SSP 200
SURROUND SOUND PROCESSOR

DOLBY AUDIO

DOLBY ATMOS

dtsX

Compact Surround Processor Designed for Pro AV

▶ Supports the latest immersive and lossless audio formats as well as legacy surround formats

▶ Automatic surround sound format detection and decoding

▶ HDMI loop through supports video resolutions up to 4K/60 @ 4:4:4

▶ Integrated test signals for calibration and connectivity validation during set up

▶ EXP expansion output port for higher speaker counts

▶ Coaxial and optical digital audio inputs plus analog stereo input

Extron

SSP 200

The Extron SSP 200 is a high-performance Surround Sound Processor designed for pro AV applications in corporate and commercial environments. Providing up to ten built in outputs, or 14 outputs via an EXP port, the SSP 200 provides the flexibility needed for multimedia system requirements, including support for the latest immersive formats of Dolby Atmos and DTS:X. An upmix function synthesizes exceptional multichannel audio from stereo content. Designed specifically for Pro AV applications, the SSP 200 is the ideal processor to create enhanced, immersive experiences in upscale presentation environments.

With support for video resolutions up to 4K/60 @ 4:4:4 and data rates up to 18 Gbps, the SSP 200 enables you to create the sophisticated, yet simple to use systems that customers demand.

Dolby Atmos envelopes the listener with moving audio that flows all around the room providing incredible realism.

DTS:X places sound where it would naturally occur, creating a lifelike, multi-dimensional audio experience.

Stereo was the first spacial audio format, allowing individual sounds to be placed anywhere in a horizontal field between two speakers. As the cinema experience evolved, additional speakers were added to the sides and rear that provided a 2D plane of audio, surrounding the listener. The addition of height speakers now offers a true 3D audio experience for unparalleled realism. The SSP 200 supports the latest immersive audio formats of Dolby Atmos and DTS:X to bring a cinematic audio experience to your video presentations.

Designed for Pro AV Integration

The SSP 200 is housed in a 1U, half rack width enclosure that is rack-mountable and occupies a fraction of the space required by a consumer surround processor or AV receiver. It can be controlled and configured using RS-232 serial control or via a network connection. For compatibility with pro AV audio equipment, the SSP 200 offers balanced or unbalanced inputs and outputs and an EXP output expansion port for connection to a DMP Plus Series audio DSP processor. Front panel controls can be locked out to prevent unauthorized operation.

The SSP 200 is designed for simple, intuitive operation from the front panel, with LED indicators for source selection, source format detection, listening mode, and output volume level.

Control and Configuration

Extron PCS - Product Configuration Software includes an intuitive user interface for efficient setup and control of the SSP 200 as well as calibration of the sound system. Using the software, an integrator can specify the number and size of speakers in the system, and enter the distance of each speaker from the central listening position, or location where acoustical measurements are taken. A nine-band parametric EQ is available for each of the speaker channels to tailor the output signal to the acoustical environment.

Test Signals for Calibration

The SSP 200 generates test signals, including Dolby noise and full-bandwidth pink noise, that can be routed sequentially to each speaker, or directed selectively to any speaker using the software. Dolby noise is a band-limited pink noise that allows for higher sound pressure levels, which is advantageous when calibrating speaker outputs to equal SPLs. An individual trim level is provided for each channel to facilitate calibration. The pink noise test signals can be used to calibrate a speaker's interaction with the acoustical environment. The SSP 200 also offers the option to use an external source for test signals, which can then be directed to any speaker, or all speakers in sequence.

|	5.1	7.1	5.1.2	5.1.4	7.1.2	7.1.4
Stereo downmix on outputs 9 & 10	√	√	√			
Stereo downmix requires EXP Bus				√	√	√
Requires EXP Bus						√

Speaker Output Configurations

Supports the latest immersive 3D audio formats as well as legacy surround formats:

- Dolby Atmos
- Dolby TrueHD
- Dolby Digital Plus
- Dolby Surround
- Dolby Digital EX
- Dolby Digital
- Dolby Pro Logic IIx
- Dolby Pro Logic II
- DTS:X
- DTS-HD Master Audio
- DTS-HD High Resolution Audio
- DTS Neural:X
- DTS-ES
- DTS 96/24
- DTS NEO:6

▸ **Automatic surround sound format detection and decoding** – Automatically detects the format of the incoming audio signal, applies the necessary decoding then sends signals to the appropriate outputs.

▸ **Supports video resolutions up to 4K/60 @ 4:4:4** – Supported video signals pass through unaltered

▸ **Upmix function converts any source program material into immersive or standard surround playback** – Converts from any input format to any selected higher output channel count format.

▸ **Integrated test signals for calibration and connectivity validation during setup:**

- **Pink noise generator:** to calibrate a speaker's interaction within the environment
- **Dolby Noise:** bandpass noise generator to balance speaker levels
- **External option:** Can use a test disc, or other audio source for calibration of decoded outputs

▸ **EXP expansion port** – Provides easy I/O connection to an Extron DMP Plus Series audio DSP processor. This allows for a higher output count and seamless integration with all DMP capabilities including Dante transport.

▸ **Lip Sync Offset** – 0 ms to 300 ms

▸ **Front panel input selection with LED indication**

▸ **Selectable stereo output mode formats** –

- **PCM:** Uncompressed stereo digital audio signals can be processed from the HDMI, Toslink, or Coaxial inputs
- **Analog:** Stereo downmix

Immersive 5.1.4 Configuration

In this immersive 3D surround configuration, four ceiling speakers in addition to the speakers of a traditional 5.1 setup, provide the ability for a sound to be placed anywhere within the room's three dimensional space. This creates a sonic environment that envelopes the listener for a more realistic and impactful experience. HDMI sources are decoded by the SSP 200 into discrete outputs connected to Extron amplifiers, speakers, and subwoofer.
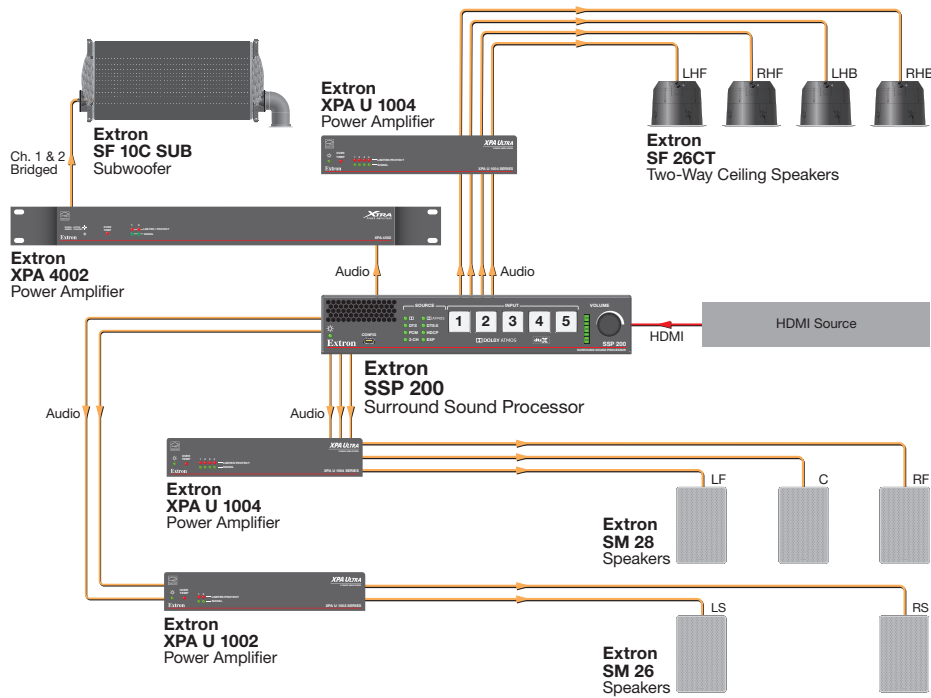
7.1 Surround Configuration

This traditional 7.1 surround system provides stereo audio up front, with a center dialog channel, stereo surround audio, stereo rear audio, and a subwoofer. This configuration can place a sound anywhere within the room at a fixed height. Source audio comes into the SSP 200, where it is decoded and sent to its discrete outputs, which are connected to Extron power amplifiers with Extron surface mount speakers and in-ceiling subwoofer.
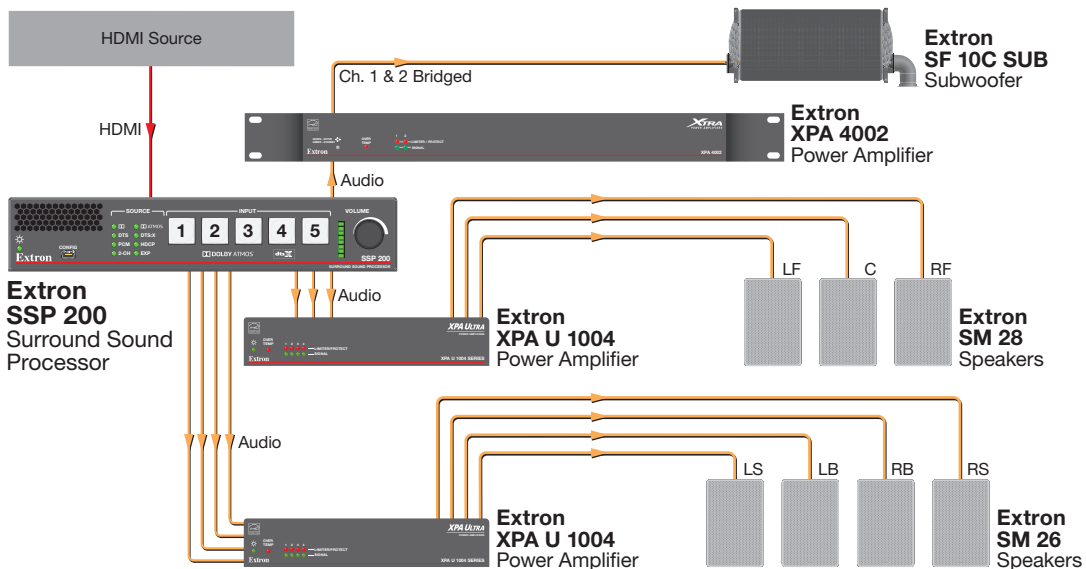
Front to back ventilation
Allows side by side and above or below rack mounting of other devices

Supports latest immersive surround formats
Automatic format detection and decoding

Backlit Input Selectors
Front panel input selection and indication

Local Volume Control
Control program volume from the front panel in configurations without a control system

Internal Everlast power supply
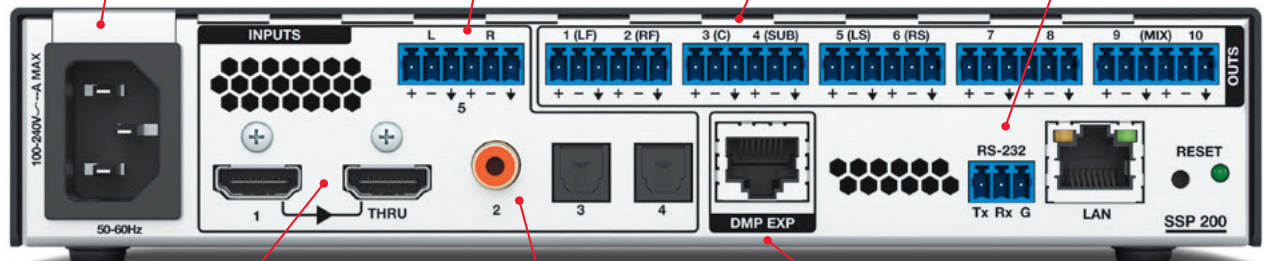Provides worldwide compatibility and high reliability mounting of other devices

Analog Inputs
Allows connection of legacy stereo audio sources

Analog outputs
Integrated support for systems up to 5.1.4 or 7.1.2

RS-232 and LAN control
Provides integration with room control systems

Video Resolutions up to 4K/60 @ 4:4:4
Supported video signals pass through on HDMI unaltered

Selectable audio inputs
The coaxial, optical, and analog audio inputs can be always connected for use when selected

EXP output expansion
Connects to a DMP Plus Series processor for larger systems

CONFIGURATION SOFTWARE

A nine band fully parametric EQ per speaker channel provides the ability to tune individual speakers for optimal response or correct for acoustic anomalies in a room.
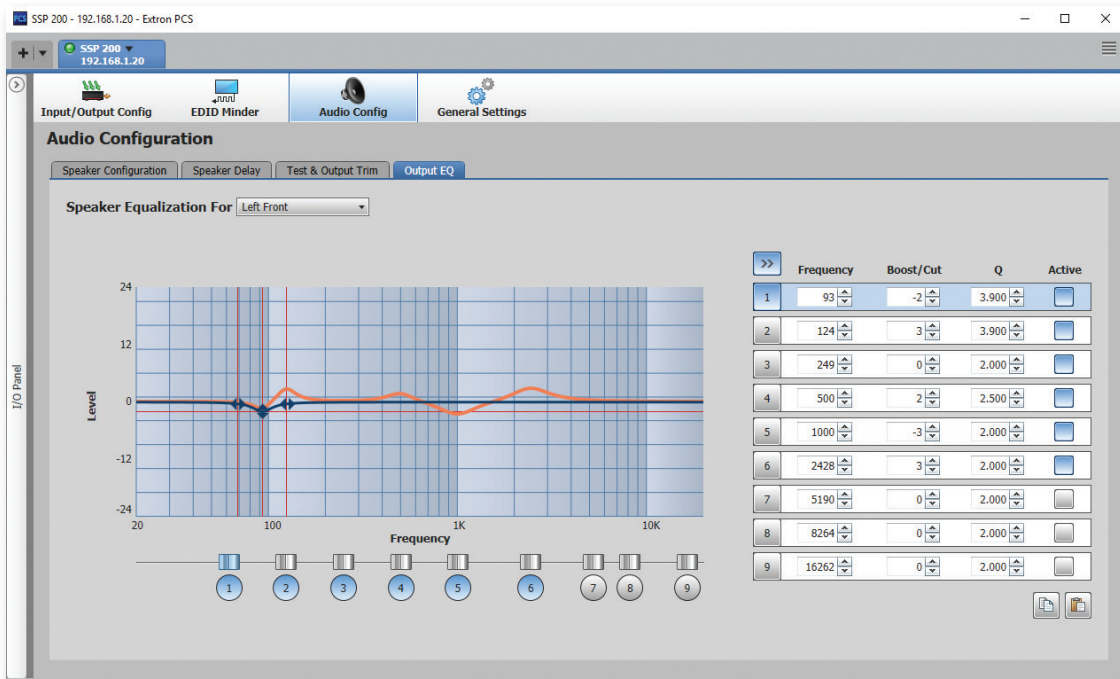

Nine band parametric EQ

The number of surround, rear, and height speakers is selected based on the system design in the Speaker Configuration screen. Selection of bass management or full range can be made, depending on the type of speaker used. The bass management crossover frequency for the subwoofer channel can also be adjusted.
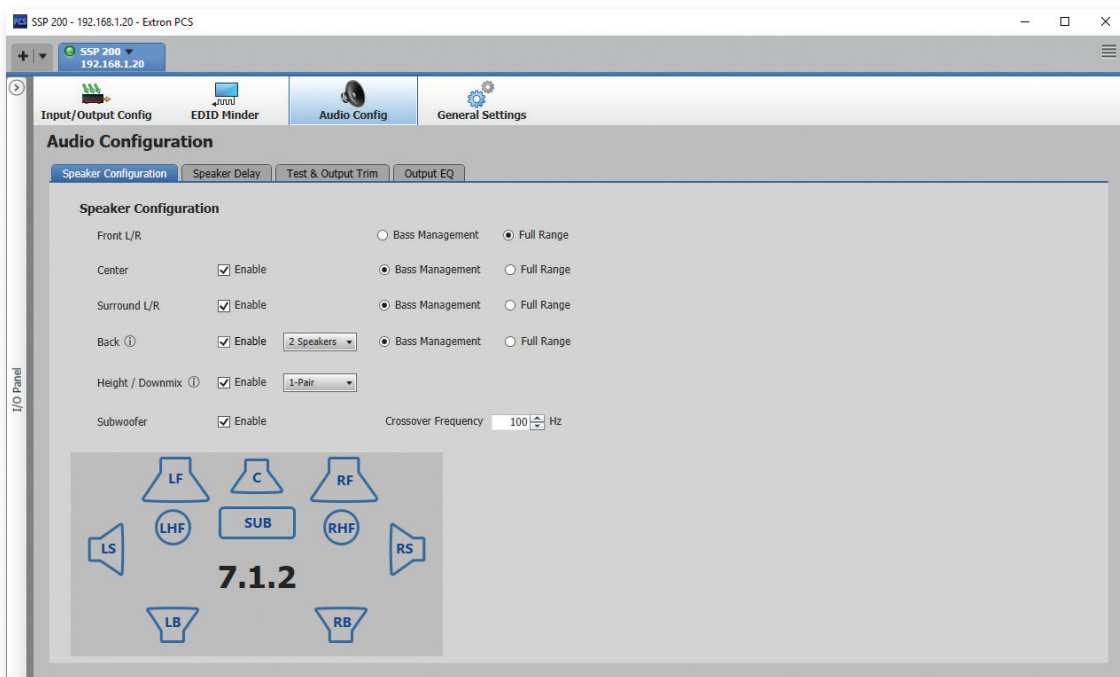

Speaker output configuration

Delay can be introduced on a per speaker channel basis in order to compensate for differing distances from the listening position and create a time-aligned system for maximum impact. Delay can be selected in feet, meters, or milliseconds. Lip Sync Offset can also be added independently per input, to compensate for the processing latency of various devices in the system.
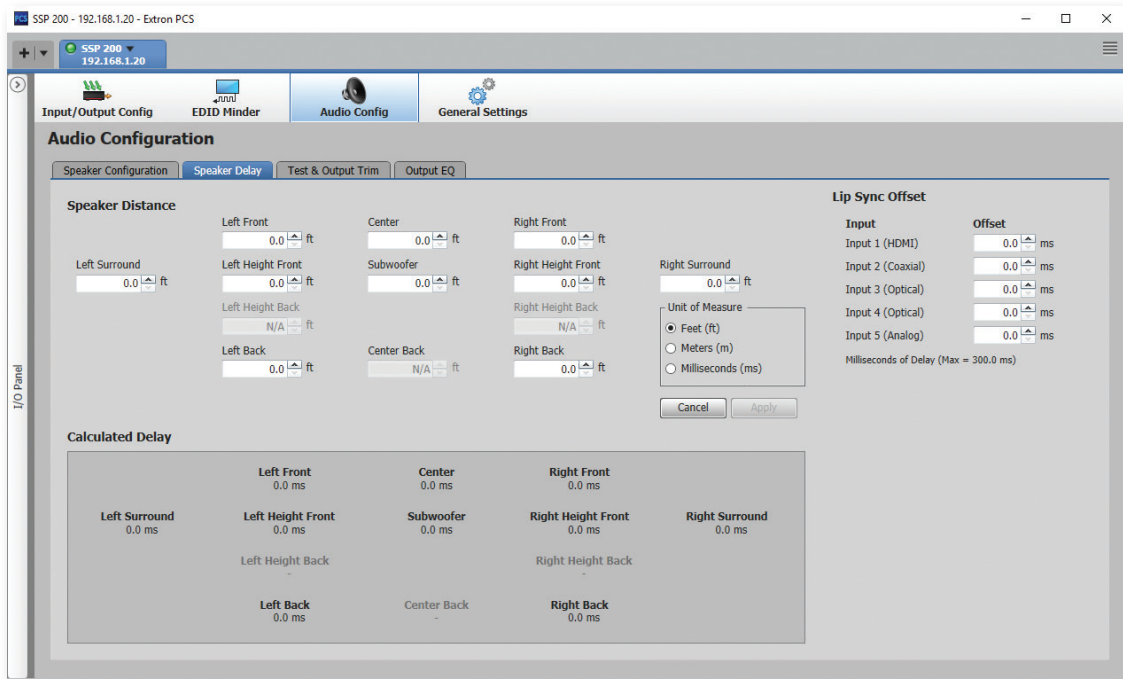
Speaker delay and Lip Sync Offset

The integrated test signal generator provides Dolby Noise, pink noise, or an external signal for speaker calibration. Individual speakers can be trimmed for system balance and true reproduction of surround and immersive content.
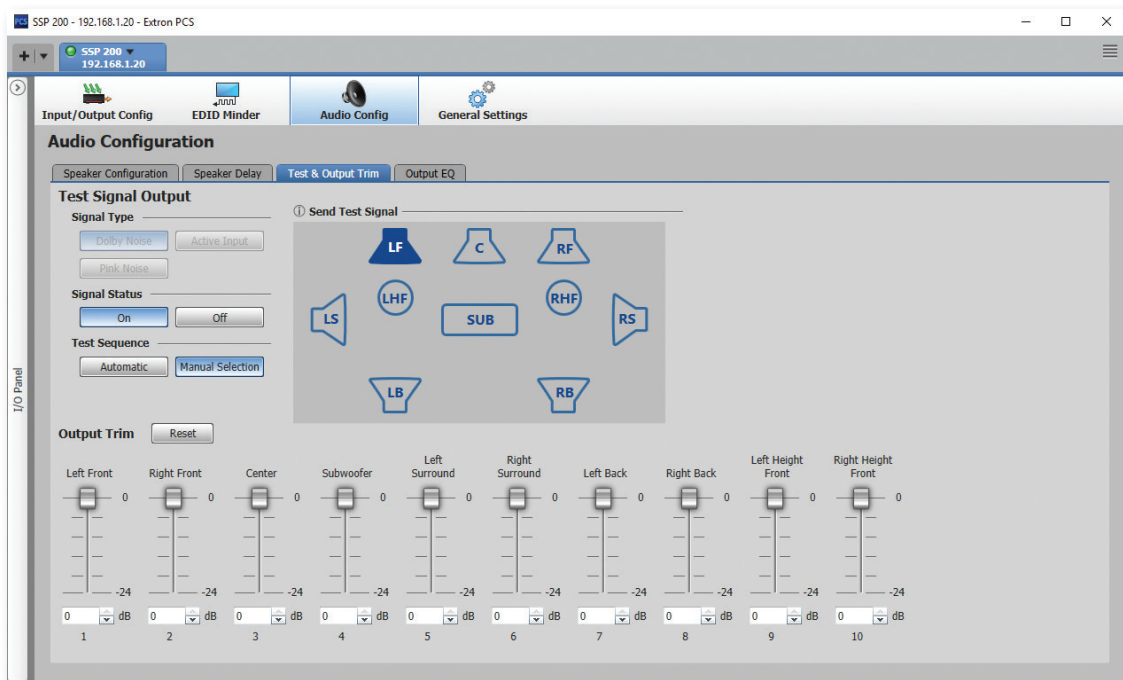
Test signal generator and speaker output trims

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
		12 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 or 4:2:0
Color bit depth[1]	8 or 10 bits per color
Signal type	DVI 1.0, HDMI 1.4 and 2.0, HDCP 1.4 and 2.3
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/8Kdatarate to determine video parameters supported by this data rate.

VIDEO INPUT AND LOOP THROUGH

Number/signal type	1 HDMI/DVI (HDCP compliant), input 1 HDMI/DVI (HDCP compliant), loop through
Connectors	2 female HDMI type A: 1 for input, 1 for loop through
Resolution range	Up to 4K (4096x2160 at 60 Hz)
Input cable equalization	Automatic
Standards	DVI 1.0, HDMI 1.4 and 2.0, HDCP 1.4 and 2.3

AUDIO

Gain	Unbalanced output: -6 dB; balanced output: 0 dB, when volume is set to 100%.
Frequency response	20 Hz to 20 kHz, ±0.2 dB
Subwoofer frequency response	4 Hz to 250 Hz, ±3 dB
THD + Noise	<0.03% @ 1 kHz, at maximum output level
S/N	>100 dB, 20 Hz to 20 kHz, unweighted
Stereo channel separation	Analog input only: >90 dB @ 1 kHz
Volume control	- 100 dB to 0 dB
Bass management crossover frequencies	40 Hz to 250 Hz

AUDIO INPUT — ANALOG

Number/signal type	1 analog stereo/mono, balanced/unbalanced
Listening modes	Auto, stereo, stereo to all, mono, mono to all, Dolby® Upmixer, DTS™ Neural:X Upmixer
Connector	(1) 3.5 mm captive screw connector, 6 pole
Impedance	>10k ohms balanced/unbalanced, DC coupled
Nominal level	+4 dBu (1.23 Vrms) balanced or -10 dBV (316 mVrms) unbalanced
Maximum level	+21 dBu (balanced/unbalanced)
Input gain adjustment	-18 dB to +24 dB (default = 0 dB), adjustable via RS-232 or front panel

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

AUDIO INPUT — DIGITAL

Number/signal type	1 HDMI, 3 S/PDIF (2 optical, 1 coaxial)
Source formats	PCM, Dolby Digital 2/0, Dolby Digital 2/0 Surround, Dolby Digital 5.1, Dolby Digital Surround EX, Dolby Atmos, Dolby True HD, Dolby Digital Plus; DTS 2-channel, DTS Digital Surround, DTS-ES Matrix 6.1, DTS-ES Discrete 6.1, DTS 96/24, DTS 96/24 ES Matrix 6.1, DTS:X, DTS Master Audio, DTS Neural:X
Listening modes	Auto, stereo, stereo to all, mono, mono to all, Dolby Upmixer, DTS Neural:X Upmixer
Connectors	1 HDMI connector 2 TOSLINK™ fiber optic connectors 1 RCA connector

AUDIO OUTPUT

Number/signal type	10 balanced/unbalanced, for left and right front, left and right surround, center, and subwoofer output, plus four assignable outputs for left and right back, front and back height pairs, and downmix
Connectors	(5) 3.5 mm captive screw connectors, 6 pole
Impedance	50 ohms unbalanced, 100 ohms balanced
Gain error	±0.2 dB channel to channel
Maximum level (Hi-Z)	>+21 dBu balanced or >+15 dBu unbalanced at 0.03% THD+N
Output level range per channel	-24 dB to 0 dB
D/A conversion	24 bit, 96 kHz

CONTROL/REMOTE — AUDIO PROCESSOR

Serial host control port	1 bidirectional RS-232 rear panel 3.5 mm captive screw connector, 3 pole
Baud rate and protocol	9600, 19200, 38400 (default), 115200 baud (adjustable); 8 data bits, 1 stop bit, no parity
Serial control pin configuration	1 = Tx, 2 = Rx, 3 = GND
Program control	Extron Product Configuration Software (PCS) program for Windows® Extron Simple Instruction Set™ (SIS™)
USB configuration port	1 front panel USB mini-B
USB standards	USB 2.0, low speed
Ethernet host port	1 RJ-45 female
Protocol	ARP, DHCP, HTTPS, ICMP, IEEE 802.1X, IP, SSH, TCP, Telnet

GENERAL

Power	100 VAC to 240 VAC, 50-60 Hz, 12 watts, internal
Cooling	Convection, vents
Mounting	
Rack mount	Yes, with optional rack shelf
Furniture mount	Yes, with optional under-desk or through-desk mounting kit
Enclosure dimensions	1.7" H x 8.75" W x 8.5" D (1U high, half rack wide) (4.3 cm H x 22.2 cm W x 21.6 cm D) (Depth excludes connectors and knob.)
Regulatory compliance	CE, c-UL, UL, C-tick, FCC Class B, ICES, VCCI Complies with the appropriate requirements of RoHS and WEEE.
Product warranty	3 years parts and labor

NOTE: All nominal levels are at ±10%.

Model	Version Description	Part number
Model SSP 200	Surround Sound Processor	60-1658-01

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