PIXELHUE

EP2
Fiber Extender

Specifications

Change History

File Version	Release Date	Description
V1.3.0	2025-09-10	Added the notes for input specifications.
V1.2.0	2025-07-04	Added the forced lossless output description.
V1.1.0	2025-04-23	Added the 12-bit description.
V1.0.0	2025-03-18	First release

Introduction

The EP2 fiber extender employs advanced fiber optic technology to achieve lossless, long-distance transmission of HDMI and DP signals via optical fiber. Unlike traditional cables, it effectively addresses limitations in length and signal degradation.

Featuring lossless compression technology, the EP2 ensures optimal video signal quality during transmission, providing users with a clear and detailed visual experience. Its compact design and straightforward installation offer plug-and-play convenience, eliminating the need for complex setup. This allows users to effortlessly extend HDMI and DP signals to their desired location.

The EP2 is versatile and can be employed in various settings, including home theaters, conference systems, and monitoring centers. Suitable for both commercial and personal use, it delivers stable and reliable video transmission, making it an ideal choice for high-definition video transmission over long distances.

Certifications

CE, FCC, RoHS, KC, RCM, EAC, PSE, CB

If the product does not have the relevant certifications required by the countries or regions where it is to be sold, please contact PIXELHUE to confirm or address the problem. Otherwise, the customer shall be responsible for the legal risks caused or PIXELHUE has the right to claim compensation.

Features

- Dual functionality

  Serve as both TX and RX, controllable via the device's DIP switch.

- Ultra-HD lossless transmission

  Supports 8-bit/10-bit/12-bit transmission, utilizing advanced encoding technology to optimize video signals, ensuring clear and smooth image quality during transmission.

  - 8-bit 4:4:4, max 4096×2160@60Hz
  - 10-bit 4:4:4, max 4096×2160@30Hz
  - 12-bit 4:2:2, max 4096×2160@60Hz

- Long-distance transmission

  Transmit video signals over long distances via optical fiber without concerns about signal degradation.

- Strong anti-Interference ability

  Fiber optic transmission is resistant to electromagnetic interference, ensuring stable signal transmission even in challenging electromagnetic environments.

- Clear signal indicators for easy device status monitoring
- EDID intelligent recognition, compatible with various device connections
- Input source copy function
- 3D and HDR passthrough
- Zero-latency video transmission
- KVM

  Support remote control of multi-platform PC hosts via KVM roaming.

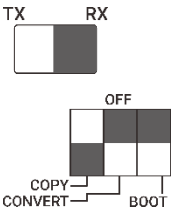
- Signal format conversion

  Facilitate output conversion between HDMI and DP signal formats.

- Simple operation, plug and play
- Encrypted video transmission
- 24/7 operation

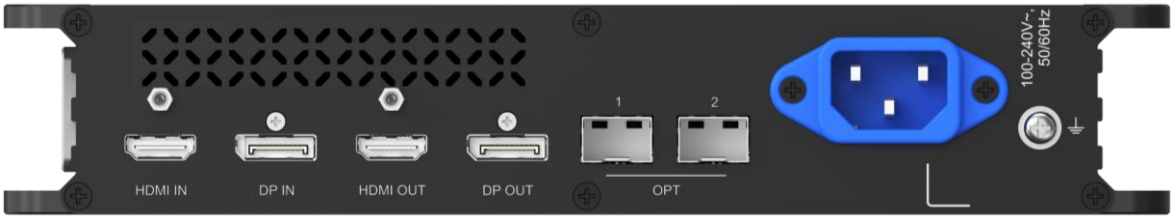
Appearance

Front Panel

Area	Function
DIP switch 	TX and RX toggle switch • Set to TX: The device functions as a TX end. • Set to RX: The device functions as an RX end. **Note** After switching the device mode, the device must be restarted for the changes to take effect.
	3-pin Switch • DIP switch 1 (COPY): Enable or disable the input source copy function. – Used as a TX end: OPT 1 and OPT 2 serve as duplicate outputs for the HDMI or DP input. – Used as an RX end and pairs with TX end: HDMI and DP serve as duplicate outputs for the OPT 1 or OPT 2 input. • DIP switch 2 (CONVERT): Control whether HDMI and DP perform format conversion. – OFF: Disable format conversion output, and the OUT serves as a loop output for the corresponding IN. – CONVERT: Enable format conversion output. – Used as an RX end: The CONVERT function is unavailable. • DIP Switch 3 (BOOT): Enable or disable BOOT mode, used for device upgrade. • When the device functions as a TX end, set DIP switch 1 (COPY) and DIP switch 2 (CONVERT) to the down position to enable forced lossless output. – OPT1 and OPT2 together (left and right) output the HDMI or DP input image. The other one does not support input. – When using forced lossless output, it must work with EP series devices. **Note** After enabling or disabling BOOT mode, the device must be restarted.
USB Type-A	2x USB 2.0 Type-A Connect a keyboard or mouse for KVM reverse control.

Area	Function
USB Type-B	1x USB 2.0 Type-B Connect to a PC for firmware update.
Indicators	PWR 1x LED indicator (red), showing the power connection status • On: The device is powered on. • Off: The device is powered off. IN1–IN2 2x LED indicators, showing the input connection status • Green: The corresponding input connector has a signal. • Blue: The corresponding input connector has a signal and is transmitting HDCP-encrypted video. • Off: The corresponding input connector has no signal. • Both indicators slow blink (1 Hz/s, green): Enter BOOT mode. • Both indicators fast blink (2 Hz/s, green): The device is upgrading. • When the input source copy function is enabled, if the resolutions of the two duplicated input sources do not match, the corresponding indicators will fast blink (2 Hz/s, green).

Rear Panel



Connector		Description
HDMI	IN	1x HDMI 2.0 When the device is used as a TX end, the HDMI IN is used to receive video signal input. • Max input resolution per connector: 3840×2160@60Hz • Max resolution width per connector: 8192 pixels; Max resolution height per connector: 8188 pixels • Max bit depth: 12-bit, compatible with 10-bit and 8-bit • Color space/sampling rate: RGB 4:4:4, YCbCr 4:4:4, YCbCr 4:2:2 • Support YCbCr 4:2:0 when the input resolution is 3840×2160@60Hz. • Support embedded audio input, with audio sampling rate of 48 kHz. • Support HDR and 3D video passthrough.

Connector		Description
		• Support progressive and interlaced video signal transmission. • HDCP 2.2 compliant, compatible with HDCP 1.4
	OUT	1x HDMI 2.0 HDMI output connector, supporting the following output modes: • When the device is used as a TX end: – When the DIP switch is set to COPY, OPT 1 and OPT 2 serve as duplicate outputs for the HDMI IN or DP IN input. – HDMI OUT serves as a loop output for HDMI IN. – When the DIP switch is set to CONVERT, HDMI OUT serves as a converted output for DP IN. • When the device is used as an RX end: – When the DIP switch is set to COPY, HDMI OUT and DP OUT serve as duplicate outputs for the OPT1 or OPT2 input. – The HDMI IN is unavailable. – The CONVERT DIP switch is unavailable.
DP	IN	1x DP 1.2 When the device is used as a TX end, the DP IN is used to receive video signal input. • Max input resolution per connector: 3840×2160@60Hz • Max resolution width per connector: 8192 pixels; Max resolution height per connector: 7680 pixels • Max bit depth: 12-bit, compatible with 10-bit and 8-bit • Color space/sampling rate: RGB 4:4:4, YCbCr 4:4:4, YCbCr 4:2:2 • Support embedded audio input, with audio sampling rate of 48 kHz. • Support 3D video passthrough. • Support progressive and interlaced video signal transmission. • HDCP 2.3, HDCP 2.2 and HDCP 1.4 compliant, compatible with HDCP 1.3
	OUT	1x DP1.2 DP output connector, supporting the following output modes: • When the device is used as a TX end: – When the DIP switch is set to COPY, OPT 1 and OPT 2 serve as duplicate outputs for the HDMI IN or DP IN input. – DP OUT serves as a loop output for DP IN. – When the DIP switch is set to CONVERT, DP OUT serves as a converted output for HDMI IN. • When the device is used as an RX end: – When the DIP switch is set to COPY, HDMI OUT and DP OUT serve as duplicate outputs for the OPT1 or OPT2 input. – The DP IN is unavailable. – The CONVERT DIP switch is unavailable.

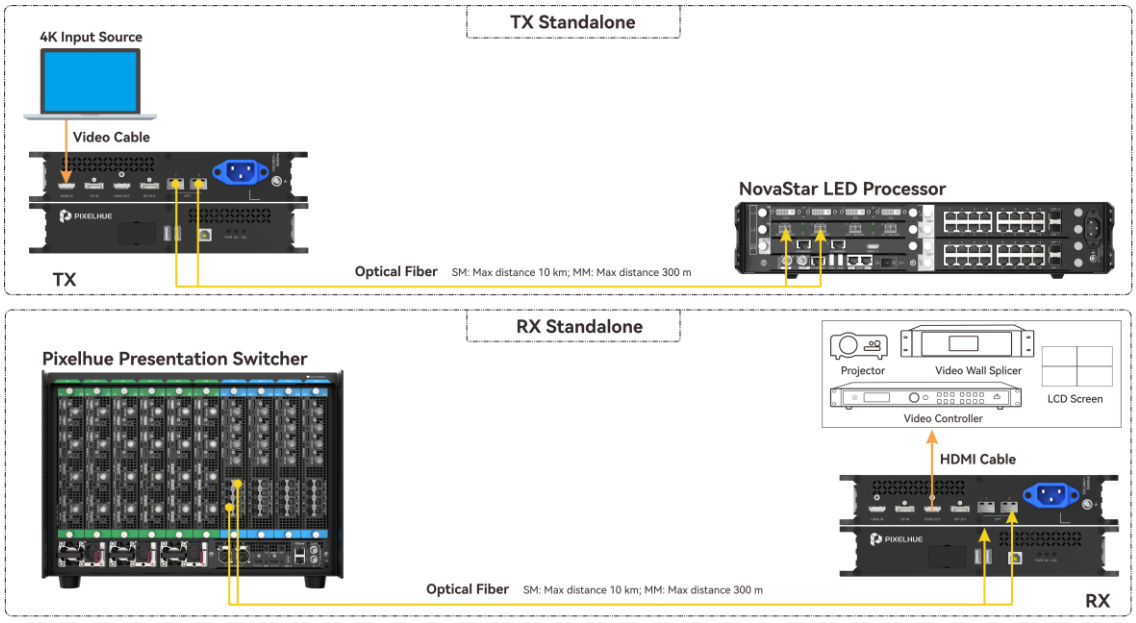
Connector		Description
OPT	IN/OUT	2x 10.3125G optical ports • When the device is used as a TX end, the OPT serves as an output connector; When used as an RX end, it serves as an input connector. • When used as a single device, max resolution per port: 3840×2160@30Hz • When RX and TX are paired, max resolution per port: 3840×2160@60Hz • When the device is used as a TX end and the input resolution is 4K, the two optical ports output the current input signal in a side-by-side mosaic mode. • Max resolution width/height per port: 8192 pixels • Max bit depth: 12-bit, compatible with 10-bit and 8-bit • Color space/sampling rate: RGB 4:4:4, YCbCr 4:4:4, YCbCr 4:2:2, YCbCr 4:2:0 • Support embedded audio input, with audio sampling rate of 48 kHz. • Support HDR and 3D video passthrough. • Support progressive and interlaced video signal transmission. • HDCP 2.2 compliant, compatible with HDCP 1.4 • Support single-mode transmission. Recommended optical module: EOLP-1396-10-I, with a maximum distance of 10 km • Support multimode transmission. Recommended optical module: EOLP-8596-02-I, with a maximum distance of 300 m • Dual-core LC fiber cables are required to ensure stable signal transmission and system reliability. **Note** • Optical ports do not support connection with 25G optical modules. • The device comes with 2x EOLP-1396-10-I single-mode optical modules. If replacement is needed, please use the recommended optical modules. • When OPT receives a video with a 4:2:0 sampling rate, output via the DP connector is not supported.
Power	1	100–240V~, 50/60Hz

Notes

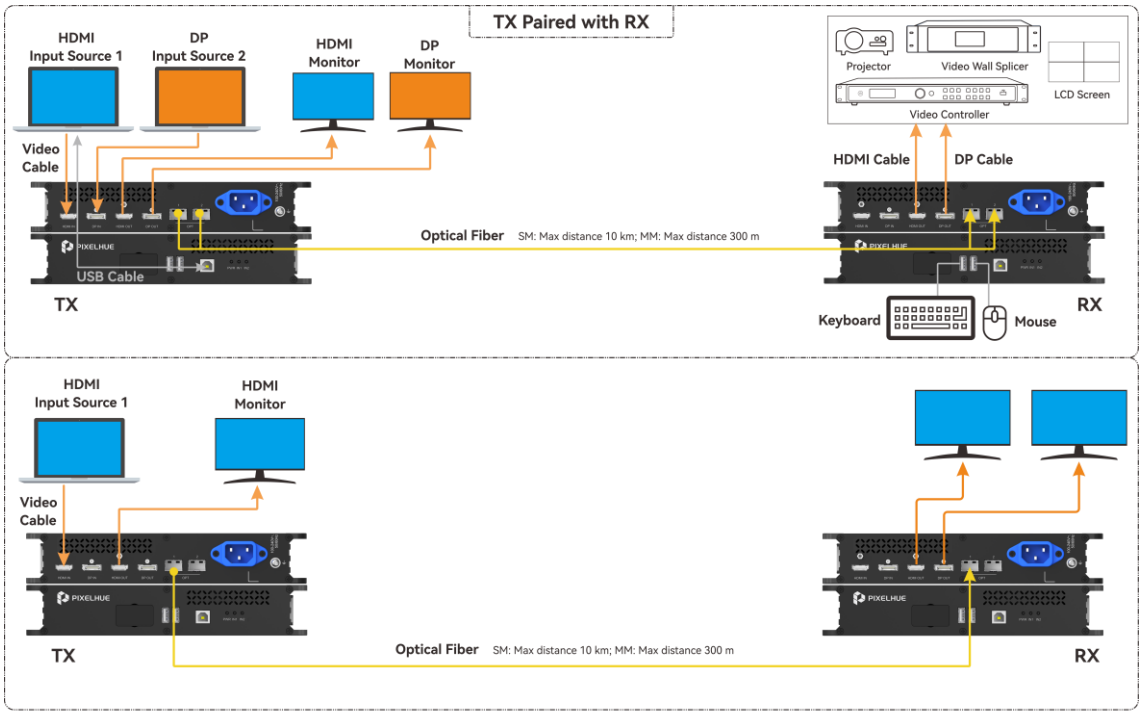
- When the input source resolution is 3840×2160@30Hz or lower, the width must be a multiple of 2.
- When the input source resolution is 3840×2160@30Hz, the width must be a multiple of 4.

Applications

Standalone Use



Paired Use

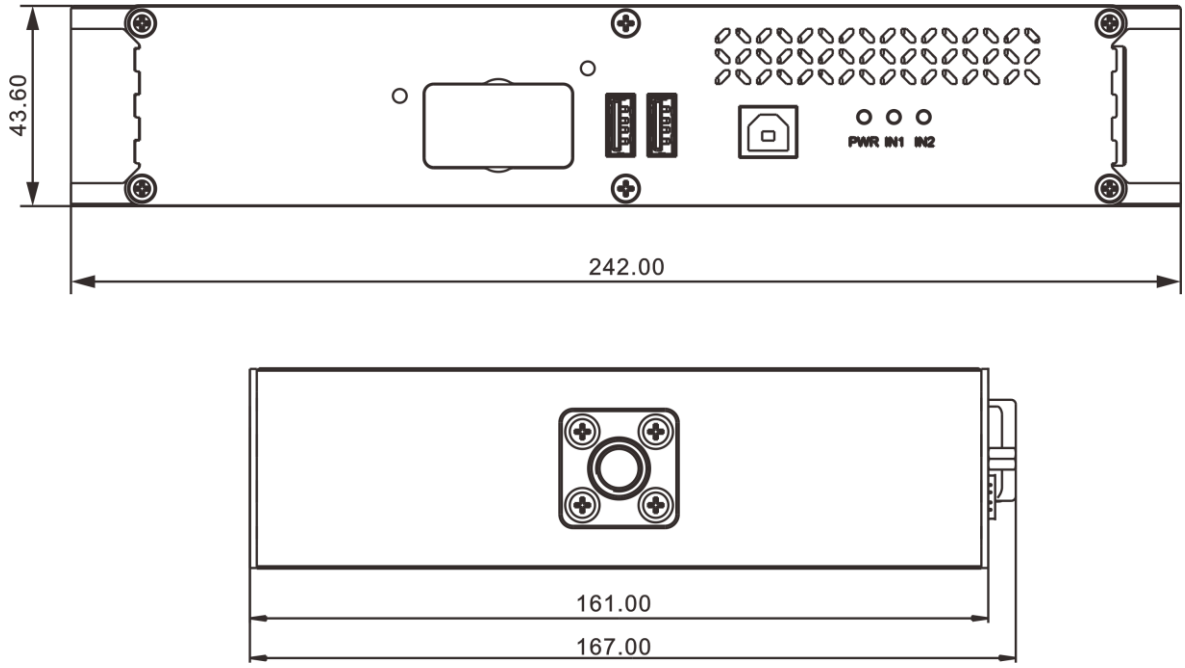


Note:

The picture is for illustration purpose only. In actual use, stacking of the devices is forbidden.

All fiber optic cables within the optical module must be connected, otherwise the device may experience operational anomalies.

Dimensions

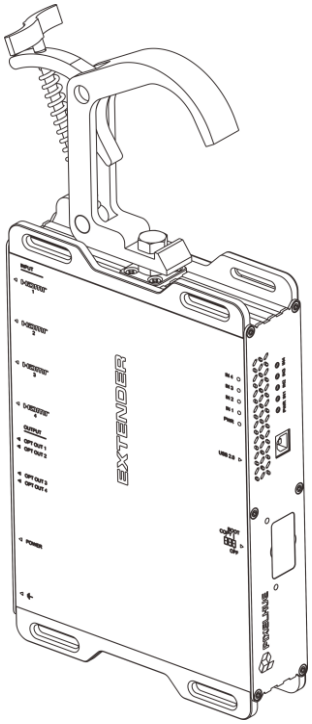


Tolerance: ±0.3 Unit: mm

Installation

C-Clamp Installation

Mount the device with a c-clamp.



Desktop Use

Place the device on a stable desktop.

Note

For the specific installation dimensions, please contact PIXELHUE technical support.

Specifications

Electrical Specifications	Power	100–240V~, 50/60Hz
	Max power consumption	28 W
Operating Environment	Temperature	–20°C to +55°C
	Humidity	5% RH to 85% RH, non-condensing
Storage Environment	Temperature	–20°C to +60°C
	Humidity	5% RH to 95% RH, non-condensing
Physical Specifications	Dimensions	242.0 mm × 167 mm × 43.6 mm
Noise Level (Typical at 25°C/77°F)		35 dB (A)
Packing Information	Accessories	1x Power adapter 2x OPT modules 1x HDMI cable 1x Certificate of Approval 1x Safety Manual
	Net weight	1.5 kg
	Gross weight	1.8 kg
	Packing size	392 mm × 265 mm × 92 mm

Input Specifications

Input Connector	Bit Depth		Max Resolution
HDMI	8-bit	RGB 4:4:4	8192×1080@60Hz 4096×2160@60Hz
		YCbCr 4:4:4	
		YCbCr 4:2:2	
		YCbCr 4:2:0	4096×2160@60Hz
	10-bit	RGB 4:4:4	4096×2160@30Hz
		YCbCr 4:4:4	
		YCbCr 4:2:2	
		YCbCr 4:2:0	4096×2160@60Hz
	12-bit	YCbCr4:2:2	4096×2160@60Hz
		YCbCr4:2:0	
DP	8-bit	RGB 4:4:4	8192×1080@60Hz 4096×2160@60Hz
		YCbCr 4:4:4	
		YCbCr 4:2:2	
	10-bit	RGB 4:4:4	4096×2160@30Hz
		YCbCr 4:4:4	
		YCbCr 4:2:2	4096×2160@60Hz
	12-bit	YCbCr 4:2:2	4096×2160@60Hz

Notes and Cautions

FCC Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Others

This is Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

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