



# 1x4 4K HDMI Splitter/Extender - 60m

## User's Guide



P/N:HD20Ext4P-LT

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## **Important Safety Notices**

Please read safety instructions carefully before installation and operation.

- Please pay close attention to all warnings and hints for this device
- Do not expose this unit to rain, heavy moisture, or liquid
- Do not put any items into the device or attempt to modify its operation
- Do not repair the device or open the enclosure without professional guidance to avoid electric shocks. Doing so may void your warranty
- Keep the product in a well-ventilated location to avoid damage from overheating
- Shut off power and make sure environment is safe before installation
- Do not plug the HDMI cables and IR cables in/out when the device is in use to avoid cable damage. Make sure they are plugged into the correct ports
- Use the included power adapter only. Make sure the specification matches if using 3rd-party DC power adapters

## **Introduction**

The 1x4 4K HDMI CAT Splitter/Extender distributes HDMI signals from one input to four CAT6/7 outputs and one HDMI output (loopout).

## **Features**

- Extends HDMI transmissions up to 60m (197ft) over CAT6/7
- HDCP 2.2/1.4 compliant
- Supports up to 4K @60Hz YUV 4:4:4, HDR, HLG
- Supports up to 5.1ch digital audio and audio extraction to Toslink and Stereo
- 4K to 1080p auto downscale to support mixed 4K and 1080p displays simultaneously
- EDID management, bi-directional IR, and firmware upgradable
- TX powers the RX's over CAT cables
- Equipped with factory reset button

## **Installation Requirements**

- HDMI source device (DVD player, set top box, PC, etc.)
- HDMI displays (SDTV/Monitor, HDTV/Monitor, projector, etc.)
- HDMI cables (not included)
- CAT cables (not included)

## **Package Contents**

- 1x 1x4 4K HDMI Transmitter
- 4x CAT6/7 Receivers
- 5x IR Emitter cables
- 5x IR Receiver cables
- 1x TX power adapter (12V/2A)
- Surface mount accessories
- 1x USB cable
- User guide

# Product Layout



Figure 1: Transmitter Front Panel Layout

1. **Power LED:** On when the Transmitter is powered on
2. **HDMI In LED:** On when HDMI signal is detected
3. **HDMI Loopout LED:** On when a display is connected to the HDMI Loopout port
4. **Reset Button:** Press to restart the Transmitter
5. **EDID DIP Switch:** See page 10 for more information
6. **Firmware Update Port:** Connects to control PC using the included USB cable for firmware update

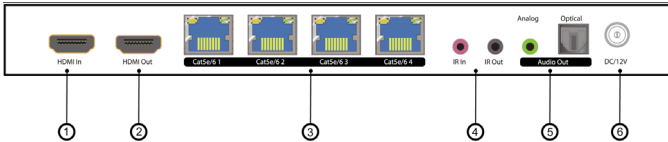


Figure 2: Transmitter Rear Panel Layout

1. **HDMI In:** Connects to your HDMI source device
2. **HDMI Loopout:** Connects to an HDMI display
3. **CAT6/7 Out (x4):** Connects to the CAT6/7 In of the Receivers using CAT6/7 cables (CAT cables not included)
4. **IR In and IR Out ports:** Connects to the IR cables. See IR Control, on page 9, for proper IR connection
5. **Stereo and Optical Audio Out:** Connects to your speakers or AV receiver
6. **Power Jack:** Connects to the included power adapter

## Product Layout Continued

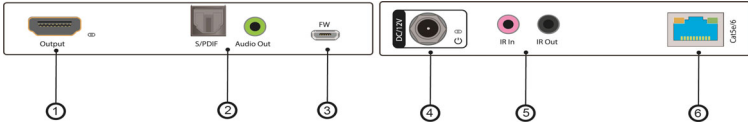


Figure 3: Receiver Front and Rear Panel Layout

1. **HDMI Out:** Connects to your HDMI display
2. **Stereo and Optical Audio Out:** Connects to your speakers or AV receiver
3. **Firmware Update Port:** Connects to control PC using the included USB cable for firmware update
4. **Power Jack:** Not required - the RXs are powered by the TX over CAT cable
5. **IR In and IR Out ports:** Connects to the IR cables. See IR Control, on page 9, for proper IR connection
6. **CAT6/7 In:** Connects to the CAT6/7 Out of the Transmitter using CAT6/7 cables (CAT cables not included)

## Hardware Installation

1. Power off all devices including your HDMI source and HDMI display(s).
2. Connect your HDMI source device to the Transmitter's HDMI In connector with an HDMI cable (HDMI cable is not included).
3. Connect your CAT cables between the Transmitter and CAT6/7 Receivers.
4. Optional: Connect an HDMI display to the HDMI Out connector of the Transmitter using an HDMI cable (HDMI cable not included). This connection is needed only if you require local monitoring of the HDMI signal.
5. Connect an HDMI display to each CAT6/7 Receiver's HDMI Out connector with an HDMI cable (HDMI cables not included).
6. Optional: Connect the IR Receiver cables and the IR Emitter cables to the IR interface ports. The IR feature is bi-directional so either the source device or the display device(s) can be remotely controlled. See IR Control, on page 9, for proper IR connection.
7. Plug the included 12V/2A power adapter into the Transmitter's Power Jack, then plug the power adapter into a reliable power outlet. **Note:** Only 1 power adapter, connected to the Transmitter, is needed to power all Receivers over CAT cables.
8. Power on your HDMI source device and HDMI display(s). The Splitter/Extender is ready for use.

## Application Diagram

The application diagram shows the most typical input and output devices used with the Splitter/Extender.

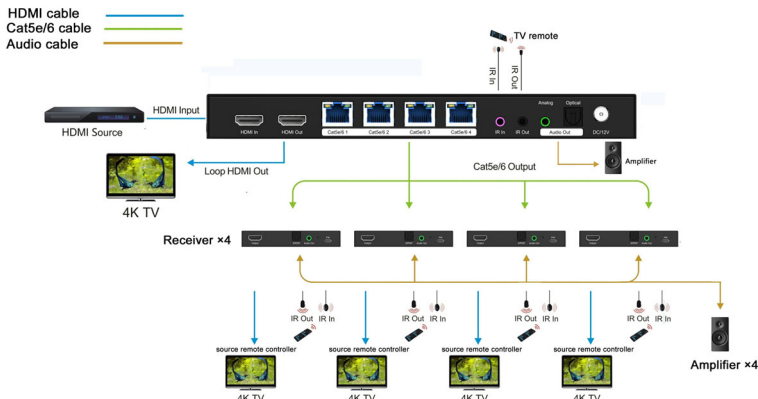
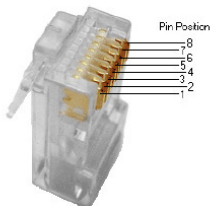


Figure 4: Application Diagram

## CAT Cable Wiring

We suggest both RJ-45 connectors be wired identically using T568B wiring standard for the best performance and compatibility.

Both connectors must be wired identically, to T568B standard.



RJ45 Plug Colour Code (T568B)	
Contact Side - Tab is on Back	
8	BROWN
7	WHITE / BROWN
6	GREEN
5	WHITE / BLUE
4	BLUE
3	WHITE / GREEN
2	ORANGE
1	WHITE / ORANGE

**Note:** You may use CAT5e, CAT6 wiring, however, for best performance CAT6a or CAT7 (particularly in electrically noisy environments) is recommended. The maximum transmission distance and video quality may be compromised by cable quality, patch cables, poor termination, wall plates, cable kinks, and electrical interference. We recommend using 100% copper 23AWG (avoid CCA type) CAT cable, in one straight run (avoid/minimize patches) and avoid close proximity to electrical sources.



## **IR Control**

Provides IR control of the connected devices. The IR feature is bi-directional so either the source device or the display device(s) can be remotely controlled.

### Controlling the Source Device

1. Connect an IR Emitter Cable to the IR Out port of the Transmitter.
2. Point the IR Emitter Cable's IR eye in line with the source device's IR window.
3. Connect an IR Receiver Cable to the IR In port on each CAT6/7 Receiver.

#### **Note:**

The Transmitter's IR Out connector will output the IR signals received from any of the CAT 6/7 Receivers, so as to allow control of a source from any of the remote CAT 6/7 Receivers.

### Controlling the Display Device(s) using IR In

Allows you to remotely control each display individually.

1. Connect an IR Receiver Cable to the IR In port of the Transmitter.
2. Connect an IR Emitter Cable to the IR Out port on each CAT6/7 Receiver.
3. Point the IR Emitter Cable's IR eye in line with the display's IR window.

## EDID Management

EDID is used by the source device to match the video resolution to the connected display(s). However, since displays with different capabilities are often connected, the EDID DIP switch can be used to set the EDID to a fixed value to offer the best compatibility across all connected displays.

### DIP Switch

The splitter supports EDID management through a 3-pin DIP switch.

Switch Up for "0"

Switch Down for "1"

Default Setting: 0, 0, 0

Switch Status			Resolution
#1	#2	#3	
0	0	0	4K@60Hz YUV 4:4:4 2CH+HDR
0	0	1	4K@60Hz YUV 4:4:4 5.1CH+HDR
0	1	0	4K@60Hz YUV 4:4:4 2CH
0	1	1	4K@30Hz YUV 4:4:4 5.1CH
1	0	0	1080p@60Hz 2CH
1	0	1	1080p@60Hz 5.1CH
1	1	0	2560x1440p@60Hz YUV 4:2:0 (16:9)
1	1	1	Copy EDID from the display connected to the HDMI loopout

### Notes:

- 4K is equivalent to 3840 x 2160 resolution
- With a computer as a source device, restart the computer after making changes to the EDID setting
- Copy EDID option can only be used with displays maxing out at 4K@60Hz. EDID copy of displays with higher resolution than 4K@60Hz, such as 8K or HDMI 2.1 devices, may result in blank screens
- Displays with 21:9 aspect ratio aren't supported

## **EDID Copy Instructions**

1. Unplug the splitter's power cord.
2. Adjust all DIP switches to down position, 111.
3. Reconnect the splitter's power cord.
4. Connect the display, using an HDMI cable, that you would like to copy the EDID to the transmitter's HDMI loopout port.
5. The display's EDID is automatically read and saved, and all HDMI outputs will use the EDID.

## **Factory Reset**

To restore factory settings, press and hold down the TX's reset button for 3 seconds.

## **FAQ & Troubleshooting**

Q: Poor video quality or no video signal on display:

A1: Check whether the HDMI cables are connected properly and are in good working condition.

A2: Make sure the resolution of the display is compatible with the splitter's resolution

Q: No HDMI signal output from the CAT6/7 connectors while the local HDMI out port is working normally:

A1: Check whether the HDMI cables are connected properly and are in good working condition.

Q: Splash screen on the displays:

A1: Cause by damaged or low quality HDMI cables. Change to a higher quality HDMI cable.

## Specifications

Input Resolution	720p / 1080p / 4K@60Hz
Output Resolution	480p / 576p / 720p / 1080p / 4K@60Hz
Data Transfer Rate	18Gbps (Max)
Transmission Distance	197Ft (60m) at 4K@60Hz
Input Port	1x HDMI
Output Ports	4x RJ45, 1x HDMI (loopout)
Operating Temperature	23 to 104 F (-5 to 40 C)
Operating Humidity	5% to 90% RH (non-condensing)
Power Consumption	12.5W (Max)
Dimensions (LxWxH)	TX: 9.0x4.5x0.9 inches (229.5x113.4x24 mm) RX: 4.3x2.7x0.7 inches (110.2x68.3x18 mm)
Weight	TX: 2.8 lbs (1300g) RX (each): 0.9 lbs (400g)

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