

Specifications

Quantum Ultra

NOTE: The Quantum Ultra 610 has 10 slots for input or output cards. Each slot can accommodate up to 4 HDMI inputs or 4 HDMI outputs.

TRUE 4K

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		
3840 x 2160 at 60 Hz		

Frame rate 24, 25, 30, 50, or 60 fps
 Chroma sampling¹ 4:4:4 or 4:2:2
 Color bit depth¹ 8 or 10 bits per color
 Signal type DVI 1.0, HDMI 1.4, and HDCP 1.4
 Max. video data rate 10.2 Gbps (3.4 Gbps per color) per connection

NOTE: ¹Subject to the maximum data rate limit. Use our calculator at www.extron.com/4KdataRate to determine video parameters supported by this data rate.

NOTE: This product requires two or four parallel connections to achieve 4K at 50 or 60 fps.

Video input – HDMI – IN4HDMI

Number/signal type HDMI/DVI (HDCP 1.4 compliant)
 Connectors 4 female HDMI type A
 Maximum pixel clock
 Inputs 1 and 3 165 MHz
 Inputs 2 and 4 300 MHz
 Formats RGB and YCbCr digital video
 Horizontal frequency 15 kHz to 135 kHz
 Vertical frequency 24 Hz to 75 Hz
 Resolution range 640x480 to 3840x2400*
 480i, 576i, 480p, 576p, 720p, 1080i, 1080p, 2048x1080, 4096x2160*
 *4K resolutions are supported up to 30 Hz refresh rate. 4K at 60Hz is supported using two or four parallel connections.

NOTE: Pixel clocks up to 300 MHz are supported on input connectors 2 and 4 only.

Standards DVI 1.0, HDMI 1.4, HDCP 1.4

Video processing – HDMI – IN4HDMI

Digital pixel data bit depth 8, 10, or 12 bits per channel
 Colors 1.07 billion (10-bit processing with full 4:4:4 sampling)

Video output – HDMI – OUT4HDMI

Number/signal type.....	HDMI/DVI (HDCP 1.4 compliant)
Connectors.....	4 female HDMI
Peripheral device power.....	250 mA per output
Vertical frequency.....	23.98 Hz, 24 Hz, 25 Hz, 29.97 Hz, 30 Hz, 50 Hz, 59.94, 60 Hz
Scaled resolutions.....	1024x768, 1280x768, 1280x800,1280x1024, 1360x768, 1366x768, 1440x900, 1400x1050, 1680x1050, 1600x1200, 1920x1200, 2048x1200, 2048x1536*, 2560x1080*, 2560x1440*, 2560x1600*, 3840x2400*, 4096x2400**, CUSTOM 720p, 1080p, 2048x1080, 1920x2160, 2048x2160, 3840x2160*, 4096x2160*
	*Supported on connectors 2 and 4 only
	**Requires 4 parallel connections.
Standards.....	DVI 1.0, HDMI 1.4, HDCP 1.4

Video output – DTP – OUT4DTP

Number/signal type.....	4 DTP 330 (HDCP Compliant)
Connectors.....	4 female RJ-45
Termination standard.....	TIA/EIA T568B
Vertical frequency.....	23.98 HZ, 24 Hz, 25 Hz, 29.97 Hz, 30 Hz, 50 Hz, 59.94 Hz, 60 Hz, 75 Hz
Scaled resolution.....	1024x768, 1280x768, 1280x800,1280x1024, 1360x768, 1366x768, 1440x900, 1400x1050, 1680x1050, 1600x1200, 1920x1200, 2048x1200, 2048x1536*, 2560x1080*, 2560x1440*, 2560x1600*, 3840x2400*, 4096x2400**, CUSTOM 720p, 1080p, 2048x1080, 1920x2160, 2048x2160, 3840x2160*, 4096x2160*
	*Supported on connectors 2 and 4 only
	**Requires 4 parallel connections.
Standards.....	DVI 1.0, HDMI 1.4, HDCP 1.4

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

NOTE: Protocol is mirrored between the connected TP endpoints and the "Over TP" ports on the OUT4DTP. Signals from a control device pass into each OUT4DTP "Over TP" port, are embedded with the TP signal, and sent to individual TP Rx endpoints for control of remote sink devices. The "Over TP" ports are simple pass-through connections to TP endpoints. There is no IR insertion from any Quantum Ultra control port to the "Over TP" ports. RS-232 can be inserted from the Ethernet connection.

Serial control pass-through ports

"Over TP" output.....	RS-232 via (4) 3.5 mm, 5-pole captive screw connectors (shared with IR ports)
Baud rates.....	9600, 19200, 38400, 115200 baud
Protocol.....	6 - 8 data bits 1 or 2 stop bits no parity (default), even or odd parity flow control = XON, XOFF, none
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
"Over TP" output.....	(4) 3.5 mm, 5-pole captive screw connector (shared with RS-232 port)
IR control pin configuration.....	3 = Gnd, 4 = IR Tx, 5 = IR Rx

Communication – Control

Serial control port.....	1 RS-232 on 3-pole captive screw connector on rear panel
Baud rate and protocol.....	9600, 8-bit, 1 stop bit, no parity (default)
Pin configurations.....	1 = Tx, 2 = Rx, 3 = Gnd

Ethernet ports	2 female RJ-45
Ethernet default settings	Link speed and duplex level = autodetected LAN A IP address = 192.168.254.254 LAN B IP address = 192.168.1.254 Subnet mask = 255.255.255.0 Gateway = 0.0.0.0 DHCP = Off
Ethernet data rate	10/100/1000Base-T, half/full duplex with autodetect
Protocols	ARP, DHCP, ICMP (ping), TCP/IP, Telnet, HTTP, SMTP
USB control port	1 female USB mini-B on rear panel
Program control	Extron Videowall Configuration Software (VCS) for Windows® Extron Simple Instruction Set™ (SIS™) Telnet

Communication – Setup

Number/signal type	1 HDMI
Connector	1 female HDMI
Vertical frequency	24 Hz to 60 Hz
Resolutions	640x480 to 1920x1200
USB control ports	3 USB type A
USB standards	USB 2.0, USB 1.1, USB 1.0 compatible
USB data rates	Low speed (1.5 Mbps), full speed (12 Mbps)

General

Power supply	Internal, primary and redundant*, hot-swappable Input: (2) 100-240 VAC, 50-60 Hz *A redundant power supply is standard.
Remote power capability	OUT4DTP supports up to four endpoints if 48 watts of power is provided on DTP POWER connector (remote power not available in XTP and HDBaseT modes)
Power consumption	456 watts
Temperature/humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +95 °F (0 to +35 °C) / 10% to 90%, noncondensing
Cooling	Fans, right to left (as viewed from the front panel)
Thermal dissipation, full load	1504 BTU/hr
Mounting	
Rack mount	Yes
Enclosure type	Metal
Enclosure dimensions	10.5" x 17.5" W x 22.3" D (6U high, full rack wide) (26.7 cm H x 44.5 cm W x 56.5 cm D) (Depth excludes connectors and handles. Width excludes built-in rack ears.)
Product weight	59.8 lbs (28 kg), fully populated
Vibration	ISTA/NSTA 1A in carton (International/National 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 ±10%.

NOTE: Specifications are subject to change without notice.

NOTE: Shipping weights and dimensions are available at www.extron.com.

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