Extron

Specifications
NAV 10E 501

TRUE 4K specification

Max. 4K Capabilities		
Resolution and Refresh Rate	**Chroma Sampling**	**Max. Bit Depth per Color**
4096 x 2160 at 60 Hz[1]	4:4:4	8 bit
3840 x 2160 at 60 Hz		
4096 x 2160 at 30 Hz		10 bit
3840 x 2160 at 30 Hz		
4096 x 2160 at 60 Hz	4:2:0	
3840 x 2160 at 60 Hz		

Frame rate[2] .... 24, 25, 30, 50, or 60 fps
Chroma sampling[2] .... 4:4:4, 4:2:2, or 4:2:0
Color bit depth[2] .... 8 or 10 bits per color
Signal type .... DVI v 1.0, HDMI v1.4 and v2.0, HDCP v1.4 and v2.3
Max. video data rate .... 18 Gbps (6 Gbps per color)

NOTE: [1]4096 x 2160 @ 50-60 Hz is available only for HDMI connectors.

NOTE: [2]Subject to the maximum data rate limit. Use our calculator at **www.extron.com/8Kdatarate** to determine video parameters supported by this data rate.

Video input and loop through

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

Number/signal type .... 1 digital HDMI video*
 1 digital HDMI video (loop through)
Connectors .... 2 female HDMI type A: 1 for input, 1 for loop through
Resolution range .... Up to 4K (4096x2160 at 60 Hz) and UHD (3840x2160 at 60 Hz)
Standards .... DVI v1.0, HDMI v1.4 and v2.0, HDCP v1.4/v2.3

Video processing
Digital sampling .... 8 or 10 bits per color; 600 MHz pixel clock maximum
Compression .... PURE3®
Bit rate .... 150 Mbps to 9.5 Gbps
Latency .... <1 frame (encode/decode)**

NOTE: **Indicates minimum latency. Network and video processing dependencies apply.

Video output stream
Number/signal type .... 1 PURE3 digital video over IP
Connector .... 1 SFP+ connector (SM or MM)

Audio

Gain	Analog to analog: -6.5 dBU balanced, -12.5 dBu unbalanced
	HDMI to analog: -5.3 dBu balanced, -11.3 unbalanced
Frequency response	20 Hz to 20 kHz, $\pm$0.5 dB
THD + Noise	<0.1% @ 20 Hz to 20 kHz at nominal level
S/N	Analog to digital: >90 dB, at full scale output, unweighted
	Digital to analog: >90 dB, at maximum balanced output, unweighted
	Analog to analog: >90 dB, at maximum balanced output, unweighted
Crosstalk	$\leq$-80 dB @ 1 kHz, fully loaded
Stereo channel separation	>80 dB @ 1 kHz
Sampling rates	32, 44.1, 48 kHz
Bit depths	16, 20, 24 bit

Audio input

Number/signal type	1 analog stereo, unbalanced or balanced
	1 digital stereo, de-embedded from HDMI
Connectors	(1) 3.5 mm captive screw connector, 5 pole
	1 female HDMI type A (shared with video input)
Supported formats	LPCM (2 channel), analog stereo input
Impedance	$\geq$10 kohms unbalanced, $\geq$20 kohms balanced
Nominal level	+4 dBu, -10 dBV configurable
Maximum level	+21 dBu balanced, +15 dBu unbalanced
Gain adjustment range	Adjustable, -18 dB to +10 dB

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

Audio output stream

Number/signal type	1 audio over IP LPCM
	1 audio over IP AES67*
Connector	1 SFP+ connector (SM or MM)

> **NOTE:** *AES67 specifications are compatible with the Extron DSPs.

Network interconnection (NAV)

Number/signal type	2 fiber optic
Connectors	(1) 10G SFP+ connector, 2 LC connectors
Termination	MDI (SFP+)
Ethernet standards	10 Gb Ethernet (802.3ae), 10GBase-LR (SFP+) SM, and 10GBase-SR (SFP+) MM
Protocols	
Streaming	SRTP (AES-128) on video, audio, and USB
Transport	Multicast UDP
All supported	DHCP, HTTPS, IGMPv2/v3, IPv4, PTPv2, QoS, SSH, TCP, UDP
Security	AES-256, 802.1X, Active Directory authentication
Signal transmission distance	
Singlemode	10 km (6.25 miles) with singlemode (SM) cables with 10GBASE-LR (SFP+)
Multimode	400 m (1312') with 50/125 µm OM4 cables with 10GBase-SR (SFP+)

> **NOTE:** Operating distance is approximate. These are typical maximum distances that may vary depending on factors such as fiber type, fiber bandwidth, connector splicing, losses, modal or chromatic dispersion, environmental factors, and kinks.

Nominal peak wavelength	850 nm for multimode, 1310 nm for singlemode

Transmission power

    Singlemode .... -5.2 dBm, minimum

    Multimode .... -3.3 dBm, minimum

Maximum receiver sensitivity

    Singlemode .... -12.6 dBm, maximum

    Multimode .... -13.0 dBm, maximum

Optical loss budget

    Singlemode .... 7.4 dB, maximum

    Multimode .... 9.7 dB, maximum

Network extension (EXT)

Connector...................................... 1 RJ-45 female

Termination .... Auto-MDIX, TIA/EIA T568B

Ethernet standards .... 1 GbE (802.3ab), 10/100/1000 Base-T, half/full duplex with auto-detect

Signal transmission distance .... 330' (100 m) using CAT-5e/6/6a/7 cables

USB extension (USB)

Quantity/type .... 1 USB type-C port

Power .... 200 mA (max)

Configuration .... Host (default) or device

Host support................................. xHCI (USB 3.0), EHCI (USB 2.0), OHCI/UHCI (USB 1.1)

Data rates .... Low speed (1.5 Mbps), full speed (12 Mbps), high speed (480 Mbps)

Traffic types.................................. Bulk, control, interrupt, and isochronous

Device usage .... Min: 0 (host/per emulation off)

    Max: 2 (all emulation on)

> **NOTE:** Hub usage is dependent on the system configuration.

Network switch hops .... 5 hops (typical)

> **NOTE:** Network switch hop limitations may apply. Typical limit is up to five network switches.

Communications - external devices

Serial

    Quantity/type........................... 1 bidirectional RS-232

    Connector .... (1) 3.5 mm captive screw connector, 5 pole (shared with IR port)

    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 or odd parity

    Pin configuration...................... Tx, Rx, and Gnd

IR control

    Quantity/type........................... 1 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 (shared with RS-232)

    Pin configuration...................... S = signal and G = Gnd

    IR output carrier frequency ...... 30 kHz to 300 kHz

Contact closure

    Quantity/type........................... 1 contact closure input

    Connector .... (1) 3.5 mm captive screw connector, 2 pole (shared with tally)

    Input voltage range.................. 0 to 5 VDC, clamped at +5.1 VDC

    Pin configuration...................... C = contact input (+5 VDC) (Ground is supplied by HDMI connector on an Extron Show-Me cable)

Tally port
    Quantity/type............................ 1 tally output
    Connector .... (1) 3.5 mm captive screw connector, 2 pole (shared with contact closure)
    Pin configuration..................... T = tally output (GND) (+5 VDC is supplied by HDMI connector on an Extron Show-Me cable)
USB configuration port
    Quantity/type............................ 1 front panel USB mini-B
    Standard .... Ethernet over USB

General

Power supply................................. External
    Input: 100-240 VAC, 50-60 Hz
    Output: 12 VDC, 2.0 A, 24 watts

Power consumption
    Device .... TBD watts
    Device and power supply .... TBD watts
Temperature/humidity .... Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing
    Operating: +32 to +104 °F (0 to +40 °C) / 10% to 85%, noncondensing
Cooling .... Fan, air flows from top to rear
Thermal dissipation
    Device .... 71.7 BTU/hr
    Device and power supply .... 81.9 BTU/hr
Mounting
    Rack mount.............................. Yes, with optional rack shelf
    Furniture mount .... Yes, with optional under desk mounting kit
Enclosure type .... Metal
Enclosure...................................... 1.00" H x 8.75" W x 6.00" D (half rack wide)
    (25 mm H x 222 mm W x 152 mm D)
Product weight .... 1.5 lbs (0.68 kg)
Regulatory compliance................... CE, c-UL UL,C-tick, FCC Class A, ICES, VCCI,
    Complies with the appropriate requirements of RoHS, WEEE
Product warranty .... 3 years parts and labor
Everlast power supply warranty...... 7 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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