



HDMI Fiber IP Extender Set, 4K/60Hz



Installation Guide

DS-55350

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Important Safety Instructions

- Do not expose the appliance to rain and do not place it near water. Any liquid entering the appliance may cause a malfunction, fire or electric shock.
- Never insert anything metallic into the open parts of the appliance. This can lead to an electric shock.
- Do not place the appliance near or over a radiator or heat accumulator and do not expose it to direct sunlight.
- The appliance should only be repaired by a qualified technician.
- If you are using a third-party power supply, make sure that the specifications of the power supply meet the requirements of the product

1. Introduction

The HDMI Fiber IP Extender Set, 4K/60Hz is the ideal solution for high-quality HDMI signal transmission over long distances. It enables the transmission of UHD signals in 4K/60Hz (3840x2160p) with minimal latency of just 80-140 ms, so that content is reproduced in razor-sharp picture quality and with virtually no delay. Thanks to modern fiber optic technology, the system achieves a maximum transmission distance of up to 40 km in Singlemode or up to 300 m in Multimode, making it perfect for professional AV installations. By using existing 1G network infrastructures or additional 1G network switches, the extender set enables flexible and powerful signal transmission. In addition, the range can be extended as required by cascading, making unlimited distances possible. For additional flexibility, the system is compatible with LC & SC SFP modules as well as Singlemode and Multimode fiber optic cables. Suitable SFP modules are available separately (Singlemode: DN-81002, Multimode: DN-81000). In addition to the excellent picture quality, the extender set also offers separate audio output via a 3.5 mm stereo connection, which enables flexible sound transmission. An HDMI loop-out allows a local monitor to be connected directly to the transmitter unit (TX), while the integrated IR interface enables remote control of the input source from the output screen. With its long range, excellent picture quality and versatile expansion options, the HDMI Fiber IP Extender Set is the perfect choice for professional applications such as conference rooms, control centers, digital signage and broadcast studios.

2. Main Features

- Long range: AV signal transmission via fiber optic cable
 - Singlemode up to 40 km, multimode up to 300 m
 - point-to-point connection
- Flexible & powerful over IP: Use of existing 1G network infrastructure or use of 1G network switches for signal transmission at unlimited distance possible - cascading
- Expansion options: Additional receivers (RX) available separately (model: DS-55349)
- SFP modules available separately (not included)
 - LC Singlemode (SM): DN-81002,
 - LC Multimode (MM): DN-81000
- Wide compatibility: Supports LC & SC-SFP modules as well as Singlemode and multimode fiber optic cables
- Outstanding picture quality: transmission in UHD of up to 4K/60Hz (3840x2160p) with low latency of 80-140 ms
- Additional audio output: 3.5 mm stereo connection for separate audio transmission
- HDMI Loop-Out: Connection of a local monitor to the transmitter unit (TX)
- IR interface enables remote control of the input source from the output screen

3. Package Content

- 1x Transmitter unit
- 1x Receiver unit
- 2x Mains adapter, EU plug (DC 5V/2A, 1.2 m)
- 2x IR cable/extension (1.0 m)
- 1x Mounting material (wall mounting brackets, screws)
- 2x RS232 terminal block
- 2x Earthing screws
- 1x Operating instructions

4. Technical Parameters

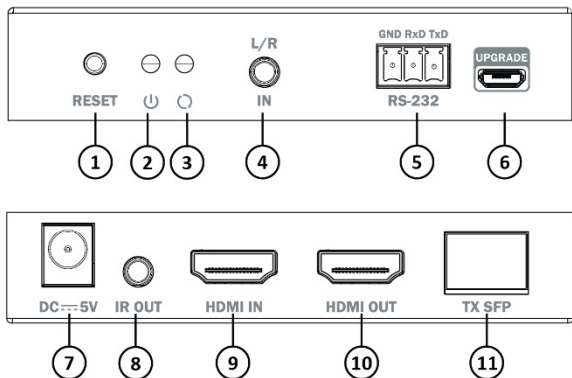
Item	Transmitter	Receiver
Video		
Input interface	1x HDMI	1x SFP
Output interface	1x HDMI 1x SFP	1x HDMI
HDMI length	≤ 5m	≤ 5m
Maximum Transfer rate	18 Gbps	
Compatibility	HDMI 2.0	
	HDCP 1.4/HDCP 2.2	
Resolutions	3840x2160@24/30/50/60Hz, 1080p@50/60Hz, 720p@50/60Hz, 1920x1200@60Hz, 2560x1440@60Hz, 2560x1600@60Hz	
Connection types	One-to-one connection Cascading (by network switch)	

Transmission distance	40km (Singlemode), 300 m (Multimode)	
Transmission latency	80 – 140 ms	
Audio Signal		
Input interface	1x HDMI 1x 3.5 mm L/R	1x SFP
Output interface	1x SFP	1x HDMI 1x 3.5 mm L/R
HDMI out	LPCM 2.0	
3.5mm L/R output	PCM	
Command Signal		
IR interface	1x 3.5 mm IR out	1x 3.5 mm IR in
IR receiving range	≤ 5m	
IR frequency	20 kHz – 60 kHz	
RS-232 (GND/RXD/TXD)	Default baud rate: 115200 Supported: 2400, 4800, 9600, 19200, 38400, 57600, 115200	
Power		
Power Supply	DC 5V/2A	DC 5V/2A
Power Consumption	TX ≤ 7.5W	RX ≤ 7.5W
Operating Environment		
Working temperature	- 10°C - 50°C	
Storage temperature	- 30°C - 70°C	
Humidity	0 - 90% RH (no condensation)	
Physical Properties		

Housing	Metal	
Weight	TX: 290 g	TX: 286 g
Color	Black	
Dimensions	106.0 (L) x 103.0 (W) x 20.6 (H) mm	
Protection	ESD protection 1a Contact discharge level 2 ($\pm 4\text{KV}$) 1b Air discharge level 3 ($\pm 8\text{KV}$) Implementation of the standard: IEC61000-4-2	
	Lightning protection, Surge protection	

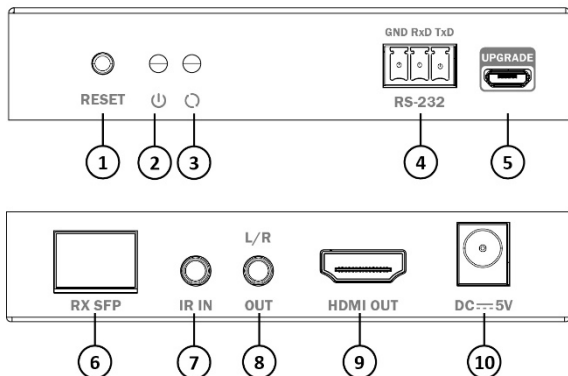
5. Panel Description

1. Transmitter (TX)



1	Reset	Press to restart the device
2	Power indicator (blue)	The indicator will turn on when the power is turned on
3	Status indicator (orange)	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	L/R IN	Connect to the audio source device with 3.5mm stereo audio cable
5	RS-232 (GND/RXD/TXD)	Used for RS-232 passthrough
6	Micro USB interface	Used for firmware upgrade
7	Power	Connect with DC5V/2A power adapter
8	IR output	Connect with IR blaster extension cable
9	HDMI input	Connect with HDMI source device
10	HDMI out	Connect with local HDMI display device
12	SFP signal out	Insert the SFP optical module (T1310nm/R1550nm)

2. Receiver (RX)



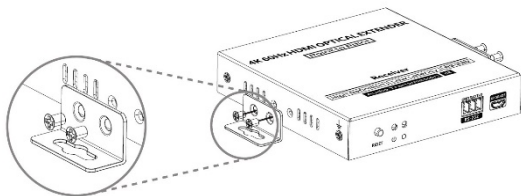
1	Reset	Press to restart the device
2	Power indicator (blue)	The indicator will turn on when the power is turned on
3	Status indicator (orange)	Light off: The transmitter and the receiver have not established a connection Slow flash: The transmitter and the receiver are connected but no video data transmission (gigabit Ethernet) Quick flash: The transmitter and the receiver are connected but no video data transmission (100M Ethernet) Steady on: The video data is transmitting

4	RS-232 (GND/RXD/TXD)	Used for RS-232 passthrough
5	Micro USB interface	Used for firmware upgrade
6	SFP signal input	Insert the SFP optical module (T1550nm/R1310nm)
7	IR input	Connect with IR receiver extension cable
8	L/R OUT	Connect to the audio device with 3.5mm stereo audio cable
9	HDMI output	Connect with HDMI display device
10	Power	Connect with DC5V/2A power adapter

6. Installation Requirements

Item	Description	Requirement
Signal source device	PC, NVR, etc. with HDMI port	HDMI cable, 5 m max.
Optical fiber cable	Singlemode Multimode	40 km 300 m
Display device	TV, projector, LED screen, etc. with HDMI port	HDMI cable, 5 m max.
Connections	One-to-one or Cascading (by network switch)	Gigabit optical fiber switch

7. Wall Mounting



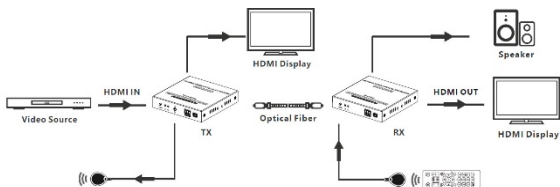
Note:

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

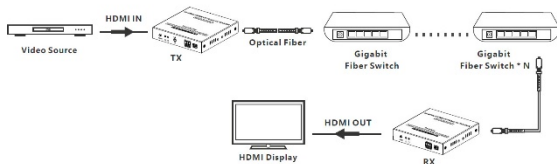
8. Installation Procedures

1. Connection Diagrams

1.1 One-to-one connection



1.2 Cascading (by network switch)



Note:

It is suggested to use only gigabit (1000 Mbps) switches in the application. 100Mbps switches should not be mixed with gigabit switches when cascading.

2. Connection Instructions

1. Connect the source device to the HDMI IN port of the transmitter with an HDMI cable and connect the HDMI OUT port of the receiver to the display device with another HDMI cable.
2. If it's one-to-one connection, then use a fiber optic cable + module to connect the SFP port of the transmitter and receiver. If it is Cascading (by network switch), then use the gigabit switch as a bridge to connect the transmitter and the receivers with the fiber optic cables + modules respectively.
3. If using HDMI loop out, connect the display device to the HDMI OUT port of the transmitter.
4. If you need another audio source instead of the HDMI audio source, connect the audio source to the L/R IN port of the transmitter with a 3.5mm stereo audio cable.

5. If you need 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 3.5mm stereo audio cable.
6. Plug the power supply into the devices to get started.
 - 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 from the HDMI OUT and L/R OUT ports of the receiver simultaneously.
 - b. When the HDMI IN port and the L/R IN port of the transmitter is both connected, the L/R stereo audio source can output from the HDMI OUT and L/R OUT ports of the receiver simultaneously.
 - c. When the L/R IN port of the transmitter is connected and the HDMI IN is not connected, it can be used as an audio extender, the L/R stereo audio source can only output from the L/R OUT port of the receiver.

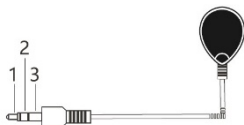
3. IR User Guide

IR Blaster



1. Power
2. IR Signal
3. Grounding

IR Receiver



1. Power
2. IR Signal
3. Grounding

1. IR blaster extension cable should plug in the IR OUT port of transmitter, and the IR receiver extension cable should plug in the IR IN port of the receiver.
2. The emitter of the IR blaster extension cable should be as close as possible to the IR receiving window of the source device.
3. Point the remote control at the receiving head of the IR receiver extension cable to operate.

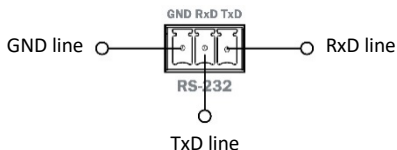
4. RS-232 pass-through function

4.1 Baud rate

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

4.2 Line order

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



If the RS-232 serial does not work by following the above connection, please try to change the order of the TXD line and RXD line.

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, and then power on the product. The baud rate printed at this time is the current baud rate. For example: "Baudrate:9600", that is, the baud rate value is 9600.

4.4 Set baud rate

For example: the baud rate of the product is 9600, and the baud rate of the serial port test tool is 115200. At this time, the baud rate of the serial port test tool must be set to 9600, which is consistent with the product, and then input the command you want to set "Bset:19200", if "Succeed" is displayed after sending data, the baud rate 19200 is set successfully.

9. FAQ

Q: Why the status indicator is off?

A: Please check whether all equipment is powered on and the fiber optic cable is connected properly.

Q: Why 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 fiber optic cable is within the specified range.
- 2) The length of HDMI cable is recommended to be 5 meters max.
- 3) Press the "reset" button on TX and RX panels to restart and reconnect.

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