MONOPRICE

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 unplug it from the power outlet 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 excessively high temperatures. Do not place it in, on, or near heat sources, 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

Thank you for purchasing this Blackbird™ 4K Fiber Optic HDMI® Extender! This extender allows you to transmit 4K@60Hz 4:4:4 video to distances up to 3280 feet (1000 meters) using a single-mode fiber cable or up to 984 feet (300 meters) using a multi-mode fiber cable. It provides up to 18Gbps bandwidth and supports bi-directional IR and RS-232 control extensions.

FEATURES

- Extends HDMI® video to distances up to 3280 feet (1000 meters) using a single-mode fiber cable or up to 984 feet (300 meters) using a multi-mode fiber cable
- Fully compliant with the HDMI 2.0b and HDCP 2.2 specifications
- Supports video resolutions up to 4K@60Hz 4:4:4, including 1080p@120Hz and 1080p 3D@60Hz
- Provides up to 18Gbps bandwidth
- Supports high-resolution, multichannel audio
- Supports bi-directional wideband IR extension
- Extends RS-232 control signals

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** during normal business hours (Mon-Fri: 5am-7pm PT, Sat-Sun: 9am-6pm PT) or via email at **support@monoprice.com**

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 Fiber optical transmitter

1x Fiber optical receiver

1x Fiber transmitter module

1x Fiber receiver module

2x IR transmitters

2x IR receivers

2x AC power adapters (5 VDC, 1A)

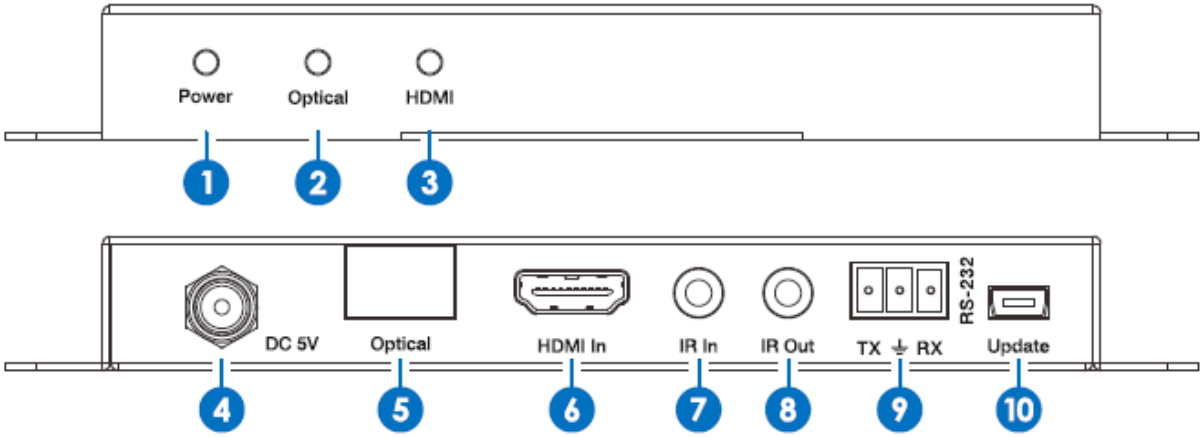
2x 3-pin terminal blocks

4x Mounting brackets

1x User's manual

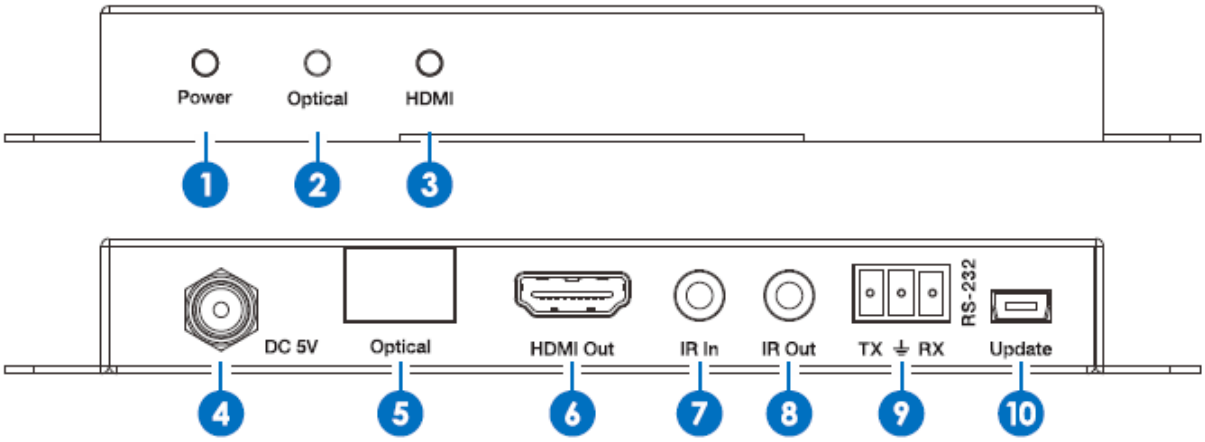
PRODUCT OVERVIEW

Transmitter



1. **Power LED:** The LED illuminates when power is applied.
2. **Optical LED:** The LED illuminates when there is a valid optical link between the transmitter and the receiver.
3. **HDMI LED:** The LED illuminates when there is an active HDMI® signal.
4. **DC 5V:** DC barrel connector for attaching one of the included AC power adapters.
5. **Optical:** LC connector for attaching a single-mode or multi-mode fiber optical cable.
6. **HDMI In:** HDMI connector for connecting the HDMI video source device.
7. **IR In:** 3.5mm jack for attaching one of the included IR receivers.
8. **IR Out:** 3.5mm jack for attaching one of the included IR transmitters.
9. **RS-232:** 3-pin terminal block for connecting a device for RS-232 serial control.
10. **Update:** Mini USB connector for performing firmware updates.

Receiver



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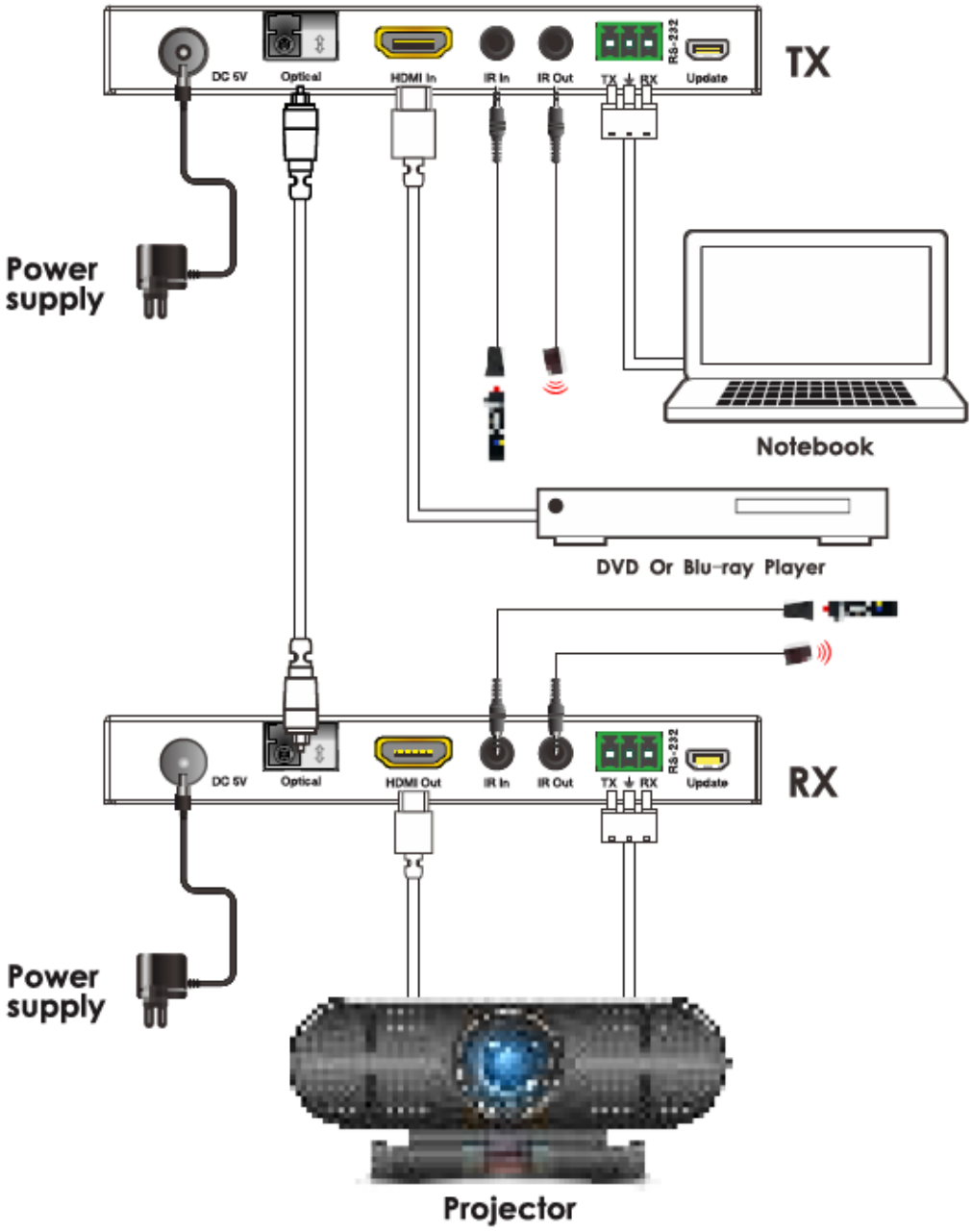
4. **DC 5V:** DC barrel connector for attaching one of the included AC power adapters.
5. **Optical:** LC connector for attaching a single-mode or multi-mode optical cable.
6. **HDMI Out:** HDMI connector for connecting the HDMI video display.
7. **IR In:** 3.5mm jack for attaching one of the included IR receivers.
8. **IR Out:** 3.5mm jack for attaching one of the included IR transmitters.
9. **RS-232:** 3-pin terminal block for connecting a device for RS-232 serial control.
10. **Update:** Mini USB connector for performing firmware updates.

SAMPLE CONNECTION DIAGRAM



INSTALLATION

1. Ensure that all equipment to be connected is powered off and unplugged from its power source.
2. Place or mount the transmitter and receiver in their intended locations. Use the mounting brackets, as desired.
3. Using a High Speed HDMI® Cable (not included), plug one end into the HDMI input on your video display, then plug the other end into the **HDMI Out** port on the receiver.
4. (Optional) If you want to control the video source device from the remote location, plug one of the included IR receivers into the **IR In** jack on the receiver, then position the IR "eye" where it can receive IR signals from the remote control.
5. (Optional) If you want to control the video display from the source location, plug one of the included IR transmitters into the **IR Out** jack on the receiver, then position the IR emitter where it can transmit signals to the IR "eye" on the video display.
6. (Optional) If you want to control a device using the serial extender feature, build a serial cable using one of the included 3-pin terminal blocks, then plug one end into your serial device, then plug the other end into the **RS-232** connector on the receiver.
7. Using a High Speed HDMI Cable (not included), plug one end into the **HDMI In** port on the transmitter, then plug the other end into the HDMI output on your video source device.
8. (Optional) If you want to control the video display from the source location, plug one of the included IR receivers into the **IR In** jack on the transmitter, then position the IR "eye" where it can receive IR signals from the remote control.
9. (Optional) If you want to control the video source device from the remote location, plug one of the included IR transmitters into the **IR Out** jack on the transmitter, then position the IR emitter where it can transmit signals to the IR "eye" on the video source device.

10. (Optional) If you want to control a device using the serial extender feature, build a serial cable using one of the included 3-pin terminal blocks, plug one end into your serial device, then plug the other end into the **RS-232** connector on the transmitter.
11. Using a single-mode or multi-mode fiber optical cable with LC connectors (not included), plug one end into the **Optical** port on the receiver, then plug the other end into the **Optical** port on the transmitter. Note that if this cable is to be run inside or through the walls, it must be rated for in-wall use.
12. Plug the DC barrel connector on one of the included AC power adapters into the **DC 5V** connector on the receiver, then plug the adapter into a nearby AC power outlet.
13. Plug the DC barrel connector on one of the included AC power adapters into the **DC 5V** connector on the transmitter, then plug the adapter into a nearby AC power outlet.
14. Plug in and power on all connected equipment. Start video playback on your source device, then verify that the video can be seen on the remote display. If you are using the IR extension feature, verify that you can control the video source and/or remote display using the appropriate remote controls. If you are using the RS-232 extension feature, verify that you can control your serial device.

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** during regular business hours, 7 days a week. You can also get assistance through email by sending a message to **tech@monoprice.com**

SPECIFICATIONS

Model	24279
Maximum Video Resolution	4K@60Hz 4:4:4, 1080p@120Hz, 1080p 3D@60Hz
Video Bandwidth	18 Gbps
Color Spaces	RGB, YCbCr 4:4:4, YCbCr 4:2:2
Color Depth	8-bit, 10-bits, or 12-bits per channel
HDMI® Version	2.0b
HDCP Version	2.2
Maximum Transmission Distance	Up to 3280 feet (1000 meters) using single-mode fiber cable Up to 984 feet (300 meters) using multi-mode fiber cable
IR Frequency Range	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
Maximum Power Consumption	3 watts
Operating Temperature	+32 ~ +104°F (0 ~ +40°C)
Storage Temperature	-4 ~ +140°F (-20 ~ +60°C)
Operating Humidity	20 ~ 90% RH, non-condensing
Dimensions (each)	3.9" x 2.6" x 1.0" (100 x 65 x 26 mm)
Transmitter Weight	9.0 oz. (256 g)
Receiver Weight	9.2 oz. (260 g)
Certifications	CE, FCC, UL

REGULATORY COMPLIANCE

Notice for FCC

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 Industry 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.