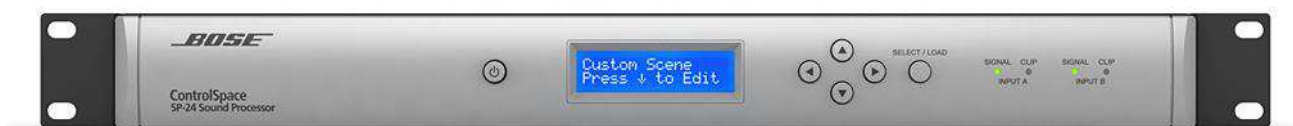


# ControlSpace® SP-24 sound processor

**BOSE**



## Product Overview

The Bose® ControlSpace® SP-24 sound processor makes optimizing 2x4 installed and portable sound systems easy. Use the purposefully simple front panel interface for basic operations, or the intuitive SP-24 Editor software for full access to all signal processing settings.

## Product Information

While many loudspeaker controllers offer complicated user interfaces, the SP-24 processor keeps the front panel interface simple with basic preset/scene recall and gain/delay operations. For full system access, the straightforward and intuitive SP-24 Editor software provides access to all signal processing settings and signal routing, whether connected live or offline. Scenes created with the SP-24 Editor software can be saved locally to a PC or, using a USB connection, stored in the SP-24 processor hardware. Full access includes custom channel routing, input and output 9-band equalization, band pass filters, delays, peak limiter, gain and polarity control. Custom loudspeaker EQ curves can be created or Bose professional loudspeaker EQs can be recalled for quick, optimized setup. The hardware includes standard XLR connectors to easily connect to balanced pro-level source devices, amplifiers and powered loudspeakers.

## Applications

Designed for a wide range of applications, including:

- Auditoriums
- Houses of worship
- Live music performances
- Restaurants and bars
- Retail stores
- Auxiliary zones

## Key Features

- **Real-time control**, and the ability to program and store custom scenes with the easy-to-use SP-24 Editor software
- **SP-24 Editor software** provides complete access to all signal processing functions including custom channel routing, input and output 9-band dual equalization, band pass filters, delays, peak limiter, gain and signal polarity for full system control
- **Simplified front panel** LCD menus and controls are purposely designed to make it easier to select preprogrammed scenes, gain and delay parameters, or quickly access Bose® loudspeaker presets
- **USB port** enables plug-and-play PC access for system configuration, programming, signal level monitoring and firmware updates using the SP-24 Editor software
- **Extensive Bose professional loudspeaker library** enables quick access to factory-created equalization curves while the SP-24 Editor software provides intuitive graphical tools for optimizing any passive or powered loudspeaker
- **XLR inputs** (2) and outputs (4) for balanced connectivity to professional audio gear
- **Signal and clip LED indicators** show the signal status of the input channels
- **Front panel lockout** feature prevents unauthorized use

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## Technical Specifications

| Audio Performance Specifications |   |
|----------------------------------|---|
| Frequency Response               | 20 Hz - 20 kHz (+0/-1 dB)   |
| THD+N                            | 0.015 % (typical)   |
| Channel Separation (Crosstalk)   | 100 dB (typical)  |
| Dynamic Range                    | 107 dB (typical)  |
| Integrated DSP                   |   |
| Audio Latency                    | 1.52 ms   |
| A/D and D/A Converters           | 24-bit  |
| Sample Rate                      | 48 kHz  |
| Maximum Output Delay             | 170 ms  |
| Audio Inputs                     |   |
| Input Channels                   | 2 channels  |
| Inputs                           | 2 analog, balanced, differential  |
| Maximum Input Level              | +18 dBu   |
| Connectors, Input                | XLR   |
| Input Impedance                  | Differential 2.2 k $\Omega$ @ 1 kHz                                       |
| Sensitivity                      | Selectable: 0/+6/+18 dBu  |
| Audio Outputs                    |   |
| Outputs                          | 4 analog, balanced, differential  |
| Connectors, Output               | XLR   |
| Output Impedance                 | Differential 200 $\Omega$   |
| Maximum Output Level             | +18 dBu   |
| Indicators and Controls          |   |
| Audio Indicators                 | Input signal present (Green LED)<br>Input signal clip at 0 dBFS (Red LED) |
| Electrical Specifications        |   |
| Mains Voltage                    | 100 VAC - 240 VAC (+/- 10%, 50/60 Hz)                                     |
| AC Power Consumption             | 15 W  |
| AC Mains                         | Standard IEC (C14)  |
| Power Dissipation                | 52 BTU (13.1 kcal)  |
| Physical                         |   |
| Rack Space Units                 | 1RU   |
| Dimensions                       | 1.8" H x 19" W x 8.6" D (45 mm x 483 mm x 218 mm)                         |
| Net Weight                       | 5.9 lb (2.7 kg)   |
| Shipping Weight                  | 8.6 lb (3.9 kg)   |
| Operating Temperature            | 32 °F - 113 °F (0 °C - 45 °C)   |
| Storage Temperature              | -40 °F - 158 °F (-40 °C - 70 °C)  |
| Humidity                         | 95% relative humidity, maximum  |
| General                          |   |
| Communication Port               | USB Type B (rear panel), PC interface                                     |

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TECHNICAL DATA SHEET



1. **Off/On switch:** Turns the product off or on
2. **Display:** 2 x 16 backlit LCD display shows presets, scenes and parameter values
3. **Navigation controls:** 4 pushbuttons allow navigation of the user interface
4. **SELECT/LOAD control:** Pushbutton loads presets and custom scenes. Saves Utility Menu parameters
5. **SIGNAL/CLIP LEDs:** Illuminates to show signal and clipping (0 dBFS) indication for each input channel
6. **Removable rack ears:** For use when installing into rack mount enclosures

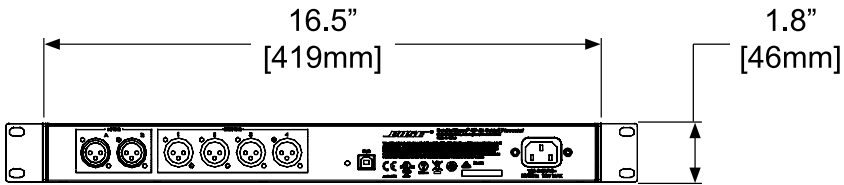


1. **INPUTS A/B:** Balanced XLR inputs, +18 dBu max
2. **OUTPUTS 1 – 4:** Balanced XLR outputs, +18 dBu max
3. **USB Port:** Type B USB port for optional connection to a personal computer running the ControlSpace SP-24 Editor software
4. **Input power:** Power cord input

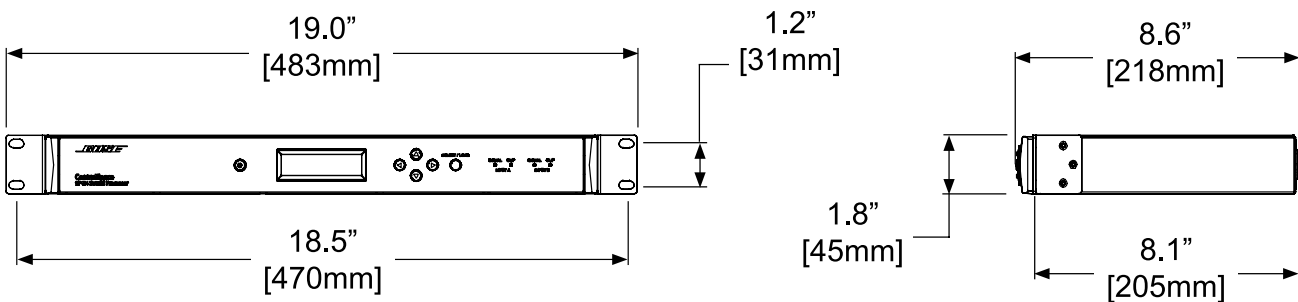
# ControlSpace® SP-24 sound processor



## Mechanical Diagrams



Back View



Front View

Right View

# ControlSpace® SP-24 sound processor



## Architects' and Engineers' Specifications

The unit shall be a 2-input, 4-output standalone sound processor using a floating point digital signal processing architecture running at a 48 kHz sample rate with 24-bit A/D and D/A converters. Total latency through the unit, analog input to analog output shall total 1.52 milliseconds. The processor shall run the following signal processing algorithms: 9-band parametric equalization, routing, band pass crossover, signal delay and peak limiting.

Input and output connections shall utilize XLR type connectors. Each input shall be a balanced, differential circuit with an input impedance of 2.2 kilohm capable of accepting input signals up to +18 dBu. Each output shall be a balanced, differential circuit with an output impedance of 200 ohms capable of delivering a signal level up to +18 dBu.

The frequency response shall be +0/-1 dB from 20 Hz to 20 kHz. The dynamic range shall be 107 dB (typical) from 20 Hz to 20 kHz. The THD shall be < 0.015% (typical). Crosstalk shall be < -100 dB (typical).

The processor shall include a front panel user interface consisting of a 2x16 blue backlit LCD display, and four navigation buttons. The front panel interface shall allow for the selection of predefined routing configurations and selection of loudspeaker equalization for Bose® professional loudspeakers. The front panel interface shall include the ability to recall custom scenes that are stored in the unit. The front panel interface shall provide access to the following functions: input level, output level, loudspeaker equalization preset and signal delay (per output channel). The processor shall have a maximum signal delay capability of 170 milliseconds per output channel. The front panel interface shall provide a user lockout function and firmware upgrade mode. The processor shall include a Type B USB connector for connection to a personal computer for the purposes of signal processing configuration and firmware updates. The control software shall provide access to signal routing and the following signal processing functions: input level, input equalization, signal routing, output band pass, output loudspeaker equalization, output equalization, output delay, output limiting, and output polarity and level. The control software shall provide the ability to create and store custom configurations within the processor which can be recalled via the software or front panel interface. The control software shall provide input and output metering with 48 dB of signal range.

The processor shall have a universal auto switching power supply capable of accepting input voltages from 100 VAC to 240 VAC, 50 Hz to 60 Hz. Power consumption shall be < 15 W.

The processor shall be constructed of painted steel and weigh 8.6 lb (3.9 kg). The processor dimensions shall be 1.8" H x 19.0" W x 8.6" D (45 mm x 483 mm x 218 mm), allowing mounting within a standard equipment rack. The processor shall be a single rack-space unit and have pre-installed 1RU rack ears.

The processor shall be the Bose ControlSpace SP-24 sound processor. The control software shall be the ControlSpace SP-24 Editor software.

## Safety and Regulatory Compliance

The ControlSpace® SP-24 sound processor complies with CE requirements, and is cUL listed according to UL60065 (7th edition) and CAN/CSA C22.2 No. 60065-03, CB approved according to IEC60065 (7th edition) including group and national differences, and is PSE compliant. It also complies with FCC Part 15B Class A (2003), EN55103-1 (1997), EN55103-2 (1996), CISPR13 (2003), and Canadian ICES-003 Class A specifications.

## Product Codes

|              |             |
|--------------|-------------|
| 120V – US    | 352428-1410 |
| 240V – AU    | 352428-2410 |
| 100V – Japan | 352428-3410 |
| 230V – EU    | 352428-4410 |
| 230V – UK    | 352428-5410 |