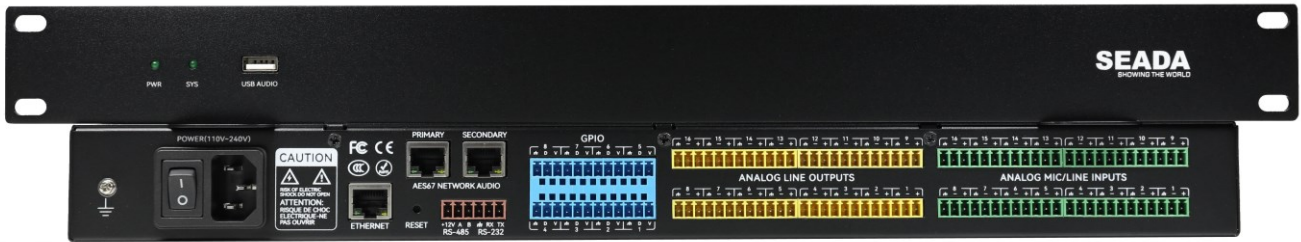# DSP Audio Matrix Processor

Overview

SEADA DSP audio matrix processor is an advanced, professional audio matrix switcher that includes multi–channel DSP, AEC (Acoustic Echo Cancellation), HDMI de–embedding, and class compliant USB audio interface. The comprehensive and user–friendly graphic interface makes configuring every detail of your audio system intuitive and easy.

SEADA DSP audio matrix processor has great advantages on its core Algorithms which include AEC (Echo Cancellation), AFC (Feedback Cancellation), ANS (Noise Suppression), AGC (Automatic Gain Control). The Echo Cancellation algorithm can be applied to signals from local analog inputs or remote digital channel, while Automatic Gain Control ensures that microphone levels remain at an optimum level, Noise Suppression removes steady state noise, and Feedback Suppression enables more flexible microphone, loudspeaker placements and speech reinforcement, delivering audio where you want it. The signal processing is fully customizable via DSP control software.

*These features are not supported on SD-0404(D)

Features

- ADI SHARC platform with semi-open architecture and ETHERNET support.
- Integrated management of multiple devices offers open user interface.
- Supports good sound quality (at 24bit/48kHz.)
- Each channel has its own independent adaptive feedback suppression which can find and suppress audio feedback automatically.
- Supports Acoustic Echo Cancellation (AEC) and Adaptive Feedback Cancellation (AFC)
- Support Active Noise Suppression (ANS).
- Gain sharing Auto Mixer Control (AMC).
- Automatic Gain Control (AGC).
- Audio Ducking (Ducker) *.
- Ambient Noise Compensation (ANC) *.
- Full-featured audio mixing matrix supports adjustable input level.
- Provides up to 16 presets, each can work independently.
- Provides 8 GPIOs, each can be independently configured as input or output, and can be used as independent ADC when configured as input *.
- Supports audio channel duplicating, linking, and grouping.
- Supports RS-232 and UDP central control. Provides the flexibility to assign UDP port number, with the control commands available through the control software.
- Built-in dual channel USB sound card can be used for audio recording, audio broadcasting, and video conference.
- Supports web browser management.

Specifications

Models	SD-0404(D)	SD-0808(D)	SD-1212(D)	SD-1616(D)
Dimensions (W x D x H)	215*162*45mm	482*260*45mm		
Sampling Rate	48K/24bit			
Input Gain	0/3/6/9/12/15/18/21/24/27/30/33/36/39/42/45/48 dBu			
Phantom Power	+48V/10mA max			
Frequency Response	20Hz~20kHz(±0.5dB)	20Hz~20kHz(±0.3dB)		
Maximum level	+18dBu			
THD+N	0.003% @1kHz, +4dBu			
Dynamic input range	110 dB			
Dynamic output range	112 dB			
Channel isolation	108 dB @1kHz			
Input impedance (balanced connection)	5.4KΩ			
Output impedance (balanced connection)	600Ω			
System latency	<3ms			
Number of Analog In/Out	4 x 4	8 x 8	12 x 12	16 x 16
Audio over IP In/Out (D only)	4 x 4	8 x 8	8 x 8	16 x 16
USB Audio Channel	Yes			
Power Supply	DC12V/PoE	110-240VAC 50/60Hz		
Warranty	2 years			
Operating Temperature Range	0~40 degrees centigrade			
Operating Humidity Range	10%~90% non-condensing			
Storage Temperature Range	-20~60 degrees centigrade			
Storage Humidity Range	10%~90% non-condensing			

System Diagram