

Specifications

SMP 352 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 RG 6 cable 45 m (150 ft) using Extron RG 59 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.....	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	400 GB (400 GB for recording files)
External USB ports	1 (front panel), 1 (rear panel), USB 2.0 (Each port current limited to 1.5 A.)
Background image format	PNG

Audio input

Analog	
Number/signal type	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
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	+12 dB to -24 dB @ 100 Hz
Treble	+12 dB to -24 dB @ 8kHz

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 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
Transport	TCP, UDP, multicast IGMPv3 (RFC 3376) or unicast
All supported	IGMPv3 (RFC 3376), IP, UDP, SSL, DHCP, HTTP, HTTPS, RTP, RTSP, SNMP V2 (RFC 1213), SAP (RFC2974), SDP (RFC4566), 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®, 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) (4.3 cm H x 44.4 cm W x 29.2 cm D) (Depth excludes connectors.)
Product weight	6.0 lbs (2.7 kg)
Vibration	ISTA 1A in carton (International Safe Transit Association)
Regulatory compliance	
Safety	CE, c-UL, UL
EMI/EMC	CE, C-tick, FCC Class A, ICES, VCCI

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

Warranty

3 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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