

# HD-EXT3-C

## 4K HDMI® over HDBaseT® Extender w/IR & RS-232

- > HDBaseT® Certified 4K Ultra HD signal extender
- > Extends uncompressed digital video, audio, and control signals over a single CAT type twisted pair cable<sup>[1]</sup>
- > Supports cable lengths up to 330 ft (100 m) for all resolutions up to 4K and Ultra HD using DM® Ultra cable<sup>[1]</sup>
- > Supports cable lengths up to 330 ft (100 m) for 1080p, WUXGA, and 2K using DM 8G® cable or CAT5e<sup>[1]</sup>
- > Supports cable lengths up to 230 ft (70 m) for 4K and UHD using DM 8G cable, or 165 ft (50 m) using CAT5e<sup>[1]</sup>
- > Compatible with HDMI®, DVI, and DisplayPort Multimode sources<sup>[2]</sup>
- > Compatible with HDMI and DVI display devices<sup>[2]</sup>
- > Supports Dolby® TrueHD, DTS-HD®, and uncompressed 7.1 linear PCM audio
- > HDCP 2.2 compliant
- > Passes CEC and EDID
- > Includes universal IR repeater up to 455 kHz
- > Extends bidirectional RS-232 up to 115.2k Baud
- > 24VDC power pack included<sup>[3]</sup>
- > Available in white or black
- > No programming or configuration required



The Crestron® 4K HDMI® over HDBaseT® Extender (HD-EXT3-C) delivers a professional-grade digital HD AV signal extension solution for use in the home, classroom, auditorium, or corporate boardroom. Without any special setup or configuration, the HD-EXT3-C enables the transmission of ultra high-definition digital video and audio, plus RS-232 and IR control, over wire runs up to 330 feet (100 meters) using a single CAT type twisted pair cable.<sup>[1]</sup>

*NOTE: The HD-EXT3-C is composed of one HD-TX3-C transmitter and one HD-RX3-C receiver. These components are only sold as part of the HD-EXT3-C package.*

### 4K Ultra HD Signal Extension

Using HDBaseT technology, the HD-EXT3-C allows for the extension of uncompressed HDMI signals over a single CAT type twisted pair cable. In addition to HDMI, it is also compatible with DVI and DisplayPort Multimode sources, and DVI display devices.<sup>[2]</sup> Without relying on signal-degrading compression or inferior HDMI signal boosting, HDBaseT reliably transports the full resolution signal from source to display — intact and uncompromised.

The HD-EXT3-C handles uncompressed Full HD 1080p, Ultra HD, 2K, and 4K video signals with support for 3D, Deep Color, and HDCP 2.2. Audio capabilities include support for high-bitrate 7.1 audio formats like Dolby® TrueHD and DTS-HD Master Audio™ as well as uncompressed linear PCM. All signals are transported over a single CAT type cable, supporting 1080p, WUXGA, and 2K signals at distances up to 330 feet (100 m) using Crestron DM® Ultra or DM 8G® Cable, or third-party CAT5e.

Higher resolutions up to UHD and 4K are supported at distances up to 330 feet (100 m) using DM Ultra Cable, 230 feet (70 m) using DM 8G Cable, or 165 feet (50 m) using CAT5e.<sup>[1]</sup>

### ...And Control Too!

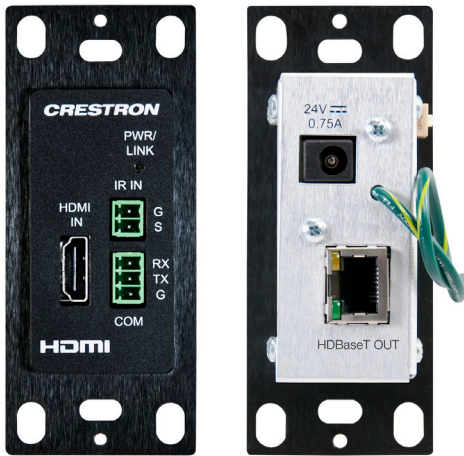
In addition to video and audio, the HD-EXT3-C provides for the extension of IR and bidirectional RS-232 control signals for a true one-wire AV interface solution.

### Uncompromised and Uncomplicated

Crestron HDMI over HDBaseT products afford a very dependable signal extension solution that's simple to implement. No special configuration or programming is required — just connect your source and display and enjoy high-quality video and audio from across the room — or the other end of the house.

The HD-EXT3-C is composed of one transmitter and one receiver (HD-TX3-C and HD-RX3-C, both included). The transmitter can be mounted in a single-gang wall box, or attached to any flat surface or inside an equipment rack. The compact receiver can be mounted discreetly behind a display device or wherever else it needs to go. Linking the two components requires just one CAT type cable.<sup>[1]</sup> Crestron offers the cable and connectors for a complete, easy, and reliable wiring solution. A range of professional AV interface cables and wall plates is also available to complement the HD-EXT3-C for a total custom installation solution.

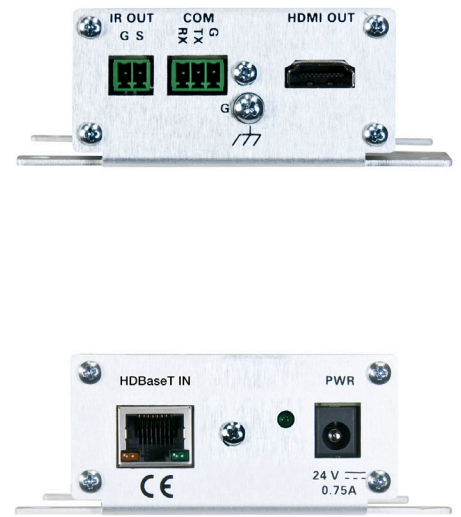
# HD-EXT3-C 4K HDMI® over HDBaseT® Extender w/IR & RS-232



HD-TX3-C-B – Front & Rear View



HD-RX3-C-B – Top, Front & Rear View



## HD-EXT3-C-B SYSTEM (Includes HD-TX3-C-B & HD-RX3-C-B)

### SPECIFICATIONS

#### Maximum HDBaseT® Cable Lengths

Cable Type:	DM-CBL-ULTRA DM® Ultra Cable	DM-CBL-8G DM 8G® Cable	CAT5e (or better) UTP or STP <sup>[1]</sup>
Resolution:			
1080p60 Full HD	330 ft (100 m)	330 ft (100 m)	330 ft (100 m)
1920x1200 WUXGA			
1600x1200 UXGA			
2048x1080 2K DCI		230 ft (70 m)	165 ft (50 m)
2560x1440 WQHD			
2560x1600 WQXGA			
3840x2160 Ultra HD			
4096x2160 4K DCI			

#### Video

**Input Signal Types:** HDMI® w/Deep Color, 3D, & 4K (DVI & DisplayPort Multimode compatible <sup>[2]</sup>)

**Output Signal Types:** HDMI w/Deep Color, 3D, & 4K (DVI compatible <sup>[2]</sup>)

**Maximum Resolutions:**

Scan Type	Resolution	Frame Rate	Color Sampling	Color Depth
Progressive	4096x2160 4K DCI & 3840x2160 Ultra HD	24 Hz	4:4:4	30 bit
		30 Hz	4:4:4	24 bit
		30 Hz	4:2:2	36 bit
		60 Hz	4:2:0	24 bit
	2560x1600 WQXGA	60 Hz	4:4:4	36 bit
	1920x1080 HD1080p	60 Hz	4:4:4	36 bit
Interlaced	1920x1080 HD1080i	30 Hz	4:4:4	36 bit

NOTE: Common resolutions are shown; other custom resolutions are supported at pixel clock rates up to 300 MHz

#### Audio

**Input Signal Types:** HDMI (DisplayPort Multimode compatible <sup>[2]</sup>)

**Output Signal Types:** HDMI

**Formats:** Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, DTS®, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio™, LPCM up to 8 channels

#### Communications

**RS-232:** Extends 2-way serial device control signals up to 115.2k baud

**IR:** Extends 1-way IR device control signals up to 455 kHz

**HDMI:** Passes HDCP 2.2, EDID, & CEC

#### Connectors – HD-TX3-C Transmitter

**HDMI IN:** (1) 19-pin Type A HDMI female;

HDMI digital video/audio input;

Also supports DVI or Displayport Multimode <sup>[2]</sup>

**IR IN:** (1) 2-pin 3.5mm detachable terminal block;

IR repeater input port;

IR signal input up to 455 kHz

**COM:** (1) 3-pin 3.5mm detachable terminal block;

Bidirectional RS-232 port;

Up to 115.2k baud, software handshaking support

**24VDC 0.75A (rear):** (1) 2.1 x 5.5 mm DC power connector;  
24 Volt DC power input (PW-2407WU power pack included) <sup>[3]</sup>

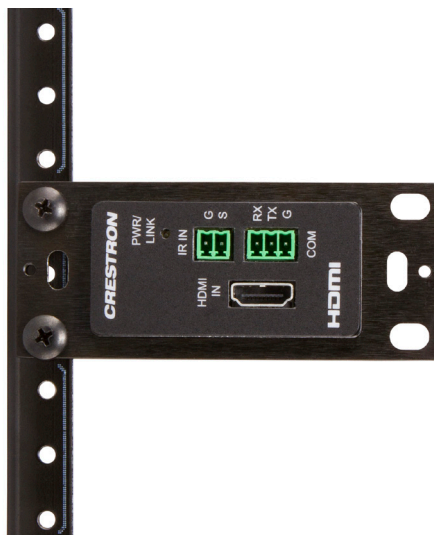
**Ground (rear):** (1) Flying lead, chassis ground connection

**HDBaseT OUT (rear):** (1) 8-pin RJ45 female, shielded;  
Connects to the HDBaseT IN port of the HD-RX3-C receiver via CAT5e, Crestron DM-CBL-8G, or Crestron DM-CBL-ULTRA cable <sup>[1]</sup>

# HD-EXT3-C 4K HDMI® over HDBaseT® Extender w/IR & RS-232



HD-TX3-C-B w/Surface Mount Bracket



HD-TX3-C-B & HD-RX3-C-B Attached to Rack Rails



## Connectors – HD-RX3-C Receiver

**IR OUT:** (1) 2-pin 3.5mm detachable terminal block; IR repeater output port; IR output up to 455 kHz

**COM:** (1) 3-pin 3.5mm detachable terminal block; Bidirectional RS-232 port; Up to 115.2k baud, software handshaking support

**G:** (1) 6-32 screw, chassis ground lug

**HDMI OUT:** (1) 19-pin Type A HDMI female; HDMI digital video/audio output; Also supports DVI<sup>[2]</sup>

**HDBaseT IN:** (1) 8-pin RJ45 female, shielded; Connects to the HDBaseT OUT port of the HD-TX3-C transmitter via CAT5e, Crestron DM-CBL-8G, or Crestron DM-CBL-ULTRA cable<sup>[1]</sup>

**PWR 24VDC 0.75A:** (1) 2.1 x 5.5 mm DC power connector; 24 Volt DC power input (PW-2407WU power pack included)<sup>[3]</sup>

## Controls & Indicators – HD-TX3-C Transmitter

**PWR/LINK:** (1) dual-color amber/green LED, indicates operating power supplied via local power pack or HD-RX3-C<sup>[3]</sup>, and indicates HDBaseT link status and HDMI input signal presence

**HDBaseT OUT (rear):** (2) LEDs, green LED indicates link status, amber LED indicates video and HDCP signal presence

**SW1 (side):** (1) slide switch, enables hot plug detect

## Indicators – HD-RX3-C Receiver

**PWR:** (1) green LED, indicates operating power supplied via local power pack or HD-TX3-C<sup>[3]</sup>

**HDBaseT IN:** (2) LEDs, green LED indicates link status, amber LED indicates video and HDCP signal presence

## Power Requirements

**Power Pack:** 0.75 Amp @ 24 Volts DC; 100-240 Volts AC, 50/60 Hz power pack, model PW-2407WU, included<sup>[3]</sup>

## Environmental

**Temperature:** 32° to 104°F (0° to 40°C)

**Humidity:** 10% to 90% RH (non-condensing)

**Heat Dissipation:** HD-TX3-C: 2 BTU/hr; HD-RX3-C: 11 BTU/hr

## Enclosure – HD-TX3-C Transmitter

**Construction:** Metal, black finish with white or black polycarbonate label overlay

**Flush Wall Mount:** 1-gang mountable in an extra-deep electrical box (2-1/2 inch deep minimum), requires decorator style faceplate (not included)

**Surface Mount:** Surface mount bracket included

**Rack Mount:** Attachable to a single 19-inch EIA rack rail

## Enclosure – HD-RX3-C Receiver

**Construction:** Aluminum w/polycarbonate label overlay and (4) integral mounting flanges

**Mounting:** Freestanding, surface mount, or attach to a single rack rail

## Dimensions

**HD-TX3-C Transmitter:** Height: 4.12 in (105 mm); Width: 1.72 in (44 mm); Depth: 2.35 in (60 mm)

**HD-RX3-C Receiver:** Height: 1.43 in (37 mm); Width: 3.91 in (100 mm); Depth: 4.70 in (120 mm)



# HD-EXT3-C 4K HDMI® over HDBaseT® Extender w/IR & RS-232

## Weight

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HD-TX3-C Transmitter: 5.8 oz (165 g)

HD-RX3-C Receiver: 11.6 oz (330 g)

## MODELS & ACCESSORIES

### Available Models

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HD-EXT3-C-B\_SYSTEM: 4K HDMI® over HDBaseT® Extender w/IR & RS-232, Black

HD-EXT3-C-W\_SYSTEM: 4K HDMI® over HDBaseT® Extender w/IR & RS-232, White

### Included Accessories

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PW-2407WU: Wall Mount Power Pack 24VDC, 0.75A, Universal  
(Qty. 1 included)

### Available Accessories

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DM-CBL-ULTRA-NP: DigitalMedia™ Ultra Cable, Non-Plenum Type CMR

DM-CBL-ULTRA-P: DigitalMedia™ Ultra Cable, Plenum Type CMP

DM-CBL-ULTRA-LSZH: DigitalMedia™ Ultra Cable, Low Smoke Zero Halogen

DM-CONN: Connector for DM-CBL-ULTRA

DM-CBL-8G-NP: DigitalMedia 8G™ Cable, non-plenum

DM-CBL-8G-P: DigitalMedia 8G™ Cable, plenum

DM-8G-CONN-WG: Connector with Wire Guide for DM-CBL-8G

DM-8G-CRIMP-WG: Crimping Tool for DM-8G-CONN-WG

DM-8G-CONN: Connector for DM-CBL-8G

DM-8G-CRIMP: Crimping Tool for DM-8G-CONN

IRP2: IR Emitter Probe w/Terminal Block Connector

CNSP-112: 2-pin to Mini-phone Cable

CNSP-XX: Custom Serial Interface Cable

CBL-Series: Crestron® Certified Interface Cables

MP-WP Series: Media Presentation Wall Plates

MPI-WP Series: Media Presentation Wall Plates - International Version

## Notes:

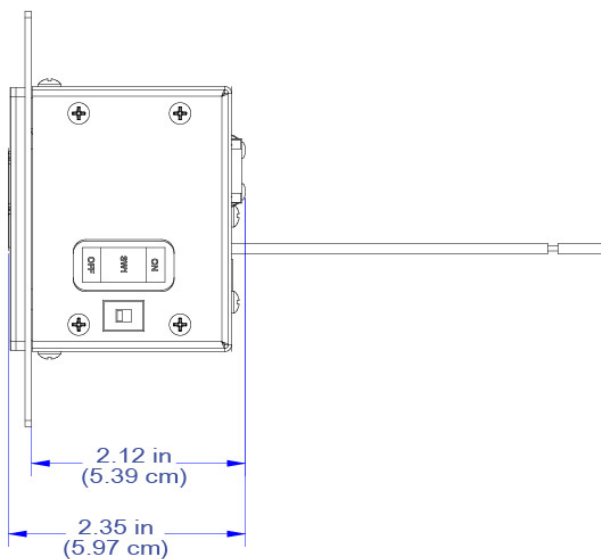
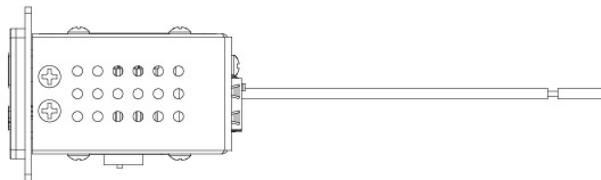
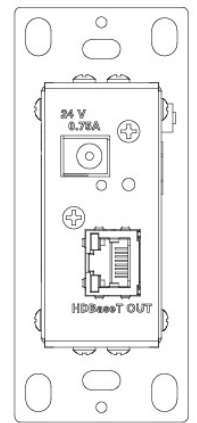
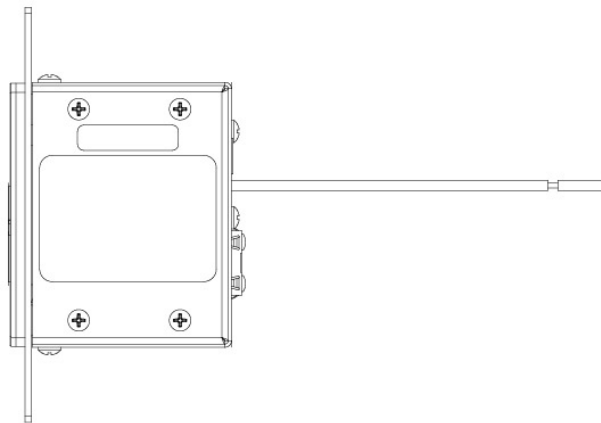
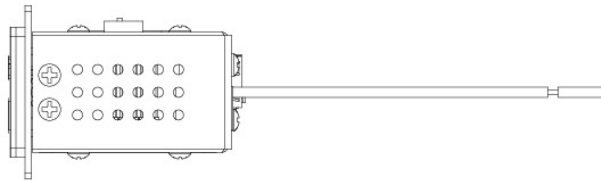
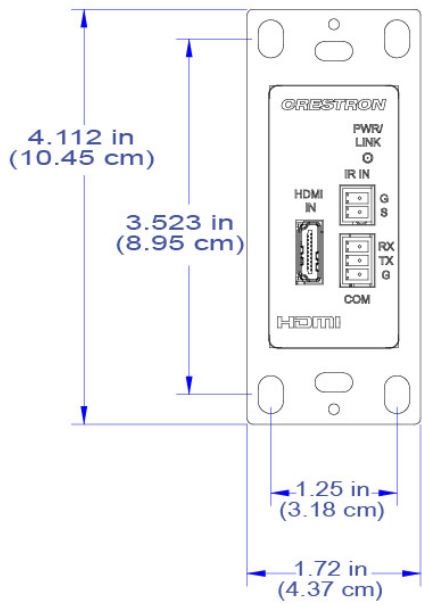
1. The maximum cable length for HDBaseT is dependent upon the type of cable and resolution of the video signal. Refer to the "Maximum HDBaseT Cable Lengths" table for a detailed overview. Shielded cable and connectors are recommended to safeguard against unpredictable environmental electrical noise which may impact performance at resolutions above 1080p. All wire and cables are sold separately.
2. HDMI IN requires an appropriate adapter or interface cable to accommodate a DVI or DisplayPort Multimode signal. HDMI OUT requires an appropriate adapter or interface cable to accommodate a DVI signal. [CBL-HD-DVI](#) interface cables are available separately.
3. The power pack must be connected to either the HD-TX3-C transmitter or HD-RX3-C receiver, not both. Power is passed to the secondary device via the HDBaseT connection. Please note, the HD-TX3-C and HD-RX3-C are not PoH compatible. They cannot be powered by, or supply power to, another HDBaseT device. They may however be connected to such devices without risk of malfunction.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at [www.crestron.com/salesreps](http://www.crestron.com/salesreps) or by calling 800-237-2041.

The specific patents that cover Crestron products are listed online at: [patents.crestron.com](http://patents.crestron.com).

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