

Specifications

DTP T DSW 4K 233

DTP T DSW 4K 333

TRUE 4K specification

Max. 4K Capabilities		
Resolution and Refresh 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 ¹	24, 25, 30, 50 ² , or 60 ² fps
Chroma sampling ¹	4:4:4, 4:2:2, or 4:2:0 ²
Color bit depth ¹	8 bits per color
Signal type ¹	HDMI 1.4, DisplayPort 1.1a, HDCP 1.4
Maximum video data rate ¹	
HDMI	10.2 Gbps (3.4 Gbps per color)
DisplayPort	10.8 Gbps (2.7 Gbps per lane)

NOTE: ¹Subject to the maximum data rate limit. Use our calculator (www.extron.com/8Kdata rate) to determine video parameters supported by this data rate.
²Applicable to HDMI signals only.

Video

VGA input

Gain	Unity
Bandwidth	170 MHz (-3 dB)
Crosstalk	-50 dB @ 10 MHz, -30 dB @ 100 MHz

HDMI input

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 1.4, CEA-861E

DisplayPort input

Maximum data rate	10.8 Gbps (2.7 Gbps per lane)
Maximum pixel clock	300 MHz
Resolution range	Up to 2560x1600* @ 60 Hz or 4K (4096x2160) @ 30 Hz (*Reduced blanking)
Formats	RGB and YCbCr digital video
Standards	DisplayPort 1.1a

Video input

Number/signal type	
VGA input.....	1 VGA-WUXGA RGBHV
HDMI input.....	1 single link HDMI (or DVI-D*)
DisplayPort input	1 DisplayPort

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

Connectors

VGA input.....	1 female 15-pin HD
HDMI input.....	1 female HDMI, type A
DisplayPort input	1 female DisplayPort

VGA input

Nominal level	1.0 Vp-p
Minimum/Maximum levels	Analog 0.3 V to 1.5 Vp-p with no offset
Impedance	75 ohms
Horizontal frequency.....	15 kHz to 145 kHz
Vertical frequency	30 Hz to 170 Hz
Return loss.....	<-40 dB @ 5 MHz

Video output

Number/signal type	
DTP T DSW 4K 233	1 DTP 230 (output)
DTP T DSW 4K 333	1 DTP 330 (output)

Interconnection between transmitter and receivers

Connector.....	1 RJ-45 jack
Termination standards.....	TIA/EIA T568B
Signal transmission distance	
DTP T DSW 4K 233	
1080p @ 60 Hz.....	Up to 230' (70 m) using shielded twisted pair (STP) cable or XTP DTP 24 cable
2560x1600 @ 60 Hz.....	Up to 130' (40 m) using STP cable or XTP DTP 24 cable
4K/UHD @ 30 and 60 Hz...	Up to 130' (40 m) using STP cable or XTP DTP 24 cable
DTP T DSW 4K 333	
1080p @ 60 Hz.....	Up to 330' (100 m) using shielded twisted pair (STP) cable or XTP DTP 24 cable
2560x1600 @ 60 Hz.....	Up to 330' (100 m) using STP cable or XTP DTP 24 cable
4K/UHD @ 30 and 60 Hz...	Up to 330' (100 m) using STP cable or XTP DTP 24 cable
Cable requirements	Solid conductor, 24 AWG or better
Cable recommendations.....	400 MHz bandwidth STP cable

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

NOTE: Output mode signaling:

DTP:	HDMI with embedded audio, analog audio, RS-232 and IR, and remote power
HDBaseT:	HDMI with embedded audio plus RS-232 and IR

Sync – VGA

Input type	RGBHV, bi-level and tri-level sync
Input level	1.9 V to 5.0 Vp-p
Input impedance.....	510 ohms
Max input voltage.....	5.0 Vp-p

Audio

Frequency response	20 Hz to 20 kHz, ± 0.5 dB
THD + Noise	0.03% @ 1 kHz at nominal level
S/N	>90 dB at maximum input (unweighted)
Stereo channel separation.....	>80 dB @ 1 kHz

Audio input

Number/signal type.....	1 stereo, unbalanced
Connector.....	(1) 3.5 mm mini audio jacks; tip (L), ring (R), sleeve (Gnd)
Impedance.....	>10k ohms, DC coupled
Nominal level.....	-10 dBV (316 mVrms)
Maximum level	+6 dBV, unbalanced

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

Control/remote — switcher

Serial control port.....	RS-232 via 1 rear panel 3.5 mm, 3-pole captive screw connector
Pin configuration.....	Pin 1 = Tx, Pin 2 = Rx, Pin 3 = Gnd
Baud rate and protocol	9600 baud, 8 data bits, 1 stop bit, no parity
Contact closure	(1) 3.5 mm 4-pole captive screw connector
Pin configuration.....	Pin 1 = input 1 contact, Pin 2 = input 2 contact, Pin 3 = input 3 contact, Pin 4 = Gnd
Tally output	(1) 3.5 mm 4-pole captive screw connector
Pin configuration.....	Pin 1 = input 1 tally ground, Pin 2 = input 2 tally ground, Pin 3 = input 3 tally ground, Pin 4 = +5 V
USB control port.....	1 front panel female mini USB B
USB standards	USB 2.0, low speed
Program control	Extron Simple Instruction Set (SIS™)

Communications — external device (RS-232/IR over TP)

NOTE: Protocol is mirrored between the connected DTP 230 Rx or DTP 330 Rx endpoints and the "Over TP" ports on the DTP T DSW 4K series. Signals from a control device pass into each "Over TP" port, are embedded with the DTP signal, and sent to the individual DTP 230 Rx or DTP 330 Rx endpoints for control of remote sink or source devices. The "Over TP" ports are pass-through connections to DTP endpoints. There is no RS-232 or IR insertion from any DTP T DSW 4K control port to the "Over TP" ports.

Serial control port.....	Bidirectional RS-232 via 1 rear panel 3.5 mm, 5-pole captive screw connector (connector is shared with IR control ports)
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 pass-through control port	1 bidirectional rear panel 3.5 mm, 5-pole captive screw connector (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, 2 A, 24 watts

NOTE: This product requires a locally connected power supply. It can provide remote DC power to a connected DTP receiver over twisted pair.

Power consumption

Device

DTP T DSW 4K 233.....	6.8 watts
DTP T DSW 4K 333.....	7.1 watts

Device and power supply

DTP T DSW 4K 233.....	8.4 watts
DTP T DSW 4K 333.....	8.6 watts

Remote power budget

DTP T DSW 4K 233.....	12 watts
DTP T DSW 4K 333.....	12 watts

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, vents on top and sides
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Thermal dissipation

Device

DTP T DSW 4K 233.....	23.1 BTU/hr
DTP T DSW 4K 333.....	24.2 BTU/hr

Device and power supply

DTP T DSW 4K 233.....	28.6 BTU/hr
DTP T DSW 4K 333.....	29.3 BTU/hr

Rack mount	Yes, with optional rack shelf kit
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Enclosure type	Metal
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Enclosure dimensions	1.0" H x 8.75" W x 6.0" D (1" high, half rack wide)
	2.5 cm H x 22.2 cm W x 15.2 cm D (depth excludes connectors)

Product weight	1.1 lbs (0.5 kg)
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Vibration	ISTA 1A in carton (International Safe Transit Association)
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Regulatory compliance

Safety.....	CE, c-UL, UL
EMI/EMC.....	CE**, C-tick, FCC Class A**, ICES
Environmental.....	Complies with the appropriate requirements of RoHS, WEEE

NOTE: **CE and FCC testing is conducted with STP cable.

Warranty	3 years parts and labor
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NOTE: All nominal levels are at $\pm 10\%$.

NOTE: Specifications are subject to change without notice.

NOTE: Shipping dimensions and weights are available at <http://www.extron.com>.

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