

# Power Amplifiers

## MDA Series - MDA2-2500M

MDA2-2500M

**MDA2-2500M** is a highly flexible, powerful and intelligent 2-Channel power amplifier delivering up to a total of 2x2000W @ 4 ohms. Designed to meet the most demanding portable and fixed installation sound systems, it provides a full set of value added features such as high output power, efficient cooling system, on board DSP and USB/Ethernet networking for monitoring and control via PC software. MDA2-2500M includes a highly efficient Switch Mode Power Supply, which provides power to the output stages. The 2 output stages use the Class D module-full bandwidth PWM modulator obtaining ultra low distortion, high efficiency and also equipped with a full set of circuit protections. Furthermore the Clip/Limiter function provides output monitoring to prevent speaker damage with gentle gain reduction at clip threshold, in addition to the efficient heat dissipation system and Over-Heat protection which themselves ensure

uncompromised reliability. MDA2-2500M is more than just an amplifier. It is also a capable and sophisticated loudspeaker processor, thanks to its powerful MARANI® DSP running 96kHz/24bit [96 bits precision for the internal intermediate processes] and high performance 24bit AD/DA Converters. It offers 2 channels of slope up to 48dB/Oct IIR HP/LP crossover filters, or up to 512 taps FIR filters [FIR Coefficients can be imported as .txt file from external applications], RMS compressor, parametric Eqs, alignment delay and white/pink noise internal generator, everything needed to optimize a loudspeaker system. Moreover, MDA2-2500M allows a 12dB headroom process. User can also set the parameters, select input source, load presets, etc with the extraordinary touchscreen LCD in front panel. Apart from regular analog and digital source input, DANTE is also optional.



### Features

#### Outstanding Performance

High power output: 2 x 2000W @ 4 Ohm  
Highly efficient Switch-Mode Power Supply with PFC  
Class D Amp module-full bandwidth PWM modulator with ultra low distortion  
Excellent sonic performance with 24bit high end converters coupled with 96kHz sample rate  
Full protection circuitry including Over-Current, Over/Under-Voltage, Output DC and Over-Temperature  
Support DANTE audio (optional)  
Warm Backup is available, by setting source priority and activating "Autoswitch" function in PC SW

#### Top-Grade DSP Engine

12 band parametric equalization per input channel  
4 band parametric equalization per output channel  
Each band can be switched to Bell, Low/High Shelving variable Q; FIR or IIR Filters for X-Over:  
The X-Over can be implemented both by FIR filters or IIR HP/LP, selectable in the dedicated PC software  
FIR: Crossover filter can be created by the user selecting from 256 up to 512 taps, the FIR type and the Out Band attenuation [FIR

Coefficients can be imported as .txt file from external applications]; IIR: Crossover filter with slopes from 6 ~ 48 dB/Octave, including Butterworth, Bessel, Linkwitz-Riley and customized topologies; Each output channel is equipped with a precise Peak Limiter with selectable ratio, attack/release time; Adjustable Delay time up to 500.998ms for input channel, and 340.998ms for output channel; Each input channel includes a Pink/White noise internal generator, noise gate function, RMS compressor with variable knee, and powerful 12-band PEQ

#### Direct PC/Network Connection & Control

Front panel USB connector for direct PC communications; Ethernet interface for system setup, monitoring and control via manageable remote PC software; Front panel interactive touchscreen LCD display for parametric setting, input source selection, preset loading and so on  
Simultaneous control up to 32 units via PC software; 50 Preset Selection

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## Power & Amplifier Sections

Number of Channels -----	2
Max Output Power per Channel-----	2000W @ 4 ohms load
Output Circuitry -----	Class D Amp Module- full bandwidth PWM modulator with ultra low distortion
Output Voltage -----	142 Vp /286 Vpp (101 Vrms)
THD @ Rated power 4 (1 kHz) -	< 0.01% (20 Hz - 20 kHz, 8 Ω load, 1 dB below rated power)
Signal To Noise Ration -----	105 dB (A-weighted, AES-17 filter)
Damping Factor -----	> 1000 (8 Ω load, 1 kHz and below)
Power Supply -----	Switch mode power supply with PFC and integral standby converter
Operating Range -----	Universal Mains, 85-268V (dual voltage auto selection)
Protections -----	Over-Current, Over/Under Voltage, Output DC and Over-Temperature
Maximum Input/Output Level ---	+ 13 dB

## Audio

Analog Input -----	2 x XLR electronically balanced, + 13dBu
Frequency Response (DSP) -----	2 x XLR electronically balanced, + 13dBu

## DSP & Processing

DSP Engine -----	MARANI® DSP: 24 x 32 bit filter processing, 54bit accumulation registers, 96 bit precision on intermediate processing data
Parametric Equalization -----	12 band PEQ per input, 4 band PEQ per output, filter gain range from -15 to + 15 dBu
Filter Type-----	Bell, Shelving, HP/LP, Band Pass, Notch Filter, All Pass
FIR for Phase Correction -----	Asymmetrical 512 Taps, allowing also FIR latency Adjustment/reduction. Coefficients can be generated by Pc Sw embedded Wizard tool, imported by external third party applications, and exported to third parties applications
Center Frequency -----	Selectable with a 0.5dBu resolution step from 20Hz up to 20kHz
Filter Q/BW -----	Bell: Q from 0.4 up to 128, steps: 100
Input&Output Gain-----	Shelving: Q from 0.1 up to 5.1, steps: 100
IIR Crossover section HPF/LPF ----	Bandpass/Notch: Q from 4 up to 104, steps: 100
FIR Crossover section HPF/LPF ---	-12dB ~ + 12dB, resolution: 0.1dBu
Noise Generator-----	Butterworth 6/12/18/24/36/48dB per octave; Bessel 12/24dB per octave; Linkwitz-Riley 12/24/36/48dB per octave.
Input RMS Compressor -----	HP/Lp/Bp filters, Taps from 256 up to 512, Attenuation up to -120dB, Window type as Rect /Sinc /Keiser /Hanning /Hamming /Blackman /Nuttal /Sine
Output Peak Limiter -----	Type: White/Pink Noise; Level: -40dBu ~ 0dBu
Internal Overflow Process-----	Threshold from -16dBu up to +14dBu; Ratio: 2:1~32:1; Knee: 0~100%;
Delay -----	Attack time from 5ms up to 200ms; Release time from 0.1sec up to 3sec
Routing-----	Threshold from -16dBu up to +14dBu;
Ground Noise -----	Attack time from 1ms up to 900ms; Release time from 0.1sec up to 5sec
	12dB
	Each input has up to 500.998ms delay, each output has up to 340.998ms delay
	Full matrix mixing mode
	-86 dBu

## General

Dimensions -----	482x314.5x88(mm)
Weight, Net /Shipping -----	14.8 Kg /16.0 Kg