

# DSP-Lite EM

## 1 in 2 out DSP interface with Ethernet connectivity for M-Drive amplifiers

DSP-Lite EM is a 1 in 2 out processing board with interface panel designed for M-Drive amplifier. It integrates a D-Sub connector port for accessing the M-Drive embedded DSP board, allowing the programming of the firmware and DPC-specific functionalities.

The built-in ETH port allows to access DSP-Lite processing capabilities directly from the PC running ArmoníaPlus™, to easily program and store up to 4 presets that can be selected by the end user.

The two output channels allow to manage the audio signal for up to two M-Drive amplifiers.

Compatible with Powersoft Integration Kit platform, DSP-Lite represents a powerful, easy to use yet cost effective tool for both the designer and the end user.

- ▶ M-Force Subwoofers
- ▶ Up to 2 M-Drives per box

- ▶ AD/DA Converter: 24 bit @ 48 kHz high dynamic range (118 dB AD / 114 dB DA).
- ▶ Programming, control and monitor via ETH.
- ▶ ArmoníaPlus™ programming environment.
- ▶ Delay: 340 ms input delay, 10 ms per channel output delay.
- ▶ 4 parametric input equalizers: hi/lo-shelving, all-pass, band-pass, band-stop, hi/lo-pass.
- ▶ Output 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.



- ▶ Perfect match and easy integration with M-Drive amplifiers
  - ✓ DSP-Lite uses all of the signals and information available from the amps, maximizing both performances and reliability of the system.
  - ✓ The form factor matches with M-Drive heatsink, allowing a super easy and short time-to-market integration.
- ▶ Integrated interface panel
  - ✓ A single, compact PCB accommodates both the processing section and a complete set of I/O connectors and controls to minimize the complexity of the system.
  - ✓ Three multicolor LED allow for a simple yet comprehensive monitoring of the system, status, signal presence, input clipping, activation of any of the limiters and protections.
  - ✓ The built in ETH port provides a quick and user friendly access to the DSP with no need of any additional device, making it easier for the designer to program the DSP and for the end user to control and monitor the system.
  - ✓ The D-Sub connector provides a quick access to M-Drive's embedded DSP for Firmware or DPC settings programming.
- ▶ Easy GUI and enhanced OEM brand visibility with ArmoníaPlus™
  - ✓ ArmoníaPlus™ provides the designer with a complete set of processing tools to precisely tailor the behavior of the DSP-Lite: input and output EQ stages, input and output delay for speakers alignment, peak and RMS limiters with frequency shaping capabilities.
  - ✓ Every processing section can be independently locked by the manufacturer in order to give the end user access only to selected settings, like input delay and EQ.
  - ✓ Thanks to ArmoníaPlus™, information such as series/model name and image can be stored into the DSP-Lite for it to be displayed in ArmoníaPlus™ as the actual end product and achieve a clear visibility for the OEM brand.



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## Specifications

General	
Number of channels	1 in / 2 out
Architecture	Analog Devices SigmaDSP® 50 MIPS
Internal processing	28 bit data path with 56 bit internal processing
Latency	1.02 ms fixed latency architecture
User data storage	Up to 4 local presets unlimited via ArmoniaPlus™
Firmware update	via ETH
Remote control	ArmoniaPlus™

Audio	
Frequency response	20 Hz - 20 kHz (-0.5 dB)
Max input voltage	8.2 V / +20 dBu
Max output voltage	4.1 V / +14.3 dBu
S/N ratio (analog-to-analog)	> 113 dB (typical)
THD+N	< 0.1% (< 0.02% typical) (20 Hz - 20 kHz)

Audio	
Delay	340 ms input delay 10 ms per channel output delay
Input equalizer	4 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	AKM 24 bit @ 48 kHz
Dynamic range AD/DA	118 dB / 114 dB (typical)
THD+N	< 0.1% (< 0.01% typical) (20 Hz - 20 kHz)

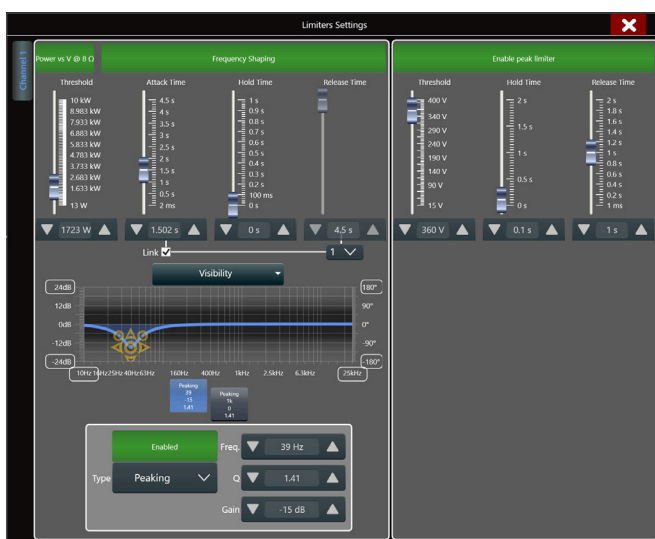
## ArmoniaPlus System Manager



Input EQ



Output EQ



Limiters

Data subject to change without notice.

Electrical characteristics Ta = 25° C (unless otherwise specified)

