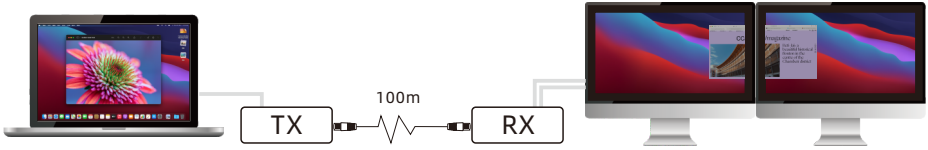
10. By now, all the connection has been completed. The Extender will begin to work if the PC is turned on.

Tips: The "STATE" indicators on both transmitter (TX) and receiver (RX) units illuminate blue when USB signal transmission is established. If indicators remain unlit, verify network cable integrity and connections.

8. Function Description

8.1 DisplayLink Technology Description

DisplayLink is a proprietary technology that enables video and audio signals to be transmitted over USB connections. It allows you to connect multiple displays to a single computer or device without the need for a dedicated graphics card for each display. This is achieved by using USB data channels to carry compressed video signals, which are then decompressed by our DisplayLink-enabled KVM Extender to drive external monitors.

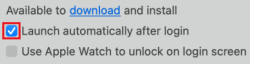


The KVM Extender offers broad compatibility with host devices (PCs/Macs/tablets) featuring USB 3.2 Gen 1 ports. To ensure full functionality, connection to a certified USB 3.2 Gen 1 or superior USB port is recommended.

- **How to Use DisplayLink with the KVM Extender**

  - Install the DisplayLink drivers on each connected computer. Please download the appropriate version of the driver based on your system.
    Path: https://www.synaptics.com/products/displaylink-graphics/downloads

  - Mac users, please check the "Launch automatically after login" option in the app window for the software to start automatically every time you log-in.
    Note: this is not compulsory but recommended.



Tips: After install the driver, starting macOS Catalina 10.15 or later, the OS requires the user to permit "Screen Recording" in order for DisplayLink devices to work properly. But the screen is not actually being recorded by DisplayLink. For more details, please refer to the official DisplayLink website.

8.2 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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