

# Specifications

## DTP CrossPoint 108 4K

### TRUE 4K specification

Max. 4K Capabilities		
Resolution and Refresh Rate	Chroma Sampling	Max. Bit Depth per Color
4096 x 2160 at 30 Hz	4:4:4	8 bit
3840 x 2160 at 30 Hz		
4096 x 2160 at 60 Hz	4:2:0	
3840 x 2160 at 60 Hz		

Frame rate<sup>1</sup> ..... 24, 25, 30, 50, or 60 fps  
 Chroma sampling<sup>1</sup> ..... 4:4:4, 4:2:2, or 4:2:0  
 Color bit depth<sup>1</sup> ..... 8 bits per color  
 Signal type ..... HDMI 1.4, HDCP 1.4  
 Max. video data rate ..... 10.2 Gbps (3.4 Gbps per color)

**NOTE:** <sup>1</sup>Subject to the maximum data rate limit. Use our calculator (<http://www.extron.com/product/videtools.aspx>) to determine video parameters supported by this data rate.

### Video

Routing ..... 10 x 8 matrix  
 Maximum data rate ..... 10.2 Gbps (3.4 Gbps per color)  
 Maximum pixel clock ..... 300 MHz (600 MHz for 4K rates with 4:2:0 chroma subsampling)  
 Resolution ..... Up to 2560x1600\* @ 60 Hz or  
 4K (4096x2160) @ 30 Hz, UHD (3840x2160) @ 30 Hz  
 4K/UHD @ 60 Hz with 4:2:0 chroma subsampling\*\*  
 (\* reduced blanking)  
 (\*\* supported only at non-scaled HDMI outputs)  
 Formats ..... RGB and YCbCr digital video  
 Standards ..... DVI 1.0, HDMI 1.4, HDCP 1.4, CEA-861E

### Video input

Number/signal type ..... 6 HDMI digital video (HDCP compliant)  
 4 DTP or XTP (configurable)  
 Connectors ..... 6 female HDMI type A  
 4 female RJ-45

### Matrix video outputs (non scaled)

Number/signal type ..... 4 HDMI digital video (HDCP compliant)  
 Connectors ..... 4 female HDMI

## Scaled TP outputs

Number/signal type.....	4 DTP, XTP, or HDBaseT (configurable) 2 buffered HDMI digital video (HDCP compliant)
Connectors.....	4 female RJ-45 2 female HDMI
Video processing	
Digital pixel data bit depth .....	8, 10, or 12 bits per channel; 300 MHz pixel clock (HDMI)
Colors .....	1.07 billion (10-bit processing)
Video input	
Horizontal frequency.....	15 kHz to 100 kHz
Vertical frequency .....	24 Hz to 75 Hz
Resolution range .....	640x480 to 1600x1200 and 1920x1200* 480i, 480p, 576i, 576p, 720p, 1080i, 1080p, and 2K through 4K @ 30 Hz *reduced blanking
Scaled resolutions.....	640x480 <sup>8</sup> , 800x600 <sup>8</sup> , 852x480 <sup>8</sup> , 1024x768 <sup>8</sup> , 1024x852 <sup>8</sup> , 1024x1024 <sup>8</sup> , 1280x768 <sup>8</sup> , 1280x800 <sup>8</sup> , 1280x1024 <sup>8</sup> , 1360x765 <sup>8</sup> , 1360x768 <sup>8</sup> , 1365x768 <sup>8</sup> , 1366x768 <sup>8</sup> , 1365x1024 <sup>8</sup> , 1400x1050 <sup>8</sup> , 1440x900 <sup>8</sup> , 1600x900 <sup>8</sup> , 1600x1200 <sup>8</sup> , 1680x1050 <sup>8</sup> , 1920x1200 <sup>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> , 1920x2160 <sup>1,2,3,4,5,6,7,8</sup> , 1920x2400 <sup>2,3,5,8</sup> , 2048x1200 <sup>8</sup> , 2048x1536 <sup>8</sup> , 2048x2160 <sup>1,2,3,4,5,6,7,8</sup> , 2048x2400 <sup>2,3,5,8</sup> , 2560x1080 <sup>8</sup> , 2560x1440 <sup>8</sup> , 2560x1600 <sup>8</sup> , 3840x2160 <sup>1,2,3,4,5</sup> , 3840x2400 <sup>5</sup> , 4096x2160 <sup>1,2,3,4,5</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

## Logos

Number .....	16 logos
Resolution range.....	Up to 4096x2160
Image file formats.....	BMP, JPG, PNG, TIFF
Logo effects.....	Transparency, RGB key, level key, alpha key

## Shielded twisted pair interconnection

Connectors.....	Female RJ-45
Termination standard.....	TIA/EIA T568B
Signal transmission distance	
Resolutions up to 1920x1200 and 1080p	
DTP 330.....	Up to 330' (100 m) using shielded twisted pair cable or XTP DTP 24 TP cable
DTP 230.....	Up to 230' (70 m) using shielded twisted pair cable or XTP DTP 24 TP cable
2560x1600* and 4k @ 30 Hz (* reduced blanking)	
DTP 330.....	Up to 330' (100 m) using shielded twisted pair cable or XTP DTP 24 TP cable
DTP 230.....	Up to 130' (40 m) using shielded twisted pair cable or XTP DTP 24 TP cable
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.

**NOTE:** Input and output mode signaling:

<b>DTP:</b>	HDMI with embedded audio, analog audio, RS-232 and IR, and remote power
<b>XTP:</b>	HDMI with embedded audio plus RS-232 and IR
<b>HDBT:</b>	HDMI with embedded audio plus RS-232 and IR

## Audio system (mic/line input to line output)

Gain.....	Unbalanced output: -6 dB; balanced output: 0 dB
Frequency response .....	20 Hz to 20 kHz, $\pm 0.2$ dB
Input impedance.....	>10k ohms unbalanced, >20k ohms balanced
THD + Noise.....	0.01% at 1 kHz nominal level
S/N.....	105 dB at maximum balanced output (unweighted)
Crosstalk .....	<-90 dB @ 20 Hz to 20 kHz, fully loaded
Stereo channel separation.....	>80 dB @ 20 Hz to 20 kHz
Digital conversion.....	24-bit, 48 kHz

## Audio

Routing.....	10 x 8 stereo switching matrix 4 x 4 microphone mixing matrix
Supported formats — Pass through	
HDMI connectors .....	LPCM up to 7.1/24-bit/192kHz, 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
Analog connectors .....	Analog stereo audio
DTP connectors .....	De-embedded from HDMI [PCM only] or remote balanced/unbalanced analog

## Audio input

Number/signal type.....	6 stereo, analog line level, balanced or unbalanced 6 stereo, de-embedded from HDMI (PCM only) 4 DTP (de-embedded from HDMI [PCM only] and remote balanced/unbalanced analog), or XTP (embedded digital)
Connectors.....	(6) 3.5 mm captive screw connectors, 5-pole for analog line level inputs 6 female HDMI type A 4 female RJ-45
Analog audio	
Nominal level.....	+4 dBu, -10 dBV adjustable via input gain
Maximum level.....	+21 dBu balanced, +15 dBu unbalanced
Input gain adjustment.....	-18 dB to +24 dB, 0.1 dB steps, adjustable per input

**NOTE:** Unbalanced analog inputs at a DTP Tx input have +12 dB of gain applied to bring the signal to a nominal level for balanced operation.

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

## Mic/line input

Number/signal type.....	4 mono, mic/line, balanced/unbalanced (with phantom power)
Connectors.....	(4) 3.5 mm captive screw connectors, 3-pole
Impedance.....	10k ohms unbalanced, 20k ohms balanced
Nominal level.....	-60 dBV, +4 dBu, -10 dBV, adjustable via input gain
Maximum level.....	>+21 dBu at rated THD+N when mic gain is set to 0 dB
Equivalent input noise .....	<-120 dBV (1.0 $\mu$ Vrms) at +40 dB input gain
CMRR.....	>70 dB typical
Input gain adjustment.....	-18 dB to +80 dB, in 0.1 dB steps, adjustable per input
Microphone volume range.....	-100 dB to +12 dB
DC phantom power .....	+48 VDC, $\pm 10\%$ (inputs 1-4) switched on or off

## Audio output

Number/signal type.....	6 HDMI embedded 4 DTP (embedded digital and remote balanced/unbalanced analog), XTP (embedded digital), or HDBaseT (embedded digital) 4 stereo balanced/unbalanced analog (variable) 1 SPDIF
Connectors .....	6 female HDMI 4 RJ-45 (4) 3.5 mm captive screw, 5-pole (1) RCA
Impedance	
Stereo audio.....	50 ohms unbalanced, 100 ohms balanced
S/PDIF.....	75 ohms
Gain error.....	±0.1 dB channel to channel
Maximum level (Hi-Z).....	>+21 dBu, balanced or +15 dBu unbalanced
Output volume range .....	0 to -100 dB in 0.1 dB steps

## EXP port

Transmission type .....	Proprietary
Connectors .....	1 RJ-45
Inputs .....	16 channels Rx
Outputs .....	16 channels Tx
Audio format .....	24 bit, 48 kHz sampling, uncompressed
EXP cable .....	Shielded CAT 6 up to 10 meters

## Audio output – power amplifier

### (DTP CrossPoint 108 4K IPCP SA and DTP CrossPoint 108 4K IPCP MA models)

Number/signal type	
SA models.....	1 stereo or mono (2 channels total)
MA models.....	1 mono, 70 V
Connector	

**NOTE:** This connector accepts wires of 22 AWG to 12 AWG.

SA models.....	(1) 5 mm screw lock captive screw connector, 4-pole
MA models.....	(1) 5 mm screw lock captive screw connector, 2-pole
Load impedance	
SA models.....	4 ohms minimum
MA models.....	50 ohms minimum
High pass filter (MA models).....	80 Hz, 12 dB/octave roll off
Amplifier type .....	Class D
Output power	
SA models.....	25 watts (rms) per channel, 8 ohms, 1 kHz, 0.1% THD 50 watts per channel, 4 ohms, 1 kHz, 0.1% THD
MA models.....	100 watts (rms) @ 70 V, 1 kHz, 0.1% THD
Protection .....	Clip limiting, thermal, short circuit, DC output
Frequency response	
SA models.....	20 Hz to 20 kHz, +1/-3 dB @ 1 watt
MA models.....	80 Hz to 20 kHz, +1/-3 dB @ 1 watt
THD + Noise .....	<0.1%, 1 kHz, 3 dB below clipping
S/N.....	>90 dB, 20 Hz to 20 kHz, unweighted

## Communications – switcher

Serial control port.....	1 bidirectional RS-232, 3.5 mm captive screw connector, 3-pole (rear panel)
Baud rate and protocol .....	9600 (default) to 115200 baud, 8 data bits, 1 stop bit, no parity (default)
Serial control pin configuration .....	1 = Tx, 2 = Rx, 3 = Gnd
USB control port .....	1 front panel female USB mini-B
USB standards .....	USB 2.0, low speed
Ethernet control port .....	1 female RJ-45 connector
Ethernet data rate .....	10/100Base-T, half/full duplex with autodetect
Ethernet protocol .....	DHCP, DNS, HTTP, HTTPS, ICMP, NTP, SFTP, SMTP, SNMP, SSH, TCP/IP, UDP/IP, ARP, Telnet
Ethernet default settings .....	Link speed and duplex level = autodetected IP address = 192.168.254.254 Subnet mask = 255.255.0.0 Default gateway = 0.0.0.0 DHCP = off
Web server .....	Up to 200 simultaneous sessions 40.0 MB nonvolatile user memory
Program control.....	Extron control/configuration program for Windows® Extron Simple Instruction Set (SIS™) Microsoft® Internet Explorer®, Telnet

## Communications – external device (pass-through, unidirectional or bidirectional) (RS-232/IR over TP)

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.....	1, 2, 3, 4 = digital I/Os 1, 2, 3, 4; 5 = Gnd

IR/serial control

**NOTE:** Protocol is mirrored between the connected TP endpoints and the "Over TP" ports on the DTP CrossPoint switcher. Signals from a control device pass into each DTP CrossPoint 108 "Over TP" port, are embedded with the TP signal, and sent to individual TP Tx or Rx endpoints for control of remote sink or source devices.  
The "Over TP" ports are simply pass-through connections to TP endpoints. There is no IR insertion from any DTP CrossPoint 108 control port to the "Over TP" ports. RS-232 can be inserted from the Ethernet connection.

### Serial control pass-through ports

DTP CrossPoint 108 input/TP Tx.....	RS-232 via (2) 3.5 mm, 5-pole captive screw connectors (shared with IR ports)
DTP CrossPoint 108 output/TP Rx.....	RS-232 via (2) 3.5 mm, 5-pole captive screw connectors (shared with IR ports)
Baud rates .....	300 to 115200 baud
Protocol .....	8 or 7 data bits 1 or 2 stop bits no parity (default), even or odd parity
Serial control pin configuration .....	1 = Tx, 2 = Rx, 3 = Gnd
IR pass-through control ports.....	TTL level (0 to 5 V) modulated infrared control from 30 kHz up to 60 kHz
DTP CrossPoint switcher input/TP Tx.....	(4) 3.5 mm captive screw connectors, 5-pole (shared with RS-232 ports)
DTP CrossPoint switcher output/TP Rx.....	(4) 3.5 mm captive screw connectors, 5-pole (shared with RS-232 ports)
IR control pin configuration .....	3 = Gnd, 4 = IR Tx, 5 = IR Rx

## Control Processor – DTP CrossPoint 108 4K IPCP Models

Memory	
SDRAM .....	512 MB
Flash .....	4.5 GB
Software and control options	
Software.....	Extron Global Configurator Plus and Professional for Windows®
Control options.....	GlobalViewer®, TouchLink® for Web, TouchLink for iPad®, or TouchLink Pro touchpanels
Ethernet control	
Network interface controllers (NICs) .....	1
Network switch .....	1 unmanaged 3 port switch
Connectors .....	3 female RJ-45 connectors
Data rate .....	10/100/1000Base-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 control	
Quantity/type.....	1 bidirectional RS-232, RS-422, RS-485 (port 1) 2 bidirectional RS-232 (ports 2 and 3)
Connectors .....	(1) 3.5 mm captive screw connector, 5-pole (2) 3.5 mm captive screw connectors, 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, odd, mark, or space parity

**NOTE:** The 5-pole ports support both hardware and software flow control.  
The 3-pole ports support software flow control.  
The default for both types of ports is no flow control.

Pin configurations, serial, 5-pole captive screw	
RS-232 (default).....	Pin 1 = Tx, 2 = Rx, 3 = Gnd, 4 = RTS, 5 = CTS
RS-422.....	Pin 1 = Tx-, 2 = Rx-, 3 = Gnd, 4 = Tx+, 5 = Rx+
RS-485.....	Pins 1 and 2 (tied together) = data-, 3 = Gnd, 4 and 5 (tied together) = data+
Pin configurations, serial, 3-pole captive screw .....	
	Pin 1 = Tx, 2 = Rx, 3 = Gnd
Digital I/O control	
Quantity/type.....	4 digital input/output (configurable)
Connectors .....	(1) 3.5 mm captive screw connector, 5-pole
Digital inputs	
Input voltage range.....	0 to 24 VDC, clamped at +30 VDC
Input impedance.....	29k ohms
Programmable pullup.....	1k ohms to +5 VDC
Quantity/type.....	2 programmable: unidirectional RS-232 (±5 V), or TTL level (0 to 5 V) infrared (carrier and non-carrier) up to 300 kHz
Connector .....	(1) 3.5 mm captive screw connector, 5-pole
Baud rate and protocol	
(RS-232).....	300 to 115200 baud (9600 baud = default); 8 (default) or 7 data bits; 1 (default) or 2 stop bits; no parity (default), even, odd, mark, or space parity
Pin configurations.....	For each port, pin 1 = signal, 2 = Gnd
IR output carrier frequency .....	30 kHz to 300 kHz

Relay control	
Quantity/type.....	4 normally open relays
Relay control connectors .....	(1) 3.5 mm captive screw connector, 6-pole
Relay control contact rating .....	24 VDC, 1 A

## General

Power supply .....	Internal Input: 100-240 VAC, 50-60 Hz
Power consumption	
IICP MA Models .....	184 watts
IICP SA Models.....	179 watts
Non-IICP Models .....	154 watts
Remote power capability.....	Supports up to eight endpoints (four DTP Tx, four DTP Rx) (remote power not available in XTP and HDBaseT modes)
Temperature/humidity .....	Storage: -40 to +104 °F (-40 to +40 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
Cooling .....	Fans, air flows from right to left (as viewed from front panel)
Thermal dissipation	
IICP MA Models .....	628 BTU/hr
IICP SA Models.....	562 BTU/hr
Non-IICP Models .....	526 BTU/hr
Mounting	
Rack mount.....	Yes
Enclosure type .....	Metal
Enclosure dimensions .....	5.25" H x 17.4" W x 15.3" D (3U high, full rack wide) (13.3 cm H x 43.2 cm W x 38.9 cm D) (Depth excludes connectors and knobs. Width excludes rack ears.)
Product weight .....	16.3 lbs (7.4 kg)
DIM weight .....	32 lbs (15 kg)
Vibration .....	ISTA 1A in carton (International Safe Transit Association)
Regulatory compliance	
Safety .....	CE, c-UL, UL
EMI/EMC.....	CE, C-tick, FCC Class A, ICES, VCCI
Environmental.....	Complies with the appropriate requirements of RoHS, WEEE.
Warranty .....	3 years parts and labor

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

**NOTE:** All nominal levels are at ±10%.

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

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