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• Disclaimer

rocstor®

TrueReach TR20

HDMI KVM Extender over Ethernet Cable 4K/60Hz

User Manual
Y10G020-B1

HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

• FCC Statement

Tested to Comply
This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference
to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna;
• Increase the separation between the equipment and receiver;
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected;
• Consult the dealer or an experienced radio/TV technician for help.
Changes or modifcations not authorized by the party responsible for compliance could void the user's authority to operate this product.

• Important Safety Instructions:

1- Do not expose the device to rain or place it near water. Any liquid entering the device may result in malfunction, fire, or electric shock.

2- Do not insert metallic objects into any openings of the device. Doing so may cause electric shock.

3- Do not position the device near or on a radiator, heat register, or in direct sunlight.

4- The device must be serviced only by a qualified technician.

5- When using a third-party power supply, ensure that its specifications fully comply with the product requirements.

• Introduction

Rocstor TrueReach TR20 is a 4K@60Hz HDMI KVM extender kit consisting of a transmitter and a receiver, utilizing ipcolor STREAM technology for high-definition, low-latency transmission. The 4K@60Hz HDMI signal can be extended up to 120m over Category 6 or higher network cables, supporting one-to-one connections, one-to-many connections via a Gigabit switch, or switch cascading.

The extender also supports HDMI loop-out, KVM, and RS-232 passthrough, making it suitable for a wide range of applications, including meetings, home entertainment, educational presentations, and other professional environments.

• Features

1- Adopts ipcolor STREAM technology to deliver high-definition, low-latency transmission.
2- Supports resolutions up to 3840 × 2160 @ 60Hz and is backward compatible.
3- Compatible with Cat5/5e/6 or higher network cables, with a transmission distance of up to 120 meters using Cat6 cable.
4- Supports one-to-one and one-to-many connections through a Gigabit switch.

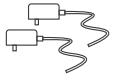
· Features

5- Supports RS-232 passthrough.
6- Transmitter supports HDMI loop-out.
7- Supports KVM control signal passback.
8- Receiver supports USB 2.0 devices such as flash drives, cameras, and touchscreens (due to network/USB bandwidth limitations, it does not support the simultaneous use of two or more USB flash drives or cameras).
9- Transmitter includes a 3.5 mm audio input for sound embedding; receiver provides an independent 3.5 mm audio output.
10- Firmware upgradeable via Micro USB.
11- Includes lightning protection, surge protection, and ESD protection.
12- Supports stable 24/7 operation.

· Package Contents


Transmitter x1


Receiver x1


DC5V/2A
Power adapter x 2


User manual x1


Mounting ear x4


Screw x10


Grounding
Screw x2

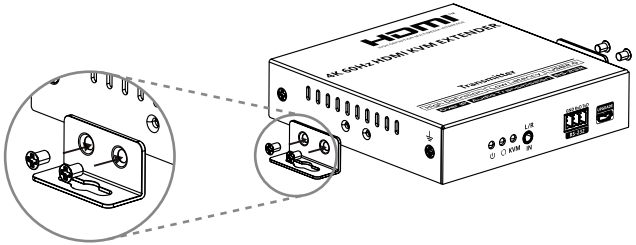

Terminal block
(RS-232) x2


USB cablex1

· Installation Requirements

Item	Description	Requirement
Signal source device	PC, DVD, NVR, etc. with HDMI port	HDMI cable ≤ 5m
Cable	Cat5/5e/6 or above, following standard IEEE-568B	Cat6/6A/7 ≤ 120m
Display device	TV, projector, LED screen, etc. with HDMI port	HDMI cable ≤ 5m
Network switch	one-to-many or switch cascading	Gigabit switch

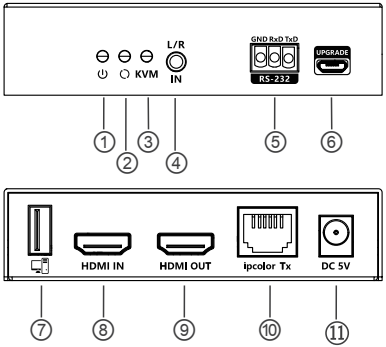
· Wall Mounting



Note: Choose the wall mounting position and attach the mounting ears to the unit according to the diagram.

· Panel Description

1. Transmitter

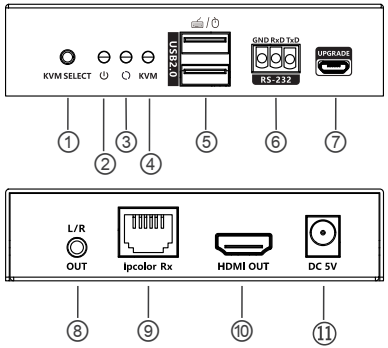


①	Power indicator	The indicator will turn on when the power is turned on
②	Status indicator	1) **Light off**: The transmitter and the receiver have not established a connection 2) **Slow flash**: The transmitter and the receiver are connected but no video data transmission (gigabit Ethernet) 3) **Quick flash**: The transmitter and the receiver are connected but no video data transmission (100M Ethernet) 4) **Steady on**: The video data is transmitting
③	KVM indicator	1) **Light flashing**: The USB data is transmitting 2) **Steady on**: The computer and the USB port are connected
④	L/R IN	Connect to the audio source device with 3.5mm stereo audio cable

· Panel Description

⑤	RS-232 (GND/RXD/TXD)	Used for RS-232 passthrough
⑥	Micro USB port	Used for firmware upgrading
⑦	USB-A port	Connect to the computer with USB cable
⑧	HDMI in	Connect with HDMI source device
⑨	HDMI out	Connect with local HDMI display device
⑩	ipcolor Tx (RJ45)	Connect with the network cable
⑪	DC 5V	Connect with DC5V/2A power adapter

2. Receiver



①	KVM SELECT	Press the button to enable the KVM function (Especially in the one-to-many situation)
②	Power indicator	The indicator will turn on when the power is turned on

③	Status indicator	1) **Light off**: The transmitter and the receiver have not established a connection 2) **Slow flash**: The transmitter and the receiver are connected but no video data transmission (gigabit Ethernet) 3) **Quick flash**: The transmitter and the receiver are connected but no video data transmission (100M Ethernet) 4) **Steady on**: The video data is transmitting
④	KVM indicator	1) **Light flashing**: The USB data is transmitting 2) **Steady on**: Connected KVM with transmitter
⑤	USB2.0 port	1) Connect the mouse and the keyboard 2) Connect USB2.0 devices such as USB flash drives, cameras, and touch screen
⑥	RS-232 (GND/RXD/TXD)	Used for RS-232 passthrough
⑦	Micro USB port	Used for firmware upgrading
⑧	L/R OUT	Connect to the audio device with 3.5mm stereo audio cable
⑨	ipcolor Rx (RJ45)	Connect with the network cable
⑩	HDMI out	Connect with HDMI display device
⑪	DC 5V	Connect with DC5V/2A power adapter

· Installation Procedures

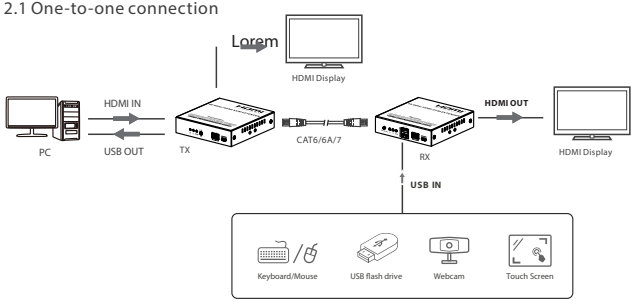
1. How to make a network cable

Follow the standard of IEEE-568B:
1-white and orange 2-orange 3-white and green 4-blue
5-white and blue 6-green 7-white and brown 8-brown

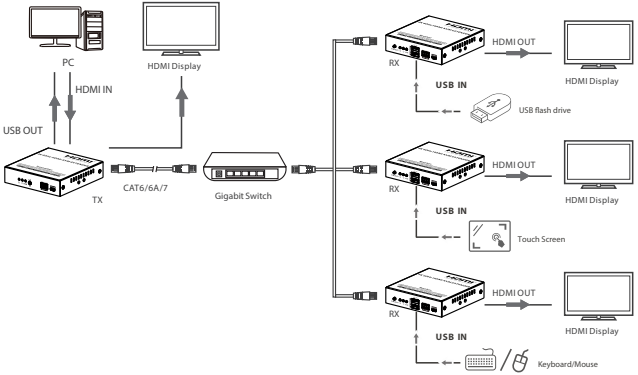
· Installation Procedures

2. Connection Diagrams

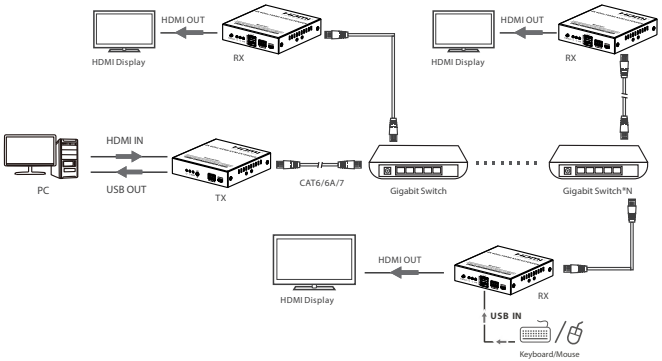
2.1 One-to-one connection



2.2 One-to-many connection (through gigabit switch):



2.3 One-to-many connection (cascade of gigabit switches):



Note: It is suggested to use gigabit (1000 Mbps) switches in LAN transmission.

3. Connection Instructions

1. Connect the source device to the HDMI IN port of the transmitter using an HDMI cable, and connect the HDMI OUT port of the receiver to the display device with another HDMI cable.

2. For a one-to-one connection, use a network cable to connect the RJ45 ports of the transmitter and receiver. For a one-to-many connection, use a Gigabit switch as a bridge to connect the transmitter and receivers with network cables respectively.

1. If using HDMI loop-out, connect the display device to the HDMI OUT port of the transmitter.

2. For USB functionality, connect the keyboard, mouse, USB flash drive, camera, or touchscreen to the USB 2.0 port of the receiver, and connect the computer to the USB port of the transmitter using a USB cable.

3. To output additional audio sources from the receiver or extend only L/R stereo audio, connect the receiver's L/R OUT port to the audio device using a 3.5 mm stereo audio cable.*

4. Plug the power supply into the devices to begin operation.

*

a. When the HDMI IN port of the transmitter is connected and the L/R IN port is not connected, the HDMI audio source can output simultaneously from the HDMI OUT and L/R OUT ports of the receiver.

b. When both the HDMI IN port and the L/R IN port of the transmitter are connected, the L/R stereo audio source can output simultaneously from the HDMI OUT and L/R OUT ports of the receiver.

c. When only the L/R IN port of the transmitter is connected and the HDMI IN port is not connected, the device functions as an audio extender, and the L/R stereo audio source outputs only from the L/R OUT port of the receiver.

4. RS-232 function:

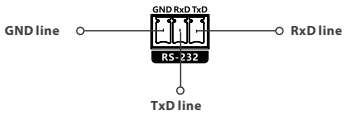
4.1 Baud rate

Different encoding mechanisms cannot be mixed. The RS-232 port of the transmitter and receiver supports baud rates of 2400, 4800, 9600, 19200, 38400, 57600, and 115200.

· Installation Procedures

4.2 Line order

Make sure the RS-232 serial line is firmly connected and that the serial data line is correctly connected as follows:



If the RS-232 serial connection does not work using the above configuration, try swapping the TXD and RXD lines.

4.3 Check baud rate

If you need to check the baud rate, set the baud rate value of the serial port test tool to the default value of 115200. Connect the serial port test tool to the product, then power on the product. The baud rate printed at this time is the current baud rate.

For example:
“Baudrate:9600” indicates that the baud rate value is 9600.

4.4 Set baud rate

For example: if the baud rate of the product is 9600 and the baud rate of the serial port test tool is 115200, the test tool baud rate must be changed to 9600 to match the product. Then, input the command you want to set, such as “Bset:19200.” If “Succeed” is displayed after sending the data, the baud rate has been successfully set to 19200.

• FAQ

Q: Why the status indicator is off?
A: Please check whether all equipment is powered on and the network cable is connected properly.

Q: Why is the status indicator has been flashing?
A: 1) Please check whether there is HDMI signal input for the TX.
2) Try to connect the signal source directly to the display device, or try to change the signal source and HDMI cable and test again.

Q: Why is the output image unstable?
A: 1) Check whether the length of the network cable is within the specified range.
2) The length of HDMI cable is recommended to be ≤ 5 meters.
3) Press the "reset" button on TX and RX panels to restart and reconnect.

· Technical Parameters

Item	Transmitter	Receiver
Video		
Input interface	1x HDMI	1x RJ45
Output interface	1x HDMI 1x RJ45	1x HDMI
HDMI length	≤ 5m	≤ 5m
Maximum transfer rate	18Gbps	
Compatibility	HDMI 2.0	
	HDCP 1.4/HDCP 2.2	
Resolutions	3840x2160@24/30/50/60Hz, 1080p@50/60Hz, 720p@50/60Hz, 1920x1200@60Hz, 2560x1440@60Hz	
Connection types	One-to-one connection One-to-many connection Switch cascading	
Transmission distance	Cat6/6A/7≤120m	
Transmission latency	80~140ms	
Audio Signal		
Input interface	1x HDMI 1x 3 . 5mm L/R	1x RJ45
Output interface	1x HDMI 1x RJ45	1x HDMI 1x 3.5mm L/R
HDMI output	LPCM 2.0	
3. 5mm L/R output	PCM	
Command Signal		
RS-232 (GND/RXD/TXD)	Default baud rate: 115200 Supported: 2400, 4800, 9600, 19200, 38400, 57600, 115200	

· Technical Parameters

USB devices		
USB1.1	Mouse and keyboard	
USB2.0	USB2.0 flash drives, cameras, touch screen	
Power		
Power Supply	DC 5V/2A	DC 5V/2A
Power Consumption	TX ≤ 5.5W	RX ≤ 4W
Operating Environment		
Working temperature	- 20℃~60℃	
Storage temperature	- 30℃~70℃	
Humidity	0~90%RH (no condensation)	
Physical Properties		
Housing	Iron	
Weight	TX: 311g	RX: 302g
Color	Black	
Dimensions	106.0(L)*103.0(W)*25(H)mm	
Protection	ESD protection 1a Contact discharge level 2 (±4KV) 1b Air discharge level 3 (±8KV) Implementation of the standard: IEC61000-4-2	
	Lightning protection, Surge protection	