

# Specifications

## XTP T USW 103 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<sup>2</sup>, or 60<sup>2</sup> fps  
 Chroma sampling<sup>1</sup> ..... 4:4:4, 4:2:2, or 4:2:0<sup>2</sup>  
 Color bit depth<sup>1</sup> ..... 8 bits per color  
 Signal type ..... DisplayPort 1.1, DVI 1.0, HDMI 1.4, HDCP 1.4 and 2.2  
 Max. video data rate  
     HDMI ..... 10.2 Gbps (3.4 Gbps per color)  
     DisplayPort ..... 10.8 Gbps (2.7 Gbps per lane)

**NOTE:** <sup>1</sup>Subject to the maximum data rate limit. Use our calculator at [www.extron.com/4Kdata](http://www.extron.com/4Kdata) to determine video parameters supported by this data rate.

<sup>2</sup>Applicable to HDMI signals only

**NOTE:** The XTP T USW 103 4K switcher can be used with other XTP products, with twisted pair cables connecting the units.

### Video

#### VGA

Gain ..... Unity  
 Resolution range ..... Up to 1920x1200\* or 1080p (HDTV)  
     \* reduced blanking

#### HDMI

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 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  
 Formats ..... RGB and YCbCr digital video  
 Standards ..... DisplayPort 1.1, DVI 1.0, HDMI 1.4; HDCP 1.4 and 2.2

DisplayPort	
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, UHD (3840x2160) @ 30 Hz * reduced blanking
Formats .....	RGB and YCbCr digital video
Standards .....	DisplayPort 1.1; HDCP 1.3

**NOTE:** Only Single Stream Transport (SST) is supported.

### Video input

Number/signal type .....	1 analog RGBHV 1 single link HDMI (or DVI-D or DisplayPort) 1 DisplayPort
Connectors .....	1 female 15-pin HD 1 female HDMI type A 1 female DisplayPort
Nominal level .....	0.7 Vp-p for RGB
Minimum/maximum levels .....	0.3 V to 1.45 Vp-p
Impedance .....	75 ohms
Horizontal frequency .....	30 kHz to 100 kHz
Vertical frequency .....	24 Hz to 120 Hz

### Video output – switched, local

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

### Shielded twisted pair interconnection

Connectors .....	1 female RJ-45 per unit
Termination standards .....	TIA/EIA T568B
Signal transmission distance .....	330' (100 m) using shielded twisted pair or XTP DTP 24 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.

### Audio

Gain	
Range .....	Adjustable, -18 dB to +24 dB
Default .....	Unbalanced output: 0 dB; balanced output +6 dB
Frequency response .....	20 Hz to 20 kHz, ±0.5 dB
THD + Noise .....	<0.1%, 20 Hz - 20 kHz at nominal level
S/N .....	>90 dB, at maximum balanced output (unweighted)
Crosstalk .....	≤-80 dB @ 1 kHz, fully loaded
Stereo channel separation .....	>80 dB @ 1 kHz
Sampling rates .....	32 kHz, 44.1 kHz, 48 kHz, 96 kHz, 192 kHz
Bit depths .....	16, 20, 24 bit

## Audio input

Number/signal type.....	1 analog stereo, unbalanced or 1 digital audio, de-embedded from HDMI 1 digital audio, de-embedded from DisplayPort
Connectors.....	1 female 3.5 mm mini stereo jack 1 female HDMI type A (shared with video input) 1 female DisplayPort (shared with video input)
Source formats .....	LPCM up to 7.1/24-bit/192 kHz, Dolby Atmos™, 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 stereo
Impedance.....	>10k ohms, unbalanced, DC coupled
Nominal level.....	-10 dBV (316 mVrms) unbalanced
Maximum level.....	+7 dBV unbalanced

**NOTE:** 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV ≈ 2 dBu

## Audio output

Number/signal type.....	1 digital audio, embedded with HDMI output
Connectors.....	1 female HDMI type A (shared with video output)
Source formats .....	LPCM up to 7.1/24-bit/192 kHz, Dolby Atmos™, 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

**NOTE:** 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV ≈ 2 dBu

## Communications – switcher

Serial control ports.....	1 bidirectional RS-232, 3.5 mm captive screw, 3 pole
Baud rate and protocol .....	9600 (default) to 115200 baud, 8 data bits, 1 stop bit, no parity
Serial control pin configuration .....	1 = Tx, 2 = Rx, 3 = GND
Contact closure .....	(1) 3.5 mm captive screw connector, 4 pole
Contact closure pin configuration...	1 = Input 1, 2 = Input 2, 3 = Input 3, 4 = GND
Tally output .....	3 tally outputs on (1) 3.5 mm captive screw connector, 4 pole
Tally pin configuration.....	1 = Input 1 tally ground, 2 = Input 2 tally ground, 3 = Input 3 tally ground, 4 = +5 V
USB control ports .....	1 front panel female mini USB B
USB standards .....	USB 2.0, low speed
Program control.....	Extron control/configuration program for Windows® Extron Simple Instruction Set (SIS™)

## Communications – external device (pass-through, unidirectional or bidirectional)

Serial control pass-through port....	RS-232 (+5 V) via a (1) 3.5 mm, 5 pole captive screw connector (uses 3 poles) (connector is shared with the IR control port)
Baud rates.....	Up to 115200 baud
Protocol.....	Data bits = 5 - 8 Stop bits = 1 or 2 Parity = odd, even, none Flow control = XON, XOFF, none
Serial control pin configuration .....	1 = Tx, 2 = Rx, 3 = GND
IR control port.....	(1) 3.5 mm, captive screw connector, 5 pole (uses 3 poles) (connector is shared with the RS-232 control port) TTL level (0 to 5 V) modulated infrared control from 30 kHz up to 56 kHz
IR control pin configuration .....	3 = GND, 4 = IR Tx, 5 = IR Rx
Ethernet pass-through port.....	1 female RJ-45 connector
Ethernet data rate .....	10/100Base-T, half/full duplex with autodetect

## General

Power supply .....	External Input: 100-240 VAC, 50-60 Hz Output: 12 VDC, 1.5 A, 18 watts
Power consumption	
Device .....	16.5 watts, 12 VDC
Device and power supply .....	18.2 watts, 12 VDC

**NOTE:** The XTP T USW 103 4K requires a locally connected power supply.

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 sides and top
Thermal dissipation	
Device .....	55.3 BTU/hr
Device and power supply .....	61.1 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 .....	1.66" H x 8.68" W x 8.5" D (half rack wide) (4.2 cm H x 22.1 cm W x 21.5 cm D) (Depth excludes connectors.)
Product weight .....	2.7 lbs (1.2 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:** 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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