

DTP2 R 212

HDMI 4K/60 DTP2 RECEIVER AND SWITCHER WITH AUDIO DE-EMBEDDING

DTP
SYSTEMS

18 Gbps
4K/60 4:4:4

- ▶ Receives HDMI plus control and analog audio up to 330 feet (100 meters) over a shielded CATx cable
- ▶ DTP2 and HDMI inputs
- ▶ HDMI input is ideal for connecting to a local source, such as a laptop or ShareLink wireless collaboration gateway
- ▶ Supports computer and video resolutions up to 4K/60 @ 4:4:4
- ▶ Auto-switching between inputs
- ▶ Stereo audio embedding and de-embedding
- ▶ Support for HDR – High Dynamic Range video
- ▶ HDCP 2.2 compliant
- ▶ Available with energy efficient Class D stereo amplifier: 2 x 15-watts @ 4 ohms; 2 x 8-watts @ 8-ohms



DTP2 R 212



DTP2 R 212 SA

The Extron DTP2 R 212 and DTP2 R 212 SA are digital twisted pair receivers that work with Extron DTP®-enabled products to send HDMI, audio, and bidirectional control signals up to 330 feet (100 meters) over a shielded CATx cable. Both models include one DTP2 input, one HDMI input for a local video source, and one HDMI output. These receivers are ideal for applications that require long distance distribution of 4K/60 video with audio.



Extron Electronics
INTERFACING, SWITCHING AND CONTROL

DESCRIPTION

The Extron **DTP2 R 212** and **DTP2 R 212 SA** are digital twisted pair receivers that work with Extron DTP®-enabled products to send HDMI, audio, and bidirectional control signals up to 330 feet (100 meters) over a shielded CATx cable. Both models include one DTP2 input, one HDMI input for a local video source, and one HDMI output. These receivers support video resolutions up to 4K/60 at 4:4:4 chroma sampling, and comply with HDCP 2.2. Audio de-embedding and Ethernet remote control facilitate integration in professional environments. The DTP2 R 212 SA model also features a built-in Class D stereo amplifier, delivering 15 watts per channel.

The DTP2 R 212 and DTP2 R 212 SA enable reliable, long distance transmission of HDMI signals at up to 18 Gbps, supporting HDR, Deep Color up to 12-bit, 3D CEC, and embedded HD lossless audio formats. A local HDMI input allows connection of an additional video source at the display, which is beneficial in BYOD applications where the display may need to support both a local collaboration appliance and remote sources.

To enhance and simplify integration of devices and to help ensure optimal system performance, the DTP2 receiver features two Extron technologies: EDID Minder and Key Minder. EDID Minder automatically manages EDID by maintaining continuous EDID communication with each source, ensuring that the sources power up properly and reliably output content for display. For HDMI signals with protected content, Key Minder authenticates and maintains continuous HDCP encryption to support quick and reliable switching in professional AV environments.

Unique Audio Features

Both DTP2 R 212 and DTP2 R 212 SA feature bass and treble controls and the stereo output is selectable for de-embedded or pass-through analog audio as a balanced or unbalanced signal on a captive screw connector. Analog audio signals are sent over the same shielded twisted pair cable as the video and control signals, eliminating the need for a separate cable run.

The DTP2 R 212 SA provides a built-in Class D stereo amplifier that can drive surface mount or ceiling speakers. This offers a significant upgrade in sound quality over displays with built-in speakers, while simplifying integration. Volume is adjustable via SIS command or a remote volume controller such as the Extron VC 50, VCM 100, or VCM 200.

Control Versatility

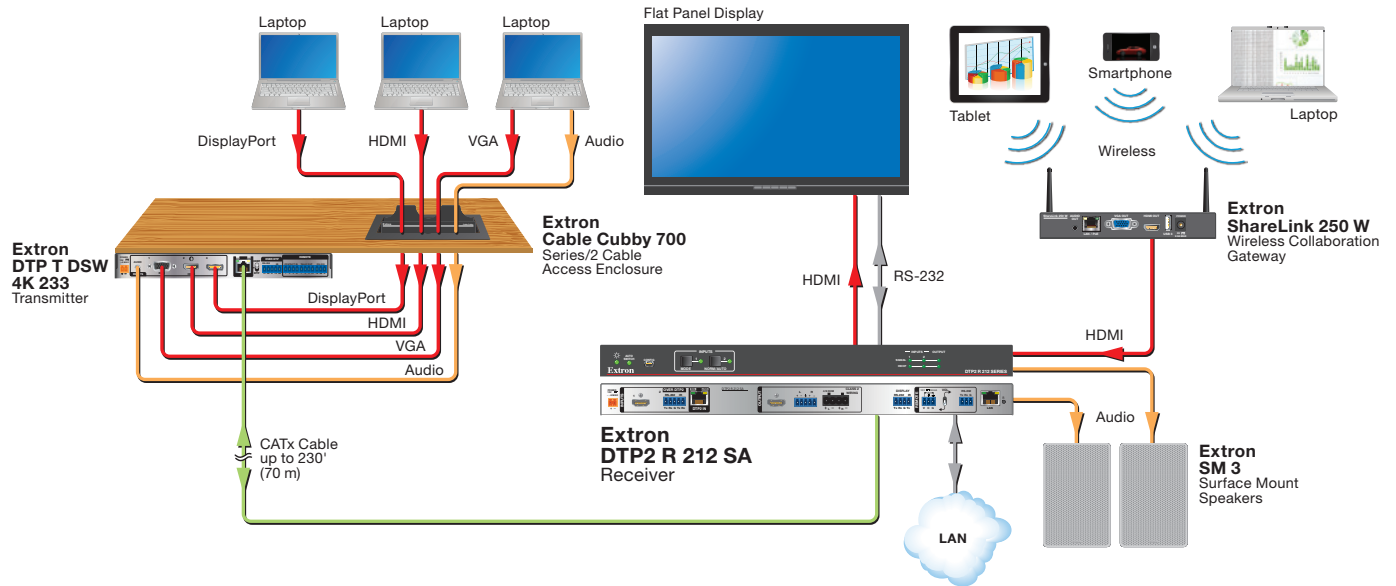
The DTP2 R 212 provides other convenient, integrator-friendly features designed to help simplify installation. Both DTP2 R 212 models provide Ethernet to RS-232 insertion to the DTP2 port as well as the RS-232 port dedicated for display control. This enables system level control of devices attached to the remotely connected DTP2 transmitter as well as a locally connected display. Additionally, loading an IPL IR driver into the unit enables it to issue IR commands to the local display.

FEATURES

- ▶ **DTP2 and HDMI inputs**
- ▶ **Supports computer and video resolutions up to 4K/60 @ 4:4:4**
- ▶ **Auto-switching between inputs**
- ▶ **Stereo audio embedding and 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**
- ▶ **Support for HDR - High Dynamic Range video**
- ▶ **HDCP 2.2 compliant**
- ▶ **Extron XTP DTP 24 shielded twisted pair cable is strongly recommended for optimal performance**
- ▶ **Remote power capability** – For simplified installation, the standard DTP2 R 212 without amplifier can be remotely powered by a DTP2 transmitter over the twisted pair connection. It can also be configured to provide power to the connected DTP2 transmitter.
- ▶ **RS-232 insertion from the Ethernet control port** – Saves system resources and simplifies installation by enabling a control processor to access remote RS-232 devices over Ethernet.
- ▶ **Display control RS-232 port** – Serial commands inserted from Ethernet can be routed to this port to control a connected display or other device.
- ▶ **DTP2 R 212 SA model features an integrated Class D stereo amplifier:**
 - **30 watts rms output power:** 2 x 15 watts @ 4 ohms or 2 x 8 watts @ 8 ohms
 - **90 dB signal-to-noise ratio with 0.1% THD+N**
 - **Extron-patented CDRS™** - Class D Ripple Suppression
 - **Automatic clip limiter**
 - **Selectable volume control** – Allows the output volume to be remotely controlled via SIS or using an optional Extron volume controller.
- ▶ **EDID Minder® automatically manages EDID communication between connected devices**
- ▶ **Key Minder® continuously verifies HDCP compliance**
- ▶ **User-selectable HDCP authorization** – Allows the unit 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.
- ▶ **HDCP authentication and signal presence confirmation** – A full-screen green signal is sent when HDCP-encrypted content is transmitted to a non HDCP compliant display, providing immediate visual confirmation that protected content cannot be viewed on the display.

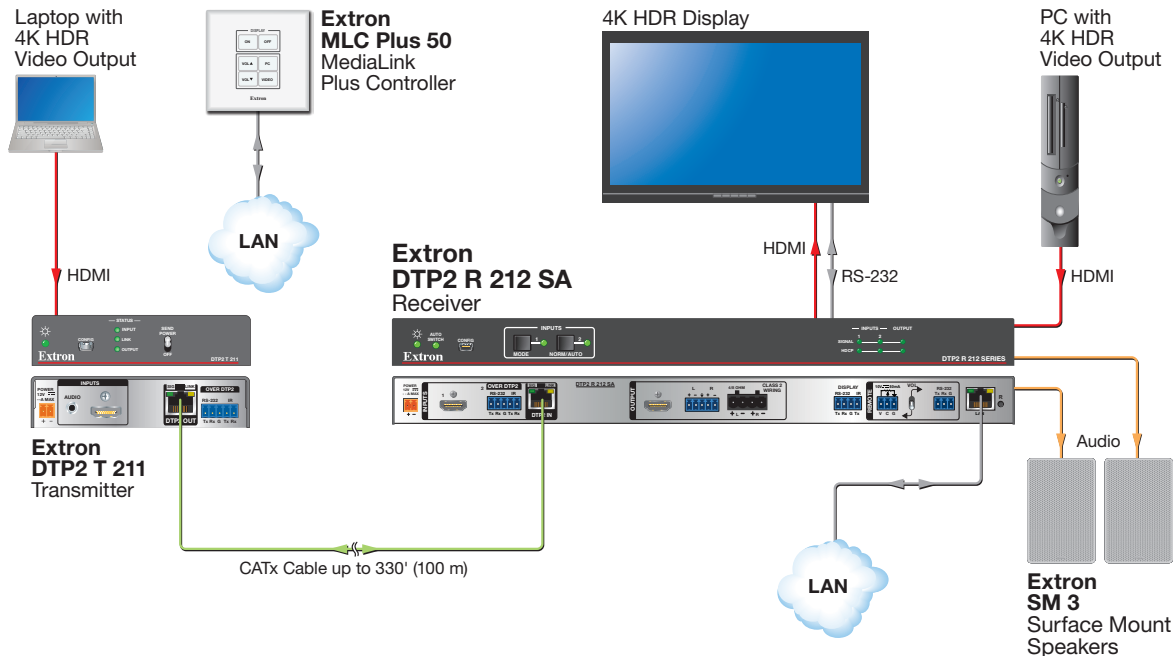
COLLABORATION APPLICATION

This system lets users bring their own devices and share AV content wirelessly or via physical digital or analog connections. Support of 4K video, high-quality audio, and automatic switching provide a premium experience. DisplayPort, HDMI, and VGA connections are available at the meeting table and extended to the DTP2 R 212 SA with its local HDMI input connected to the ShareLink 250 W Wireless Collaboration Gateway. The HDMI and amplified audio outputs on the DTP2 R 212 SA connect to the display and Extron SM 3 speakers.



4K HDR APPLICATION

This system maintains 18 Gbps video data rate from end-to-end, delivering the highest quality video performance to support 4K HDR video. The MLC Plus 50 controller provides complete and intuitive system control, while the Ethernet to RS-232 insertion capability on the DTP2 R 212 SA simplifies installation. 4K HDR HDMI video connected at the DTP2 T 211 transmitter is extended up to 330 feet (100 m) to the receiver, which also has a locally connected PC. Selected inputs feed the 4K HDR display and Extron SM3 speakers.



SPECIFICATIONS

TRUE 4K SPECIFICATION

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

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, 10, or 12 bits per color
Signal type	HDMI 1.4, 2.0b; HDCP 2.2, 1.4
Max. video data rate	18 Gbps (6 Gbps per color)
NOTE: ¹ Subject to the maximum data rate limit. Use our calculator at www.extron.com/4Kdata to determine video parameters supported by this data rate.	

VIDEO INPUT

Number/signal type	1 DTP2 1 HDMI (or single link DVI-D, with appropriate DVI-HDMI adapters)
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INTERCONNECTION BETWEEN TRANSMITTER AND RECEIVER

Connectors	1 female RJ-45 per unit
Termination standard	TIA/EIA T568B
Signal transmission distance	Up to 330' (100m) using shielded twisted pair (STP) cable or XTP DTP 24 STP cable
Cable requirements	Solid conductor, 24 AWG or better
Cable recommendations	400 MHz bandwidth, STP (shielded twisted pair)
NOTE: Extron XTP DTP 24 shielded twisted pair cable is strongly recommended for optimal performance.	

VIDEO OUTPUT

Number/signal type	1 HDMI output
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AUDIO

Gain	Unbalanced output: 0 dB; balanced output: +6 dB
Frequency response	20 Hz to 20 kHz, ±0.5 dB
THD + Noise	0.03% @ 20 Hz to 20 kHz at maximum output
S/N	>90 dB, at maximum output (15 dBu), balanced (unweighted)
Bass	+12 dB to -24 dB @ 100 Hz
Treble	+12 dB to -24 dB @ 8 Hz

AUDIO INPUT

Connectors	1 female HDMI type A 1 female RJ-45 connector for audio over DTP
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CMRR	>80 dB @ 1 KHz
NOTE: 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV=2 dBu	

AUDIO OUTPUT — ANALOG

Number/signal type	1 stereo, balanced/unbalanced analog audio output (fixed and variable)
DTP2 R 212	1 stereo, balanced/unbalanced analog audio output (fixed and variable)
DTP2 R 212 SA	1 amplifier output (1 stereo [default] or 2 mono, 2 channels total)

Connectors	(1) 3.5 mm captive screw connector, 5-pole 1 female HDMI type A
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Impedance	50 ohms unbalanced, 100 ohms balanced
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Output volume range	0 to -100 dB in 1 dB steps
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NOTE: 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV = 2 dBu

AUDIO OUTPUT — POWER AMPLIFIER (DTP2 R 212 SA)

Number/signal type	1 stereo or 2 mono (2 channels total)
Connector	(1) 5 mm captive screw connector, 4-pole
Load impedance	4 ohms, minimum
Amplifier type	Class D
Output power	8 watts rms per channel, 8 ohms, 1 kHz, 1% THD 15 watts rms per channel, 4 ohms, 1 kHz, 1% THD

Frequency response	20 Hz to 20 kHz, +1/-3 dB @ 8 ohms
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THD + Noise	<0.1% -3 dB below clipping @ 1 kHz, 8 ohm load
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S/N	90 dB, 20 Hz to 20 kHz, unweighted
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COMMUNICATIONS — SWITCHER

Serial control port	1 RS-232, 3.5 mm captive screw connector, 3-pole, rear panel
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USB control port	1 female mini-USB, type B, front panel
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Ethernet data rate	10/100Base-T, half/full duplex, with autodetect
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COMMUNICATION

RS-232/IR over DTP2 and RS-232/IR Display Control — external device (IR/RS-232 over DTP2 and sink displays)

Serial control pass-through port	1 -232 via 3.5 mm, 5-pole captive screw connector (shared with IR port)
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IR control pass-through ports	1 directional TTL level (0 to 5 V) modulated infrared control from 30 kHz up to 60 kHz
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GENERAL

Power supply	External Input: 100-240 VAC, 50-60 Hz Output: 12 VDC, 4A, 48 watts
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Power input requirements	12 VDC
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Remote power capability	DTP2 R 212 Can transmit or receive power via DTP2
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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
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Cooling	Convection, vents on top and sides
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Mounting	Rack mount Yes, with optional rack shelf kit Furniture mount Yes, with optional under-desk mounting kit
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Enclosure dimensions	1.00" H x 13.1" W x 6.0" D (1" high, 3/4 rack wide) (2.54 cm H x 33.3 cm W x 15.2 cm D) (Depth excludes connectors)
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Regulatory compliance	Safety CE, c-UL, UL EMI/EMC CE, C-Tick, FCC Class A, ICES, VCCI
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Warranty	3 years parts and labor
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NOTE: All nominal levels are at ±10%.

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

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

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