ControlSpace® EX-1280C conferencing signal processor

BOSE

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Dante™

Product Description

The ControlSpace EX-1280C conferencing processor combines USB, VoIP, PSTN and Dante™ audio networking in one purpose-built processor. The EX-1280C includes 12 mic/line analog inputs, 8 analog outputs, 64 x 64 Dante, 12 acoustic echo cancellers (AEC), 8 Bose® AmpLink digital outputs, and flexible, open-architecture signal processing to meet the needs of a wide range of audio conferencing applications. Optional ControlSpace EX under-table Dante endpoints complement the EX-1280C processor by providing a scalable "one cable from the table" Dante-based connectivity solution for analog microphones, soft codecs via USB, and telephone handsets.

Applications

Designed for a wide range of applications, including:

• Boardrooms

• Medium/large conference rooms

• Courtrooms

• Distance learning

• Auditoriums

• Multi-purpose spaces

Key Features

• **All-in-one design** supports simultaneous VoIP, PSTN and USB soft codecs in a single 1RU model

• **12-channel advanced AEC** routes to both analog and Dante inputs. Multiple references allow one EX-1280C processor to support multiple rooms, or AEC-sharing across multiple processors. Each AEC channel includes adaptable noise cancellation, non-linear processing and comfort noise to enhance the clarity and intelligibility of the meeting

• **2-line VoIP** supports all popular codecs and multiple call appearances. A VoIP web interface allows IT personnel to configure VoIP parameters without audio system design file access or integrator involvement

• **PSTN connection** (RJ-11) for worldwide POTS/analog telephone systems worldwide. It includes compliance certification for most countries including US, Canada, Mexico, Europe, Japan, and Australia

• **USB connection** facilitates easy integration with PC soft codecs

• **Dante™** audio networking supports 64 x 64 audio channels for connection to other Dante-enabled products, including native Dante-integrated microphones

• **Bose® AmpLink** port provides a uncompressed, low-latency digital audio connection to AmpLink-equipped Bose amplifiers via standard CAT 5/6 cables

• **Front-panel interface** features a large OLED display and rotary encoder for setting network parameters and monitoring channel activity

• **GPIO (5 in/5 out)** for external connections including microphone pushbuttons or driving microphone LEDs

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Technical Specifications

INTEGRATED DSP	
Signal Processor/CPU	32-bit fixed/floating-point DSP 456 MHz/ARM Cortex-A8 600MHz
Maximum Calculation	3.6 GIPS / 2.7 GFLOPS
Delay	43 s
Audio Latency	860 µs (analog in to analog out)
A/D and D/A Converters	24-bit
Sample Rate	48 kHz

ANALOG AUDIO INPUTS	
Input Channels	12 balanced, mic/line level
Connectors, Input	3.81 mm Phoenix Contact®, 6-pin
Input Impedance	12 kΩ @ 1 kHz (with or without phantom power active)
Maximum Input Level	+24 dBu
Equivalent Input Noise	-118 dB at 48 dB gain setting
Phantom Power	+48 VDC, 10 mA, selectable per input
Gain Settings	0/14/24/32/48/54/64 dB

ANALOG AUDIO OUTPUTS	
Output Channels	8 balanced, line level
Connectors	3.81 mm Phoenix Contact®, 6-pin
Output Impedance	200 Ω
Maximum Output Level	+24 dBu

AUDIO PERFORMANCE SPECIFICATIONS	
Frequency Response	20 Hz – 20 kHz (+0.3 dB/-0.1 dB)
THD+N	0.002 % 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 input to analog output

AUDIO OVER IP	
Dante™	RJ-45; 64 x 64 channels, primary/secondary (ControlSpace ports)

DIGITAL AUDIO OUTPUTS	
AmpLink Output	RJ-45; 8 ultra-low latency < 100 µs, 48 kHz

COMMUNICATION PORTS	
USB Device	Micro-B type, stereo in/out, class-compliant
VoIP	RJ-45; 2 lines, 2 instances per line
PSTN	RJ-11; 1 line, Tx/Rx
USB Host	Type A. For future use

CONTROL INPUTS	
Inputs (Control)	5 analog or digital inputs, 2 kΩ internal pull-up resistor to 5 V, 3.81 mm Phoenix Contact®, 6-pin
Analog Input Voltage Range	0 V to 3.3 V (maximum 5 V)
Digital Input Voltage Range	0 V to 3.3 V (threshold voltage = 1.6 V)

CONTROL OUTPUTS	
Outputs (Control)	5 digital outputs, 3.81 mm Phoenix Contact®, 6-pin
Output Voltage	High: 8 V (open circuit), 2.5 V @ 10 mA Low: < 1 V @ 100 mA, push-pull

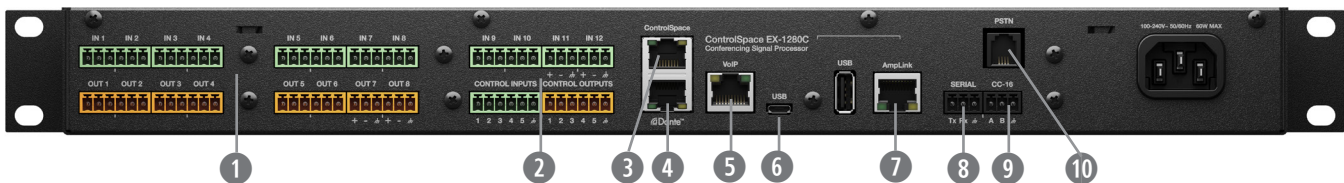| INDICATORS AND CONTROLS	
Display	256 x 64 OLED with rotary encoder
LED Status Indicators	Power/Status

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ELECTRICAL SPECIFICATIONS	
Mains Voltage	85 VAC-264 VAC 50/60 Hz
AC Power Consumption	< 15 VA typical at 122 °F (50 °C) ambient
Mains Connector	IEC 60320-C14 (Inlet)
Power Dissipation	12 W (41 BTU, 10 kcal)

PHYSICAL	
Dimensions	44 mm x 483 mm x 215 mm (1.7" H x 19" W x 8.5" D)
Net Weight	2.6 kg (5.8 lb)
Operating Temperature	32 °F - 122 °F (0 °C - 50 °C)
Cooling System	Passive, side venting

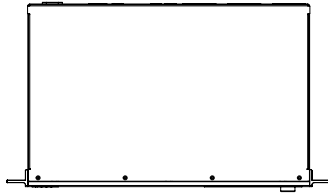| GENERAL	
PC Configuration Software	ControlSpace® Designer™ software
Network Control	Ethernet (RJ-45), 1Gb
RS-232/485 ports	RS-232 (DTE) & Bose CC-16 (RS-485 master); 3.81 mm Phoenix Contact®, 3-pin
Audio Channel Capacity	166 channels (20 analog, 8 AmpLink out, 64x64 Dante, 4 VoIP, 4 USB, 2 PSTN)

❶ Front-panel OLED Display and Encoder – 256 x 64 display for metering and network info
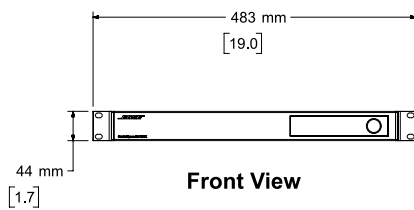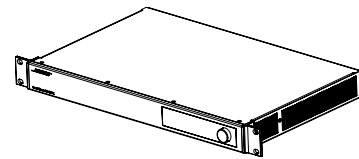Rotary/press knob for IP setup

❶ Balanced Analog I/O – 12 inputs (routable to AEC), 8 outputs

❷ GPIO – 5x5 expandable general-purpose control

❸ ControlSpace Network Port – Interfaces with Bose and 3rd party control

❹ Dante Network Port – 64 x 64 channel, 1 Gbps

❺ 2-Line VoIP – SIP 2.0-Compliant IT web configuration page

❻ USB Port – Micro-B USB for PC soft codecs with stereo input and output

❼ Bose® Amplink – 8-channel uncompressed, ultra-low latency digital audio

❽ Serial Port – 3-wire RS-232C (DTE) serial interface connection

❾ CC-16 – Supports Bose® CC-16 user controls

❿ PSTN (RJ-11) – Supports worldwide analog telephone connections
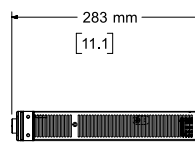
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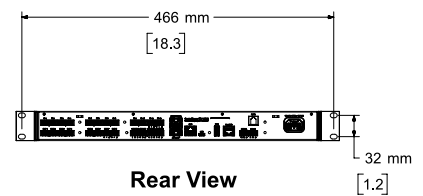## Mechanical Diagrams

Top View

483 mm
[19.0]

44 mm
[1.7]
Front View

283 mm
[11.1]
Right View
DIMENSIONS APPLY TO BOTH SIDES

466 mm
[18.3]
Rear View

32 mm
[1.2]

Product Codes

ControlSpace® EX-1280C Conferencing Signal Processor

US-120V	075257
EU-230V	075255
JP-100V	075225
UK-230V	075224
AU-240V	075222

Accessories

ControlSpace® EX-UH USB/Headset Dante® endpoint	075256
ControlSpace® EX-4ML mic/GPIO Dante® endpoint	075253
ControlSpace® EX-8ML mic/GPIO Dante® endpoint	075254