

Specifications

NAV SD 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 rate² 24, 25, 30, 50, or 60 fps
 Chroma sampling² 4:4:4, 4:2:2, or 4:2:0
 Color bit depth² 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: ¹4096 x 2160 @ 50-60 Hz is available only for HDMI connectors.

NOTE: ²Subject 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 RJ-45 connector

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)

Specifications • NAV SD 501 (Continued)

| | |
|-------------------------|---|
| 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 , 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} , 2560x1080 ⁸ , 2560x1440 ⁸ , 2560x1600 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: -6.5 dBu balanced, -12.5 dBu unbalanced HDMI to analog: -5.3 dBu balanced, -11.3 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 RJ-45 connector |

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 dBv balanced, +9 dBv 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 \approx 2 dBu

Network interconnection (NAV)

| | |
|-----------------------------------|---|
| Connector type..... | 1 RJ-45 female |
| Ethernet standards | 1GbE (802.3ab), 10/100/1000 Base-T. half/full duplex with autodetect. |
| Termination | Auto-MDIX, TIA/EIA T568B |
| Power over Ethernet (PoE)..... | Complies with IEEE 802.3at Type 2 (PoE+), class 4 |
| 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..... | 330' (100 m) using CAT 5e/6/6a/7 cables |

Specifications • NAV SD 501 (Continued)

Network extension (EXT)

| | |
|-----------------------------------|---|
| Connector..... | 1 RJ-45 female |
| Ethernet standards | 1GbE (802.3ab), 10/100/1000 Base-T. half/full duplex with autodetect. |
| Termination | Auto-MDIX, TIA/EIA T568B |
| Signal transmission distance..... | 330' (100 m) using CAT-5e/6/6a/7 cables |

USB extension (USB)

| | |
|--|---|
| USB device port — Host mode configuration | |
| Number/signal type | 1 USB 2.0 high speed |
| Connector | 1 USB type C female |
| Power..... | N/A |
| Maximum built-in USB hubs | 1 |
| Minimum built-in USB hubs | 0 |
| Optional built-in USB hubs | 1 (peripheral emulation enabled) |
| USB device port configuration — Device mode configuration (default mode) | |
| Number/signal type | 1 USB 2.0 high speed |
| Connector | 1 USB type C female |
| Power..... | 5V DC, 500mA (when in device mode) |
| Maximum built-in USB hubs | 0 |
| Minimum built-in USB hubs | 0 |
| Optional built-in USB hubs | 0 |
| 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 |
| 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 |
| USB configuration port | |
| Quantity/type..... | 1 front panel USB mini-B |
| Standard | Ethernet over USB |

Specifications • NAV SD 501 (Continued)

General

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

NOTE: Each 1G endpoint can be powered either locally by an external power supply or remotely using optional PoE+.

Power consumption
Device 21.9 watts
Device and power supply 24.8 watts
PoE Complies with IEEE 802.3at type 2 (PoE+), class 4
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 65.3 BTU/hr
Device and power supply 75.2 BTU/hr
Device with PoE 75.2 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)
(depth excludes connectors)
Product weight 1.5 lbs (0.68 kg)
Regulatory compliance CE, c-UL UL, C-tick, FCC Class A, ICES, KC, 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 $\pm 10\%$.

NOTE: Specifications are subject to change without notice.

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

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