

MONOPRICE

Blackbird™ 4K Pro HDBaseT™ Extender Kit



P/N 21608

User's Manual

CONTENTS

SAFETY WARNINGS AND GUIDELINES	3
INTRODUCTION.....	4
FEATURES.....	4
CUSTOMER SERVICE.....	5
PACKAGE CONTENTS	5
PRODUCT OVERVIEW.....	6
Transmitter	6
Receiver.....	7
SAMPLE CONNECTION DIAGRAM	8
INSTALLATION.....	8
TECHNICAL SUPPORT.....	10
SPECIFICATIONS.....	11
REGULATORY COMPLIANCE.....	11
Notice for FCC.....	11
Notice for Industry Canada.....	12

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.
- Do not expose this device to excessive vibration.
- Use only in a well-ventilated area. Do not use in close, confined spaces.
- 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 Pro HDBaseT™ Extender Kit! This kit allows you to extend High Speed HDMI® signals using a single Cat6 Ethernet cable. It supports extension of 4K video to distances up to 230 feet (70 meters) and 1080p video to distances up to 328 feet (100 meters). It delivers 10.2Gbps bandwidth and is compliant with HDCP 2.2. It supports the Power over HDBaseT (PoH) feature, which uses the Cat6 cable to deliver power to either the transmitter or receiver, so it can be installed without the need for a nearby AC power outlet. The transmitter and receiver each include a 2-port Ethernet switch, allowing you to extend a network connection along with the video and power.

FEATURES

- Ultra-thin design
- Supports HDMI® video to resolutions up to 4K@60Hz, including 1080p@60Hz
- Delivers 10.2 Gbps bandwidth
- HDCP 2.2 compliant
- Extends 4K video to distances up to 230 feet (70m) and 1080p video to distances up to 328 feet (100m)
- 2-port Ethernet switch on both the transmitter and receiver
- Extends 10/100 Mbps Ethernet data to distances up to 328 feet (100m)
- Extends RS232 serial data to distances up to 328 feet (100m)
- Supports bi-directional IR control signals
- Supports the Power over HDBaseT™ feature, which allows either the transmitter or receiver to be installed in locations without an AC power outlet

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

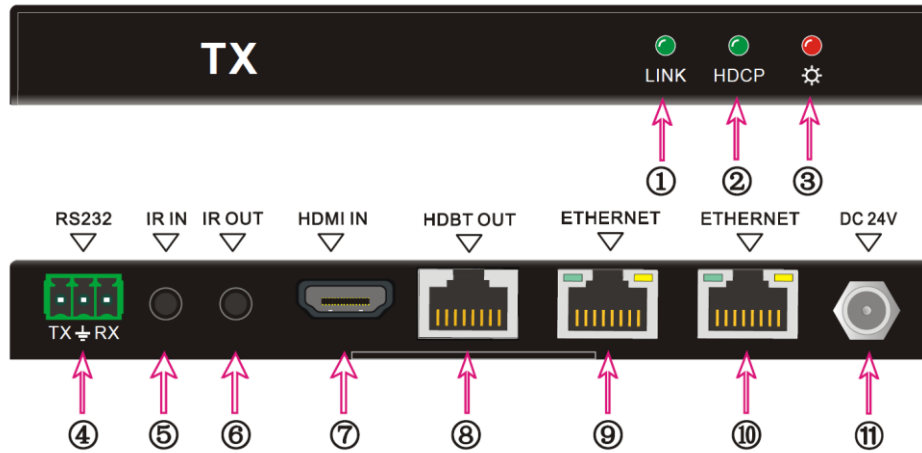
PACKAGE CONTENTS

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 HDBaseT™ Transmitter
- 1x HDBaseT Receiver
- 4x Mounting Brackets
- 8x Plastic Feet
- 4x Screws
- 2x RS232 Cables
- 1x AC Power Adapter (24 VDC, 1.25A)
- 1x User's Manual

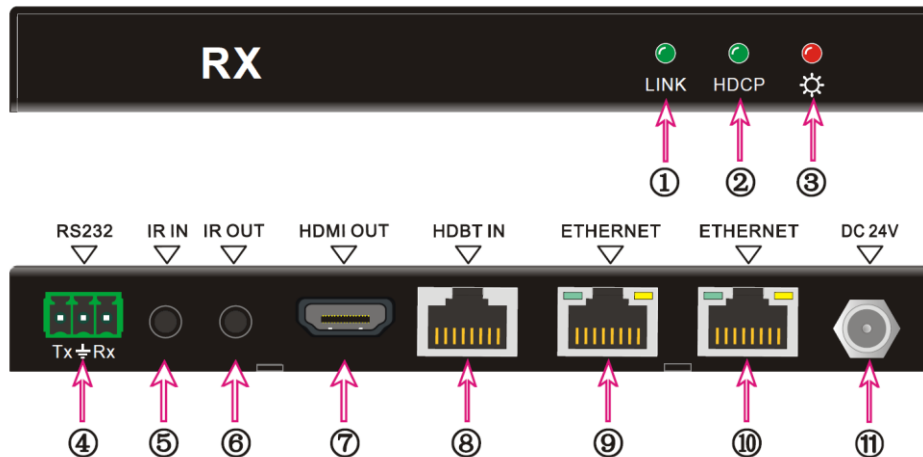
PRODUCT OVERVIEW

Transmitter



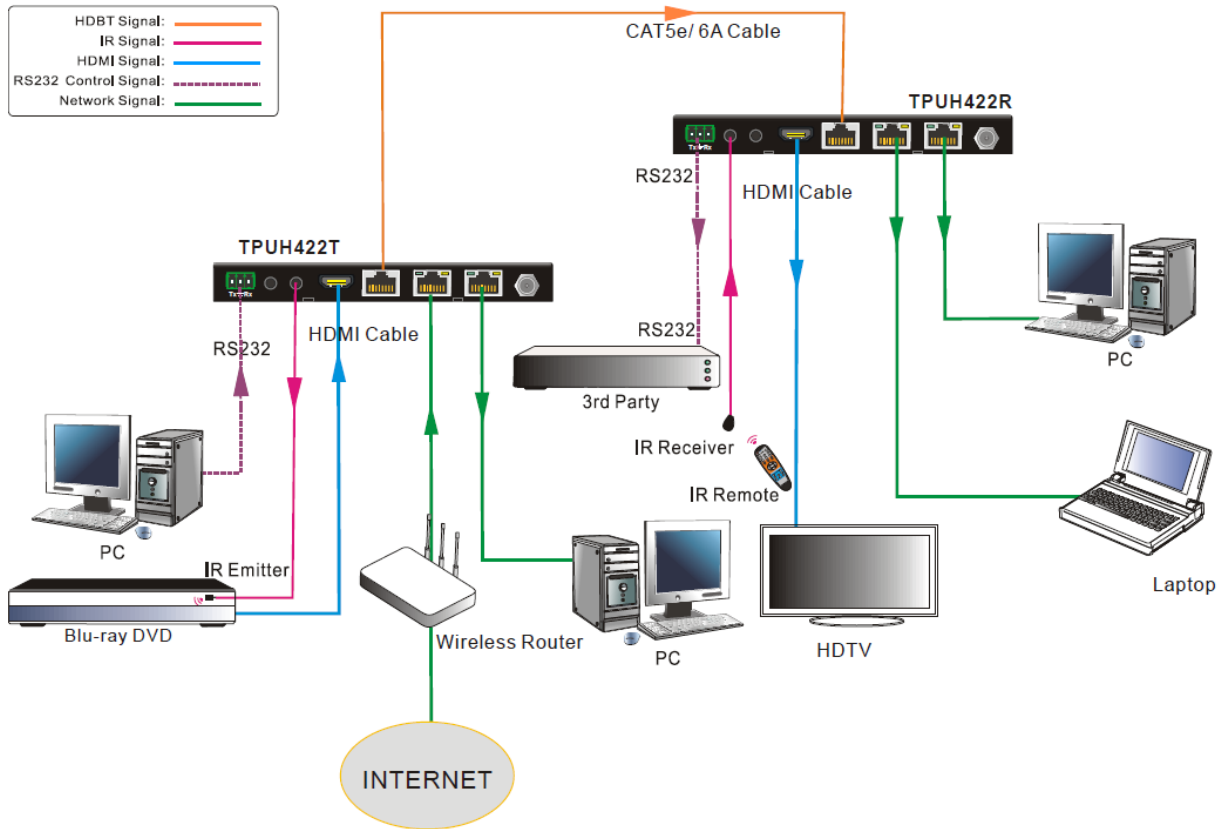
1. **LINK:** HDBaseT™ Link status LED indicator illuminates green when the HDBaseT link is successful. It blinks green when the link is abnormal and is off when no link exists.
2. **HDCP:** HDCP status LED indicator illuminates green when video with HDCP is present. It blinks green when video without HDCP is present and is off when there is no video data.
3. **POWER:** Power LED indicator glows red when power is applied and is off when there is no power.
4. **RS232:** Euroblock/Phoenix connector for connecting to an RS232 data device.
5. **IR IN:** 3.5mm jack for connecting an IR receiver (not included).
6. **IR OUT:** 3.5mm jack for connecting an IR transmitter (not included).
7. **HDMI IN:** HDMI® port for connecting the HDMI source device.
8. **HDBT OUT:** RJ45 port for connecting a Cat6 cable to the receiver.
9. **ETHERNET:** 10/100 Mbps Ethernet port for connecting an Ethernet switch of network-enabled device.
10. **ETHERNET:** 10/100 Mbps Ethernet port for connecting an Ethernet switch of network-enabled device.
11. **DC24V:** DC barrel connector for connecting the included AC power adapter.

Receiver



1. **LINK:** HDBaseT™ Link status LED indicator illuminates green when the HDBaseT link is successful. It blinks green when the link is abnormal and is off when no link exists.
2. **HDCP:** HDCP status LED indicator illuminates green when video with HDCP is present. It blinks green when video without HDCP is present and is off when there is no video data.
3. **POWER:** Power LED indicator glows red when power is applied and is off when there is no power.
4. **RS232:** Euroblock/Phoenix connector for connecting to an RS232 data device.
5. **IR IN:** 3.5mm jack for connecting an IR receiver (not included).
6. **IR OUT:** 3.5mm jack for connecting an IR transmitter (not included).
7. **HDMI OUT:** HDMI® port for connecting the HDMI display.
8. **HDBT IN:** RJ45 port for connecting a Cat6 cable to the transmitter.
9. **ETHERNET:** 10/100 Mbps Ethernet port for connecting an Ethernet switch of network-enabled device.
10. **ETHERNET:** 10/100 Mbps Ethernet port for connecting an Ethernet switch of network-enabled device.
11. **DC24V:** DC barrel connector for connecting the included AC power adapter.

SAMPLE CONNECTION DIAGRAM



INSTALLATION

Perform the following steps to install this extender kit.

1. Ensure that all equipment to be connected is powered off and unplugged from its power source.
2. Place or mount the receiver and transmitter in their intended locations.
3. Using a High Speed HDMI Cable (not included), plug one end into the HDMI® input on your display, then plug the other end into the **HDMI OUT** port on the Receiver.
4. (Optional) Using a Cat6 Ethernet cable (not included), plug one end into an Ethernet switch, router, computer, or other network-enabled device to one of the **ETHERNET** ports on the Receiver. Repeat with a second network-enabled device and the second **ETHERNET** port, as desired.

5. (Optional) Plug one end of one of the included **RS232 Cables** into the serial input of a computer or other serial device, then plug the other end into the **RS232** port on the Receiver.
6. (Optional) Plug an IR receiver (not included) into the **IR IN** jack on the Receiver, then position the receiving "eye" so that it can receive infrared signals from your remote control.
7. (Optional) Plug an IR transmitter (not included) into the **IR OUT** jack on the Receiver, then position the IR emitter so that it can transmit infrared signals to the display.
8. Route a Cat6 Ethernet cable (not included) between the Receiver and the Transmitter. If the cable will be routed inside or through walls, the cable must be rated for in-wall use. The cable must be no longer than 328 feet (100m). If you will be transmitting 4K video signals, the cable must be no longer than 230 feet (70m). Plug one end of this cable into the **HDBT IN** port on the Receiver, then plug the other end into the **HDBT OUT** port on the Transmitter.
9. (Optional) Using a Cat6 Ethernet cable (not included), plug one end into an Ethernet switch, router, computer, or other network-enabled device to one of the **ETHERNET** ports on the Transmitter. Repeat with a second network-enabled device and the second **ETHERNET** port, as desired.
10. (Optional) Plug one end of one of the included **RS232 Cables** into the serial input of a computer or other serial device, then plug the other end into the **RS232** port on the Transmitter.
11. (Optional) Plug an IR receiver (not included) into the **IR IN** jack on the Transmitter, then position the receiving "eye" so that it can receive infrared signals from your remote control.
12. (Optional) Plug an IR transmitter (not included) into the **IR OUT** jack on the Transmitter, then position the IR emitter so that it can transmit infrared signals to the video source device (e.g., Blu-ray Disc™ or DVD player).
13. 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 the video source device (e.g., Blu-ray Disc or DVD player).

14. Plug the DC barrel connector on the included AC power adapter into the **DC24V** port on either the Receiver or Transmitter, then plug the adapter into a nearby AC power outlet. The device not connected to the AC power adapter will receive its power over the Cat6 Ethernet cable via the Power over HDBaseT™ feature.
15. Plug in and power on all connected devices. Start video playback on your video source device and verify that video can be seen on the remote display.
16. (Optional) If you are using the Ethernet switches in the Receiver and Transmitter, verify that you have Ethernet connectivity at each end.
17. (Optional) If you are using the infrared repeater function(s), verify that you can remotely control the source device and/or display from the other end.
18. (Optional) If you are using the RS232 extender function, verify that you have serial data at each end.
19. (Optional) If you are using the infrared repeater function, use your remote control(s) to verify that you can control the video source and/or display from the other end.

Congratulations, your extender is installed and fully operational!

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	21608
Maximum Video Resolution	4K@60Hz, including 1080p@60Hz
Transmission Medium	HDBaseT™
Transmission Distance	1080p signals to 100m, 4K signals to 70m
Bandwidth	10.2 Gbps
Video Standard	HDMI® 1.4 with HDCP 2.2
Ethernet Transmission Speed	10/100 Mbps, full or half duplex
Input Power	24 VDC, 1.25A or Power over HDBaseT (PoH)
AC Adapter Input Power	100 ~ 240 VAC, 50/60 Hz
Power Consumption	10 watts
Operating Temperature	+32 ~ +122°F (0 ~ 50°C)
Operating Humidity	0 ~ 90% RH, non-condensing
Dimensions (each)	6.0" x 0.6" x 4.1" (152 x 16 x 104 mm)
Weight (each)	8.3 oz. (235g)

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 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.

Blackbird™ is a trademark of Monoprice Inc.

HDBaseT™ is a trademark of HDBaseT Alliance.

HDMI®, the HDMI Logo, and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.

Blu-ray Disc™, Blu-ray™, and the logos are trademarks of the Blu-ray Disc Association.