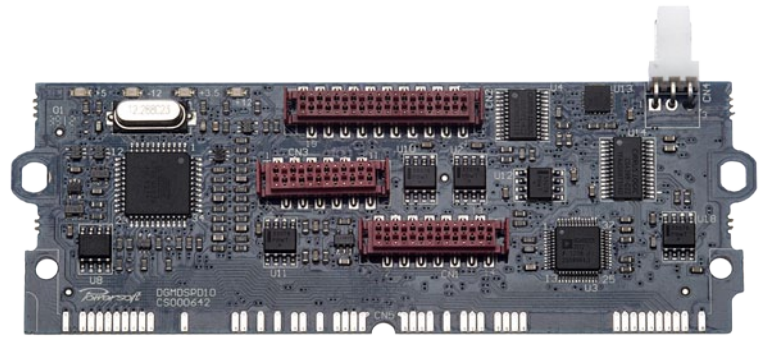# DSP-D

2in/4out DSP board for DigiMod amplifier modules

DSP-D is a 2in/4out processing board based on Analog Devices SigmaDSP® platform and represents a highly flexible and powerful tool for both the designer and the end user.

Specifically designed for DigiMod Series amp modules, it provides the loudspeaker designer with all tools needed for tailoring the amplifier's behavior through a precise 24 bit @ 48 kHz AD/DA conversion and 56 bit processing, to perfectly fit any application.

With the Analog Devices SigmaStudio™ software a totally customizable signal path can be built by choosing from a library of tens of different algorithms, from Linkwitz-Riley crossovers (up to 48 dB/oct) to IIR filters, RMS and peak limiters and delay for speaker alignment.

▶ Line-arrays

▶ High-Level 2-way and 3-way systems

▶ OEM rack processors

▶ Versatile solution

  ✓ 4 different presets can be stored on the DSP-D, allowing for easy selection of desired processing setting by end user, even when no network or remote control are available

▶ Interface panel available

  ✓ The optional interface panel provides a quick and easy way for connecting signal input and implements RS-485 connectivity; a knob for level adjustment, a push-button for switching preset and four status LEDs are provided as well.

▶ Easy integration in DigiMod IK solutions

  ✓ DigiMod IK represents a true plug'n'play solution including a DigiMod unit, heatsink, DSP and interface board, easy to assemble and program through Armonía ProManager™ and Armonía Pro Audio Suit™ softwares.

▶ Full integration with Armonía Pro Audio Suite™ software

  ✓ ProNet-485: quick, easy and end user friendly tool, allowing to access the DSP-D with optional interface panel from Armonía Pro Audio Suite™ via RS485 connection: a perfect tool for both the designer needing a easy way to define the behavior of the end product and for the end user to remotely control and monitor his speakers.

  ✓ Thanks to Armonía ProManager™, system designer can initialize and customize the DSP-D in order for active loudspeakers to be recognized by Armonía Pro Audio Suite™ as proprietary custom models.

▶ DSP Programming Boards

  ✓ The DSP Programming Boards offer low level programming features through the Analog Devices SigmaStudio™ graphical development environment.

  ✓ The DSP Programming Boars are perfect in production lines and testing departments for easily setup and programming the DSP-D.
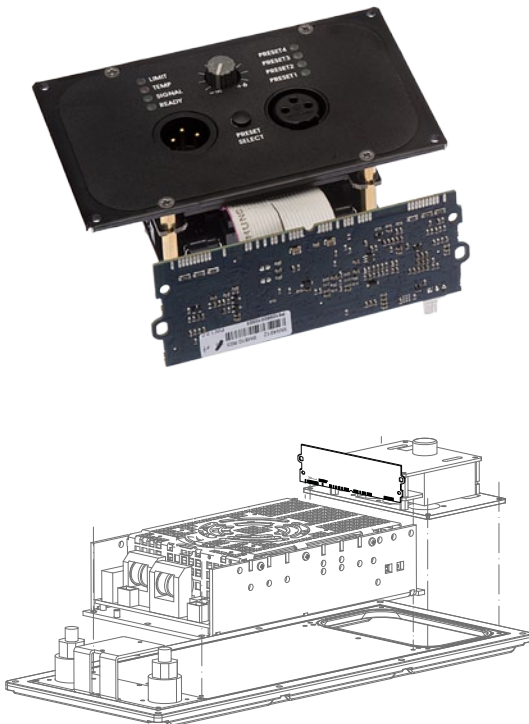
DSP-D

2in/4out DSP board for DigiMod amplifier modules

Specifications

General

Number of channels	2 in / 4 out
Architecture	Analog Devices SigmaDSP® 50 MIPS
Internal processing	28 bit data path with 56 bit internal processing
Latency	1 ms fixed latency architecture
User data storage	Up to 4 local presets, unlimited via Armonía Pro Audio Suite™ software
Firmware update	RS-485 protocol or DSP Programming Board
Remote control	Armonía Pro Audio Suite™ software

Audio

Frequency response	20 Hz - 20 kHz (-0.5 dB)
Max input voltage	1.95 V / +8 dBu
Max output voltage	5 V / +16 dBu
S/N ratio	> 116 dB
THD+N	< 0.02% (20 Hz - 20 kHz)

DSP features

Delay	340 ms input delay 10 ms per channel output delay
Input equalizer	5 parametric equalizers: hi/lo-shelving, all-pass, band-pass, band-stop, hi/lo-pass
Output equalizer	Parametric IIR filters: peaking, hi/lo-shelving, all-pass, band-pass, band-stop, hi/lo-pass
Crossover	Butterworth, Linkwitz-Riley, Bessel: 6 dB/oct to 48 dB/oct (IIR)
Limiters	Peak limiter, RMS limiter, frequency dependent RMS limiter
Parameters locking	Protection of OEM/user features

AD/DA converters

Architecture	Cirrus Logic® 24 bit 48 kHz
Dynamic range	120 dB
THD+N	< 0.005% (20 Hz - 20 kHz)

Armonía
Pro Audio Suite™

Powersoft AUDIO