Specifications
HC 403 (HCT 102 D, HCR 102)

NOTE: This product consists of a switching transmitter (HCT 102 D) and a scaling receiver (HCR 102), sold together as a system, with a twisted pair cable linking the transmitter and receiver.

Video input

Number/signal type
- Analog: HCT 102 D: 1 VGA RGBHV
- Digital: 1 HDMI input (or single link DVI-D with the appropriate DVI-HDMI adapter)

Connectors
- HCT 102 D: 1 female 15-pin HD, 1 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.

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, 800x600, 852x480, 1024x768, 1024x852, 1024x1024, 1280x768, 1280x800, 1280x1024, 1360x768, 1360x800, 1360x1024, 1400x1050, 1600x900, 1600x1200, 1680x1050, 1920x1200, HDTV 480p, 576p, 720p, 1080i, 1080p, 2048x1080
  - 60 Hz: 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)
- **Crossstalk**
  - ≤-80 dB @ 1 kHz, fully loaded
- **Stereo channel separation**
  - >80 dB @ 1 kHz

**Audio input**

- **Number/signal type**
  - 2 analog stereo, unbalanced or
digital audio, embedded in the HDMI signal
- **Connectors**
  - 2 female 3.5 mm mini stereo jacks; tip (L), ring (R), sleeve (ground)
  - 2 female HDMI Type A
- **Source formats**
  - Analog
    - Analog stereo audio
  - HDMI
- **Impedance**
  - 10k ohms, DC coupled
- **Nominal level**
  - -10 dBV, unbalanced
- **Maximum level**
  - +6 dBV, unbalanced
- **CMRR**
  - >60 dB typical, unbalanced, @ 1 kHz

**Audio output**

- **Number/signal type**
  - 1 analog, line level stereo, balanced or unbalanced (variable)
digital, embedded in HDMI (fixed)
- **Connectors**
  - (1) 3.5 mm captive screw connector, 5 pole
d 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

**Communications**

- **Contact closure remote control**
  - (1) 3.5 mm, 3 pole captive screw connector
- **Contact closure pin configuration**
  - Pin 1 = Gnd, pin 2 = input 2, pin 3 = input 3
- **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®

**NOTE:** 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV = 2 dBu
Communications — control processor

Memory
- SDRAM .................. 512 MB
- Flash ........................ 512 MB

Software and control options
- 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

General
- Power supply .................. External
  - Input: 100-240 VAC, 50-60 Hz
  - Output: 12 VDC, 3 A, 36 watts

Power consumption
- System
  - Device ..................... TBD watts
  - Device and power supply .. TBD watts

**NOTE:** Connect the included 3 A, 36 W, external power supply to the HCR 102, and the receiver remotely powers the HCT 102 D. 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 .................................... TBD BTU/hour
 Device and power supply... TBD BTU/hour

Mounting
 HCT 102 D
 Rack mount......................... Yes, with optional UCM R308 rack mounting panel
 Furniture or wall mount ...... Yes, with 2-gang junction box or mud ring mounting bracket and the included
decorator-style wallplate, or with an optional AAP 424 panel

HCR 102
 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
 HCT 102 D
 Faceplate............................ 2.6" H x 3.2" W x 0.2" D
(Fits the openings in a 2-gang decorator-style wallplate)
 Device ............................... 2.7" H x 3.5" W x 1.9" D
(Fits the openings in a 2-gang decorator-style wallplate)
 HCR 102............................. 1.0" H x 8.75" W x 6.0" D (half rack wide)
(Fits the openings in a 2-gang decorator-style wallplate)

Product weight
 HCT 102 D............................ TBD lb (TBD kg)
 HCR 102............................... 1.2 lbs (0.6 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

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