

BLACKBIRD™

4K Fiber Optic HDMI® Extender



P/N 24279

User's Manual

SAFETY WARNINGS AND GUIDELINES

Please read this entire manual before using this device, paying extra attention to these safety warnings and guidelines. Please keep this manual in a safe place for future reference.

- This device is intended for indoor use only.
- Do not expose this device to water or moisture of any kind. Do not place drinks or other containers with moisture on or near the device. If moisture does get in or on the device, immediately remove it from its power source and allow it to fully dry before reapplying power.
- Do not touch the device, the power cord, or any other connected cables with wet hands.
- Do not expose this device to excessive vibration or extreme force, shock, or fluctuations in temperature or humidity.
- Do not expose this device to excessively high temperatures. Do not place it in, on, or near a heat source, such as a fireplace, stove, radiator, etc. Do not leave it in direct sunlight.
- Prior to operation, check the unit and power cord for physical damage. Do not use if physical damage has occurred.
- Before plugging the unit into a power outlet, ensure that the outlet provides the same type and level of power required by the device.
- Unplug this device from the power source when not in use.
- Take care to prevent damage to the power cord. Do not allow it to become crimped, pinched, walked on, or become tangled with

other cords. Ensure that the power cord does not present a tripping hazard.

- Never unplug the unit by pulling on the power cord. Always grasp the connector head or adapter body.
- Ensure that power is turned off and disconnected before making any electrical connections.
- Clean using a soft, dry cloth only. Do not use chemical cleaners, solvents, or detergents. For stubborn deposits, moisten the cloth with warm water.
- This device has no user serviceable parts. Do not attempt to open, service, or modify this device.

INTRODUCTION

This 4K Fiber Optic HDMI® Extender allows you to extend an HDMI signal to distances up to 32,800 feet (10 km) using a single-mode fiber optic cable. It complies with the HDMI 2.0b, HDCP™ 2.2, and DVI™ 1.0 specifications and supports up to 18Gbps bandwidth. It supports video resolutions up to 4K@60Hz with the YCbCr 4:4:4 color space. It includes an HDMI loop output, EDID® management, and supports bidirectional IR and RS-232 passthrough. The transmitter supports audio embedding from an external audio source, while the receiver can extract audio from the HDMI signal for use with an external amplifier or powered speakers.

FEATURES

- Extends an HDMI® signal to distances up to 32,800 feet (10 km) using a single-mode fiber optic cable
- Supports video resolutions up to 4K@60Hz with the YCbCr 4:4:4 color space
- Complies with the HDMI 2.0b, HDCP™ 2.2, and DVI™ 1.0 specifications
- Delivers up to 18Gbps bandwidth
- Supports 3D video modes and High Dynamic Range (HDR) video
- Includes HDMI loop output on the transmitter for use with a local display
- Supports bidirectional IR and RS-232 passthrough
- Includes EDID® management
- Transmitter supports audio embedding from an external audio source
- Receiver supports audio extraction from the HDMI signal for use with an external amplifier or powered speakers
- Supports all HDMI audio formats, including 2-, 5.1-, and 7.1-channel LPCM, Dolby Digital™, Dolby Digital Plus™, Dolby Digital EX, Dolby TrueHD™, DTS®, DTS-ES®, DTS:X®, DTS-96/24, DTS-HD™, DTS-HD Master Audio™, and Direct Stream Digital™ (DSD)
- Does not support the Consumer Electronics Control (CEC) HDMI feature

CUSTOMER SERVICE

The Monoprice™ Customer Service department is dedicated to ensuring that your ordering, purchasing, and delivery experience is second to none. If you have any problem with your order, please give us an opportunity to make it right. You can contact a Monoprice Customer Service representative through the Live Chat link on our website www.monoprice.com or via email at support@monoprice.com. Check the website for support times and links.

PACKAGE CONTENTS

Please take an inventory of the package contents to ensure you have all the items listed below. If anything is missing or damaged, please contact Monoprice™ Customer Service for a replacement.

1x 4K Fiber Optic HDMI® Extender Transmitter

1x 4K Fiber Optic HDMI® Extender Receiver

1x IR Transmitter

1x IR Receiver

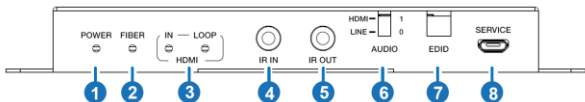
2x 3-pin 3.81mm Euroblock Connectors

2x AC Power Adapters (5 VDC, 1A)

1x User's Manual

PRODUCT OVERVIEW

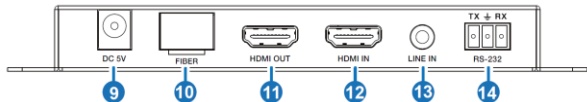
Transmitter Front Panel



1. **POWER:** The LED illuminates when power is applied.
2. **FIBER:** The LED illuminates when there is a valid fiber optic connection between the transmitter and the receiver.
3. **HDMI IN/LOOP:** The **IN** LED illuminates when there is a valid HDMI® signal on the **HDMI IN** port. The **LOOP** LED illuminates when the **HDMI OUT** port is connected to an HDMI display.
4. **IR IN:** 3.5mm jack for connecting an IR receiver to send IR signals to the receiver for controlling the remote display from the transmitter location.
5. **IR OUT:** 3.5mm jack for connecting an IR transmitter to send IR signals for controlling the HDMI source device from the receiver location.
6. **AUDIO:** Switch for selecting the audio source. When set to the **HDMI** position, the transmitted HDMI signal uses the audio embedded in the video source signal. When set to the **LINE** position, the audio in the video source signal is replaced with audio from the **LINE IN** jack on the rear panel. Note that even if there is no video input, audio from the **LINE IN** jack can be transmitted to the receiver.

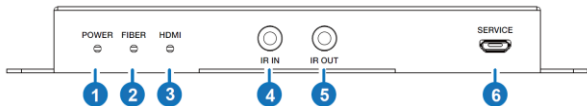
7. **EDID:** Two DIP switches for setting the EDID® that is sent to the video source device. Refer to the *EDID MANAGEMENT* section for details on setting the switches.
8. **SERVICE:** Micro USB port for performing firmware updates.

Transmitter Rear Panel



9. **DC 5V:** DC barrel connector for connecting one of the included AC power adapters.
10. **FIBER:** Fiber optic transmitter module with an LC connector for connecting a single-mode fiber optic cable to send signals to the receiver.
11. **HDMI OUT:** HDMI® loop output port for connecting a local HDMI display.
12. **HDMI IN:** HDMI input port for connecting an HDMI video source device.
13. **LINE IN:** 3.5mm stereo audio input for connecting an external audio source to embed into the transmitted signal.
14. **RS-232:** 3-pin Euroblock RS-232 passthrough connector for transmitting RS-232 control signals between the transmitter and receiver.

Receiver Front Panel



1. **POWER:** The LED illuminates when power is applied.
2. **FIBER:** The LED illuminates when there is a valid fiber optic connection between the transmitter and the receiver.
3. **HDMI:** The LED illuminates when there is a valid connection between the receiver and a connected HDMI® display.
4. **IR IN:** 3.5mm jack for connecting an IR receiver to send IR signals to the transmitter to control the video source device from the receiver location.
5. **IR OUT:** 3.5mm jack for connecting an IR transmitter to send IR signals for controlling the connected HDMI display from the transmitter location.
6. **SERVICE:** Micro USB port for performing firmware updates.

Receiver Rear Panel



7. **DC 5V:** DC barrel connector for connecting one of the included AC power adapters.

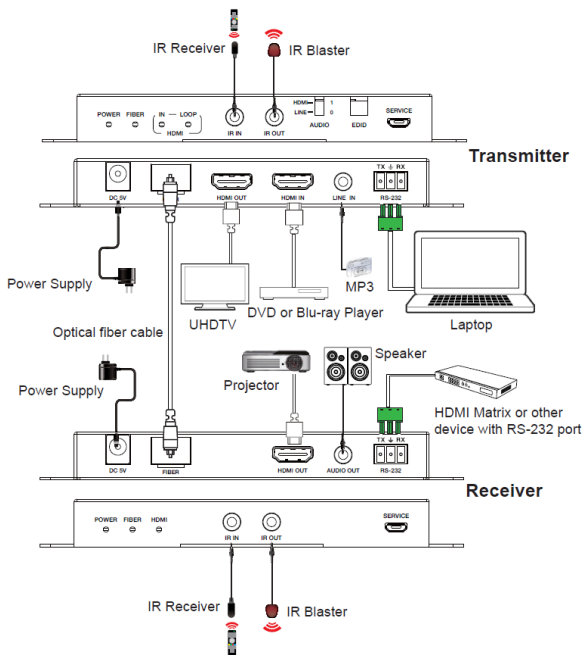
8. **FIBER:** Fiber optic receiver module with an LC connector for connecting a single-mode fiber optic cable to receive signals from the transmitter.
9. **HDMI OUT:** HDMI® port for connecting an HDMI display.
10. **AUDIO OUT:** 3.5mm stereo audio output jack for connecting an external amplifier or speakers to play audio de-embedded from the HDMI signal.
11. **RS-232:** 3-pin Euroblock RS-232 passthrough connector for transmitting RS-232 control signals between the transmitter and receiver.

EDID MANAGEMENT

Extended Display Identification Data (EDID®) is data sent to the HDMI® source device that tells the maximum video resolution and best audio format that can be used by the connected display(s). The EDID DIP switches on the front panel of the transmitter determine which EDID is sent to the connected video source device.

DIP Switch Positions	EDID
11	Gets EDID from the display connected to the receiver
10	Gets EDID from the display connected to the transmitter
01	Sets EDID to 4K@60Hz with 2-channel audio
00	Sets EDID to 1080p@60Hz with 2-channel audio

SAMPLE CONNECTION DIAGRAM



TECHNICAL SUPPORT

Monoprice™ is pleased to provide free, live, online technical support to assist you with any questions you may have about installation, setup, troubleshooting, or product recommendations. If you ever need assistance with your new product, please come online to talk to one of our friendly and knowledgeable Tech Support Associates. Technical support is available through the online chat button on our website www.monoprice.com or through email by sending a message to tech@monoprice.com. Check the website for support times and links.

To download the latest drivers, firmware, manuals, etc., go to www.monoprice.com and type the **P/N** into the search bar. If available, support files are linked at the bottom of the product page.

SPECIFICATIONS

P/N	24279
HDMI® Version	2.0b
HDCP™ Version	2.2
Maximum Video Resolution	4K@60Hz
Video Bandwidth	18Gbps
Supported Color Spaces	RGB, YCbCr 4:4:4/4:2:2/4:2:0
Support Color Depths	8-bit, 10-bit, 12-bit

Supported Audio Formats	2-, 5.1-, and 7.1-channel LPCM, Dolby Digital™, Dolby Digital Plus™, Dolby Digital EX, Dolby TrueHD™, DTS®, DTS-ES®, DTS:X®, DTS-96/24, DTS-HD™, DTS-HD Master Audio™, and Direct Stream Digital™ (DSD)
Transmission Distance	Up to 32,800 feet (10 km) over a single-mode fiber optic cable
IR Frequency	20 ~ 60 kHz
RS-232 Baud Rate	4800 ~ 115200 bps
Input Power	5 VDC, 1A
AC Adapter Input Power	100 ~ 240 VAC, 50/60 Hz
Transmitter Power Consumption	3.85 watts
Receiver Power Consumption	2.7 watts
Operating Temperature	+32 ~ +104°F (0 ~ +40°C)
Storage Temperature	-4 ~ +140°F (-20 ~ +60°C)
Operating Humidity	20 ~ 90% RH, noncondensing
Dimensions (WxDxH) (each)	5.3" x 2.7" x 0.7" (134 x 68 x 18 mm)
Transmitter Weight	9.9 oz. (280 g)
Receiver Weight	9.8 oz. (278 g)

REGULATORY COMPLIANCE

Notice for FCC



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.

Modifying the equipment without Monoprice's authorization may result in the equipment no longer complying with FCC requirements for Class B digital devices. In that event, your right to use the equipment may be limited by FCC regulations, and you may be required to correct any interference to radio or television communications at your own expense.

This equipment has been tested and found to comply with the limits for 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.

Notice for ISED Canada

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

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