Extron

Specifications
DTP CrossPoint 84 Series

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	4:2:4	
3840 x 2160 at 60 Hz		

Frame rate[1] .... 24, 25, 30, 50, or 60 fps
Chroma sampling[1] .... 4:4:4, 4:2:2, or 4:2:0
Color bit depth[1]............................. 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: [1]Subject to the maximum data rate limit. Use our calculator (**www.extron.com/8Kdatarate**) to determine video parameters supported by this data rate.

Video
Routing... 8 x 4 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 sampling)
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)
Formats .... RGB and YCbCr digital video
Standards .... DVI 1.0, HDMI, HDCP 1.1, CEA-861E

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

Matrix video outputs (non scaled)
Number/signal type......................... 2 HDMI digital video (HDCP compliant)
Connectors..................................... 2 female HDMI

Scaled TP outputs
Number/signal type......................... 2 DTP, XTP, or HDBase T (configurable)
Connectors..................................... 2 female RJ-45
Video processing
    Digital pixel data bit depth .... 8, 10, or 12 bits per channel; 165 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
                                                      *reduced blanking

Scaled resolutions......................... $640x480^8$, $800x600^8$, $852x480^8$, $1024x768^8$, $1024x852^8$, $1024x1024^8$, $1280x768^8$, $1280x800^8$, $1280x1024^8$, $1360x765^8$, $1360x768^8$, $1365x768^8$, $1366x768^8$, $1365x1024^8$, $1400x1050^8$, $1440x900^8$, $1600x900^8$, $1600x1200^8$, $1680x1050^8$, $1920x1200^8$

                                          HDTV $480p^{7,8}$, $576p^6$, $720p^{3,4,5,6,7,8}$, $1080i^{6,7,8}$, $1080p^{1,2,3,4,5,6,7,8}$, $2048x1080^{1,2,3,4,5,6,7,8}$

                                          ^{1} = at 23.98 Hz, ^{2} = at 24 Hz, ^{3} = at 25 Hz, ^{4} = at 29.97 Hz, ^{5} = at 30 Hz, ^{6} = at 50 Hz, ^{7} = at 59.94 Hz, ^{8} = at 60 Hz

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:
        DTP: HDMI with embedded audio, analog audio, RS-232 and IR, and remote power
        XTP: HDMI with embedded audio plus RS-232 and IR
        HDBT: 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, ±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... 8 x 4 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 conectors .... 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)
	2 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
	2 female RJ-45

Analog audio

Nominal level	+4 dBu, -10 dBV configurable
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 ≈ 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 µVrms) 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, ±10% (inputs 1-4) switched on or off

Audio output

Number/signal type........................	2 HDMI embedded
	2 DTP (embedded digital and remote balanced/unbalanced analog), XTP (embedded digital), or HDBaseT (embedded digital)
	4 stereo balanced/unbalanced analog (variable)
Connectors....................................	2 female HDMI
	2 RJ-45
	(4) 3.5 mm captive screw, 5 pole

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 IPCP SA and DTP CrossPoint IPCP MA models)

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

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

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

> **NOTE:** Protocol is mirrored between the connected DTP 330 endpoints and the "Over TP" ports on the DTP CrossPoint 84. Signals from a control device pass into each DTP CrossPoint 84 "Over TP" port, are embedded with the DTP signal, and sent to individual DTP 330 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 84 control port to the "Over TP" ports. RS-232 can be inserted from the Ethernet connection.

Serial control pass-through ports
 DTP CrossPoint 84 input/
 DTP Tx .... RS-232 via (2) 3.5 mm, 5 pole captive screw connectors (shared with IR ports)
 DTP CrossPoint 84 output/
 DTP 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 84 input/
 DTP Tx .... (2) 3.5 mm captive screw connectors, 5 pole (shared with RS-232 ports)
 DTP CrossPoint 84 output/
 DTP Rx.................................... (2) 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 (IPCP Pro 350) — DTP CrossPoint 84 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
  - 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
- 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
- DTP CrossPoint 84.................. 101 watts
- DTP CrossPoint 84 SA .... 136 watts
- DTP CrossPoint 84 MA 70 ...... 136 watts

Remote power capability............... Supports up to four endpoints (two DTP Tx, two DTP Rx) (remote power not available in XTP and HDBaseT modes)

Temperature/humidity .... Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing
Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing

Cooling .... Fans, air flows from left to right (as viewed from front panel)

Thermal dissipation
- DTP CrossPoint 84.................. 250 BTU/hr
- DTP CrossPoint 84 SA .... 264 BTU/hr
- DTP CrossPoint 84 MA 70 ...... 265 BTU/hr

Mounting
- Rack mount............................ Yes

Enclosure type .... Metal
Enclosure dimensions .... 3.5" H x 17.4" W x 15.3" D (2U high, full rack wide)
(8.9 cm H x 43.2 cm W x 38.9 cm D)
(Depth excludes connectors and knobs. Width excludes rack ears.)
Product weight .... 11.4 lbs (5.2 kg)
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., KC
Product warranty .... 3 years parts and labor
Everlast power supply warranty...... 7 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**.

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