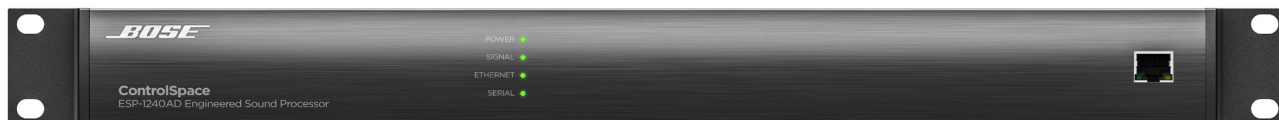


ControlSpace ESP-1240AD engineered sound processor

BOSE

PROFESSIONAL



Product Overview

An open-architecture DSP, the Bose ControlSpace ESP-1240AD engineered sound processor is designed for a wide variety of applications — from small, self-contained projects to large, networked systems. It features integrated Dante® audio networking, 12x4 analog audio I/O, a Bose AmpLink output, and a front-panel RJ-45 Ethernet connection for localized configuration and monitoring. Engineered for precise performance, the ControlSpace ESP-1240AD offers advanced digital signal processing with 48 kHz/24-bit audio conversion, low-latency, and ultra-low noise operation.

Key Features

- **High-quality analog circuitry** offers both mic and line-level I/O, operates with ultra-low noise and 115 dB dynamic range.
- **Advanced digital signal processing** supports audio at 48 kHz sample rate/24-bit, uses a floating-point open architecture DSP and operates at low latencies for sound system precision.
- **Integrated Dante audio networking** supports 32x32 audio channels for connection to other Dante-enabled products.
- **Integrated AmpLink connection** uses standard CAT 5 cables to send up to 8 channels of low-latency, uncompressed digital audio to compatible Bose amplifiers.
- **Bose ControlSpace Designer software** enables a large set of signal processing modules, such as automatic mic mixing, multiband graphic and parametric EQs, Bose loudspeaker libraries, signal generators, routers, mixers, AGCs, duckers, gates, compressors, source selectors and delays.
- **Front panel RJ-45 Ethernet** connection enables localized configuration and monitoring, while enabling network passthrough with the rear-panel Dante network ports.
- **A variety of control options** — ControlSpace ESP products are compatible with the programmable Bose CC-64 and CC-16 controllers, ControlCenter zone controllers and ControlSpace Remote clients.
- **Supports industry-standard control systems** using a comprehensive serial protocol through onboard RS-232 and Ethernet ports, with available drivers for AMX and Crestron-based systems.

Applications

Designed for a wide range of applications, including:

- Auditoriums
- Places of worship
- Resorts and hospitality venues
- Retail stores
- Educational institutions

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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 |
| Delay | 43 s |
| Audio Latency | 860 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/-0.1 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 through |

| AUDIO INPUTS | |
|------------------------|---|
| Input Channels | 12 analog (balanced, mic/line level), 32 via Dante connection |
| Connectors, Input | 3.81 mm Phoenix Contact, 6-pin |
| Input Impedance | 12 k Ω @ 1 kHz (with or without phantom power active) |
| Maximum Input Level | +24 dBu |
| Equivalent Input Noise | < -119 dBu (22 - 20 kHz, 150 Ω input, 64 dB gain) |
| Phantom Power | +48 VDC, 10 mA, selectable per input |
| Pre-Gain Settings | 0/14/24/32/44/54/64 dB |

| AUDIO OUTPUTS | |
|----------------------|---|
| Output Channels | 4 analog (balanced, line level), 8 AmpLink, 32 via Dante connection |
| Connectors, Output | 3.81 mm Phoenix Contact, 6-pin (analog), AmpLink RJ-45 |
| Output Impedance | 66 Ω |
| Maximum Output Level | +24 dBu |

| CONTROL INPUTS | |
|-----------------------------|---|
| Inputs (Control) | 5 analog or digital inputs, 2 k Ω 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 |
| Output Current | 10 mA source, 100 mA sink (24 VDC max external supply voltage) |

| INDICATORS AND CONTROLS | |
|-------------------------|--|
| LED Status Indicators | Power/Status, Signal, Ethernet, Serial (RS-232 + CC-16) |
| Audio Signal Indication | Green (-60 to -20 dBFS), Yellow (-20 to -2 dBFS), Red (-2 to 0 dBFS) |

| ELECTRICAL SPECIFICATIONS | |
|---------------------------|--|
| Mains Voltage | 85 VAC-264 VAC 50/60 Hz |
| AC Power Consumption | < 37 VA typical, over all mains voltages |
| Mains Connector | IEC 60320-C14 (inlet) |
| Power Dissipation | 22 W (75 BTU/hr, 19 kcal/hr) |

| PHYSICAL | |
|------------|---|
| Dimensions | 1.7" H x 19.0" W x 8.5" D (44 mm x 483 mm x 215 mm) |
| Net Weight | 5.8 lb (2.6 kg) |

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| | |
|-----------------------|---------------------------|
| Operating Temperature | 32°F - 104°F (0°C - 40°C) |
| Cooling System | Active, side venting |

| GENERAL | |
|---------------------------|---|
| PC Configuration Software | ControlSpace Designer software |
| Network Control | Ethernet (RJ-45),100Mb |
| RS-232/485 ports | RS-232 (DB9M, DTE), Bose CC-16 (3.81 mm Phoenix Contact, 3-pin) |
| Expansion Slots | 1 control/audio network |
| Audio Channel Capacity | None |



- ❶ **Analog audio connectors** – Mic/line-level balanced input and line-level output connectors
- ❷ **AmpLink output connector** – For use with AmpLink-equipped Bose amplifiers
- ❸ **Control Outputs connector** – Five general-purpose control outputs
- ❹ **Control Inputs connector** – Five general-purpose control inputs
- ❺ **RS-232** – Five-wire, RS-232-C (DTE) serial data interface connection
- ❻ **CC-16 connector** – Allows Bose CC-16 zone controller connections
- ❼ **Dante network ports** – Support 32x32 Dante, control via ControlSpace Designer software, and Serial over Ethernet. Secondary port is programmable.
- ❽ **AC Mains receptacle** – Power cord connection (IEC 60320-C14 inlet)
- ❾ **Lockable Network port** – Control and monitoring

Product Codes

ControlSpace ESP-1240AD engineered sound processor

| | |
|---------|-------------|
| US-120V | 812848-1110 |
| EU-230V | 812848-2110 |
| JP-100V | 812848-3110 |
| UK-230V | 812848-4110 |
| AU-240V | 812848-5110 |

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