4K@60Hz HDMI Extender over Fiber

4KEX10F



User Manual

AV Access

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Introduction

Overview

This product is a high-performance HDMI fiber optic extender designed for long-distance transmission of ultra-high-definition video, audio, and control signals. The extender supports HDMI 2.0 and HDCP 2.3 standards, delivering resolutions up to 5120×1440@60Hz for high-quality video transmission.

Using SFP+ fiber modules, the extender supports transmission distances of up to 10 kilometers over single-mode fiber, making it suitable for professional AV installations and long-distance signal distribution.

The device also supports bi-directional RS232 pass-through, bi-directional IR pass-through, HDMI audio de-embedding, and EDID management for flexible system integration. A built-in test pattern generator is included to simplify system installation and troubleshooting.

Features

- Supports resolutions up to 4K@60Hz and 5120x1440@60Hz.
- Fully compliant with HDCP 2.3.
- Transmission distance up to 10km over single-mode fiber (SFP+ fiber module with dual LC port).
- Supports bi-directional RS232 pass-through.
- Supports bi-directional IR pass-through.
- Supports audio de-embedding output.
- Supports EDID management.
- Built-in test pattern for engineering installation and system setup.

Package Contents

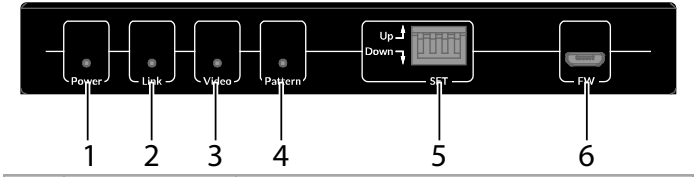
Before you start the installation of the product, please check the package contents:

- Transmitter × 1
- Receiver × 1
- DC 12V Power Adapter × 2
- SFP+ 10G Single-Mode Fiber modules x 2
- IR Emitter × 1
- IR Receiver × 1
- Phoenix Male Connector (3.5mm, 3-Pin) × 2
- Phoenix Male Connector (3.5mm, 5-Pin) × 1
- Mounting Bracket (with Screws) × 4
- User Manual x 1

Panel

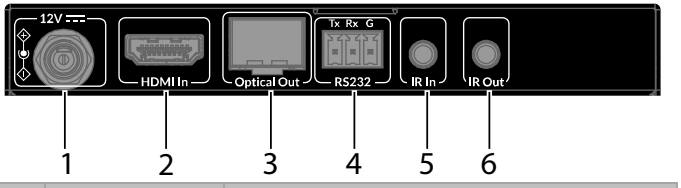
Transmitter

Front Panel



#	Name	Description
1	Power LED	**On:** The device is powered on. **Off:** The device is powered off.
2	Link LED	**On:** Optical link is normal. **Off:** No optical link or link error.
3	Video LED	**On:** Video signal is being transmitted. **Off:** No video is being transmitted.
4	Pattern LED	**On:** Test pattern function is set to on. In this mode, the HDMI In source is replaced with a test signal, and the display shows a black-and-white checkerboard test pattern. **Off:** Test pattern function is set to off.
5	SET	Four-pin DIP switch. To enable/disable test pattern, enable/disable input HDCP and manage EDID. Detail information, please refer to "DIP Switch Control" section.
6	FW	Micro-USB port. For firmware upgrade.

Rear Panel



#	Name	Description
1	DC 12V	Connect to the provided power adapter.
2	HDMI In	Connect to an HDMI source.
3	Optical Out	Connect to the Optical In port of the receiver.
4	RS232	Connect to RS232 enabled device for RS232 pass-through.
5	IR In	Connect to the provided IR receiver cable.
6	IR Out	Connect to the provided IR emitter cable.

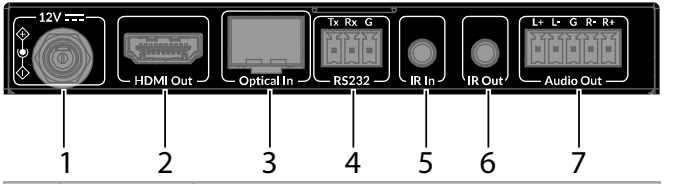
Receiver

Front Panel



#	Name	Description
1	Power LED	**On:** The device is powered on. **Off:** The device is powered off.
2	Link LED	**On:** Optical link is normal. **Off:** No optical link or link error.
3	Video LED	**On:** Video signal is being transmitted. **Off:** No video is being transmitted.
4	FW	Micro-USB port. For firmware upgrade.

Rear Panel



#	Name	Description
1	DC 12V	Connect to the provided power adapter.
2	HDMI Out	Connect to an HDMI display.
3	Optical In	Connect to the Optical Out port of the transmitter.
4	RS232	Connect to RS232 enabled device for RS232 pass-through.
5	IR In	Connect to the provided IR receiver cable.
6	IR Out	Connect to the provided IR emitter cable.
7	Audio Out	Connect to an audio receiver for outputting de-embedded audio from HDMI out.

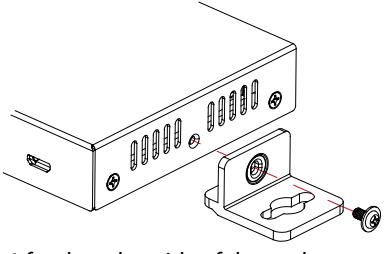
Installation and Wiring

Warnings:

- Before wiring, disconnect the power from all devices.
- During wiring, connect and disconnect the cables gently.

Installation

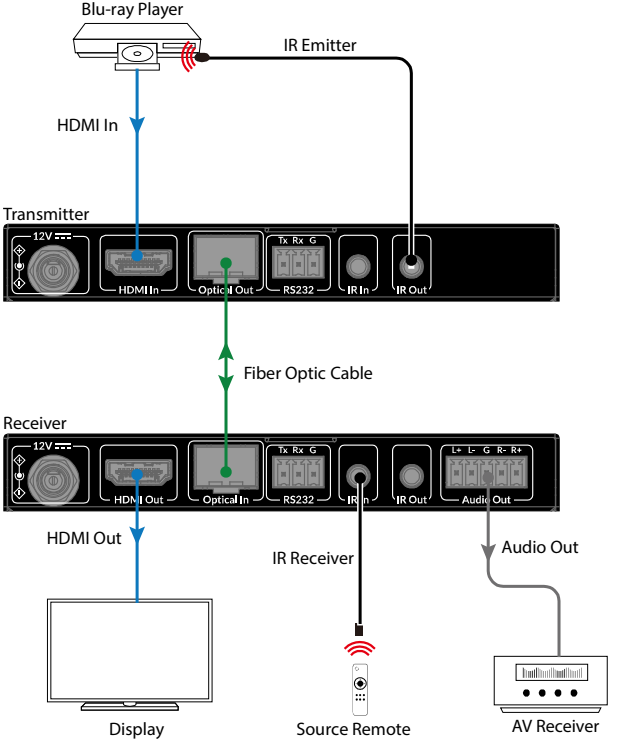
1. Attach the bracket to one side of the enclosure using the screws provided. The bracket is attached to the enclosure as shown.



2. Repeat step 1 for the other side of the enclosure.
3. Attach the brackets to the surface or location desired using screws (not included in the package).

Note: The bracket installation method for the transmitter and receiver is the same.

Wiring



Additional connection options:

- RS232 pass-through: Connect a control device/slave device to the RS232 port of the transmitter / receiver, and connect a slave / control device to the RS232 port of the receiver / transmitter for bi-directional RS232 pass-through.
- IR pass-through: Connect an IR emitter to the IR OUT port of the transmitter / receiver, and connect an IR receiver to the IR IN port of the receiver / transmitter. Then you can use source remote to control the source at the receiver side or use the display remote to control the display at the transmitter side.

DIP Switch Control

The transmitter is equipped with a four-pin DIP switch ("SET") for enabling or disabling test pattern mode, enabling or disabling HDCP and managing EDID.

Please refer to the table below for detailed settings:

Pin 1	Pin 2	Pin 3	Pin 4	Function
Up	-	-	-	Test Pattern Off (default)
Down	-	-	-	Test Pattern On
-	Up	-	-	HDMI IN HDCP On (default)
-	Down	-	-	HDMI IN HDCP Off
-	-	Up	Up	Copy EDID from RX HDMI OUT (default)
-	-	Up	Down	Fixed 4K@60Hz 2CH
-	-	Down	Up	Fixed 4K@30Hz 2CH
-	-	Down	Down	Fixed 1080P@60Hz 2CH

Note:

- "-" indicates the position of this pin doesn't affect the current function.
- When set the Pin 1 of the "SET" DIP switch on the transmitter to "Down" position, the HDMI IN source is replaced with a test signal, and the display shows a black and white checkerboard image.
- Changing the DIP switch settings will take effect immediately.
- The EDID management function allows the transmitter to control the video resolution and audio format sent from the HDMI source device.

  ✓ Copy EDID from RX HDMI OUT

  The transmitter reads the EDID information from the connected display device at the receiver side and sends it to the source device. This ensures the best compatibility with the display.

  Example: If a 4K display is connected but the source supports up to 4K output, the source will output 4K video according to the display capability.

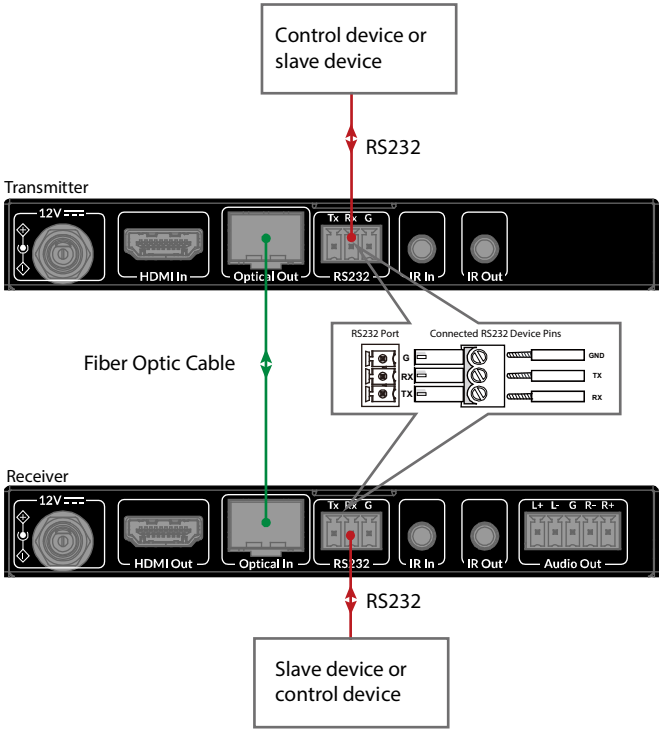
  ✓ Fixed EDID Modes

  The transmitter outputs a predefined EDID to the source device to force a specific video resolution and stereo audio format.

  Example: If a 4K source device is connected but the EDID is set to 1080P, the source will output 1080P video instead of 4K.

RS232 Pass-Through

The kit supports bi-directional RS232 pass-through. As shown in the following figure:



Specifications

Technical	
Input/Output Signal Type	HDMI with 5120x1440@60Hz; HDCP 2.3
Input/Output Resolution Supported	**CEA:** 4096 x 2160P[1,2,3,4], 3840 x 2160P[1,2,3,4,5], 1920 x 1080P[1,2,3,4,5,6,7,8,9,10], 1280 x 720P[4,5,6,7], 720 x 576P[4,6], 720 x 480P[5,7], 640 x 480P[5] **VESA:** 5120 x 1440[5], 3840 x 1080[5,6,7], 2560 x 1440[5], 2048 x 1152[5], 1920 x 1200[5], 1680 x 1050[5], 1600 x 1200[5], 1600 x 900[5], 1440 x 900[5], 1400 x 1050[5], 1366 x 768[5], 1360 x 768[5], 1280 x 1024[5], 1280 x 960[5], 1280 x 800[5], 1280 x 768[5], 1024 x 768[5], 800 x 600[5], 640 x 480[5] 1 = at 24Hz, 2 = at 25Hz, 3 = at 30Hz, 4 = at 50Hz, 5 = at 60Hz, 6 = at 100Hz, 7 = at 120Hz, 8 = at 144Hz, 9 = at 165Hz, 10 = at 240Hz
Input/Output Audio formats Supported	**HDMI:** Up to 7.1ch, including PCM 2.0/5.1/7.1ch, Dolby Digital, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS 5.1, DTS-HD Master Audio and DTS:X. **AUDIO OUT:** Stereo
Maximum Data Rate	18Gbps
Maximum Pixel Clock	600MHz

General	
Operating Temperature	0°C to 45°C (32°F to 113°F)
Storage Temperature	-20°C to 70°C (-4°F to 158°F)
Humidity	10% to 90%, non-condensing
ESD Protection	Human-body Model: ±8kV (Air-gap discharge)/ ±4kV (Contact discharge)
Power Supply	DC 12V/1A
Power Consumption (Max)	Transmitter: 3.4W Receiver: 2.7W
Device Dimension (W x H x D)	Transmitter / Receiver: 130mm x 18mm x 74mm/ 5.12" x 0.71" x 2.91"
Product Weight	0.22kg/0.49lb

Transmission Distance

Cable Type	Range	Supported Video
Single-Mode SFP+ Fiber	10km / 6.21mi	4K@60Hz 5120x1440@60Hz
HDMI	Input / Output: 5m / 16ft	4K@60Hz
	Input / Output: 15m / 49ft	1080P@60Hz 4K@30Hz

Warranty

Products are backed by a limited 1-year parts and labor warranty. For the following cases AV Access shall charge for the service(s) claimed for the product if the product is still remediable and the warranty card becomes unenforceable or inapplicable.

1. The original serial number (specified by AV Access) labeled on the product has been removed, erased, replaced, defaced or is illegible.
2. The warranty has expired.
3. The defects are caused by the fact that the product is repaired, dismantled or altered by anyone that is not from an AV Access authorized service partner. The defects are caused by the fact that the product is used or handled improperly, roughly or not as instructed in the applicable User Guide.
4. The defects are caused by any force majeure including but not limited to accidents, fire, earthquake, lightning, tsunami and war.
5. The service, configuration and gifts promised by salesman only but not covered by normal contract.
6. AV Access preserves the right for interpretation of these cases above and to make changes to them at any time without notice.

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If you have any question, please contact us via the following emails:

General Enquiry: sales@avaccess.com

Customer/Technical Support: support@avaccess.com



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