



SUBMITTAL COVER SHEET

Project Name: College of Alameda
 General Contractor: _____
 Spec Section: 27 41 00
 Submission Date: _____
 Version: 2

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PCD AUDIO & VIDEO
SYSTEM INTEGRATION

18068

College of Alameda Liberal Arts Classrooms

AV SYSTEMS SUBMITTAL # 3

18068 - College of Alameda Liberal Arts Classrooms

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Data Sheet Table of ContentsClassroom Equipment

#	Make	Model	Description
1	Epson	V11H919520	Brightlink 1485Fi
2	Extron	26-726-50	Optical HDMI cable 50', HD-05, HD-07
3	Extron	HDMI Ultra/12	4K Premium High Speed HDMI Ultra Flexible Cable - 12' (3.6m), HD-01
4	Extron	IPL Pro S3	Three Serial Port IP Link Pro Control Processor
5	Extron	PVS 407D	IP-Enabled digital PoleVault Switcher with integrated amplifier
6	Extron	SF 26PT	Pendant Speaker
7	Extron	TLP Pro 320M	3.5" Wall Mount TouchLink Pro Touchpanel - White
8	Extron	60-1471-13	USB Extender Plus R
9	Extron	60-1473-13	USB Extender Plus D T
10	Extron	XTP PI 100	XTP Power Injector
11	HoverCam	HCS8PLUS	HoverCam Document Camera HCS8PLUS
12	Monoprice	2135	CAT5e patch cable 3', N-03, N-04, N-07
13	Monoprice	24341	CAT6a STP patch cable 3' for voice lift Rx, N-01
14	Sendt	SNT-NBLC-SL	Sendt Notebook/Laptop Locking Cable
15	C2G	27329	USB 2.0 A to Mini-B cable, 1m
16	C2G	29652	USB 2.0 A to Mini-B cable, 3m
17	C2G	56783	6FT HDMI CBL, HD-02, HD-03
18	C2G	56783	6FT HDMI HS W ETHERNET CBL, HD-02,HD-03, HD-04, HD-06
19	Extron	FF 120	Flat Field Speaker
20	Extron	PVT HDMI	PoleVault Digital Input, HDMI - Decorator-Style Wallplate
21	Extron	42-255-03	VLM 3002H Pendant and Handheld VoiceLift Pro Microphone
22	Extron	UPB 125	Universal Projector Mounting Bracket - White
23	Extron	USFM 100	Ultra Short throw projector mount and equipment enclosure
24	Extron	60-1583-23	DTP CrossPoint 4K Series
25	Tripp-Lite	SRW9U	Tripp-Lite 9U SmartRack

BrightLink[®] 1485Fi 1080p 3LCD Interactive Laser Display



Product shown with
mount, sold separately.

Projectors

Education

Bring collaboration to classrooms and meeting spaces with this interactive HD 1080p laser display¹.

Super bright — 5,000 lumens color/white brightness²; 1080p Full HD laser display¹

Flexible image sizes — projects large, 100", 16:9 or super-wide 120", 16:6 images — up to 95 percent more interactive space vs. a 75" flat panel

Solid-state laser light source — virtually maintenance-free 20,000-hour laser light source with no lamps³

Easy installation — automatic image adjustment and simplified calibration makes installation easier than ever before

Digital whiteboard — draw, save, print and email without a PC; share whiteboard content to other network-connected BrightLink projectors⁴

Easy operation — touch and pen-enabled interactivity⁵ allows up to eight users to collaborate at once

Improved cable management — HDBaseT control pad supports, video, audio and interactive functions, reducing the number of cables and making installation a snap⁶

Built-in wireless — use free Epson iProjection™ software to connect, display and share content simultaneously to/from up to 50 connected devices⁷

Connect with Miracast[®] — supports software-free, peer-to-peer wireless connectivity

SMART Learning Suite — includes 1-year subscription and support for SMART Notebook[®], SMART amp™, SMART lab™, SMART Learning Suite Online and more



Specifications

Display System Epson[®] 3LCD, 3-chip technology
Display Method Ceiling/wall mount/table mount
Driving Method Epson Poly-silicon TFT Active Matrix
Native Resolution 1080p¹ (1366 x 768 x 2)
Resolution on Screen 1080p¹ (2.1 million pixels)
Pixel Number 1,049,000 pixels (1366 x 768) x 3 chips
Color Brightness² Color Light Output: 5,000 lumens
White Brightness² White Light Output: 5,000 lumens
Aspect Ratio 16:9 (native), supports 4:3, 16:10, 16:6, 21:9
Size (Projected Distance) Area (16:9) 65" – 100"
Keystone Correction (Manual)
 Horizontal: ± 3 degrees
 Vertical: ± 3 degrees
USB Plug 'n Play Mac[®] 10.7 or later; Windows Vista[®] or later
Contrast Ratio Up to 2,500,000:1
Color Reproduction Up to 1.07 billion colors
Illumination Technology Laser Diode
Light Source Life³ 20,000 hours (Normal)
 30,000 hours (Extended)

Wireless Specifications

Supported Security Mode
 OPEN, WPA2/WPA3-PSK, WPA2/WPA3-EAP
 Supported EAP Type PEAP, PEAP-TLS, EAP-TLS, EAP-Fast
Supported Speeds:
 IEEE 802.11b: 11 Mbps* (2.4 GHz)
 IEEE 802.11g: 54 Mbps* (2.4 GHz)
 IEEE 802.11n: 72.2 Mbps* (2.4 GHz)
 IEEE 802.11a: 54 Mbps* (5 GHz)
 IEEE 802.11n: 150 Mbps* (5 GHz)
 IEEE 802.11ac: 325 Mbps* (5 GHz)
 *Maximum speed and range is achievable when used with the same Enhanced Mode technology. Actual data rates, features and performance may vary depending on your computer system, the environment and other factors.

Projection Lens

Type Manual focus
F-number 1.50
Focal Length 3.9 mm
Throw Ratio Range (16:9) 0.27 – 0.37, (4:3) 0.37 – 0.50, (16:10) 0.30 – 0.42
Zoom Ratio Digital zoom 1.0 – 1.35x

Other

Speaker 8 W x 2 stereo
Operating Temperature 41° to 104 °F (0° to 40 °C)
Power Supply Voltage 100 – 240 V ± 10%, 50/60 Hz
Power Consumption
 ECO Mode: 270 W
 Normal Mode: 381 W
 Standby (Communication On): 2.0 W
 Standby (Communication Off): 0.5 W
Fan Noise
 Quiet Mode: 27 dB, Normal Mode: 36 dB
Security Kensington lock provision, security anchor bar, password-protect function

Interfaces

HDMI[®]: 3
 HDBaseT HDMI out: DS 1
 Computer/Component Video: 2x D-sub 15 pin
 Composite Video: 1x RCA (Yellow)
 Audio In: 3x Mini stereo
 Audio Out: 1x Mini stereo
 Microphone in: 1
 USB Connector: 2x Type B (USB display, audio and mouse, k/b control interactivity)
 USB Connector: 2x Type A (USB memory/document camera)
 1x RJ-45
 Serial: 1x RS-232c
 Monitor Out/Computer: 1x D-sub 15 pin
 Integrated Wireless LAN: 802.11 b/g/n/ac
 Interactive Synchronization Mini stereo In
 Interactive Synchronization Mini stereo Out
 Touch Unit Connection Port



Interactivity

Interactive Technology Infrared, 850 nm
Interactive Area (Image Size) 65" – 100" diagonal (16:9, 1080p)
Input Device Digital pen or finger
Number of Pens Two
Number of Pen Tips Six (4x Felt/Soft Tip, 2x Teflon[™] Hard Tip)
Pen Functions Mouse functions (left and right click), Electronic pen, LED battery status indicator
Pen Specifications Size: 6.3" (L) x 0.95" (W); Weight: 1.1 oz (without battery), Power: AA battery, Compatible Battery Types: AA x 1, Manganese dry cell, Alkaline dry cell, Panasonic eneloop[®] BK-3MCCx (The suffix "x" can be blank or A-Z), Calibration Method: Automatic or Manual
Interactive Modes
 Whiteboard Mode: 2x pens and 6x fingers, PC-free Annotation
 Mode: 2x pens and 6x fingers, Computer Interactivity Mode, Easy Interactive Tools: 2x pens and 6x fingers
Requirements for Computer Interactivity
 Connection to the Computer: Via USB cable or wired/wireless LAN
 Software System Compatibility: Epson Easy Interactive Driver for Mac only; Windows[®] driver for Multi Projection; Windows (single projector) and Linux: No driver required
 Mac: Mac OS X[®] 10.7.x or later

Interactive Software Requirements

Epson Easy Interactive Driver (Mac and PC — required for DuoLink); Windows and Linux: driver not required
 Mac: Mac OS X 10.7/10.8/10.9/10.10/10.11/macOS 10.12.x
 Epson Easy Interactive Tools for Windows and Mac
System Compatibility Microsoft[®] Windows Vista SP2 (All editions except for Starter), Windows 8/8.1, Windows 10, Windows 7 SP1 (All editions except for Starter) macOS[®] 10.7/10.8/10.9/10.10/10.11/macOS 10.12.x, UBUNTU 15.10, 16.04 LTX, 16.04, 18.04, 19.04

Dimensions (W x D x H)

Including Feet 18.1" x 14.3" x 8.3"
Weight 21.4 lbs with cable cover (9.7 kg)

Remote Control

Features Source search, HDMI, Computer, LAN, USB, Power, Aspect, Color mode, Volume, E-zoom, A/V Mute, Freeze, Menu, Home, Auto, Enter, Esc, Pointer, User, Pen Mode, Split, Home, ID
Operating Angle
 Rear: Right/left: -55 to +55 degrees, Upper/lower: +75 to +15 degrees, Front: Right/left: -30 to +30 degrees, Upper/lower: 0 to +60 degrees
Operating Distance 19.7 ft (6 m)

HDBaseT Control Box

Functions Projector On/Off, HDMI source switching, audio/video interactivity via CAT6, USB for PC-free saving
Dimensions 7.75" H x 6.9" W x 1.5" D
Power DC 12 V power supply
Supported Distance 40 m (4k 30 fps) or 70 m (1080p 60 fps) via CAT6 cable

Eco Features

Energy-efficient 3LCD light engine
 RoHS compliant
 Recyclable product⁴
 Epson America, Inc. is a SmartWay[®] Transport Partner⁵

Support

Service Programs Two-year projector limited warranty, Epson Road Service program, PrivateLine[®] dedicated toll-free support

What's in the Box

BrightLink Pro 1485Fi, lens cover, rear cable cover, interactive touch module and cable, Quick Setup Guide, 6' power cable, USB A/B cable (x1), projector remote control with two AA batteries, HDBaseT control pad with power supply, pen holder, four (4) markers for auto screen adjustment, IR reflectors, two (2) interactive pens, battery charger and two (2) AA rechargeable batteries (for interactive pens), Warranty statement, SMART SLS redemption code

Ordering Information

BrightLink 1485Fi	V11H919520
Air Filter	V13H134A56
PowerLite [™] Pilot [™] 3 (ELPCB03)	V12H927020
Pixie Plus (ELPSP10)	
Document Camera (DC21)	V12H758020
External Speakers (ELPSP02)	V12H467020
Wireless 802.11b/g/n LAN Unit (ELPAP11)	V12H005A02
100" Whiteboard 16:9 Aspect Ratio	V12H006A02
DaLite 100" IDEA Screen	V12H006A01
Interactive Pen A (Orange)	V12H773010
Interactive Pen B (Blue)	V12H774010
Replacement Pen Tips (Hard/Teflon)	V12H775010
Replacement Pen Tips (Soft/Felt)	V12H776020
Ultra Short-throw Wall Mount (ELPMB62)	V12HA06A05
Finger Touch Module	V12H007A23
Touch Module Bracket	V12HA05A09
USB Extension Cable (ELPKC31)	V12H525001

1 Pixel shifting technology achieves Full HD resolution on screen. | 2 Color brightness (color light output) and white brightness (white light output) will vary depending on usage conditions. Color light output measured in accordance with IDMS 15.4; white light output measured in accordance with ISO 21118. | 3 No required maintenance for the light source for up to 20,000 hours. Approximate time until brightness decreases 50% from first usage. Measured by acceleration test assuming use of 0.04 - 0.20 mg/m³ of particulate matter. Time varies depending on usage conditions and environment. Replacement of parts other than the light source may be required in a shorter period. | 4 BL1485Fi and 1480Fi projectors only. Cannot share to earlier models. | 5 Requires Windows 7, Windows 8 or Mac OS X or later to recognize finger gestures. | 6 Supports maximum distance up to 229 feet (Cat6A/7; 1080p) and up to 131 feet (Cat6A/7; 4K content) | 7 For wireless functionality, including via the Epson iProjection App, the projector must be configured on a network, either through the Ethernet port on the projector (check model specifications for availability) or via a wireless connection. Check your owner's manual to determine if a wireless LAN module must be purchased separately to enable a wireless connection. Not all Epson projectors are able to be networked. The Epson iProjection App does not support all files and formats. See www.epson.com for details. | 8 For convenient and reasonable recycling options, visit www.epson.com/recycle | 9 SmartWay is an innovative partnership of the U.S. Environmental Protection Agency that reduces greenhouse gases and other air pollutants and improves fuel efficiency.

Learn more about how our products can empower your institution. Visit us at www.epson.com/foreducation

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 eco.epson.com



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DMP 44 LC

DIGITAL MATRIX PROCESSOR

▶ **4x4 line level audio matrix mixer**

▶ **DSP audio signal processing**

- Fixed, low latency DSP processing

▶ **Audio DSP tools:**

- Compression
- Limiting
- Ducking
- Parametric EQ
- Bass and treble shelving filters
- High pass filters
- Low pass filters
- Building Block DSP templates
- 16 DSP Configurator presets
- 16 Group master controls

▶ **24-bit/48 kHz analog-to-digital and digital-to-analog converters**

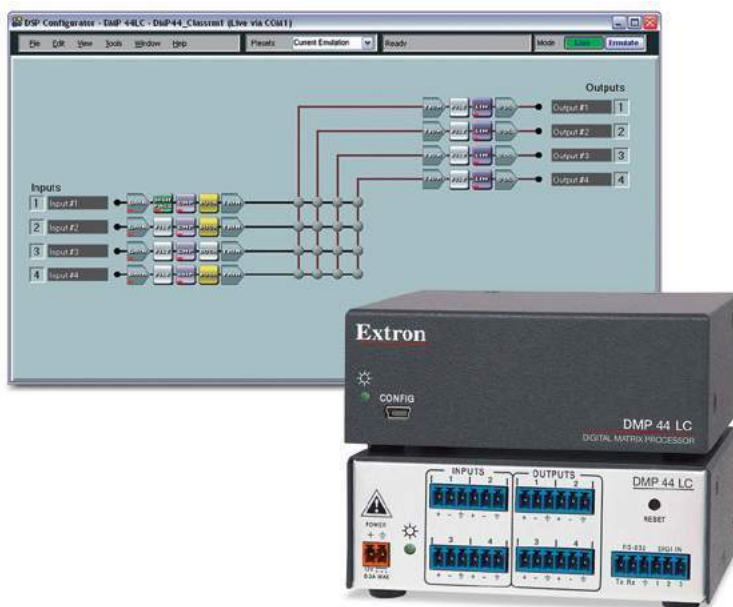
▶ **DSP Configurator™ Software for fast configuration**

▶ **Live and Emulate operation modes**

▶ **Intuitive Graphical User Environment**

▶ **SpeedNav™ keyboard navigation**

▶ **Three digital input ports for remote triggering**



The Extron DMP 44 LC is a compact audio matrix mixer with a digital signal processing platform for audio signal routing and control. Several DSP audio tools facilitate source signal and room optimization with quick and easy configuration using the DSP Configurator software. The built-in 4x4 matrix mixing makes the DMP 44 LC ideal for combining two or more audio sources into an input on an amplifier or recording system, or for distributing audio in a divisible room installation.



DESCRIPTION

The Extron **DMP 44 LC** Digital Matrix Processor is a compact 4x4 audio matrix mixer featuring a digital signal processing platform for audio signal routing and control. The DMP 44 LC features four line level inputs and outputs, all balanced or unbalanced. It offers several audio DSP tools for mixing, routing, and room optimization with quick and intuitive configuration using the DSP Configurator™ Software, allowing the DMP 44 LC to be installed in very little time. The DMP 44 LC is ideal for presentation applications that require line level audio matrix mixing with DSP in a small form factor.

DSP

The DSP built into the DMP 44 LC provides wide dynamic range and utilizes 24-bit audio converters with 48 kHz sampling to maintain audio signal transparency. Several convenient, easy-to-configure tools are available: level controls, high and low pass filters, parametric EQ filters, bass and treble shelving filters, compressor, limiter, and ducker.

Easy-to-Use DSP Configurator Software

The DSP Configurator Software features an intuitive on-screen layout that offers fast access to all of the digital audio signal processing tools as well as audio matrix mixing. Designers can quickly get a snapshot view of the entire audio system including processing blocks, routing, and mixing matrix assignments all at once.

Flexible Routing

The DMP 44 LC features four mono line inputs, each of which can be mixed into any or all four mono line outputs. This audio matrix mixing is ideal for many applications, such as combining two independent stereo audio sources or switchers into a single amplifier or recording system, or in a divisible room installation where a switcher's audio output is fed to the sound system for each room.

FEATURES

- ▶ **4x4 line level audio matrix mixer** – The DMP 44 LC is a compact matrix mixer with DSP. It features four line level inputs that can be processed, mixed, and routed to four line level outputs.
- ▶ **DSP audio signal processing** – The DMP 44 LC provides digital signal processing on all input and output paths.
- ▶ **24-bit/48 kHz analog-to-digital and digital-to-analog converters** – High performance converters preserve audio signal integrity in input and output signal conversion, while maintaining latency under 1 ms.
- ▶ **Fixed, low latency DSP processing** – Input to output latency within the DMP 44 LC is fixed regardless of the number of active channels or processes. Fixed, low latency processing keeps audio in sync with video, and prevents distractions to the presenter resulting from delayed live audio.
- ▶ **DSP Configurator™ Software** – A powerful yet user-friendly PC-based software tool for managing all audio operations of the DMP 44 LC. It enables complete setup and configuration of digital audio processing tools as well as routing and mixing.
- ▶ **Intuitive Graphical User Environment** – The DSP Configurator Software features a Graphical User Environment that offers a clear view of all inputs and outputs, audio processing blocks, routing, and mix points in a single window. This allows a designer or installer to quickly view an audio configuration without having to access multiple windows or menus.
- ▶ **Front panel USB configuration port** – Enables easy configuration via the DSP Configurator Software without having to access the mixer's rear panel.
- ▶ **RS-232 control port** – Using serial commands, the DMP 44 LC can be integrated into a control system.
- ▶ **Three digital input ports for remote triggering** – Three configurable digital input ports are provided, so that external switches and sensors can be connected to the mixer for remote triggering of functions within the DMP 44 LC.
- ▶ **Building Blocks processor templates** – A collection of pre-designed processor templates optimized for a specific type of input or output device, such as microphones and Extron speakers, with preset levels, filters, dynamics, and more. Flexible Building Blocks are available on each I/O strip and allow system designers to fully customize and save their own Building Blocks, further streamlining audio system design and integration.
- ▶ **Console View with gain settings, metering, and routing in a single window** – An optional view within the DSP Configurator Software that allows system designers to see all gain settings and routing, together with live metering in a single window. Console View provides overload indication, numeric values for levels, and also mute status for each input, gain stage, mix point, and output, so that settings between inputs and outputs can be easily compared and adjusted in one view.
- ▶ **Live and Emulate operation modes with configuration file saving** – Allows settings to be configured offline, then uploaded to the DMP 44 LC. The software also downloads configuration files from the mixer for archiving.
- ▶ **16 DSP Configurator presets** – Using the DSP Configurator Software, any or all parameters for DSP processing, levels, or audio routing can be saved as presets.
- ▶ **Group Master controls** – The DMP 44 LC provides the capability to consolidate gain or mute control using 16 gain and mute groups. Gain or mute controls can be selected and added to a group master, which can then be controlled by a single master fader or mute control.
- ▶ **Soft limits provide optimal group master adjustment range** – The group master volume range can be limited using soft limits to maintain optimal minimum and maximum levels when using external volume control. This prevents operators from over or under-adjusting levels when using digital I/O or RS-232 control.
- ▶ **SpeedNav™ keyboard navigation** – SpeedNav enables user-friendly, keyboard-based navigation of the DSP Configurator Software without the need for a mouse or touchpad. Using keyboard navigation keys and shortcuts, the user can access any input or output, mixing points, and all audio DSP tools. Using only the keyboard for software access can help expedite audio system setup and commissioning while on-site using laptop PCs.

HD Pro Plenum Series

HDMI PREMIUM HIGH SPEED OPTICAL CABLES - PLENUM



18 Gbps
4K/60 4:4:4

Extron HD Pro Plenum Series active, hybrid optical-copper cables provide high-speed transmission of HDMI digital video and audio signals. These ultra-thin cables, which conform to Premium High Speed HDMI Cable performance standards, support data rates up to 18 Gbps, and video resolutions up to 4K/60 @ 4:4:4. They are powered by the connected HDMI source device, streamlining integration. Offering the optimal combination of price and performance, the HD Pro Plenum Series cables are ideal for sending high data rate HDMI signals over long cable runs while maintaining full signal integrity and providing reliable operation to support mission-critical applications.

- ▶ Conforms to Premium High Speed HDMI Cable performance standards
- ▶ Supports data rates up to 18 Gbps, video resolutions up to 4K/60 @ 4:4:4, and HDR
- ▶ PCM 8-channel, Dolby Digital True HD, DTS-HD Master Audio support
- ▶ Supports EDID, HDCP, and CEC
- ▶ 4K/60 verified
- ▶ Flexible, ultra-thin 0.16" (4 mm) diameter cable
- ▶ NEC CMP-rated plenum cable
- ▶ Highly resistant to EMI/RFI interference
- ▶ Gold-plated contacts
- ▶ No external power is needed
- ▶ Color-coded and labeled ends
- ▶ Available in lengths from 25 feet to 300 feet (7.6 meters to 91.4 meters)

DESCRIPTION

The Extron **HD Pro Plenum Series** are active, hybrid optical-copper cables for high-speed transmission of HDMI digital video and audio signals. These cables conform to Premium High Speed HDMI Cable performance standards and support data rates up to 18 Gbps, video resolutions up to 4K/60 @ 4:4:4, HDR, EDID, HDCP, and CEC. All HDMI audio formats are supported, including PCM 8-channel, Dolby Digital True HD, and DTS-HD Master Audio. Ultra-thin 0.16" (4 mm) diameter, narrow bend radius cable construction provides ease of installation in tight spaces, including plenum air spaces, without compromising performance. The active cables are unidirectional and draw ultra-low power from the connected HDMI source device. The HD Pro Plenum cables are available in lengths from 25 feet to 300 feet (7.6 meters to 91.4 meters).

The HD Pro Plenum Series offers the benefits of fiber optics with the simplicity of traditional copper cables. Offering the optimal combination of price and performance, this cabling solution is ideal for sending high data rate HDMI signals over long cable runs while maintaining full signal integrity and providing reliable operation to support mission-critical applications. The HD Pro Plenum Series uses glass multimode optical fiber to transmit full 4K/60, HDR, and multi-channel audio high-speed signals. Built-in active circuitry converts the incoming electrical signal into an optical signal on one end, and back into an electrical signal on the other end. This circuitry requires ultra-low power, and is powered by the connected HDMI source device. All other non-bandwidth intensive or low-speed signals are carried on the integrated copper wires, including EDID, HDCP, CEC, and 5V power.

All HD Pro Plenum Series cables are unidirectional. For easy identification and cable orientation, a blue-colored ring encircles the source connector neck and connector ends are molded with descriptive text to indicate source and sink directionality.



SPECIFICATIONS

TRUE 4K SPECIFICATION

Max 4K Capabilities		
Resolution and Refresh Rate	Chroma Sampling	Max Bit Depth per Color
4096 x 2160 at 60 Hz 3840 x 2160 at 60 Hz 4096 x 2160 at 30 Hz 3840 x 2160 at 30 Hz	4:4:4	8 bit
4096 x 2160 at 60 Hz 3840 x 2160 at 60 Hz	4:2:0	12 bit

Frame rate¹ 24, 25, 30, 50, or 60 fps

Chroma sampling¹ 4:4:4, 4:2:2, or 4:2:0

Color bit depth¹ 8, 10, or 12 bits per color

Signal type HDMI 2.0b, HDCP 2.2

Max. video data rate 18.0 Gbps (6.0 Gbps per color)

NOTE: ¹Subject to the maximum data rate limit. Use our calculator at www.extron.com/4Kdata to determine video parameters supported by this data rate.

PERFORMANCE/ELECTRICAL

Resolution range	
HDMI	Up to 4K (4096x2160) @ 60 Hz, UHD (3840x2160) @ 60 Hz 8-bit color depth, max. 18.0 Gbps data rate
Voltage	30 V
Power consumption	250 mW

MECHANICAL

Max Tensile strength	100 N (10.2 kg, 22.5 lbs)
Max. compression load resistance	200 N (20.4 kg, 45 lbs)
Cable outer diameter	0.16" (4 mm)
Bend radius	0.79" (20 mm)

GENERAL — PHYSICAL CHARACTERISTICS

Connector type	1 male type A HDMI to 1 male type A HDMI
Contacts	Gold plated
Material	Conductors: Multi-Mode fiber and 28 AWG tinned copper Jacket: PVC
Connector dimensions	2.40" L x 0.84" W x 0.49" thick (61.0 mm L x 21.3 mm W x 12.4 mm thick)
Operating temperature rating	Minimum: 0 °C Maximum: 50 °C
Humidity	85 °C and 85% Relative Humidity, Non-Condensing
Regulatory compliance	CE, UL-CMP
Warranty	Limited Lifetime Performance

Model	Version Description	Part number
HD Pro P/25	25' (7.6 m)	26-726-25
HD Pro P/35	35' (10.6 m)	26-726-35
HD Pro P/50	50' (15.2 m)	26-726-50
HD Pro P/75	75' (22.8 m)	26-726-75
HD Pro P/100	100' (30.4 m)	26-726-100
HD Pro P/125	125' (38 m)	26-726-125
HD Pro P/150	150' (45.7 m)	26-726-150
HD Pro P/175	175' (53.2 m)	26-726-175
HD Pro P/200	200' (60.9 m)	26-726-200
HD Pro P/250	250' (76.2 m)	26-726-250
HD Pro P/300	300' (91.4 m)	26-726-300

For complete specifications, please go to www.extron.com
Specifications are subject to change without notice.

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www.extron.com



Specifications

HDMI Ultra Series Cables

TRUE 4K specification

Max. 4K Capabilities								
Resolution and Refresh Rate	Chroma Sampling	Max. Bit Depth per Color	Data Rate	Cable Length				
4096 x 2160 at 60 Hz	4:4:4	8 bit	18.0 Gbps	Up to 12 feet (3.6 m)				
3840 x 2160 at 60 Hz								
4096 x 2160 at 30 Hz	4:4:4		8 bit	10.2 Gbps	15 feet (4.5 m)			
3840 x 2160 at 30 Hz								
4096 x 2160 at 60 Hz	4:2:0					8 bit	10.2 Gbps	15 feet (4.5 m)
3840 x 2160 at 60 Hz								

Frame rate¹ 24, 25, 30, 50, or 60 fps
 Chroma sampling¹ 4:4:4, 4:2:2, or 4:2:0
 Color bit depth¹ 8 bits per color
 Signal type HDMI 2.0
 Max. video data rate 18.0 Gbps (6.0 Gbps per color)

NOTE: ¹Subject to the maximum data rate limit. Use our calculator at www.extron.com/4KdataRate to determine video parameters supported by this data rate.

Performance/electrical

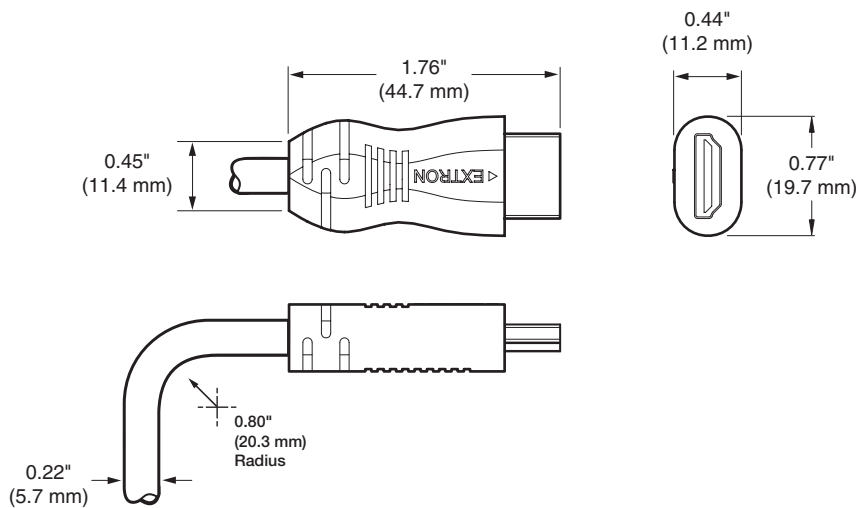
Resolution range
 Premium High Speed HDMI cable — Up to 12' (3.6 m) Up to 4K @ 60 Hz (4096x2160), UHD @ 60 Hz (3840x2160)
 8 bit color depth, max. 18.0 Gbps data rate
 High Speed HDMI cable — Up to 15' (4.5 m) Up to 4K @ 30 Hz (4096x2160) or UHD @ 30 Hz (3840x2160)
 8 bit color depth, max. 10.2 Gbps data rate
 Voltage 30 V
 Pair impedance 100 ohms ±10 ohms
 Attenuation At 0.3 - 0.825 GHz: 5 dB per 3 m
 At 0.825 - 2.475 GHz: 12 dB per 3 m
 At 2.475 - 4.125 GHz: 20 dB per 3 m
 At 4.125 - 5.100 GHz: 25 dB per 3 m
 FEXT 20 dB per 3 m
 Skew
 Intrapair 112 ps per 3 m
 Interpair 1.78 ns per 3 m

Specification • HDMI Ultra Series Cables (Continued)

General — physical characteristics

Connector type.....	1 male type A HDMI to 1 male type A HDMI
Contacts.....	Gold plated
Material.....	Conductors: tinned copper, 30 AWG Drain wire: tinned copper, 32 AWG Shielding: fluorocopolymer tape binder, tinned copper braid Jacket: PVC
Connector dimensions.....	1.40" L* x 0.77" W x 0.44" thick (35.6 mm L* x 19.7 mm W x 11.1 mm thick) *Length excludes plug.

HDMI Ultra Series 3' (90 cm) - 15' (4.5 m) Lengths



Cable dimensions

Cable outer diameter.....	0.22" (5.7 mm)
Bend radius.....	0.80" (20.3 mm)

NOTE: Dimensions given above exclude the cable length.

Regulatory compliance

Safety.....	UL VW-1, CSA FT-1
Temperature rating.....	80 °C
Warranty.....	Limited Lifetime Performance

NOTE: Specifications are subject to change without notice.

NOTE: Shipping weights and dimensions are available at www.extron.com.

4114-D6

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Extron USA - West +1.714.491.1500 +1.714.491.1517 FAX	Extron USA - East +1.919.850.1000 +1.919.850.1001 FAX	+31.33.453.4040 +31.33.453.4050 FAX					

IPL Pro S3

IP LINK PRO CONTROL PROCESSOR

- ▶ Supports TouchLink® Pro touchpanels
- ▶ Supports secure industry standard communications protocols
- ▶ Two bidirectional RS-232 ports with hardware and software handshaking
- ▶ One bidirectional RS-232/RS-422/RS-485 serial port with hardware and software handshaking
- ▶ Ethernet monitoring and control
- ▶ Power over Ethernet allows the control processor to receive power and control over a single Ethernet cable, eliminating the need for a local power supply
- ▶ Supports 10/100/1000 Base-T
- ▶ Supports Ethernet-controllable devices
- ▶ Automatic clock synchronization allows touchpanel to display the accurate time and date
- ▶ Supports control system synchronization



The Extron IPL Pro S3 is a compact, high-performance control processor with more power, speed and memory. It features advanced security standards and Gigabit Ethernet, which ensures compatibility with multiple TouchLink® Pro touchpanels using today's network infrastructure. It can be used as either a stand-alone control processor in a medium-size system or as a secondary control processor in a larger system when paired with an IPCP Pro control processor and Global Configurator Professional.



DESCRIPTION

The Extron **IPL Pro S3** is a compact, high-performance control processor designed for stand-alone use in a medium size AV system. It can also be used in a larger system as a secondary control processor when combined with Global Configurator Professional and an IPCP Pro control processor. The IPL Pro S3 supports Gigabit Ethernet and advanced network security standards, making it ideal for military or other sensitive applications.

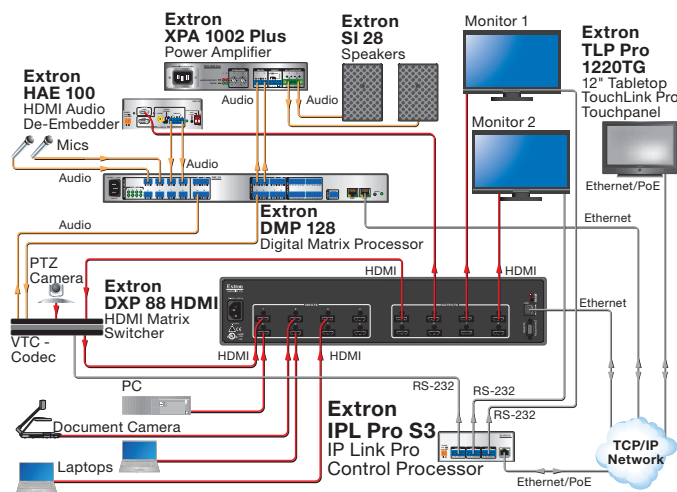
The IPL Pro S3 is configured using Extron Global Configurator Plus or Global Configurator Professional software. The IPL Pro S3 can communicate with multiple TouchLink® Pro touchpanels using standard network infrastructure.

The IPL Pro S3 is compatible with GlobalViewer® Enterprise software for complete, centralized AV resource monitoring, management, and control over a computer network.

KEY FEATURES

- ▶ Supports TouchLink® Pro touchpanels
- ▶ Supports secure industry standard communications protocols
- ▶ Two bidirectional RS-232 ports with hardware and software handshaking
- ▶ One bidirectional RS-232/RS-422/RS-485 serial port with hardware and software handshaking
- ▶ Ethernet monitoring and control
- ▶ Power over Ethernet allows the control processor to receive power and control over a single Ethernet cable, eliminating the need for a local power supply
- ▶ Supports 10/100/1000 Base-T

APPLICATION DIAGRAM



SPECIFICATIONS

MEMORY		
SDRAM	512 MB	
Flash	512 MB	
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		
Connectors	1 female RJ-45 connector	
Data rate	10/100/1000Base-T, half/full duplex with autodetect	
Protocols	DHCP, DNS, ICMP (ping), HTTP, HTTPS, NTP, SFTP, SMTP, SNMP, SSH, TCP/IP, UDP/IP	
SERIAL CONTROL		
Quantity/type	1 bidirectional RS-232, RS-422, RS-485 (port 1) 2 bidirectional RS-232 (ports 2 and 3)	
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	
GENERAL		
Power supply	External Input: 100-240 VAC, 50-60 Hz Output: 12 VDC, 1 A, 12 watts	
Power input requirements	12 VDC, 1 A, 12 watts, max. Or power over Ethernet (PoE) (complies with PoE 802.3af, class 3)	
Power consumption	Device: 2.0 watts, 12 VDC	
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	
Device	6.8 BTU/hr	
Device and power supply	8.7 BTU/hr	
Mounting		
Rack mount	Yes, with optional 1U rack shelf or back of the rack mounting kit	
Furniture mount	Yes, with optional bracket kit	
Enclosure type		
Enclosure type	Metal	
Enclosure dimensions	1.7" H x 4.3" W x 6.0" D (1U high, quarter rack wide) (4.3 cm H x 10.9 cm W x 15.2 cm D) (Depth excludes connectors.)	
Product weight	0.8 lbs (0.4 kg)	
Regulatory compliance		
Safety	CE, c-UL, UL UL Listed for use in plenum air handling spaces; meets UL 2043 for heat and smoke release; meets UL 60950 for safety.	
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	
Model	Version Description	Part number
IPL Pro S3	Three Serial Ports	60-1413-01

For complete specifications, please go to www.extron.com
Specifications are subject to change without notice.

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MIDDLE EAST

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System Components

INPUT WALLPLATES



PVT HDMI PoleVault Digital Input, Dual HDMI - Decorator-Style Wallplate

- Two input switcher - transmits the selected HDMI video and audio signals to a PVS 407D switcher over one CATx cable
- HDCP compliant
- EDID Minder® automatically manages EDID communication between connected devices
- IR pass-through provides control connections for DVD/VCR players, tuners, switchers, or other IR controllable devices



PVT HDMI RGB PoleVault Digital Input, HDMI and VGA - Decorator-Style Wallplate

- Two input switcher - transmits HDMI or VGA computer video and audio signals to a PVS 407D switcher over one CATx cable
- HDCP compliant
- Built-in VGA distribution amplifier provides local monitor output
- Audio pass-through supplies PoleVault audio content for podcasting or assistive listening systems
- EDID Minder® automatically manages EDID communication between connected devices

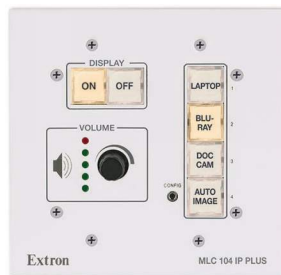
SWITCHER



PVS 407D IP-Enabled Digital PoleVault Switcher with Integrated Audio Amplifier

- Two local HDMI inputs and two twisted pair inputs support up to six common classroom AV sources
- Receives HDMI and VGA video and audio signals from PVT dual input switching wallplates over a single CATx cable
- Integrated 50 watt rms audio amplifier for stereo or dual mono audio
- Four port network switch for configuration and allowing three additional devices to share a single network drop
- ENERGY STAR® qualified AV product designed to lower energy usage and reduce operating costs

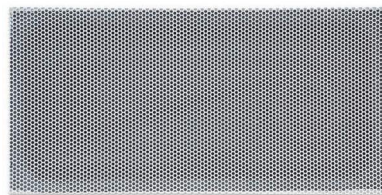
CONTROLLER



MLC 104 IP Plus MediaLink Controller with IP Link

- Two bidirectional RS-232 ports for display and switcher control
- IP Link Network monitoring and control
- Front panel security lockout
- Configurable tri-color backlit buttons
- Volume control with indicators
- Support for optional IRCM control modules

AUDIO



FF 120 Extron Exclusive Patented Flat Field Speaker

- Plenum rated ceiling speakers designed for classrooms with a drop ceiling
- 1' x 2' (30.5 cm x 61 cm), 4.7 lb (2.1 kg) drop-in ceiling tile enclosure for suspended ceilings
- Extron patented Flat Field Technology for consistent sound levels across the listening area
- 3" (7.6 cm) horn-loaded, full-range driver provides extended low frequency reproduction
- Wide 170° dispersion
- Designed and manufactured by Extron



VoiceLift Pro Microphone High Performance RF Wireless Microphone

- Advanced RF wireless technology provides superior sound quality, increased reliability, greater range, and reduced interference over traditional systems
- Advanced DSP suppresses feedback while maximizing sound quality and intelligibility
- System supports up to two microphones for each classroom
- Instant Alert feature on the pendant enables the teacher to request assistance with the push of a button

System Components

MOUNTING HARDWARE



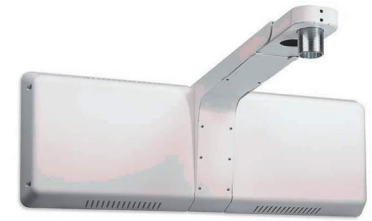
PMK 560 PoleVault Digital Pole Mount Kit

- Securely mounts PoleVault equipment above the projector.
- Provides adequate space for PoleVault equipment with designated locations for the switcher and power supply
- Low profile only requires 3" (7.7 cm) of height between projector and ceiling
- Lightweight design for reduced ceiling structure support requirements
- Built-in cable management with several tie down points for proper strain relief and dressing of excess cable.



PVM 220 PlenumVault Mounting Kit

- Large capacity mounting kit designed to fit in 2' x 2' US style suspended ceilings
- Securely mounts AV system components in the plenum space above a suspended ceiling
- Hinged room-side door for setup and maintenance
- Four integrated AC outlets
- Access door supports a tile insert to match the surrounding ceiling
- Temperature controlled fan provides additional ventilation when required



USFM 100 Ultra Short-Throw Projector Mount and Equipment Enclosure

- Integrated solution for wall-mounting an ultra short-throw projector and AV system components
- Protects AV system components from tampering and theft
- Adjustable arm accommodates projectors with a variety of throw distances up to 30 inches
- Base provides numerous holes to support mounting to wall studs with either 16-inch or 24-inch on center spacing
- Knockouts for conduit and raceway

MOUNTING HARDWARE



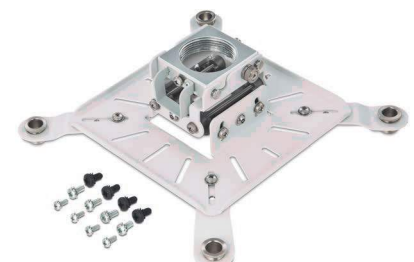
WMK 160 PoleVault Digital Wall Mount Kit

- Securely mounts AV system components to a wall
- Protects components from tampering and theft
- Designed for installations with a flat panel display or wall-mounted, short throw projector
- Large base plate offers a wide variety of mounting and cable management options
- Raceway knockouts are compatible with the most common surface mount systems



PCM 340 Projector Drop Ceiling Mount with Adjustable Pole

- Patent-pending projector drop ceiling mount with adjustable pole for use with suspended ceilings using 2'x2' or 2'x4' tiles
- Provides time- and cost-effective integration of projectors in small boardrooms and classrooms
- Includes single-space and double-space junction box openings
- 25" (63.5 cm) adjustable pole with range from 1.5" to 23" in 0.1 increments



UPB 125 Universal Projector Mounting Bracket

- Universal projector mount compatible with most projectors up to 15 pounds (6.8 kg) in weight
- Independent adjustment of horizontal tilt or roll, vertical angle or pitch, and rotation or yaw.
- Precise positioning adjustments are maintained even if projector is removed for service
- Includes all necessary projector mounting hardware

FF 120T

Full-Range Flat Field® Speakers with 1' x 2' Low Profile Enclosure and 70/100 V Transformer



DESCRIPTION

The Extron **FF 120T** is a full-range ceiling tile speaker for 70 volt/100 volt systems. The FF 120T features Extron patented Flat Field Technology which reduces beaming of mid and high frequencies directly under the speaker, delivering consistent sound levels across the listening area. In addition, the FF 120T offers an extraordinarily wide dispersion area of 170 degrees, providing a very wide room coverage pattern which is especially important for rooms with low ceilings. An Extron exclusive, UL 2043 plenum rated, 1' x 2' (30.5 cm x 61 cm) by 3.25" (8.3 cm) deep aluminized composite enclosure drops into standard suspended ceilings, providing quicker installations. With a low profile enclosure, this speaker is an excellent choice for ceiling installations with tight above-the-ceiling space issues.

FEATURES

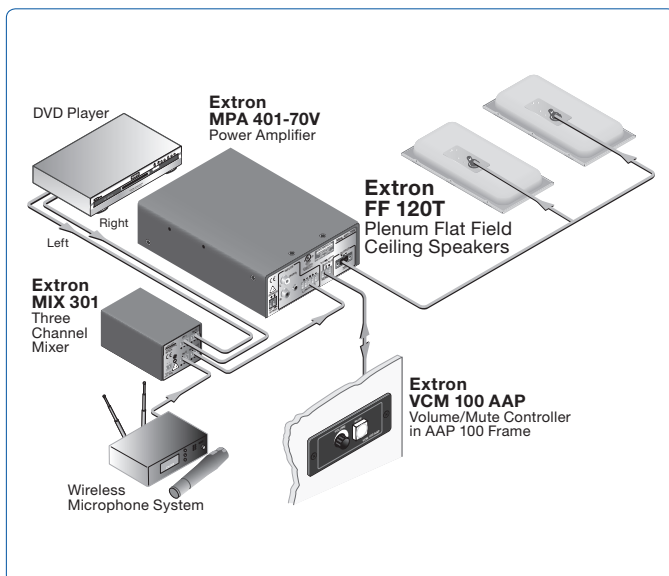
- 1' x 2' (30.5 cm x 61 cm), 4.7 lb (2.1 kg) drop-in ceiling tile speaker for suspended ceilings
- UL 2043 plenum rated enclosure
- Extron patented Flat Field® Technology for consistent sound levels across the listening area, reducing the number of speakers required
- 3" (7.6 cm) horn-loaded, full-range driver provides extended low frequency response
- White perforated grille matches appearance of air conditioning vents
- 8 ohm direct or 70/100 volt operation with selectable power taps
- Frequency response: 68 Hz to 18 kHz
- 16 watts continuous pink noise, 32 watts continuous program
- Wide 170° dispersion
- 3.25" (8.3 cm) deep low profile enclosure for plenum environments

SPECIFICATIONS

AUDIO/ACOUSTIC AND ELECTRICAL	
Frequency range	68 Hz to 18 kHz, -10 dB, half space
Power capacity	16 W (rms) continuous pink noise 32 W (rms) continuous program
Nominal sensitivity	86 dB SPL, 1 watt, 1 m, half space
Nominal coverage angle	170° conical coverage
Nominal impedance	8 ohms per speaker
Driver	(1) 3" (76.2 mm) paper cone
Input connector	(1) 8 mm Euro-style captive screw terminal block, 7 pole
Tap settings	
70 V input	16 W, 8 W, 4 W, 2 W, 1 W, null (bypass 8 ohm direct connection)
100 V input	Null, 16 W, 8 W, 4 W, 2 W, 1 W (bypass 8 ohm direct connection)
GENERAL	
Package	2 speakers (1 pair) with 2' (61 cm) cross bars
Mounting	Drops into 2' x 2' (61 cm x 61 cm) or 2' x 4' (61 cm x 122 cm) suspended tile ceilings
Enclosure type	Composite, rectangular, with metal grille
Enclosure outer dimensions	3.25" H x 23.75" W x 11.75" D (8.3 cm H x 60.3 cm W x 29.9 cm D)
Product weight	Single: 5.1 lbs (2.3 kg)
Shipping weight	Pair: 17 lbs (8 kg) with mounting kit
Regulatory compliance	
Safety	NFPA90A, NFPA70; UL Listed for use in plenum airspaces: meets UL 2043 for heat and smoke release, meets UL 1480 for commercial and professional audio systems
Warranty	5 years parts and labor

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

NOTE: This product is not available in Europe



MODEL	VERSION DESCRIPTION	PART #
FF 120T	Ceiling - 1x2 Drop-In, Transformer, Pair	42-120-13

Specifications

PVT PoleVault Digital Series Wallplates (for PVS 407D)



NOTE: These transmitter wallplates are compatible with an Extron PVS 407D PoleVault® Digital Switcher only. They are not compatible with other models of twisted pair receivers or PoleVault switchers. DO NOT connect to a data network.

NOTE: Appropriate HDMI to DVI-D cables or adapters are required for DVI signal input/output.

TRUE 4K specification – HDMI inputs

Max. 4K Capabilities		
Resolution and Refresh Rate	Chroma Sampling	Max. Bit Depth per Color
4096 x 2160 at 30 Hz	4:4:4	8 bit
3840 x 2160 at 30 Hz		
4096 x 2160 at 60 Hz	4:2:0	
3840 x 2160 at 60 Hz		



Frame rate¹ 24, 25, 30, 50, or 60 fps
 Chroma sampling¹ 4:4:4, 4:2:2, or 4:2:0
 Color bit depth¹ 8 bits per color
 Signal type HDMI 1.4, HDCP 1.4
 Max. video data rate 10.2 Gbps (3.4 Gbps per color)

NOTE: ¹Subject to the maximum data rate limit. Use our calculator at www.extron.com/4Kdata to determine video parameters supported by this data rate.

NOTE: The PVS 407D must have firmware version 2.00 or greater for 4K support on all HDMI inputs.

Video – digital

Maximum pixel clock 300 MHz
 Resolution range Up to 4096x2160 @ 30 Hz, 3840x2160 @ 30Hz, 4K/UHD @ 60 Hz with 4:2:0 Chroma subsampling
 Formats RGB and YCbCr digital video
 Standards DVI 1.0, HDMI 1.4, HDCP 1.4, CEA-861E

Video input and loop-through

Number/signal type
 PVT HDMI 2 single link HDMI (or DVI-D with appropriate HDMI-DVI adapter) input
 PVT HDMI RGB 1 single link HDMI (or DVI-D with appropriate HDMI-DVI adapter) input
 1 analog VGA-UXGA RGBHV, RGBS input
 1 buffered analog RGBHV, RGBS local monitor loop-through

Connectors
 PVT HDMI 2 female HDMI type A
 PVT HDMI RGB 1 female HDMI type A
 2 female 15-pin HD (1 for input, 1 for loop-through)

Nominal level 0.7 Vp-p for analog RGB
 Minimum/maximum levels Analog: 0.3 V to 1.5 Vp-p with no offset at unity gain
 TTL: 0.0 V to 5.0 Vp-p
 Impedance 75 ohms

Horizontal frequency	15 kHz to 130 kHz
Vertical frequency.....	30 Hz to 150 Hz
Return loss	30 dB @ 5 MHz
DC offset (max. allowable).....	0.25 V

Sync – analog RGB, PVT HDMI RGB only

Input type	RGBHV, RGBS
Input level	3.5 V to 5.5 Vp-p, unterminated
Input impedance.....	510 ohms

Interconnection between PVT wallplates and PVS switcher

Number/signal type.....	1 digital proprietary signal
Connector.....	1 female RJ-45
Termination standard.....	TIA/EIA T568B Extron cables included with the PoleVault system kits are T568B
Signal transmission distance	Up to 150' (46 m) for 2K rate, or up to 130' (40 m) for 4K/30Hz, using Extron XTP DTP 24 cable
Cable requirements.....	Solid conductor, 24 AWG
Cable recommendations	400 MHz bandwidth STP (shielded twisted pair) cable

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

Audio

Gain.....	Unbalanced output: 0 dB; balanced output +6 dB
Frequency response	20 Hz to 20kHz, ±0.5 dB
THD + Noise	<0.03%, 20Hz to 20 kHz, at nominal level
S/N.....	>90 dB, at maximum output (15 dBu), balanced (unweighted)
Stereo channel separation.....	>80 dB @ 1 kHz to 20 kHz

Audio input

Number/signal type	
PVT HDMI	2 analog stereo, unbalanced, or 2 digital audio embedded on the HDMI signal
PVT HDMI RGB.....	2 analog stereo, unbalanced, or 1 digital audio embedded on the HDMI signal and 1 analog stereo 1 analog pass-through
Connectors	
PVT HDMI	(2) 3.5 mm stereo mini audio jacks (tip, ring, sleeve) 2 female HDMI type A (embedded on the HDMI signal)
PVT HDMI RGB.....	(2) 3.5 mm stereo mini audio jacks (tip, ring, sleeve) 1 female HDMI type A (embedded on the HDMI signal) (1) 3.5 mm captive screw connector, 3 pole (pass-through)
Impedance.....	>10k ohms, unbalanced
Nominal level.....	-10 dBV (316 mVrms)
Maximum level.....	+6 dBV, (unbalanced)

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

Audio output to a PoleVault Digital switcher – PVS 407D

Number/signal type.....	1 digital proprietary signal
Connector.....	1 female RJ-45

Audio output, pass-through - PVT HDMI RGB only

Number/signal type.....	1 stereo, unbalanced
Connector.....	(1) 3.5 mm mini audio jack (tip, ring, sleeve)

Communications – external device (pass-through)

IR control port.....	(1) 3.5 mm captive screw connector, 2 pole TTL level (0 to 5 V) unmodulated or modulated infrared control up to 40 kHz
----------------------	---

General

Power	Supplied by the PoleVault digital switcher
Power input requirements	12.0 VDC, 1.0 A, supplied by the PVS 407D switcher
Power consumption	
PVT HDMI RGB	
Device	8 watts, 12 VDC
PVT HDMI	
Device	7 watt, 12 VDC
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
Thermal dissipation	
PVT HDMI RGB	
Device	27.3 BTU/hr
PVT HDMI	
Device	23.7 BTU/hr
Mounting	
Furniture or wall mount	Yes, with the included decorator-style wallplate
Enclosure	Metal
Enclosure dimensions	
Faceplate	2.6" H x 3.2" W x 0.2" D (6.6 cm H x 8.1 cm W x 0.6 cm D) (Fits the openings in a 2-gang decorator-style wallplate)
Device	2.7" H x 3.5" W x 2.0" D (6.9 cm H x 8.9 cm W x 5.1 cm D) (Depth excludes connectors, height excludes mounting tabs. Allow at least 3.0", 7.6 cm, depth in the wall or furniture.)
Product weight	0.6 lbs (0.3 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.

3538-D2-042417

Specifications

USFM 100

General

Mounting

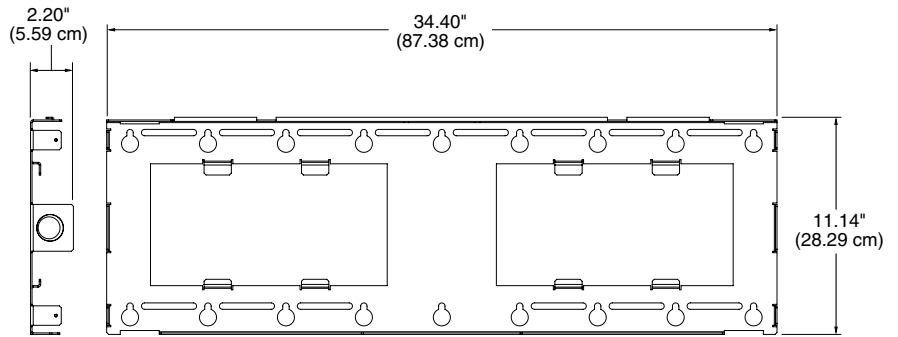
Wall mount..... Yes, with included hardware

Maximum projector load capacity... 20 lbs (9.1 kg) projector weight (does not include the UPB 25)

Material Steel (structural parts), plastic (covers), aluminum (boom arm covers)

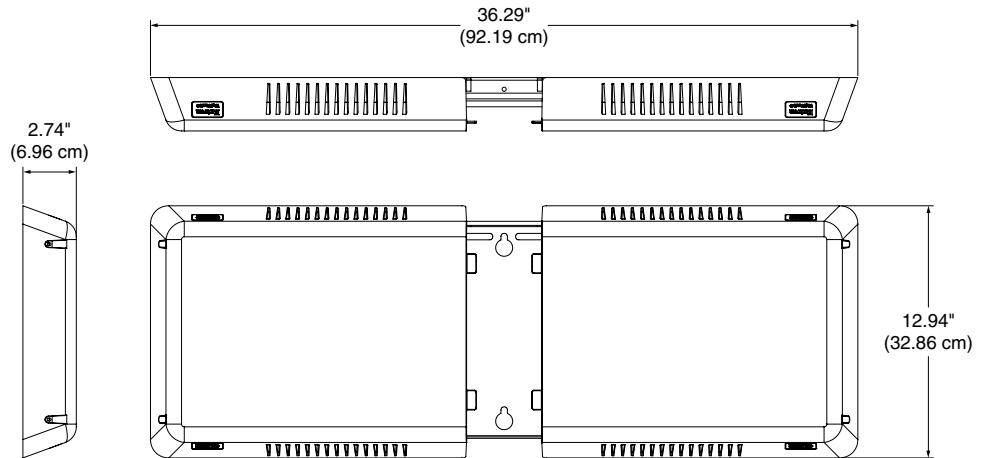
Dimensions

Base plate 11.1" H x 34.4" W x 2.2" D
(28.3 cm H x 87.4 cm W x 5.6 cm D)



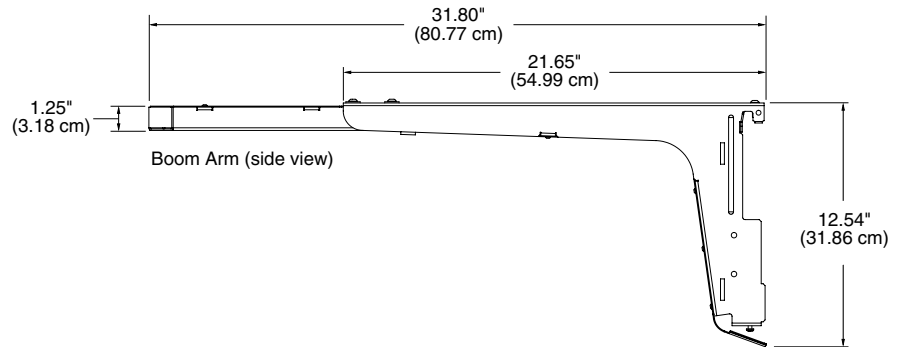
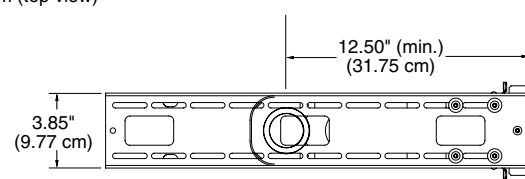
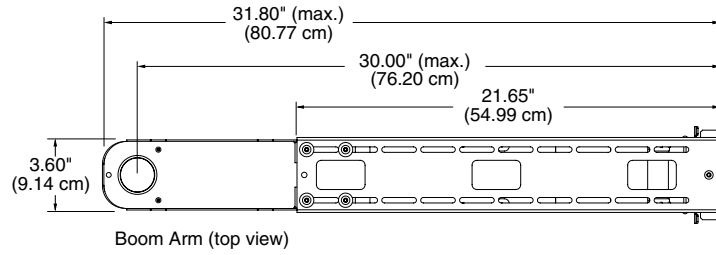
Base Plate (front view)

Base plate with covers 12.9" H x 36.3" W x 2.7" D
(32.9 cm H x 92.2 cm W x 7.0 cm D)



Base Plate with Covers

Boom arm 12.5" H x 3.6" W x 21.7 - 31.8" D
 (31.9 cm H x 9.1 cm W x 55.0 - 80.8 cm D)
 Boom extension range 17.5" (44.4 cm)



Product weight..... 17 lbs (7.7 kg)
 Shipping weight..... 25 lbs (12 kg)
 Vibration..... ISTA 1A in carton (International Safe Transit Association)

NOTE: Weights exclude the UPB 25.

Regulatory compliance
 Safety c-UL, UL
 Warranty 3 years parts and labor

NOTE: Specifications are subject to change without notice.

8.0-050411-D3

VoiceLift Pro

High Performance Wireless Microphone



Extron

VoiceLift Pro Microphone

For Use With PoleVault Digital Systems

VoiceLift Pro Microphone packages are specifically designed for integration into new or existing Extron PlenumVault, WallVault, or PoleVault Systems. These complete AV switching and control systems are easy to install, use, and support, making them ideal for single display classrooms. All VLM systems include a pendant microphone, receiver, and charging station, as well as cables necessary for connecting to an Extron Classroom AV System. The VLM 3002 adds a second pendant microphone while the VLM 3002H adds a handheld microphone.



Each standard system includes the following core components:

- VLP 302 VoiceLift Pro Pendant Microphone
- VLR 302 VoiceLift Pro Receiver
- VLC 302 VoiceLift Pro Charging Station
- 3' CATx shielded twisted pair cable for connecting the receiver and switcher

Model	Version Description	Part Number
VLM 3001	Single Pendant VoiceLift Pro Microphone	42-255-01
VLM 3002	Two Pendant VoiceLift Pro Microphone	42-255-02
VLM 3002H	Pendant and Handheld VoiceLift Pro Microphone	42-255-03

VoiceLift Pro Pendant

State of the Art Wireless Microphone



VLP 302

VoiceLift Pro Pendant Microphone:

- State of the art wireless technology provides higher sound quality, increased reliability, and greater range, with reduced interference
- Lightweight enclosure with adjustable lanyard for around the neck, or clip for attaching to clothing
- Volume controls offer easy voice level adjustment
- Power/Mute button silences the microphone for private conversations or when not in use
- Instant Alert and function buttons
- Auxiliary microphone input enables connection of optional external lavalier or headset microphone
- High capacity rechargeable battery lasts for the entire school day on a single charge

VoiceLift Pro Components

Receiver, Handheld Microphone and Charging Station

VLR 302

VoiceLift Pro Receiver:

- Supports pairing of up to two microphones
- Status LEDs indicate power and connection status
- Two relays for triggering Instant Alert and other functions such as lecture capture and podcast recording
- RJ45 output for connection with PoleVault switchers
- Compact enclosure provides flexible mounting options



VLH 302

VoiceLift Pro Handheld Microphone:

- Ideal for use as a pass around microphone for student presentations or a secondary microphone for team teaching and guest speakers
- On/Off/Mute switch
- Anti-roll collar ensures microphone will not roll off flat surfaces
- Auxiliary input provides connection for unbalanced stereo audio devices



VLC 302

VoiceLift Pro Charging Station:

- Charges up to two VoiceLift Pro Pendant or Handheld Microphones simultaneously
- Mini-B USB power port
- Durable polycarbonate construction
- Protects microphones when not in use
- May be placed on desk, table, or shelf



Extron RSU 126

RSU 126

Universal Rack Shelf Kit for 6" Deep Products

Key Features

- Holds up to eight eighth-rack, four quarter-rack, or two half-rack width, 6" deep or 3" deep products
- Includes three false faceplates: one eighth-rack width, one quarter-rack width, and one half-rack width
- Underside of products mount to the shelf using the included hardware
- Available in a gray powder coat finish



 Image Gallery

SF 26PT

SOUNDFIELD 6.5" TWO-WAY PENDANT SPEAKER



The Extron SF 26PT is a pendant loudspeaker for high performance program or music playback in high-ceiling and open-ceiling applications. With its clean lines, the SF 26PT easily blends in with contemporary pendant lighting. The included Extron exclusive PendantConnect™ speaker cable completes an integrator friendly solution, with steel support and safety cables invisibly bundled inside for a finished installation that is clean and secure.

- ▶ 6.5" (165 mm) long throw woofer
3/4" (19 mm) ferrofluid-cooled dome tweeter
- ▶ Frequency range: 70 Hz to 20 kHz
- ▶ 8 ohm direct or 70/100 volt operation
- ▶ 92° conical dispersion
- ▶ 65 watts continuous pink noise
130 watts continuous program
- ▶ Architecturally clean, unobtrusive design using Extron exclusive PendantConnect speaker cable

DESCRIPTION

The Extron **SF 26PT** is a two-way pendant loudspeaker for high performance program or music playback in high-ceiling and open-ceiling applications. Taking inspiration from modern pendant lighting, the SF 26PT offers an architecturally clean, patent pending design that complements the aesthetic of contemporary interiors. The SF 26PT is available in black or white and is paintable to fit in with any décor. The included Extron-exclusive PendantConnect™ speaker cable combines the speaker wires and steel support cables within a single outer jacket, providing a finished installation that is clean and secure. The UL listed SF 26PT offers both direct 8 ohm and 70/100 volt operation and is voiced similarly to the Extron SF 26CT for consistency and installation flexibility in mixed ceiling environments.

The 6.5" (165 mm) two-way pendant loudspeaker provides a wide and smooth frequency range of 70 Hz to 20 kHz. The two-way design offers exceptional audio quality for applications where premium sonic performance is required. With a power rating of 130 watts continuous program, this speaker delivers the performance needed in larger spaces and music reproduction applications.

The Pendant Speaker That Blends In

With the introduction of the SF 26PT, Extron has taken pendant speaker design in a new direction. Offering clean lines and concealed wiring connections, the SF26PT has an elegant profile that blends into the background alongside contemporary pendant lighting fixtures.

Architects and designers will appreciate how these unobtrusive pendant speakers complement the design aesthetic in a variety of modern spaces, without requiring modifications to existing structure.

Integrator-Friendly

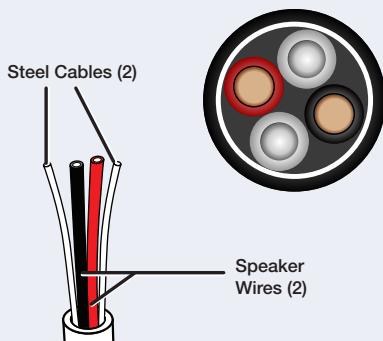
The SF 26PT pendant speaker comes with everything needed for a finished installation, including 30 feet (9.1 m) of PendantConnect PCC-2 speaker cable with pre-swaged ends, an Extron exclusive hybrid cable design incorporating the speaker wires and two steel support cables into a single outer jacket for a clean installation with only a single visible cable. Like the speaker itself, PendantConnect speaker cable is paintable.

Voicing Consistency

The SF 26PT is voiced consistently with the Extron SF 26CT ceiling speaker to ensure smooth sonic transitions in applications when the listener moves between drop-ceiling and open-ceiling areas.

KEY FEATURES

- ▶ **6.5" (165 mm) long throw woofer**
3/4" (19 mm) ferrofluid-cooled dome tweeter
- ▶ **Frequency range: 70 Hz to 20 kHz**
- ▶ **8 ohm direct or 70/100 volt operation:**
 - 8 ohm direct
 - 70 volt: 64, 32, 16, and 8 watt selectable
 - 100 volt: 64, 32, and 16 watt selectable
- ▶ **92° conical dispersion** – 1 kHz to 4 kHz
- ▶ **65 watts continuous pink noise**
130 watts continuous program
- ▶ **Architecturally clean, unobtrusive design using Extron exclusive PendantConnect speaker cable** – Blends in well with contemporary pendant lighting fixtures for an aesthetically pleasing appearance. Includes 30' (9.1 m) length of PendantConnect PCC-2 speaker cable per pair.
- ▶ **Similar voicing to the Extron SF 26CT ceiling speaker** – Allows smooth sonic transitions when using SF 26PT and SF 26CT speakers in mixed ceiling applications
- ▶ **Available in black or white and is paintable to fit in with any décor**
- ▶ **Optional 30 foot (9.1 m) length of PendantConnect PCC-2 speaker cable**
- ▶ **Optional 500 foot (152 m) spool of PendantConnect PCC-2 speaker cable**
- ▶ **Optional Ceiling Surface Mount Kits** – Used to surface mount an SF 26PT with a ceiling electrical box
- ▶ **Optional Speaker Aircraft Cable Kits** – Used to reduce lateral movement, when required by local seismic codes, and when suspending the speaker between ceiling beams
- ▶ **5-year parts and labor warranty**



PendantConnect

The Extron exclusive PendantConnect speaker cable simplifies the installation process by eliminating the need for a separate safety cable, which also eliminates the visual clutter caused by separate speaker and safety cables. PendantConnect speaker cable achieves this by bundling the two speaker conductors along with steel support and safety cables into a single harness surrounded by a jacket that is color matched to the speaker.

TLP Pro 320M

3.5" WALL MOUNT TOUCHLINK PRO TOUCHPANEL

- ▶ 3.5" LCD touchscreen with 320x240 resolution and 18-bit color depth
- ▶ Faster processing and more memory
- ▶ Compatible with all IP Link® Pro control processors
- ▶ Power over Ethernet allows the touchpanel to receive power and control over a single Ethernet cable, eliminating the need for a local power supply
- ▶ Built-in speaker with improved audio performance
- ▶ Light sensor adjusts screen brightness as the ambient room lighting changes
- ▶ System connection status indicator provides visual feedback if the touchpanel is not communicating with a control processor
- ▶ Mounts on a wall, lectern, or any flat surface



The Extron TLP Pro 320M is a 3.5" wall mount touchpanel with an LCD touchscreen. As with all TouchLink® Pro models, this customizable touchpanel features faster processing and more memory. The TLP Pro 320M works with any Extron IP Link® Pro control processor and is designed for use in AV system applications that require complete, interactive control of conferencing systems, displays, switchers, and source devices.



DESCRIPTION

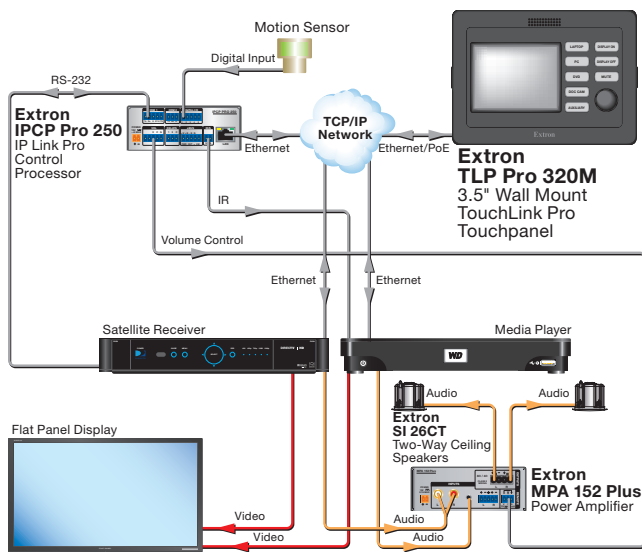
The Extron **TLP Pro 320M** is a 3.5" wall mount touchpanel with an LCD touchscreen. In addition to more processing power and memory, Power over Ethernet - PoE allows the touchpanel to receive power and communications over a single Ethernet cable. The TLP Pro 320M features a sleek, rounded bezel that compliments the aesthetics of any AV environment. It is ideal for AV applications requiring a compact, wall-mountable touchpanel with a fully customizable interface.

All TouchLink Pro touchpanels are customized using Extron GUI Designer software. This powerful interface design software offers ready-to-use templates for a wide variety of rooms and presentation environments. These designs may be used as is, or customized for the application by simply changing individual graphic elements.

KEY FEATURES

- ▶ 3.5" LCD touchscreen with 320x240 resolution and 18-bit color depth
- ▶ Faster processing and more memory
- ▶ Compatible with all IP Link® Pro control processors
- ▶ Power over Ethernet allows the touchpanel to receive power and control over a single Ethernet cable, eliminating the need for a local power supply
- ▶ Built-in speaker with improved audio performance
- ▶ Light sensor adjusts screen brightness as the ambient room lighting changes

APPLICATION DIAGRAM



SPECIFICATIONS

DISPLAY		
Screen type	Active matrix TFT color display	
Size	3.5" (8.9 cm), measured diagonally	
Resolution	320x240	
Aspect ratio	Standard	
Color depth	256k colors	
Contrast	80:1	
MEMORY		
SDRAM	512 MB	
Flash	512 MB	
CONTROL – ETHERNET INTERFACE		
Ethernet data rate	10/100Base-T, half/full duplex with autodetect	
Ethernet protocol	DHCP, DNS, HTTP, HTTPS, ICMP, SFTP, SSH, TCP/IP, UDP/IP	
AUDIO OUTPUT		
Speaker output	1 mono, 86 dB SPL, 0.1 watt, 0.1 m, half space	
Playback format(s)	WAV files: 16 bit PCM, stereo, 48 kHz sampling	
GENERAL		
Power supply	Not included	
Power input requirements	12 VDC or Power over Ethernet (PoE 802.3af, class 2)	
Temperature/humidity	Storage: -4 to +140 °F (-20 to +60 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing	
Mounting	Rack mount: With optional kit Furniture or wall mount: With included hardware	
Regulatory compliance	Safety: CE, c-UL, UL EM/EMC: CE, C-tick, FCC Class A, ICES, VCCI Environmental: Complies with the appropriate requirements of RoHS and WEEE.	
Warranty	3 years parts and labor; touchpanel display and overlay components are covered for 1 year	
Model	Version Description	Part number
TLP Pro 320M	Black & White Bezels - Wall	60-1451-02

For complete specifications, please go to www.extron.com
Specifications are subject to change without notice.

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USB Extender Plus Series

TWISTED PAIR EXTENDER FOR
USB PERIPHERALS

Extend and switch USB peripherals
between multiple locations

- ▶ Extends USB peripherals up to 1,980 feet (600 meters) through a Gigabit Ethernet network
- ▶ Extends USB peripherals up to 330 feet (100 meters) point-to-point over one CATx cable
- ▶ Supports USB 2.0/1.0 devices with data rates up to 480 Mbps
- ▶ Choice of rack-mountable and architectural form factors
- ▶ USB switching controller lets you easily create USB switching systems



Extron Electronics
INTERFACING, SWITCHING AND CONTROL

Specifications

Form factors can be mixed and matched between transmitters and receivers for mounting in all types of furniture and locations.

Rack-Mount



USB Extender Plus T



USB Extender Plus R

Architectural Adapter Plates



USB Extender Plus AAP T - Front



USB Extender Plus AAP R - Front

Decorator-Style Wall Plates



USB Extender Plus D T - Front



USB Extender Plus D R - Front

USB EXTENDER PLUS T/R SERIES		
USB host support	xHCI (USB 3.0), EHCI (USB 2.0), OHCI/UHCI (USB 1.1)	
USB data rates	Low speed (1.5 Mbps), full speed (12 Mbps), high speed (480 Mbps)	
USB host — Tx units	Number/signal type: 1 USB	
USB hub — Rx units	Number/signal type: (1) 4-port USB hub	
Interconnection between transmitter and receiver		
Connectors	1 female RJ-45 per unit	
Signal transmission distance	Point to point: Up to 330' (100 m) Over the network: Up to 1980' (600 m)**	
NOTE:	**Over the network distance is through connection of up to five network switches.	
Power supply	External Input: 100-240 VAC, 50-60 Hz Output: 12 VDC, 1 A	
Enclosure type	Metal	
GENERAL		
Regulatory compliance		
Safety	CE, c-UL, KCC, UL	
EMV/EMC	CE, C-tick, FCC Class A, ICES, VCCI Class A	
Environmental	Complies with the appropriate requirements of RoHS, WEEE	
USB PLUS MATRIX CONTROLLER		
Ethernet control		
Network interface controllers (NICs)	1	
Serial control		
Quantity/type	1 bidirectional RS-232	
GENERAL		
Power supply	External Input: 100-240 VAC, 50-60 Hz Output: 12 VDC, 1 A, 12 watts	
Power consumption	Device and power supply: 2.0 watts, 100-240 VAC, 50-60 Hz	
Mounting		
Rack mount	Yes, with optional 1U rack shelf or back of the rack mounting kit	
Furniture mount	Yes, with optional bracket kit	
Enclosure type	Metal	
Warranty	3 years parts and labor	
NOTE: All nominal levels are at $\pm 10\%$.		
Model	Version Description	Part number
USB Extender Plus T	Transmitter	60-1471-12
USB Extender Plus R	Receiver	60-1471-13
USB Extender Plus D T	Transmitter - Decorator-Style Version - White	60-1473-13
USB Extender Plus D R	Receiver - Decorator-Style Version - White	60-1473-23
USB Extender Plus AAP T	Transmitter - AAP Version - Black	60-1472-12
USB Extender Plus AAP R	Receiver - AAP Version - Black	60-1472-22
USB Extender Plus AAP R	Receiver - AAP Version - White	60-1472-23
USB Extender Plus T HID	HID Transmitter	60-1539-12
USB Extender Plus R HID	HID Receiver	60-1539-13
USB Plus Matrix Controller	Controller	42-267-01

For complete specifications, please go to www.extron.com
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XTP PI 100

XTP POWER INJECTOR

- ▶ Supplies power to one XTP extender
- ▶ Designed specifically for the high data rates of XTP Systems
- ▶ No impact on signal quality
- ▶ Patented ZipClip™ 200 mounting kit included
- ▶ Real-time status LEDs for troubleshooting and monitoring
- ▶ UL/c-UL listed and CE compliant
- ▶ 1U, quarter rack width enclosure



The Extron XTP PI 100 is a single port power injector designed specifically for the high data rates of XTP Systems. It provides a convenient and reliable means of supplying remote power to an XTP transmitter or receiver in point-to-point environments, or when supplementing remote power capabilities of fully loaded XTP CrossPoint® matrix switchers.



DESCRIPTION

The **XTP PI 100** is a single port power injector that provides power to a remote XTP transmitter or receiver, eliminating the need for a local power supply. Designed specifically for the high data rates of XTP Systems, signal quality is unaffected when using the power injector. To ensure system reliability, the power injector maintains the integrity of the original XTP signal. It can be installed anywhere within the XTP signal path, providing design flexibility for XTP Systems with fully populated matrix switchers as well as in point-to-point applications. The unique enclosure of the power injector enables it to be installed in small spaces and the included Extron ZipClip™ 200 mounting kit provides installation flexibility.

The 1U, quarter rack width enclosure features threaded inserts and recessed grooves for zip ties, allowing for easy mounting onto Extron rack shelves or oddly shaped supports, such as projector poles and rack rails. The patented ZipClip 200 mounting kit offers further versatility to quickly and securely mount the XTP PI 100 within lecterns, beneath tables, or into many other tight spaces.

KEY FEATURES

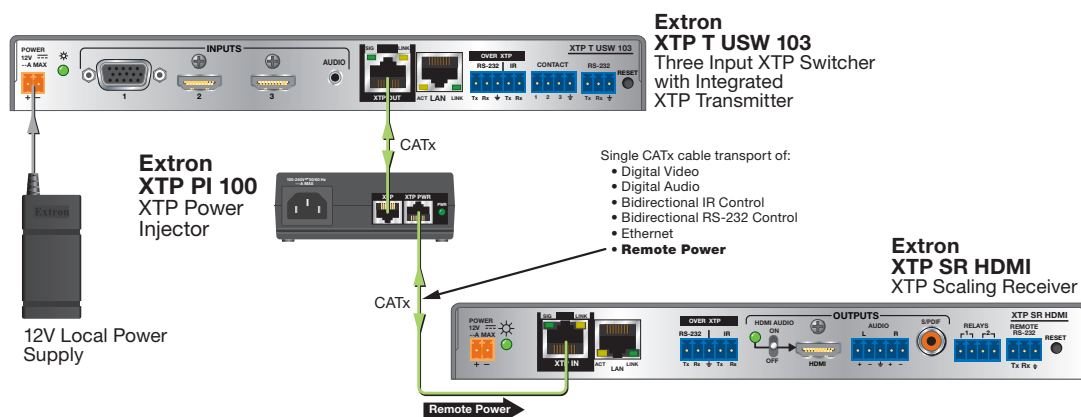
- ▶ Supplies power to one XTP extender
- ▶ Designed specifically for the high data rates of XTP Systems
- ▶ No impact on signal quality
- ▶ Patented ZipClip™ 200 mounting kit included
 - Mounts securely on a variety of surfaces, including rack rails, tables, lecterns, projector poles, and table legs
 - Wire tie slots for proper strain relief and dressing of excess cable
 - Quick release tab allows for easy installation and removal
- ▶ Real-time status LEDs for troubleshooting and monitoring
- ▶ UL/c-UL listed and CE compliant

SPECIFICATIONS

GENERAL		
Connectors	1 RJ-45 female connector for pass-through input 1 RJ-45 female connector for power and pass-through output	
Power output	+48 VDC, 0.35 A, 16.8 watts	
Power input	100 VAC to 240 VAC, 50-60 Hz	
No load	0.3 watts maximum	
Full power	28.5 watts, 0.4 A maximum	
Cooling	Convection, no vents	
Mounting		
Rack mount	Yes, with optional 1U rack shelf with the included ZipClip 200 mounting clip or by securing to rack rails with tie wraps	
Furniture mount	Yes, with the included ZipClip 200 mounting clip	
Pole mount	Yes, using tie wraps	
Enclosure type	High impact, high temperature plastic	
Enclosure dimensions	1.7" H x 4.3" W x 4.5" D (1U high, quarter rack wide) (4.2 cm H x 11.0 cm W x 11.4 cm D)	
Product weight	0.8 lb (0.4 kg)	
Shipping weight	3 lbs (2 kg)	
Regulatory compliance	CE, C-tick, c-UL, UL, CISPR 22 Class B, CISPR 24, FCC Class B, KC, S-mark, GS-mark	
Environmental	Complies with the appropriate requirements of RoHS, WEEE.	
MTBF	300,000 hours	
Warranty	3 years parts and labor	
Model	Version Description	Part number
XTP PI 100	XTP Power Injector	60-1233-01

For complete specifications, please go to www.extron.com
Specifications are subject to change without notice.

APPLICATION DIAGRAM



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+971.4.299.1800



Product Highlights

- 8.0 MegaPixel resolution - ultra HD clarity in still image or live video
- Constant 30fps full motion video in 4K with ASR, uncompressed 1080P or 720P
- USB 3.0 SuperSpeed performance - streams UVC video over USB 3.0 or USB 2.0
- Amazing clarity and vibrant picture color
- Zoom from an A3 sized document to a coin
- Easily conduct live, real-time video presentations
- Record hours of stunning 30fps full motion video for flipped learning
- Scan from A3 size to business cards directly to PDF; OCR software included
- Engage in online video communication, distance learning, video conferencing
- Small footprint and aluminum alloy construction with precision craftsmanship
- Multiple pivots allow for maximum poseability and enables a 10X mechanical zoom
- Weighted camera base ensures stability when standing, pivoted or tilted
- Control the camera without a mouse or keyboard with shortcut buttons
- Archive and organize with the convenience of a full-featured archive manager

Product Specifications

Sensor:	8.0 MegaPixel high performance CMOS sensor
Optics:	1/3.2" sensor, f2.0
Focus:	Autofocus, Autofocus Lock, Select Region Focus, Minimum 5cm Focal Distance
Image Resolution:	3264x2448, 3264x1836, 1600x1200, 1920x1080, 1024x768, 1280x720, 800x600
Frame Rate:	8MP ^{ASR} @ 30fps 1080P @ 30fps
Zoom:	Total 320x Zoom (4X ASR Zoom, 8X Interpolated Digital Zoom, 10X Mechanical Zoom)
Scan Size:	13" x 21", A3, A4, 11" x 17", Legal, US Letter and smaller
Image Rotation:	360 degrees
Video Format:	YUV (USB 3.0) or MJPEG (USB 2.0)
Microphone:	Built-in with noise reduction
Lighting:	4 built-in ultra-bright LEDs
Power Requirements:	USB power to computer, no external power required
Communication Interface:	UVC over SuperSpeed USB 3.0 or USB 2.0, no driver required
System Requirements:	CPU 1.6 GHz minimum, 2.0 GHz recommended RAM 512MB minimum, 1GB recommended
Weight:	2.2 lbs / 1.0 kg
Dimensions (W x D x H):	3.15" x 3.15" x 11" / 8cm x 8cm x 28cm
Warranty:	2 years Register online for 3rd year
Certifications:	FCC, CE, RoHS





Brilliant 8-Megapixel Resolution

Solo 8's advanced sensor delivers uncompressed YUV video with 4K clarity, giving you 4x as many pixels than the resolution of a 1080p HDTV. This ultimately means there is no image quality loss. Experience every image 4x crisper, sharper and clearer, than any other high priced document camera. Save in .jpeg, multi-paged .pdf, .png, .tiff and others. With Solo 8 the finest details come to life.

Stunning 30fps Full Motion Video

Solo 8 utilizes a new generation of imaging technology called Photon 1.0. This key technology gives the world, for the first time ever, a document camera that delivers 4K resolution and full motion frame rate at the same time. This is an unprecedented achievement in USB camera technology. All new generation HoverCams will be equipped with this amazing proprietary technology, allowing you to truly create captivating lag-free video.



Zoom Re-invented

Our Photon 1.0 imaging engine uses Adaptive Sensor Resolution (ASR) technology that adapts to your screen size and gives you all 8 million uncompressed pixels at a 4x magnification. This is equivalent to optical zoom, without the bulkiness and high cost.



Compact & Versatile

Our advanced electronics are paired with meticulous craftsmanship and well thought out design. Five pivot points allow the camera to be pointed in any direction, raised to shoot large areas, lowered for close-ups and folded for compactness. A swivel lens allows for 90° rotation for image orientation.



No External Power Adapter Needed

A single USB 3.0 cable is the only thing needed to power the Solo 8. This gives you the convenience of plug-and-play simplicity. The Solo 8 uses less than 5 volts, which is within the maximum power of USB 2.0 and only half the power of USB 3.0.



Scan from A3 to Business Cards

The Solo 8 can be fully extended and raised to cover an 11"x17" (A3) area. Use this functionality to scan multiple pages into one PDF file. It can also be lowered to scan smaller items like business cards.



Advanced Camera Controls

Solo 8 is the first USB document camera that offers advanced camera controls normally found in expensive digital SLR cameras. Through our FLEXVIEW software, easily utilize autofocus, select-focus, auto exposure and auto white balance functionalities.



SlingShot into Favorite Programs

Easily transfer any files created with the Solo 8 into your favorite programs. Just drag-and-drop or click the SlingShot button in FLEXVIEW to instantly drop your images or videos into Word, PowerPoint, Interactive Whiteboard Software, Evernote and more.



Half the Price of Other Brands

We deliver higher performance than our competitors at half the price because we employed smart solutions that replaced expensive optical components with electronic technology and leveraged the full intelligence of computers. The result is lower cost, high performance and better user interface.

CAT5e 24AWG UTP

Ethernet Patch Cable



Lifetime
★★★★★ warranty

For more information or to order, please contact **Monoprice Sales Representative** or sales@monoprice.com

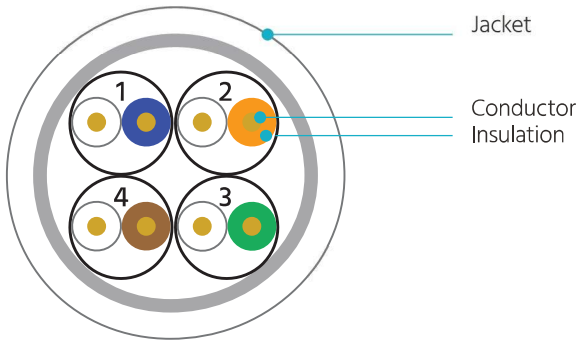
Construction

Conductor	24AWG
Material:	BC
Nom. OD:	7/0.19±0.008mm
Insulation:	PE
Nominal Thickness:	0.18mm Min: 0.02mm
Nom. OD:	0.97±0.05mm
Jacket	PVC
Nominal Thickness:	0.55mm Min: 0.05mm
Nom. OD:	5.4±0.02mm

Electrical Characteristics

Conductor Resistance@20 °C ≈ 87.6 Ohms/km

MHz	LOSS	NEXT	RL	ACR-N	ACR-F	PS NEXT	PS ACR-N	PS ACR-F
	dB	dB	dB	dB	dB	dB	dB	dB
1	3.0	60	17	57	57.4	57	54	54.4
4	4.5	53.5	17	49.1	45.4	50.5	46.1	42.4
8	6.3	48.6	17	42.3	39.3	45.6	39.3	36.3
10	7.1	47	17	39.9	37.4	44	36.9	34.4
16	9.1	43.6	17	34.5	33.3	40.6	31.5	30.3
20	10.2	42	17	31.8	31.4	39	28.8	28.4
25	11.4	40.3	16	28.9	29.4	37.3	25.9	26.4
31.25	12.9	38.7	15.1	25.9	27.5	35.7	22.9	24.5
62.5	18.6	33.6	12.1	15	21.5	30.6	12	18.5
100	24.0	30.1	10	6.1	17.4	27.1	3.1	14.4



Mechanical Characteristics

Storage Temperature Range	0 °C to 45 °C
Installation Temperature Range	0 °C to 75 °C
Maximum Pulling Force	100 lbs.

Wire Connection

Pair 1 White + Blue	Pair 3 White + Green
Pair 2 White + Orange	Pair 4 White + Brown



Ratings/Certifications

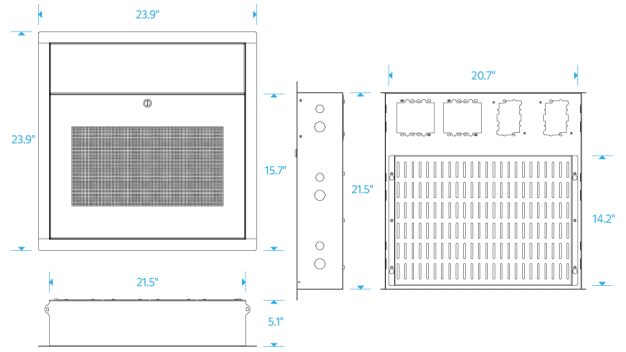
UL, RoHS, REACH



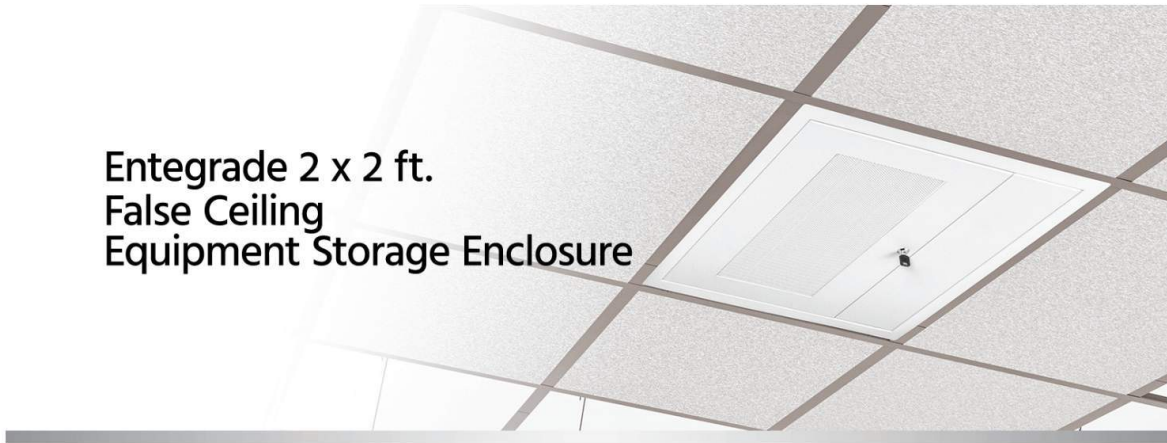
Colors: Black, Blue, Gray, Green, Orange, Pink, Purple, Red, White, and Yellow
Lengths: 0.5, 1, 2, 3, 5, 7, 10, 14, 20, 25, 30, 50, 75, and 100 feet

Jacket Marking: MONOPRICE TYPE CM 24AWG 4PR 75°C (UL) E467139 ANSI/TIA-568-C.2 CAT.5E UTP 100MHz RoHS COMPLIANCE

Monoprice 2 x 2 ft. False Ceiling Equipment Storage Enclosure



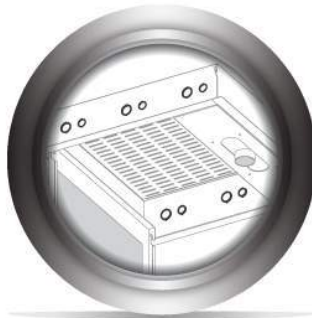
Entegrade 2 x 2 ft. False Ceiling Equipment Storage Enclosure



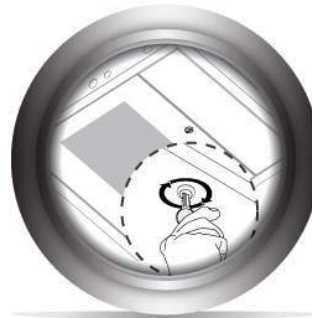
The Entegrade Series False Ceiling Equipment Storage Enclosure stores A/V and IT components above the false ceiling to provide a clean, organized room environment. It replaces half standard ceiling tile and feature a perforated door panel, which has the appearance of a standard HVAC return register when closed. It features multiple knockouts for ultimate flexibility and a lock and keys are included to ensure the security of any installed components. P/N 16087 also includes a 1.5-inch NPT Pipe Coupler, making it easy to attach a projector mount.



Standard Sizing



Multiple Knockouts



Locking Door Panel

Standard Sizing: The storage enclosure replaces half standard ceiling tile, making it compatible with most commercial drop ceilings.

Multiple Knockouts: It features multiple knockouts for ultimate flexibility.

Locking Door Panel: A lock and keys are included to ensure the security of any installed components.

- Locking door panel keeps equipment safe
- Fits a standard 2-foot square or half of a 4x2-foot ceiling tile
- Multiple knockouts for flexibility when running power or signal cables
- Eliminates the need for an A/V rack in the room
- Slotted mounting tray allows for fast and easy equipment mounting

CAT6A 26AWG STP Ethernet Patch Cable



Lifetime
★★★★★ warranty

For more information or to order, please contact **Monoprice Sales Representative** or sales@monoprice.com

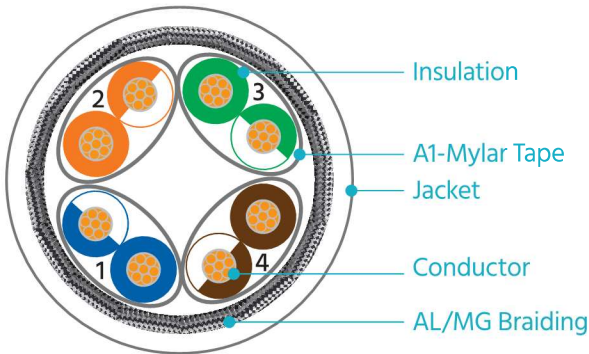
Construction

Conductor	26AWG
Material:	BC
Nom. OD:	7/0.16±0.001mm
Insulation:	PE
Nominal Thickness:	0.18±0.02mm
Nom. OD:	0.89±0.05mm
AL Foil:	Overlapping Ratio 25%
Braiding:	AL-MG
Size of braiding:	5x16x0.12mm
Overlapping Ratio	45%
Jacket	PVC
Nominal Thickness:	0.55mm±0.05mm
Nom. OD:	6.2mm

Electrical Characteristics

Conductor Resistance@20 °C ≈ 87.6 Ohms/km

MHz	LOSS	NEXT	RL	ACR-N	ACR-F	PS NEXT	PS ACR-N	PS ACR-F
	dB	dB	dB	dB	dB	dB	dB	dB
1	3.0	65.0	19.0	62.0	63.3	62.0	59.0	60.3
4	4.2	63.0	19.0	58.9	51.2	60.5	56.4	48.2
8	5.8	58.2	19.0	52.4	45.2	55.6	49.8	42.2
10	6.5	56.6	19.0	50.1	43.3	54.0	47.5	40.3
16	8.2	53.2	18.0	45.0	39.2	50.6	42.4	36.2
20	9.2	51.6	27.5	42.5	37.2	49.0	39.8	34.2
25	10.2	50	17.0	39.8	35.3	47.3	37.1	32.3
31.25	11.5	48.4	16.5	36.9	33.4	45.7	34.3	30.4
62.5	16.4	43.4	14.0	27.0	27.3	40.6	24.1	24.3
100	20.9	39.9	12.0	19.0	23.3	37.1	16.2	20.3
200	30.1	34.8	9.0	4.7	17.2	31.9	18.0	14.2
250	33.9	33.1	8.0	-0.8	15.3	30.2	-3.7	12.3
350	40.6	30.3	6.6	-10.3	12.4	27.3	-13.3	9.4
450	46.5	27.3	6.0	-19.2	10.2	24.4	-22.1	7.2
500	49.3	26.1	6.0	-23.2	9.3	23.2	-26.1	6.3



Mechanical Characteristics

Storage Temperature Range	0 °C to 45 °C
Installation Temperature Range	0 °C to 75 °C
Maximum Pulling Force	100 lbs.



Colors: Black, Blue, Gray, Green, Orange, Purple, Red, White, and Yellow

Lengths: 0.5, 1, 2, 3, 5, 7, 10, 14, 20, 25, 30, 50, 75, and 100 feet

Wire Connection

Pair 1 White + Blue	Pair 3 White + Green
Pair 2 White + Orange	Pair 4 White + Brown



Ratings/Certifications

UL, RoHS, REACH

Jacket Marking: MONOPRICE TYPE CM 26AWG 4PR 75°C (UL) E467139 ANSI/TIA-568-C.2 CAT6A STP 500MHz RoHS COMPLIANCE



DESCRIPTION

The CO-6 Earworn Microphone features speech optimized characteristics at a maximum 125 dB SPL, but it includes all the premium attributes that come with the celebrated "Unbreakable Boom". The CO-6 is designed for vocal reinforcement for church liturgy, aerobics instruction, singing, lecturing, sports-casting and other applications that require high quality vocal pick up in a hands-free environment. The boom life is prolonged with the enhanced durability of the completely bendable boom. The convenient placement near the mouth greatly reduces noise from wind and clothing. Additionally, its distinguishing clarity in close-talk operation and excellent gain before feedback make it suitable for applications where higher degrees of speech intelligibility are desired.

Boom Bends 360°	125 dB Max SPL

-XX CONNECTOR OPTIONS

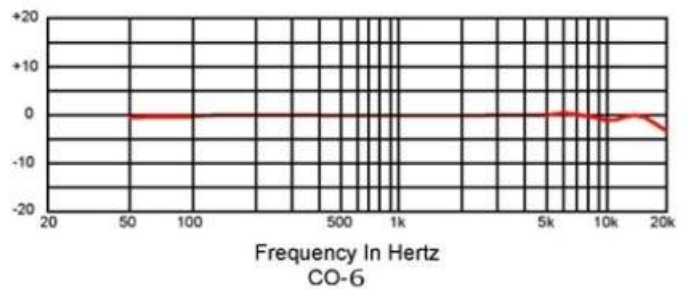
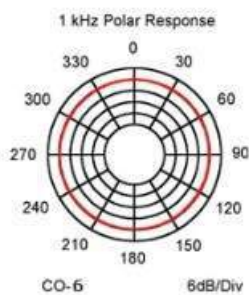
- AK AKG, Audix
- SE Sennheiser
- SH Shure, Line 6
- AT Audio-Technica
- MP MiPro
- TX Telex

-XX COLOR OPTIONS

- -BE Beige
- -BL Black

SPECIFICATIONS

Element:	Back Electret Condenser
Pattern:	Omnidirectional
Frequency:	40Hz ~ 17kHz
Sensitivity:	-47 dB 1V/Pa (Nominal Sensitivity ± 3dB at 1kHz)
Maximum SPL:	125 dB
Output Impedance:	2,000Ω ± 30% (at 1kHz)
Operating Voltage:	1.5V ~ 10VDC
Cable Length:	4ft. 2in. + connector
Net Weight:	0.6 oz
Colors:	Beige or Black
Connector Types:	Hardwired options for TA3F, TA4F, lockable 3.5mm, Hirose
Boom Flexibility:	Bendable to 360°
Ear Placement:	Left/Right
Included Accessories:	Windscreen, cable clip, storage box





Vertical Wall Mount Rack Bracket 1U - 4U

Vertical Rack for 19 Inch Network Equipment

- Mounts server and network equipment flush against the wall to save space
- Low-profile vertical rack perfect for when a server rack is too much
- Great for mounting servers, network switches, routers, patch panels, KVM switches, and power strips
- Also mounts under a desk or to the ceiling
- Equipment mounts to standard EIA universal, square mounting holes
- Installation hardware, sheetrock anchors, and cagenuts included



Built to Last

- Proudly made in Texas from high quality 16-Gauge cold-rolled steel
- 200 lb weight capacity when mounted on 16" wooden center studs
- 35 - 105 lb weight capacity (depending on size) when mounted to dry wall using included sheetrock anchors

PRODUCT NAME	SKU
1U Vertical Wall Mount Rack	1URACK-119
2U Vertical Wall Mount Rack	2URACK-119
3U Vertical Wall Mount Rack	3URACK-119
4U Vertical Wall Mount Rack	119-5028

Our rack mount bracket is a perfect solution for small or home offices. In environments where a server rack is too much or there's just not enough room, this wall mount can flush mount your 19" equipment vertically to the wall or horizontally to the bottom of a desk. With up to a 200lb load capacity, can handle everything from switches and patch panels to heavy servers. The bracket can also be installed in pairs for side by side horizontal installations. This vertical wall mount rack works with standard 19" server, networking, and telecommunications equipment from Dell, HP, IBM, Apple, Sun, Intel, Cisco, Juniper, 3Com and more.



Mount it on a wall or under a desk

The vertical wall mount rack's low-profile flush mounts networking equipment against the wall can hide it under a desk.



1U - 4U Sizes Available

1U - 4U vertical network racks available for rack mounting servers, patch panels, routers, and telecommunications equipment including heavy servers, patch panels, routers, and network switches.

Sendt Silver Notebook / Laptop Combination Lock Security Cable

Part Number: SNT-NBLC-SL



The Sendt combination lock security cable is easy to install and an ideal theft deterrent. In addition to securing a notebook or laptop, it may be used with a netbook, LCD screen, plasma screen, projector and will fit any device that has a Kensington compatible security slot.

General Features:

- 6 foot cable length
- Silver color
- 4 dial combination lock
- Up to 10,000 user-settable combinations
- Designed to secure most notebooks, projectors, LCD and Plasma Screens
- Fits any device with a Kensington security slot
- Zinc alloy material
- **Superior design that prevents accidentally resetting the combination**

Product dimensions: 6.5 x 4.25 x 1 inches

Product weight: 5.03 ounces

Packaged dimensions: 9 x 4.75 x 1 inches

Packaged weight: 6.35 ounces

Shipping weight: 8 ounces

Country of origin: Taiwan

U.P.C.: 818254010016

ASIN: [B008A2DQC4](#)

Warranty:

All Sendt products come with a 1 year limited warranty against manufacturing defect. Please see our [warranty](#) page for details.

1% For The Planet:

At least 1% of sales on all Sendt branded products are donated to 1% For The Planet approved charities. See our [1% For the Planet](#) page for details.



ULX-D[®]

DIGITAL WIRELESS SYSTEMS



Shure ULX-D[®] Digital Wireless offers uncompromising 24-bit audio clarity and extremely efficient RF performance with single, dual, and quad channel receivers for any size professional sound reinforcement application. Generations ahead of any other available system in its class, ULX-D brings a new level of performance to professional sound reinforcement.

UNCOMPROMISING PROFESSIONAL DIGITAL WIRELESS

24-bit/48 kHz digital audio that delivers incredibly clear and accurate sound reproduction
20 Hz – 20 kHz frequency range with flat response
Greater than 120 dB dynamic range
Wide selection of trusted Shure Microphones
Available in UHF, VHF and ISM (900MHz) Frequency Bands (region dependent)

EXTREMELY EFFICIENT AND RELIABLE RF PERFORMANCE

Up to 64 MHz overall tuning range (region dependent)
Up to 17 active transmitters in one 6 MHz TV channel (22 on an 8 MHz TV channel)
High Density mode enables up to 47 active transmitters in one 6 MHz TV channel
Rock-solid signal stability with no audio artifacts over the entire 100 meter range
Optimized scanning automatically finds, prioritizes, and selects the cleanest frequencies available

SCALABLE, INTELLIGENT HARDWARE

Single (half-rack), Dual and Quad (full-rack) receiver form factors
AES 256-bit encryption equipped for secure wireless transmission
Dante™ digital networked audio over Ethernet
Wireless Workbench[®] 6 compatible for advanced coordination, monitoring and control; features Site Survey tool for scanning frequencies in the 902-928 MHz ISM band
Compatible with the Shure SB900A Rechargeable Battery and SBC chargers

APPLICATIONS

Installed Audio
Critical Audio Performances
High channel counts
Secure presentations

PRODUCT HIGHLIGHTS

24-bit/48 kHz Digital Wireless Audio
High Density Mode
Single, Dual, and Quad Channel Receivers
Advanced Rechargeability
Dante™ Networked Audio over Ethernet
Boundary and Gooseneck Base Transmitters are available in black and white color options

COMPONENT SPECIFICATIONS

ULXD1 WIRELESS BODYPACK TRANSMITTER

OVERVIEW

The ULXD1 is a wireless bodypack transmitter compatible with ULX-D® Digital Systems. With a rugged yet lightweight aluminum case, the ULXD1 delivers uncompromising audio quality and RF performance, AES 256-bit encryption for secure transmission, and advanced rechargeability options for professional sound reinforcement applications.

- 20 Hz to 20 kHz range with flat frequency response (actual response is microphone dependent)
- AES 256-bit encryption-enabled for applications where secure transmission is needed
- >120 dB dynamic range
- 1, 10, and 20 mW selectable RF output power
- 5 segment battery fuel gauge
- Shure lithium-ion rechargeable battery pack provides up to 9 hours of battery life, precision metering, and zero memory effect
- Up to 8 hours continuous use with 2 x AA batteries
- Backlit LCD with easy to navigate menu and controls
- Available with TA4M and LEM03 input connectors
- 100 meter (300 ft) operating range
- Rugged metal construction
- Frequency and power lockout

SPECIFICATIONS (SUBJECT TO CHANGE)

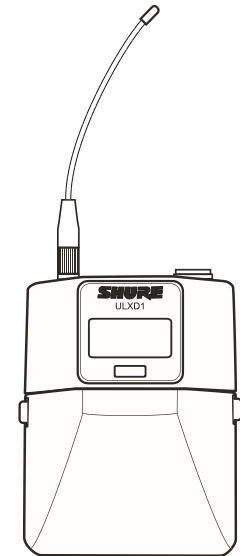
Gain Offset Range	0 to 21 dB (in 3 dB steps)
Battery Type	Shure SB900A Rechargeable Li-Ion or AA batteries
Battery Runtime @ 10 mW	Shure SB900A: up to 9 Alkaline: 8 hours See Battery Runtime Chart
Dimensions	86 mm × 66 mm × 23 mm (3.4 in. × 2.6 in. × 0.9 in.) H × W × D
Weight	142 g (5.0 oz.), without batteries
Housing	Cast aluminum

AUDIO INPUT

Connector	4-Pin male mini connector (TA4M) LEM03 connector
Configuration	Unbalanced
Impedance	1 MΩ
Maximum Input Level 1 kHz at 1% THD	Pad Off: 8.5 dBV (7.5 Vpp) Pad On: 20.5 dBV (30 Vpp)
Preamplifier Equivalent Input Noise (EIN) System Gain Setting > +20	120 dBV, A-weighted, typical

RF OUTPUT

Connector	SMA
Antenna Type	1/4 wave
Impedance	50 Ω
Occupied Bandwidth	<200 kHz
Modulation Type	Shure Proprietary Digital
Power	1 mW, 10 mW, 20 mW See Frequency Range and Output Power table, varies by region



ULXD1
Wireless Bodypack Transmitter

MICROPHONE OPTIONS (See shure.com for more)

WL93	WL93 condenser capsule, omnidirectional lavalier mic
WL183	WL183 condenser capsule, omnidirectional lavalier mic
WL184	WL184 condenser capsule, super-cardioid lavalier mic
WL185	WL185 condenser capsule, cardioid lavalier mic
WL50	WL50 condenser capsule, omnidirectional lavalier mic
WL51	WL51 condenser capsule, cardioid lavalier mic
SM31FH	SM31FH condenser capsule, moisture repellant cardioid headset mic
SM35	SM35 condenser capsule, cardioid headset mic
WCM16	WCM16 condenser capsule, hyper-cardioid headworn mic
WBH53	WBH53 condenser capsule, omnidirectional headworn mic
WBH54	WBH54 condenser capsule, super-cardioid headworn mic
WB98H/C	WB98H/C condenser capsule, cardioid instrument clip mic

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DIGITAL WIRELESS SYSTEMS



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Single (half-rack), Dual and Quad (full-rack) receiver form factors
AES 256-bit encryption equipped for secure wireless transmission
Dante[™] digital networked audio over Ethernet
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Compatible with the Shure SB900A Rechargeable Battery and SBC chargers

APPLICATIONS

Installed Audio
Critical Audio Performances
High channel counts
Secure presentations

PRODUCT HIGHLIGHTS

24-bit/48 kHz Digital Wireless Audio
High Density Mode
Single, Dual, and Quad Channel Receivers
Advanced Rechargeability
Dante[™] Networked Audio over Ethernet
Boundary and Gooseneck Base Transmitters are available in black and white color options



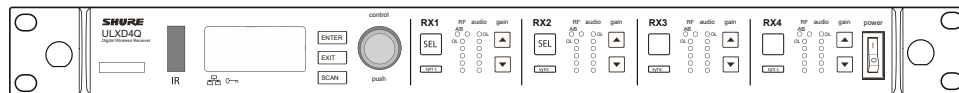
COMPONENT SPECIFICATIONS

ULXD4Q QUAD CHANNEL DIGITAL WIRELESS RECEIVER

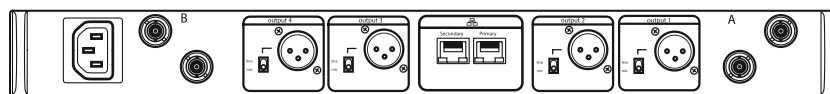
OVERVIEW

The Shure ULXD4Q Quad Channel Digital Wireless Receiver offers four channels of uncompromising audio quality, RF signal stability, and advanced setup features in a space-efficient single rack unit. Digital wireless processing delivers premium 24-bit/48 kHz audio and RF spectrum efficiencies that dramatically increase the number of available compatible channels. With an expansive set of enhanced features including AES 256-bit encryption for security and Dante™ digital networking for audio over Ethernet, the ULXD4Q delivers the most wireless performance per square inch.

- Four receivers in a rugged 1RU metal chassis with internal power supply
- Individual gain controls, LED meters, and XLR outputs for each channel
- Up to 64 MHz tuning range (region dependent)
- Digital predictive switching diversity
- High Density mode optimizes ULX-D systems to simultaneously operate significantly more channels in applications up to 30 meters
- RF cascade ports allow distribution of RF signal to another unit
- Optimized scanning automatically finds, prioritizes, and deploys the cleanest frequencies to transmitters over IR sync
- Bodypack Frequency Diversity ensures uninterrupted audio for mission-critical applications
- AES 256-bit encryption-enabled for secure transmission
- Audio summing routes two or more audio channels to combinations of receiver outputs. Use each channel's gain adjustment to reach the desired mix.
- Dante™ digital networked audio over Ethernet Two receivers in a rugged 1RU metal chassis with internal power supply
- Individual gain controls, LED meters, and XLR outputs for each channel
- Ethernet networking for streamlined frequency coordination and deployment across multiple receivers
- Interference detection and alerts provided on both the receiver and WWB6
- Up to 60 dB independently adjustable gain for each channel
- Wireless Workbench® 6 software integration for advanced coordination, monitoring, and control AMX/Crestron control
- Compatible with the AXT600 Axient™ Spectrum Manager
- Intuitive front panel LCD menu and controls with lockout feature
- Upgraded LCD with adjustable contrast and brightness
- Audio and RF LED meters with peak indicator
- Switchable mic/line output level
- Remoteable ½ wave antennas



ULXD4Q
Front Panel



ULXD4Q
Back Panel

SPECIFICATIONS

(SUBJECT TO CHANGE)

Dimensions	44 mm x 482 mm x 274 mm (1.73 in. x 18.97 in. x 10.79 in.), H x W x D
Weight	3.45 Kg (7.6 lbs), without antennas
Housing	Steel; Extruded Aluminum
Power Requirements	100 to 240 V AC, 50–60 Hz, 0.32 A max.

RF OUTPUT

Spurious Rejection	>80 dB, typical
Connector Type	BNC
Impedance	50 Ω
Bias Voltage	12 - 13 V DC, 150 mA maximum, per antenna

AUDIO INPUT

Gain Adjustment Range	-18 to +42 dB in 1 dB steps (plus Mute setting)
Configuration	XLR: Balanced (1=ground, 2=audio +, 3=audio -)
Impedance	100 Ω

Full Scale Output	LINE setting= +18 dBV, MIC setting= -12 dBV
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Mic/Line Switch	30 dB pad
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Phantom Power Protection	Yes
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CASCADE OUTPUT

Connector Type	BNC: For connection of 1 additional receiver
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Configuration	Unbalanced, passive
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Impedance	50 Ω
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Insertion Loss	0 dB
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ULX-D® DIGITAL WIRELESS SYSTEMS

SPECIFICATIONS (SUBJECT TO CHANGE)

RF Carrier Range	174–216 MHz, 470–865 MHz, 1492–1525 MHz, 1785–1805 MHz Note: Varies by region (See Frequency Range and Output Power table)
Working Range	100 m (328 ft) Note: Actual range depends on RF signal absorption, reflection and interference.
RF Tuning Step Size	25 kHz, varies by region
Image Rejection	>70 dB, typical
RF Sensitivity	-98dBm at 10 ⁻⁵ BER
Latency	<2.9 ms
Audio Frequency Response	ULXD1: 20 Hz – 20 kHz (±1 dB) ULXD2: 30 Hz – 20 kHz (±1 dB) Note: Dependent on microphone type
Audio Dynamic Range System Gain @ +10	XLR Analog Output: >120 dB, A-weighted Dante Digital Output (Dual and Quad receivers): 130 dB (typical), A-weighted
Total Harmonic Distortion -12 dBFS input, System Gain @ +10	<0.1%
System Audio Polarity	Positive pressure on microphone diaphragm produces positive voltage on pin 2 (with respect to pin 3 of XLR output) and the tip of the 6.35 mm (1/4-inch) output.
Operating Temperature Range	-18 °C (0 °F) to 50 °C (122 °F) Note: Battery characteristics may limit this range.
Storage Temperature Range	-29°C (-20°F) to 74°C (165°F) Note: Battery characteristics may limit this range.

FREQUENCY RANGE

Band	Range (MHz)	Transmitter Output (mW)
V50	174 to 216	1/10/20
V51	174 to 216	1/10/20
G50	470 to 534	1/10/20
G51	470 to 534	1/10/20
G52	479 to 534	1/10
H50	534 to 598	1/10/20
H51	534 to 598	1/10/20
H52	534 to 565	1/10
J50	572 to 636	1/10/20
K51	606 to 670	1/10
L50	632 to 696	1/10/20
L51	632 to 696	1/10/20
P51	710 to 782	1/10/20
R51	800 to 810	1/10/20
JB (Tx only)	806 to 810	1/10
AB (Rx and Tx)	770 to 810	"A" band (770.250-805.750): 1/10/20 "B" band (806.125-809.750): 1/10
Q51	794 to 806	1/10/20
X52	902 to 928	1/10/20
X50	925 to 932	1/10
X51	925 to 937.5	1/10
X52	902 to 928	0.25/10/20
X53	902 to 907.5, 915 to 928	0.25/10/20
X54	915 to 928	0.25/10/20
Z16	1240 to 1260	1/10/20

*Note: Not all frequencies available in all regions. Contact your authorized Shure dealer for availability.

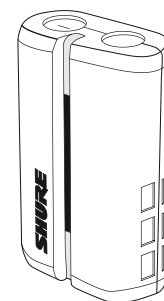
NOTE:

This Radio equipment is intended for use in musical professional entertainment and similar applications. This Radio apparatus may be capable of operating on some frequencies not authorized in your region. Please contact your national authority to obtain information on authorized frequencies and RF power levels for wireless microphone products.

RECHARGEABLE POWER MANAGEMENT (sold separately)

SB900A RECHARGEABLE BATTERY

ULX-D transmitters are compatible with the SB900A lithium-ion rechargeable battery, which provides over 9 hours of continuous use and precise tracking of remaining life and charge cycle details.



SBC200 DUAL DOCKING RECHARGING STATION

This compact and portable unit charges batteries while in transmitters or out. Up to 4 SBC200's can be chained together to run off one power supply.

SBC220 2-BAY NETWORKED CHARGING STATION

Enables docked charging and storage for any combination of two SB900A batteries or ULXD1, ULXD2 wireless transmitters. When connected to a network, the charging status of each transmitter can be viewed remotely. Up to four SBC220 units can be linked together to share power and network connectivity.

SBC800 EIGHT BATTERY RECHARGING STATION

This compact and portable unit charges up to 8 SB900A batteries to full capacity within 3 hours, with status LEDs to indicate power levels. SB900A batteries fit securely in the charger for easy, efficient storage and transport.

BATTERY RUNTIMES

(Note: Frequency Band Dependent)

BATTERY

TYPE	1 MW	10 MW	20 MW
SB900A	> 9 hours	> 9 hours	> 7 hours
Alkaline	> 8 hours	> 8 hours	< 6 hours
NIMH	> 8 hours	> 8 hours	< 6 hours
Li-primary	10-16 hours	10-16 hours	7-9 hours

C2G 1m USB 2.0 A to Mini-B Cable (3.3ft)



Manufacturer Part# 27329

UPC Code: 757120273295

Provantage Code: CBTU016

Condition: Factory New

- ▶ Product Type: **Data Transfer Cable**
- ▶ Connector on First End: **Type A Male USB**
- ▶ Cable Type: **USB**
- ▶ Cable Length: **3.28 ft**
- ▶ Connector on Second End: **Mini Type B Male USB**
- ▶ TAA Compliant: **No**

C2G 27329 Specifications

1m USB 2.0 A to Mini-B Cable (3.3ft)

Overview

The future of computer connectivity is here with mini-USB cables from Cables To Go. These fully rated universal serial bus cables provide transfer rates up to 480Mbps, depending on USB version, and easily attach to any mini-USB device. Mini USB cables are designed to connect from your USB port on Hub, PC or Mac to your USB device, including cellular phones and PDAs. Foil and braid shielding reduces EMI/RFI interference, and twisted-pair construction helps reduce cross talk thus ensuring high-speed, error-free data transfer. Meets all the UL requirements for communication cabling, and is compatible with USB 1.0, 1.1, and 2.0.



Compatibility

- ▶ USB Hub
- ▶ PDA
- ▶ MP3 Player
- ▶ Cell Phone(s)
- ▶ Digital Camera Sony S-75, Sony DSC-P5, Sony DSC-F707, Sony DSC-S85, Sony MVC-CD300, Sony MVC-CD200, Canon Digital IXUS, 300 (S300ELPH), Canon Powershot S40, Canon Powershot A20



C2G 3m Ultima USB 2.0 A to Mini-B Cable (9.8ft)



Ultima

Manufacturer Part# **29652**

UPC Code: 757120296522

Provantage Code: CBT91NY

Condition: Factory New

- ▶ Product Type: **Data Transfer Cable**
- ▶ Connector on First End: **Type A Male USB 2.0 USB**
- ▶ Cable Type: **USB**
- ▶ Cable Length: **9.84 ft**
- ▶ Color: **Charcoal**

C2G 29652 Specifications

3m Ultima USB 2.0 A to Mini-B Cable (9.8ft)

Overview

The Ultima Series of USB 2.0 Cables from Cables To Go combines style, quality, performance and value while giving you the ultimate in cable technology. The sleek design of the molded connectors makes them easy to grip. The connectors are color coded to match the ports on your personal computer or notebook, ensuring a simple connection. The charcoal gray cable jacket not only matches your case but disappears behind your desk leaving a clean organized look.

Constructed with UL tested and certified cable, the Ultima Series meets the rigid standards of everyday use. The USB 2.0 cable is double-shielded with a dual foil and braid. A metal shield surrounds the connector, while a solder-to-connector shell and cable braid create an end-to-end shielding solution for a noise-free connection.



Miscellaneous

- ▶ Heavy-duty strain relief provides increased flexibility and durability
- ▶ Meets FCC requirements on EMI/RFI interference



C2G 6ft High Speed HDMI Cable with Ethernet - 4K 60Hz



Manufacturer Part# 56783

UPC Code: 757120567837

Provantage Code: CBT9FJ3

Condition: Factory New

- ▶ Product Type: **A/V Cable**
- ▶ Cable Type: **HDMI**
- ▶ Cable Length: **6 ft**
- ▶ Limited Warranty: **Lifetime**
- ▶ Supported Resolution: **4096 x 2160**
- ▶ TAA Compliant: **No**

Overview

The C2G High Speed HDMI with Ethernet Cable is perfect for home theater or desktop audio video applications requiring high speed HDMI features and video resolutions up to 4K (4096 x 2160 at 60Hz, 4:4:4). The Ethernet capabilities of the cable allow a user to connect multiple Ethernet enabled HDMI devices through a single Ethernet connection for accessing interactive online content or updating device firmware. This fully-functional, high bandwidth cable is tested to perform at industry standards and is backed by a lifetime warranty. This cable can be utilized for network switch stacking with compatible equipment. Experience the latest HDMI features including



- 4K@50/60, (2160p), which is 4 times the clarity of 1080p/60 video resolution
 - 3D video, Deep Color and x.v. Color-
 - Dolby- True HD, DTS-HD Master Audio and up to 32 audio channels for a multi-dimensional immersive audio experience
 - Up to 1536kHz audio sample frequency for the highest audio fidelity
 - Simultaneous delivery of dual video streams to multiple users on the same screen
 - Simultaneous delivery of multi-stream audio to multiple users (up to 4)
 - Support for the wide angle theatrical 21:9 video aspect ratio
 - Dynamic synchronization of video and audio streams
 - CEC extensions for control of consumer electronics devices through a single control point
- Note:- To utilize HDMI stacking for network equipment all attached equipment must use the same firmware.. Both the source device and display must support a HDMI feature in order to pass that feature through this cable

-Download a PDF with the technical specifications of this product on the Support tab or view the technical specifications of this product on the Specs tab

Learn more about how this C2G product and other C2G products can help you adapt your Chromebook to meet your needs by reading our blog post, -Getting the most from your Chromebook-, visiting our -Chromebook Adapters New Technology- page, exploring our - Chromebook Solutions- page, or checking out our -Chromebook Adapters- product **Page 56 of 68** category.

DTP CrossPoint 4K Series

4K PRESENTATION MATRIX
SWITCHERS WITH SCALING AND
SEAMLESS SWITCHING

Complete AV System Integration
in One Box

DTP
SYSTEMS

VECTOR 4K
SCALING

- A All-in-one matrix switcher, scaler, audio DSP with AEC, audio power amplifier, and control processor
- A 4K matrix switching
- A Available in four sizes: 8x2, 8x4, 8x6, and 10x8
- A Extron-exclusive Vector™ 4K scaling with seamless switching and logo keying
- A DTP® and XTP® signal extension
- A Advanced DSP with AEC and expansion capabilities
- A Integrated IPCP Pro control processor and audio amplifier with Pro Audio performance



Extron Electronics
INTERFACING, SWITCHING AND CONTROL

Introduction



The industry-leading Extron **DTP CrossPoint® 4K Series** is a definitive game-changer for 4K presentation systems. These highly versatile presentation matrix switchers deliver all of the technologically advanced capabilities necessary to design and integrate advanced AV systems in one box. They incorporate a matrix switcher with 4K inputs and outputs, built-in scalars that are powered by Extron Vector™ 4K scaling technology and support seamless switching, integrated DTP and XTP signal extension, comprehensive audio DSP and AEC capabilities unmatched in the industry, a high performance mono or stereo amplifier, and an advanced control processor for complete AV system control. The internal audio DSP can be linked to an additional Extron DSP for unprecedented audio system scalability. The DTP CrossPoint 4K Series sets the new industry standard for fully integrated AV systems, greatly simplifying system design and installation, and dramatically reducing total cost of ownership.

The DTP CrossPoint 4K delivers all of the core functionality required for today's AV system in a single enclosure that replaces as many as eleven separate components. In addition to saving substantial rack space, the single enclosure makes it easy to standardize on a common system design throughout a facility. The DTP CrossPoint 4K adapts to many different environments in which equipment space may be limited. These fully-featured presentation matrix switchers are highly versatile and ideal for applications where content must be presented on multiple displays. They are also well-suited for multi-purpose rooms and divisible rooms that require flexible system configuration.

Exclusive Vector 4K Scaling

VECTOR 4K
SCALING The DTP CrossPoint 4K Series streamlines integration with the latest 4K sources and displays. All HDMI and DTP inputs accept high resolution signals up to 4K, and these signals can be passed to any output. The DTP CrossPoint 4K incorporates the Extron exclusive Vector 4K scaling engine that is specifically designed with best-in-class image upscaling and downscaling. The Vector 4K engine embodies a new set of image processing algorithms that deliver uncompromising performance with 30-bit precision processing and 4:4:4 chroma sampling. This enables independent scaling up to 4K for each of the DTP outputs, or downscaling for interoperability with lower resolution displays.

High Performance 4K Matrix Switching

4K UHD The DTP CrossPoint 4K Series has all the standard convenience features common to Extron matrix switchers, including a user-friendly front panel interface with tri-color backlit buttons, I/O memory presets, and more. Matrix switching between the inputs and outputs enables a wide range of design possibilities to meet the audio and video requirements of boardrooms, lecture halls, or other applications with multiple sources and displays. They offer flexible signal routing and reliable digital video switching capabilities. For professional transitions between sources, the DTP CrossPoint 4K offers a range of switching effects on the scaled DTP outputs such as freeze/fade, cut through black, and fade through black. A custom graphic logo may also be inserted into any presentation when using the scaled video outputs.

HDMI Inputs and Outputs, Plus Integrated DTP Transmitters and Receivers

The DTP CrossPoint 4K Series provides HDMI inputs and HDMI outputs for integration with HDMI sources and displays. The DTP twisted pair inputs and outputs offer extraordinary flexibility in how and where AV and control signals can be distributed. They are compatible with DTP Series products, the industry's most complete offering of digital twisted pair transmitters and receivers, which are available in a wide variety of single and multi-input models for furniture and wall-mount applications. These endpoint devices are ideal for installation on a wall, in a lectern, under a table, in a floor box, or near a display. The breadth of DTP endpoints allows great versatility in specifying the appropriate transmitters and receivers to suit the exact needs of the application.

Compatible with DTP 230, DTP 330 and DTP2 Series Extenders

When the DTP CrossPoint 4K is paired with DTP2 or DTP 330 transmitters and receivers, video, bidirectional RS-232 and IR signals, and analog audio can be extended up to 330 feet (100 meters) over a single shielded CATx cable. With a DTP 230 endpoint, the same signals can be extended up to 230 feet (70 meters). Select DTP endpoints can be powered by the DTP CrossPoint 4K over the same shielded CATx cable used for extending HDMI, DisplayPort, DVI, or VGA, plus audio and control signals. This convenience streamlines system design and installation.

HDBaseT-Compatible Outputs

The DTP outputs can be configured for compatibility with HDBaseT-enabled displays to send digital video and embedded audio, plus control signals up to 330 feet over a shielded CATx cable.

Compatible with XTP CrossPoint Matrix Switchers

XTP SYSTEMS In addition to supporting DTP endpoints, the DTP CrossPoint 4K can be integrated into an XTP CrossPoint matrix switcher system with digital video and embedded audio, plus control signals extended up to 330 feet. This is ideal for providing connectivity between presentation spaces and a larger, facility-wide system. A DTP CrossPoint 4K in a room can connect into an XTP CrossPoint matrix switcher in a central equipment rack or closet for accessing shared AV sources, or sending local content to several destinations in a facility.

Extron Exclusive Digital Video Technologies for Reliable, High Performance Operation

The DTP CrossPoint 4K Series is HDCP compliant and delivers highly reliable digital switching of HDMI signals. For integration of HDMI sources and displays with plug-and-play simplicity, and to help ensure optimal system performance and dependability, the DTP CrossPoint 4K features three Extron-exclusive technologies: EDID Minder®, Key Minder®, and SpeedSwitch®.

Designed for Full Audio System Integration

In addition to video matrix switching and scaling, the DTP CrossPoint 4K can serve as the central component for full audio system integration. It includes audio switching and

breakaway for all video sources, four mic/line inputs that can be matrix mixed into any output, as well as HDMI audio embedding and de-embedding. It also provides highly flexible configuration and processing options for the audio inputs and outputs, and for distributing the audio in a system. Each video input, including the DTP endpoints, can be accompanied by embedded digital audio or separate analog audio.

Audio from the DTP CrossPoint 4K can be output with or without processing, as HDMI embedded audio, two-channel analog audio, S/PDIF digital audio, or amplified with the matrix switcher's integrated mono 70 volt or two-channel stereo power amplifier - MA and SA models. Multi-channel bitstream formats are routed directly to the outputs, without de-embedding or processing.

Built-In Extron ProDSP, AEC, and Automixer



All DTP CrossPoint 4K models include a powerful audio matrix processor with

Extron ProDSP™, the same full-featured, high performance audio signal processing found in the Extron DMP digital signal processors. Extron's exclusive ProDSP is engineered from the ground up using a powerful 64-bit floating point DSP engine for a very wide dynamic range and to reduce the potential for clipping. ProDSP also uses studio grade 24-bit audio converters with 48 kHz sampling for audio signal transparency.

The built-in, professional grade DSP delivers many of the capabilities found in a standalone DSP, including a complete set of audio processing tools, highly flexible matrix mixing options, an automixer, AEC, and more. It allows full audio system design, precise optimization and fine tuning, and proper gain structure. The four mic/line inputs can be matrix mixed into any of the eight stereo output buses. These inputs can also be routed to any of the eight



DTP CrossPoint 4K Series matrix switchers are available in 10x8, 8x6, 8x4, and 8x2 configurations.

Introduction

“virtual” buses for group processing and then routing into the output buses. The flexible routing and mixing capabilities allow system designers to create simple or complex signal management schemes to accommodate a wide variety of system application requirements.

The DTP CrossPoint 4K includes four independent channels of high performance AEC - acoustic echo cancellation, and selectable noise cancellation, for conferencing applications. Extron AEC features advanced algorithms that deliver fast echo canceler convergence for optimal intelligibility. The automixer includes gated and gain sharing modes for managing up to eight groups of microphone signals. Setup and optimization is easy with the intuitive DSP Configurator™ Software, which offers fast access to all digital signal processing tools, plus AEC and noise cancellation settings.

Easily Expand with Extron DMP 128 Plus Audio Processors for Larger Systems

The DTP CrossPoint 4K Series allows unprecedented audio system expansion possibilities with an Extron digital audio expansion port that links the internal DSP to an Extron DMP 128 Plus Digital Matrix Processor. This allows for 16x16 I/O channel transport between devices, and the DMP 128 Plus provides an additional 12 inputs and eight outputs. Additionally, many unique and scalable system designs are possible when linking a DTP CrossPoint 4K to a DMP 128 Plus AT in a Dante™ network.

Integrated XTRA Series Audio Amplifier Technologies



The DTP CrossPoint 4K IPCP amplifier-equipped models deliver stereo power amplification with 50 watts rms per channel

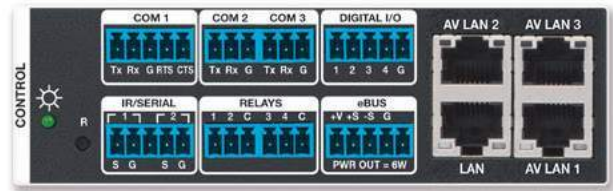
into 4 ohms and 25 watts rms per channel into 8 ohms, or mono 70 volt amplification with 100 watts rms output. The integrated amplifiers feature an Extron exclusive, highly efficient Class D amplifier design and patented CDRS™ - Class D Ripple Suppression, the same core amplifier technologies found in the renowned, ENERGY STAR® qualified XTRA™ Series amplifiers. CDRS provides a smooth, clean audio waveform and a dramatic improvement in signal fidelity over conventional Class D amplifier designs. The DTP CrossPoint 4K IPCP completes a sound reinforcement system with absolutely no compromises in audio performance or power efficiency.

Powerful Integrated Control Processor



DTP CrossPoint 4K IPCP models feature a built-in Extron IPCP Pro control processor

with a secure, dedicated three-port AV LAN switch and one standard Ethernet port. The network switch ports of the AV LAN



are designed to control local AV devices, and safeguard them from outside intrusion or interference. The DTP CrossPoint 4K IPCP delivers high-speed processing and abundant control port capacity for complete, customizable control of an entire AV system, including all source devices and displays, lighting, window shades, projection screens, occupancy sensing, and more. Select an Extron TouchLink® Pro touchpanel, available in a variety of screen sizes and form factors, and connect it to one of the AV LAN ports to create a complete AV control system.

As with all Extron control systems, the DTP CrossPoint 4K IPCP is very intuitive and easy to configure with Global Configurator software. The latest version includes powerful, advanced features such as conditional logic, local variables, and macros. Global Configurator Professional adds unprecedented scalability with Controller Groups, a unique feature that allows a DTP CrossPoint 4K IPCP to be combined with additional IP Link Pro processors to create a large-scale control system. DTP CrossPoint 4K IPCP systems throughout a facility, building, campus, or offices worldwide can be monitored and managed using Extron GlobalViewer® Enterprise server-based software.

Extron LinkLicense® is an easy, cost-effective way for people to add even more powerful capabilities to Extron products. Purchasing a LinkLicense for User Interfaces upgrade for the DTP CrossPoint 4K IPCP will enable a mobile device or computer to serve as the primary control interface for the AV system. This expands AV control options, and promotes BYOD - Bring Your Own Device convenience. LinkLicense is applied per-system, not per-user, and there are no hidden costs.

Reliable, Energy Efficient, and Low Total Cost of Ownership

The unique features and capabilities of the DTP CrossPoint 4K help reduce a client's total cost of ownership. The compact enclosure houses all essential AV system functions. With the energy efficient, highly reliable power supply and Class D amplifier, the DTP CrossPoint 4K IPCP runs cool to maximize reliability and significantly enhance operating life.

Seamless Switching and Logo Keying

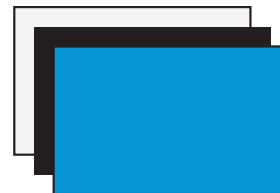
The high performance video scaling within the DTP CrossPoint 4K allows for uncompromised image quality. Driven by Vector 4K scaling technology, the DTP video outputs of these matrix switchers provide powerful processing capabilities, including selectable seamless switching transition effects and logo keying. These capabilities serve the needs of environments where superior quality presentations are crucial.

SEAMLESS SWITCHING TRANSITIONS

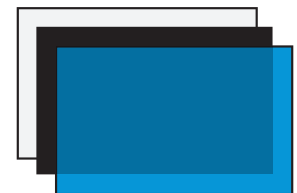
Critical presentations do not tolerate video glitches. To ensure glitch-free, professional quality presentations, several transition effects can be selected when switching between video sources. These transition effects are available for each of the scaled DTP video outputs.

Effects include:

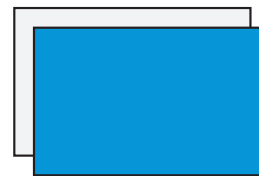
- **Cut through black** – Instantly cut the current input to black, then cut to the newly selected input.
- **Fade through black** – Fade the current input to black, then fade to the new input.
- **Seamless cut** – Freeze the current input video frame, then cut to the newly selected input.
- **Seamless fade** – Freeze the current input video frame, then fade to the new input.



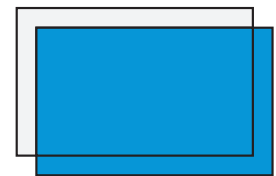
Cut Through Black



Fade Through Black



Seamless Cut

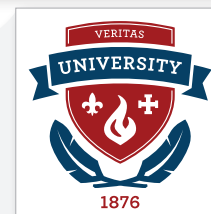
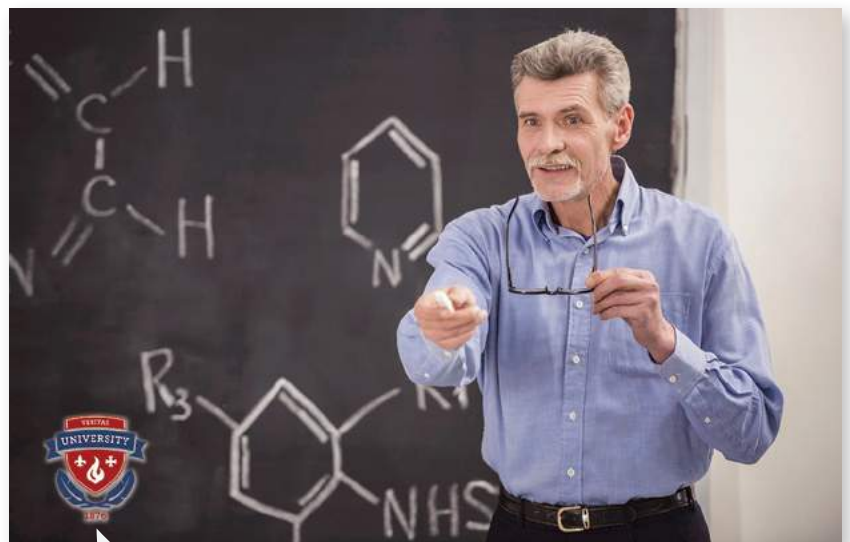


Seamless Fade

LOGO KEYING

A graphic image such as a company or school logo can be uploaded and inserted on the output video signal to enhance branding and to identify the source of valuable video content. Logo keying is available for each of the scaled DTP video outputs. Custom images up to 4096x2400 resolution are supported and can be used at any point in the presentation.

- Logos can be placed anywhere on the active video.
- Uploaded logos can be inserted above live video using either level keying, RGB color keying, or an alpha channel when supported by the graphic file format.
- Logo images in BMP, JPG, PNG, or TIFF graphic file formats are supported.
- 16 logo presets are available to store the logo filename, position, and key settings for quick recall and switching between multiple logo images.



Images up to 4096x2400 resolution can be uploaded.

Extron Exclusive Vector 4K Scaling Engine

VECTOR 4K SCALING

When it comes to delivering unsurpassed image quality, Extron has the proven technology and expertise to do it right. For over 20 years, Extron has been engineering and designing scaling and signal processing solutions, with 24 worldwide patents awarded to date.

Extron Vector™ 4K is the latest generation of our video scaling engines and is specifically engineered for critical-quality 4K imaging. Innovative applications utilizing 4K content and displays continue to emerge, with end users demanding sharp, detailed, and professionally crafted imagery from their systems.

To meet this important criterion, Extron has created a new series of signal processing technologies for upscaling, downscaling, and optimally converting 4K signals or any other source content.

Designing Scaling Technology from the Ground Up

The Vector 4K scaling engine is the result of our extensive R&D operations with in-house engineering expertise in signal processing, image rendering, software engineering, and computing platform integration. With the vast knowledge we've acquired over the years through our research into high resolution video and graphics imaging, we're able to deliver patented image processing technologies that meet our exact specifications for visual performance.

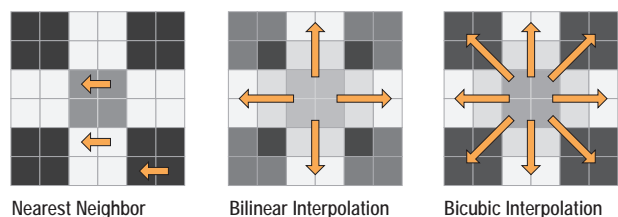
In addition to high performance image processing, Vector 4K incorporates essential integration features that help address frequent AV system design and integration challenges, while simplifying setup

and commissioning. Having our own "home-grown" scaling and signal processing technology allows us to respond to specific AV integration needs in a timely manner.



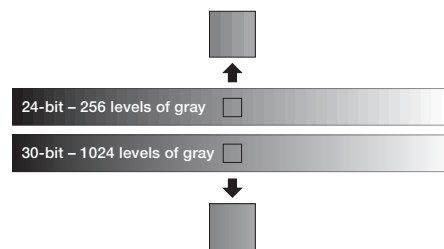
Unparalleled Scaling Quality

The Vector 4K scaling engine incorporates Extron-engineered, multi-tap, bicubic interpolation, which creates a new pixel by averaging adjacent pixels above, below, to the sides, and diagonally of the new pixel. This produces sharp, accurate output, preserving single-pixel detail as content is downscaled or upscaled.



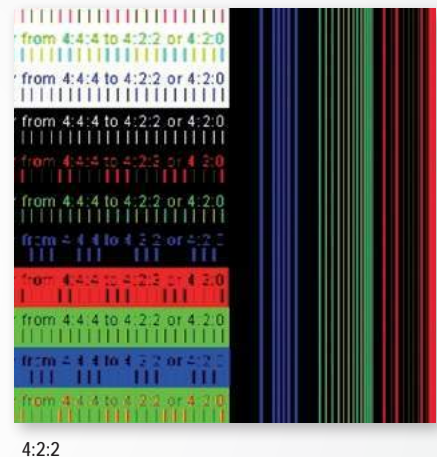
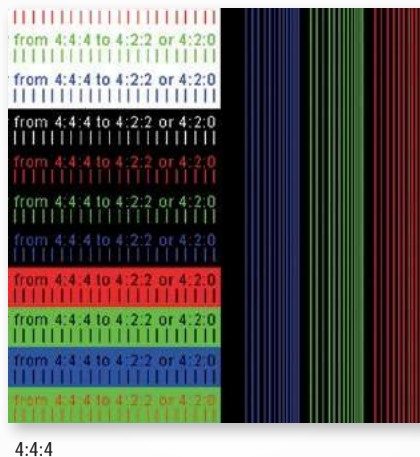
Color Bit Depth

Vector 4K scaling technology processes video at 30 bits per pixel to maximize grayscale and color accuracy. This maintains color fidelity and detail present in native 30-bit source content, while delivering better color accuracy for 24-bit sources. It also ensures compatibility with the BT.2020 color standard for 4K, which has a minimum requirement of 30-bit color resolution.



4:4:4 Chroma Sampling

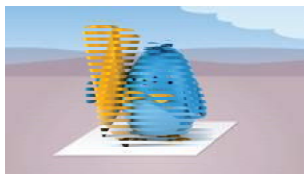
4:2:2 or 4:2:0 chroma subsampling may be acceptable for processing full-motion video, but can produce color smearing, missing lines, jagged lines, and other artifacts with PC-generated content. Vector 4K scaling processes video and computer graphics in the RGB domain with full 4:4:4 color sampling, which is critical for processing fine image details such as single pixel, colored lines and text in computer content.





Motion-Adaptive Deinterlacing

Extron patented motion-adaptive deinterlacing integrates two different processing techniques within each video frame. Blended odd and even fields are best for static content, while line doubling is optimal for areas of motion between fields. To best apply these two modes, Vector 4K scaling utilizes motion estimation at the single-pixel level for the greatest accuracy in detecting dynamic content. Though complex and computationally intensive, this method allows interlaced motion to be averaged to avoid artifacts, while static areas are blended to perfectly preserve the original detail.



Blend Method



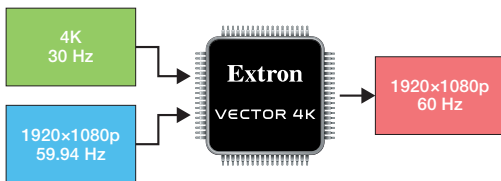
Line Doubling



Extron Motion-Adaptive Deinterlacing

Frame Rate Conversion

Vector 4K scaling includes high performance frame rate conversion that always delivers images free of visual motion artifacts. In addition to eliminating on-screen video tear, frame rate conversion avoids the need for a display to readjust to changes in source frame rates, which eliminates re-syncing and minimizes latency when switching between sources.



Automatic Film Cadence Detection

Vector 4K scaling features 3:2, 2:2, and 24:1 cadence detection which examines interlaced signals and instantaneously identifies, within a fraction of a second, content that originated from 24 Hz source material. Repeated fields, generated

during the 3:2, 2:2, or 24:1 pulldown process, are discarded to recreate the original, progressive 24 frame-per-second content. Frame rate conversion is then applied to the reconstructed 24 Hz content to match the scaler's selected output frame rate.

Dynamic Digital Input Detection

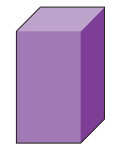
Today's evolving computer video standards allow for a wide range of signal resolutions, which may be customized to suit the needs of a particular application or display. These resolutions may be unique to military or medical sources, or the latest consumer laptops or tablets. Vector 4K Scaling technology incorporates dynamic input detection, which analyzes incoming resolutions, and accurately measures the signal parameters to enable precise capture, conversion, and scaling of both standard and unconventional video signals.

Digital Signage Media Player



1920x545

Workstation



2048x2048

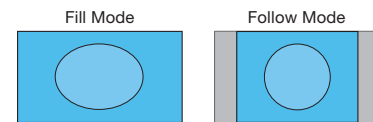
Laptop



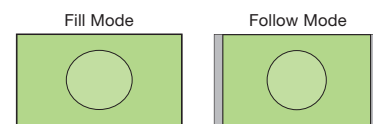
3200x1800

Aspect Ratio Control

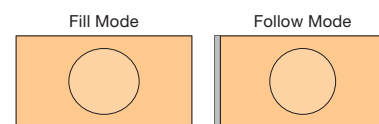
Extron Aspect Ratio Control, featured in all products with Vector 4K Scaling, automatically detects the aspect ratio of an incoming source signal, and provides two user-selectable modes to optimize the content presentation. FOLLOW mode preserves the original aspect ratio of the input signal, while FILL mode provides full-screen output so every pixel of the display contains active content. Additionally, custom aspect ratios can be configured with options for manual or automatic recall of settings.



4:3 Content on a 16:9 UHD Display



16:10 Content on a 16:9 UHD Display



16:9 UHD Content on a 17:9 4K Display

Model Summary

Extron DTP CrossPoint 4K models are all-in-one products featuring 4K matrix switching, scaling, audio DSP with AEC, integrated audio power amplification, and a built-in IPCP Pro control processor. Each model also offers additional integration-friendly features, such as seamless transitions between sources, logo insertion on the scaled video outputs, and mirrored HDMI connections for local monitoring of the same digital video that is delivered via shielded CATx cable.



DTP CrossPoint 108 4K

10x8 Seamless 4K Scaling Presentation Matrix Switcher

- 10x8+2 matrix configuration
- Four DTP inputs and six HDMI inputs
- Four HDMI outputs
- Four independently scaled DTP outputs with two mirrored HDMI outputs
- 3U, full rack width metal enclosure

Model	Version Description	Part Number
DTP CrossPoint 108 4K	Preamp Output, w/o Amplifier and Control Processor	60-1381-01
DTP CrossPoint 108 4K IPCP SA	2 x 50 Watt Stereo Power Amplifier	60-1381-22
DTP CrossPoint 108 4K IPCP SA	2 x 50 Watt Stereo Power Amplifier, LL UI Upgrade	60-1381-22A
DTP CrossPoint 108 4K IPCP MA 70	100 Watt 70 V Mono Power Amplifier	60-1381-23
DTP CrossPoint 108 4K IPCP MA 70	100 Watt 70 V Mono Power Amplifier, LL UI Upgrade	60-1381-23A



DTP CrossPoint 86 4K

8x6 Seamless 4K Scaling Presentation Matrix Switcher

- 8x6+2 matrix configuration
- Two DTP inputs and six HDMI inputs
- Two HDMI outputs
- Four independently scaled DTP outputs with two mirrored HDMI outputs
- 3U, full rack width metal enclosure

Model	Version Description	Part Number
DTP CrossPoint 86 4K	Preamp Output, w/o Amplifier and Control Processor	60-1382-01
DTP CrossPoint 86 4K IPCP SA	2 x 50 Watt Stereo Power Amplifier	60-1382-22
DTP CrossPoint 86 4K IPCP SA	2 x 50 Watt Stereo Power Amplifier, LL UI Upgrade	60-1382-22A
DTP CrossPoint 86 4K IPCP MA 70	100 Watt 70 V Mono Power Amplifier	60-1382-23
DTP CrossPoint 86 4K IPCP MA 70	100 Watt 70 V Mono Power Amplifier, LL UI Upgrade	60-1382-23A



DTP CrossPoint 84 4K

8x4 Seamless 4K Scaling Presentation Matrix Switcher

- 8x4+2 matrix configuration
- Two DTP inputs and six HDMI inputs
- Two HDMI outputs
- Two independently scaled DTP outputs with mirrored HDMI outputs
- 2U, full rack width metal enclosure

Model	Version Description	Part Number
DTP CrossPoint 84 4K	Preamp Output, w/o Amplifier and Control Processor	60-1515-01
DTP CrossPoint 84 4K IPCP SA	2 x 50 Watt Stereo Power Amplifier	60-1515-22
DTP CrossPoint 84 4K IPCP SA	2 x 50 Watt Stereo Power Amplifier, LL UI Upgrade	60-1515-22A
DTP CrossPoint 84 4K IPCP MA 70	100 Watt 70 V Mono Power Amplifier	60-1515-23
DTP CrossPoint 84 4K IPCP MA 70	100 Watt 70 V Mono Power Amplifier, LL UI Upgrade	60-1515-23A



DTP CrossPoint 82 4K

8x2 Seamless 4K Scaling Presentation Matrix Switcher

- 8x2+2 matrix configuration
- Two DTP inputs and six HDMI inputs
- Two independently scaled DTP outputs with mirrored HDMI outputs
- 2U, full rack width metal enclosure

Model	Version Description	Part Number
DTP CrossPoint 82 4K	Preamp Output, w/o Amplifier and Control Processor	60-1583-01
DTP CrossPoint 82 4K IPCP SA	2 x 50 Watt Stereo Power Amplifier	60-1583-22
DTP CrossPoint 82 4K IPCP SA	2 x 50 Watt Stereo Power Amplifier, LL UI Upgrade	60-1583-22A
DTP CrossPoint 82 4K IPCP MA 70	100 Watt 70 V Mono Power Amplifier	60-1583-23
DTP CrossPoint 82 4K IPCP MA 70	100 Watt 70 V Mono Power Amplifier, LL UI Upgrade	60-1583-23A

Overview

Tri-color, backlit buttons

The QS-FPC - QuickSwitch Front Panel Controller allows for simple, intuitive matrix switcher operation.

Extron Vector 4K scaling engine

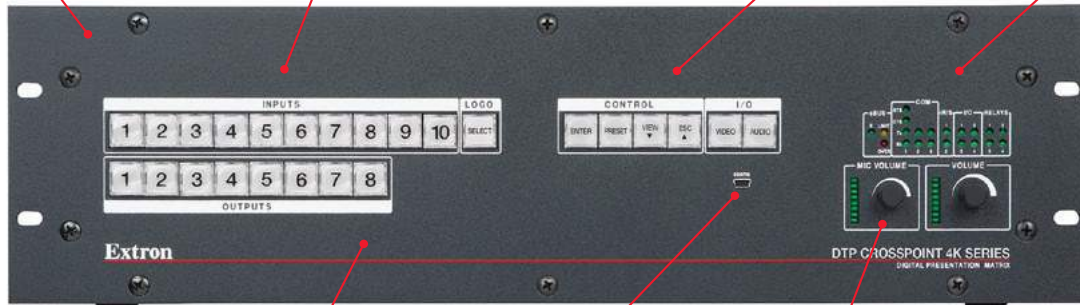
The exclusive 4K scaling engine is specifically designed for critical-quality 4K imagery, with best-in-class image upscaling and downscaling. Scaling and video format conversion are performed at 30-bit precision for signals up to 4K to provide enhanced color accuracy and picture detail.

Flexible video and audio routing options

AV signals can be routed together or independently, including embedded HDMI stereo audio signals.

Complete AV system integration in one box

The DTP CrossPoint 4K IPCP is an all-in-one matrix switcher, scaler, audio DSP with AEC, audio amplifier, and control processor.



DTP CrossPoint 108 4K IPCP SA - Front

HDCP compliant

The DTP CrossPoint 4K is fully HDCP compliant at all inputs and outputs.

USB configuration port

Provides convenient user access for configuring, controlling, and monitoring the matrix switcher

Volume controls

Allow for adjustment of master volume and microphone level, with accompanying LEDs to indicate volume level

Powerful IPCP Pro control processor

DTP CrossPoint 4K IPCP models are available with an integrated IP Link® Pro control processor for complete and secure AV system control

Built-in three-port AV LAN switch

Enables local control of AV devices while isolating the AV LAN network traffic from outside interference or intrusion

DMP digital audio expansion port

Allows the matrix switcher and an Extron DMP 128 Plus DSP to be linked together via a shielded CAT 6 cable for system expansion

Mic/line inputs with 48 volt phantom power and ducking

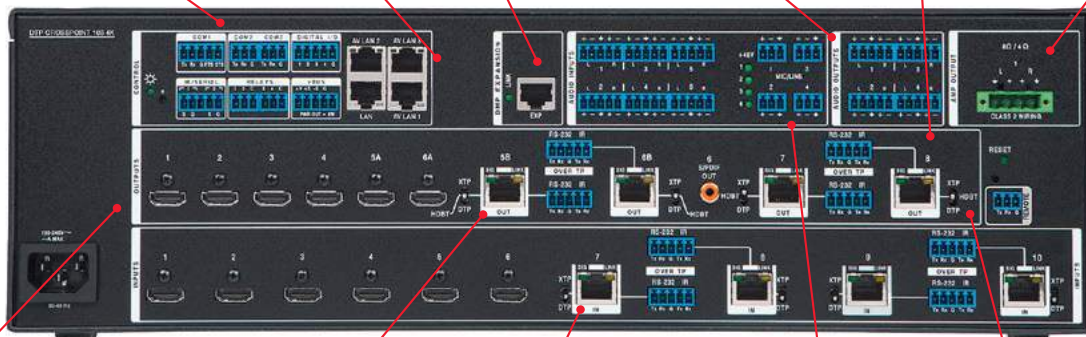
Four mic/line inputs are available for mixing microphones or line level sources into the audio outputs.

Scaled DTP outputs

The DTP CrossPoint 4K provides individual scaling up to 2560x1600 and 4K for each DTP output.

Integrated XTRA Series audio amplifier technologies

DTP CrossPoint 4K IPCP models are available with an integrated stereo or mono amplifier.



DTP CrossPoint 108 4K IPCP SA - Back

HDMI inputs and HDMI outputs

Enable easy integration with HDMI sources and displays

Two DTP outputs with mirrored HDMI connections

Two DTP outputs on the DTP CrossPoint 4K feature mirrored HDMI connections to support local monitoring.

DTP inputs and DTP outputs

The DTP inputs and outputs are compatible with DTP Systems, including DTP 230 and DTP 330 products, or XTP CrossPoint matrix switchers. They support digital signal transmission up to 330 feet (100 meters) over a single shielded CATx cable.

Extron ProDSP

Provides full control of audio input and output levels, plus a wide array of audio processing tools and matrix mixing options for program and microphone signals

Compatible with HDBaseT-enabled displays

The DTP outputs can be configured to send video and embedded audio, plus bidirectional RS-232 and IR signals to projectors and flat-panel displays equipped with HDBaseT inputs.

Features

All-in-one matrix switcher, scaler, audio DSP with AEC, audio power amplifier, and control processor

Choose from 10x8, 8x6, 8x4, and 8x2, matrix switcher configurations

Independently scaled DTP outputs

Two DTP outputs feature mirrored HDMI connections to support local monitoring.

4K matrix switching and scaling with logo keying

The DTP CrossPoint 4K supports 4K signals at all video inputs and outputs. Each DTP output features a built-in high performance Vector 4K video scaler, with the ability to insert a logo image.

Integrated DTP inputs and outputs support transmission of video, control, and audio up to 330 feet (100 m) over a shielded CATx cable

Select DTP endpoints can be remotely powered over each twisted pair connection.

Advanced Extron Vector 4K scaling engine

The Vector 4K scaling engine is specifically designed for critical-quality 4K imagery, with best-in-class image upscaling and downscaling. Scaling and video format conversion are performed at 30-bit precision for signals up to 4K to provide enhanced color accuracy and picture detail.

Selectable scaled DTP output rates from 640x480 to 4K

The output rate can be individually selected for each of the scaled DTP outputs. Available output rates include computer and video up to 4K.

Compatible with DTP 230, DTP 330, DTP2 Series, plus XTP CrossPoint Matrix Switchers

This enables mixing and matching with desktop and wallplate transmitters and receivers, as well as other DTP-enabled products. The DTP CrossPoint 4K can also be integrated with an XTP CrossPoint matrix switcher to provide connectivity between presentation spaces and a larger, facility-wide system.

DTP outputs are compatible with HDBaseT-enabled devices

The DTP outputs can be configured to send video and embedded audio, plus bidirectional RS-232 and IR signals to HDBaseT-enabled displays.

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

Bidirectional RS-232 and IR insertion for AV device control

Bidirectional RS-232 and IR signals can be inserted from a control system via dedicated control ports on the matrix switcher. Bidirectional RS-232 signals can also be inserted via the Gigabit switch.

HDMI audio embedding and de-embedding

Two-channel audio signals can be embedded onto the HDMI and DTP outputs. Embedded HDMI two-channel PCM audio can be extracted for routing and further processing. Embedded multi-channel bitstream formats are routed with the video to the HDMI and DTP outputs.

Output volume control

Master volume control is provided for the variable line level and amplified audio outputs. A separate control is provided for mic volume.

Audio input gain and attenuation, plus audio breakaway

Gain or attenuation can be adjusted for each two-channel audio input to eliminate noticeable differences when switching between sources. Audio breakaway provides the capability to break the two-channel audio away from its corresponding video signal and route to the audio outputs.

Integrated audio digital signal processor with ProDSP 32/64-bit floating point signal processing

The DTP CrossPoint 4K features 32/64-bit floating point audio DSP processing, which maintains very wide dynamic range and audio signal transparency, to simplify management of gain staging while reducing the possibility of DSP signal clipping.

Four channels of AEC

The matrix switcher includes four independent channels of high performance AEC, and selectable noise cancellation. Extron AEC features advanced algorithms that deliver fast echo canceler convergence for optimal intelligibility in situations that challenge AEC performance, including double talk and the use of wireless microphones.

Automixer with eight groups

The matrix switcher features an automixer with gated and gain sharing modes for managing up to eight groups of microphone signals. Gating threshold, signal level reduction, and timing parameters are user adjustable per channel, allowing for fine tuning to avoid the "chopped" sound characteristic of a traditional automixer when a mic is gated off.

Digital audio expansion port provides interfacing to an Extron DMP 128 Plus processor for audio system scalability

An expansion port allows the DTP CrossPoint 4K and any DMP 128 Plus model to be linked together via a single shielded CAT 6 cable for 16x16 I/O channel transport between devices. This allows for audio system scalability with expanded audio processing and signal routing capabilities.

Four mic/line inputs with 48 volt phantom power

Four mic or line level audio sources can be independently mixed with program audio.

Mic ducking

Automatically reduces program audio when a microphone or other incoming audio signal is detected, eliminating the need for a separate audio ducking processor.

Studio grade 24-bit/48 kHz analog-to-digital and digital-to-analog converters

Professional converters fully preserve the integrity of the original audio signal.

Low latency DSP processing

The DTP CrossPoint 4K features very low, deterministic latency from input to output, regardless of the number of active channels or processes. While latency

DTP
SYSTEMS

4K UHD

ProDSP

**EDID
MINDER**

SPEED SWITCH

**KEY
MINDER**

Features

increases marginally in channels with AEC enabled, overall latency remains extremely low. This keeps audio in sync with video, and prevents distractions to the presenter resulting from delayed live audio.

DSP Configurator Software

DSP Configurator Software is a powerful yet user-friendly PC-based software tool for managing all audio operations of the DTP CrossPoint 4K. It enables complete setup and configuration of digital audio processing tools on the ProDSP platform, as well as routing and mixing.

Flexible matrix design provides output, virtual, and expansion routing options

The DSP architecture employs an intuitive matrix design that offers substantial flexibility in routing, mixing, and processing audio input sources.

Available with integrated energy efficient Class D audio amplifier

The DTP CrossPoint 4K IPCP includes a stereo power amplifier with 50 watts rms per channel into 4 ohms and 25 watts rms per channel into 8 ohms, or a mono 70 volt amplifier with 100 watts rms output.

Professional grade audio performance

The integrated amplifier delivers professional grade signal-to-noise ratio and THD+N performance.

Extron Patented CDRS - Class D Ripple Suppression

CDRS is an Extron patented technology that provides a smooth, clean audio waveform and an improvement in signal fidelity over conventional Class D amplifier designs. CDRS eliminates the high frequency switching ripple characteristic of Class D amplifiers, a source of RF emissions which can interfere with sensitive AV equipment such as wireless microphones.

Supported HDMI specification features include data rates up to 10.2 Gbps, Deep Color up to 12-bit, 3D, and HD lossless audio formats

HDCP compliant

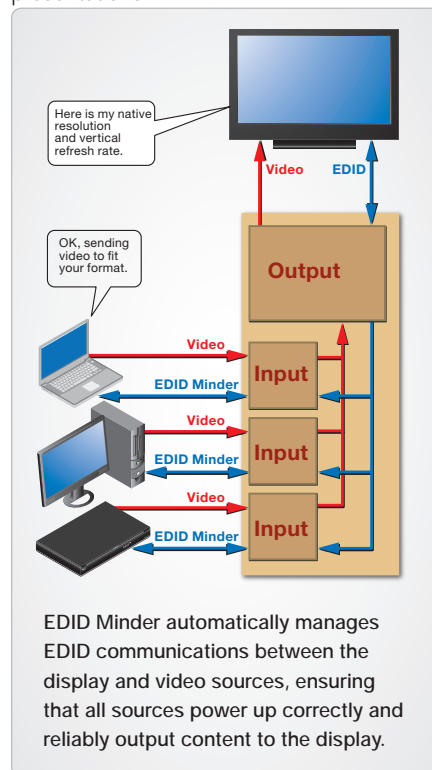
User-selectable HDCP authorization

This allows individual inputs to appear HDCP compliant or non-HDCP compliant to the connected source, which is beneficial

if the source automatically encrypts all content when connected to an HDCP-compliant device. Protected material is not passed in non-HDCP mode.

Logo image keying and display

A logo graphic may be placed at any position on any scaled video output as a foreground image. Logo graphics in BMP, JPG, PNG, or TIFF format may be uploaded to the unit. Full screen images up to 4096x2400 resolution can also be displayed to eliminate blank screens between presentations.



Seamless switching

Seamless freeze/fade, cut through black, and fade through black transition effects are available at the scaled video outputs.

Extron-exclusive digital video technologies

The DTP CrossPoint 4K includes EDID Minder, Key Minder, and SpeedSwitch to simplify integration of HDMI sources and displays, and to help ensure optimal system performance and dependability.

HDCP Visual Confirmation

When processing HDCP-encrypted content, the DTP CrossPoint 4K outputs a full-screen green signal on any video output

connected to a non-HDCP compliant display, providing immediate visual confirmation that protected content cannot be viewed.

QS-FPC™ - QuickSwitch Front Panel Controller

Provides a discrete button for each input and output, allowing for simple, intuitive operation. 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.

View I/O mode

Users can easily view which inputs and outputs are actively connected.

Global presets

Frequently used I/O configurations may be recalled either from the QuickSwitch Front Panel Controller, Ethernet, USB, or RS-232.

Output muting control

One or all outputs can be muted at any time. This allows, for example, content to be viewed on a local monitor prior to appearing on the main presentation display.

Aspect ratio control

For the scaled DTP outputs, the aspect ratio of the video can be controlled by selecting a FILL mode, which provides a full screen output, or a FOLLOW mode, which preserves the original aspect ratio of the input signal.

Available with integrated IPCP Pro control processor

DTP CrossPoint 4K IPCP models include a built-in IPCP Pro control processor for complete and secure AV system control.

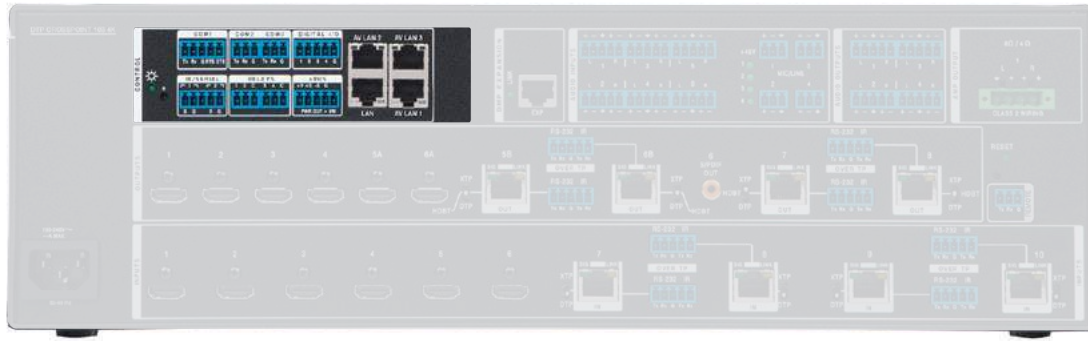
Multiple options for control, configuration, and monitoring

In addition to front panel controls, the DTP CrossPoint 4K offers Ethernet monitoring and control, built-in Web pages, RS-232 control, plus a front panel USB configuration port.

Easy setup and commissioning with Extron's PCS - Product Configuration Software

Conveniently configure multiple products, including the DTP CrossPoint 4K, using a single software application.

Integrated Control Processor



BUILT-IN IP LINK PRO CONTROL PROCESSOR

The integrated IPCP Pro control processor includes all of the same advanced features, processing power, and breakthrough technologies found in standalone Extron Pro Series control systems. It enables the DTP CrossPoint 4K IPCP to provide powerful AV and room control capabilities, including control of all sources and displays, lighting, window shades, projection screens, occupancy sensing, and much more. The DTP CrossPoint 4K IPCP can also be grouped with up to three additional IPCP Pro control processors using Global Configurator Professional software to create large, sophisticated control systems. This is ideal for controlling multiple systems, rooms, or even remote locations around the world.

Two bidirectional RS-232 serial ports with software handshaking

One bidirectional RS-232/RS-422/RS-485 serial port with hardware and software handshaking

Two IR/serial ports for one-way control of external devices

Four digital I/O ports and four relays
Provide control of various room functions

Integrated three-port AV LAN switch allows AV devices to be isolated from the corporate network

Supports secure industry standard communications protocols
Uses industry standard communication protocols, including HTTP (insecure), HTTPS, SSH, SFTP, SMTP, NTP, Discovery Service, DHCP, DNS, ICMP, and IPv4

Supports LinkLicense
Enhances the capabilities of Extron Pro Series control systems

Multi-level password protection
Allows security to be set based on user roles

Fully customizable using Extron control system software
GUI Designer combined with Global Configurator Plus or Global Configurator Professional

Controller Groups
Allow multiple IP Link Pro control processors to be grouped together to function as one, when configured with Global Configurator Professional

PAIR WITH TOUCHLINK PRO TOUCHPANELS FOR A POWERFUL AV CONTROL SYSTEM

The DTP CrossPoint 4K IPCP supports direct connectivity with Extron TouchLink® Pro touchpanels through the Gigabit switch on the presentation matrix switcher. TouchLink Pro touchpanels feature enhanced processing and memory, plus capacitive touchscreens for select models. These touchpanels are available in a variety of form factors and sizes to suit a wide range of applications.

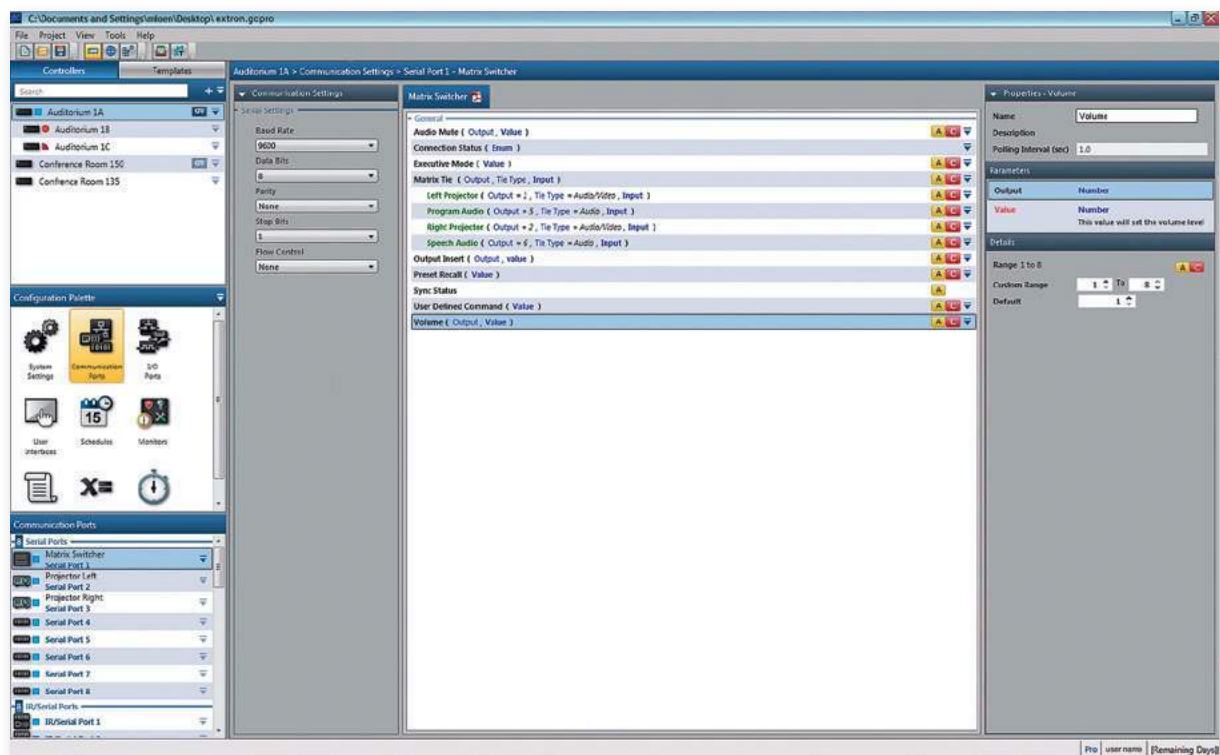


Advanced Control System Configuration

POWERFUL CONFIGURATION SOFTWARE

Global Configurator is Extron's most powerful and versatile control system configuration software. It is ideal for a wide variety of control systems and applications, and helps streamline integration within today's demanding AV control environments. Within this latest version, powerful features, such as conditional logic, variables, and macros provide even greater flexibility for more elaborate control system designs. Global Configurator has two modes. Global Configurator Plus is ideal for smaller scale applications requiring one control processor and one control interface. Global Configurator Professional duplicates all of the powerful features within Global Configurator Plus but is especially suited for applications requiring multiple control processors, enhanced functionality, and advanced configuration.

One of the many features of Global Configurator Professional is the ability to create controller groups. Multiple control processors can be grouped together with the DTP CrossPoint 4K IPCP to function as one. This provides unique control system scalability, and is beneficial when more control ports are needed than offered on a single control processor, especially in larger-scale projects spanning multiple rooms.



GUI DESIGNER

Extron GUI Designer is a software application used for the design, creation, and maintenance of Extron TouchLink Pro user interfaces. Begin with ready-to-use design templates and resource kits, or start from scratch and build your own layout using our comprehensive software. The available design elements are fully customizable and matched carefully to popular AV system applications. In many cases, all of the input sources, display control, and environmental settings are already in place. These resources are fully developed and include complete, detailed documentation.

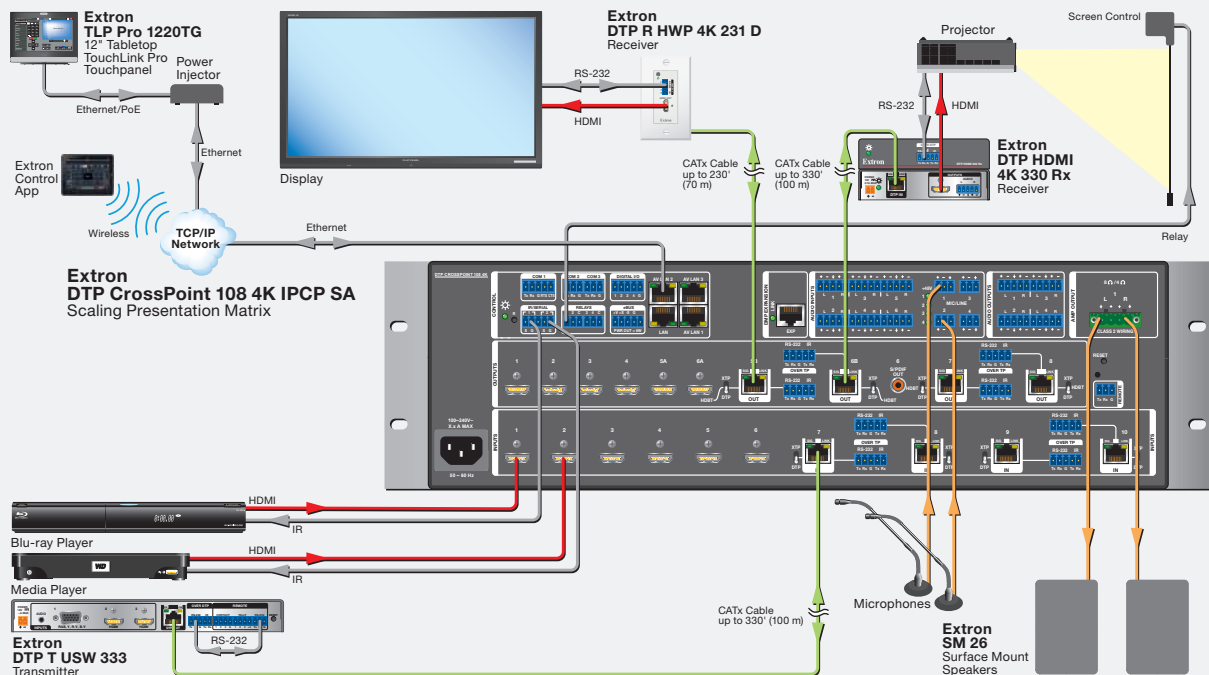


Add Powerful Capabilities with LinkLicense



Extron LinkLicense® is an easy, cost-effective way to add even more powerful capabilities to Extron products. Purchasing a LinkLicense for User Interfaces upgrade for the DTP CrossPoint 4K IPCP will enable people to use a mobile device or computer as the primary control interface for the AV system. With the purchase of a LinkLicense with the DTP CrossPoint 4K IPCP, integrators can create custom user interfaces for tablets or laptops, and duplicate them to additional devices with no per-user fees.

- Purchase LinkLicense and activate it with a single click to take immediate advantage of all the benefits
- Unlock features that add convenience, expand system options, and enhance the capabilities of your Extron products
- No central management of licenses required
- Use a mobile device or computer as the primary control interface in an Extron control system
- Simplify deployment of BYOD – Bring Your Own Device control designs
- Streamlines support by standardizing on a consistent BYOD control approach across your organization
- Operates seamlessly with the Extron Control App



Product Configuration Software

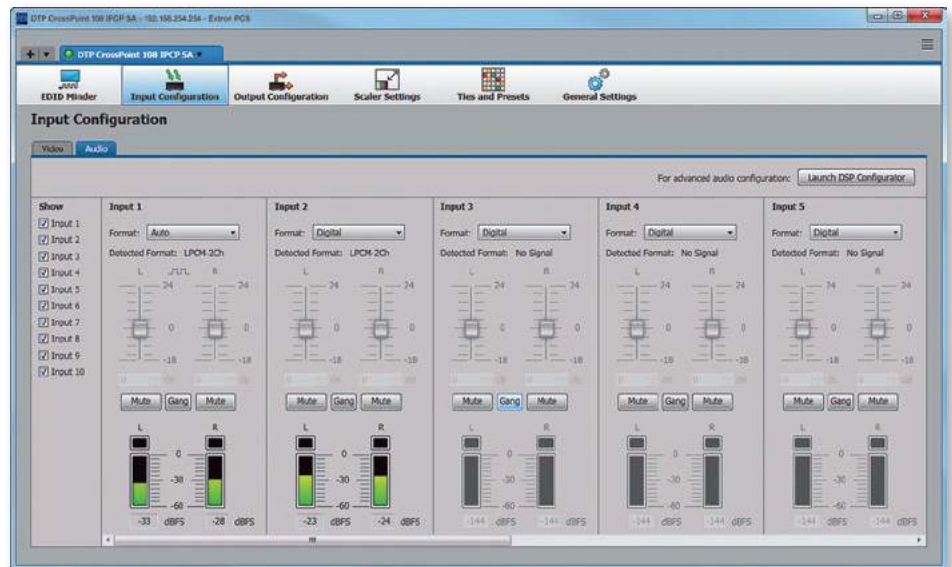
INTUITIVE SYSTEM SETUP AND OPERATION

The DTP CrossPoint 4K Series can be easily configured using Extron's PCS - Product Configuration Software via the front panel USB port or over Ethernet. The user-friendly GUI of the configuration software allows for expedited audio and video setup. You are able to use the DTP CrossPoint 4K out of the box, in just a few steps. Users can view details about the current input and output, such as video signal presence, HDCP status, and audio format. In addition to creating AV matrix switching ties, picture settings are available for the four independently scaled DTP outputs. These include resolution selection, image brightness, contrast, positioning, sizing, and more. PCS offers preset management and provides the ability to configure multiple DTP CrossPoint 4K units in the same session, making it easy for AV integrators to quickly set up systems across different rooms in a facility.

AV integrators and technicians can adjust audio levels in PCS using the graphical sliders available for each input. Real-time meters are available at all inputs and outputs to set proper gain structure for the audio system. For full audio system optimization and fine-tuning, integrators can take advantage of the DSP Configurator Software which is conveniently accessible from PCS.



The intuitive user interface makes it easy to independently apply EDID settings to each input, allowing the user to select from EDID captured from connected output devices, factory default EDID, or custom EDID uploaded to the unit.



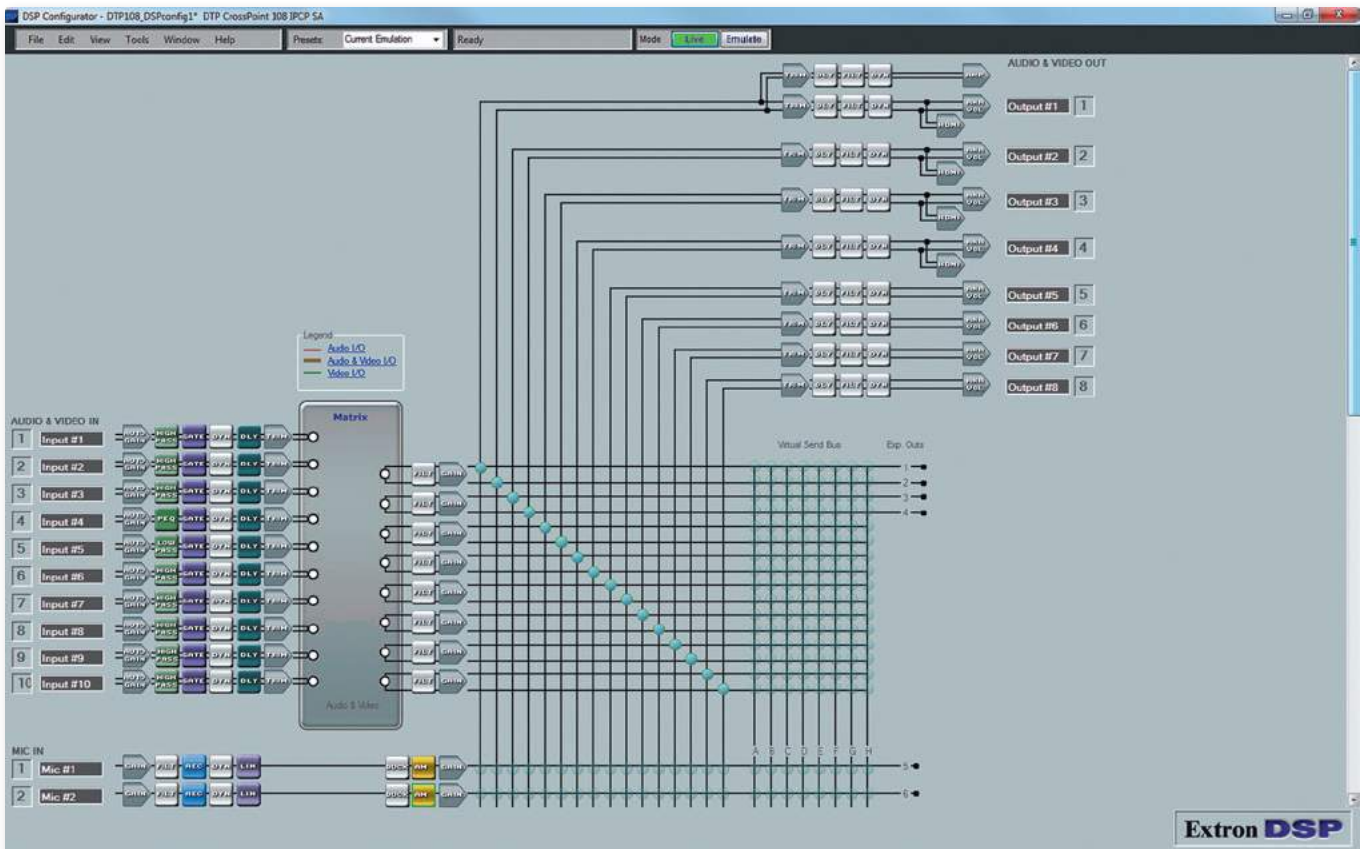
PCS enables expedited audio system setup with convenient audio input format selection, level adjustment, and real-time meters for each input and output.

DSP Configurator Software

EASY-TO-USE DSP CONFIGURATOR SOFTWARE FOR FAST SETUP

The DSP Configurator Software allows AV integrators and technicians to take advantage of the professional grade DSP in the DTP CrossPoint 4K for full audio system design, precise optimization and fine tuning, and proper gain structure. The intuitive Graphical User Environment offers fast access to all digital audio signal processing tools for the matrix switcher, including level control, dynamics, filters, delay, loudness, feedback suppression, and matrix mixing. The DSP Configurator Software is also used to configure and manage AEC and automixing, providing real-time metering for echo return or echo reduction levels. Designers can quickly get a snapshot of the entire audio system, including all processing blocks, AV matrix switching ties, and audio matrix mixing, without having to access multiple windows or menus.

Using the DSP Configurator Software, users can matrix mix any of the mic/line inputs into any of the eight stereo output buses to create finely tuned audio zones for the corresponding outputs. With virtual buses, the inputs can be processed together as a group, before routing into the output buses. These flexible routing and mixing capabilities allow designers to create simple or complex signal management schemes to accommodate a wide variety of system application requirements. For added convenience, the DSP Configurator Software offers an Emulate mode, in addition to a Live mode, so that settings can be configured and saved offline. The configuration file can then be uploaded to the DTP CrossPoint 4K when you are ready to install the unit into a system. Available Building Blocks processor settings and the ability to save presets of any or all DSP parameters provide additional ease when setting up a fully optimized audio system.

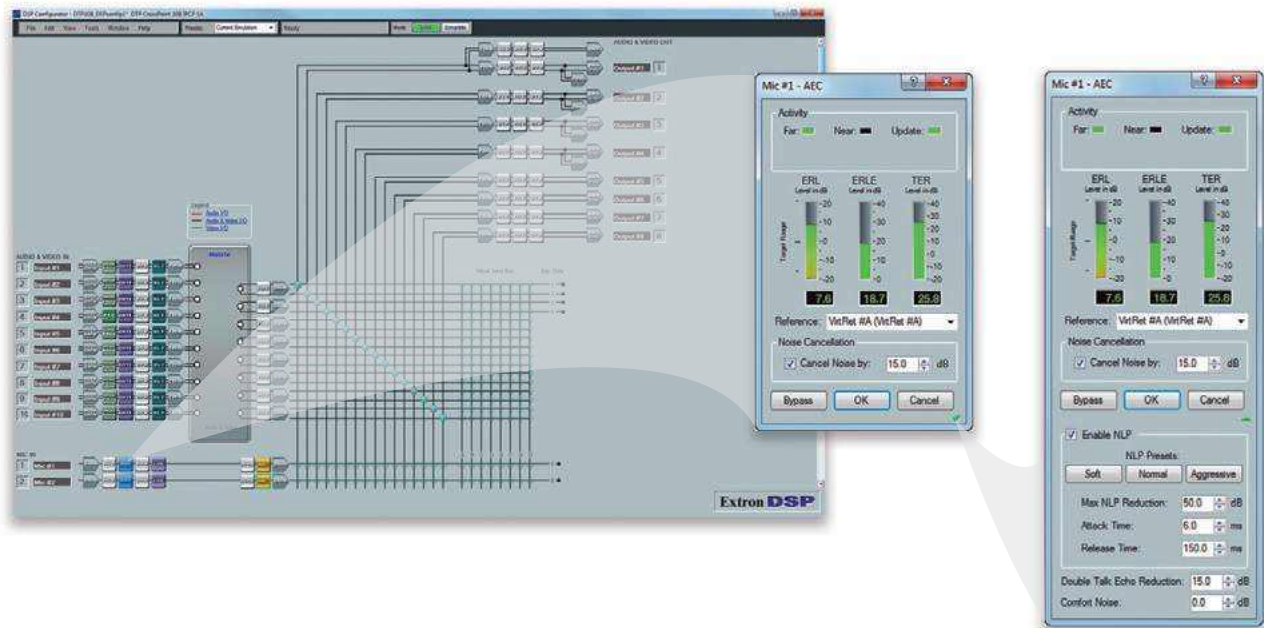


The DSP Configurator Software provides a convenient snapshot of the entire audio system, including all processing blocks, AV matrix switching ties, and audio matrix mixing.

DSP Configurator Software

ACOUSTIC ECHO CANCELLATION

In conferencing applications, hearing the talker's voice returned as an echo is disruptive to natural communication. AEC processing prevents far end audio, as reproduced in the near end, from being returned back to the remote talker as echo, ensuring clear, natural conversations. However, AEC processing can be challenged by conditions such as double-talk, when talkers from both ends are speaking simultaneously, and when near end talkers use wireless microphones. Extron AEC delivers fast echo cancelling optimized for these challenging conditions.



AUTOMIXER

The DTP CrossPoint 4K offers an automixer with gated and gain sharing modes, and includes several advanced features for optimizing microphone management. Multiple trigger protection allows only the microphone with the highest signal to be active while the rest are gated off. The NOM - number of open microphones can be specified to limit the number of active microphones at one time. For a natural sounding mic mix, the automixer also offers a gain sharing mode when the NOM is bypassed, allowing all mics to gate on. A global automixer configuration screen in the DSP Configurator Software enables fast, intuitive management of all microphones and groups in a centralized user interface.



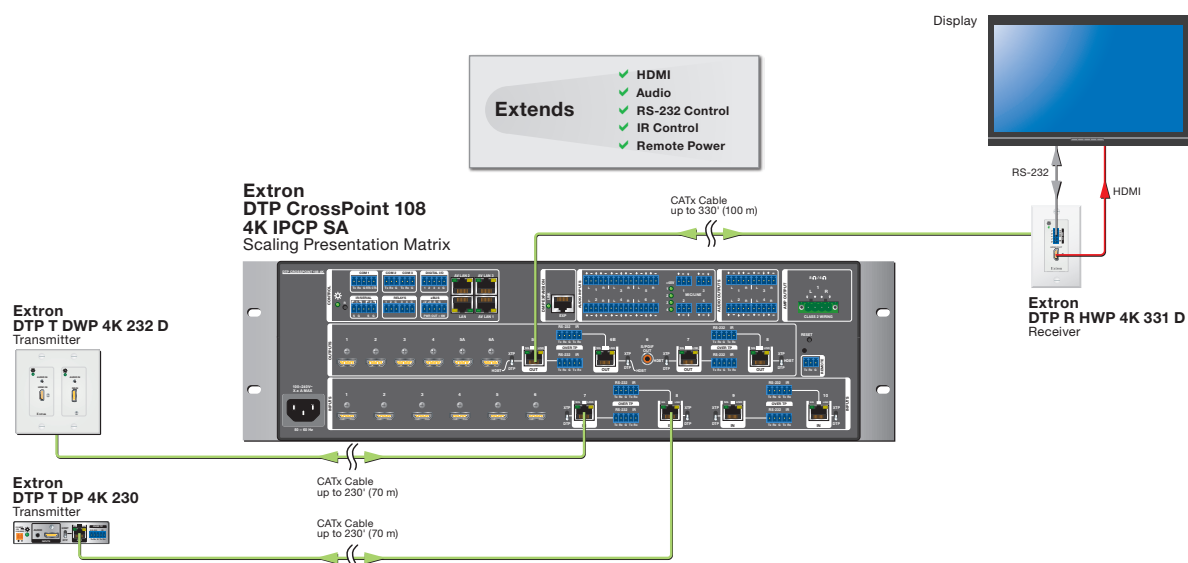
Compatible with all DTP Products



The DTP CrossPoint 4K works in conjunction with all Extron DTP 230 and DTP 330 transmitters and receivers to extend video, audio, and control signals in AV switching applications. When the DTP CrossPoint 4K is paired with a DTP 330 transmitter or receiver, HDMI, DisplayPort, DVI, or VGA, plus control and analog audio signals can be extended up to 330 feet (100 meters). With a DTP 230 endpoint, signals can be extended up to 230 feet (70 meters). The ability to extend these signals and provide remote power to select DTP endpoints with just one shielded CATx cable greatly streamlines system designs and installation.

Designed for rack mount and architectural applications, the DTP transmitters and receivers provide convenient connection points at remote source and display locations. Decorator-style models are available for placement in walls, lecterns, floor boxes, or behind flat-panel displays. Compact, low-profile versions can be discreetly installed beneath tables, in lecterns, above ceiling-mounted projectors, or behind flat-panel displays.

DTP transmitters and receivers are HDCP compliant and support computer and video resolutions up to 2560x1600, including 1080p/60 and 2K. Single input transmitters and receivers, as well as select multi-input transmitters, also support 4K resolutions. In addition, DDC communication of EDID and HDCP is continuously maintained between a source and display, ensuring direct compatibility and optimal signal transmission between devices. Multi-input transmitter models allow convenient sub-switching at a wall location, in a lectern, or under a conference room table. In addition, the multi-input transmitters offer auto-switching between inputs, plus contact closure and RS-232 control, for simplified operation. DTP 230 and DTP 330 transmitters also accept direct analog stereo audio connections from Blu-ray Disc players, laptops, or other devices for simultaneous transmission over the shielded CATx cable to the DTP CrossPoint 4K, eliminating the need for separate cable runs.



DTP2 Products

DTP
SYSTEMS



18 Gbps
4K/60 4:4:4



The Next Generation of DTP

DTP2 products build upon the extensive DTP platform to reach new heights in professional AV integration. They incorporate advanced features and functions to let you create the sophisticated, yet simple to use systems that customers demand.

Advanced 18 Gbps Performance

All DTP2 products accommodate the full 18 Gbps data rate of HDMI 2.0b and support video signals up to 4K/60 with 4:4:4 chroma sampling. These HDCP 2.3 compliant products can also be used for distribution of 4K HDR. All extend video, audio, and control up to 330 feet (100 meters) at every video resolution.

Designed to Simplify Integration

DTP2 products add unique capabilities to enable innovative professional AV systems.

- Analog audio inputs on all DTP2 products support audio embedding
- Audio de-embedding supported on analog audio outputs of all DTP2 products
- DTP2 T 212 transmitters feature an independently assignable HDMI output for local monitoring in addition to a long distance DTP2 output
- DTP2 R 212 receivers have a local HDMI input to support BYOD in collaboration spaces and an integrated audio power amplifier for premium sound quality

Compatibility

Even as they offer all-new performance and capability, DTP2 products retain backward compatibility with existing DTP products. Any DTP or DTP2 transmit port can be connected to any DTP or DTP2 receive port to extend video, audio, and control signals. This maintains the simple format conversion functionality of DTP Systems and allows use of unique DTP2 product features. While DTP and DTP2 products can be intermixed, DTP2 transmitters and DTP2 receivers are necessary to support remote power and transmission of signals with data rates above 10.2 Gbps.

DTP2 Products



DTP2 T 211

HDMI 4K/60 DTP2 Transmitter with Audio Embedding

- Transmits HDMI plus control and analog audio up to 330 feet (100 meters) over a shielded CATx cable
- Supports computer and video resolutions up to 4K/60 @ 4:4:4
- Analog stereo audio embedding
- Supported HDMI 2.0b specification features include data rates up to 18 Gbps, HDR, Deep Color up to 12-bit, 3D, and HD lossless audio formats
- Support for HDR – High Dynamic Range video
- HDCP 2.3 compliant
- Remote power capability

DTP2 R 211

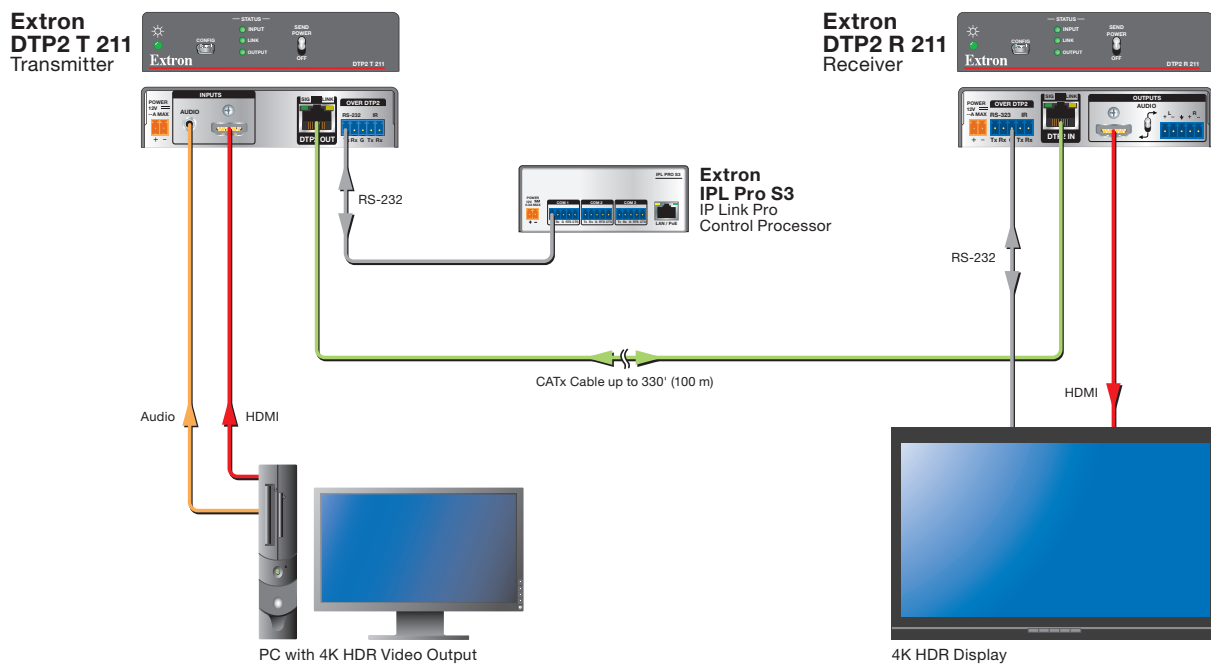
HDMI 4K/60 DTP2 Receiver with Audio De-Embedding

- Receives HDMI plus control and analog audio up to 330 feet (100 meters) over a shielded CATx cable
- Supports computer and video resolutions up to 4K/60 @ 4:4:4
- Stereo audio de-embedding
- Supported HDMI 2.0b specification features include data rates up to 18 Gbps, HDR, Deep Color up to 12-bit, 3D, and HD lossless audio formats
- Support for HDR – High Dynamic Range video
- HDCP 2.3 compliant
- Remote power capability

Model	Version Description	Part Number	Model	Version Description	Part Number
DTP2 T 211	HDMI 4K/60 Tx – 330 feet (100 m)	60-1631-52	DTP2 R 211	HDMI 4K/60 Rx – 330 feet (100 m)	60-1631-53

APPLICATION

4K HDR AV and control signal extension up to 330 feet (100 meters)





DTP2 R 212



DTP2 R 212 SA

DTP2 R 212

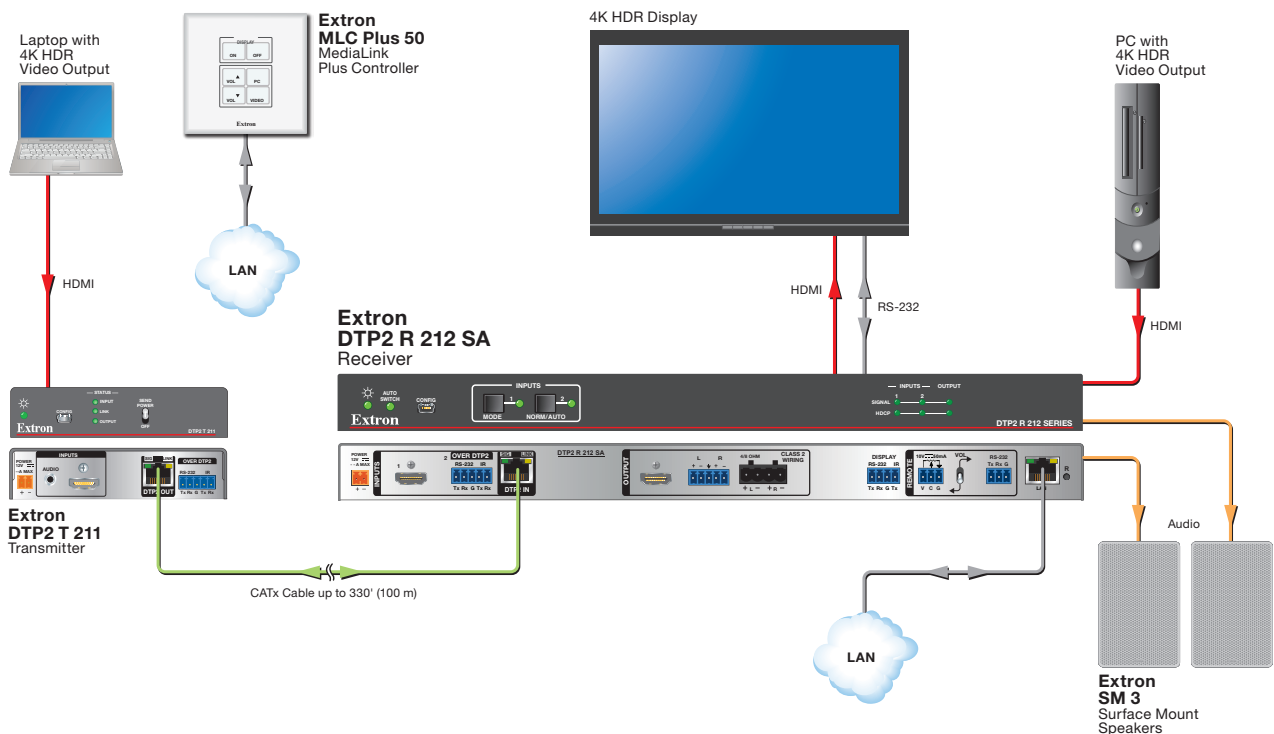
HDMI 4K/60 DTP2 Receiver and Switcher with Audio De-Embedding

- Receives HDMI plus control and analog audio up to 330 feet (100 meters) over a shielded CATx cable
- One DTP2 and one HDMI input
- Auto-switching between inputs
- Supports computer and video resolutions up to 4K/60 @ 4:4:4
- Stereo audio de-embedding
- Supported HDMI 2.0b specification features include data rates up to 18 Gbps, HDR, Deep Color up to 12-bit, 3D, HD lossless audio formats, and CEC pass-through
- HDCP 2.3 compliant
- Support for HDR – High Dynamic Range
- DTP2 R 212 standard model features remote power capability
- DTP2 R 212 SA model features energy efficient Class D stereo amplifier: 2 x 15 watts @ 4 ohms; 2 x 8 watts @ 8 ohm

Model	Version Description	Part Number
DTP2 R 212	HDMI 4K/60 Rx Switcher - 330 feet (100 m)	60-1588-52
DTP2 R 212 SA	HDMI 4K/60 Rx Switcher w/ Amp - 330 feet (100 m)	60-1588-53

APPLICATION

Collaboration solution featuring 4K HDR and audio amplification



DTP2 Products



DTP2 T 212

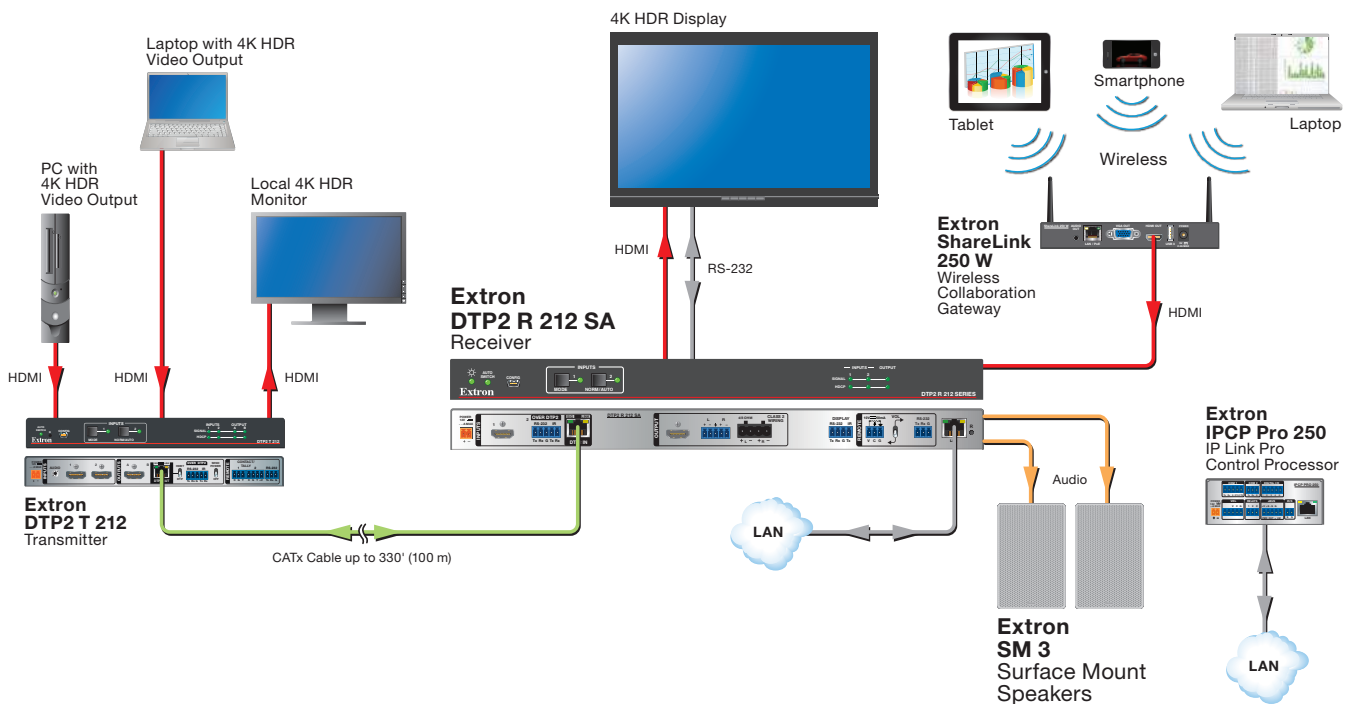
Two Input 4K/60 HDMI Switcher with Integrated DTP2 Transmitter and HDMI Output

- Transmits HDMI plus control and analog audio up to 330 feet (100 meters) over a shielded CATx cable
- Two HDMI inputs
- DTP2 and HDMI outputs
- Supports computer and video resolutions up to 4K/60 @ 4:4:4
- Auto-switching between inputs
- Analog stereo audio embedding
- Supported HDMI 2.0b specification features include data rates up to 18 Gbps, HDR, Deep Color up to 12-bit, 3D, HD lossless audio formats, and CEC pass-through
- HDCP 2.3 compliant
- Remote power capability
- Support for HDR – High Dynamic Range video

Model	Version Description	Part Number
DTP2 T 212	Two Input 4K/60 HDMI Switcher - 330 feet (100 m)	60-1587-52

APPLICATION

4K HDR collaboration solution featuring wireless connectivity and audio amplification



DTP Transmitters

Extron DTP twisted pair transmitters are HDCP compliant and enable reliable digital transmission of video, audio, and bidirectional control signals up to 230 feet (70 meters) or 330 feet (100 meters) over a shielded twisted pair cable. DTP transmitters can also be remotely powered by a DTP-enabled product over the same shielded CATx cable. Designed for rack mount and architectural applications, the DTP transmitters provide convenient connection points for local and remote source locations. These transmitters work in conjunction with DTP receivers and DTP-enabled products to extend video, audio, and control over a shielded CATx cable to destinations within an Extron DTP System.



DTP HDMI 4K 330 Tx

DTP HDMI 4K 230 Tx and DTP HDMI 4K 330 Tx

DTP Transmitter for HDMI

- Inputs: HDMI, 3.5 mm stereo mini jack for audio pass-through
- Output: One DTP twisted pair output
- Supports computer and video resolutions up to 4K

Model	Version Description	Part Number
DTP HDMI 4K 230 Tx	HDMI Tx - 230 feet (70 m)	60-1271-12
DTP HDMI 4K 330 Tx	HDMI Tx - 330 feet (100 m)	60-1331-12



DTP T HD2 4K 330

DTP T HD2 4K 230 and DTP T HD2 4K 330

DTP Transmitter for HDMI with Input Loop-Through

- Inputs: HDMI with buffered input loop-through
- Output: One DTP twisted pair output
- Supports computer and video resolutions up to 4K
- Buffered HDMI input loop-through
- DTP output is compatible with HDBaseT-enabled devices

Model	Version Description	Part Number
DTP T HD2 4K 230	HDMI Tx - 230 feet (70 m)	60-1491-12
DTP T HD2 4K 330	HDMI Tx - 330 feet (100 m)	60-1491-52



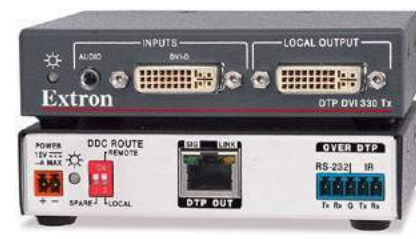
DTP T DP 4K 330

DTP T DP 4K 230 and DTP T DP 4K 330

DTP Transmitter for DisplayPort

- Inputs: One DisplayPort, 3.5 mm stereo mini jack for audio pass-through
- Output: One DTP twisted pair output
- Supports computer and video resolutions up to 4K, including 2560x1600
- DTP output is compatible with HDBaseT-enabled devices

Model	Version Description	Part Number
DTP T DP 4K 230	DisplayPort Tx - 230 feet (70 m)	60-1076-12
DTP T DP 4K 330	DisplayPort Tx - 330 feet (100 m)	60-1076-52



DTP DVI 4K 330 Tx

DTP DVI 4K 230 Tx and DTP DVI 4K 330 Tx

DTP Transmitter for DVI

- Inputs: DVI-D with loop-through, 3.5 mm stereo mini jack for audio pass-through
- Output: One DTP twisted pair output
- Supports computer and video resolutions up to 4K
- Supported HDMI specification features include data rates up to 10.2 Gbps, Deep Color up to 12-bit, 3D, HD lossless audio formats, and CEC pass-through

Model	Version Description	Part Number
DTP DVI 4K 230 Tx	DVI Tx - 230 feet (70 m)	60-1272-12
DTP DVI 4K 330 Tx	DVI Tx - 330 feet (100 m)	60-1272-52

DTP Transmitters



DTP T HWP 4K 331 D



DTP T EU 4K 331

DTP T HWP 4K 231 D and DTP T HWP 4K 331 D

DTP Transmitter for HDMI – Decorator-Style Wallplate

- Inputs: HDMI, 3.5 mm stereo mini jack for audio pass-through
- Output: One DTP twisted pair output
- Supports computer and video resolutions up to 4K
- DTP output is compatible with HDBaseT-enabled devices

DTP T EU 4K and DTP T MK 4K

DTP Transmitters for EU and MK Electrical Junction Boxes

- Input: one HDMI
- Output: One DTP twisted pair output
- Supports computer and video resolutions up to 4K
- DTP output is compatible with HDBaseT-enabled products
- Supported HDMI specification features include data rates up to 10.2 Gbps, Deep Color up to 12-bit, 3D, HD lossless audio formats, and CEC pass-through

Model	Version Description	Part Number
DTP T HWP 4K 231 D	HDMI Decorator-Style Tx, Black - 230 feet (70 m)	60-1421-12
DTP T HWP 4K 231 D	HDMI Decorator-Style Tx, White - 230 feet (70 m)	60-1421-13
DTP T HWP 4K 331 D	HDMI Decorator-Style Tx, Black - 330 feet (100 m)	60-1421-52
DTP T HWP 4K 331 D	HDMI Decorator-Style Tx, White - 330 feet (100 m)	60-1421-53

Model	Version Description	Part Number
DTP T EU 4K 231	HDMI EU Tx - 230 feet (70 m)	60-1532-12
DTP T EU 4K 331	HDMI EU Tx - 330 feet (100 m)	60-1532-52
DTP T MK 4K 231	HDMI MK Tx - 230 feet (70 m)	60-1533-12
DTP T MK 4K 331	HDMI MK Tx - 330 feet (100 m)	60-1533-52



DTP DVI 4K 230 D Tx

DTP DVI 4K 230 D Tx

DTP Transmitter for DVI – Decorator-Style Wallplate

- Inputs: DVI-D with loop-through, 3.5 mm stereo mini jack for audio pass-through
- Output: One DTP twisted pair output
- Supports computer and video resolutions up to 4K
- DVI input loop-through
- Supported HDMI specification features include data rates up to 10.2 Gbps, Deep Color up to 12-bit, 3D, HD lossless audio formats, and CEC pass-through
- Mounts in an included two-gang decorator-style wallplate

Model	Version Description	Part Number
DTP DVI 4K 230 D Tx	DVI Decorator-Style Tx, Black - 230 feet (70 m)	60-1214-12
DTP DVI 4K 230 D Tx	DVI Decorator-Style Tx, White - 230 feet (70 m)	60-1442-13

DTP Switching Transmitters

Extron DTP switching transmitters provide high performance input switching between multiple source devices for transmission of video, audio, and bidirectional control over a shielded CATx cable to destinations within a DTP System. DTP switching transmitters can also be remotely powered by a DTP-enabled product over the same shielded CATx cable. These transmitters offer convenient features such as automatic switching between inputs and Extron-exclusive EDID Minder technology. DTP switching transmitters are available in a variety of form factors for convenient sub-switching at a wall location, in a lectern, in a floor box, or under a conference room table.



DTP T DWP 4K 332 D



DTP T UWP 332 D

DTP T DWP 4K 232 D and DTP T DWP 4K 332 D

DTP Transmitter for DisplayPort and HDMI with Audio Embedding – Decorator-Style Wallplate

- Inputs: One DisplayPort, one HDMI, two 3.5 mm stereo mini jacks for audio pass-through
- Output: One DTP twisted pair output
- Auto-switching between inputs
- Analog stereo audio embedding

DTP T UWP 232 D and DTP T UWP 332 D

DTP Transmitter for HDMI and VGA with Audio Embedding – Decorator-Style Wallplate

- Inputs: One HDMI, one VGA on 15-pin HD, two 3.5 mm stereo mini jacks for audio
- Output: One DTP twisted pair output
- Auto-switching between inputs
- Analog stereo audio embedding

Model	Version Description	Part Number
DTP T DWP 4K 232 D	DP, HDMI Decorator-Style Tx, Black – 230 feet (70 m)	60-1498-12
DTP T DWP 4K 232 D	DP, HDMI Decorator-Style Tx, White – 230 feet (70 m)	60-1498-13
DTP T DWP 4K 332 D	DP, HDMI Decorator-Style Tx, Black – 330 feet (100 m)	60-1498-52
DTP T DWP 4K 332 D	DP, HDMI Decorator-Style Tx, White – 330 feet (100 m)	60-1498-53

Model	Version Description	Part Number
DTP T UWP 232 D	HDMI, VGA Decorator-Style Tx, Black – 230 feet (70 m)	60-1366-12
DTP T UWP 232 D	HDMI, VGA Decorator-Style Tx, White – 230 feet (70 m)	60-1366-13
DTP T UWP 332 D	HDMI, VGA Decorator-Style Tx, Black – 330 feet (100 m)	60-1366-52
DTP T UWP 332 D	HDMI, VGA Decorator-Style Tx, White – 330 feet (100 m)	60-1366-53



DTP T HWP 332 D



DTP T FB 332

DTP T HWP 232 D and DTP T HWP 332 D

Two Input DTP Transmitter for HDMI with Audio Embedding – Decorator-Style Wallplate

- Inputs: Two HDMI, two 3.5 mm stereo mini jacks for audio
- Output: One DTP twisted pair output
- Auto-switching between inputs
- Analog stereo audio embedding

DTP T FB 232 and DTP T FB 332

Two Input DTP Transmitter with Audio Embedding for Floor Boxes

- Inputs: One HDMI, one VGA on 15-pin HD, one 3.5 mm stereo mini jack for audio pass-through
- Output: One DTP twisted pair output
- Auto-switching between inputs
- Analog stereo audio embedding

Model	Version Description	Part Number
DTP T HWP 232 D	2 HDMI Decorator-Style Tx, Black - 230 feet (70 m)	60-1365-12
DTP T HWP 232 D	2 HDMI Decorator-Style Tx, White - 230 feet (70 m)	60-1365-13
DTP T HWP 332 D	2 HDMI Decorator-Style Tx, Black - 330 feet (100 m)	60-1365-52
DTP T HWP 332 D	2 HDMI Decorator-Style Tx, White - 330 feet (100 m)	60-1365-53

Model	Version Description	Part Number
DTP T FB 232	Two Input Floor Box Tx - 230 feet (70 m)	60-1568-12
DTP T FB 332	Two Input Floor Box Tx - 330 feet (100 m)	60-1568-52

DTP Switching Transmitters



DTP T EU 332



DTP T MK 332

DTP T EU and DTP T MK

Two Input DTP Transmitter with Audio Embedding for EU and MK Junction Boxes

- Inputs: One HDMI, one VGA on 15-pin HD, two 3.5 mm stereo mini jacks for audio pass-through
- Output: One DTP twisted pair output
- Designed to mount in a standard two-gang EU and MK electrical junction box
- Analog stereo audio embedding

Model	Version Description	Part Number
DTP T EU 232	Two Input EU Tx - 230 feet (70 m)	60-1569-12
DTP T EU 332	Two Input EU Tx - 330 feet (100 m)	60-1569-52
DTP T MK 232	Two Input MK Tx - 230 feet (70 m)	60-1567-12
DTP T MK 332	Two Input MK Tx - 330 feet (100 m)	60-1567-52



DTP T SW4 HD 4K

DTP T SW4 HD 4K

Four Input HDMI Switcher with Integrated DTP Transmitter

- Inputs: Four HDMI
- Output: One DTP twisted pair output
- Auto-switching between inputs
- Supports computer and video resolutions up to 4K

Model	Version Description	Part Number
DTP T SW4 HD 4K	Four Input HDMI Switcher with DTP Tx	60-1625-01



DTP T USW 333

DTP T USW 233 and DTP T USW 333

Three Input Switcher with Integrated DTP Transmitter and Audio Embedding

- Inputs: Two HDMI, one VGA on 15-pin HD, one 3.5 mm stereo mini jack for audio pass-through
- Output: One DTP twisted pair output
- Auto-switching between inputs
- Analog stereo audio embedding

Model	Version Description	Part Number
DTP T USW 233	2 HDMI, VGA Switcher - 230 feet (70 m)	60-1551-12
DTP T USW 333	2 HDMI, VGA Switcher - 330 feet (100 m)	60-1551-52



DTP T DSW 4K 333

DTP T DSW 4K 233 and DTP T DSW 4K 333

Three Input Multi-Format Switcher with Integrated DTP Transmitter and Audio Embedding

- Inputs: One DisplayPort, one HDMI, one VGA on 15-pin HD, one 3.5 mm stereo mini jack for audio
- Output: One DTP twisted pair output
- Auto-switching between inputs
- Analog stereo audio embedding

Model	Version Description	Part Number
DTP T DSW 4K 233	DisplayPort, HDMI, VGA Switcher - 230 feet (70 m)	60-1487-12
DTP T DSW 4K 333	DisplayPort, HDMI, VGA Switcher - 330 feet (100 m)	60-1487-52

DTP Distribution Amplifiers

Extron distribution amplifiers with DTP twisted pair outputs are engineered for reliable operation in commercial AV applications. They provide digital transmission of video, audio, and bidirectional control signals up to 230 feet (70 meters) or 330 feet (100 meters) over shielded CATx cable to destinations within a DTP System. They are HDCP compliant and include integrator-friendly features such as EDID Minder, Key Minder, remote power capability, and selectable output muting.



DTP HD DA4 4K 330



DTP HD DA8 4K 330

DTP HD DA4 4K 230 and DTP HD DA4 4K 330

Four Output DTP Distribution Amplifier

- Inputs: One HDMI with buffered input loop-through, one 3.5 mm stereo mini jack for audio with loop-through
- Outputs: Four DTP twisted pair outputs
- Supports computer and video resolutions up to 4K
- DTP outputs are compatible with HDBaseT-enabled devices

Model	Version Description	Part Number
DTP HD DA4 4K 230	HDMI to Four Output DTP DA - 230 feet (70 m)	60-1437-01
DTP HD DA4 4K 330	HDMI to Four Output DTP DA - 330 feet (100 m)	60-1437-51

DTP HD DA8 4K 230 and DTP HD DA8 4K 330

Eight Output DTP Distribution Amplifier

- Inputs: One HDMI with buffered input loop-through, one 3.5 mm stereo mini jack for audio with loop-through
- Outputs: Eight DTP twisted pair outputs
- Supports computer and video resolutions up to 4K
- DTP outputs are compatible with HDBaseT-enabled devices

Model	Version Description	Part Number
DTP HD DA8 4K 230	HDMI to Eight Output DTP DA - 230 feet (70 m)	60-1438-01
DTP HD DA8 4K 330	HDMI to Eight Output DTP DA - 330 feet (100 m)	60-1438-51

DTP RECEIVERS

A wide selection of HDCP-compliant DTP twisted pair receivers are also available for extending AV and control signals over a shielded CATx cable to destinations within a DTP System. Designed for rack mount and architectural applications, the DTP receivers provide convenient connection points at remote display locations.



DTP R HWP 4K 331 D



DTP DVI 4K 230 D Rx

DTP R HWP 4K 231 D & DTP R HWP 4K 331 D

DTP Receiver for HDMI – Decorator-Style Wallplate

- Input: One DTP twisted pair input
- Outputs: HDMI, captive screw for audio pass-through
- Supports computer and video resolutions up to 4K

Model	Version Description	Part Number
DTP R HWP 4K 231 D	HDMI Decorator-Style Rx, Black - 230 feet (70 m)	60-1531-12
DTP R HWP 4K 231 D	HDMI Decorator-Style Rx, White - 230 feet (70 m)	60-1531-13
DTP R HWP 4K 331 D	HDMI Decorator-Style Rx, Black - 330 feet (100 m)	60-1531-52
DTP R HWP 4K 331 D	HDMI Decorator-Style Rx, White - 330 feet (100 m)	60-1531-53

DTP DVI 4K 230 D Rx

DTP Receiver for DVI – Decorator-Style Wallplate

- Input: One DTP twisted pair input
- Outputs: DVI-D, 3.5 mm stereo mini jack for audio pass-through
- Supports computer and video resolutions up to 4K

Model	Version Description	Part Number
DTP DVI 4K 230 D Rx	DVI Decorator-Style Rx, Black - 230 feet (70 m)	60-1214-22
DTP DVI 4K 230 D Rx	DVI Decorator-Style Rx, White - 230 feet (70 m)	60-1214-23

DTP Receivers



DTP HDMI 4K 330 Rx

DTP HDMI 4K 230 Rx and DTP HDMI 4K 330 Rx

DTP Receiver for HDMI

- Input: One DTP twisted pair input
- Outputs: HDMI, captive screw connector for audio pass-through
- Supports computer and video resolutions up to 4K

Model	Version Description	Part Number
DTP HDMI 4K 230 Rx	HDMI Rx - 230 feet (70 m)	60-1271-13
DTP HDMI 4K 330 Rx	HDMI Rx - 330 feet (100 m)	60-1331-13



DTP DVI 4K 330 Rx

DTP DVI 4K 230 Rx and DTP DVI 4K 330 Rx

DTP Receiver for DVI

- Input: One DTP twisted pair input
- Outputs: One DVI-D, captive screw connector for audio pass-through
- Supports computer and video resolutions up to 4K

Model	Version Description	Part Number
DTP DVI 4K 230 Rx	DVI Rx - 230 feet (70 m)	60-1272-13
DTP DVI 4K 330 Rx	DVI Rx - 330 feet (100 m)	60-1360-13



DTP R DP 4K 330

DTP R DP 4K 230 and DTP R DP 4K 330

DTP Receiver for DisplayPort

- Input: One DTP twisted pair input
- Outputs: DisplayPort, captive screw connector for audio pass-through
- Supports computer and video resolutions up to 4K, including 2560x1600

Model	Version Description	Part Number
DTP R DP 4K 230	DisplayPort Rx - 230 feet (70 m)	60-1076-13
DTP R DP 4K 330	DisplayPort Rx - 330 feet (100 m)	60-1076-53

DTP Cable & Accessories

Extron XTP DTP 24 shielded twisted pair cable is specifically engineered for optimum signal transmission and signal path reliability in Extron DTP Systems. XTP DTP 24 cable has been independently tested in an HDBaseT™ Alliance Recognized Testing Facility, and verified to meet performance requirements for recommendation by the Alliance. To ensure an end-to-end cable infrastructure with maximum performance and integrity, Extron strongly recommends XTP DTP 24 shielded RJ-45 plugs, punch down jacks, and couplers when installing XTP DTP 24 cable.



XTP DTP 24 Series

Precision-terminated Shielded Twisted Pair Cable for XTP Systems and DTP Systems

- Engineered for superior performance with Extron XTP Systems and DTP Systems
- Provides added protection from outside interference and ensures high quality signal transmission
- Certified to 475 MHz bandwidth at distances up to 330 feet (100 m)

Model	Version Description	Part Number
XTP DTP/3	3' (90 cm)	26-702-03
XTP DTP/6	6' (1.8 m)	26-702-06
XTP DTP/9	9' (2.7 m)	26-702-09
XTP DTP/12	12' (3.6 m)	26-702-12
XTP DTP/25	25' (7.6 m)	26-702-25
XTP DTP/35	35' (10.6 m)	26-702-35
XTP DTP/50	50' (15.2m)	26-702-50
XTP DTP/75	75' (22.8 m)	26-702-75
XTP DTP/100	100' (30.4 m)	26-702-100



XTP DTP 24P Series

Precision-terminated Shielded Twisted Pair Cable for XTP Systems and DTP Systems - Plenum

- Engineered for superior performance with Extron XTP Systems and DTP Systems
- Provides added protection from outside interference and ensures high quality signal transmission
- Certified to 475 MHz bandwidth at distances up to 330 feet (100 m)

Model	Version Description	Part Number
XTP DTP P/3	3' (90 cm)	26-695-03
XTP DTP P/6	6' (1.8 m)	26-695-06
XTP DTP P/9	9' (2.7 m)	26-695-09
XTP DTP P/12	12' (3.6 m)	26-695-12
XTP DTP P/25	25' (7.6 m)	26-695-25
XTP DTP P/35	35' (10.6 m)	26-695-35
XTP DTP P/50	50' (15.2m)	26-695-50
XTP DTP P/75	75' (22.8 m)	26-695-75
XTP DTP P/100	100' (30.4 m)	26-695-100



XTP DTP 24

Shielded Twisted Pair Cable for XTP Systems and DTP Systems

- Engineered for superior performance with Extron XTP Systems and DTP Systems
- Provides added protection from outside interference and ensures high quality signal transmission
- Certified to 475 MHz bandwidth at distances up to 330 feet (100 m)

Model	Version Description	Part Number
XTP DTP 24/1000	Non-Plenum 1000' (305 m) spool	22-236-03
XTP DTP 24P/1000	Plenum 1000' (305 m) spool	22-235-03



XTP DTP 24 Plug

Shielded RJ-45 Plug Kit for Extron XTP DTP 24 Shielded Twisted Pair Cable

- Engineered for use with XTP DTP 24 Shielded Twisted Pair Cable
- Metal strain relief and ground bonding
- Ideal for high EMI/RFI environments
- Conductor alignment guide reduces crosstalk and signal interference

Model	Version Description	Part Number
XTP DTP 24 Plug	XTP DTP 24 Plug, Package of 10	101-005-02

DTP Cable and Accessories



XTP DTP 24 Punch Down Jack

Shielded RJ-45 Punch Down Jack Kit for Extron XTP DTP 24 Shielded Twisted Pair Cable

- Engineered for use with XTP DTP 24 Shielded Twisted Pair Cable
- Keystone style snap-in design for ease of installation in wallplates, AAP™ AV Connectivity Modules, and similar mounting frames
- Metal strain relief and ground bonding

Model	Version Description	Part Number
XTP DTP 24 Jack	XTP DTP 24 Jack, Package of 10	101-023-01



XTP DTP 24 Coupler

Shielded RJ-45 Plug Kit for Extron XTP DTP 24 Shielded Twisted Pair Cable

- Engineered for use with XTP DTP 24 Shielded Twisted Pair Cable
- Fully shielded design reduces noise due to high EMI/RFI interference
- Compatible with TIA/EIA 568A/B wiring standards

Model	Version Description	Part Number
XTP DTP 24 Coupler	XTP DTP 24 Coupler, Package of 10	101-022-02



CTU 45

Universal RJ-45 Termination Tool

- Designed for use with Extron XTP DTP 24 shielded twisted pair cables and XTP DTP 24 Plugs
- Also compatible with other modular, shielded or unshielded RJ-45 plug types
- Compatible with keyed and non-keyed modular plugs

Model	Version Description	Part Number
CTU 45	RJ-45 Crimp Tool	101-024-01



WPD 101C

WPD 100 Series

Pass-Through Wallplates - Decorator-Style for XTP DTP 24 Cable

- Designed for use with Extron XTP DTP 24 Cables, Non-Plenum part #22-236-03 and Plenum part #22-235-03
- Fully shielded design reduces noise due to high EMI/RFI interference
- Metal strain relief and ground bonding

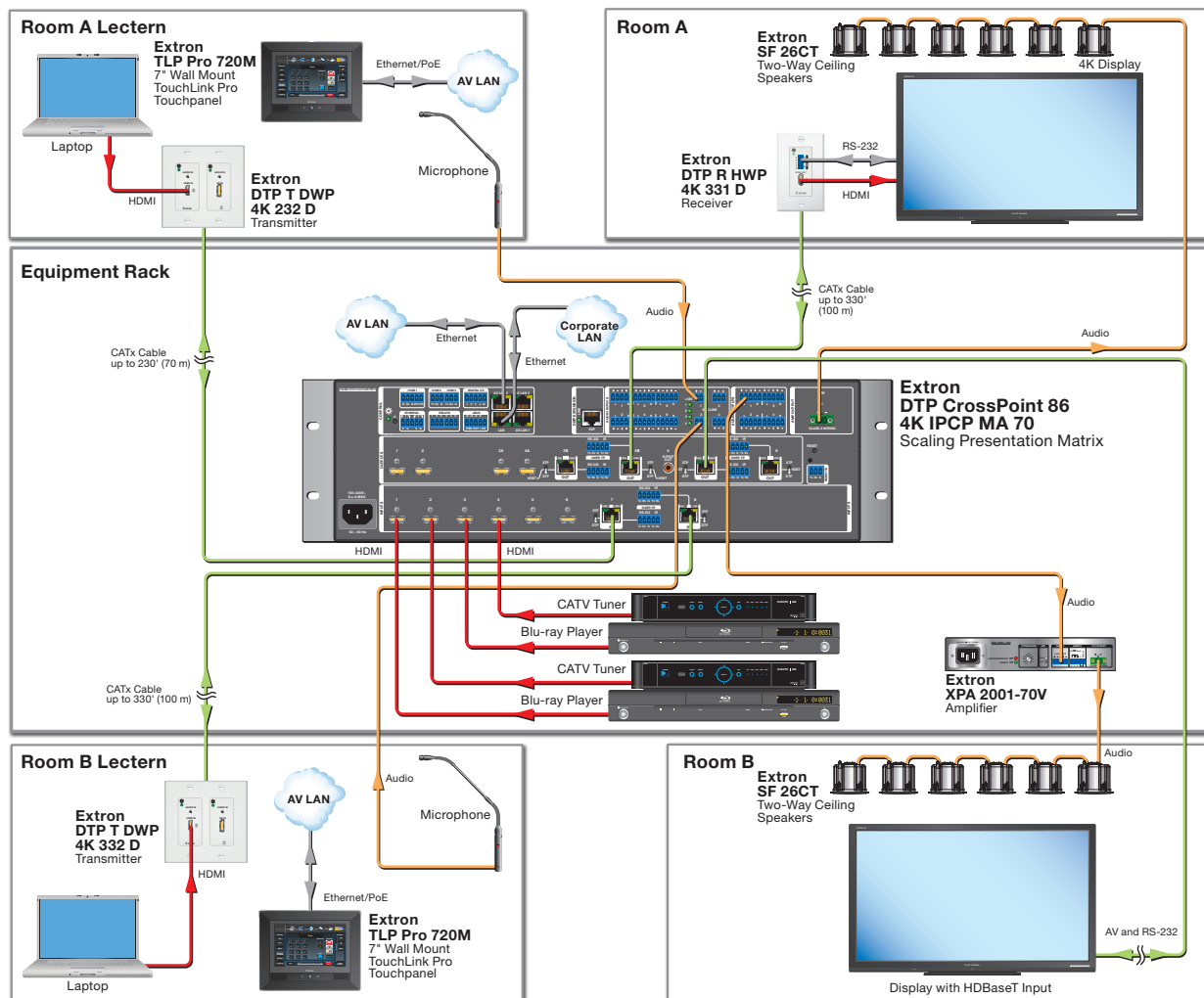
Model	Version Description	Part Number
WPD 101 C	One XTP DTP 24 Coupler	70-1053-03
WPD 102 C	Two XTP DTP 24 Couplers	70-1055-03
WPD 101 P	One XTP DTP 24 Punch Down Jack	70-1054-03
WPD 102 P	Two XTP DTP 24 Punch Down Jacks	70-1056-03

Application

DIVISIBLE ROOM

Many divisible room applications require an AV system that keeps the AV resources of two rooms exclusive to each other when the rooms are used for separate meetings, and supports sharing AV when both sections are combined into a single room. The DTP CrossPoint 86 4K provides highly reliable matrix switching and distribution to accommodate either room configuration. The independent outputs on the DTP CrossPoint 86 4K provide users with the flexibility to view a separate source at each room's display. Users can also view the same signal at both displays when the rooms are tied together. Video content can be viewed at 4K resolution on a compatible display that is connected to one of the matrix switcher's DTP outputs via a DTP receiver. Each DTP output can also be configured for viewing content on an HDBaseT-enabled display. The DTP transmission capabilities of the DTP CrossPoint 86 4K are ideal for reaching sources at the lectern, and the wall mounted displays.

Serving as the central component for full audio system integration, the DTP CrossPoint 86 4K IPCP MA 70 features powerful DSP to support distributed audio systems that can function independently or together, depending on room configuration. The internal DSP provides audio signal switching and processing for each of the source inputs and room microphones. The DTP CrossPoint 86 4K IPCP MA 70 includes an integrated 100 watt mono amplifier that can feed a 70 volt speaker system to provide ample sound reinforcement. As an additional integration convenience, source selection, transport control for a Blu-ray player and CATV tuner, and audio system control are easily accessible with TouchLink Pro touchpanels that are connected to the matrix switcher's built-in control processor. This allows AV network control to be dedicated to an AV LAN for enhanced security and convenient management.

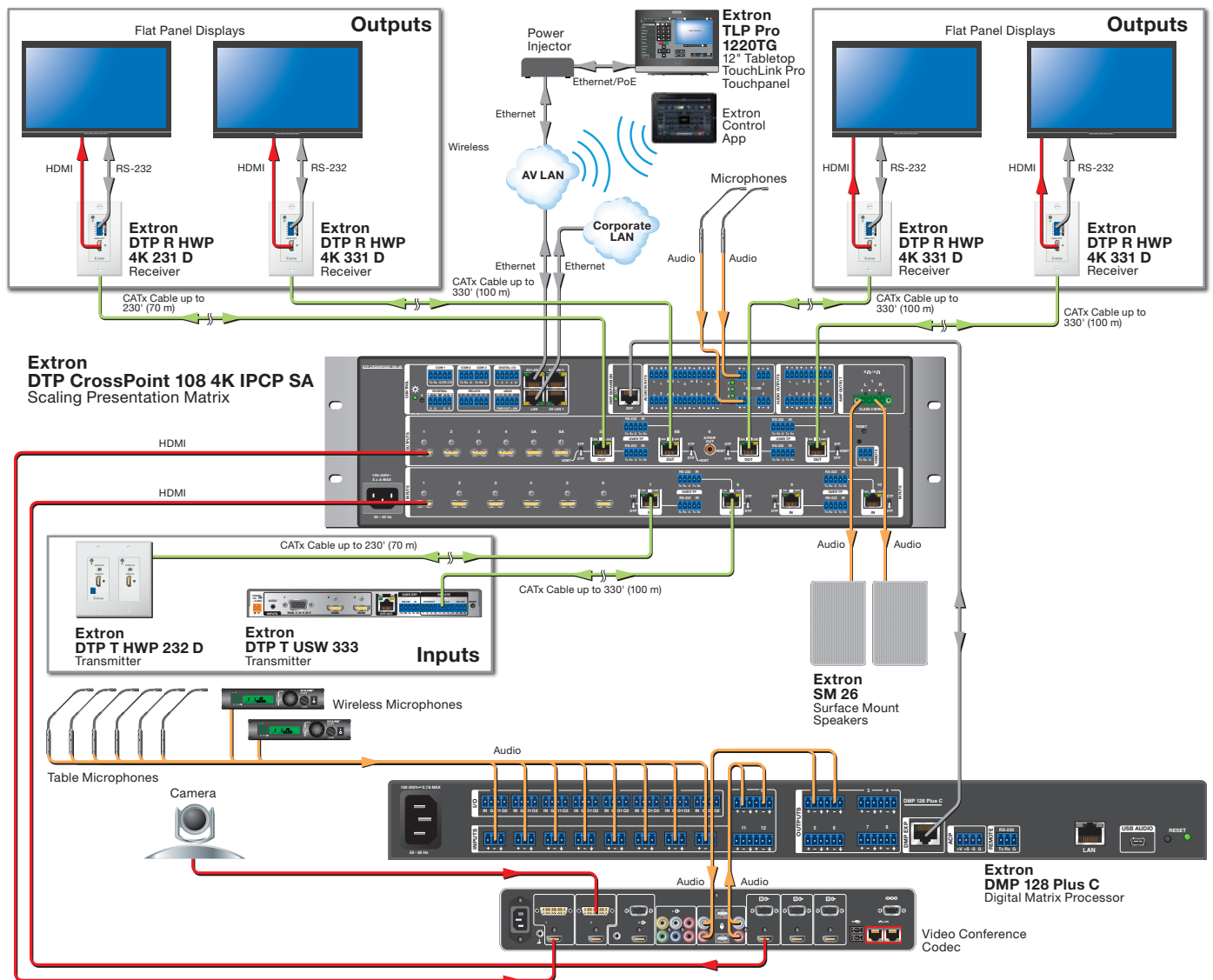


Application

INTEGRATED AEC AND AUDIO SYSTEM EXPANSION FOR SCALABILITY

The DTP CrossPoint 108 4K enables complete audio system integration in one box. It accepts mic/line inputs, analog stereo inputs, additional analog stereo inputs from DTP transmitters, and HDMI embedded audio. The comprehensive selection of outputs includes analog stereo, S/PDIF digital audio, HDMI embedded audio, stereo outputs transmitted to DTP receivers, and amplified mono or stereo audio. The matrix switcher features Extron 64-bit ProDSP technology with fully configurable EQ, filters, dynamics, delay, ducking, feedback suppression, mic/line matrix mixing options, and much more. It also includes AEC - acoustic echo cancellation and automixing for conferencing applications.

The DTP CrossPoint 108 4K is easily scalable for integrating large system applications with numerous microphones or audio destinations. An Extron-exclusive audio expansion port is provided for linking the internal DSP of the DTP CrossPoint 108 4K to an Extron DMP 128 Plus ProDSP audio matrix processor. This allows audio channels to be exchanged between the two audio processors, with the DMP 128 Plus providing an additional 12 input channels and eight output channels. Several DMP 128 Plus models are available, including the DMP 128 Plus C with eight channels of AEC processing for additional microphones. Even greater system scalability is possible when linked to a DMP 128 Plus AT processor on a Dante network.



Specifications

TRUE 4K SPECIFICATION

Max 4K Capabilities		
Resolution and Refresh Rate	Chroma Sampling	Max Bit Depth per Color
4096 x 2160 at 30 Hz 3840 x 2160 at 30 Hz	4:4:4	8 bit
4096 x 2160 at 60 Hz 3840 x 2160 at 60 Hz	4:2:0	8 bit

Frame rate ¹	24, 25, 30, 50, or 60 fps
Chroma sampling ¹	4:4:4, 4:2:2, or 4:2:0
Color bit depth ¹	8 bits per color
Signal type	HDMI 1.4, HDCP 1.4
Max. video data rate	10.2 Gbps (3.4 Gbps per color)
NOTE: ¹ Subject to the maximum data rate limit. Use our calculator (http://www.extron.com/product/videotools.aspx) to determine video parameters supported by this data rate.	

VIDEO

Routing	
DTP CrossPoint 108 4K	10 x 8 matrix
DTP CrossPoint 86 4K	8 x 6 matrix
DTP CrossPoint 84 4K	8 x 4 matrix
DTP CrossPoint 82 4K	8 x 2 matrix

VIDEO INPUT

Number/signal type	
DTP CrossPoint 108 4K	6 HDMI digital video (HDCP compliant) 4 DTP or XTP (configurable)
DTP CrossPoint 86 4K	6 HDMI digital video (HDCP compliant) 2 DTP or XTP (configurable)
DTP CrossPoint 84 4K	6 HDMI digital video (HDCP compliant) 2 DTP or XTP (configurable)
DTP CrossPoint 82 4K	6 HDMI digital video (HDCP compliant) 2 DTP or XTP (configurable)

MATRIX VIDEO OUTPUTS (NON SCALED)

Number/signal type	
DTP CrossPoint 108 4K	4 HDMI digital video (HDCP compliant)
DTP CrossPoint 86 4K	2 HDMI digital video (HDCP compliant)
DTP CrossPoint 84 4K	2 HDMI digital video (HDCP compliant)
DTP CrossPoint 82 4K	0

SCALED TP OUTPUTS

Number/signal type	
DTP CrossPoint 108 4K	4 DTP, XTP, or HDBaseT (configurable) 2 buffered HDMI digital video (HDCP compliant)
DTP CrossPoint 86 4K	4 DTP, XTP, or HDBaseT (configurable) 2 buffered HDMI digital video (HDCP compliant)
DTP CrossPoint 84 4K	2 DTP, XTP, or HDBaseT (configurable) 2 buffered HDMI digital video (HDCP compliant)
DTP CrossPoint 82 4K	2 DTP, XTP, or HDBaseT (configurable) 2 buffered HDMI digital video (HDCP compliant)

Video input

Resolution range	640x480 to 1600x1200 and 1920x1200* 480i, 480p, 576i, 576p, 720p, 1080i, 1080p, and 2K through 4K @ 30Hz *reduced blanking
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Scaled resolutions	640x480 ⁸ , 800x600 ⁸ , 852x480 ⁸ , 1024x768 ⁸ , 1024x852 ⁸ , 1024x1024 ⁸ , 1280x768 ⁸ , 1280x800 ⁸ , 1280x1024 ⁸ , 1360x765 ⁸ , 1360x768 ⁸ , 1365x768 ⁸ , 1366x768 ⁸ , 1365x1024 ⁸ , 1400x1050 ⁸ , 1440x900 ⁸ , 1600x900 ⁸ , 1600x1200 ⁸ , 1680x1050 ⁸ , 1920x1200 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} ,
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2048x1080^{1,2,3,4,5,6,7,8}, 1920x2160^{1,2,3,4,5,6,7,8}, 1920x2400^{3,5,8}, 2048x1200⁸, 2048x1536⁸, 2048x2160^{1,2,3,4,5,6,7,8}, 2048x2400^{2,3,5,8}, 2560x1080⁸, 2560x1440⁸, 2560x1600⁸, 3840x2160^{1,2,3,4,5}, 3840x2400⁸, 4096x2160^{1,2,3,4,5}
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

LOGOS

Image file formats	BMP, JPG, PNG, TIFF
Logo effects	Transparency, RGB key, level key, alpha key

SHIELDED TWISTED PAIR INTERCONNECTION

Connectors	Female RJ-45
Signal transmission distance	
Resolutions up to 1920x1200 and 1080p	
DTP 330	Up to 330' (100 m) using shielded twisted pair cable or XTP DTP 24 TP cable
DTP 230	Up to 230' (70 m) using shielded twisted pair cable or XTP DTP 24 TP cable
2560x1600* and 4K @ 30 Hz (*reduced blanking)	
DTP 330	Up to 330' (100 m) using shielded twisted pair cable or XTP DTP 24 TP cable
DTP 230	Up to 130' (40 m) using shielded twisted pair cable or XTP DTP 24 TP 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.	
NOTE: Input and output mode signaling:	
DTP:	HDMI with embedded audio, analog audio, RS-232 and IR, and remote power
XTP:	HDMI with embedded audio plus RS-232 and IR
HDBT:	HDMI with embedded audio plus RS-232 and IR

AUDIO SYSTEM (MIC/LINE INPUT TO LINE OUTPUT)

Frequency response	20 Hz to 20 kHz, ±0.2 dB
THD + Noise	0.01% at 1 kHz nominal level
S/N	105 dB at maximum balanced output (unweighted)

AUDIO

Routing	
DTP CrossPoint 108 4K	10 x 8 stereo switching matrix 4 x 4 microphone mixing matrix
DTP CrossPoint 86 4K	8 x 6 stereo switching matrix 4 x 4 microphone mixing matrix
DTP CrossPoint 84 4K	8 x 4 stereo switching matrix 4 x 4 microphone mixing matrix
DTP CrossPoint 82 4K	8 x 2 stereo switching matrix 4 x 4 microphone mixing matrix

Supported formats – Pass through

HDMI connectors	LPCM up to 7.1/24-bit/192kHz, 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
DTP connectors	De-embedded from HDMI [PCM only] or remote balanced/unbalanced analog

AUDIO INPUT

Connectors	
DTP CrossPoint 108 4K	(6) 3.5 mm captive screw connectors, 5-pole for analog line level inputs 6 female HDMI type A 4 female RJ-45
DTP CrossPoint 86 4K	(6) 3.5 mm captive screw connectors, 5-pole for analog line level inputs 6 female HDMI type A

Specifications

2 female RJ-45 DTP CrossPoint 84 4K	(6) 3.5 mm captive screw connectors, 5-pole for analog line level inputs 6 female HDMI type A 2 female RJ-45
DTP CrossPoint 82 4K	(6) 3.5 mm captive screw connectors, 5-pole for analog line level inputs 6 female HDMI type A 2 female RJ-45
MIC/LINE INPUT	
Number/signal type	4 mono, mic/line, balanced/unbalanced (with phantom power)
DC phantom power	+48 VDC, ±10% (inputs 1-4) switched on or off
AUDIO OUTPUT	
Connectors	
DTP CrossPoint 108 4K	6 female HDMI 4 RJ-45 (4) 3.5 mm captive screw, 5-pole 1 RCA
DTP CrossPoint 86 4K	4 female HDMI 4 RJ-45 (4) 3.5 mm captive screw, 5-pole 1 RCA
DTP CrossPoint 84 4K	4 female HDMI 2 RJ-45 (4) 3.5 mm captive screw, 5-pole 1 RCA
DTP CrossPoint 82 4K	2 female HDMI 2 RJ-45 (2) 3.5 mm captive screw, 5-pole 1 RCA
EXP PORT	
Connectors	1 RJ-45
Inputs	16 channels Rx
Outputs	16 channels Tx
EXP cable	Shielded CAT 6 up to 10 meters
AUDIO OUTPUT	
Power amplifier (DTP CrossPoint 4K IPCP SA and DTP CrossPoint 4K IPCP MA models)	
Number/signal type	
SA models	1 stereo or mono (2 channels total)
MA models	1 mono, 70 V
Connector	
NOTE: This connector accepts wires of 22 AWG to 12 AWG.	
SA models	(1) 5 mm screw lock captive screw connector, 4-pole
MA models	(1) 5 mm screw lock captive screw connector, 2-pole
Load impedance	
SA models	4 ohms minimum
MA models	50 ohms minimum
High pass filter (MA models)	80 Hz, 12 dB/octave roll off
Output power	
SA models	25 watts (rms) per channel, 8 ohms, 1 kHz, 0.1% THD 50 watts per channel, 4 ohms, 1 kHz, 0.1% THD
MA models	100 watts (rms) @ 70 V, 1 kHz, 0.1% THD

Protection	Clip limiting, thermal, short circuit, DC output
Frequency response	
SA models	20 Hz to 20 kHz, +1/3 dB @ 1 watt
MA models	80 Hz to 20 kHz, +1/3 dB @ 1 watt
S/N	>90 dB, 20 Hz to 20 kHz, unweighted
COMMUNICATIONS — SWITCHER	
Serial control port	1 bidirectional RS-232, 3.5 mm captive screw connector, 3-pole (rear panel)
USB control port	1 front panel female USB mini-B
Ethernet control port	1 female RJ-45 connector
CONTROL PROCESSOR — DTP CROSSPOINT 4K IPCP MODELS	
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)	2: 1 LAN, 1 AV LAN
Connectors	
LAN	1 female RJ-45 connector
AV LAN	3 female RJ-45 connectors
Data rate	10/100/1000Base-T, half/full duplex with autodetect
Serial control	
Quantity/type	1 bidirectional RS-232, RS-422, RS-485 (port 1) 2 bidirectional RS-232 (ports 2 and 3)
Digital I/O control	
Quantity/type	4 digital input/output (configurable)
IR/serial control	
Quantity/type	2 programmable: unidirectional RS-232 (±5 V), TTL level (0 to 5 V) infrared (carrier and non-carrier) up to 300 kHz
Relay control	
Quantity/type	4 normally open relays
GENERAL	
Power supply	Internal Input: 100-240 VAC, 50-60 Hz
Enclosure dimensions	
DTP CrossPoint 108 4K, DTP CrossPoint 86 4K	5.25" H x 17.4" W x 16" D (3U high, full rack wide) (13.3 cm H x 43.2 cm W x 40.6 cm D) (Depth excludes connectors and knobs. Width excludes rack ears.)
DTP CrossPoint 84 4K, DTP CrossPoint 82 4K	3.5" H x 17.4" W x 15.3" D (2U high, full rack wide) (8.9 cm H x 43.2 cm W x 38.9 cm D) (Depth excludes connectors and knobs. Width excludes rack ears.)
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

For complete specifications, please go to www.extron.com
Specifications are subject to change without notice.

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SmartRack 9U Low-Profile Switch-Depth Wall-Mount Rack Enclosure Cabinet

MODEL NUMBER: SRW9U



Wall-mount cabinet secures and organizes 9U of 19-inch rack equipment in network closets, classrooms and other locations with limited floor space. Houses network switches and patch panels up to 16.5 inches deep.

Description

The SRW9U SmartRack 9U Low-Profile Switch-Depth Wall-Mount Rack Enclosure Cabinet is designed to house EIA-standard 19-inch rack equipment in network wiring closets, retail locations, classrooms, back offices and other areas with limited floor space where you need equipment to be secure, organized and out of the way. Constructed from heavy-duty steel with a durable black powder-coated finish, the cabinet has a maximum load capacity of 200 lbs (90.7 kgs).

The side panels and front door lock securely to help prevent damage, tampering or theft. The front, top, bottom and removable side panels are vented, which allows air to flow freely and keep equipment cool. The reversible front door can open left or right by rotating the cabinet 180° before mounting. Convenient top and bottom ports allow easy cable routing.

The SRW9U comes fully assembled and ready to mount to the wall, or use Tripp Lite's optional SRCASTER rolling caster kit to make it a mobile rack. Square and 12-24 threaded mounting holes and numbered rack spaces make equipment installation easy. The vertical mounting rails adjust in 7/8-inch increments to accommodate equipment up to 16.5 inches deep, such as network switches and patch panels.

Features

Saves Valuable Workspace

- Perfect for network wiring closets, retail locations, classrooms, back offices and other areas with limited floor space where you need equipment to be secure, organized and out of the way
- Houses EIA-standard 19 in. rack equipment in 9U of space

Highlights

- Maximum load capacity of 200 lbs (90.7 kgs)
- Locking steel cabinet vented at sides, front, top and bottom
- Flow-through ventilation keeps equipment cool
- Secures 9U of 19 in. rack equipment up to 16.5 in. deep
- Mounts to wall or rolls on floor (with optional SRCASTER)

Package Includes

- SRW9U SmartRack 9U Low-Profile Switch-Depth Wall-Mount Rack Enclosure Cabinet
- (12) M6 screws
- (12) M6 cage nuts
- (12) M6 cup washers
- (12) 12-24 screws
- Removable mounting plate
- (3) Mounting plate screws
- (2) Keys
- Owner's manual



- Maximum load capacity of 200 lbs (90.7 kgs)

Keeps Important Equipment Secure

- Side panels and front door lock securely to help prevent damage, tampering or theft
- Vented panels allow generous airflow that keeps equipment cool
- Rotate cabinet 180° before mounting to open reversible front door left or right
- Convenient ports with removable covers allow cable routing through top and bottom

Easy Enclosure and Equipment Installation

- Ships fully assembled for quick installation
- Mounts to wall or rolls on floor with Tripp Lite's optional SRCASTER caster kit
- Wall-mounting holes spaced 16 in. apart for standard wall stud placement
- Vertical mounting rails adjust in 7/8 in. increments to accommodate equipment up to 16.5 in. deep, such as network switches and patch panels
- Rails support square-hole or 12-24 threaded-hole mounting
- Rack spaces numbered for easy reference

Meets Payment Card Industry Standards

- Provides physical equipment and media security required for PCI DSS (Payment Card Industry Data Security Standard) compliance

Specifications

OVERVIEW	
UPC Code	037332160744
Device Compatibility	Patch Panel; Network Switch; UPS
Rack Type	Enclosure
PHYSICAL	
Cable Access Hole Measurement (inches)	9.812 x 2.35 (l x w)
Color	Black
Maximum Device Depth (cm)	41.91
Maximum Device Depth (in.)	16.5
Maximum Device Depth (mm)	419
Minimum Device Depth (cm)	7.62
Minimum Device Depth (in.)	3
Minimum Device Depth (mm)	76



Tripp Lite
1111 W. 35th Street
Chicago, IL 60609 USA
Telephone: 773.869.1234
www.tripplite.com

Rack Height	9U
Shipping Dimensions (hwd / cm)	57.40 x 52.32 x 67.06
Shipping Dimensions (hwd / in.)	22.60 x 20.60 x 26.40
Shipping Weight (kg)	17.69
Shipping Weight (lbs.)	39.00
Unit Dimensions (hwd / cm)	50.5 x 60.02 x 45.16
Unit Dimensions (hwd / in.)	19.88 x 23.63 x 17.78
Unit Weight (kg)	15.88
Unit Weight (lbs.)	35
Weight Capacity - Stationary (kg)	91
Weight Capacity - Stationary (lbs.)	200
Rack Depth	Shallow
Number of Vertical Mounting Rails	2
SPECIAL FEATURES	
Grounding Lug	Front and Back door frames
STANDARDS & COMPLIANCE	
Certifications	UL/CSA 60950-1, EIA-310-E; IP20 Protection Rating
Approvals	RoHS
WARRANTY	
Product Warranty Period (Worldwide)	5-year limited warranty

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Alternate #1

SMP 111SINGLE CHANNEL H.264
STREAMING MEDIA PROCESSOR

Multipurpose Adaptable Platform
for Recording and Streaming
AV Presentations

- ▶ Process live, high resolution HDMI video and audio with metadata
- ▶ Stream and record simultaneously
- ▶ High quality scaling with aspect ratio control, size, and position
- ▶ Produces MP4 media files that are compatible with virtually any media player
- ▶ Automatic file uploading
- ▶ RTMP streaming protocol supports popular third party hosting services



Extron

Introduction

The convergence of AV and IT continues to create new opportunities for AV integrators. The scale, flexibility, and reach of IP networks offer an incredible opportunity to extend live presentations to individuals unable to attend an event due to time, distance, or other physical barriers. Streaming and recording are effective ways that organizations can use to communicate and educate, by capturing the presentation experience and delivering that same information and insight to viewers anywhere.

Streaming Solutions Require Flexibility

Any organization with a network and an AV presentation system can enjoy the benefits of streaming. Today's streaming systems must be compatible with high resolution source signals, including high definition cameras. They must reliably present video that enhances a user's insight into the live experience. Streaming products must also conform to different network policies and operating requirements by supporting multiple transport protocols and session management methods. Additionally, the ability to record at a high resolution while streaming at a lower resolution or bit rate addresses network bandwidth requirements.

Recording Requirements for Presentations

To efficiently produce, manage, and distribute recorded presentations, a variety of requirements must be met. Effective systems record media that can be easily processed and transferred to a variety of storage formats. The recorded media must be efficiently processed with rights-managed user access, operating within an organization's standard network services and conforming

to their IT policies. Lastly, the media must be published in a format that can be easily delivered and consumed.

Extron Streaming and Recording

The SMP 111 is a high performance recording and streaming processor for capturing and distributing AV sources and presentations as live streaming and recorded media. The SMP 111 accepts an HDMI signal with embedded audio and an analog audio signal. Extron high performance scaling and flexible signal processing enable superior display of content of varying resolutions from computers and HDTV sources. The SMP 111 supports extensive streaming capabilities. It can record and stream simultaneously, with independent resolutions and bit rates using a range of transport protocols and session management options. Recording with the SMP 111 provides easy capture of live HDMI signals to internal flash storage and external USB drives. Requiring no licensing fees, the SMP 111 is a compact, flexible, and cost-effective solution for streaming and recording content.

A Cost-Effective Solution

Comprehensive control and configuration features make the SMP 111 integration-friendly and easy to control and operate. Requiring no recurring licensing fees, it has a low cost of ownership, making it a cost-effective solution for delivering presentations to a larger audience.

Many Applications Benefit from Streaming and Recording

The SMP 111 is ideal for applications that require simple recording of a single video signal with audio and metadata. It provides MP4 or M4V file format recordings integrated with metadata, chapter and event marking. It is also ideal for applications that require live streaming to remote participants, hosting services, or local confidence viewing. The SMP 111 can be adapted to many applications, documenting virtually any meeting, conference, or activity that uses an AV source as a reference. The SMP 111 is ideal for use in corporate, education, government, and rental and staging applications.



Presentation Recording & Streaming

Signal Processing Simplifies Setup and Operation

Like many other Extron AV products, the SMP 111 offers comprehensive digital and analog signal processing features that make it easy to connect with various presentation sources. EDID Minder® automatically manages EDID communications to ensure sources power up properly and a reliable output signal is provided. Auto-Image™ automatically adjusts source sizing, centering, and filtering and Auto Input Memory saves the size, position, and picture settings of incoming signals, ensuring that sources present properly. Comprehensive picture, aspect ratio, size, and position controls provide quality images.

Highly Adaptable FlexOS Platform

FlexOS is Extron's flexible, embedded operating system that manages and controls additional functions within the SMP 111. FlexOS makes the SMP 111 easily-adaptable to new requirements over time for a multitude of streaming, recording, processing, control, and presentation applications.

Flexible System Control Options

Many different control capabilities are available from the SMP 111. The front panel buttons and LED indicators provide a simple interface to manage, monitor, and control the unit for a wide variety of applications. The SMP 111 also features an RS-232 port and an Ethernet port to interface with remote devices and control systems.

A mini USB control port is available on the front panel of the SMP 111 to support direct configuration from a PC. Alternatively, a USB port on the rear of the unit is available for connection to a keyboard and mouse, to serve as the interface for the embedded web browser. The browser can be viewed from the HDMI output connection and serves as a convenient method to access network setup and control.

Powerful Tools for Monitoring and Management

Simple Network Management Protocol – SNMP traps, email, and Simple Mail Transfer Protocol – SMTP can deliver messages to support staff or monitoring systems when signal errors or encrypted sources are detected, or when storage nears capacity, allowing for proactive service. Operational system data is logged continually, detailing recording sessions, storage directory use, file names, metadata, and storage capacity. This information provides valuable data for evaluating usage patterns and operating concerns.

Recorded Media Enhanced with Data

The SMP 111 produces an MP4 or M4V container format compatible with virtually any media player. It records at resolutions

from 512x288 through 1920x1080, including 480p, 720p, or 1080p, supporting a variety of storage, and playback requirements. Recordings can include metadata such as: Title, Creator, Subject, Description, Publisher, Contributor, and Date, making searching, indexing, and managing multiple recordings more efficient. Chapter marks can be set during recording sessions, providing highly efficient searching and scanning during file playback. JPEG thumbnail images are captured periodically and for specially marked events, and the thumbnail image size is selectable. Extron recording packages include thumbnail images, chapter marks, metadata, and the recorded video and audio. The combination of a high resolution AV signal, on-screen data, metadata, thumbnail images, and chapter marks make navigation of SMP 111 recordings highly efficient and effective. MP4 recordings can be saved to internal flash storage, a USB storage device, or a defined network storage directory. USB storage devices connect easily to the SMP 111 from the front or rear panel.

Content Management and Publishing Options

The SMP 111 produces MP4 or M4V media files with chapter marks, JPEG thumbnail images, and metadata supporting a data-rich playback experience from content management systems. It can be configured to integrate directly with the Opencast Video Solution. It also integrates with the Kaltura Hosted Video Platform. SMP 111 AV recordings can be automatically transferred to network shares or FTP servers for a simplified workflow. Recording packages may also be manually uploaded to third party content management systems such as iTunes-U, Blackboard LMS, SharePoint, CaptionSync, YouTube, Moodle, and more.

Extensive Streaming Capabilities

The SMP 111 offers flexible encoder settings to allow for high resolution, high bit-rate recordings while also offering the ability to stream at a lower resolution and bit-rate to reduce network impact. Bit rates can range from 200 Kbps to 10 Mbps for video and 80 Kbps to 320 Kbps for audio. Push and pull streaming sessions are supported, offering a range of streaming transport protocols and session management methods. These capabilities provide flexibility to stream from the SMP 111 to a variety of devices in different system configurations and network conditions.

Features

Process live, high resolution HDMI video and audio with metadata

Combines high quality video and audio with supporting data for cataloging and indexing to produce an enhanced presentation experience.

Stream and record simultaneously

Document presentations, view confidence streaming, or extend live media to overflow destinations without the need for a computer or additional equipment.

High quality scaling with aspect ratio control, size, and position

Configurable aspect ratio control allows selection of FILL, FOLLOW, or FIT modes as well as zoom and position settings.

Produces MP4 media files that are compatible with virtually any media player

Use recordings produced by the SMP 111 directly with any software media player, computer or mobile device.

Automatic file uploading

Manage the transfer of recordings automatically using defined workflows to Hosting Services, FTP, Secure FTP, and CIFS network shares.

RTMP streaming protocol supports popular third party hosting services

Supports RTMP push streaming with stream name or key, and user authentication for services like YouTube Live, Wowza Streaming Cloud, Twitch, and more.



Supports source resolutions up to 1920x1200, including HDTV 1080p

The SMP 111 supports a wide range of input resolutions, from standard definition up to the resolutions commonly used for computer video and HDTV.

Stream at resolutions from 512x288 to 1080p/30

High resolutions deliver superior quality images for overflow applications and lower resolutions are more efficient for streaming distribution and confidence viewing applications.

Supports HDMI with embedded and analog audio

Facilitates the mixing of embedded AV audio with analog stereo audio for compatibility with AV presentation systems.

Records audio, video and data to a media folder

Recordings contained within the folder include a standard MP4 or M4V audio and video recording, as well as metadata including data fields such as Title, Subject, Description, Presenter, Date etc. The folder provides a complete package of all captured elements.

Save recordings to internal storage, external USB storage, or network storage

Configure the SMP 111 to save recordings to internal storage and external USB drives simultaneously. Permits the creation of both an archive copy, and a portable USB copy.

Mark Chapters for quick selection

Events or chapters can be marked, both periodically, time based, or manually by front panel, or a control system. Chapter marks permit directly jumping to those indicated points of the recording during playback.

Capture thumbnails

Thumbnails are captured at native resolution or set to 848x480, defined by the archive encoder settings. Periodic capture of images during the recording facilitates rapid scanning to desired visual section during playback.

Record at 512x288 thru 1920x1080, including 480p, 720p, or 1080p

Use standard video resolutions or computer resolutions based on the desired content or viewing requirements.

Audio mixing and DSP functionality

Produces a quality audio experience without requiring the use of external mixing and DSP equipment.

Directly compatible with Panopto, Kaltura, and Opencast Hosted Video Platforms

Configure to automatically send recordings to content management systems for processing and posting of content.

Compatible with third-party content management systems

Manually upload recordings to systems such as iTunes-U, Blackboard LMS, SharePoint, CaptionSync, YouTube, Moodle, and RSS feed.

RS-232 and Ethernet control

The SMP 111 interfaces with AV control systems via serial or Ethernet using Extron's SIS™ - Simple Instruction Set command protocol.

USB remote control port

Configure communication settings using a keyboard and mouse while viewing the embedded webpage, or connect the optional RCP 101 remote control panel for extended front panel operation and convenient thumb drive access.

Standards-based H.264 / MPEG 4 AVC video compression

The SMP 111 supports use of the Baseline, Main, or High Profiles at Levels 4.x, or 3.x providing the ability to optimize video coding for use with various types of applications and decoding devices.

Auto Input Memory

The SMP 111 automatically stores size, position, and picture settings based on the incoming signal. When the same signal is detected again, these image settings are automatically recalled from memory.

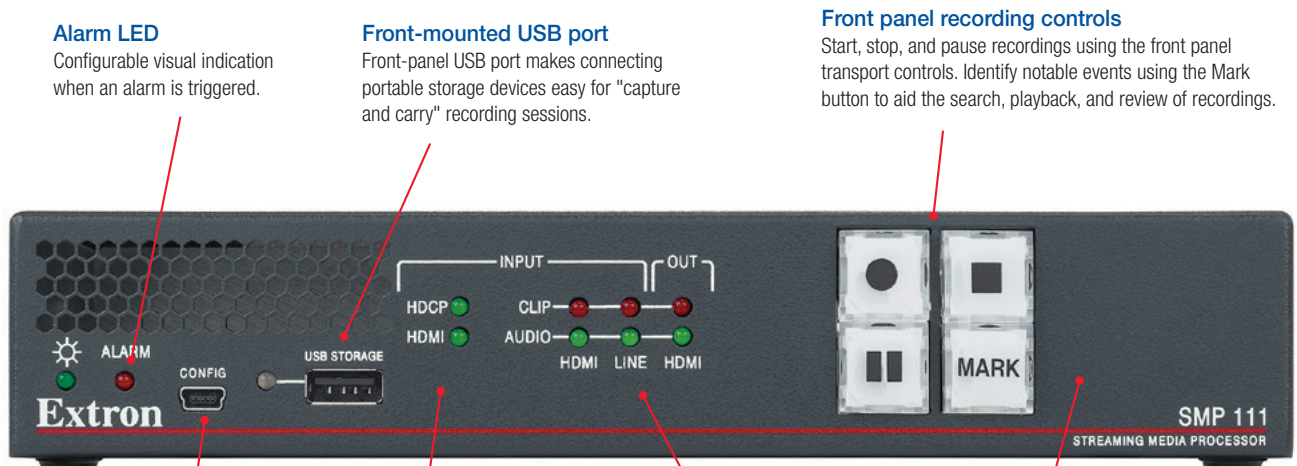
Encoding presets for quick recall of compression settings

The SMP 111 provides 16 customizable presets for specific encoding and streaming parameters. Users can quickly switch between these encoder presets to support different applications.

License-free operation for to a low cost of ownership

With no licensing or support fees, the SMP 111 is a cost effective solution for AV streaming and recording.

Overview



SMP 111 - Front

Alarm LED

Configurable visual indication when an alarm is triggered.

Front-mounted USB port

Front-panel USB port makes connecting portable storage devices easy for "capture and carry" recording sessions.

Front panel recording controls

Start, stop, and pause recordings using the front panel transport controls. Identify notable events using the Mark button to aid the search, playback, and review of recordings.

Configuration port

The front panel USB port provides convenient access to control the unit directly from a PC.

HDMI and HDCP LED indicators

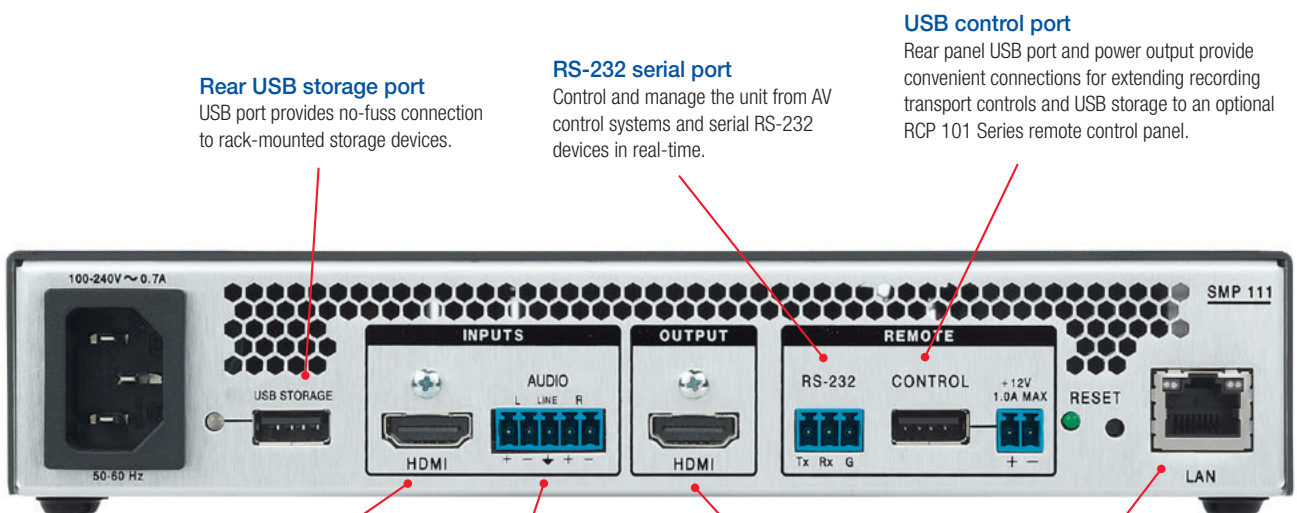
HDMI LED indicates when an active input signal is present while the HDCP LED provides visual feedback of HDCP encrypted content.

Audio LED indicators

Discrete level indicators for HDMI audio, analog audio input, and audio output provide a visual reference for signal level and aid in troubleshooting.

Internal flash storage

Save recorded contents to internal flash storage and reliably transfer media files to USB or network storage.



SMP 111 -Back

Rear USB storage port

USB port provides no-fuss connection to rack-mounted storage devices.

RS-232 serial port

Control and manage the unit from AV control systems and serial RS-232 devices in real-time.

USB control port

Rear panel USB port and power output provide convenient connections for extending recording transport controls and USB storage to an optional RCP 101 Series remote control panel.

HDMI input

HDMI video and embedded audio support for compatibility with commonly used AV sources and camera signals.

Analog audio input

Stereo line level input for recording analog stereo audio sources. Audio source is user selectable: analog only, embedded HDMI audio, or analog audio mixed with embedded HDMI audio.

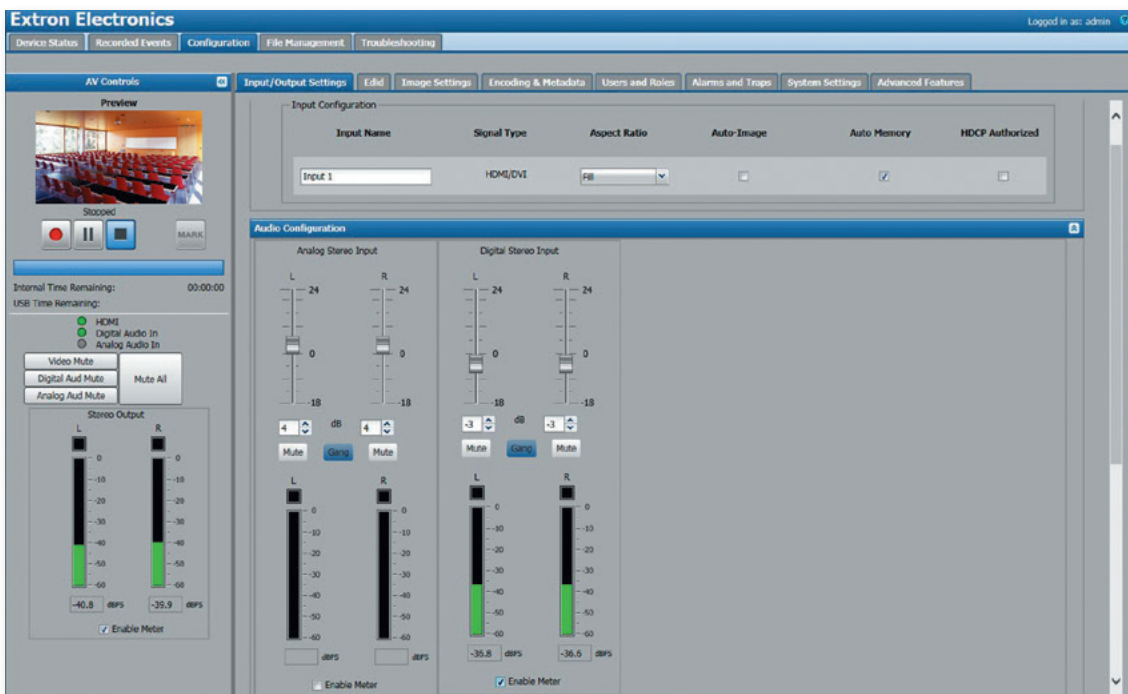
HDMI output

Provides a local preview of the streamed output.

Ethernet port

Multi-purpose Ethernet port for streaming transport and transfer of recordings to network storage directories. It also serves as the interface for AV control systems and the embedded web interface.

Embedded Web Interface



The embedded webpage allows easy access to configuration settings, as well as monitoring of video and audio signals

Intuitive Interface for Configuration

The SMP 111 has an embedded web interface, which makes it simple and easy to navigate and configure a wide array of signal processing, recording, streaming, and automated functions. The embedded web page provides all of the detailed settings in a tabular format organized by function. It is used to configure publishing and file transfer parameters and provides valuable tools for managing, monitoring, and troubleshooting. The embedded web page makes it easy for AV support staff and IT departments to control and manage the streaming processor.

Efficient Signal Management and Operation

The embedded web page interface presents the controls for managing input and output signals. It identifies signal presence, mute, audio level, and recording status. User controls are provided for transport functions and chapter marks during the recording process. Additional processing controls are provided for: aspect ratio management, audio mixing and level adjustment, as well as full encoder configuration and presets. A small preview window in the embedded web page decodes a live view of the encoder process. Changes in settings and parameters are applied immediately with no restarting or loading required.

RCP 101 Series - Remote Control Panels for SMP Series



RCP 101 D



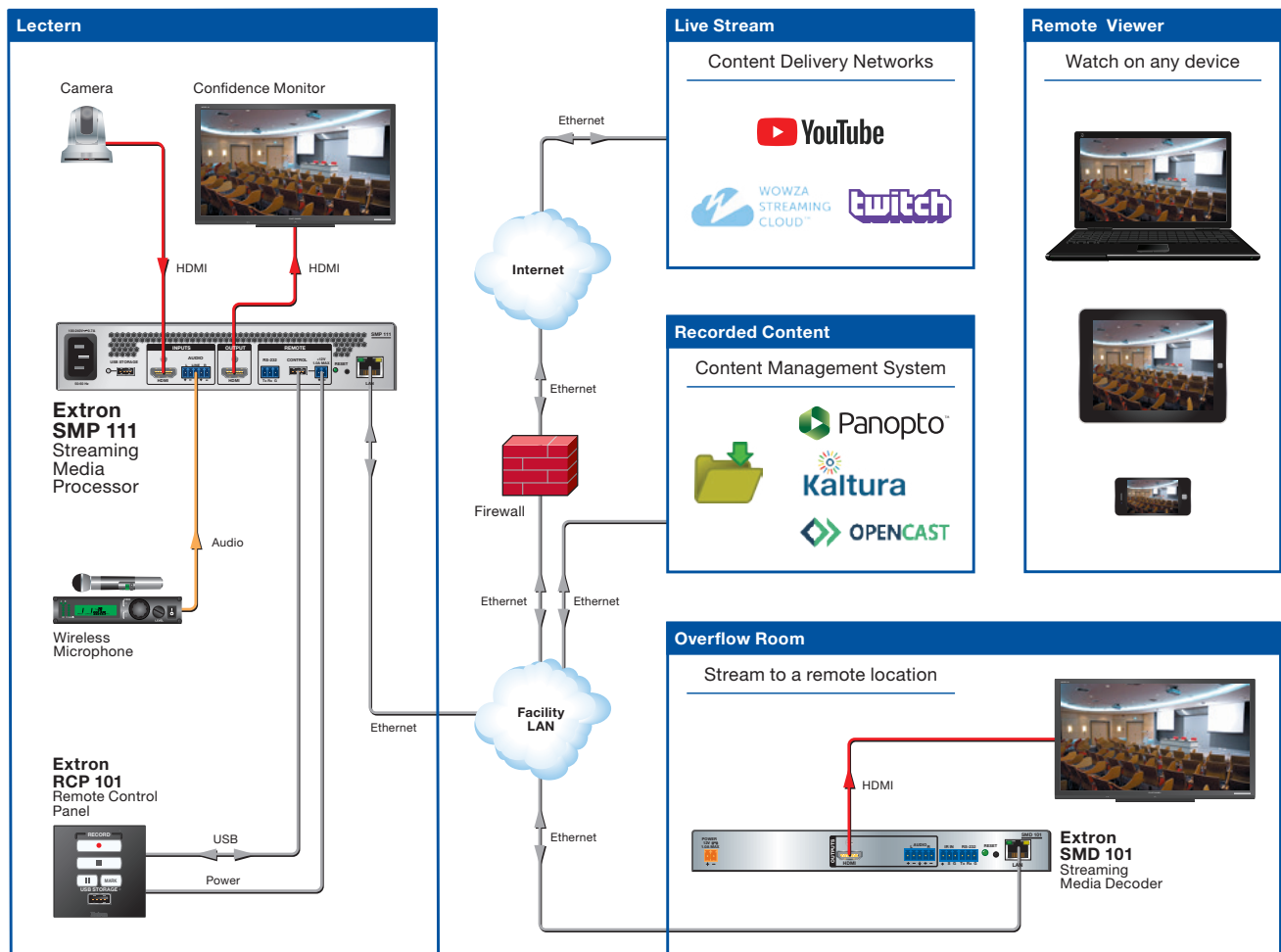
RCP 101 EU

Extron **RCP 101 Series** remote control panels feature backlit transport controls for remote operation of Extron SMP Series products. A USB port provides convenient access to a thumb drive or external portable storage. RCP 101 panels have status and alarm indicator lights with an audible buzzer. A 15 foot (4.5 meter) USB cable is included. RCP 101 panels may be used with Extron **USB Extender Plus Series** twisted pair extenders to support distances up to 330 feet (100 meters). Available in decorator-style, MK, and EU versions; the EU version is compatible with Flex55 enclosures or EU junction boxes. RCP 101 Series panels include black and a white faceplates to compliment a wide range of environments. MK model is available in white only.

Applications

CAMPUS VIDEO DISTRIBUTION SYSTEM

Instructors, trainers, athletic departments, and media centers benefit from the SMP 111 Streaming Media Processor, and are able to record and stream their sessions with ease. Providing a flexible platform to record to both the internal flash storage and provide a duplicate copy on a USB drive, makes the process of documenting an event very efficient. Coupled with the ability to automatically upload the recordings to content management systems after the session, and provide a live stream to services such as YouTube, and Wowza Streaming Cloud all at the same time, makes this a complete system in a very small package. Supporting an HDMI source, such as a camera, computer, or an entire upstream AV system, the input scaling engine manages resolution changes and matches the desired recording and separate streaming resolutions. Adding a microphone or auxiliary audio source in addition to the HDMI source audio is easily configured, and the two audio sources can be mixed together. Flexible streaming presets allow for rapid adjustment of streaming configurations to serve multiple tasks, such as streaming to an overflow room before switching the stream to a hosting service.



Specifications

VIDEO INPUT	
Number/signal type	1 HDMI digital video (HDCP content not supported)
Resolution range	480i, 480p, 576i, 576p, 720p, 1080i, 1080p, 640x480 to 1920x1200* *reduced blanking
Format	RGB and YCbCr digital video
VIDEO PROCESSING	
Digital sampling	8-, 10-, or 12-bits per channel, 165 MHz pixel clock (HDMI)
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	1 H.264/AVC digital video over Ethernet 1 HDMI digital video
Scaled resolution	HDMI output/record: 480p, 720p, 1080p, 512x288, 1024x768, 1280x1024 Stream: 480p, 720p, 1080p, 512x288, 1024x768, 1280x1024
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)
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, M4A, JPEG, JSON, XML
File transfer protocols	FTP, SFTP, CIFS
Network file share protocols	CIFS/SMB, NFS
Internal storage capacity	32 GB SDHC
External USB ports	1 (front panel), 1 (rear panel), USB 2.0 (max. current 1.5 A)
Font file format	(TrueType) TTF, (OpenType) OTF
AUDIO INPUT	
Analog	
Number/signal type	1 stereo (balanced or unbalanced)
Digital	
Number/signal type	1 stereo, digital de-embedded from HDMI
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 – DIGITAL	
Number/signal type	1 stereo, HDMI (re-embedded audio) 1 AAC-LC digital audio over Ethernet

COMMUNICATION		
USB		
USB configuration port	1 front panel female mini USB B	
Mouse and keyboard port	Connect via any USB ports on SMP 111.	
USB control port	Connect to optional accessory RCP 101.	
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	
Remote power	(1) +12 VDC power on 3.5 mm, 2-pole captive screw connector 1.0 A max	
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, RTMP TCP, UDP, multicast IGMPv3 (RFC 3376) or unicast 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)	
Transport		
All supported		
GENERAL		
Power supply	Internal Input: 100-240 VAC, 50-60 Hz	
Power consumption	23 watts typical	
Thermal dissipation	50 BTU/hr	
Enclosure dimensions	1.66" H x 8.68" W x 9.5" D (1U high, half rack wide) (4.2 cm H x 22.1 cm W x 21.6 cm D) (Depth excludes connectors.)	
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 and WEEE.	
Model	Version Description	Part number
SMP 111	Single Channel Recorder – 32 GB	60-1594-01

For complete specifications, please go to www.extron.com
Specifications are subject to change without notice.

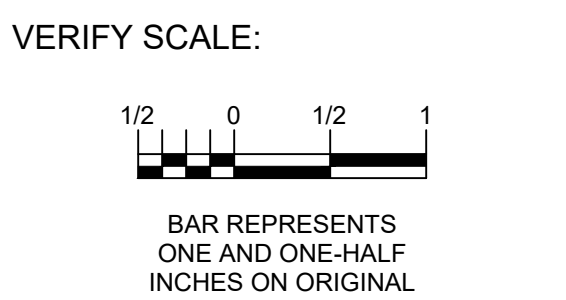
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SYMBOL KEY

CP1	TOUCH PANEL
AV1	HDMI INPUT PLATE
PRJ	PROJECTOR WALL MOUNT
USB1	USB EXTENSION CONNECTION



REVISIONS

NO.	DESCRIPTION	DATE

JOB NUMBER: 18068
DRAWN BY: JGB
CHECKED BY: ---
DATE: 4-24-2020

DRAWING SET STATUS:
SUBMITTAL 3
PLOT DATE: 4/24/20

**AUDIOVISUAL
PLAN
1ST FLOOR**

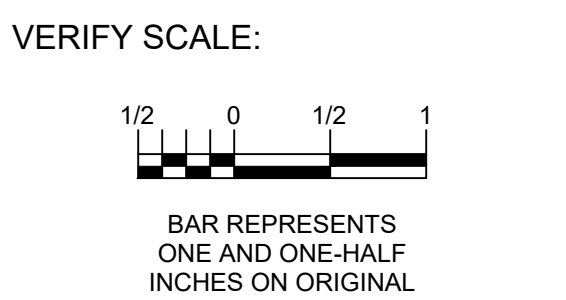
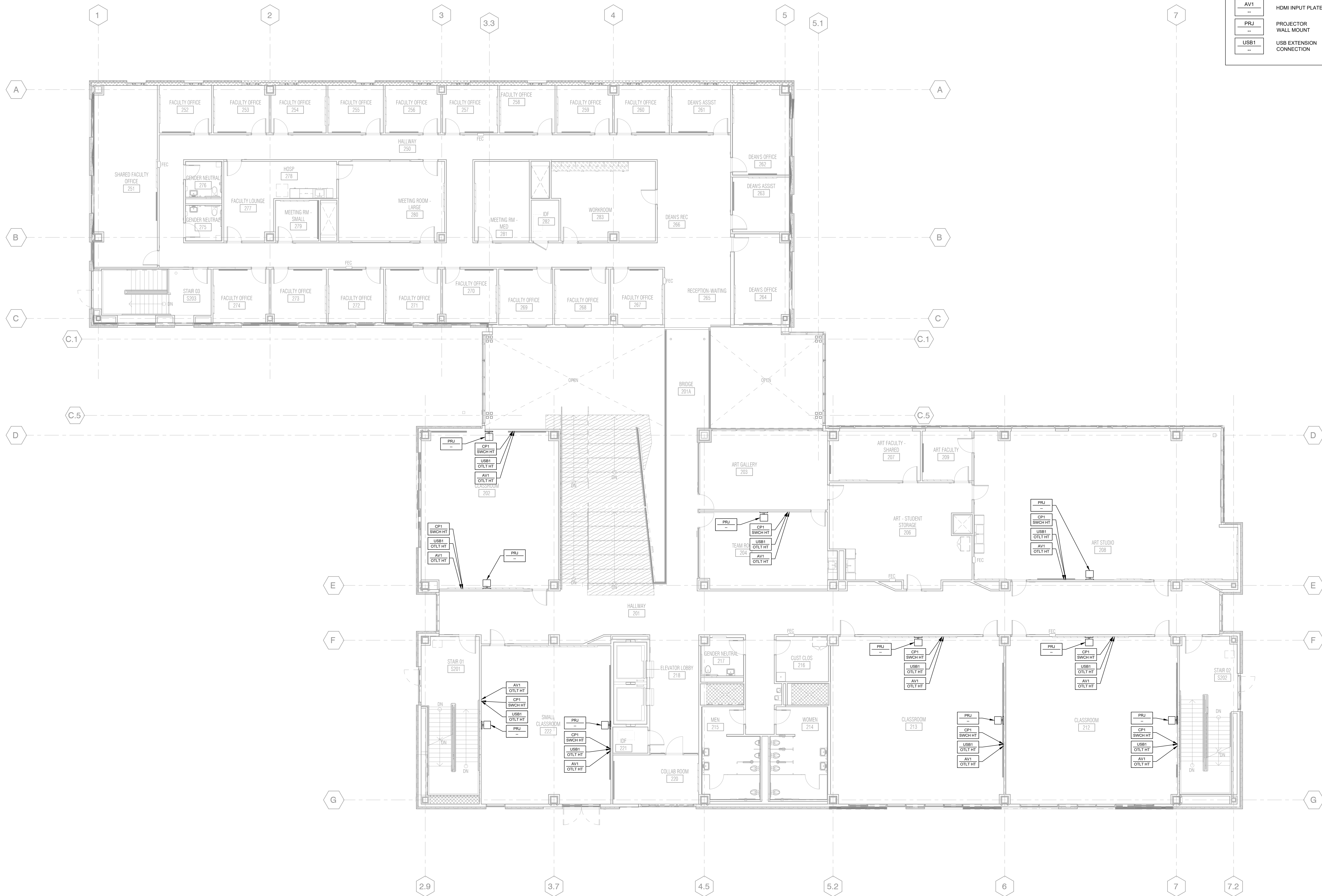
DRAWING NO. **AV2.21** REV NO. **0**

1 1ST FLOOR PLAN
1/8" = 1'-0"

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SYMBOL KEY

CP1	TOUCH PANEL
AV1	HDMI INPUT PLATE
PRJ	PROJECTOR WALL MOUNT
USB1	USB EXTENSION CONNECTION



REVISIONS

NO.	DESCRIPTION	DATE

JOB NUMBER: 18068
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PLOT DATE: 4/24/20

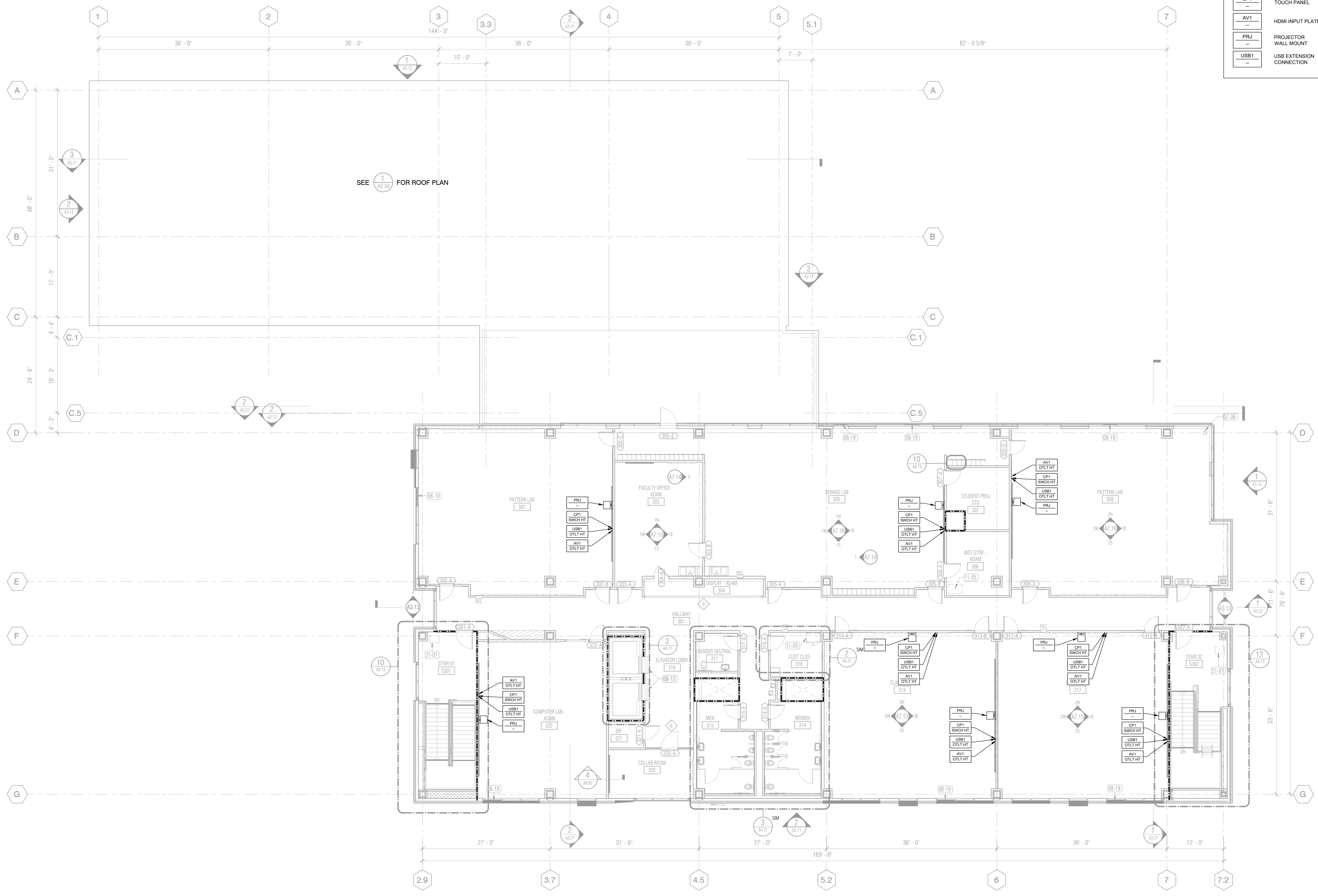
**AUDIOVISUAL
PLAN
2ND FLOOR**

1 2ND FLOOR PLAN
1/8" = 1'-0"

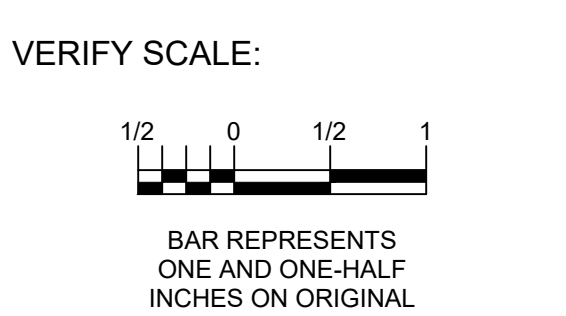
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SYMBOL KEY

CP1	TOUCH PANEL
AV1	HDMI INPUT PLATE
PRJ	PROJECTOR WALL MOUNT
USB1	USB EXTENSION CONNECTION



SEE 1 FOR ROOF PLAN



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SHEET TITLE
AUDIOVISUAL
PLAN
3RD FLOOR

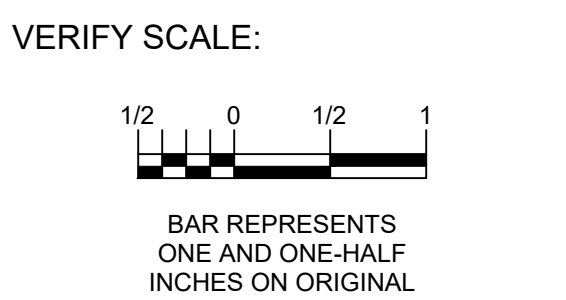
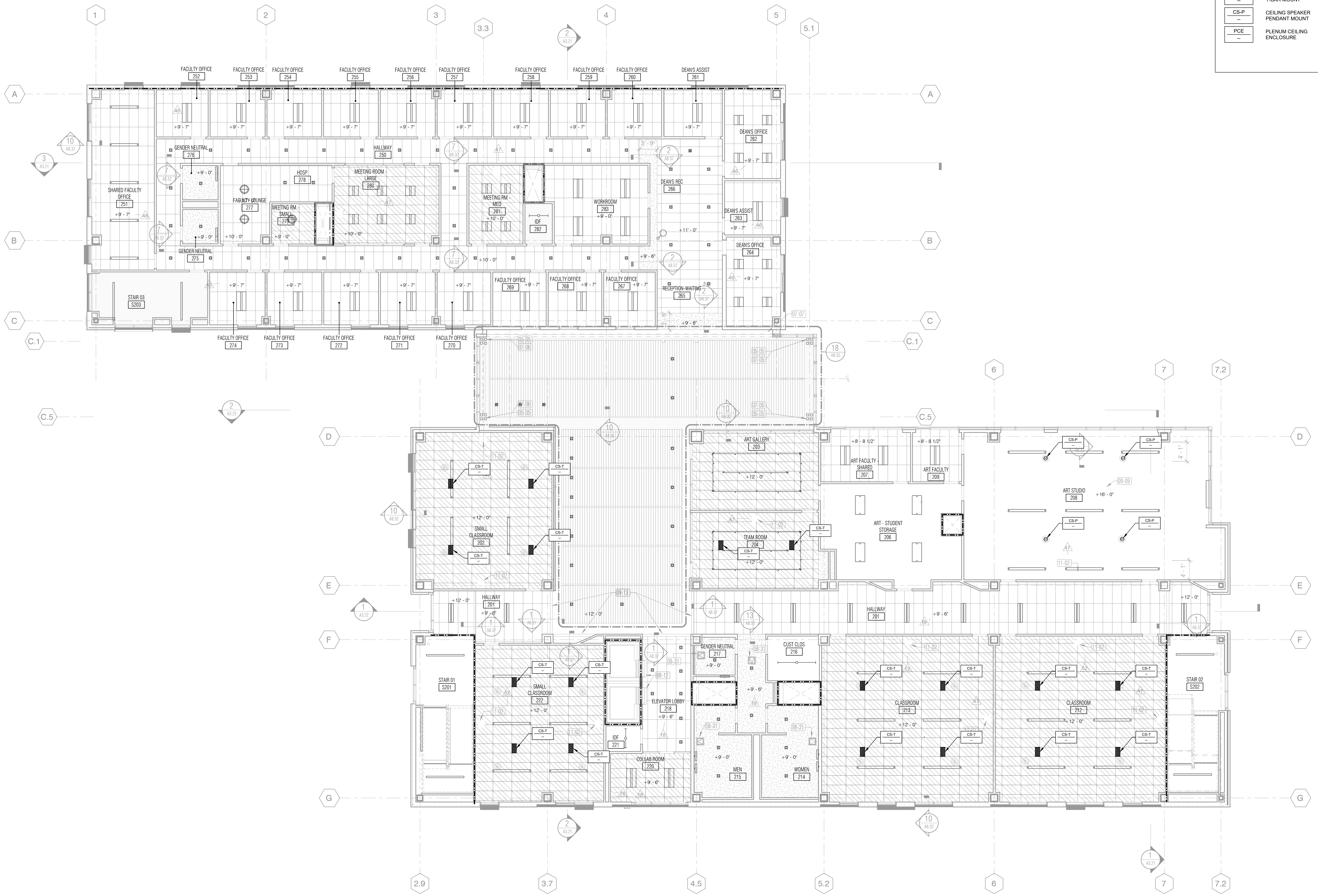
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1 3RD FLOOR PLAN
1/8" = 1'-0"

SYMBOL KEY

CS-T	CEILING SPEAKER T-BAR MOUNT
CS-P	CEILING SPEAKER PENDANT MOUNT
PCE	PLENUM CEILING ENCLOSURE

PROJECT
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555 RALPH APPEZZATO
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SHEET TITLE
**AUDIOVISUAL
RCP
2ND FLOOR**

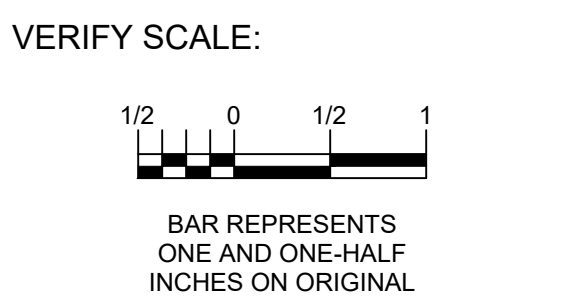
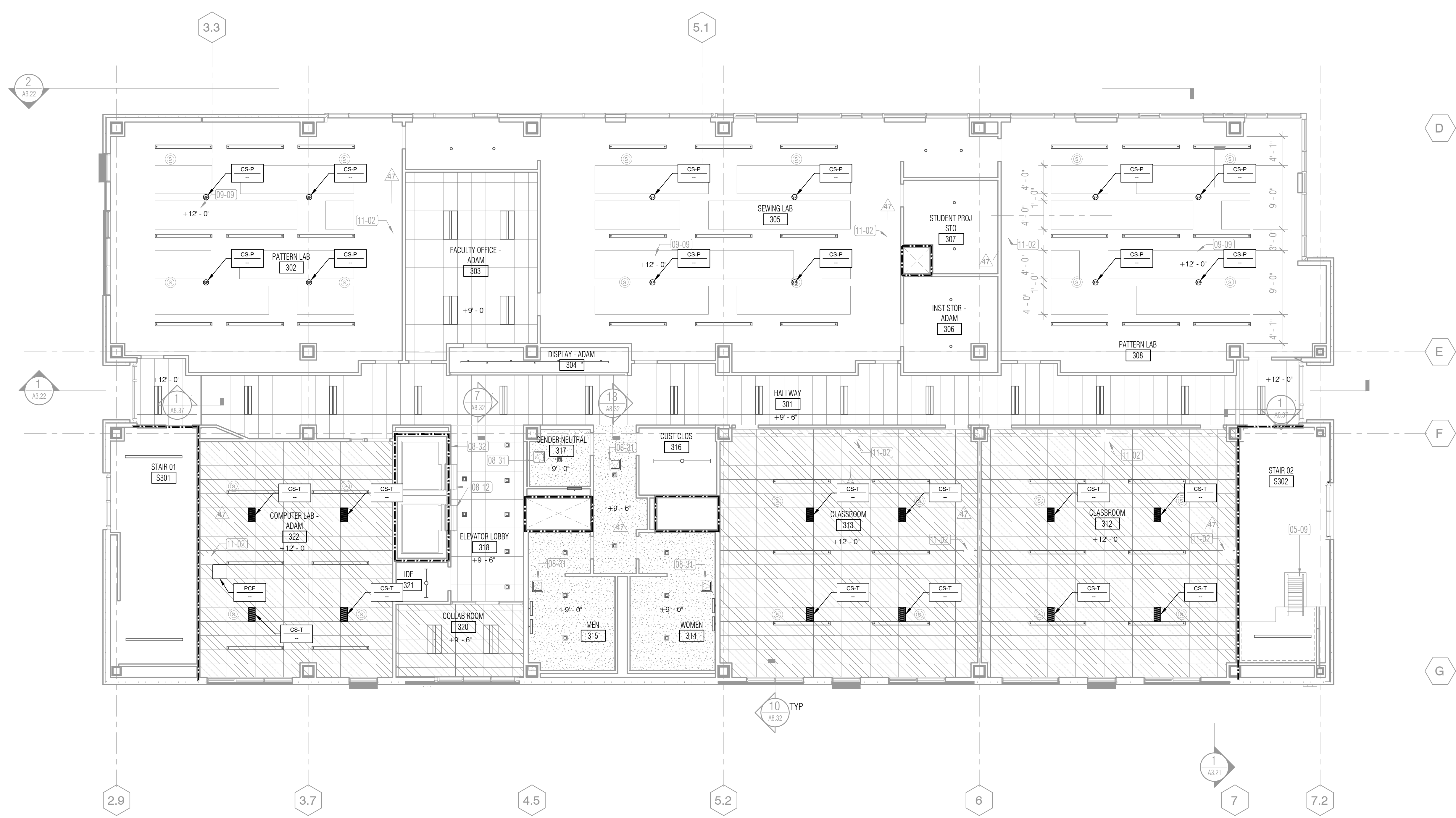
DRAWING NO. **AV2.42** REV NO. **0**

1 2ND FLOOR RCP
1/8" = 1'-0"

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SYMBOL KEY	
CS-T	CEILING SPEAKER T-BAR MOUNT
CS-P	CEILING SPEAKER PENDANT MOUNT
PCE	PLENUM CEILING ENCLOSURE

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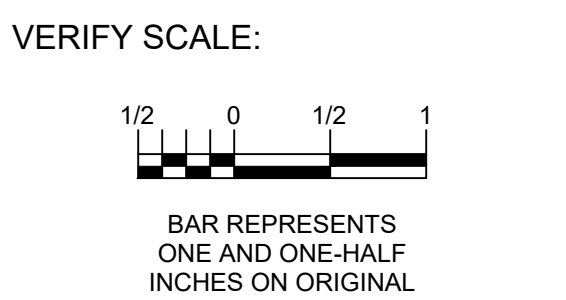
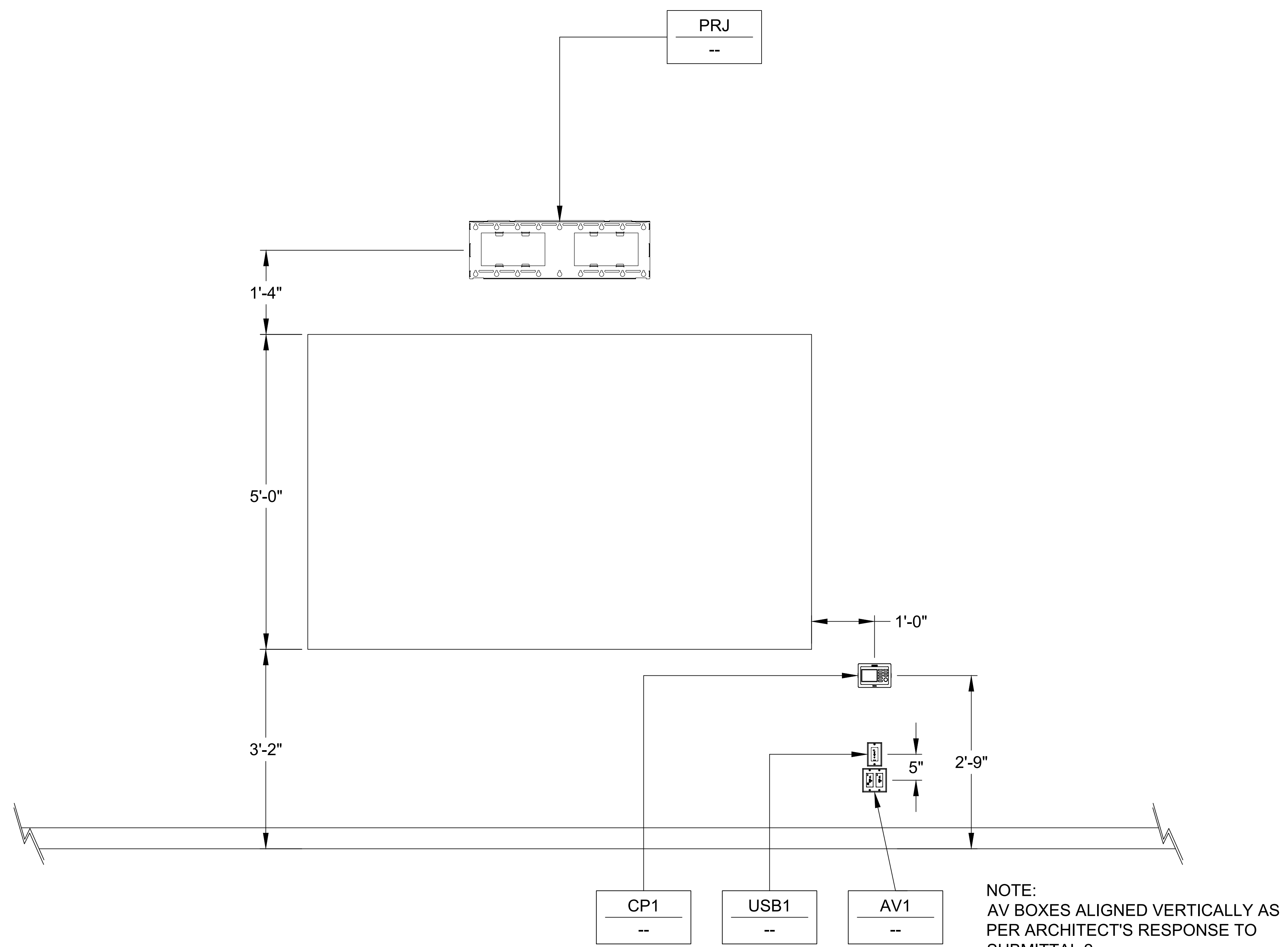
SHEET TITLE
**AUDIOVISUAL
RCP
3RD FLOOR**

DRAWING NO. **AV2.43** REV NO. **0**

1 3RD FLOOR RCP
1/8" = 1'-0"

SYMBOL KEY	
CS-T --	CEILING SPEAKER T-BAR MOUNT
CS-P --	CEILING SPEAKER PENDANT MOUNT
PCE --	PLENUM CEILING ENCLOSURE

PROJECT
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SHEET TITLE
**AUDIOVISUAL
ELEVATIONS**

DRAWING NO. **AV7.14** | REV NO. **0**

1 TYPICAL ELEVATION
1" = 1'-0"