

BA-1616-DAP

Digital Audio Processor

16 × 16 Analog · Dante 64 × 64 · SHARC DSP · 24-bit / 48 kHz



Front Panel



SHARC 21569
DSP + ARM



16 In / 16 Out
Analog



Dante 64 × 64
AES67



4 AFC / 2 AEC
Auto Mixer



HD Colour
Screen



Dual Gigabit
Redundant Network

Description

The BA-1616-DAP is a freely designable audio processing and control system with an open software architecture. It offers 16 analog inputs and outputs, 64 × 64 Dante network audio channels (128 in total) and a front-panel HD colour screen that shows the unit's working status. A wide range of DSP processing modules lets it solve real-world problems in theatres, conference centres, stadiums, places of worship and public sound reinforcement, with high-bandwidth, low-latency network audio at low cost.

Key Features

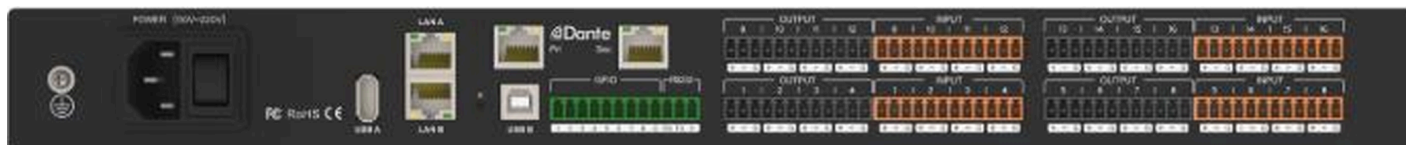
- ✓ Analog Devices SHARC 21569 DSP with NXP i.MX ARM processor.
- ✓ High-performance A/D and D/A converters, 24-bit / 48 kHz sampling.
- ✓ 16 analog inputs and 16 analog outputs with very low distortion and ultra-low noise.
- ✓ 64 × 64 Dante network audio channels, AES67 compatible.
- ✓ Dual Gigabit Ethernet ports for redundant network audio, plus a separate dual control network port for backup.
- ✓ Open signal-flow design with a visual, user-friendly control interface.
- ✓ Up to 3,400 EQ bands: graphic and parametric EQ, high/low-pass, all-pass and FIR filters, crossover, noise gate and limiter.
- ✓ 4 independent feedback cancellers and 2 independent echo cancellers, plus automatic mixing.
- ✓ Built-in USB sound card for multi-channel recording and playback, with selectable paths.
- ✓ Real-time signal monitoring, level metering and spectrum analysis on every channel.
- ✓ Front-panel HD colour screen showing device status, IP address and device name.
- ✓ Open WebSocket protocol for cloud integration, with RS232 and UDP central control.
- ✓ 8 programmable GPIO ports; all software built into the device, so no CD is needed.



Specifications

Model	BA-1616-DAP
Analog Inputs / Outputs	16 balanced/line inputs, 16 balanced/line outputs
Dante Channels	64 inputs, 64 outputs (AES67 compatible)
RS232 Serial Interfaces	1
GPIO Interfaces	8, freely configurable as inputs or outputs
RJ45 Interfaces	4
USB Interfaces	1 × USB Type A, 1 × USB Type B
Sample Rate / Bit Depth	48 kHz / 24-bit
Preamp Gain	60 dB (3 dB per step, 20 steps)
Phantom Power	48 V
Frequency Response	20 Hz – 20 kHz, ±0.2 dB
THD+N	≤ 0.003% @ 1 kHz, 4 dBu
A/D Dynamic Range (A-wtd)	120 dB
D/A Dynamic Range (A-wtd)	114 dB
Input Impedance (Balanced)	20 kΩ
Output Impedance (Balanced)	100 Ω
EIN (A-wtd)	≤ -125 dBu
Channel Isolation	100 dB @ 1 kHz, 4 dBu
Common Mode Rejection	70 dB @ 50 Hz
S/N Ratio	108 dB
Max. Input / Output Level	18 dBu / 18 dBu
Background Noise	-90 dBu
Power Supply	AC 110–220 V, 50/60 Hz
Power Consumption	< 40 W
Operating Temperature	0 – 40 °C
Operating Humidity	10% – 90%, non-condensing
Dimensions (W × D × H)	482 × 258 × 45 mm
Net / Package Weight	2.2 kg / 2.7 kg
Package Size	590 × 430 × 110 mm

Rear Panel



Tender Specification

The digital audio processor shall be a 19" 1U unit with an open signal-flow architecture, based on an Analog Devices SHARC 21569 DSP and an NXP i.MX ARM processor, with 24-bit / 48 kHz A/D and D/A converters. It shall provide 16 balanced analog inputs, 16 balanced analog outputs and 64 × 64 Dante network channels (AES67 compatible), with dual Gigabit Ethernet ports for redundant audio and 60 dB preamp gain (3 dB steps) with 48 V phantom power. Processing shall include up to 3,400 EQ bands, FIR filtering, crossover, noise gate, limiter, automatic mixing, 4 independent feedback cancellers and 2 echo cancellers. Frequency response shall be 20 Hz – 20 kHz (±0.2 dB), with THD+N ≤ 0.003% and S/N ratio of 108 dB. It shall include a front-panel HD colour screen, a USB sound card for recording and playback, RS232, 8 programmable GPIO ports and open WebSocket / UDP control. It shall operate from AC 110–220 V, 50/60 Hz, consume less than 40 W, measure 482 × 258 × 45 mm and weigh 2.2 kg.

