Product Overview

The DSP for quick-turn installations — the Bose CSP-1248 commercial sound processor is part of a comprehensive platform that includes loudspeakers, controls, and software that help installers deliver premium sound systems efficiently. An onboard CSP configuration utility and intuitive browser-based UI provide a quick-setup workflow. Common tasks are presented in a logical manner, so you can configure the system faster, reducing installation time while increasing setup accuracy. Once installed, Bose proprietary algorithms offer predictable performance while optional interfaces — such as ControlCenter digital zone controllers and the ControlSpace Remote app — make operation easy for end users.

Key Features

- **Right-sized connectivity** for cost-effective commercial installation — 8 x 4 balanced analog I/O, 4 pair mono-summed RCA inputs, 8 control inputs, 1 control output, mute contact, Ethernet port, and Bose AmpLink connectivity
- **CSP configuration** utility with browser-based UI facilitates real-time display and control of levels, routing, thresholds, priorities, scheduled events, Bose loudspeaker EQs, plus input and area EQs
- **Rear-panel Ethernet** port for PC/Mac configuration; also allows for connection to networks supporting ControlCenter digital zone controllers and the ControlSpace Remote app
- **AutoVolume compensation** continuously adapts zone output level based on ambient noise when paired with the Bose AVM-1 sense microphone (sold separately)
- **Opti-voice paging** provides a smooth transition between music and announcements
- **Opti-source level management** monitors input level of up to 4 sources, maintaining consistent volume when switching sources
- **SmartBass processing** expands performance and response at any listening level on supported Bose loudspeakers
- **Bose AmpLink output** for simplified digital audio connection to compatible power amplifiers, reducing terminations, and related points of failure
- **Intuitive end-user operation** — optional ControlCenter CC-1D, CC-2D, and CC-3D (sold separately) digital zone controllers and ControlSpace Remote app provide easy volume control and source selection

Applications

- Retail
- Restaurants
- Hospitality

TECHNICAL DATA

**Bose CSP-1248 commercial sound processor**
**Technical Specifications**

### INTEGRATED DSP

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signal Processor/CPU</td>
<td>32-bit fixed/floating-point DSP + ARM, 456 MHz</td>
</tr>
<tr>
<td>Maximum Calculation</td>
<td>3.6 GIPS / 2.7 GFLOPS</td>
</tr>
<tr>
<td>Audio Latency</td>
<td>900 μs (analog in to analog out)</td>
</tr>
<tr>
<td>A/D and D/A Converters</td>
<td>24-bit</td>
</tr>
<tr>
<td>Sample Rate</td>
<td>48 kHz</td>
</tr>
</tbody>
</table>

### AUDIO PERFORMANCE SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Response</td>
<td>20 Hz - 20 kHz (+0.3 dB/-0.5 dB)</td>
</tr>
<tr>
<td>THD+N</td>
<td>&lt; 0.01 % at +4 dBu (A-weighted/20 Hz - 20 kHz)</td>
</tr>
<tr>
<td>Channel Separation (Crosstalk)</td>
<td>&lt; -105 dB at +4 dBu input and output level, 1 kHz</td>
</tr>
<tr>
<td>Dynamic Range</td>
<td>&gt; 115 dB A-weighted 20 Hz - 20 kHz, analog through</td>
</tr>
</tbody>
</table>

### AUDIO INPUTS

<table>
<thead>
<tr>
<th>Channel</th>
<th>Connectors</th>
<th>Type</th>
<th>Sensitivity Options (via configuration utility)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inputs 1 - 4</td>
<td>RCA pairs</td>
<td>Unbalanced, mono-summed</td>
<td>-10 dBV</td>
</tr>
<tr>
<td>Inputs 5 - 11</td>
<td>3-pin Euroblock</td>
<td>Balanced, mic/line</td>
<td>-70 / -60 / -50 / +4 / +14 dBu, with selectable phantom power</td>
</tr>
<tr>
<td>Input 12</td>
<td>4-pin Euroblock with dedicated GPI for paging</td>
<td>Balanced mic/line or 600 Ω paging input</td>
<td>-70 / -60 / -50 / +4 / +14 dBu, with selectable phantom power, or 600 Ω paging</td>
</tr>
</tbody>
</table>

- Input Impedance: 12 kΩ @ 1 kHz (with or without phantom power active)
- Maximum Input Level: +24 dBu (THD+N <=0.3%, 20 to 20 kHz, 0 dB gain)
- Equivalent Input Noise: < -119 dBu (22 Hz - 20 kHz, 150 Ω input, 64 dB gain)
- Phantom Power: +48V, open circuit, 10 mA max per channel, selectable per input, 80 mA max across all channels

### AUDIO OUTPUTS

<table>
<thead>
<tr>
<th>Channel</th>
<th>Connectors</th>
<th>Type</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs 1 - 3</td>
<td>3-pin Euroblock</td>
<td>Balanced line level</td>
<td>Balanced line level, or fully-isolated output for Music On Hold for 600 Ω telephone systems (activated in configuration utility)</td>
</tr>
<tr>
<td>Analog Output 4</td>
<td>3-pin Euroblock</td>
<td>Balanced line level, or fully-isolated output for Music On Hold for 600 Ω telephone systems (activated in configuration utility)</td>
<td>48 kHz, 8-channel digital audio over AmpLink</td>
</tr>
</tbody>
</table>

- Output Impedance: 66 Ω
- Maximum Output Level: +24 dBu (THD+N <=0.3%, 22 Hz to 20 kHz)

### CONTROL INPUTS

- Inputs (Control): 8 digital inputs, 2 kΩ internal pull-up resistor to 5 V, Green 3.81 mm pitch connector (9-pin)
- Mute (Control): 1 digital input, 2 kΩ internal pull-up resistor to 5 V, Black 3.81 mm pitch connector (2-pin)
- Digital Input Voltage: 0 V to 3.3 V (threshold voltage = 1.6 V)

### CONTROL OUTPUTS

- Outputs (Control): 1 digital outputs, Orange 3.81 mm pitch connector (2-pin)
- Output Voltage: High: 8 V (open circuit), 2.5 V @ 10 mA, Low: < 1 V @ 100 mA, push-pull
- Output Current: 10 mA source, 100 mA sink (24 VDC max external supply voltage)

### INDICATORS AND CONTROLS

- LED Status Indicators: Power/Status, Signal, Ethernet, AmpLink
- Audio Signal Indication: Green (-60 to -20 dBFS), Yellow (-20 to -2 dBFS), Red (-2 dBFS to Clip)

### ELECTRICAL SPECIFICATIONS

- Mains Voltage: 85 VAC-264 VAC 50/60 Hz
- AC Power Consumption: < 30 W typical, over all mains voltages, (PSU Max < 45W)
- Mains Connector: IEC 60320-C14 (Inlet)
- Power Dissipation: -22 W (75 BTU/Hr, 19 kcal/hr)

### PHYSICAL

- Dimensions (H x W x D): 44 x 483 x 215 mm (1.7 x 19.0 x 8.5 in)
- Operating Temperature: 0 °C - 40 °C (32 °F - 104 °F)
- Cooling System: Active, side venting with fan
- Storage temperature: -40 °C - 70 °C (-40 °F - 158 °F)
- Humidity: 80% (without condensation)
# Bose CSP-1248
Commercial sound processor

## GENERAL
<table>
<thead>
<tr>
<th>Configuration Software</th>
<th>Web browser based configuration utility</th>
</tr>
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<tbody>
<tr>
<td>Network Control</td>
<td>Ethernet (RJ-45), 10/100 Mbps</td>
</tr>
</tbody>
</table>

## PRODUCT CODES
- **US-120V**: 808456-1110
- **EU-230V**: 808456-2110
- **JP-100V**: 808456-3110
- **UK-230V**: 808456-4110
- **AU-240V**: 808456-5110

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### Features

1. **RCA inputs** – Four mono-summed pairs for connection to unbalanced sources
2. **Balanced inputs** – Eight balanced analog mic/line inputs with selectable +48V phantom power
3. **PBX input** – Dedicated paging control input for 600 Ω telephone systems
4. **Balanced outputs** – Four balanced analog line outputs
5. **MOH output** – Standard balanced output or source for 600 Ω music-on-hold telephone system. Configured by software
6. **AmpLink output connector** – 8-channel digital audio output for use with supported Bose amplifiers
7. **Control inputs** – Eight digital control inputs for push-to-talk microphone triggering
8. **Control output** – Control output for use with third-party devices (triggering via ControlSpace Remote only)
9. **Mute** – Contact closure connection that upon trigger will mute all outputs, NO default
10. **Service port**
11. **Network** – Ethernet connection (RJ-45) for accessing the onboard configuration utility, or for connecting ControlCenter digital controllers via a PoE network switch
12. **AC Mains receptacle** – Power cord connection (IEC 60320-C14 inlet)

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### Dimensions

- **Top View**: 217 mm (8.6 in)
- **Front View**: 44 mm (1.7 in), 482 mm (18.9 in)
- **Back View**: 465 mm (18.3 in), 199 mm (7.9 in)
- **Bottom View**: 29 mm (1.2 in)

**Notes:**
- Dimensions are in millimeters or inches

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For additional specifications and application information, please visit PRO.BOSE.COM. Specifications subject to change without notice. 01/2019