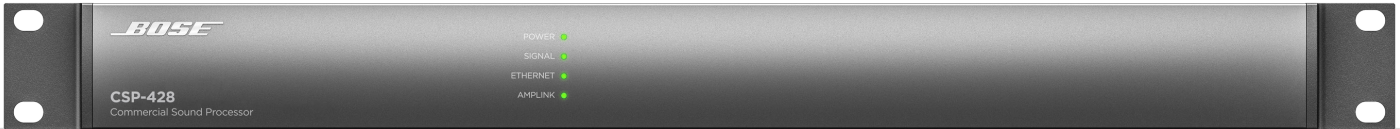


# Bose CSP-428

## commercial sound processor



## Product Overview

The DSP for quick-turn installations — the Bose CSP-428 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 — 2 x 2 balanced analog I/O, 2 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

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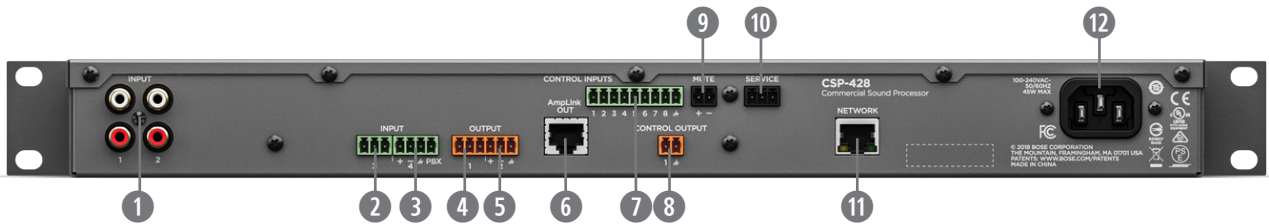
## Technical Specifications

<b>INTEGRATED DSP</b>			
Signal Processor/CPU	32-bit fixed/floating-point DSP + ARM, 456 MHz		
Maximum Calculation	3.6 GIPS / 2.7 GFLOPS		
Audio Latency	900 $\mu$ s (analog in to analog out)		
A/D and D/A Converters	24-bit		
Sample Rate	48 kHz		
<b>AUDIO PERFORMANCE SPECIFICATIONS</b>			
Frequency Response	20 Hz - 20 kHz (+0.3 dB/-0.5 dB)		
THD+N	< 0.01 % at +4 dBu (A-weighted/20 Hz - 20 kHz)		
Channel Separation (Crosstalk)	< -105 dB at +4 dBu input and output level, 1 kHz		
Dynamic Range	> 115 dB A-weighted 20 Hz - 20 kHz, analog through		
<b>AUDIO INPUTS</b>			
Input Channels	4 analog inputs (two unbalanced, two balanced)		
	Inputs 1 and 2	Input 3	Input 4
Connectors	RCA pairs	3-pin Euroblock	4-pin Euroblock with dedicated GPI for paging
Type	Unbalanced, mono-summed	Balanced, mic/line	Balanced mic/line or 600 $\Omega$ paging input
Sensitivity Options (via configuration utility)	-10 dBV	-70 / -60 / -50 / 0 / +4 dBu -10 dBV with selectable phantom power	-70 / -60 / -50 / 0 / +4 dBu -10 dBV with selectable phantom power
Input Impedance	12 k $\Omega$ @ 1 kHz (with or without phantom power active)		
Maximum Input Level	+24 dBu (THD+N $\leq$ 0.3%, 20 to 20kHz, 0 dB gain)		
Equivalent Input Noise	< -119 dBu (22Hz - 20 kHz, 150 $\Omega$ input, 64 dB gain)		
Phantom Power	+48V, open circuit, 10mA max per channel, selectable per input, 80mA max across all channels		
<b>AUDIO OUTPUTS</b>			
Output Channels	10 (2 analog, 8 digital via AmpLink)		
	Analog Output 1	Analog Output 2	Digital Outputs
Connectors	3-pin Euroblock	3-pin Euroblock	RJ-45
Type	Balanced line level	Balanced line level, or fully-isolated output for Music On Hold for 600 $\Omega$ telephone systems (activated in configuration utility)	48 kHz, 8-channel digital audio over AmpLink
Output Impedance	66 $\Omega$		
Maximum Output Level	+24 dBu (THD+N $\leq$ 0.3%, 22 Hz to 20 kHz )		
<b>CONTROL INPUTS</b>			
Inputs (Control)	8 digital inputs, 2 k $\Omega$ internal pull-up resistor to 5 V, Green 3.81 mm pitch connector (9-pin)		
Mute (Control)	1 digital input, 2 k $\Omega$ 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)		
<b>CONTROL OUTPUTS</b>			
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)		
<b>INDICATORS AND CONTROLS</b>			
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)		
<b>ELECTRICAL SPECIFICATIONS</b>			
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)		
<b>PHYSICAL</b>			
Dimensions (H x W x D)	44 x 483 x 215 mm (1.7 x 19 x 8.5 in)		
Operating Temperature	0 $^{\circ}$ C - 40 $^{\circ}$ C (32 $^{\circ}$ F - 104 $^{\circ}$ F)		
Cooling System	Active, side venting with fan		
Storage temperature	-40 $^{\circ}$ C to 70 $^{\circ}$ C (-40 $^{\circ}$ F to 158 $^{\circ}$ F )		
Humidity	80% (without condensation)		

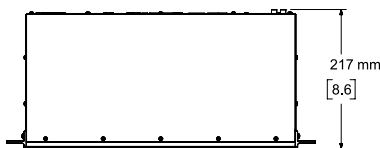
# Bose CSP-428

## commercial sound processor

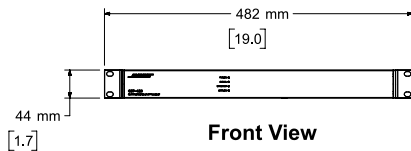
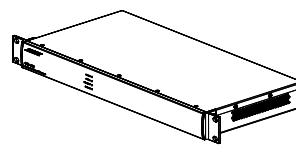
GENERAL	
Configuration Software	Web browser based configuration utility
Network Control	Ethernet (RJ-45), 10/100 Mbps
PRODUCT CODES	
US-120V	808453-1110
EU-230V	808453-2110
JP-100V	808453-3110
UK-230V	808453-4110
AU-240V	808453-5110



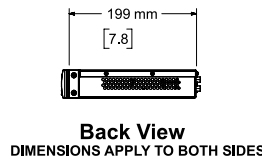
- 1 RCA inputs** - Two mono-summed pairs for connection to unbalanced sources
- 2 Balanced inputs** - Two balanced analog mic/line inputs with selectable +48V phantom power
- 3 PBX input** - Dedicated paging control input for 600 Ω telephone systems
- 4 Balanced outputs** - Two balanced analog line outputs
- 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)



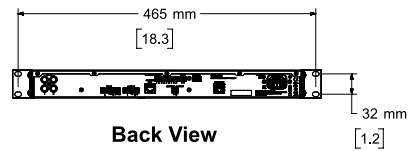
Top View



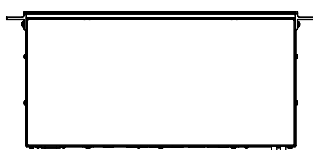
Front View



Back View  
DIMENSIONS APPLY TO BOTH SIDES



Back View



Bottom View

NOTES:  
1. DIMENSIONS ARE IN MILLIMETERS OVER INCHES

For additional specifications and application information, please visit [PRO.BOSE.COM](http://PRO.BOSE.COM). Specifications subject to change without notice. 07/2019