Specifications

IN1608 Series

Video input

Number/signal type	2 RGB, RGBcvS, component video (YUVi or YUVp/HDTV), S-video, composite video 4 HDMI digital video (HDCP compliant) 2 DTP 230 (HDCP compliant)
Connectors	2 female 15-pin HD 4 female HDMI type A 2 female RJ-45 connectors
Nominal level	1 Vp-p for Y of component video and S-video, and for composite video 0.7 Vp-p for RGB and for R-Y and B-Y of component video 0.3 Vp-p for C of S-video
Minimum/maximum levels	Analog: 0.0 V to 1.0 Vp-p with no offset at unity gain
Impedance	75 ohms
Horizontal frequency	15 kHz to 100 kHz
Vertical frequency	24 Hz to 75 Hz
Resolution range	640x480 to 1600x1200 and 1920x1200* NTSC, PAL, SECAM, 480i, 480p, 576i, 576p, 720p, 1080i, 1080p, and 2K *reduced blanking
Return loss	>30 dB @ 5 MHz
DC offset (max. allowable)	1.5 V

Video processing

Decoder	12 bit digital (3D-adaptive comb filter)
Analog sampling	12 bits per color; 13.5 MHz standard (video) 170 MHz standard (RGB)
Digital pixel data bit depth	8, 10, or 12 bits per channel; 165 MHz pixel clock (HDMI)
Colors	1 billion (10 bit processing)

Video output

Number/signal type	2 HDMI digital video (HDCP compliant) 1 DTP 230 (HDCP compliant)
Connectors	2 female HDMI 1 female RJ-45 connector
Scaled resolution	640x480[6,8,9], 800x600[6,8,9], 852x480[6,8,9], 1024x768[6,8,9], 1024x852[6,8,9], 1024x1024[6,8,9], 1280x768[6,8,9], 1280x800[6,8,9], 1280x1024[6,8,9], 1360x765[6,8,9], 1360x768[6,8,9], 1365x768[6,8,9], 1365x1024[6,8,9], 1366x768[6,8,9], 1400x1050[6,8], 1440x900[6,8,9], 1600x900[6,8], 1600x1200[6,8], 1680x1050[6,8], 1920x1200[6,8] HDTV 480p[7,8], 576p[6], 720p[3,4,5,6,7,8], 1080i[6,7,8], 1080p[1,2,3,4,5,6,7,8], 2048x1080[1,2,3,4,5,6,7,8] [1] = at 23.98 Hz, [2] = at 24 Hz, [3] = at 25 Hz,[4] = at 29.97 Hz, [5] = at 30 Hz, [6] = at 50 Hz, [7] = at 59.94 Hz, [8] = at 60 Hz, [9] = at 75 Hz

Sync

Input type	RGBHV, RGBS, RGsB, RGBcvS, bi-level or tri-level component video
Input standards	NTSC 3.58, NTSC 4.43, PAL, SECAM
Input level	2.75 V to 5.0 Vp-p for RGBHV or RGBS 0.6 Vp-p for component video with tri-level sync 0.3 Vp-p for component video with bi-level sync or RGsB
Input impedance	Horizontal: 510 ohms Vertical: 510 ohms
Max. input voltage	5.0 Vp-p

Interconnection between IN1608 and DTP transmitter/receiver

Connectors	3 female RJ-45
Termination standard	TIA/EIA-T568B
DTP signal	
Signal transmission distance	Up to 230' (70 m) using shielded twisted pair cable or XTP DTP 24 STP cable
Cable requirements	Solid conductor, 24 AWG or better
Cable recommendations	400 MHz bandwidth, STP (shielded twisted pair)

NOTE: Extron XTP DTP 24 shielded twisted pair cable is strongly recommended for optimal performance.

Audio

Gain	Unbalanced output: -6 dB; balanced output: 0 dB
Frequency response	20 Hz to 20k Hz, ±0.5 dB
THD + Noise	<0.1%, 20 Hz to 20k Hz at nominal level
S/N	>90 dB at maximum balanced output (unweighted)
Crosstalk	≤-80 dB @ 1 kHz, fully loaded
Stereo channel separation	>80 dB @ 1 kHz
Bass	+12 dB to -24 dB @ 100 Hz
Treble	+12 dB to -24 dB @ 8 kHz

Audio input

Number/signal type	8 stereo line level balanced or unbalanced 2 mono mic/line level balanced or unbalanced (with available phantom power) 4 stereo, de-embedded from HDMI (PCM only) 2 DTP 230 (de-embedded from HDMI [PCM only], or remote balanced/unbalanced, analog)
Connectors	(6) 3.5 mm captive screw connectors, 5 pole for line (2) 3.5 mm captive screw connectors, 3 pole for mic/line 4 female HDMI type A 2 female RJ-45 connectors
Impedance	>10k ohms unbalanced, >20k ohms balanced
Nominal level	Line inputs: +4 dBu, -10 dBV, adjustable Mic/line inputs: -60 dBV, +4 dBu, -10 dBV, adjustable
Maximum level	+21 dBu at rated THD+N when input gain is set to 0 dB
CMRR	>80 dB @ 1 kHz
Input gain adjustment	Line inputs: -18 dB to +24 dB, 1 dB steps, adjustable per input Mic/line inputs: -18 dB to +60 dB, 1 dB steps, adjustable per input

NOTE: Unbalanced analog inputs applied at a DTP Tx input have +12 dB of gain applied to bring the signal to a nominal level for balanced operation.

DC phantom power	+48 VDC ±10% (can be switched on or off per mic/line input)

Audio output

Number/signal type	1 balanced or unbalanced stereo (variable) 1 balanced or unbalanced stereo; can be configured as stereo or two independently mixed mono channels 2 HDMI embedded 1 DTP 230 (embedded digital, and remote balanced/unbalanced analog)
Connectors	(2) 3.5 mm captive screw connectors, 5 pole 2 female HDMI 1 RJ-45 connector
Impedance	50 ohms unbalanced, 100 ohms balanced
Gain error	±0.5 dB channel to channel
Maximum level (Hi-Z)	>+21 dBu, balanced; >+15 dBu, unbalanced
Output volume range	0 to -100 dB in 1 dB steps

NOTE: System gain for the analog DTP Rx output is rated at -12 dB (unbalanced) and -6 dB (balanced).

Audio output — power amplifier (MA and SA models only)

Number/signal type

IN1608 SA, IN1608 IPCP SA	1 stereo (default) or 2 mono (2 channels total)
IN1608 MA, IN1608 IPCP MA 70	1 mono, 70 V line

Connectors

NOTE: This connector accepts wires of 22 AWG to 12 AWG.

IN1608 SA, IN1608 IPCP SA	(1) 5 mm screw lock captive screw connector, 4 pole
IN1608 MA, IN1608 IPCP MA 70	(1) 5 mm screw lock captive screw connector, 2 pole

Load impedance

IN1608 SA, IN1608 IPCP SA	4 ohms minimum
IN1608 MA, IN1608 IPCP MA 70	50 ohms minimum

Amplifier type	Class D

Output power

IN1608 SA, IN1608 IPCP SA	25 watts per channel, 8 ohms, 1 kHz, 0.1% THD 50 watts per channel, 4 ohms, 1 kHz, 0.1% THD
IN1608 MA, IN1608 IPCP MA 70	100 watts (rms) @ 70 V, 1 kHz, 0.1% THD
Protection	Clip limiting, thermal, short circuit, DC output
Frequency response	20 Hz to 20 kHz, -3 dB to +1 dB @ 1 W
THD + Noise	<0.1% @ 1 kHz, 3 dB below clipping
S/N	>90 dB, 20 Hz to 20 kHz, unweighted

Control/remote — scaling presentation switcher

Serial control port	1 bidirectional RS-232, 3.5 mm captive screw connector, 3 pole (rear panel)
Baud rate and protocol	9600, 8 data bits, 1 stop bit, no parity (default)
Serial control pin configuration	1 = Tx, 2 = Rx, 3 = Gnd
USB control port	1 front panel female mini USB B
USB standards	USB 2.0, high speed

IN1608, IN1608 MA, IN1608 SA only

Ethernet control port	1 female RJ-45 connector
Ethernet data rate	10/100Base-T, half/full duplex with autodetect
Ethernet protocol	ARP, ICMP (ping), IP, TCP, DHCP, HTTP, Telnet
Ethernet default settings	Link speed and duplex level = autodetected IP address = 192.168.254.254 Subnet mask = 255.255.0.0 Gateway = 0.0.0.0 DHCP = off
Program control	Extron control/configuration program for Windows® Extron Simple Instruction Set (SIS™) Microsoft® Internet Explorer®

Control/remote — external device (pass-through, unidirectional or bidirectional) (RS-232/IR over DTP)

NOTE: Protocol is mirrored between the connected DTP 230 endpoints and the "Over DTP" ports on the IN1608. Signals from a control device pass into each IN1608 "Over DTP" port, are embedded with the DTP signal, and sent to individual DTP 230 Tx or Rx endpoints for control of remote sink or source devices. The "Over DTP" ports are simply pass-through connections to DTP endpoints. There is no RS-232 or IR insertion from any IN1608 control port to the "Over DTP" ports.

Serial control pass-through ports

IN1608 input/DTP Tx	RS-232 via (2) 3.5 mm, 5 pole captive screw connectors (shared with IR ports)
IN1608 output/DTP Rx	RS-232 via (1) 3.5 mm, 5 pole captive screw connector (shared with IR port)
Baud rates	300 to 38400 baud
Protocol	8 or 7 data bits 1 or 2 stop bits no parity (default) even or odd parity
Serial control pin configuration	1 = Tx, 2 = Rx, 3 = Gnd

IR pass-through control ports ..... TTL level (0 to 5 V) modulated infrared control from 30 kHz up to 60 kHz
IN1608 input/DTP Tx..... (2) 3.5 mm captive screw connectors, 5 pole (shared with RS-232 ports)
IN1608 output/DTP Rx ..... (1) 3.5 mm captive screw connector, 5 pole (shared with RS-232 port)
IR control pin configuration..... 3 = Gnd, 4 = IR Tx, 5 = IR Rx

Control/remote — IPCP Pro control processor — IN1608 IPCP SA, IN1608 IPCP MA models only

Memory
SDRAM..... 512 MB
Flash..... 4.5 GB
Software and control options
Software..... Extron Global Configurator Plus and Professional for Windows®
Control options..... GlobalViewer®, TouchLink® for Web, TouchLink for iPad®, or TouchLink Pro touchpanels
Ethernet control
Network interface controllers (NICs)
1
Network switch ..... 1 unmanaged 3 port switch
Connectors..... 3 female RJ-45 connectors
Data rate ..... 10/100/1000Base-T, half/full duplex with autodetect
Protocols..... DHCP, DNS, HTTP, HTTPS, ICMP, NTP, SFTP, SMTP, SNMP, SSH, TCP/IP, UDP/IP
Default settings ..... Link speed and duplex level = autodetected
IP address = 192.168.254.250
Subnet mask = 255.255.255.0
Gateway = 0.0.0.0
DHCP = off
DNS: 127.0.0.1
Serial control
Quantity/type..... 1 bidirectional RS-232, RS-422, RS-485 (port 1)
2 bidirectional RS-232 (ports 2 and 3)
Connectors..... (1) 3.5 mm captive screw connector, 5 pole
(2) 3.5 mm captive screw connectors, 3 pole
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, odd, mark, or space parity

NOTE: The 5-pole ports support both hardware and software flow control.
The 3-pole ports support software flow control.
The default for both types of ports is no flow control.

Pin configurations, serial, 5-pole captive screw
RS-232 (default)..... Pin 1 = Tx, 2 = Rx, 3 = Gnd, 4 = RTS, 5 = CTS
RS-422..... Pin 1 = Tx-, 2 = Rx-, 3 = Gnd, 4 = Tx+, 5 = Rx+
RS-485..... Pins 1 and 2 (tied together) = data-, 3 = Gnd, 4 and 5 (tied together) = data+
Pin configurations, serial, 3-pole captive screw
Pin 1 = Tx, 2 = Rx, 3 = Gnd
Digital I/O control
Quantity/type..... 4 digital input/output (configurable)
Connectors..... (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 max.
Pin configurations..... 1, 2, 3, 4 = digital I/Os 1, 2, 3, 4; 5 = Gnd

IR/serial control

Quantity/type	2 programmable: unidirectional RS-232 (±5 V), or 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
Baud rate and protocol (RS-232)	300 to 115200 baud (9600 baud = default); 8 (default) or 7 data bits; 1 (default) or 2 stop bits; no parity (default), even, odd, mark, or space parity
Pin configurations	For each port, pin 1 = signal, 2 = Gnd
IR output carrier frequency	30 kHz to 300 kHz
IR learning carrier frequency	30 kHz to 300 kHz
IR learning capture distance	2" (5.1 cm) to 12" (30.5 cm) from the front panel

Relay control

Quantity/type	4 normally open relays
Relay control connectors	(1) 3.5 mm captive screw connector, 6 pole
Relay control contact rating	24 VDC, 1 A

General

Power supply	Internal Input: 100-240 VAC, 50-60 Hz

Power consumption

Full load (amp output at 1/8 power)	
IN1608	45 watts
IN1608 SA, IN1608 MA	66 watts
IN1608 IPCP SA, IN1608 IPCP MA 70	TBD
Power save mode	
IN1608	<33 watts
IN1608 SA, IN1608 MA	<43 watts
IN1608 IPCP SA, IN1608 IPCP MA 70	TBD

Remote power capability	Supports up to three endpoints (two DTP Tx, one DTP Rx)
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 flows right to left (as viewed from front panel)

Thermal dissipation

Full load (amp output at 1/8 power)	
IN1608	85 BTU/hr
IN1608 SA, IN1608 MA	120 BTU/hr
IN1608 IPCP SA, IN1608 IPCP MA 70	TBD
Power save mode	
IN1608	75 BTU
IN1608 SA, IN1608 MA	110 BTU
IN1608 IPCP SA, IN1608 IPCP MA 70	TBD

Mounting

Rack mount	Yes, with included, pre-installed brackets
Enclosure type	Metal

Enclosure dimensions

IN1608 ..... 1.75" H x 17.5" W x 9.5" D (1U high, full rack wide)
(4.4 cm H x 44.4 cm W x 24.2 cm D)
(Depth excludes connectors and knobs. Width excludes rack ears.)

IN1608 SA, IN1608 MA ..... 3.5" H x 17.5" W x 9.5" D (2U high, full rack wide)
(8.1 cm H x 44.4 cm W x 24.2 cm D)
(Depth excludes connectors and knobs. Width excludes rack ears.)

IN1608 IPCP SA, IN1608 IPCP MA 70
3.5" H x 17.5" W x 9.5" D (2U high, full rack wide)
(8.1 cm H x 44.4 cm W x 24.2 cm D)
(Depth excludes connectors and knobs. Width excludes rack ears.)

Product weight

IN1608 ..... 5.0 lbs (2.3 kg)

IN1608 SA, IN1608 MA ..... 7.4 lbs (3.4 kg)

IN1608 IPCP SA, IN1608 IPCP MA 70
TBD

Shipping weight

IN1608 ..... 7 lbs (4 kg)

IN1608 SA, IN1608 MA ..... 11 lbs (5 kg)

IN1608 IPCP SA, IN1608 IPCP MA 70
TBD

DIM weight

IN1608 ..... 8 lbs (4 kg)

IN1608 SA, IN1608 MA ..... 22 lbs (10 kg)

IN1608 IPCP SA, IN1608 IPCP MA
22 lbs (10 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

Environmental..... Complies with the appropriate requirements of RoHS, WEEE.

Warranty ..... 3 years parts and labor

NOTE: All nominal levels are at ±10%.

NOTE: Specifications are subject to change without notice.

8.0-031114-D5