ControlSpace® EX-1280C conferencing processor

PROFESSIONAL

Dante™

Product Description

The ControlSpace® EX-1280C conferencing processor includes 12 mic/line analog inputs, 8 analog outputs, 8 AmpLink digital outputs, 12 acoustic echo cancellers (AEC), 64 x 64 Dante™ and flexible signal processing to meet the needs of a wide variety of integrated-microphone audio conferencing applications. The open-architecture design is configured using ControlSpace® Designer™ software and features drag-and-drop programming for extensive design possibilities.

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. 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. It includes compliance certification for most countries.
- **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
- **AmpLink** port provides 8-channels of uncompressed, low-latency digital audio to AmpLink-equipped Bose Professional amplifiers
- **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

Applications

Designed for a wide range of applications, including:

- Boardrooms
- Medium/large conference rooms
- Courtrooms
- Distance learning
- Auditoriums
- Multi-purpose spaces

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Technical Specifications

INTEGRATED DSP	
Signal Processor/CPU	32-bit fixed/floating-point DSP 456 MHz/ARM Cortex-A8 600 MHz
Maximum Calculation	3.6 GIPS / 2.7 GFLOPS
Delay	43 s
Audio Latency	1.05 ms (analog in to analog out, without AEC)
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 detachable Euroblock, 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 44 dB gain setting
Phantom Power	+48 VDC, 10 mA, software selectable per input
Gain Settings	0 / +14 / +24 / +32 / +44 / +54 / +64 dB

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

AUDIO PERFORMANCE SPECIFICATIONS	
Frequency Response	20 Hz to 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

ACOUSTIC ECHO CANCELLING	
Tail Length	480 ms
Noise Reduction	32 dB
Latency	50 ms
References	4

AUDIO OVER IP	
Dante™	64 x 64, primary/secondary, routable to AEC

DIGITAL AUDIO OUTPUTS	
AmpLink	8 low latency (< 21 µs), 48 kHz. Requires shielded CAT 5/6

COMMUNICATION PORTS	
USB Device	Micro-B type, stereo in/out
VoIP	RJ-45; 2 lines
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 detachable Euroblock, 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)

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CONTROL OUTPUTS	
Outputs (Control)	5 digital outputs, 3.81 mm detachable Euroblock, 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
Audio Signal Indication	On Display

ELECTRICAL SPECIFICATIONS	
Mains Voltage	85 VAC-264 VAC 50/60 Hz
AC Power Consumption	35 W typical at 40 °C (104 °F) ambient
Mains Connector	IEC 60320-C14 (Inlet)
Power Dissipation	60 W (205 BTU, 52 kcal)

PHYSICAL	
Dimensions	44 mm x 483 mm x 282 mm (1.7” x 19” x 11.1”)
Net Weight	3.6 kg (7.3 lb)
Operating Temperature	0°C - 40°C (32°F - 104°F)
Cooling System	2 variable-speed fans, side venting

GENERAL	
PC Configuration Software	ControlSpace® Designer™ software version 5.0 or later
Network Control	Ethernet (RJ-45), 1 Gbps
RS-232/485 ports	RS-232 (DTE) and Bose Professional CC-16 (RS-485 master) 3.81 mm detachable Euroblock, 3-pin
Audio Channel Capacity	166 channels (20 analog, 8 AmpLink out, 64 x 64 Dante, 4 VoIP, 4 USB, 2 PSTN)

COMPLIANCE	
Safety	UL60065 (8th edition), CAN/CSA-C22.2 No.60065 (8th edition), IEC/EN60065 (8th edition)
EMC	EN 55032:2015, EN 61000-3-2:2014, EN 61000-3-3:2013, EN 55103-2:2009 FCC Part 15B Class A, ICES-003 Class A, CNS13439, GB13837, GB17625.1, GB17625.2 25.2, CISPR13
Telephone:	
Country	Standard
EU	ETSI ES 203 021-1 V2.1.1 (2005-08), 203 021-2 V2.1.2 (2006-01), 203 021-3 V2.1.2 (2006-01)
Japan	JATE, ORDINANCE CONCERNIG TERMINAL FACILITES ETC., MIC Notices NO. 99
HK	HKTA 2011 ISSUE 6 MAY 2010
Australia	AS/ACIF S002: 2010+AMANDMENT 2012 NO.1(only reports)
Taiwan	NCC: PSTN01, EMI CNS13438, Safety: CNS14336
New Zealand	PTC200-May 2006, PTC220-May 2008
UAE	TRA
India	TEC: TEC-IR-TX-PST-01-02-MAR-15
USA	FCC Part 68
Canada	CS-03 Part I, Issue 9, Amendment 5, March 2016
Mexico	NOM-196-SCFI-2016 (IFT-004-2016)

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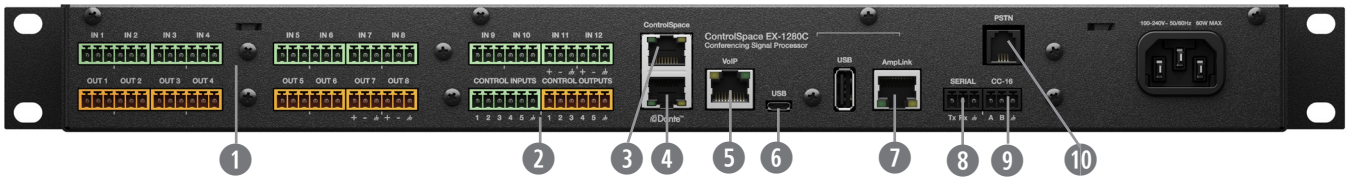
1 **Front-panel OLED Display and Encoder** – 256 x 64 display for metering and network info
Rotary/press knob for IP setup



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

2 **GPIO** – 5 x 5 expandable general-purpose control

3 **ControlSpace Network Port** – ControlSpace/Dante Primary

4 **Dante™ Network Port** – ControlSpace/Dante by default. Dante secondary when configured for redundant mode.

5 **2-Line VoIP** – SIP 2.0-Compliant; web-page configurable

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

7 **Bose Professional AmpLink** – 8-channel uncompressed, low-latency digital audio output

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

9 **CC-16** – Supports Bose Professional CC-16 user controls

10 **PSTN (RJ-11)** – Supports worldwide analog telephone connections

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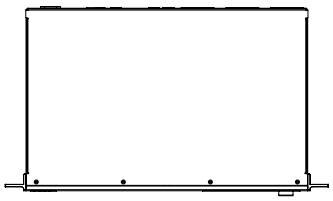
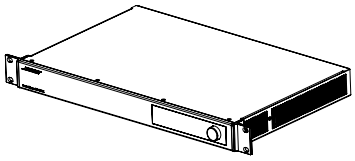
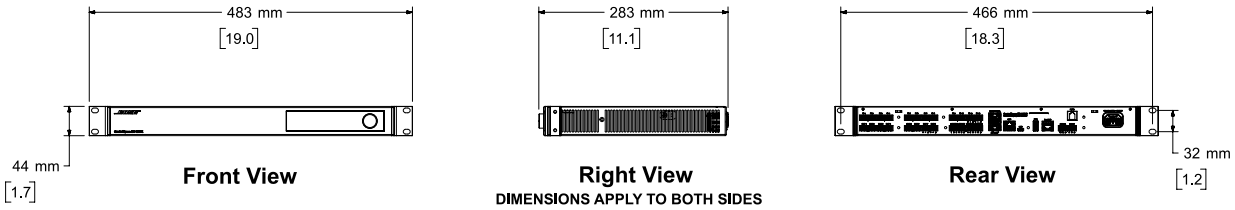
Mechanical Diagrams



Top View





Product Codes

ControlSpace® EX-1280C conferencing processor

US-120V	772234-1110
EU-230V	772234-2110
JP-100V	772234-3110
UK-230V	772234-4110
AU-240V	772234-5110

Accessories

ControlSpace® EX-UH USB/Headset Dante® endpoint	771784-0110
ControlSpace® EX-4ML 4-ch mic/GPIO Dante® endpoint	771783-0110
ControlSpace® EX-8ML 8-ch mic/GPIO Dante® endpoint	772045-0110