

## 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, Y UVp, 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.

# Specification • SMP 351 Series (Continued)

## 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
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.....	80 GB (75 GB for recording files) or 400 GB (400 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

# Specification • SMP 351 Series (Continued)

## Audio system (line input to line output)

Gain.....	-6 dB unbalanced, 0 dB balanced
Frequency response .....	20 Hz to 20 kHz, $\pm 0.5$ 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 .....	$\leq -103$ 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.....	$\pm 0.1$ dB channel to channel

**NOTE:** 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV  $\approx$  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
Upper threshold.....	2.8 VDC
Lower threshold.....	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

# Specification • SMP 351 Series (Continued)

Ethernet control	
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, RTP, RTSP, SNMP V2 (RFC 1213), SAP (RFC 2974), SDP (RFC 4566), QoS (RFC 2474), NTPv4 (RFC 4330)
<b>NOTE:</b> *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.)

## 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](http://www.extron.com).

4236-D7-032218