

# Specifications

## DTP HDMI 230 4K Tx/Rx

### TRUE 4K specification

Max. 4K Capabilities		
Resolution and Frame Rate	Chroma Sampling	Max. Bit Depth per Color
4096x2160 at 30 Hz	4:4:4	8 bit
3840x2160 at 30 Hz		
4096x2160 at 60 Hz	4:2:0	
3840x2160 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 2.2  
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/videotools.aspx>) to determine video parameters supported by this data rate.

**NOTE:** This product consists of a transmitter (DTP HDMI 4K 230 Tx) and a receiver (DTP HDMI 4K 230 Rx), sold separately, with twisted pair cables linking the transmitter and receiver.

**NOTE:** \*Appropriate HDMI to DVI-D cables or adapters are required for DVI signal input/output.

### Video

Maximum data rate ..... 10.2 Gbps (3.4 Gbps per color)  
Maximum pixel clock ..... 300 MHz  
Resolution range ..... 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)  
Color bit depth ..... 8, 10, or 12 bits — subject to the maximum data rate limit  
Formats ..... RGB and YCbCr digital video  
Standards ..... DVI 1.0, HDMI 1.4, HDCP 2.2, CEA-861E

### Video input — transmitter

Number/signal type ..... 1 single link HDMI (or DVI-D\*)  
Connectors ..... 1 female HDMI type A

## Interconnection between transmitter and receiver

Connectors .....	1 female RJ-45 per unit
Termination standard.....	TIA/EIA T568B
Signal transmission distance	
1080p @ 60 Hz .....	Up to 230' (70 m) using shielded twisted pair (STP) cable or XTP DTP 24 STP cable
2560x1600 @ 60 Hz.....	Up to 130' (40 m) using shielded twisted pair (STP) cable or XTP DTP 24 STP cable
4K/UHD @ 30Hz and 60 Hz ....	Up to 130' (40 m) using shielded twisted pair (STP) cable or XTP DTP 24 STP 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.

## Video output – receiver

Number/signal type.....	1 single link HDMI (or DVI-D*)
Connectors.....	1 female HDMI type A

## 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 20 kHz at maximum output
S/N.....	>90 dB, at maximum output (15 dBu), balanced (unweighted)
Stereo channel separation.....	>80 dB @ 1 kHz to 20 kHz

## Audio input

Number/signal type.....	1 PC level stereo, unbalanced
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**NOTE:** Analog audio is not embedded onto the digital video signal. Embedded digital audio is not de-embedded from the digital video signal.

Connectors.....	(1) 3.5 mm stereo jack, 2 channel; tip (L), ring (R), sleeve (ground)
Impedance.....	>10k ohms, DC coupled
Nominal level.....	-10 dBV (316 mVrms)
Maximum level .....	+7 dBV (unbalanced)

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

## Audio output

Number/signal type.....	1 stereo (2 channel), balanced/unbalanced
Connectors.....	(1) 3.5 mm captive screw connector, 5 pole
Impedance.....	50 ohms unbalanced, 100 ohms balanced
Gain error.....	$\pm 0.1$ dB channel to channel
Maximum level (600 ohm) .....	>+11 dBu, balanced

## Control/remote – external device (pass-through, unidirectional or bidirectional)

Serial control port input/output	
Transmitter .....	RS-232 via (1) 3.5 mm, 5 pole captive screw connector for RS-232 control ( $\pm 5$ V) (connector is shared with IR control port)
Receiver .....	1 set of proprietary signals on a female RJ-45 jack
Serial control port output/input	
Transmitter .....	1 set of proprietary signals on a female RJ-45 jack
Receiver .....	RS-232 via a 3.5 mm, 3 pole captive screw connector
Baud rate and protocol .....	300 to 115200 baud, 8 or 7 data bits, 1 or 2 stop bits, non-parity (default), even or odd parity
Serial control pin configuration .....	1 = Tx, 2 = Rx, 3 = Gnd
IR control port .....	(1) 3.5 mm, captive screw connector, 5 pole (connector is shared with RS-232 control port) TTL level (0 to 5 V) modulated infrared control from 30 kHz up to 60 kHz
IR control pin configuration .....	3 = Gnd, 4 = IR Tx, 5 = IR Rx

## General

Power supply .....	External Input: 100-240 VAC, 50-60 Hz Output: 12 VDC, 1 A, 12 watts
Power consumption	
Transmitter	
Device .....	2.5 watts, 12 VDC
Device and power supply...	3.4 watts, 100-240 VAC, 50-60 Hz
Receiver	
Device .....	4.2 watts, 12 VDC
Device and power supply...	5.8 watts, 100-240 VAC, 50-60 Hz

**NOTE:** Each transmitter or receiver can be powered either locally by an external power supply or remotely by receiver or transmitter on the other end of the twisted pair cable.

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 .....	Convection, no vents
Thermal dissipation	
Transmitter	
Device .....	7.4 BTU/hr
Device and power supply...	10.4 BTU/hr
Receiver	
Device .....	13.0 BTU/hr
Device and power supply...	18.7 BTU/hr
Mounting	
Rack mount .....	Yes, with optional 1U high rack shelf
Furniture mount .....	Yes, with optional under-desk mounting kit
Enclosure type .....	Metal
Enclosure dimensions	
Transmitter .....	1.0" H x 4.3" W x 3.0" D (quarter rack wide) (2.5 cm H x 10.9 cm W x 7.6 cm D) (Depth excludes connectors.)
Receiver .....	1.0" H x 4.3" W x 6.0" D (quarter rack wide) (2.5 cm H x 10.9 cm W x 15.2 cm D) (Depth excludes connectors.)
Product weight	
Transmitter .....	0.5 lbs (0.3 kg)
Receiver .....	1.0 lb (0.5 kg)
Shipping weight .....	3 lbs (2 kg)

Vibration ..... ISTA 1A in carton (International Safe Transit Association)  
Regulatory compliance  
Safety ..... CE, c-UL, UL  
UL rated for use in plenum airspaces: meets UL 2043 for heat and smoke release,  
excluding the power supply.  
EMI/EMC ..... CE\*\*, C-tick, FCC Class A\*\*, ICES, VCCI, KCC

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

Warranty ..... 3 years parts and labor

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

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

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