Extron

Specifications

SMP 351 Series

Input

Number/signal type	3 HDMI digital video (HDCP compliant), 1 component video (Y, R-Y, B-Y; interlaced, progressive, HD), or composite video Optional: 1 SDI, HD-SDI, or 3G-SDI digital component video
Connectors	4 female HDMI type A, 3 inputs and 1 loop-through 3 female BNC; component video, composite video Optional: 1 female BNC: 3G-SDI, HD-SDI, SDI
Nominal level	1 Vp-p for Y of component video and for composite video 0.7 Vp-p for RGB and for R-Y and B-Y of component video 0.8 Vp-p for 3G-SDI
Minimum/maximum level	Analog: 0.0 V to 1.0 Vp-p with no offset
Impedance	75 ohms
Horizontal frequency	15 kHz to 100 kHz
Vertical frequency	24 Hz to 75 Hz
Resolution range	640x480 to 1920x1200 (reduced blanking), 480p, 480i, 576p, 720p, 1080i, 1080p, NTSC, and PAL, sampled pixel for pixel
Return loss (input 3)	<-30 dB @ 5 MHz (input 3)
Return loss (Input 5, 3G-SDI)	≥15 dB @ 5 MHz to 1.5 GHz ≥10 dB @ >1.5 GHz to 2.97 GHz
DC offset (max. allowable)	0.5 V
Input cable equalization	Automatic for up to -30 dB of cable loss
3G-SDI	60 m (200 ft) using Extron RG6 cable 45 m (150 ft) using Extron RG59 cable
HD-SDI	120 m (400 ft) using Extron RG6 cable 90 m (300 ft) using Extron RG59 cable
SDI	150 m (500 ft) using Extron RG6 cable 120 m (400 ft) using Extron RG59 cable

Video processing

Analog sampling	12 bits per color, 13.5 MHz standard (low resolution video), 165 MHz standard (RGB, YUVp, DVI)
Digital sampling	8-, 10-, or 12-bits per channel
Digital processing	4:2:2, 8-bits per color
Compression	H.264/AVC (ITU H.264, ISO/IEC 14496-10) 4:2:0, 8-bit color Encoding profiles: High, Main, Baseline; Encoding levels: 4.1, 4.0, 3.2, 3.1, 3.0; configurable GOP
Bit rate	200 kbps to 10 Mbps
Bit rate control	Selectable (variable, constrained, or constant)
Latency	130 msec* (encode), 600 msec* (encode/decode) *Indicates minimum latency. Encoder, decoder, and network dependencies apply.

Video output

Number/signal type

SMP 351, SMP 351 3G-SDI .... 2 H.264/AVC digital video over Ethernet
1 HDMI digital video (HDCP compliant)

Models with LinkLicense..... 3 H.264/AVC digital video over Ethernet
1 HDMI digital video (HDCP compliant)

Connectors ..... 1 female RJ-45 (streaming)
1 female HDMI type A

Video output power for active cables
1.1 W max. for the HDMI port

Scaled resolution ..... Archive/record: 480p, 720p, 1080p, 512x288, 1024x768, 1280x1024, custom
Confidence: 480p, 720p, 1080p, 512x288, 1024x768, 1280x1024, custom

Frame rate ..... Up to 30 fps for all output rates

Formats ..... H.264/AVC (Profile type: High, Main, Baseline. Profile level: 4.1, 4.0, 3.2, 3.1, 3.0)

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

Sync

Input type ..... Tri-level or bi-level component video

Standards ..... Input: NTSC 3.58, NTSC 4.43, PAL
SDI (SMPTE 259M-C, 270 Mbps), HD-SDI (SMPTE 292M, 1.485 Gbps),
3G-SDI (SMPTE 424M, 2.97 Gbps)

Input level ..... 0.6 Vp-p for component video tri-level sync
0.3 Vp-p for component video bi-level sync

Maximum level ..... 5 Vp-p

Input impedance ..... 75 ohms

Recording and storage

File system for USB storage..... FAT32, NTFS, VFAT long file name extensions, EXT2, EXT3, EXT4

File types ..... H.264 and AAC in an MP4 container, JPEG, JSON, XML

File transfer protocols..... FTP, SFTP, CIFS

Network file share protocols..... CIFS/SMB, NFS

Resolution..... Same as primary streamed resolution: 480p, 720p, 1080p, 512x288,
1024x768, 1280x1024, custom

Recording frame rate support ..... Same as primary streamed frame rate, up to 30 fps for all output rates

Internal storage capacity ..... 128 GB (110 GB for recording files) or 480 GB (440 GB for recording files)

External USB ports ..... 1 (front panel), 1 (rear panel), USB 2.0 (Each port is current limited to 1.5 A.)

Background image format..... PNG

Audio input

Analog

Number/signal type

SMP 351, SMP 351 3G-SDI
2 stereo, balanced or unbalanced, 1 with loop-through

Models with LinkLicense.... Ch. A: 1 stereo, balanced or unbalanced, with loop-through
Ch. B: 1 stereo, balanced or unbalanced, or 2 mono, unbalanced

Connectors ..... (3) 3.5 mm captive screw connectors, 5-pole

Digital

Number/signal type ..... 3 stereo, digital de-embedded from HDMI
1 loop-through from HDMI
1 stereo, digital de-embedded from SDI (optional)

Connectors ..... 4 female HDMI type A

Impedance..... >10k ohms unbalanced, >20k ohms balanced

Nominal level..... +4 dBu (1.23 Vrms), -10 dBV (316 mVrms), adjustable via input gain

Maximum level ..... +18 dBu, (balanced or unbalanced)

CMRR..... >70 dB @ 20 Hz to 20 kHz

Input gain adjustment..... -18 dB to +24 dB, 1 dB steps, adjustable per input

Audio system (line input to line output)

Gain	-6 dB unbalanced, 0 dB balanced
Frequency response	20 Hz to 20 kHz, ±0.5 dB
THD + Noise	<0.03%, 20 Hz to 20 kHz at maximum output
S/N	>90 dB, at maximum balanced output (unweighted)
Stereo channel separation	>90 dB @ 1 kHz
Crosstalk	≤ -103 dB, at 20 Hz to 20 kHz, full loaded
Bass	LinkLicense models only: +12 dB to -24 dB @ 100 Hz
Treble	LinkLicense models only: +12 dB to -24 dB @ 8 kHz

Audio processing

Sampling rate	16 bit, 48 kHz or 44.1 kHz sampling
Compression	AAC-LC MPEG-4 (ISO/IEC 14496-3:2005)
Bit rate	80 kbps to 320 kbps, stereo

Audio output — analog

Number/signal type	1 stereo, balanced/unbalanced
Connectors	(1) 3.5 mm captive screw connector, 5 pole
Impedance	50 ohms unbalanced, 100 ohms balanced
Maximum level (Hi-Z)	>+18 dBu balanced, +12 dBu unbalanced
Gain error	±0.1 dB channel to channel

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

Audio output — digital

Number/signal type	1 stereo, HDMI (re-embedded local preview) 1 AAC-LC digital audio over Ethernet
Connector	1 female HDMI type A 1 female RJ-45

Digital I/O control

Number/signal type	4 digital input/output (configurable)
Connector	(1) 3.5 mm captive screw connector, 5-pole
Digital inputs	
Input voltage range	0 to 24 VDC, clamped at +30 VDC
Input impedance	29k ohms
Programmable pullup	1k ohms to +5 VDC
Threshold low to high	2.8 VDC
Threshold high to low	2.0 VDC
Digital outputs	250 mA sink from 24 VDC maximum
Pin configurations	1, 2, 3, 4 = digital I/O numbers 1, 2, 3, 4. 5 = Gnd

Communication

USB

USB configuration ports	1 front panel female mini USB B
Mouse and keyboard port	2 rear panel USB type A
USB standards	USB 1.1, USB 2.0, high/full/low speed hosts

Serial control

Serial control port	1 bidirectional RS-232, rear panel 3.5 mm captive screw connector, 3-pole
Host control	Host control (Extron SIS), bidirectional
Protocols	Data bits: 7 or 8 (default) Stop bits: 1 (default) or 2 Parity: odd, even, or no (default) Flow control: no flow control (default)
Baud rates	9600 (default), 19200, 38400, 57600, 115200
Serial control pin configurations	1 = Tx, 2 = Rx, 3 = Gnd

Ethernet

Ethernet host port	1 female RJ-45
Ethernet data rate	10/100/1000Base-T, half/full duplex with autodetect
Maximum Transmission Unit	68 - 1500 MTU, adjustable
Protocols	
Streaming	Pull: RTP/RTCP (RFC 3550), RTSP (RFC 2326), Interleaved RTSP (RTP/RTSP), RTP/RTSP tunneled through HTTP unicast or multicast Push: MPEG2-TS/UDP* (ISO/IEC 13818-1), MPEG2-TS/RTP* (RFC 2250, IPTV-ID-0087, ETSI TS 102 034), Direct RTP (RFC 3984), SAP (RFC2974), SDP (RFC4566), unicast or multicast, RTMP
Transport	TCP, UDP, multicast IGMPv3 (RFC 3376) or unicast
All supported	IGMPv3 (RFC 3376), IP, UDP, SSL, DHCP, HTTP, HTTPS, RTMP, RTMPS, RTP, RTSP, SNMP V2 (RFC 1213), SAP (RFC 2974), SDP (RFC 4566), QoS (RFC 2474), NTPv4 (RFC 4330)

NOTE: *Indicates that portions of the RFC and other standards may apply.

Ethernet default settings	IP address = 192.168.254.254 Subnet mask = 255.255.0.0 Default gateway = 0.0.0.0 DHCP = off
Program control	Extron Simple Instruction Set™ (SIS™) Extron DataViewer, Microsoft® Internet Explorer®*, Microsoft Edge™*, Apple® Safari®*, Mozilla® Firefox®, Google® Chrome™ (*Certain browser dependencies may apply.)

USB device ports

Number/signal type	(1) 4-port, USB hub
Connector	4 female USB 2.0 type A (1 front panel and 1 rear panel for storage, 2 rear panel for keyboard and mouse control)
Maximum built-in USB hubs	1
Minimum built-in USB hubs	1
Optional built-in USB hubs	0
Available USB power	Storage ports: one port (selectable) with 1.5 A, remaining port with 0.5 A Keyboard/mouse ports: 0.5 A each

General

Power supply	Internal Input: 100-240 VAC, 50-60 Hz
Power consumption	30 watts typical
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	Fans, air flow left to right
Thermal dissipation	96 BTU/hr
Mounting	
Rack mount	Yes, with pre-installed brackets
Enclosure type	Metal
Enclosure dimensions	1.7" H x 17.5" W x 11.5" D (1U high, full rack wide) (43 mm H x 444 mm W x 292 mm D) (Depth excludes connectors.)
Product weight	6.0 lbs (2.7 kg)
Regulatory compliance	CE, C-Tick, c-UL, FCC Class A, ICES, KCC, UL, VCCI

NOTE: CE and FCC testing is conducted with STP (shielded, twisted pair) cable.

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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