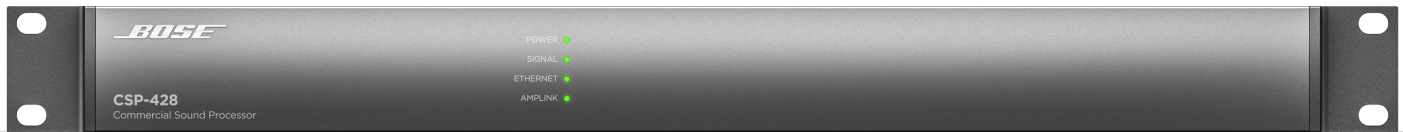


CSP-428

commercial sound processor



Product Overview

The DSP for quick-turn installations — the Bose Professional 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 Professional 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 Professional AmpLink connectivity

CSP configuration utility with browser-based UI facilitates real-time display and control of levels, routing, thresholds, priorities, scheduled events, Bose Professional 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 Professional 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 Professional loudspeakers

Bose Professional 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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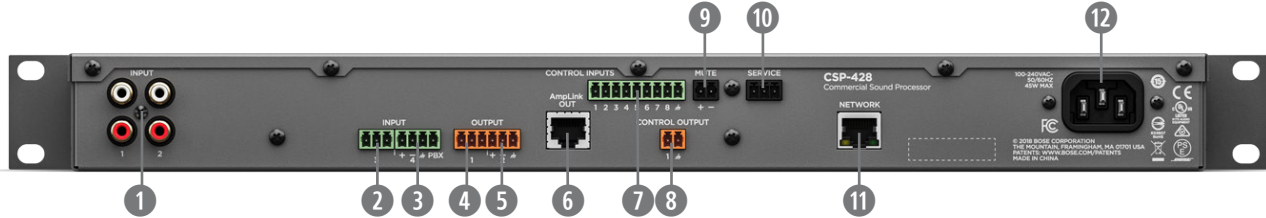
Technical Specifications

INTEGRATED DSP			
Signal Processor/CPU	32-bit fixed/floating-point DSP + ARM, 456 MHz		
Maximum Calculation	3.6 GIPS / 2.7 GFLOPS		
Audio Latency	900 μ s (analog in to analog out)		
A/D and D/A Converters	24-bit		
Sample Rate	48 kHz		
AUDIO PERFORMANCE SPECIFICATIONS			
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		
AUDIO INPUTS			
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 Ω 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 Ω @ 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 Ω input, 64 dB gain)		
Phantom Power	+48V, open circuit, 10mA max per channel, selectable per input, 80mA max across all channels		
AUDIO OUTPUTS			
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 Ω telephone systems (activated in configuration utility)	48 kHz, 8-channel digital audio over AmpLink
Output Impedance	66 Ω		
Maximum Output Level	+24 dBu (THD+N \leq 0.3%, 22 Hz to 20 kHz)		
CONTROL INPUTS			
Inputs (Control)	8 digital inputs, 2 k Ω internal pull-up resistor to 5 V, Green 3.81 mm pitch connector (9-pin)		
Mute (Control)	1 digital input, 2 k Ω 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 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)		

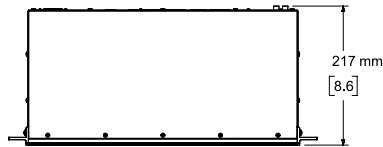
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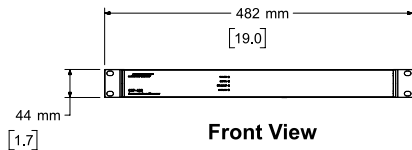
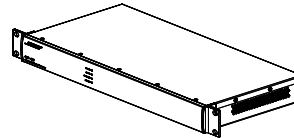
GENERAL	
Configuration Software	Web browser based configuration utility
Network Control	Ethernet (RJ-45), 10/100 Mbps
PRODUCT CODES	
US-120V	808453-1110
EU-230V	808453-2110
JP-100V	808453-3110
UK-230V	808453-4110
AU-240V	808453-5110



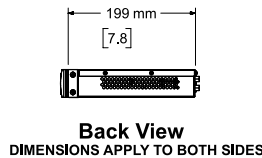
- 1 RCA inputs** – Two mono-summed pairs for connection to unbalanced sources
- 2 Balanced inputs** – Two balanced analog mic/line inputs with selectable +48V phantom power
- 3 PBX input** – Dedicated paging control input for 600 Ω telephone systems
- 4 Balanced outputs** – Two balanced analog line outputs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

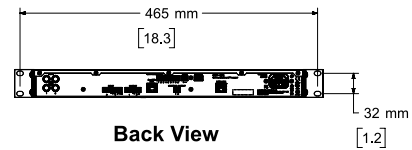


Front View



Back View

DIMENSIONS APPLY TO BOTH SIDES



Back View



Bottom View

NOTES:
1. DIMENSIONS ARE IN MILLIMETERS OVER INCHES

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