

Specifications

HC 404 (HCT 103, HCR 102)

NOTE: This product consists of a switching transmitter (HCT 103) and a scaling receiver (HCR 102), sold together as a system.

Video input

Number/signal type	
Analog.....	HCT 103: 1 VGA RGBHV
Digital	
HCT 103.....	2 HDMI (or single link DVI-D with the appropriate DVI-HDMI adapters)
HCR 102	1 HDMI (or single link DVI-D with the appropriate DVI-HDMI adapter)
Connectors	
HCT 103	1 female 15-pin HD 2 female HDMI type A
HCR 102	1 female HDMI type A
Nominal level.....	Analog: 0.7 Vp-p
Min./max. level.....	Analog, 0.3 V to 1.5 Vp-p with no offset at unity gain
Impedance.....	Analog: 75 ohms
Horizontal frequency	Analog: 15 kHz to 100 kHz
Vertical frequency.....	Analog: 30 Hz to 75 Hz
HDMI equalization.....	Automatic
HDMI input cable length.....	≤50' (15 m) for resolutions up to 1920x1200 or 1080p @ 60 Hz; 2K, using Extron HDMI Pro Series cable
Resolution range.....	640x480 to 1600x1200 and 1920x1200*, 480p, 576p, 720p, 1080i, 1080p, and 2K *reduced blanking
Return loss	<-40 dB @ 5 MHz
DC offset (max. allowable).....	1.5 V
Standards	DVI 1.0, HDMI 1.4, HDCP 1.4

Sync – VGA

Input type	RGBHV, bi-level and tri-level sync
Input level	1.9 V to 5.0 Vp-p
S/N.....	>90 dB at maximum input (unweighted)
Max. input voltage.....	5.0 Vp-p

Interconnection between transmitter and receiver

Connector.....	1 female RJ-45 on each unit (transmitter and receiver)
Termination standard.....	TIA/EIA T568B
Transmission distance.....	Up to 230' (70 m) using shielded twisted pair (STP) cable or XTP DTP 24 STP cable with a 1080p, 60 Hz signal
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.

Specification • HC 404 (HCT 103, HCR 102) (Continued)

Video processing

Decoder.....	12 bit digital (3D-adaptive comb filter)
Analog sampling	12 bits per color, 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.....	1 HDMI (with CEC)
Connectors.....	1 female HDMI
HDMI peripheral device power	250 mA
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

Audio

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

Audio input

Number/signal type.....	1 analog stereo, unbalanced or 3 digital audio, embedded in the HDMI
Connectors.....	1 female 3.5 mm mini stereo jack; tip (L), ring (R), sleeve (ground) 3 female HDMI Type A
Source formats	
Analog.....	Analog stereo audio
HDMI.....	LPCM up to 7.1/24-bit/192 kHz, Dolby TrueHD, Dolby Digital Plus, Dolby Digital EX, Dolby Digital 5.1, Dolby Digital 2/0 Surround, Dolby Digital 2/0, DTS-HD Master Audio, DTS-HD, DTS-ES Discrete 6.1, DTS-ES Matrix 6.1, DTS Digital Surround 5.1, DTS 2 Channel
Impedance.....	10k ohms, DC coupled
Nominal level.....	-10 dBV, unbalanced
Maximum level.....	+6 dBV, unbalanced
CMRR.....	>60 dB typical, unbalanced, @ 1 kHz

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

Audio output

Number/signal type.....	1 analog, line level stereo, balanced or unbalanced (variable) 1 digital, embedded in HDMI (fixed)
Connectors.....	(1) 3.5 mm captive screw connector, 5 pole 1 female HDMI
Impedance.....	50 ohms unbalanced, 100 ohms balanced
Gain error.....	±0.5 dB channel to channel
Maximum level (Hi-Z).....	>+14 dBu, balanced; >+8 dBu, unbalanced
Output volume range	0 to 100% in 1% steps

Specification • HC 404 (HCT 103, HCR 102) (Continued)

Communications

Tally port	(1) 3.5 mm, 4 pole captive screw connector
Tally port pin configuration.....	Pin 1 = input 2 tally, pin 2 = input 3 tally, pin 3 = input 4 tally, pin 4 = +5 VDC
Contact closure remote control	(1) 3.5 mm, 4 pole captive screw connector
Contact closure pin configuration...	Pin 1 = input 2, pin 2 = input 3, pin 3 = input 4, pin 4 = Gnd
USB control port.....	1 front panel female USB mini-B
USB standards	USB 2.0, high speed
Program control.....	Extron Product Configuration Software (PCS) for Windows®

Communications – control processor

Memory	
SDRAM	512 MB
Flash	512 MB
Software	
Configuration software.....	Extron Global Configurator® Plus and Professional for Windows®
Ethernet control	
Network interface controllers (NICs)	1
Connectors	1 female RJ-45 connector
Data rate	10/100Base-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
Connectors	(1) 3.5 mm captive screw connector, 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, or odd parity

NOTE: This 3-pole port supports software flow control. The default is no flow control.

Pin configuration.....	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, 6-pole
Digital inputs	
Input voltage range.....	0 to 24 VDC, clamped at +30 VDC
Input impedance.....	>10k 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.....	Pins 1, 2, 4, 5 = digital I/Os 1, 2, 3, 4; pins 3, 6 = Gnd
IR control	
Quantity/type.....	1 programmable TTL level (0 to 5 V) infrared (carrier and non-carrier) up to 300 kHz
Connector	(1) 3.5 mm captive screw connector, 2-pole
Pin configuration.....	Pin 1 = signal, 2 = Gnd
IR output carrier frequency	30 kHz to 300 kHz

Specification • HC 404 (HCT 103, HCR 102) (Continued)

General

Power supply	External
	Input: 100-240 VAC, 50-60 Hz
	Output: 12 VDC, 4.2 A, 50 watts
Power consumption	
System	
Device	22.0 watts
Device and power supply...	24.7 watts

NOTE: Connect the included 4.2 A, 50 W, external power supply to the HCR 102, and the receiver remotely powers the HCT 103. Alternatively, the transmitter can be powered locally by an optional external power supply.

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 90%, noncondensing
Cooling	Convection, vents on top and sides
Thermal dissipation	
System	
Device	70.7 BTU/hour
Device and power supply...	79.7 BTU/hour
Mounting	
Rack mount.....	Yes, with optional 1U high rack shelf or back of the rack mounting kit
Furniture mount	Yes, with included, attached MBU 125 under-desk mounting brackets
Enclosure type	Metal
Enclosure dimensions	1.0" H x 8.75" W x 6.0" D (half rack wide)
	(25 mm H x 222 mm W x 152 mm D)
	(Depth excludes connectors.)
Product weight	
HCT 103	1.1 lb (0.5 kg)
HCR 102	1.2 lbs (0.6 kg)
Regulatory compliance.....	CE**, C-tick, c-UL, FCC Class A**, ICES, UL, VCCI
	Complies with the appropriate requirements of RoHS, WEEE

NOTE: **CE and FCC testing is conducted with STP (shielded twisted pair) I/O cable.

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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