Extron

Specifications
NAV 10SD 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 stream
Number/signal type .... 1 PURE3® digital video over IP
Connector .... 1 SFP+ connector (SM or MM)

Video processing
Digital sampling .... 8 or 10 bits per color; 600 MHz pixel clock maximum
Compression PURE3
Latency .... <1 frame (encode/decode)

NOTE: Indicates minimum end-to-end latency. Network and video processing dependencies may apply.

Scaling .... Vector™

Video output

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

Number/signal type .... 1 digital HDMI video
Connectors .... 1 female HDMI type A
Resolution range .... Up to 4K (4096x2160 at 60 Hz) and UHD (3840x2160 at 60 Hz)

Scaled resolution .... 640x480[8], 800x600[8], 1024x768[8], 1280x768[8], 1280x800[8], 1280x1024[8], 1360x768[8], 1366x768[8], 1400x1050[8], 1440x900[8], 1600x900[8], 1600x1200[8], 1680x1050[8], 1920x1200[8], 2048x1200[8], 2048x1536[8], 2056x1080[8], 2560x1080[8], 2560x1440[8], 2560x1600[8], bypass*
480p[7,8], 576p[6], 720p[3,4,5,6,7,8], 1080p[1,2,3,4,5,6,7,8], 2048x1080 (2K)[1,2,3,4,5,6,7,8] 3840x2160[1,2,3,4,5,6,7,8], 4096x2160[1,2,3,4,5,6,7,8]
[1] = 23.98 Hz, [2] = 24 Hz, [3] = 25 Hz, [4] = 29.97 Hz, [5] = 30 Hz, [6] = 50 Hz, [7] = 59.94 Hz, [8] = 60 Hz

NOTE: When the output resolution is set to "bypass," the input signal is output without scaling.

Standards .... DVI v1.0, HDMI v1.4 and v2.0, HDCP v1.4/v2.3
Formats .... RGB and YCbCr digital video

Audio
Gain... Analog to analog: -6.5dBu balanced, -12.5 dBu unbalanced
HDMI to analog: -5.3 dBu balanced, -11.3 dBu unbalanced
Frequency response .... 20 Hz to 20 kHz, ±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 .... ≤-80 dB @ 1 kHz, fully loaded
Stereo channel separation.............. >80 dB @ 1 kHz
Sampling rates............................... 48 kHz
Bit depths .... 24 bit

Audio input stream
Number/signal type........................ 1 audio over IP LPCM or AES67
Connector...................................... 1 SFP+ connector (SM or MM)

Audio output
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 (shared with video output)
Supported formats......................... LPCM (2 channel), analog stereo
Impedance..................................... 50 ohms unbalanced, 100 ohms balanced
Maximum level (Hi-Z)..................... >+15 dBu balanced, +9 dBu unbalanced
Gain error...................................... ±0.5 dB channel to channel
Gain range .... Adjustable, -18 dB to +24 dB
Volume control range .... -100 dB to 0 dB (control 0 to 100 in 1 dB steps)

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

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 or device (default)

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

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. NAV endpoints(encoders and decoders) may be configured in host mode of device mode.

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

CEC control .... 1 HDMI type A connector

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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