

CrossPoint Ultra Series

Ultra-Wideband Matrix Switchers with ADSP™ for RGB and Stereo Audio



SERIES FEATURES

- **Inputs:** Video on female BNC connectors; audio on captive screw connectors
- **Outputs:** Video on female BNC connectors; audio on captive screw connectors
- **Ultra-wideband performance - 525 MHz to 600 MHz (-3dB), depending on model** — CrossPoint Ultra models provide a minimum of 525 MHz (-3 dB) RGB video bandwidth, fully loaded, with many models providing 600 MHz (-3 dB) or more.
- **Ultra-flat frequency response - ± 0.5 dB from 0 to 130 MHz** — CrossPoint Ultra provides an ultra-flat frequency response of ± 0.5 dB or less, through the critical portion of the bandwidth curve, from 0 to 130 MHz. This means that the matrix switcher is virtually transparent to the A/V signal path for the most demanding, high resolution system designs with multiple levels of signal processing.
- **Ultra-low crosstalk (-56) dB or better at 100 MHz** — CrossPoint Ultra is engineered to achieve superb channel-to-channel isolation of -56 dB or better at 100 MHz.
- **Ultra-low power consumption 40 watts or less at 120 VAC** — Draws less than 40 watts at 120 VAC under full load for increased product life with very low cost of operation.
- **ADSP™ - Advanced Digital Sync Processing technology** — An exclusive, all-digital process that regenerates the sync signal waveform and restores sync level to 5.0 V p-p, TTL, specifications. This ensures a stable sync signal for improved signal compatibility with any LCD, DLP, plasma, or other digital display device.
- **DSVP™ - Digital Sync Validation Processing** — Verifies active sources by polling all inputs for valid sync signals. DSVP then transmits the horizontal and vertical sync information to the user through the serial or IP Link ports.
- **Compatible with RGBHV, RGBS, RGSB, HDTV, component video, S-video, composite video, and unbalanced/balanced stereo audio** — All models switch separate horizontal and vertical sync to ensure proper sync polarity, providing a more stable image.
- **Buffered I/O** — Each input and output is individually buffered to provide maximum performance and virtually no crosstalk or signal interference between channels.
- **Triple-Action Switching™ for RGB Delay** — Blanks the screen when switching to a new source. The new sync signals precede the RGB signals, so there is no glitch shown during the transition. The time delay between the RGB and sync signals is adjustable up to five seconds through front panel, IP Link, or serial control.
- **Audio input gain and attenuation** — Allows users to set the level of gain or attenuation for each audio input channel, eliminating noticeable volume differences when switching between sources.
- **Audio output volume adjustment and muting** — Can be set dynamically for each channel through the front panel or serial control, eliminating the need for an audio preamplifier in many system designs.
- **QS-FPC™ - QuickSwitch Front Panel Controller** — Provides a discrete, backlit button for each input and output, allowing for simple, intuitive operation.
- **Tri-color, backlit buttons** — Can be custom labeled for easy identification. The buttons illuminate red, green, or amber, depending on function, for ease of use in low-light environments.
- **Front panel security lockout** — Prevents unauthorized use in non-secure environments. In lockout mode, a special button combination is required to operate the switcher from the front panel controller.
- **View I/O mode** — Users can easily view which inputs and outputs are actively connected.
- **Global presets** — Frequently used I/O configurations may be saved and recalled either from the front panel, IP Link, or serial control. This time-saving feature allows I/O configurations to be set up and stored in memory for future use.
- **Control software** — Provides a graphical, drag-and-drop interface for I/O configuration and other customization functions via RS-232 and RS-422 remote control. This software also offers an emulation mode for configuration of an offsite matrix switcher; the I/O configuration may be saved for future downloading to the matrix switcher.
- **Optional remote controls** — Available control panels and keypads provide the flexibility to control a CrossPoint Ultra Series matrix switcher from a remote location.
- **Rack-mountable metal enclosure** — CrossPoint Ultra matrix switchers are housed in 19-inch wide metal enclosures and feature integrated rack ears for ease of installation.
- **Internal universal power supply** — The 100-240VAC, 50/60 Hz, international power supply provides worldwide power compatibility.

DESCRIPTION

CrossPoint Ultra ultra-wideband matrix switchers are designed to deliver exceptional performance in the most demanding, very high resolution computer-video and stereo audio routing systems. CrossPoint Ultra sets a new standard for engineering excellence in all critical measures of matrix switcher performance, including bandwidth, frequency response, efficiency, reliability, power consumption, and control. CrossPoint Ultra is available in six I/O sizes from 8x4 to 16x16 and is ideal for complex A/V routing applications that require efficient, reliable operation at the highest computer-video resolutions without signal loss or degradation.

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CrossPoint Ultra Series

DESCRIPTION (CONTINUED)

Ultra-wideband performance

High demand applications require high performance signal routing. CrossPoint Ultra matrix switchers provide a minimum of 525 MHz (-3dB) RGB bandwidth, fully loaded, with many models providing 600 MHz (-3 dB) or more.

CrossPoint Ultra combines this exceptional, ultra-wideband performance with Ultra-flat frequency response of ± 0.5 dB or less, through the critical portion of the bandwidth curve, from 0 to 130 MHz. This means that the matrix switcher is virtually transparent to the A/V signal path supporting the most demanding, high resolution system designs with multiple levels of signal processing.

Ultra-low crosstalk

Crosstalk interference occurs when electrical signals "leak" from one component or circuit board signal line to another due to improper shielding or isolation. CrossPoint Ultra matrix switchers are engineered to achieve superb channel-to-channel isolation of -56 dB or better at 100 MHz. This minimizes signal leakage across video channels, and eliminates signal bleed-through that can compromise critical imaging or high-security presentation environments.

Ultra-efficient power supplies

Temperature has the highest impact on component life. Efficient enclosure design and, in particular, the power supply, can drastically cut down on heat generation and power consumption. CrossPoint Ultra matrix switchers use a single, highly-efficient, cool-running power supply, allowing the utilization of a fan-free enclosure. Whether you're considering thermal management in the equipment rack, or silent operation in a noise-sensitive environment, CrossPoint Ultra makes an excellent choice.

Ultra-low power consumption

CrossPoint Ultra is engineered for use in high-demand, rack-mount applications with other A/V signal processing devices. Through efficiency of design and the careful selection of high-quality, long-life electronic components, CrossPoint Ultra draws less than 40 watts at 120 VAC under full load, less than a standard desk lamp. Low power consumption equates to less heat generation which translates to a lower cost of ownership and an increased product lifespan.

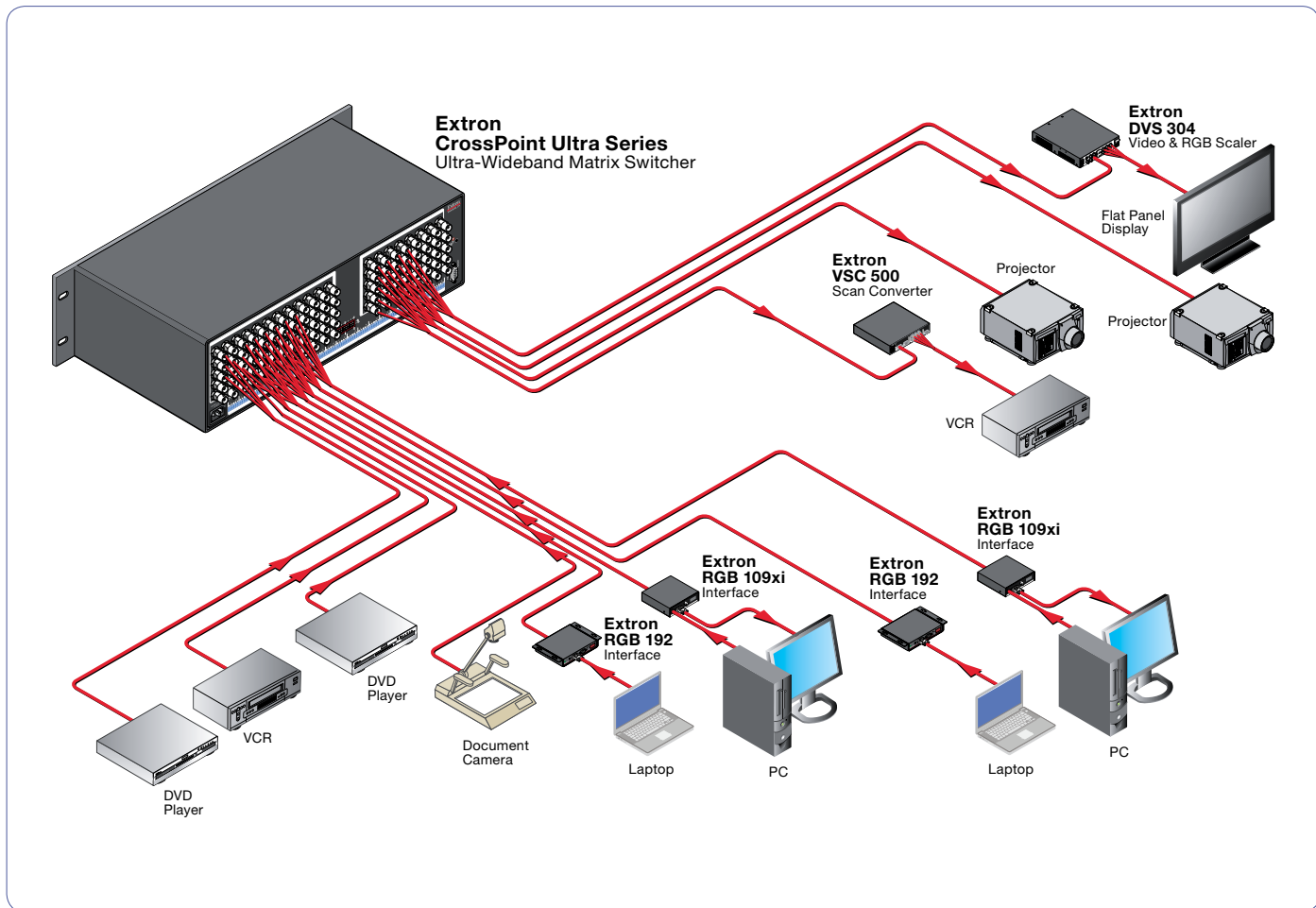
Ultra-reliable architecture

CrossPoint Ultra represents Extron's 5th generation of CrossPoint design and technological development, resulting in new design architecture that yields higher performance, utilizes fewer boards and cables, and eliminates many of the most common failure points. The result is optimum reliability around the clock, year in and year out.

Ultra-flexible control

With so many makes and models of control systems available, you need a matrix switcher that can work with any or all of them, and one that does not lock your system design into a single closed, proprietary control protocol. That's why all CrossPoint Ultra models come standard with front panel, RS-232/422 serial control, and IP Link Ethernet control. The QuickSwitch™ front panel controller is always available, whether it's for convenient system testing or day-to-day operation without a control system.

The RS-232/422 serial control port utilizes Extron's popular SIS™ Simple Instruction Set command protocol, allowing easy integration with virtually any third-party control system. IP Link enables CrossPoint Ultra to be controlled, monitored, and accessed from most IP-enabled control systems, or from any authorized computer connected to a Local Area Network, Wide Area Network, or the Internet.



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CrossPoint Ultra Series

SPECIFICATIONS

VIDEO

Routing

84 Series	8 x 4 matrix
88 Series	8 x 8 matrix
128 Series	12 x 8 matrix
1212 Series	12 x 12 matrix
168 Series	16 x 8 matrix
1616 Series	16 x 16 matrix

Gain

Unity

Bandwidth

84/88/128 Series	600 MHz (-3dB), fully loaded
0 - 10 MHz	No more than ±0.1 dB
0 - 130 MHz	No more than ±0.3 dB
1212/168/1616 Series	525 MHz (-3 dB), fully loaded
0 - 10 MHz	No more than ±0.30 dB
0 - 130 MHz	No more than ±0.50 dB

Crosstalk

84/88/128 Series	-85 dB @ 1 MHz
	-73 dB @ 5 MHz
	-70 dB @ 10 MHz
	-63 dB @ 30 MHz
	-56 dB @ 100 MHz
1212/168/1616 Series	-92 dB @ 1 MHz
	-80 dB @ 5 MHz
	-78 dB @ 10 MHz
	-75 dB @ 30 MHz
	-70 dB @ 100 MHz

Switching speed

200 ns (max.)

VIDEO INPUT

Number/signal type 8, 12, or 16 RGBHV, RGBS, RGSB, RsGsBs, HDTV, component video, S-video, composite video

Connectors

84/88 Series	8 x 5 BNC female
128/1212 Series	12 x 5 BNC female
168/1616 Series	16 x 5 BNC female

Nominal level 1 Vp-p for Y of component video and S-video, and for composite video
0.7 Vp-p for RGB and R-Y and B-Y of component video
0.3 Vp-p for C of S-video

Minimum/maximum levels Analog: 0.2 V to 2.25 Vp-p with no offset

Impedance

75 ohms

Horizontal frequency 15 kHz to 150 kHz

Vertical frequency 30 Hz to 150 Hz

Return loss <-40 dB @ 5 MHz

DC offset (max. allowable) 1.47 V

VIDEO OUTPUT

Number/signal type 4, 8, 12, or 16 RGBHV, RGBS, RGSB, RsGsBs, HDTV, component video, S-video, composite video

Connectors

84 Series	4 x 5 BNC female
88/128/168 Series	8 x 5 BNC female
1212 Series	12 x 5 BNC female
1616 Series	16 x 5 BNC female

Nominal level 1 Vp-p for Y of component video and S-video, and for composite video
0.7 Vp-p for RGB and R-Y and B-Y of component video
0.3 Vp-p for C of S-video

Minimum/maximum levels 0 V to 1.8 Vp-p (follows input)

Impedance

75 ohms

Return loss -40 dB @ 5 MHz

DC offset ±7 mV with input at 0 offset

Switching type Triple-Action*

SYNC

Input type RGBHV, RGBS, RGSB, RsGsBs

Output type RGBHV, RGBS, RGSB, RsGsBs (follows input)

Input level 0.5 V to 5.0 Vp-p, 4.0 Vp-p normal

Output level AGC to TTL: 4.0 V to 5.0 Vp-p, unterminated

Input impedance Inputs 1 to 4: 75 or 510 ohms, switchable

Inputs 5 to 8, 12, or 16: 510 ohms

Output impedance 75 ohms

Max. input voltage 5.0 Vp-p

Max. propagation delay <120 ns

Max. rise/fall time 4 ns

Polarity Positive or negative (follows input)

AUDIO — AUDIO MODELS ONLY

Routing

84 Series	8 x 4 stereo matrix
88 Series	8 x 8 stereo matrix
128 Series	12 x 8 stereo matrix
1212 Series	12 x 12 stereo matrix
168 Series	16 x 8 stereo matrix
1616 Series	16 x 16 stereo matrix

Gain

Unbalanced output: -6 dB; balanced output 0 dB

Frequency response 20 Hz to 20 kHz, ±0.05 dB

THD + Noise 0.01% @ 1 kHz at nominal level

S/N >105 dB, balanced, at maximum output (21 dBu), unweighted

Crosstalk <-89 dB @ 1 kHz, fully loaded

Stereo channel separation >-105 dB @ 1 kHz

CMRR >-83 dB @ 20 Hz to 20 kHz

AUDIO INPUT — AUDIO MODELS ONLY

Number/signal type	8, 12, or 16 stereo, balanced/unbalanced
Connectors	(8, 12, or 16) 3.5 mm captive screw connectors, 5 pole
Impedance	>10k ohm, balanced/unbalanced, DC coupled
Nominal level	+4 dBu (1.228 Vrms)
Maximum level	+21 dBu, (balanced or unbalanced) at 0.01% THD+N
Input gain adjustment	-18 dB to +24 dB (default = 0 dB), adjustable per input by RS-232/422, Ethernet, or front panel

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

AUDIO OUTPUT — AUDIO MODELS ONLY

Number/signal type	4, 8, 12, or 16 stereo, balanced/unbalanced
Connectors	(4, 8, 12, or 16) 3.5 mm captive screw connectors, 5 pole
Impedance	50 ohms unbalanced, 100 ohms balanced
Gain error	±0.1 dB channel to channel
Maximum level (Hi-Z)	>+21 dBu, balanced or unbalanced at 1.0% THD+N
Maximum level (600 ohm)	>+20 dBm, balanced or unbalanced at 1.0% THD+N
Output volume range	0 to 64 (-92.8 dB to 0 dB) in 1 dB increments from steps 1 to 64, in 30 dB increment from step 0 to 1; default = 64 = 0 dB

CONTROL/REMOTE — SWITCHER

Serial host control port	1 bidirectional RS-232 or RS-422, rear panel 9-pin female D connector 1 bidirectional RS-232, front panel 2.5 mm mini stereo jack
Baud rate and protocol	9600 (default), 19200, 38400, 115200 baud (adjustable); 8 data bits, 1 stop bit, no parity
Serial control pin configurations	RS-232 9-pin female D connector: 2 = TX, 3 = RX, 5 = GND Mini stereo jack: tip = TX, ring = RX, sleeve = GND
RS-422	9-pin female D connector: 2 = TX-, 3 = RX-, 5 = GND, 7 = RX+, 8 = TX+
Ethernet control port	1 RJ-45 female connector
Ethernet data rate	10/100Base-T, half/full duplex with autotdetect
Ethernet protocol	ARP, DHCP, ICMP (ping), TCP/IP, Telnet, HTTP, SMTP
Ethernet default settings	Link speed and duplex level = autotdetected IP address = 192.168.254.254 Subnet mask = 255.255.0.0 Default gateway = 0.0.0.0 DHCP = off
Web server	Up to 200 simultaneous sessions 1.24 MB nonvolatile user memory
Program control	Extron's control/configuration program for Windows® Extron's Simple Instruction Set (SIS™) Microsoft® Internet Explorer, Telnet

GENERAL

Power	84/88/128 Series 35 watts (typical) 38 watts (loaded)
	1212/168/1616 Series 45 watts (typical) 52 watts (loaded)
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	Convection, no vents
Rack mount	Yes
Enclosure type	Metal
Enclosure dimensions (Depth excludes connectors. Width excludes rack ears.)	84/88/128 Series 5.25" H x 17.0" W x 9.4" D (3U high, full rack wide) (13.3 cm H x 43.2 cm W x 23.9 cm D)
	1212/168/1616 Series 10.5" H x 17.0" W x 9.7" D (6U high, full rack wide) (26.7 cm H x 43.2 cm W x 24.6 cm D)
Product weight	84/88/128 Series 14.4 lbs (6.5 kg)
	1212/168/1616 Series 19.4 lbs (8.8 kg)
Shipping weight	84/88/128 Series 21 lbs (10 kg)
	1212/168/1616 Series 26 lbs (12 kg)
DIM weight, international	84/88/128 Series 25 lbs (12 kg)
	1212/168/1616 Series 34 lbs (15.5 kg)
Vibration	ISTA 1A in carton (International Safe Transit Association)
Regulatory compliance	Safety CE, C-tick, CUL, UL EMI/EMC CE, C-tick, FCC Class A, ICES, VCCI
MTBF	30,000 hours
Warranty	3 years parts and labor

NOTE: All nominal levels are at ±10%.

NOTE: Specifications are subject to change without notice.

Note: For complete specifications, please go to www.extron.com