HDMI Extender

User Manual

Model : HE01FE-4K6G

4K60Hz Compact HDMI® Fiber Extender 300m

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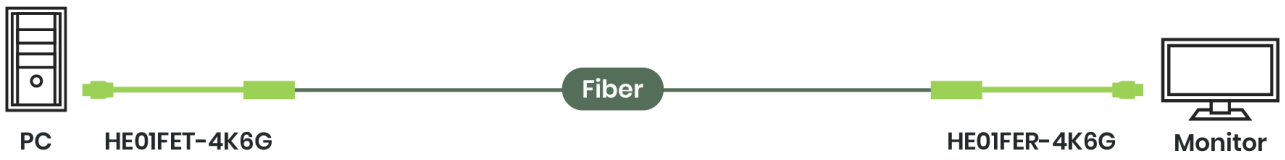
Introduction

HE01FE-4K6G is an HDMI® extender that uses fiber optic cable with LC connection to transmit uncompressed 4K60Hz HDMI® signals. It supports EDID and HDCP pass-through for multi-mode fibers. Its small, compact size and pig-tail design allow for easier installation in any AV application.

Features

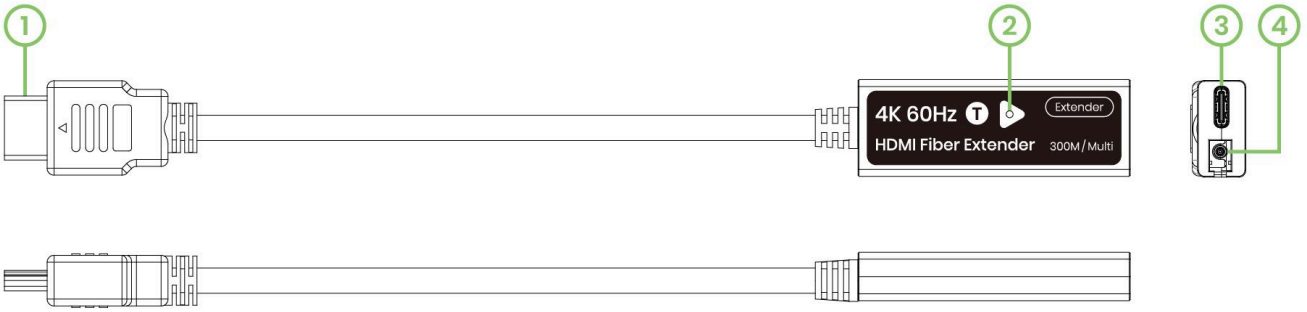
- Resolution up to 4K60Hz
- Transmission distance up to 300m over multi-mode fibers
- Built-in LC Fiber Connector
- Requires power only on the receiver side, no additional power is needed for the transmitter
- Supports EDID and HDCP passthrough
- Supports Dolby Vision and HDR10+ passthrough
- Supports LPCM, Dolby and DTS audio passthrough
- Low latency
- Plug and Play
- USB type-C powered
- Pig-tail design

Application Diagram



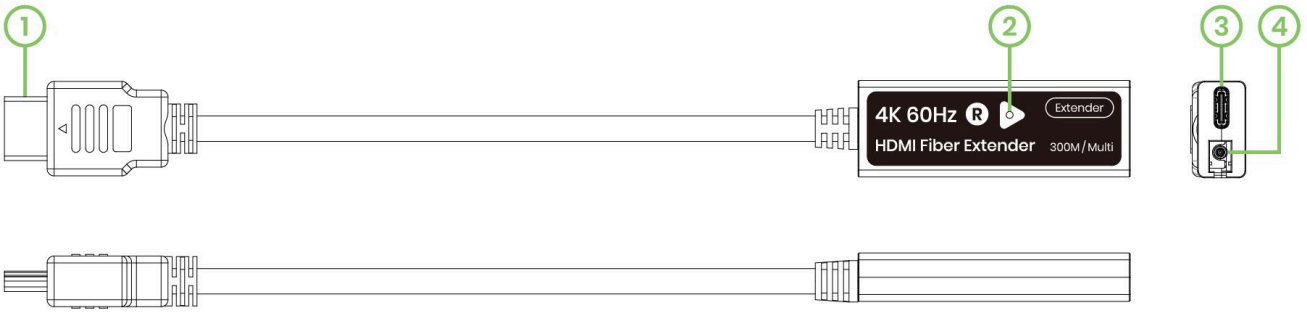
Panel View

HE01FET-4K6G



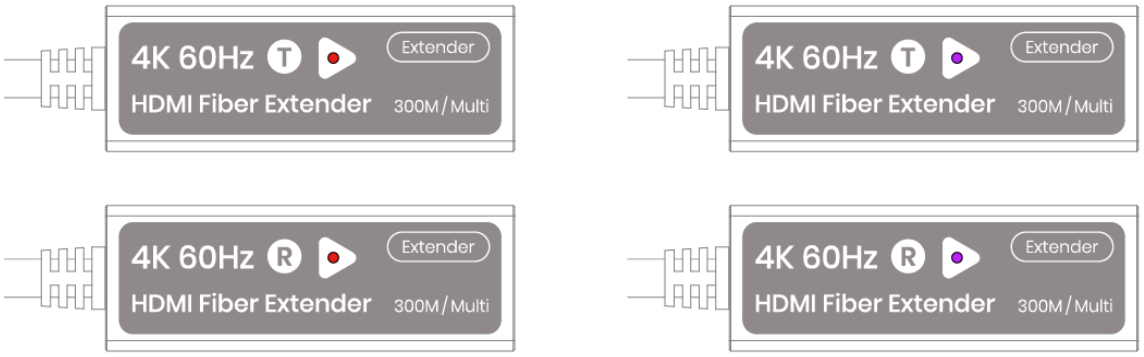
Item	Interface	Description
1	HDMI® Input	To connect to HDMI® source
2	LED Indication	Refer to LED Indication
3	USB Type-C	To input DC 5V power (Optional)
4	LC Fiber Connector	To connect to HE01FER-4K6G via multi-mode fiber cable

HE01FER-4K6G



Item	Interface	Description
1	HDMI® Output	To connect to monitor or TV
2	LED Indication	Refer to LED Indication
3	USB Type-C	To input DC 5V power
4	LC Fiber Connector	To connect to HE01FET-4K6G via multi-mode fiber cable

LED Indication



Transmitter/Receiver	LED Status	Extender Status
HE01FET-4K6G (Transmitter)/ HE01FER-4K6G (Receiver)	Off	Not powered
	Red	Powered
	Purple	Powered and HDMI® signals transferring

Functional Description

HDMI® Interface

The HDMI® Video input and output functionality in HE01FE-4K6G allows for the transmission and reception of high-definition video signals over optical fiber for longer distances. These features enable integration of HDMI®-equipped audiovisual sources and displays into the AV over optical fiber, facilitating flexible and scalable multimedia content distribution.

Support Resolution

HE01FE-4K6G supports various resolutions, indicated by the below table:

Resolution	
3840x2160	30/50/60Hz
2560x1600	60Hz
2560x1440	60Hz
1920x1200	60Hz
1920x1080[1]	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

Fiber Optic Interface

HE01FE-4K6G integrates multi-mode modules for its fiber optic transmission functionality, offering flexibility and scalability in extending HDMI® signals over various distances.
HE01FET-4K6G converts electrical HDMI® signals into optical signals by the fiber transmitter module for transmission over fiber optic cables, while HE01FER-4K6G converts optical signals back into electrical HDMI® signals with the fiber receiver module at the receiving end.
HE01FE-4K6G is compatible with multi-mode fiber optic cables, offering flexibility in deployment based on distance requirements and installation environments.

[1] The timing of 1920x1080 is also supported in interlace mode.

Latency

HE01FE-4K6G has a latency[2] less than one frame according to our test, and here is our test condition. The Test result is shown as follows:

HE01FE-4K6G Latency Test			
Test condition			Test result
Distance	Resolution	Cable used	
300m	4K60Hz 4:4:4	PRYSMIAN UC FIBRE ZIPCORD F0 CABLE LSZH ZICM202M3 180110217 2x50/125UM OM3	< 1 frame

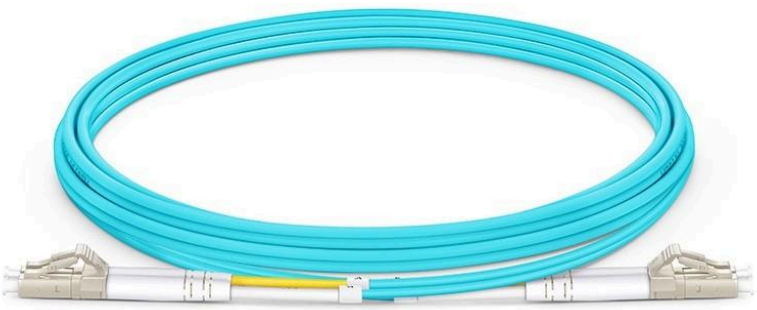
Transmission Distance

HE01FE-4K6G integrates multi-mode modules, which are optimized for long-distance transmission, with a specified transmission distance up to 300m.
The transmission distance will vary depending on the quality of the fiber optic cable used.

HE01FE-4K6G Transmission Distance Test		
Test condition		Test result
Resolution	Cable used	
4K60Hz 4:4:4	PRYSMIAN UC FIBRE ZIPCORD F0 CABLE LSZH ZICM202M3 180110217 2x50/125UM OM3	300m

Fiber Connector Type

HE01FE-4K6G uses Lucent Connector (LC) type single fiber connectors for seamless integration with existing fiber optic infrastructure. The LC connector's small form-factor and single fiber design enable high-density connections and efficient use of fiber optic cables in networking environments.



[2] 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.

Technical Specification

Item No.	HE01FET-4K6G	HE01FER-4K6G
Compliance		
Standard	HDMI® 2.0 HDCP 2.2	
Max. Video Resolution	4K60Hz 4:4:4	
Max. Transmission Distance	Multi-mode Fiber 300m	
Wavelength	850nm	
Dynamic Range Standard[3]	SDR, HDR, HDR10, HDR10+, Dolby Vision	
Audio Format[4]	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	
Ports & Interfaces		
Video Input	1 x HDMI Type-A (Pig-tail)	1 x LC Fiber
Video Output	1 x LC Fiber	1 x HDMI Type-A (pig-tail)
Power Input	1 x USB Type-C	1 x USB Type-C
Power		
Power Supply	5V (USB Type-C)	5V (USB Type-C)
Power Consumption	0.70W	0.30W
Power Saving	0.15W	0.25W
Ambient Temperature		
Operation	0 to 55°C	
Storage	-40 to 80°C	
Operating Altitude	2000m	
Humidity	Up to 95%	
Physical Characteristics		
Dimension	62.2 x 25 x 12mm (w/o pig-tail) 252.9 x 25 x 12mm (with pig-tail)	62.2 x 25 x 12mm (w/o pig-tail) 252.9 x 25 x 12mm (with pig-tail)
Weight	45.6 g	45.6 g

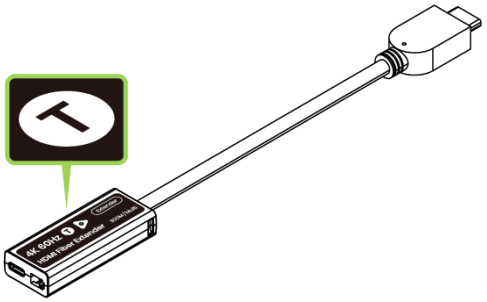
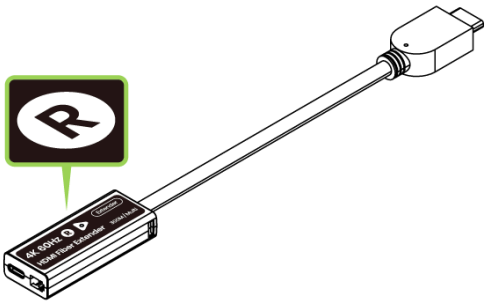
[3] Dynamic range metadata in the input stream is pass-through and fully maintained

[4] Audio data in the input stream is pass-through and fully maintained.

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 standardized and certified optical fiber cables (at least OM3) to transfer high-resolution video is recommended.
6. Using HDMI female-to-female connectors (patch adapters) to extend HDMI transmission distances may lead to unstable connections, resulting in potential video or audio interruptions.
7. The HE01FT-4K6G transmitter is designed to draw power from the HDMI source device through its HDMI port. As a result, the included power adapter is used with the HE01FR-4K6G receiver.

Package Includes

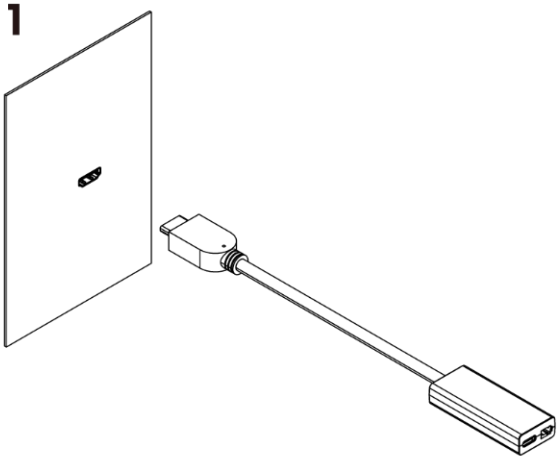
Item	Amount	Image
HE01FET-4K6G (Transmitter)	1 pc	
HE01FER -4K6G (Receiver)	1 pc	
DC 5V1A Power Adapter	1 pc	

Installation

1. Connect HE01FET-4K6G to an HDMI source.
2. Connect the optical fiber cable to HE01FET-4K6G.
3. Power on HE01FET-4K6G from the USB type-C port.
4. Connect HE01FER-4K6G to an HDMI Device.
5. Connect the optical fiber cable to HE01FER-4K6G.
6. Power on HE01FER-4K6G from the USB type-C port.

Transmittter

1



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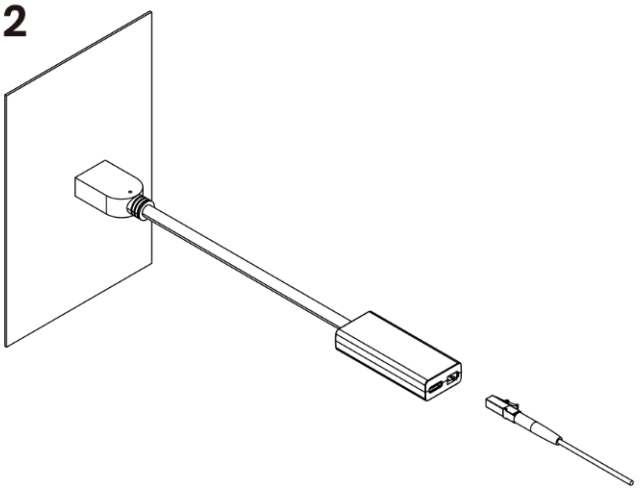
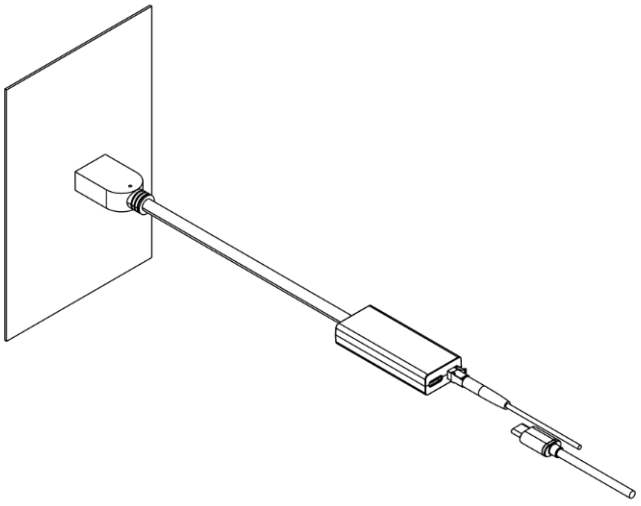
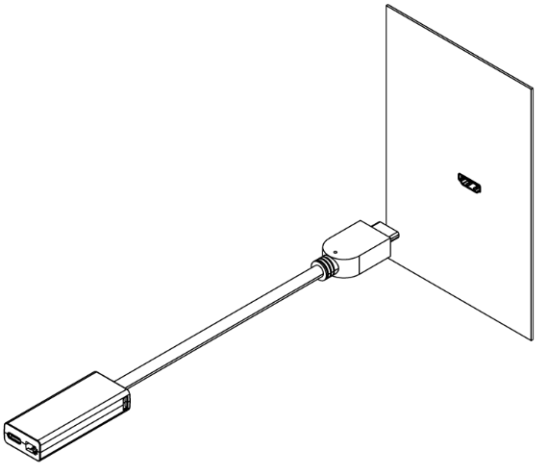


3 (Optional)



Receiver

1



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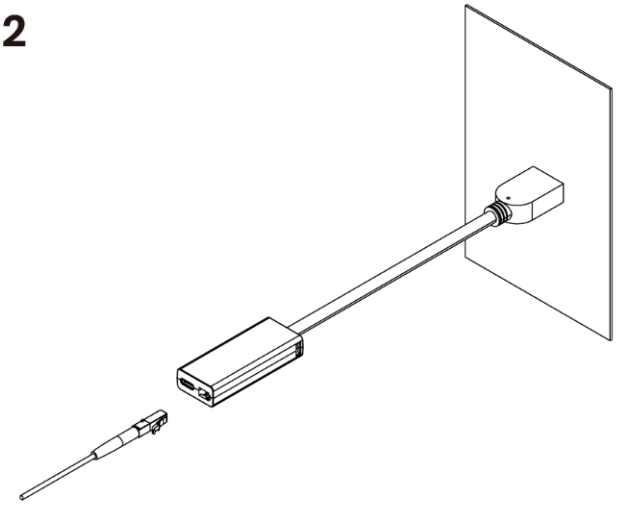

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