

## Specifications

### HC 402 (HCT 101 D, HCR 102)

**NOTE:** This product consists of a switching transmitter (HCT 101 D) and a scaling receiver (HCR 102), sold together as a system.

#### Video input

Number/signal type	
Digital	
HCT 101 D .....	1 HDMI (or single link DVI-D with the appropriate DVI-HDMI adapter)
HCR 102 .....	1 HDMI (or single link DVI-D with the appropriate DVI-HDMI adapter)
Connectors	
HCT 101 D .....	1 female HDMI type A
HCR 102 .....	1 female HDMI type A
HDMI equalization .....	Automatic
HDMI input cable length .....	≤50' (15 m) for resolutions up to 1920x1200 or 1080p @ 60 Hz; 2K, using Extron HDMI Pro Series cable
Resolution range .....	640x480 to 1600x1200 and 1920x1200*, 480p, 576p, 720p, 1080i, 1080p, and 2K *reduced blanking
Return loss .....	<-40 dB @ 5 MHz
DC offset (max. allowable) .....	1.5 V
Standards .....	DVI 1.0, HDMI 1.4, HDCP 1.4

#### Interconnection between transmitter and receiver

Connector .....	1 female RJ-45 on each unit (transmitter and receiver)
Termination standard .....	TIA/EIA T568B
Transmission distance .....	Up to 230' (70 m) using shielded twisted pair (STP) cable or XTP DTP 24 STP cable with a 1080p, 60 Hz signal
Cable requirements .....	Solid conductor, 24 AWG or better
Cable recommendations .....	400 MHz bandwidth, STP (shielded twisted pair)

**NOTE:** Extron XTP DTP 24 shielded twisted pair cable is strongly recommended for optimal performance.

#### Video processing

Decoder .....	12 bit digital (3D-adaptive comb filter)
Digital pixel data bit depth .....	8, 10, or 12 bits per channel; 165 MHz pixel clock
Colors .....	1 billion (10 bit processing)

#### Video output

Number/signal type .....	1 HDMI (with CEC)
Connectors .....	1 female HDMI
HDMI peripheral device power .....	250 mA
Scaled resolution .....	640x480 <sup>6,8,9</sup> , 800x600 <sup>6,8,9</sup> , 852x480 <sup>6,8,9</sup> , 1024x768 <sup>6,8,9</sup> , 1024x852 <sup>6,8,9</sup> , 1024x1024 <sup>6,8,9</sup> , 1280x768 <sup>6,8,9</sup> , 1280x800 <sup>6,8,9</sup> , 1280x1024 <sup>6,8,9</sup> , 1360x765 <sup>6,8,9</sup> , 1360x768 <sup>6,8,9</sup> , 1365x768 <sup>6,8,9</sup> , 1365x1024 <sup>6,8,9</sup> , 1366x768 <sup>6,8,9</sup> , 1400x1050 <sup>6,8</sup> , 1440x900 <sup>6,8,9</sup> , 1600x900 <sup>6,8</sup> , 1600x1200 <sup>6,8</sup> , 1680x1050 <sup>6,8</sup> , 1920x1200 <sup>6,8</sup> HDTV 480p <sup>7,8</sup> , 576p <sup>6</sup> , 720p <sup>3,4,5,6,7,8</sup> , 1080i <sup>6,7,8</sup> , 1080p <sup>1,2,3,4,5,6,7,8</sup> , 2048x1080 <sup>1,2,3,4,5,6,7,8</sup> <sup>1</sup> = at 23.98 Hz, <sup>2</sup> = at 24 Hz, <sup>3</sup> = at 25 Hz, <sup>4</sup> = at 29.97 Hz, <sup>5</sup> = at 30 Hz, <sup>6</sup> = at 50 Hz, <sup>7</sup> = at 59.94 Hz, <sup>8</sup> = at 60 Hz, <sup>9</sup> = at 75 Hz

# Specifications • HC 402 (HCT 101 D, HCR 102) (Continued)

## Audio

Gain.....	Unbalanced output: 0 dB; balanced output +6 dB
Frequency response .....	20 Hz to 20 kHz, $\pm 0.5$ dB
THD + Noise .....	0.03%, 20 Hz to 20k Hz at nominal level
S/N.....	>90 dB, at maximum output (15 dBu), balanced (unweighted)
Crosstalk .....	$\leq -80$ dB @ 1 kHz, fully loaded
Stereo channel separation.....	>80 dB @ 1 kHz to 20 kHz

## Audio input

Number/signal type.....	1 analog stereo, unbalanced or 2 digital audio, embedded in the HDMI signal
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**NOTE:** Analog audio is not embedded onto the HCT 101 HDMI digital signal. You can select analog audio or digital embedded audio using Extron PCS Product Configuration Software.

Connectors.....	1 female 3.5 mm mini stereo jack; tip (L), ring (R), sleeve (ground) 2 female HDMI Type A
Source formats	
Analog.....	Analog stereo audio
HDMI.....	LPCM up to 7.1/24-bit/192 kHz, Dolby TrueHD, Dolby Digital Plus, Dolby Digital EX, Dolby Digital 5.1, Dolby Digital 2/0 Surround, Dolby Digital 2/0, DTS-HD Master Audio, DTS-HD, DTS-ES Discrete 6.1, DTS-ES Matrix 6.1, DTS Digital Surround 5.1, DTS 2 Channel
Impedance.....	10k ohms, DC coupled
Nominal level.....	-10 dBV (316 mVrms), unbalanced
Maximum level.....	+7 dBV, unbalanced
CMRR.....	>60 dB typical, unbalanced, @ 1 kHz

**NOTE:** 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV  $\approx$  2 dBu

## Audio output

Number/signal type.....	1 analog, line level stereo, balanced or unbalanced (variable) 1 digital, embedded in HDMI (fixed)
Connectors.....	(1) 3.5 mm captive screw connector, 5 pole 1 female HDMI
Impedance.....	50 ohms unbalanced, 100 ohms balanced
Gain error.....	$\pm 0.5$ dB channel to channel
Maximum level (Hi-Z).....	>+14 dBu, balanced; >+8 dBu, unbalanced
Output volume range .....	0 to 100% in 1% steps

## Communications

USB control port.....	1 front panel female USB mini-B
USB standards .....	USB 2.0, high speed
Program control.....	Extron Product Configuration Software (PCS) for Windows®

## Communications – control processor

Memory	
SDRAM.....	512 MB
Flash .....	512 MB
Software	
Configuration software.....	Extron Global Configurator® Plus and Professional
Utilities.....	Toolbelt, embedded web page

## Specifications • HC 402 (HCT 101 D, HCR 102) (Continued)

### Ethernet

Network interface controllers (NICs)	1
Connectors .....	1 female RJ-45 connector
Data rate .....	10/100Base-T, half/full duplex with autodetect
Protocols.....	DHCP, DNS, HTTP, HTTPS, ICMP, NTP, SFTP, SMTP, SNMP, SSH, TCP/IP, UDP/IP
Default settings.....	Link speed and duplex level = autodetected IP address = 192.168.254.250 Subnet mask = 255.255.255.0 Gateway = 0.0.0.0 DHCP = off DNS: 127.0.0.1

### Serial

Quantity/type.....	1 bidirectional RS-232
Connectors .....	(1) 3.5 mm captive screw connector, 3-pole
Baud rate and protocol.....	300 to 115200 baud (9600 baud = default); 8 (default) or 7 data bits; 1 (default) or 2 stop bits; no parity (default), even, or odd parity

**NOTE:** This 3-pole port supports software flow control. The default is no flow control.

Pin configuration.....	Pin 1 = Tx, 2 = Rx, 3 = Gnd
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### Digital I/O

Quantity/type.....	4 digital input/output (configurable)
Connectors .....	(1) 3.5 mm captive screw connector, 6-pole
Digital inputs	
Input voltage range .....	0 to 24 VDC, clamped at +30 VDC
Input impedance.....	>10k ohms
Programmable pullup.....	1k ohms to +5 VDC
Threshold low to high.....	2.8 VDC
Threshold high to low.....	2.0 VDC
Digital outputs .....	250 mA sink from 24 VDC max.
Pin configurations.....	Pins 1, 2, 4, 5 = digital I/Os 1, 2, 3, 4; pins 3, 6= Gnd

### IR

Quantity/type.....	1 programmable TTL level (0 to 5 V) infrared (carrier and non-carrier) up to 300 kHz
Connector .....	(1) 3.5 mm captive screw connector, 2-pole
Pin configuration.....	Pin 1 = signal, 2 = Gnd
IR output carrier frequency .....	30 kHz to 300 kHz

## General

Power supply .....	External, included Input: 100-240 VAC, 50-60 Hz Output: 12 VDC, 4.2 A, 50 watts
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### Power consumption

System	
Device .....	TBD watts
Device and power supply...	TBD watts

**NOTE:** Connect the included 4.2 A, 50 W, external power supply to the HCR 102, and the receiver remotely powers the HCT 101 D. Alternatively, the transmitter can be powered locally by an optional external power supply.

Temperature/humidity .....	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +104 °F (0 to +40 °C) / 10% to 90%, noncondensing
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## Specifications • HC 402 (HCT 101 D, HCR 102) (Continued)

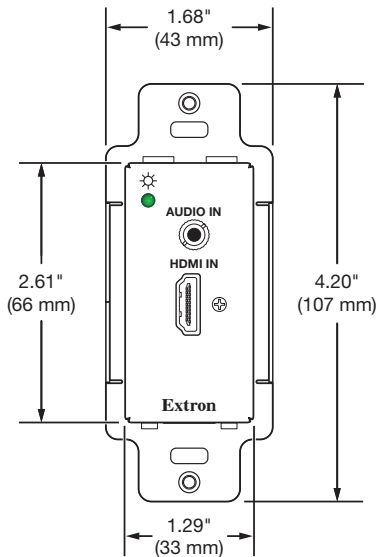
Cooling .....	Convection, vents on top and sides
Thermal dissipation	
System	
Device .....	TBD BTU/hour
Device and power supply...	TBD BTU/hour
Mounting	
HCT 101 D	
Furniture or wall mount .....	Yes, with 1-gang junction box or mud ring mounting bracket and the included decorator-style wallplate or an optional AAP 314 or AAP 424 panel
HCR 102	
Rack mount.....	Yes, with optional 1U high rack shelf or back of the rack mounting kit
Furniture mount .....	Yes, with included, attached MBU 125 under-desk mounting brackets
Enclosure type .....	Metal

# Specifications • HC 402 (HCT 101 D, HCR 102) (Continued)

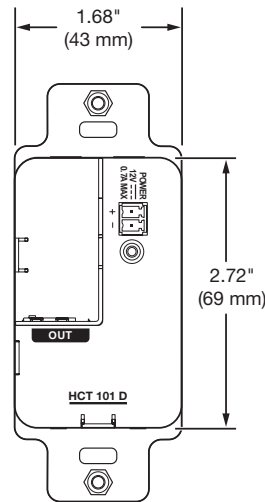
## Enclosure dimensions

### HCT 101 D

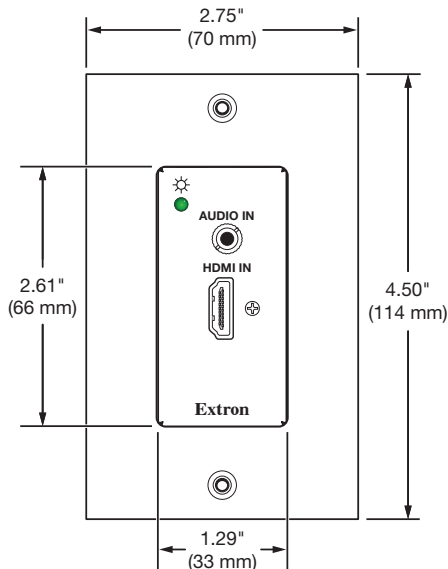
- Faceplate..... 2.61" H x 1.29" W x 0.25" D  
(66 mm H x 33 mm W x 6.4 mm D)
- Device ..... 2.72" H x 1.68" W x 1.87" D  
(69 mm H x 43 mm W x 48 mm D)  
(Depth excludes connectors, height excludes mounting tabs. Overall height is 4.20" (107 mm), including mounting tabs. Mounting holes are 3.2" (82 mm) apart on center. Fits the opening in a 1 gang decorator wallplate. Allow at least 3.0", 76 mm, depth in the wall or furniture.)



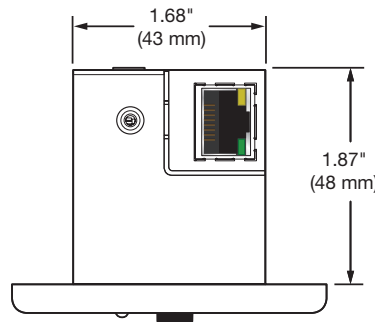
**HCT 101 D  
Front**



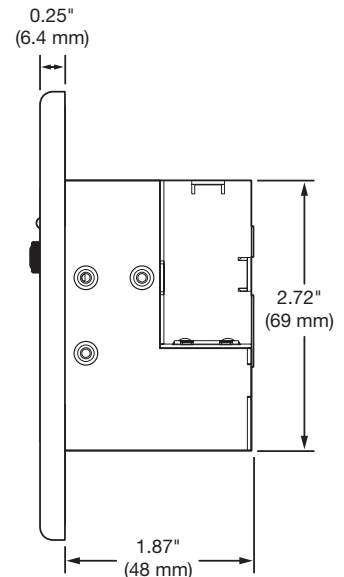
**HCT 101 D  
Rear**



**HCT 101 D  
(with Faceplate)  
Front**



**HCT 101 D  
(with Faceplate)  
Top**



**HCT 101 D  
(with Faceplate)  
Side**

- HCR 102 ..... 1.0" H x 8.75" W x 6.0" D (half rack wide)  
(25 mm H x 222 mm W x 152 mm D)  
(Depth excludes connectors.)

## Specifications • HC 402 (HCT 101 D, HCR 102) (Continued)

Product weight	
HCT 101 D .....	TBD lb (TBD kg)
HCR 102 .....	1.2 lbs (0.6 kg)
Regulatory compliance.....	CE**, C-tick, c-UL, FCC Class A**, ICES, UL, VCCI Complies with the appropriate requirements of RoHS, WEEE

**NOTE:** \*\*CE and FCC testing is conducted with STP (shielded twisted pair) I/O cable.

Product warranty .....	3 years parts and labor
Everlast power supply warranty.....	7 years parts and labor

**NOTE:** All nominal levels are at  $\pm 10\%$ .

**NOTE:** Specifications are subject to change without notice.

**NOTE:** Shipping weights and dimensions are available at [www.extron.com](http://www.extron.com).

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