



HDMI® Extender

User Manual

Model : HKM01-4K6G

4K60Hz HDMI USB/Audio/RS232/IR CAT6/Fiber KVM Extender

100m/60km



Table of Contents

Introduction.....	3
Features.....	3
Application Diagram.....	4
Panel View.....	5
HKM01T-4K6G.....	5
HKM01R-4K6G.....	6
LED Indication.....	7
Functional Description.....	8
KVM Transmission over IP.....	8
Latency.....	8
Transmission Distance.....	9
RJ45 Pin Definition.....	10
KVM Transmission over Fiber Optic.....	11
Transmission Distance.....	11
SFP Pin Definition.....	11
Fiber Connector Type.....	12
Pairing.....	13
Default.....	13
Point to Point.....	13
Grouping – Rotary Switch.....	13
SFP/ Ethernet Link – Detection Mode.....	14
Video Interface.....	16
Support Resolution.....	16
EDID Settings.....	17
EDID Setup Steps.....	17
EDID Modes.....	18
Audio Interface.....	19
Digital/Analog Audio Conversion.....	19
Audio Function and Connection Table.....	19
USB Interface.....	25
Read and write speed.....	25
USB Compatibility.....	27
USB Power Output.....	27
RS232.....	28
RS232 Setting – DIP switch.....	28

Baud Rate Setting/ Check IP or Mac address - Panel Button.....	30
Infrared (IR).....	31
Technical Specification.....	32
Caution.....	34
Package Includes.....	35
Installed on a Platform.....	36
Installed on Wall.....	36
Installed on a Rack.....	37

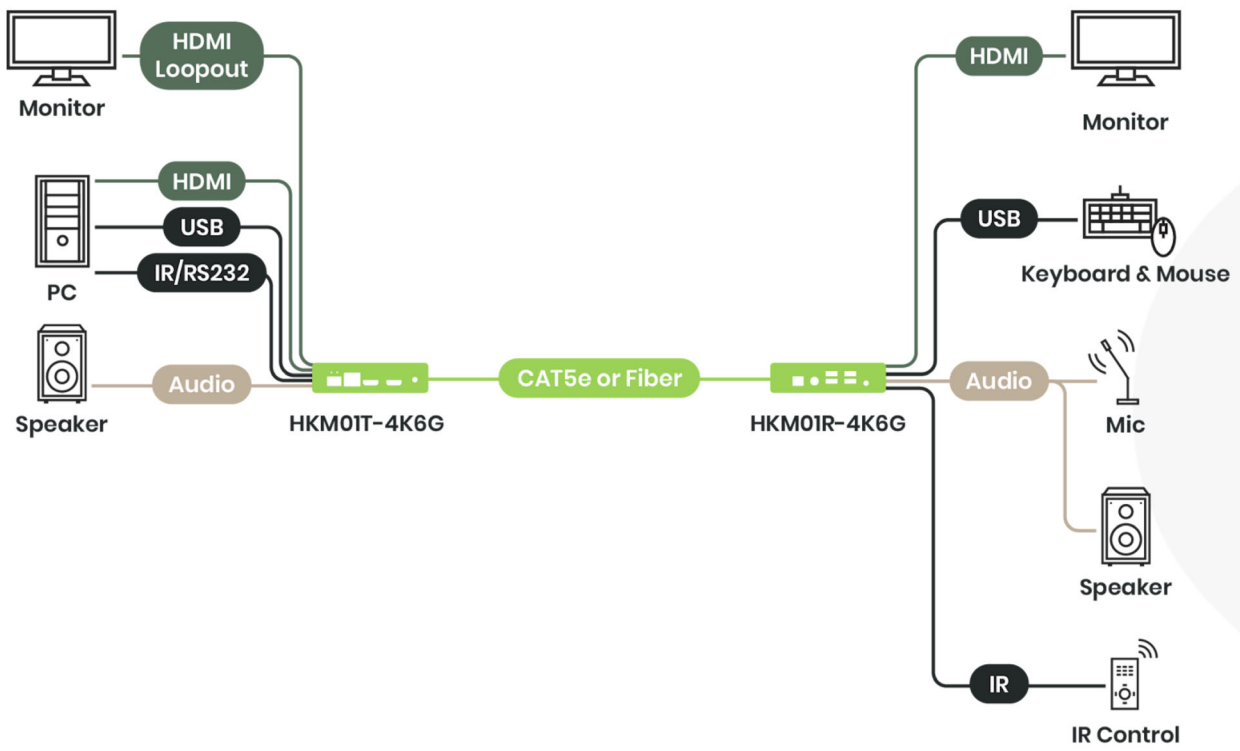
Introduction

HKM01-4K6G is a 4K60Hz HDMI® KVM extender that uses a cost-effective Ethernet cable to send HDMI®, USB, Analog audio, RS232 and IR signals with transmission distance up to 100 meters. Its TX unit has an HDMI® loop-out port for an extra HDMI® display. The built-in 4 USB 2.0 ports at the RX unit allow you to control the connected HDMI® device at the remote end. The KVM extender can perfectly apply to the broadcasting system, digital signage, home network integration, industrial control...etc.

Features

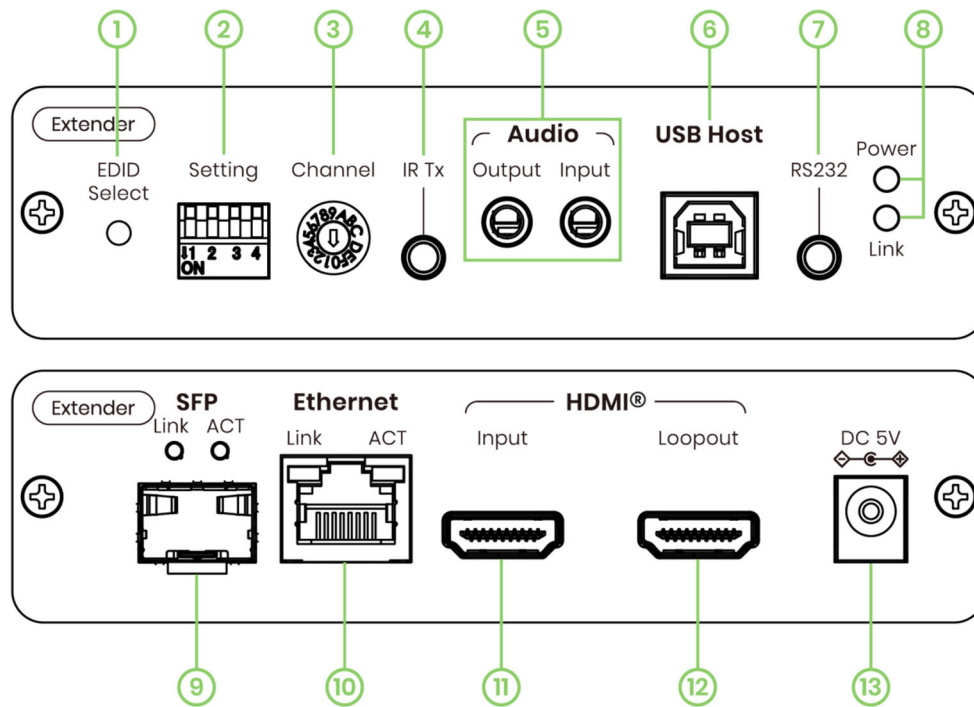
- Resolution up to 4K60Hz 4:4:4.
- Signal extension up to 100M over CAT5e cable.
- 60KM over single-mode fiber optic.
- Built-in local loop out for an extra HDMI® display at the TX side.
- Built-in 4 USB ports at the RX unit.
- Supports bi-directional analog audio transmission for Mic and headphones.
- Supports RS232 transmission and EDID management.
- Supports IR pass-through.

Application Diagram



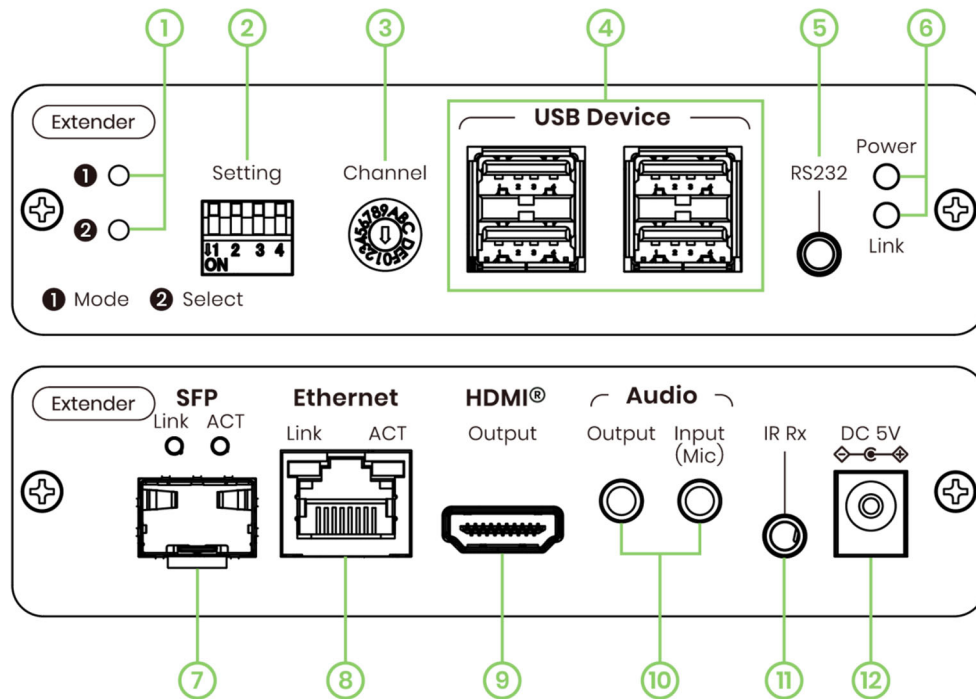
Panel View

HKM01T-4K6G



Item	Interface	Description
1	EDID Select	EDID Select button. Refer to EDID setting
2	Setting	Refer to EDID Modes and RS232 Setting – DIP switch
3	Channel	To set up the grouping function
4	IR Tx	To connect to IR emitter
5	Audio Output	To connect to audio receiver
	Audio Input	To connect to audio source
6	USB Type-B	To connect to USB host
7	RS232	To connect to RS232-command-controllable device (needs 3.5mm jack cable to RS232)
8	Power/Link LED	Refer to LED Indication
9	SFP	To connect to HKM01R-4K6G via SFP fiber module
10	Ethernet	To connect to HKM01R-4K6G via Ethernet cable
11	HDMI® Input	To connect to HDMI® source
12	HDMI® Loopout	To connect to monitor or TV
13	DC Jack	To plug in DC 5V power adapter

HKM01R-4K6G

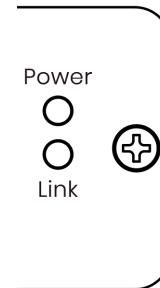


Item	Interface	Description
1	Mode & Select	Mode & Select button. Refer to settings
2	Setting	Refer to RS232 Setting – DIP switch
3	Channel	To set up the grouping function
4	USB Type-A	To connect to USB device, USB2.0
5	RS232	To connect to RS232-command-controllable device (needs 3.5mm jack cable to RS232)
6	Power/Link LED	Refer to LED Indication
7	SFP	To connect to HKM01T-4K6G via SFP fiber module
8	Ethernet	To connect to HKM01T-4K6G via Ethernet cable
9	HDMI® Output	To connect to monitor or TV
10	Audio Output	To connect to audio receiver
	Audio Input (Mic)	To connect to Mic
11	IR Rx	To connect to IR receiver
12	DC Jack	To plug in DC 5V power adapter

LED Indication

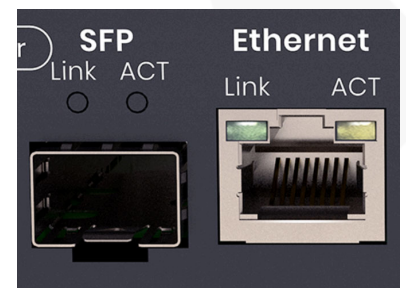
Power/Link LED

LED Indication	Status	Description
Power (Green)	On	Power On
	Off	Power Off
Link (Blue)	On	Fiber or Ethernet Linked
	Off	Fiber or Ethernet Unlinked



Link/ACT LED

LED Indication	Status	Description
Fiber Connection Link (Green)	On	Fiber Linked
	Off	Fiber Unlinked
Fiber Connection ACT (Yellow)	Flash	Data Transferring
Ethernet Connection Link (Green)	On	Ethernet Linked
	Off	Ethernet Unlinked
Ethernet Connection ACT (Yellow)	Flash	Data Transferring



Functional Description

KVM Transmission over IP

HKM01-4K6G allows Keyboard, Video, and Mouse (KVM) transmission over IP using advanced technologies which enables the encoding and decoding of audiovisual (AV) signals into IP packets for transmission over Ethernet cables or fiber optic connections, allowing for longer reach distance without compromising signal quality.

The compression algorithms employed by the codec reduce the size of AV data, allowing for efficient transmission over 1 Gigabit IP networks.

Latency

HKM01-4K6G has a latency¹ less than one frame according to our test, and here is our test condition. The test results are shown as follows:

HKM01-4K6G Latency Test			
Test condition			Test result
Distance	Resolution	Cable used	
160m	4K60Hz 4:4:4	CAT5e COMMSCOPE ISO-EN COMPLIANT 27 CAT5E UTP SOLIDPR04 AWG24 1917 RN19040036	Less than 1 frame

¹ The compression introduces ultra-low latency which is crucial for real-time applications such as video conferencing and live streaming, where minimizing delay is essential for smooth and responsive communication.

Transmission Distance

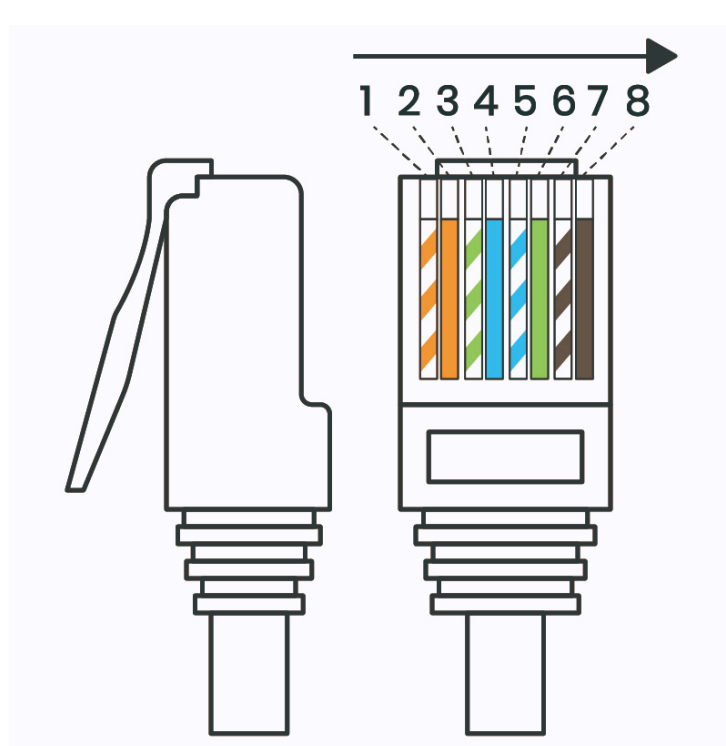
At 4K60Hz 4:4:4, HKM01-4K6G could reach up to 170m, the distance may differ by cable or construction quality. The transmission distance test result is shown as follows:

HKM01-4K6G Transmission Distance Test		
Test condition		Test result
Resolution	Cable used	
4K60Hz 4:4:4	CAT5e COMMSCOPE ISO-EN COMPLIANT 27 CAT5E UTP SOLIDPR04 AWG24 1917 RN19040036	160m
4K60Hz 4:4:4	CAT6 COMMSCOPE E98256 4PR 24AWG U/UTP	170m

RJ45 Pin Definition

RJ45 connectors are commonly used for Ethernet cables in networking and AV over IP applications. Understanding the pinout or pin configuration of the connector is essential for proper cable termination² and connectivity.

Pin	Color	Data
1	Orange-white	DATA0 +
2	Orange	DATA0 -
3	Green-white	DATA1 +
4	Blue	DATA2 +
5	Blue-white	DATA2 -
6	Green	DATA1 -
7	Brown-white	DATA3 +
8	Brown	DATA3 -



² When terminating Ethernet cables with RJ45 connectors, it's crucial to follow the TIA/EIA-568 wiring standards, which specify the wiring scheme for T568B pinout.

KVM Transmission over Fiber Optic

HKM01-4K6G also offers KVM transmission over longer distances using fiber optic cables.

Depending on the specific SFP (Small Form-factor Pluggable) modules and fiber optic cables used, transmission distances can extend from hundreds of meters to several kilometers without signal degradation.

HKM01T-4K6G converts electrical AV signals into optical signals by the SFP transmitter module for transmission over fiber optic cables, while HKM01R-4K6G converts optical signals back into electrical AV signals with the SFP receiver module at the receiving end.

HKM01-4K6G is compatible with both single-mode and multi-mode fiber optic cables, offering flexibility in deployment based on distance requirements and installation environments.

Transmission Distance

HKM01-4K6G optional package includes a pair of SFP transceiver modules. Single-mode modules, FM01S-20K, can be used when distances up to 20 kilometers are needed, while multi-mode modules, FM01M-550 are used for shorter distances up to 300 meters.

SFP Pin Definition

HKM01-4K6G meets the pin configuration of SFP modules which adheres to industry standards governed by the Multi-Source Agreement (MSA). The SFP MSA outlines mechanical, electrical, and functional specifications for SFP modules, including the pin out configuration, ensuring interoperability and compatibility with SFP compatible devices from different manufacturers. Below tables is the pin configuration for SFP transceivers.

Pin	Pin Name	Description
1	Vee	Ground connection
2	TX_FAULT	Indicates a fault condition in the transmitter
3	TX_DISABLE	When pull low, disables the transmitter circuitry
4	MOD_DEF2	Used for module identification and management purposes
5	MOD_DEF1	Used for module identification and management purposes
6	MOD_DEF0	Used for module identification and management purposes
7	Rate Select	No connection required
8	RX_LOS	Indicates the loss of signal condition on the receiver side
9	Vee	Ground connection
10	Vee	Ground connection
11	Vee	Ground connection
12	RD-	Differential pair for receiving data signals

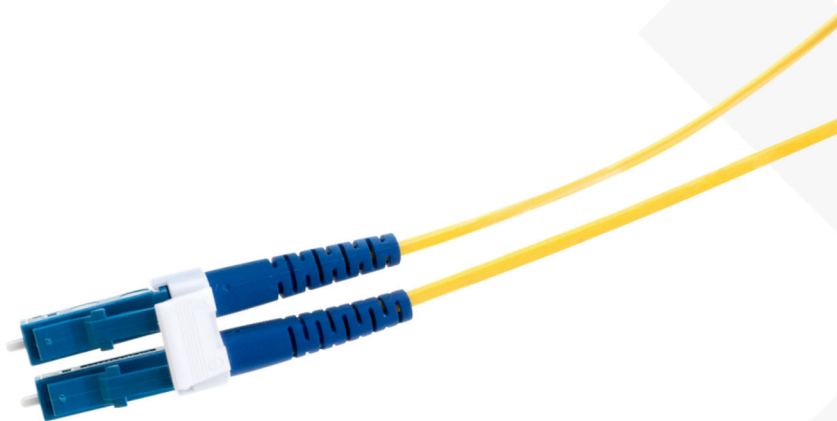
13	RD+	Differential pair for receiving data signals
14	Vee	Ground connection
15	Vcc	Provides power to the SFP module
16	Vcc	Provides power to the SFP module
17	Vee	Ground connection
18	TD+	Differential pair for transmitting data signals
19	TD-	Differential pair for transmitting data signals
20	Vee	Ground connection

Bidirectional Small

Form-factor Pluggable (Bi-Di SFP) is also supported by HKM01-4K6G. Unlike traditional SFP modules, which use separate fibers for transmitting and receiving data (one for each direction), Bi-Di SFP modules utilize wavelength division multiplexing (WDM) technology to transmit and receive signals over the same fiber strand.

Fiber Connector Type

The SFP modules provided in our optional package use Lucent Connector (LC) type dual fiber connectors for seamless integration with existing fiber optic infrastructure. The LC connector's small form-factor and dual fiber design enable high-density connections and efficient use of fiber optic cables in networking environments.



Pairing

Pairing the HKM01T-4K6Gs and HKM01R-4K6Gs is essential for transmitting and receiving audiovisual signals over IP networks. To ensure proper functionality and communication between transmitters and receivers, follow below steps.

Default

The factory default setting is set to Channel 0 for both the HKM01T-4K6G and HKM01R-4K6G, therefore, there is no need to adjust the channel for a point to point application.

Point to Point

1. If the rotary switch has been adjusted to a different channel from the original default setting, you will have to set up the channel of the HKM01T-4K6G and HKM01R-4K6G to the same channel.
2. Remove the power and plug it in again.

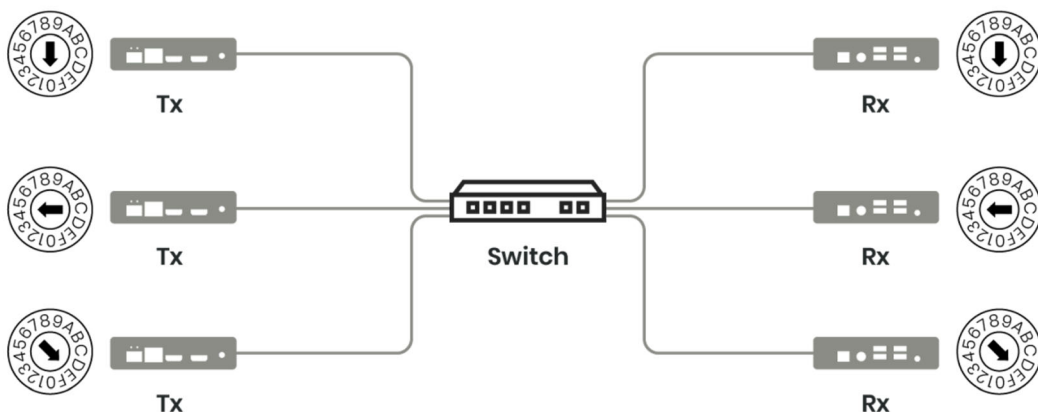


Grouping – Rotary Switch

1. You only need to adjust the rotary switch while connecting multiple HKM01T-4K6Gs/HKM01R-4K6Gs on the same Ethernet switch.
2. Set up the Channel:
The channel of the transmitter and receiver in the same group should be the same. Notice that each HKM01T-4K6G should be set to a unique channel number (all channels can not be repeated).
3. Remove the power and plug it in again.



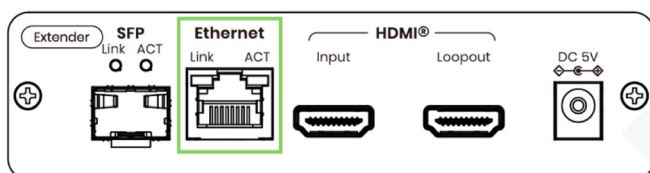
(Up to 16 pairs of the HKM01T-4K6Gs and HKM01R-4K6Gs can be set)



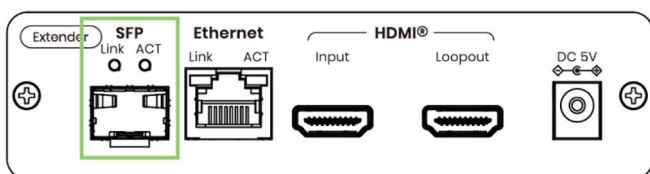
SFP/ Ethernet Link – Detection Mode

HKM01-4K6G will detect the connection status before booting and decide whether to use the Ethernet or fiber optic cable for transmission. We recommend you to connect the cable you desire to HKM01-4K6G before booting it, and it will automatically detect the cable when booting. To configure the operation, follow these steps:

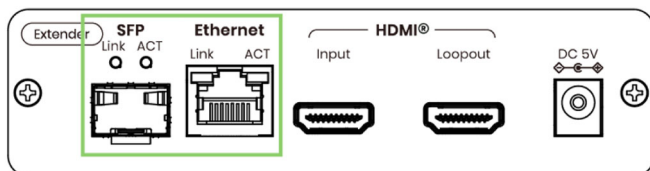
- Connect **Ethernet interface** before booting: Ethernet cable transmission mode



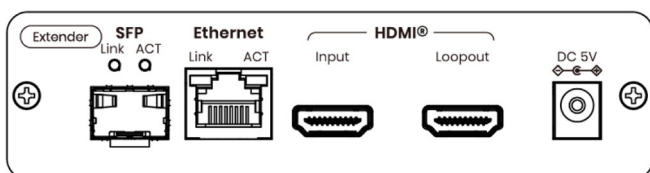
- Connect **SFP interface** before booting: Fiber optic cable transmission mode



- Connect **both Ethernet and SFP interfaces** before booting: Fiber optic cable transmission mode



- Connect **neither Ethernet nor SFP interfaces** before booting: Ethernet cable transmission mode



- If you want to change the transmission mode during operation, you need to turn off HKM01-4K6G, reconnect, and then reboot HKM01-4K6G to change the transmission mode.



Video Interface

The HDMI® Video input and output functionality in HKM01-4K6G allows for the transmission and reception of high-definition video signals over IP for longer distances. These features enable integration of HDMI®-equipped audiovisual sources and displays into the AV over IP, facilitating flexible and scalable multimedia content distribution.

Support Resolution

HKM01-4K6G supports various resolutions, indicated by the below table:

Resolution	
3840x2160	30/50/60Hz
2560x1600	60Hz
2560x1440	60Hz
1920x1200	60Hz
1920x1080 ³	30/50/60/120Hz
1680x1050	60Hz
1600x1200	60Hz
1600x900	60Hz
1440x900	60Hz
1280x1024	60Hz
1280x720	50/60Hz
1024x768	60/75Hz
800x600	60/75Hz
640x480	60/75Hz

³ The timing of 1920x1080 is also supported in interlace mode.

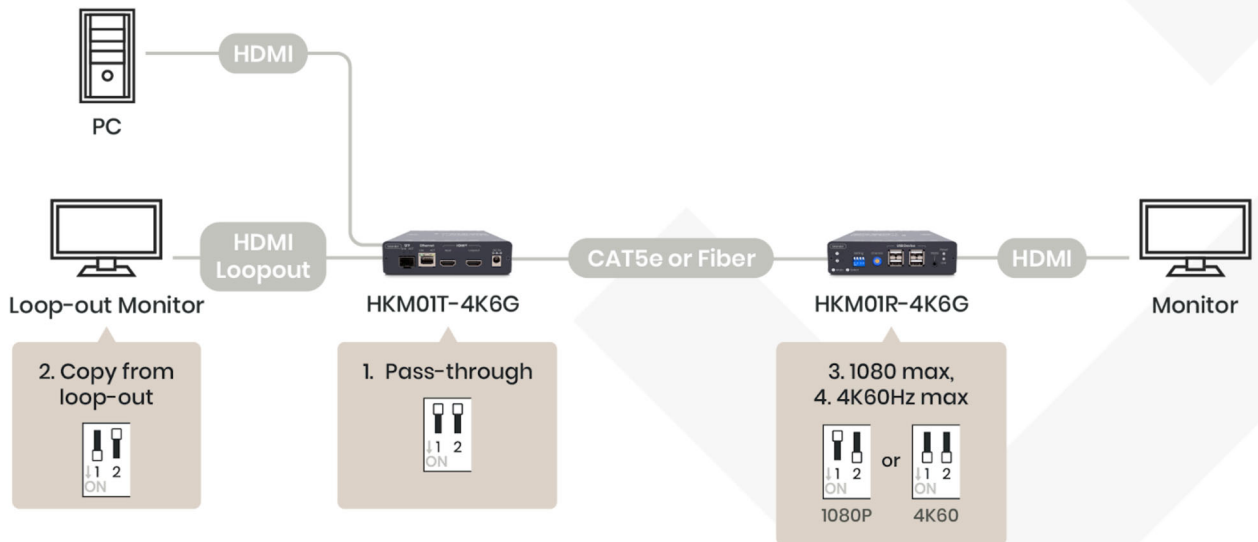
EDID Settings

HKM01-4K6G offers users the flexibility to configure EDID settings based on their specific requirements and preferences. The settings can be done only on the HKM01T-4K6G.

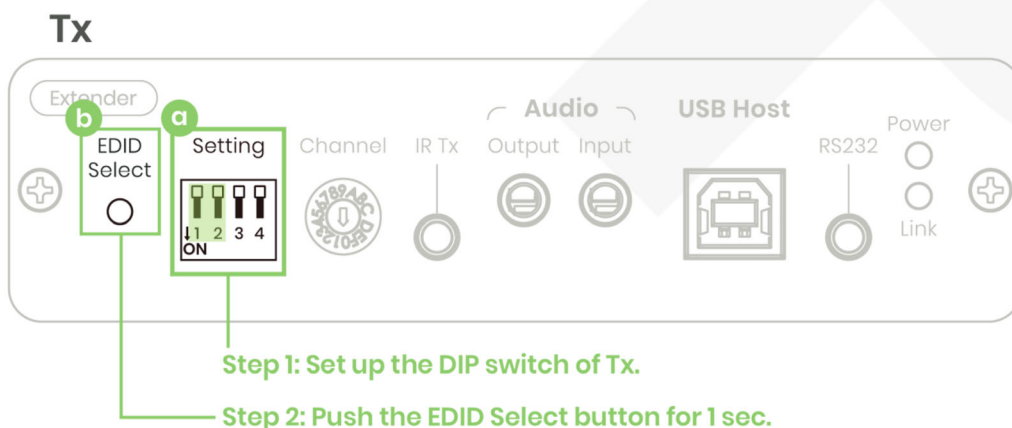
EDID Setup Steps

The following steps are the configuration for the EDID mode:

1. Connect the HKM01T-4K6G to HKM01R-4K6G via Ethernet or fiber optic cable.
2. Pair the HKM01T-4K6G and HKM01R-4K6G following the steps in the “Pairing” Section.
3. Connect the source and display devices to the HKM01T-4K6G and HKM01R-4K6G respectively.
4. The default mode is the “Pass-through Mode”, which uses the EDID of the monitor connected to the HKM01R-4K6G.
5. The EDID setup includes four modes: 1. pass-through, 2. copy from loop-out, 3. 1080 max, 4. 4K60Hz max. All can be set up by adjusting the DIP switch on HKM01T-4K6G.


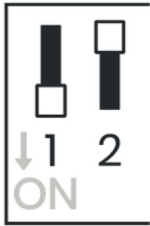
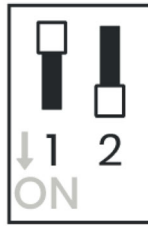
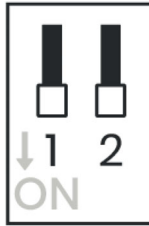


6. Adjust and set up EDID mode by using the DIP switch and EDID select button on the HKM01T-4K6G
 - b. Set up the DIP switch of the HKM01T-4K6G (refers to EDID Modes table).
 - c. Push the EDID Select button for 1 sec.



EDID Modes

There are four modes for EDID settings, refer to the below table:

HKM01T-4K6G EDID Mode				
SWITCH	EDID Mode / Settings			
Diagram				
Function	Pass-through Mode (Default)	Loop-out Mode	Max resolution 1080P	Max resolution 4K60Hz

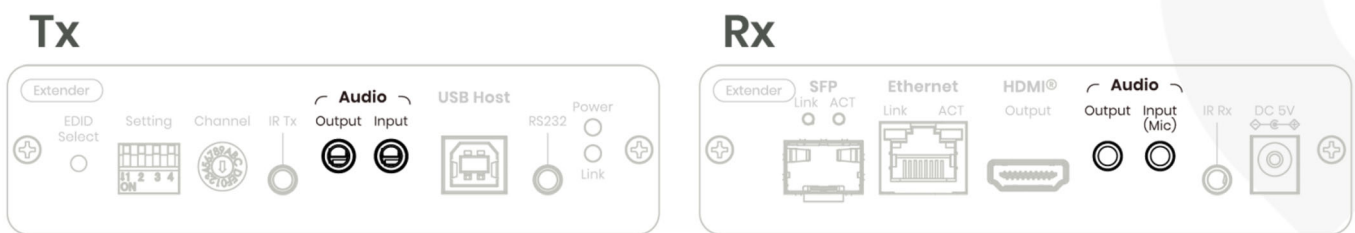
Audio Interface

Audio transmission over IP through HKM01-4K6G enables the extension of high-quality audio signals over IP with ultra-low latency and fully synchronized with the video signal.

Apart from audio transmitted through HDMI® port, HKM01-4K6G supports audio embedding and extraction through additional ports.

Digital/Analog Audio Conversion

The HKM01T-4K6G and HKM01R-4K6G both have 3.5mm audio input and output interfaces, supporting audio embedding, extraction, and other audio functions. The following will describe the operation of the 3.5mm audio interface.



Audio Function and Connection Table

Below table shows the Audio Modes described in the [following previous sections](#). The connection of audio devices on the transmitter and receiver decides the Audio Mode.

Function	Tx Audio Input	Tx Audio Output	Rx Audio Input (Mic)	Rx Audio Output	Audio Source	Audio Output Port
Analog Bypass	O	O	O	O	Audio Input on Tx	Audio Output on Rx
	O	X	X	O	Audio Input (Mic) on Rx	Audio Output on Tx
	O	X	X	O	Audio Input on Tx	Audio Output on Rx
	X	O	O	X	Audio Input (Mic) on Rx	Audio Output on Tx
Audio Embedder	O	X	X	X	Audio Input on Tx	HDMI® OUT on Rx
Audio Extractor	X	X	X	O	HDMI® IN on Tx	Audio Output on Rx
HDMI® Bypass	X	X	X	X	HDMI® IN on Tx	HDMI® OUT on Rx

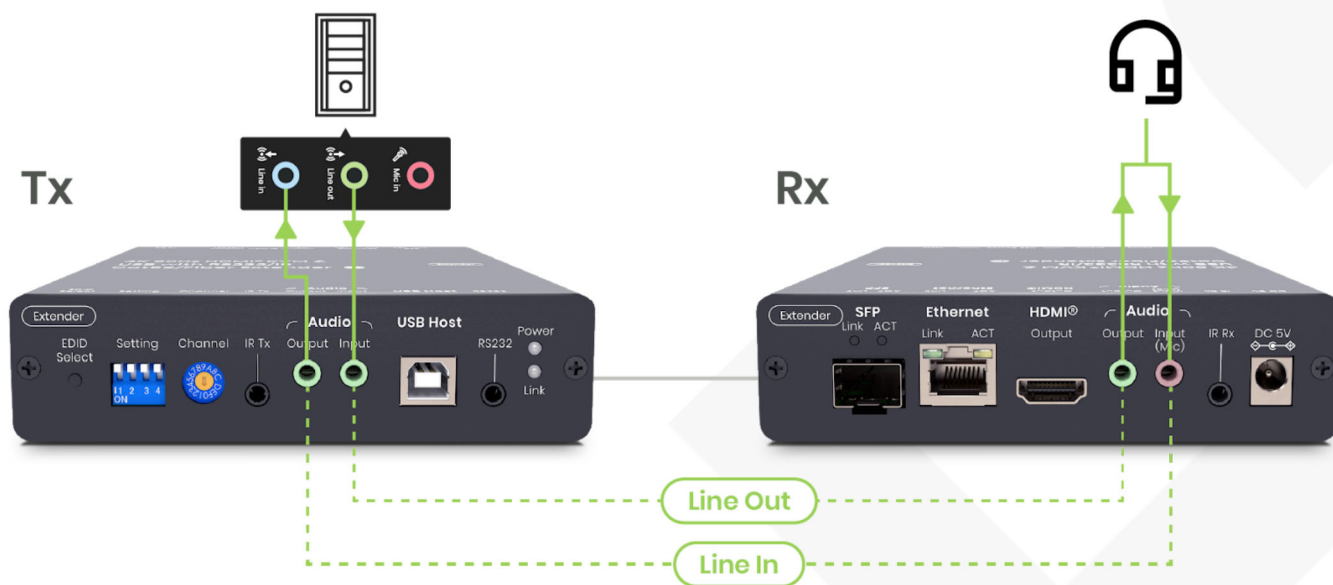
O = Connected X = Disconnected

Tx = HKM01T-4K6G Rx = HKM01R-4K6G

Analog Bypass

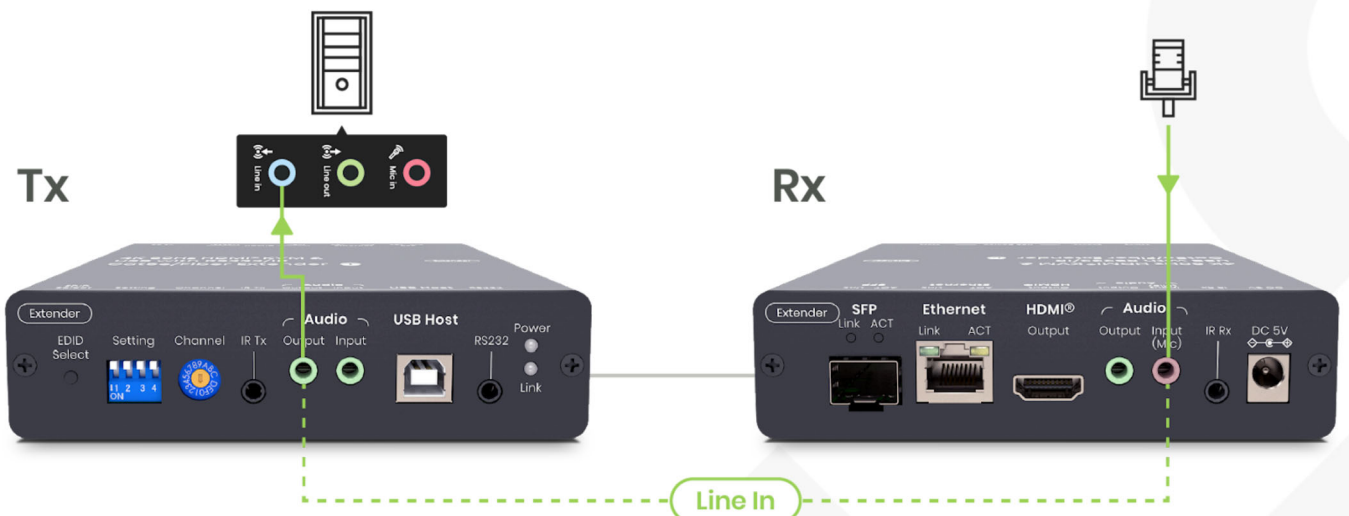
Play Audio on the HKM01R-4K6G Output

When an audio source device connects to the HKM01T-4K6G via "Audio Input," the sound can be played on a speaker connected to the HKM01R-4K6G via the "Audio Output" port, and the HDMI® of the screen will have no audio.



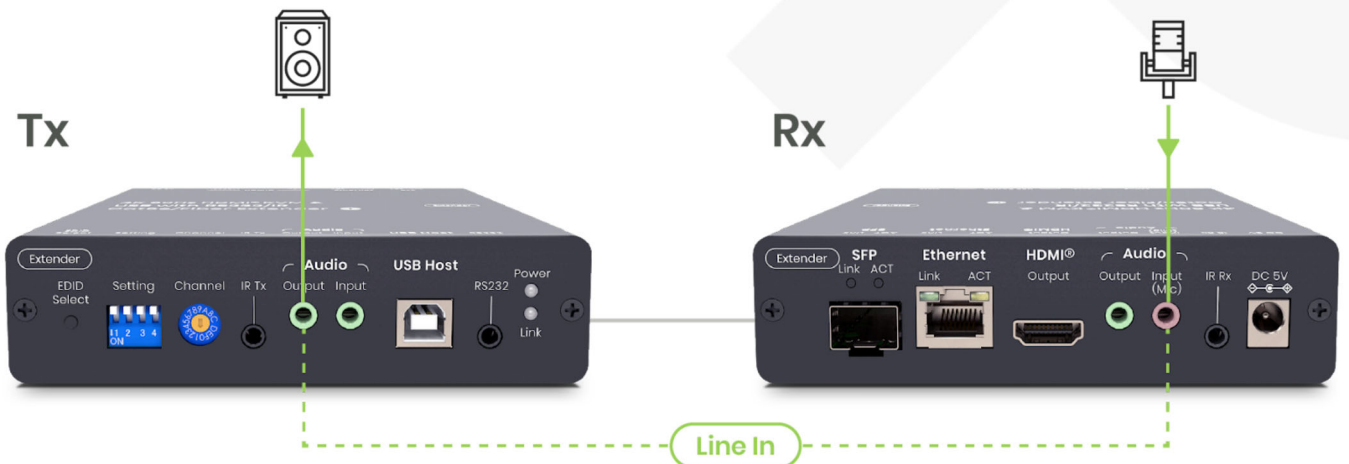
Transmit Mic Audio to PC

When a Mic device connects to the HKM01R-4K6G via "Mic in," the sound of the Mic can be transmitted to the PC via the "Audio Output" port on the HKM01T-4K6G. Connect "Audio Output" from HKM01T-4K6G to the computer's "Line in" interface via a 3.5mm cable, and you can transmit the remote Mic sound to the computer for communication or recording.



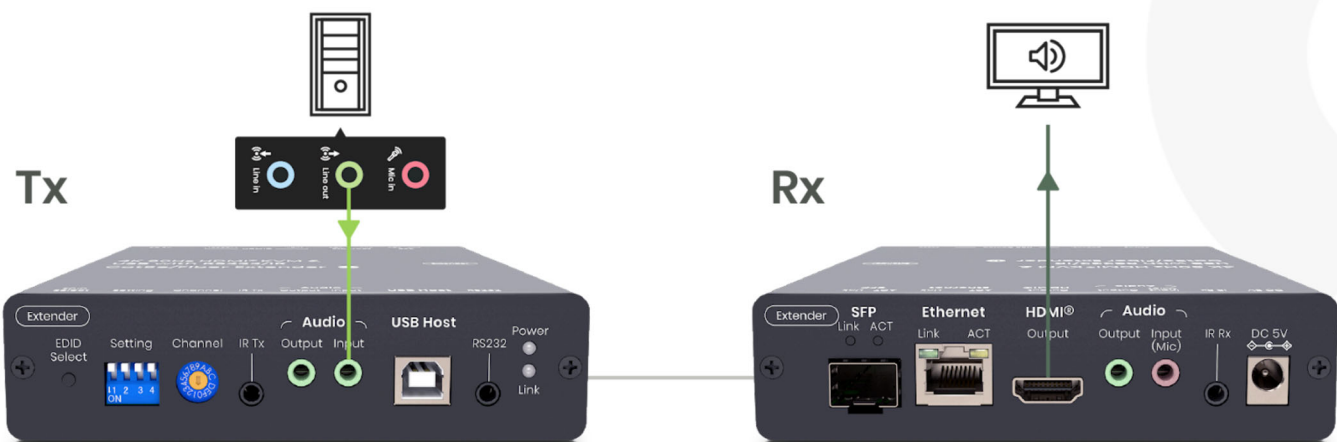
Play Mic Audio on the HKM01T-4K6G

When a Mic device connects to the HKM01R-4K6G via "Mic in," the sound of the Mic can be played on a speaker connected to the HKM01T-4K6G via the "Audio Output" port.



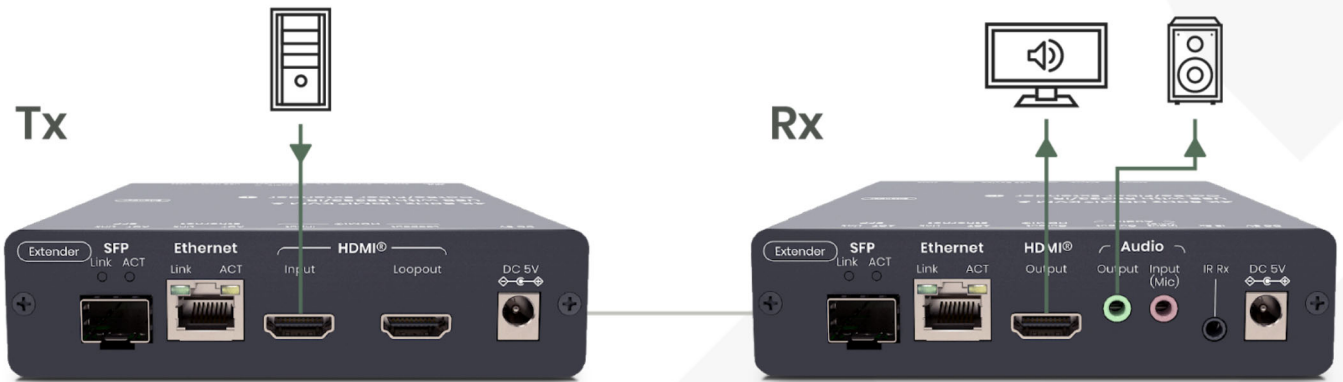
Audio Embedder

Play extra audio source on Far End HDMI® Screen. When an audio source device connects to the HKM01T-4K6G via "Audio Input," the sound can be played on an HDMI® screen at the HKM01R-4K6G via "HDMI® Output" port. Please note that this method will override the original "HDMI® In" audio source from the HKM01T-4K6G.



Audio Extractor

Far End Playing PC Audio Sound. Play Audio on the HKM01R-4K6G or HDMI® Screen (Audio Extraction)
When the HKM01T-4K6G only has an “HDMI® in” (without “Audio Input”), and a speaker is connected to the HKM01R-4K6G via “Audio Output,” the sound from “HDMI® in” will play on both the HDMI® screen and the speaker. If you want only one side to play the audio, please mute the other device (TV or speaker).



HDMI® Bypass

When the audio in, audio out of HKM01T-4K6G, HKM01R-4K6G are not connected to any device, the remote screen will automatically play the PC-side HDMI® audio source through the HDMI® interface.

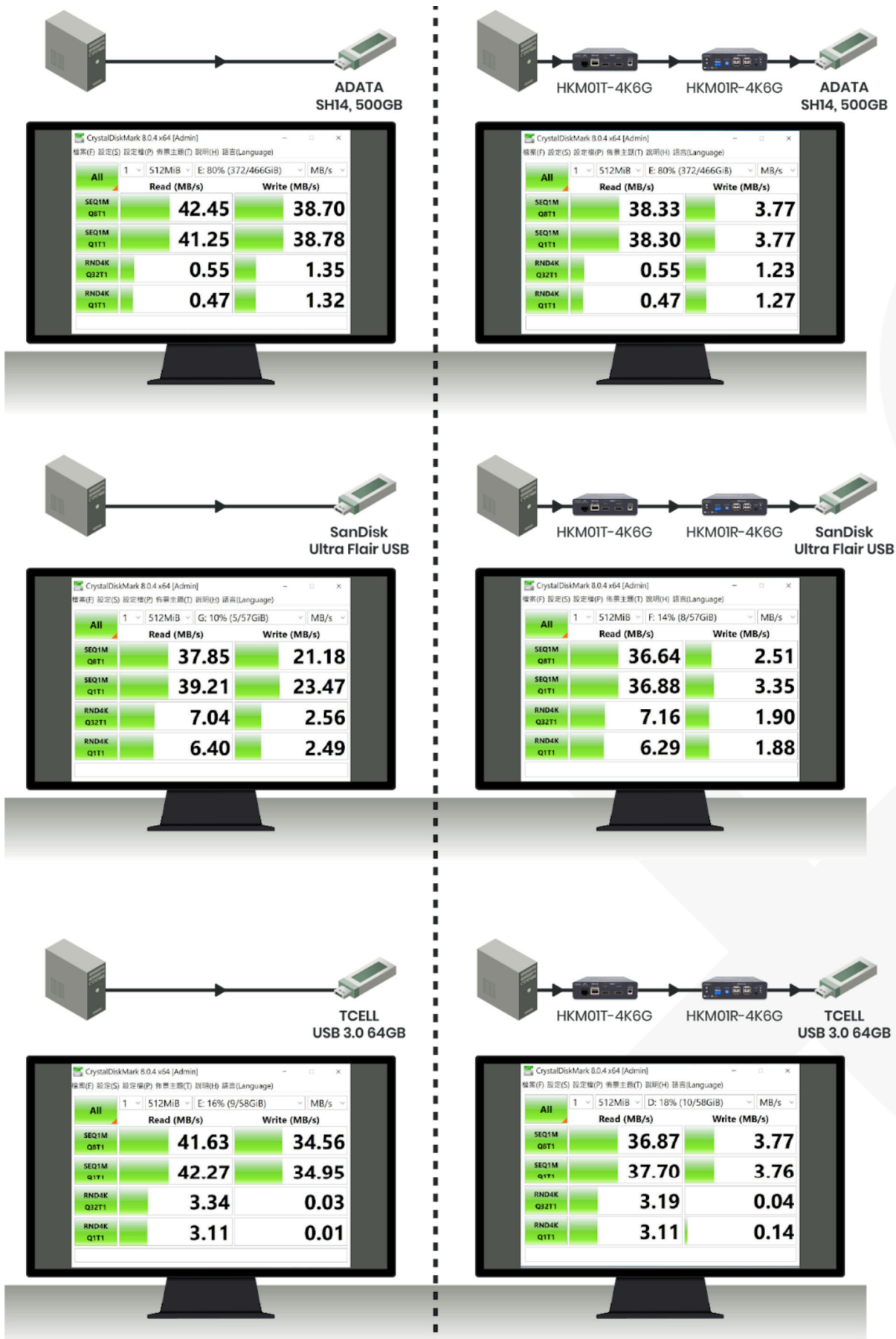


USB Interface

In addition to audiovisual data transmission, HKM01-4K6G supports the transmission of USB data streams over IP. This feature allows users to transmit USB 2.0, USB 1.1 and USB 1.0 data between connected devices, such as computers, peripherals, USB storage devices, etc.

Read and write speed

HKM01-4K6G uses four-pair STP/UTP cable to enable high-speed USB data transfer over a CAT5e cable or higher. HKM01-4K6G has low impact on USB read/write speeds, the read and write speed via HKM01-4K6G/direct transfer between USB host and USB device as follow:



(Results may vary with devices from different manufacturers.)

USB Compatibility

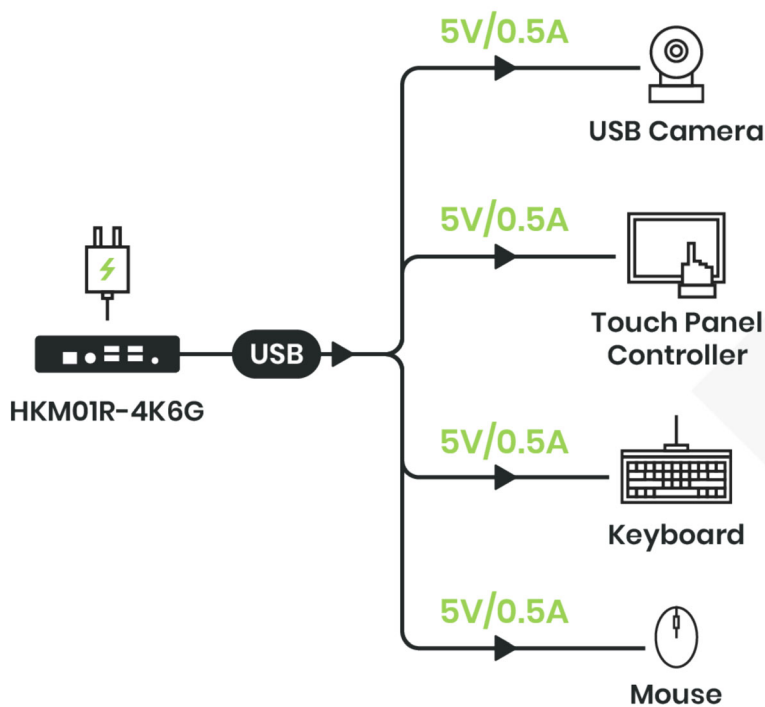
HKM01-4K6G complies with USB 2.0⁴, it is backwards compatible with USB 1.1 and USB 1.0, and support all USB transfer types⁵. However, it's not certain that it will work with every USB device or host because different factors can affect how USB devices perform over long distances.

HKM01-4K6G is compatible with a variety of communication protocols and device types, allowing it to send different kinds of data including files, sound, picture, and input from devices like mice, keyboards, and touchpads that connect via USB cable or Bluetooth.

HKM01-4K6G supports one upstream port and 14 downstream ports with configurable endpoint type.

USB Power Output

Max power output for USB devices is 5V/0.5A on HKM01R-4K6G.



⁴ USB 2.0 supports speeds up to 480 Mbps.

⁵ Control Transfers : Typically used for command and status operations, along with bulk, interrupt and isochronous transfers. Bulk Transfers : Used for transmission of large quantities of data, typically by mass storage devices, cameras that generate compressed video streams, and other devices that require fast file transfers. Interrupt Transfers : Used by devices, such as keyboards and mice. Isochronous Transfers : Used by time-sensitive devices such as streaming cameras and audio products.

RS232

HKM01-4K6G supports RS232⁶ control, used for connecting various electronic devices. It defines the electrical characteristics and timing of signals for serial communication between devices⁷, typically facilitating communication between computers and peripherals such as modems, printers, and other serial devices.

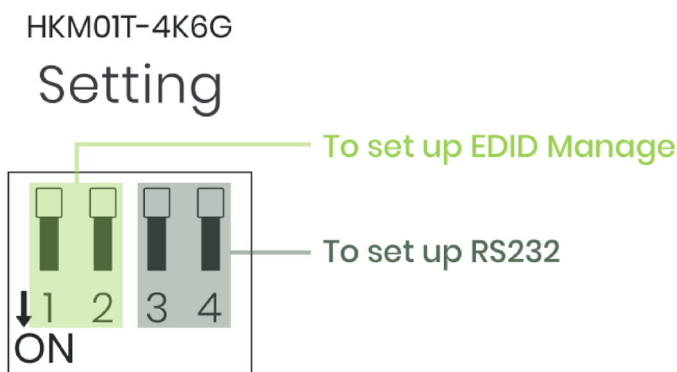
For successful communication, both communicating devices must operate at the same baud rate⁸. If one device transmits at a different baud rate than the other, communication errors may occur.

Lower baud rates are often chosen for longer communication distances and improved resistance to noise interference. In certain environments, a lower baud rate is preferred to ensure stable communication.

RS232 Setting – DIP switch

The following steps are the configuration for the RS232 setting:

1. Connect the HKM01T-4K6G to HKM01R-4K6G via Ethernet or fiber optic cable.
2. Pair the HKM01T-4K6G and HKM01R-4K6G following the steps in “Pairing Section”.
3. Connect the source and sink devices to the HKM01T-4K6G and HKM01R-4K6G respectively.
4. Adjust the DIP switch on HKM01T-4K6G to set up the RS232 settings. Refer to the instructions below to adjust the DIP switch.


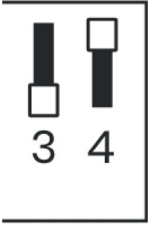
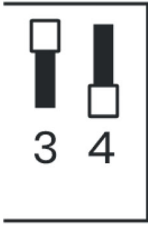
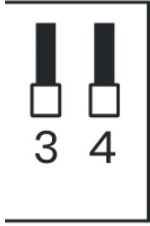


⁶ RS232 is used for serial communication, allowing data to be transmitted one bit at a time over a single wire.

⁷ RS232 communication can be simplex (one-way), half-duplex (two-way, but only one direction at a time), or full-duplex (two-way, simultaneous communication).

⁸ Common baud rates in RS232 communication include 2400, 4800, 9600, 19200, 38400, 57600, 115200, and more. The selection of baud rate depends on the capabilities and requirements of the communicating devices.

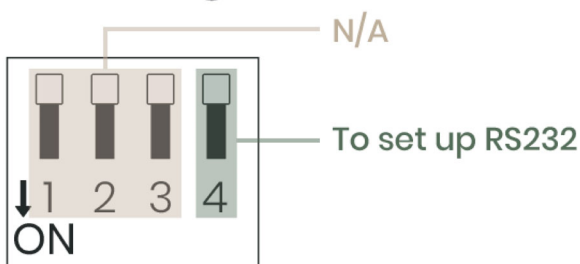
Refer to the instructions below to adjust the DIP switch.



Tx (HKM01T-4K6G)			
SWITCH	Function/Settings		
Diagram		 	
Function	RS232 on (Default)	Debug console	N/A

- Adjust the DIP switch on HKM01R-4K6G to set up the RS232 settings. DIP switches 1, 2, and 3 have no function on HKM01R-4K6G.

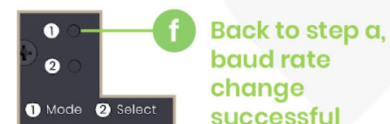
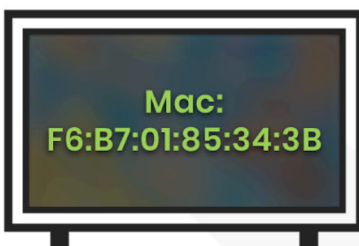
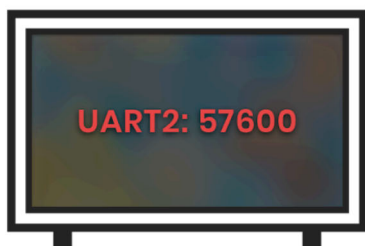
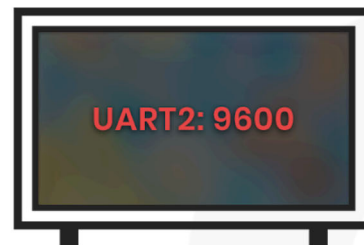
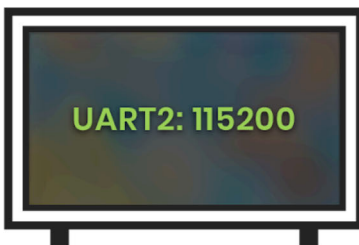
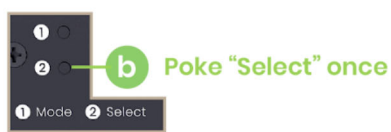
HKM01R-4K6G

Setting



Rx (HKM01R-4K6G)	
SWITCH	Function/Settings
Diagram	 
Function	RS232 on (Default) Debug console

Baud Rate Setting/ Check IP or Mac address – Panel Button

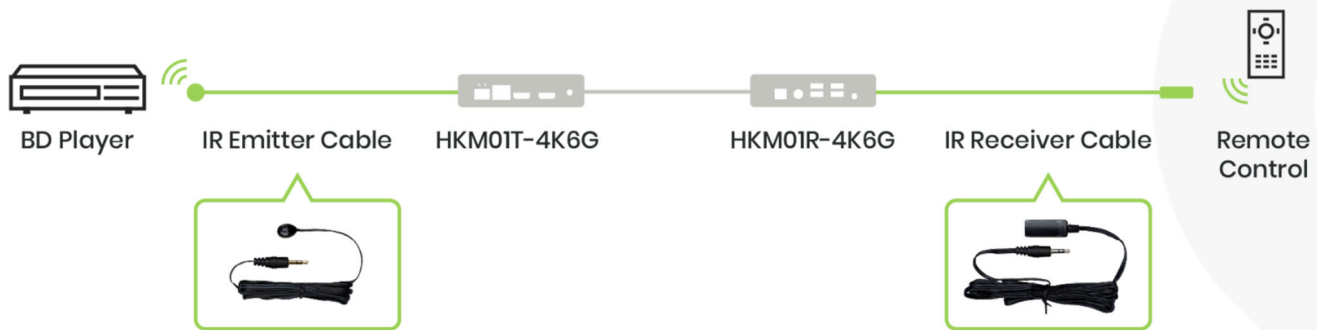


1. Press Button 1 on HKM01R-4K6G to show OSD menu (there are 3 options: Mac address, IP address, and Baud Rate), keep pressing button 1 till "UART: XXXX" is shown.
2. Press Button 2 to switch to a desired Baud Rate. The options are as below:
115200 (Default), 57600, 38400, 19200, 14400, 9600, 4800, 2400, 1200bps
3. Press Button 1 again to confirm the change.

Infrared (IR)

This function facilitates the transmission of IR signals from a remote control to the IR Receiver connected to the HKM01R-4K6G, which then passes the signal over IP to the HKM01T-4K6G. The HKM01T-4K6G, equipped with an IR emitter cable, emits the IR signal to control external devices such as DVD players, TVs, or set-top boxes.

HKM01-4K6G does not have built-in IR interface, in order to transmit IR signal, you would need to connect both IR receiver and emitter cable.



Technical Specification

HKM01-4K6G	HKM01T-4K6G	HKM01R-4K6G
Compliance		
Standard	HDMI® 2.0 HDCP 2.2 USB 2.0/ 1.1/ 1.0	
Max. Video Resolution	4K60Hz	
Max. Transmission Distance	100M over CAT5e 60KM over single mode fiber optic	
Dynamic Range Standard ⁹	SDR, HDR, HDR10, HDR10+ Dolby Vision	
Audio Format ¹⁰	PCM 2CH, 5.1CH, 7.1CH Dolby True HD, Dolby Digital (AC-3), Dolby Digital Plus (E-AC-3), Dolby Atmos (AC4) DTS, DTS-HD Master Audio, DTS: X	
RS232 Baud Rate	115200bps	
IR Support	20-60 kHz, ±45°, 5M	20-60 kHz, ±45°, 5M
Ports & Interfaces		
Video Input	1 x HDMI® Type-A	1 x RJ45 1 x SFP
Video Output	1 x RJ45 1 x SFP	1 x HDMI® Type-A
Video Loop-out	1 x HDMI® Type A	
Analog Audio Input	1 x 3.5mm Stereo Phone Jack	1 x 3.5mm Mono Phone Jack
Analog Audio Output	1 x 3.5mm Stereo Phone Jack	1 x 3.5mm Stereo Phone Jack
USB	1 x USB Type-B	4 x USB Type-A
IR	External Receiver: 3.5mm Stereo Phone Jack 20-60 kHz / ±45° / 5M	
	External Transmitter: 3.5mm Stereo Phone Jack: 20-60 kHz / ±45° / 5M	
RS232	1 x 3.5mm Phone Jack	1 x 3.5mm Phone Jack
Power		
Power Supply	5V 2A	5V 2A
Power Consumption	4.75W	3.25W (w/o USB devices)
Power Saving	2.05W	1.85W

⁹ Dynamic range metadata in the input stream is pass-through and fully maintained.

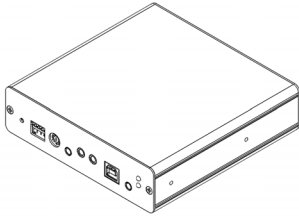
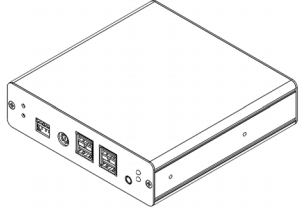
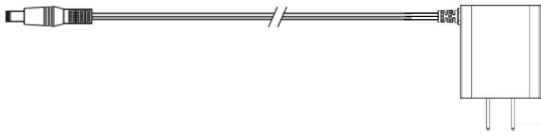


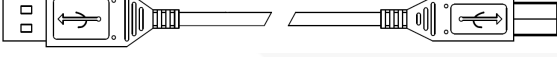




¹⁰ Audio data in the input stream is pass-through and fully maintained.

Ambient Temperature		
Operation	0 to 55°C	
Storage	-40 to 80°C	
Operating Altitude	2000m	
Humidity	Up to 95%	
Physical Characteristics		
Dimension (D x Wx H)	123 x 125 x 32mm	123 x 125 x 32mm
Weight	345g	353.6g

Caution

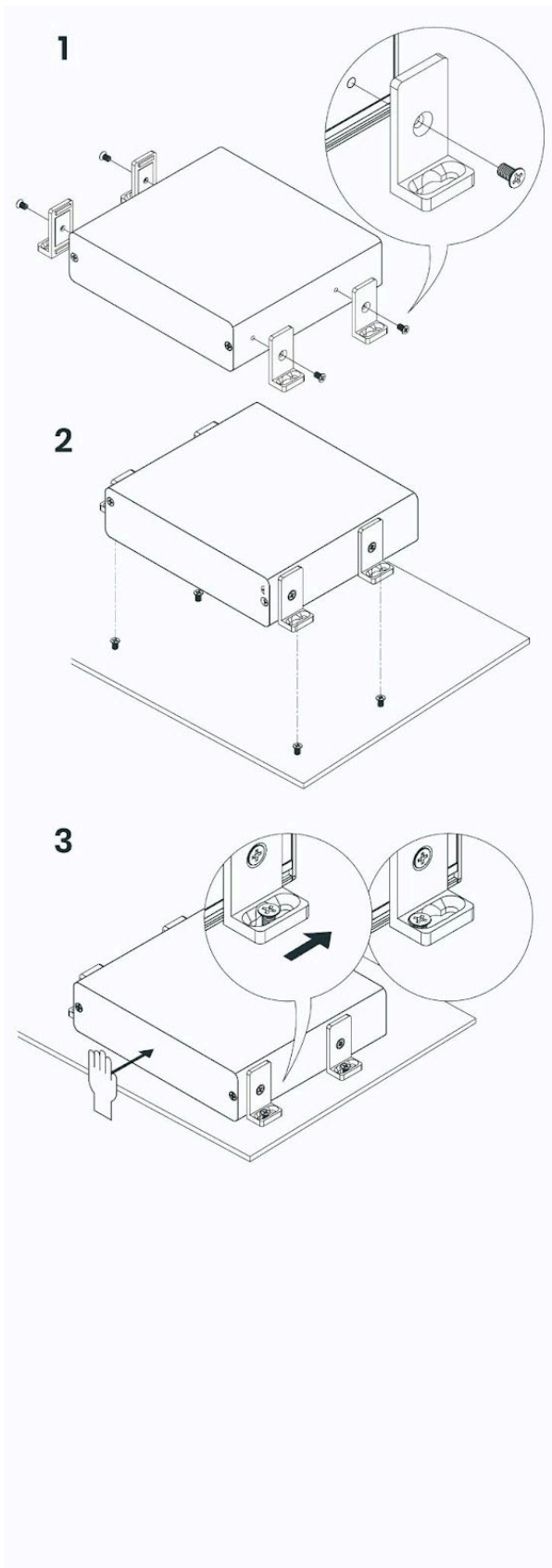
1. This product is designed for indoor applications. If you plan to use it outdoors, we recommend installing additional equipment for waterproof protection and surge protectors to prevent damage caused by lightning.
2. Do not put anything on the power and system cables, place them where they cannot be stepped on. Please be sure there is nothing resting on any cables.
3. Avoid using this product close to water places, or near high temperature devices such as radiators, stoves, etc.
4. Shut down the power supply and unplugged all equipment immediately if:
 - A. water or any kind of liquid has been spilled into the product;
 - B. the product has been damaged by external force;
 - C. the product does not operate normally as this manual indicates;
 - D. please contact us for further repair if above conditions happen.
5. Using certified Premium HDMI® cables to transfer high-resolution video is recommended.
6. The UTP Ethernet cable is recommended to use high-quality CAT5e, CAT6 UTP/STP/FTP cable. Improper installation may cause unstable connection, and video or audio interruption.
7. The transmission distance may be shortened by the equipment (gigabit switch), cable or construction quality. Using CAT5e, CAT6 cable between transmitter and receiver, the transmission distance can reach up to 100 meters.
8. The data rate can reach up to 850Mbps, which might affect other devices at the same LAN, so we recommend using the Closed Ethernet Network.
9. Transmission can be selected between Ethernet cable and SFP optical fiber cable, but cannot work at the same time.
10. The optical fiber transmission interface uses the standard SFP optical fiber module, and the transmission distance depends on the specifications and performance of the optical fiber module and optical fiber cable
11. The analog input of the receiver is a single-sound Mic input, not a stereo sound source input.
12. If all four USB ports are needed to supply 5V 500mA, the power supply should be replaced by a 5V 3A adapter.
13. RS232 does not support hardware handshake.

Package Includes

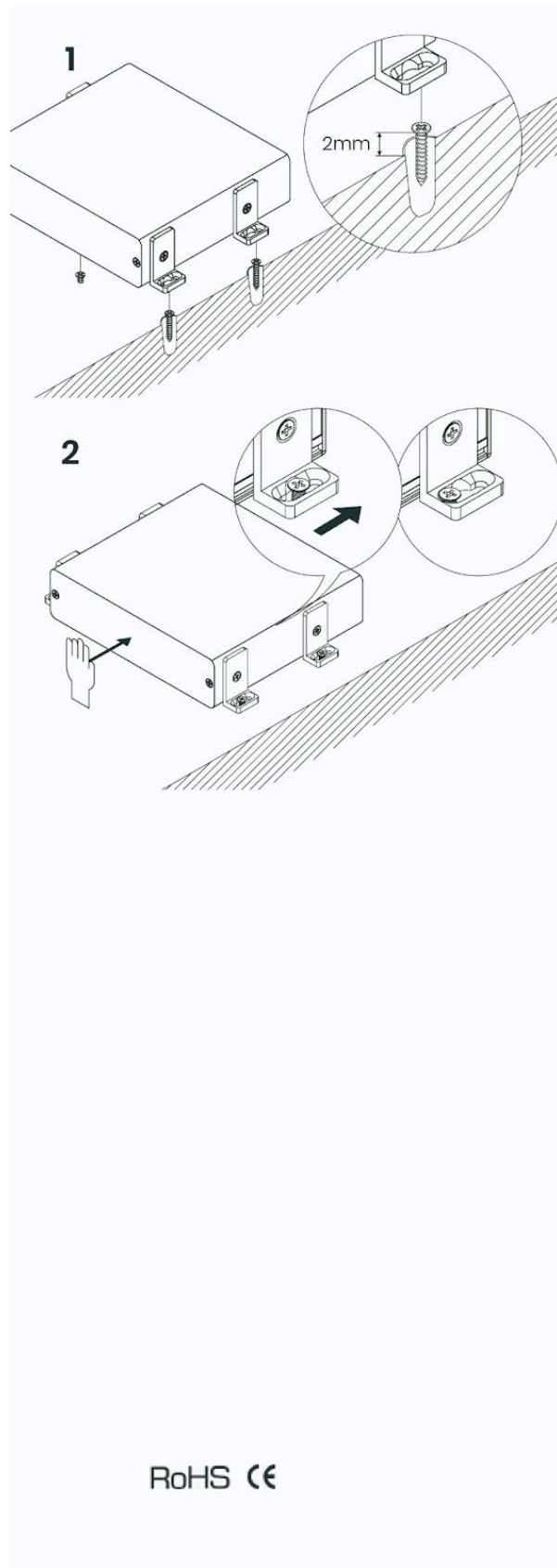
Item	Amount	Image
HKM01T-4K6G (Transmitter)	1 pc	 <p>The unit has a width of 125mm and accommodates three units within a standard 19-inch rack</p>
HKM01R-4K6G (Receiver)	1 pc	 <p>The unit has a width of 125mm and accommodates three units within a standard 19-inch rack</p>
DC 5V2A Power Adapter	2 pcs	
IR Emitter Cable	1 pc	
IR Receiver Cable	1 pc	
USB A to B cable	1 pc	
DB9(M) to 3.5mm phone jack	1 pc	
DB9(F) to 3.5mm phone jack	1 pc	
Mounting Screw Pack	2 bags	 <p>4 pcs (bag) 4 pcs (bag) 4 pcs (bag) 4 pcs (bag)</p>
Rubber gasket Pack	2 bags	 x4

Installation

Installed on a Platform



Installed on Wall



RoHS 

Installed on a Rack

