

MONOPRICE

Blackbird™ 4K HDMI® 1x4 Splitter/Extender

P/Ns 8159, 18786

User's Manual

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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.
- 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.
- Keep away from corrosive materials.

INTRODUCTION

Thank you for purchasing this Blackbird™ 4K 1x4 HDMI® Splitter/Extender! This splitter/extender allows you to distribute a single HDMI signal to up to four displays. It transmits the split signals to receivers at distances up to 164 feet (50) away over a single Cat6 Ethernet cable. It provides 4.95Gbps bandwidth and supports video resolutions to 4K@30Hz, including 1080p@60Hz and 3D video. It supports the Power over Cable (PoC) feature, allowing you to install the receivers in locations without an available AC power outlet.

FEATURES

- Distributes a single HDMI® signal to up to four displays
- Transmits video signals to distances up to 164 feet (50 meters) over a single Cat6 Ethernet cable
- 4.95Gbps maximum bandwidth
- Supports multichannel high-definition audio, including 7.1-channel LPCM and 5.1-channel Dolby TrueHD™ and DTS-HD Master Audio™
- Supports the Power over Cable (PoC) feature
- EDID switch to set the video and audio modes for the HDMI source
- Wideband infrared extender allows control of the HDMI source device from each of the remote locations

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

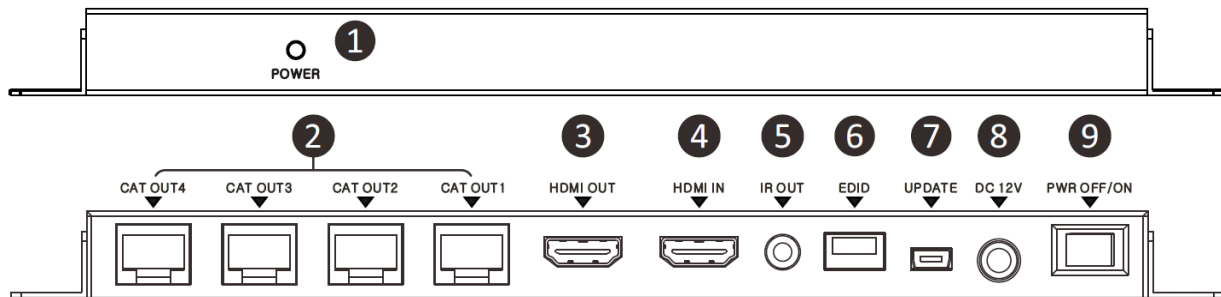
Please take an inventory of the package contents to ensure you have all the items listed below. If anything is missing or damaged, please contact Monoprice Customer Service for a replacement.

- 1x 4K 1x4 HDMI® Splitter
- 4x Receivers
- 1x AC Power Adapter (12 VDC, 2.5A)
- 1x Wideband IR Transmitter
- 4x Wideband IR Receivers
- 2x Mounting Ears
- 1x User's Manual



PRODUCT OVERVIEW

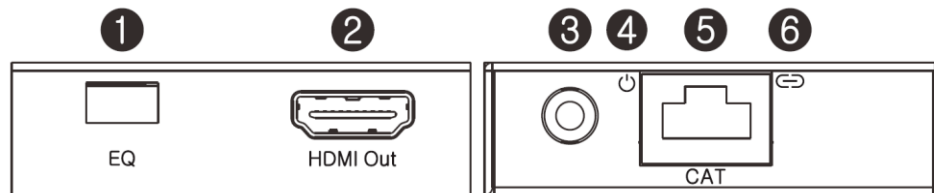
Splitter



1. **POWER LED:** Illuminates red when power is applied.
2. **CAT OUT 1-4:** RJ45 jacks for connecting the Cat6 Ethernet cables.
3. **HDMI OUT:** HDMI® local loop output.
4. **HDMI IN:** HDMI input port for connecting the HDMI source device.
5. **IR OUT:** 3.5mm jack for connecting the IR transmitter.
6. **EDID Switch:** Sets the video resolution and audio settings for the HDMI source.

7. **UPDATE:** Mini USB port for performing software updates.
8. **DC 12V:** DC barrel connector for attaching the included AC power adapter.
9. **POWER Switch:** Turns the splitter on or off.

Receivers



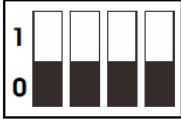






1. **EQ Switch:** Receiver equalizer switch to fix video anomalies.
2. **HDMI OUT:** HDMI® port for connecting the remote display.
3. **IR IN:** 3.5mm jack for connecting the IR receiver.
4. **Power LED:** Illuminates when power is being received over the Ethernet cable.
5. **CAT:** RJ45 jack for connecting the Cat6 Ethernet cable.
6. **Link LED:** Illuminates when the input signal is stable.










EDID CONTROL

The Extended Display Information Data (EDID) is a system in which the video source device queries the connected display to determine its maximum video resolution and supported audio modes. Ordinarily this is a seamless process, but since this splitter supports four extended and one local display connections, each of which can have different capabilities, this splitter includes a switch to allow you to manually set the EDID.

To set the EDID, first determine the maximum video resolutions of each of the connected displays, then choose the lowest maximum resolution. For example, if you are connecting displays with 1080i, 1080p, and 4K maximum resolutions, select one of the 1080i options. Similarly, determine the number of supported audio channels and choose the one with the lowest number of channels, 7.1, 5.1, or 2-channel.

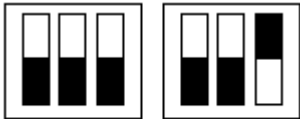
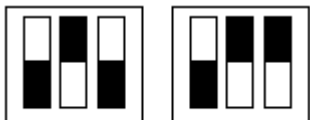
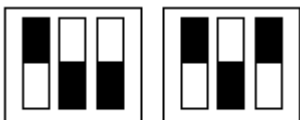
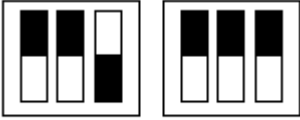
Refer to the following table to select the appropriate video resolution and audio type, then set the EDID DIP switches accordingly. Note that the black in the following images indicates the location of each switch. Unplug the splitter before changing the EDID switch.

EDID Switch	Video and Audio Settings
 <p>0</p>	1080p, 2-channel audio
 <p>1</p>	1080p, 5.1-channel Dolby®/DTS® audio
 <p>2</p>	1080p, 7.1-channel LPCM audio
 <p>3</p>	1080i, 2-channel audio
 <p>4</p>	1080i, 5.1-channel Dolby/DTS audio
 <p>5</p>	1080i, 7.1-channel LPCM audio
 <p>6</p>	3D, 1080p, 2-channel audio

 <p>7</p>	<p>3D, 1080p, 5.1-channel Dolby®/DTS® audio</p>
 <p>8</p>	<p>3D, 1080p, 7.1-channel LPCM audio</p>
 <p>9</p>	<p>Obtain EDID information from the display connected to the HDMI Out jack on the splitter. Note that this is the only way to set the EDID for the 4K video resolution.</p>
 <p>A</p>	<p>1080p, 2-channel audio</p>
 <p>B</p>	<p>1080p, 2-channel audio</p>
 <p>C</p>	<p>1080i, 2-channel audio</p>
 <p>D</p>	<p>1080i, 2-channel audio</p>
 <p>E</p>	<p>1080i, 2-channel audio</p>
 <p>F</p>	<p>1080i, 2-channel audio</p>

RECEIVER EQUALIZATION

If you see flickering, blinking, or other video anomalies on the remote display, use the EQ Switches to increase the signal strength. Start with the EQ set to 0, then increase it until the video anomalies are no longer present. The positions for each of the three DIP switches for each number value and the approximate HDMI cable length range can be found in the following table.

EQ Switch Positions	Approximate Cat6 Cable Length
 <p>0 1</p>	up to 49 feet (15 meters)
 <p>2 3</p>	49 ~ 98 feet (15 ~ 30 meters)
 <p>4 5</p>	98 ~ 131 feet (30 ~ 40 meters)
 <p>6 7</p>	131 ~ 164 feet (40 ~ 50 meters)

INSTALLATION

Perform the following steps to connect and configure the splitter/extender.

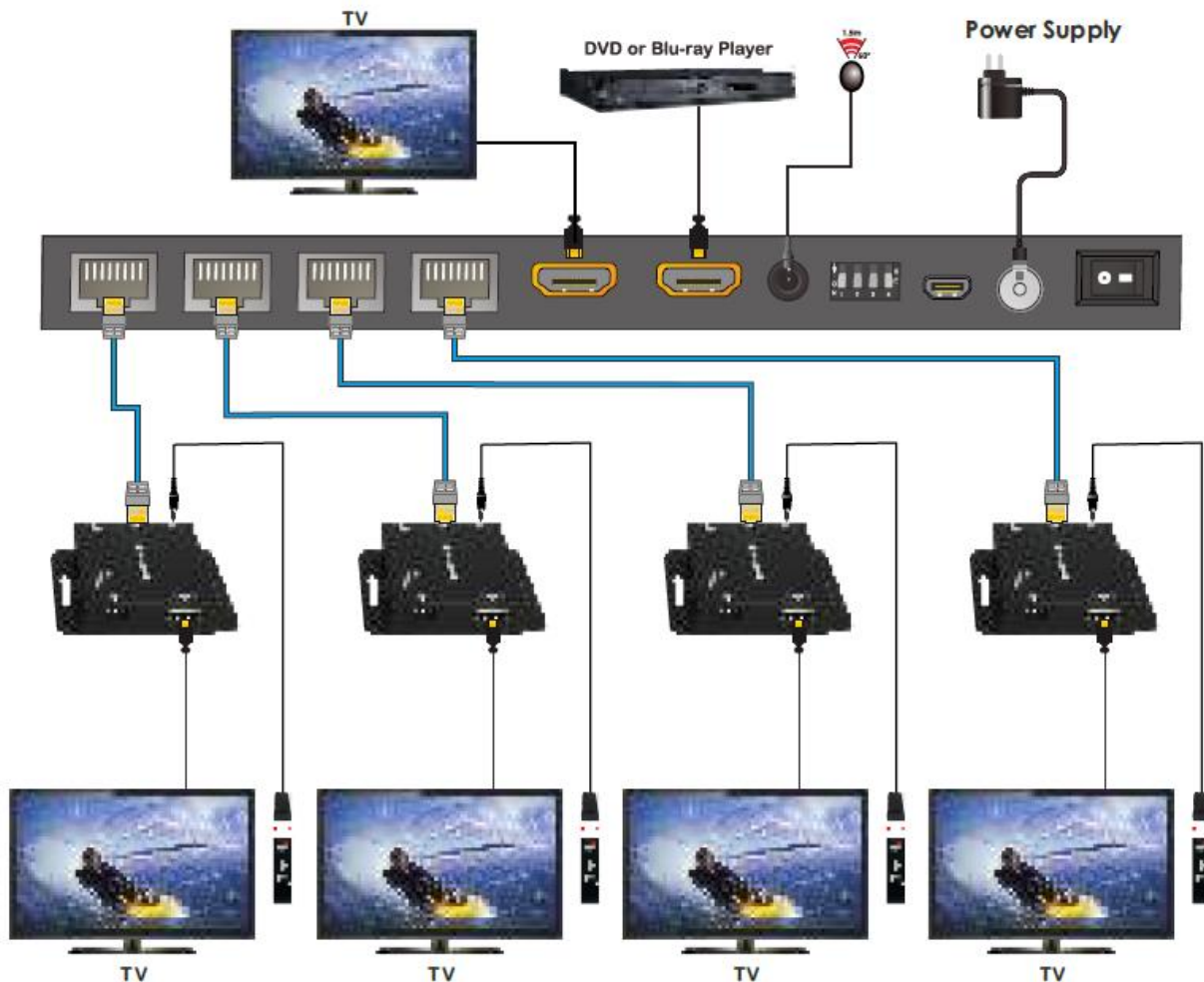
1. Ensure that all equipment to be connected is powered off and disconnected from its power source.
2. Place or mount the splitter and the receivers in the desired locations.
3. Using a High Speed HDMI® Cable (not included), plug one end into the HDMI input on your display, then plug the other end into the **HDMI OUT (2)** port on the receiver.

4. Plug one of the IR Receivers into the **IR IN (3)** jack on the receiver, then position the receiving "bulb" where it can receive signals from your remote control.
5. Route a Cat6 Ethernet cable (not included) from the splitter to the receiver. This cable can be no longer than 164 feet (50 meters) and must be rated for in-wall use if being routed inside or through the walls.
6. Plug one end of the Cat6 cable into the **CAT (5)** jack on the receiver, then plug the other end into one of the **CAT OUT (2)** jacks on the splitter.
7. Repeat steps 3-6 for the other three receivers and their corresponding displays.
8. (Optional) Using a High Speed HDMI® Cable (not included), plug one end into the HDMI input port on a local display, then plug the other end into the **HDMI OUT (3)** port on the splitter.
9. Using a High Speed HDMI Cable (not included), plug one end into the **HDMI IN (4)** port on the splitter, then plug the other end into HDMI output on your video source device (e.g., DVD or Blu-ray Disc™ player).
10. Plug the included IR transmitter into the **IR OUT (5)** jack on the splitter, then position the transmitter "bulb" where it can transmit infrared signals to the receiving "eye" on your video source device.
11. Determine the maximum common video resolution and audio capabilities of each connected display, then set the EDID switch accordingly. Refer to the *EDID CONTROL* section above for details.
12. Ensure that the **POWER Switch (9)** on the splitter is in the OFF position.
13. Plug the DC barrel connector on the included AC power adapter into the **DC 12V (8)** jack on the splitter, then plug the adapter into a nearby AC power outlet.
14. Plug in and power on each connected display.
15. Plug in and power on your video source device.
16. Flip the **POWER Switch (9)** on the splitter to the ON position.
17. Check each receiver and verify that the **Power LED (4)** is illuminated, indicating that the receiver is getting power from the splitter via the Cat6 cable.
18. Start video playback on your video source device.

19. Check each display to verify that video is present. If there is video noise or other anomalies, use the **EQ Switch (1)** on the receiver to increase the signal strength until the anomalies are no longer present. Refer to the *RECEIVER EQUALIZATION* section above for details.
20. Using the infrared remote control for your video source device, verify that you can control the source device from each remote location.

Congratulations, your splitter/extender is now installed and properly configured!

SAMPLE CONNECTION DIAGRAM



TROUBLESHOOTING

Q1: Video is not present on one of the remote displays.

A1: Verify that the **Power LED (4)** on the receiver is illuminated. Verify that the EDID is not set to a video resolution that exceeds the capability of the display. Verify that the **Link LED (6)** on the receiver is illuminated. Try swapping out the HDMI® cable with a known good one.

Q2: The **Power LED (4)** and/or the **Link LED (6)** on a receiver is not illuminated.

A2: Verify that the Cat6 Ethernet cable is properly plugged into both the splitter and repeater. Try swapping out the Cat6 Ethernet cable with a known good one.

Q3: Video is present on the remote displays but not the local loop display.

A3: Verify that the EDID is not set to a video resolution that exceeds the capability of the display. Try swapping out the HDMI cable with a known good one.

Q4: Video is not present on any display.

A4: Verify that the video source device is powered on and playing video. Verify that splitter is plugged in and powered on. Try swapping out the HDMI cable from the source with a known good one.

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	18786
Input	1x HDMI®
Outputs	4x RJ45, 1x HDMI
Maximum Resolution	4K@30Hz, including 1080p@60Hz and 3D video
Maximum Pixel Clock	165 MHz per channel (495 MHz total)
Bandwidth	1.65 Mbps per channel (4.95 Mbps total)
IR Frequency Range	30 ~ 60 kHz
Input Power	12 VDC, 2.5A
AC Adapter Input Power	100 ~ 240 VAC, 50/60 Hz
Maximum Power Consumption	8 watts
HDMI Version	1.3
HDCP Version	1.2
Operating Temperature	+32 ~ +104°F (0 ~ +40°C)
Storage Temperature	-4 ~ +140°F (-20 ~ +60°C)
Operating Humidity	20 ~ 90% RH, noncondensing
Splitter Dimensions	8.3" x 3.3" x 0.7" (210 x 83 x 17 mm)
Receiver Dimensions (each)	3.1" x 2.7" x 0.7" (79 x 68 x 17 mm)
Splitter Weight	14.6 oz. (415g)
Receiver Weight (each)	4.6 oz. (131g)

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.

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