

**MDA4-1000M** is a highly flexible, powerful and intelligent 4-Channel power amplifier delivering up to a total of 4x1000W @4 ohms, or able to drive 70V Constant Voltage Lines, in Direct Drive without using internal transformers. 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 for monitoring and control via PC software. **MDA4-1000M** includes a highly efficient Switch Mode Power Supply, which provides power to the output stages. The 4 output stages use the well-proven Pascal Class D SA-2 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. **MDA4-1000M** is more than just an amplifier. It is also a capable and sophisticated loudspeaker processor, thanks to its powerful M716 DSP running 96kHz/24bit [96 bits precision for the internal intermediate processes] and high performance 24bit AD/DA Converters. It offers 4 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 from external application], RMS compressor, parametric Eqs, alignment delay, white/pink noise internal generator, everything needed to optimize a loudspeaker system. Moreover, **MDA4-1000M** 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: 4 x 1000W @4 Ohm or 70V Direct Drive
- Highly efficient Switch-Mode Power Supply
- Pascal 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, Lo/Hi-Shelving 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 with taps from 256 up to 512, the FIR type and the Out Band attenuation

- FIR Coefficients can be imported as .txt/.csv file from external applications
- IIR: Crossover filter with slopes from 6 ~ 48 dB/Octave, including Butterworth, Bessel, Linkwitz-Riley and customized topologies
- Each input channel includes a Pink/White noise internal generator, noise gate function, RMS compressor
- 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

#### Direct PC/Network Connection & Control

- Front panel USB connector for direct PC communications
- Ethernet interface and M-LAN connection 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



### Power&Amplifier

|                                 |   |
|---------------------------------|---|
| Number of Channels -----        | 4   |
| Max Output Power per Channel-   | 1000W @ 4ohm, or 70V Direct Drive   |
| Output Circuitry -----          | Pascal Class D Amp Module- full bandwidth PWM modulator with ultra low distortion |
| THD+N -----                     | <0.01%  |
| Signal To Noise Ratio -----     | > 105 dB (A-weighted, AES-17 filter)  |
| Damping Factor -----            | >580 (8Ω load, 1kHz and below)  |
| Power Supply -----              | Independent Switch mode Power Supply  |
| Operating Range -----           | 90 - 245 VAC (50/60Hz);   |
| Consumption / Current draw and  | 18.7 W / 0.268 A / 63.82 BTU/h (Idle)   |
| Thermal dissipation @ 230 V --- | 1172 W / 8.8 A / 4000 BTU/h (1/8 max. power@4Ω)                                   |
| Protections -----               | Over-Current, Over/Under Voltage, Output DC and Over-Temperature                  |
| Maximum Input/Output Level ---  | + 13dB  |

### Audio

|                                |   |
|--------------------------------|---|
| Analog Input-----              | 4 x XLR electronically balanced, +13dBu     |
| Frequency Response (DSP) ----- | 20 Hz - 20 KHz; -0.5dBu at 20 Hz and 20 kHz |

### DSP&Processing

|                                     |  |
|-------------------------------------|--|
| DSP Engine -----                    | MARANI M716: 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.<br>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<br>Shelving: Q from 0.1 up to 5.1, steps: 100<br>Bandpass/Notch: Q from 4 up to 104, steps: 100   |
| Input&Output Gain-----              | -12dB ~ +12dB, resolution: 0.1dBu  |
| IIR Crossover section HPF/LPF ----- | Butterworth 6/12/18/24/36/48dB per octave; Bessel 12/24dB per octave;<br>Linkwitz-Riley 12/24/36/48dB per octave.  |
| FIR Crossover section HPF/LPF ----- | Hp/Lp/Bp filters, Taps from 256 up to 512, Attenuation up to -120dB, Window type as Rect / Sinc / Keiser / Hanning / Hamming / Blackman / Nuttall / Sine   |
| Noise Generator-----                | Type: White/Pink Noise; Level: -40dBu ~ 0dBu   |
| Input RMS Compressor -----          | Threshold from -16dBu up to +14dBu; Ratio: 2:1~32:1; Knee: 0~100%;<br>Attack time from 5ms up to 200ms; Release time from 0.1sec up to 3sec  |
| Output Peak Limiter -----           | Threshold from -16dBu up to +14dBu;<br>Attack time from 1ms up to 900ms; Release time from 0.1sec up to 5sec   |
| Internal Overflow Process-----      | 12dB Headroom  |
| Delay -----                         | Each input has up to 500.998ms delay, each output has up to 340.998ms delay  |
| Ground Noise -----                  | -86 dBu  |

### General

|                              |   |
|------------------------------|---|
| User Preset -----            | 50  |
| Front Panel -----            | LCD display with Touchscreen Function<br>1 x Red LED (Power)<br>1 x Rotary encoder push button switches<br>USB type B connector   |
| Real Panel-----              | 6 x XLR female connector (Input)<br>4 x Neutrik® Speakon NL4 (Output)<br>1 x Ethernet 10/100 TCP-IP(PC Control)<br>2 x Ethernet 10/100 TCP-IP(Dante Audio Signal:Optional)<br>1 x Locking PowerCON® 20A: AC Power Cord (Blue)<br>1 x 80*80 mm 24V FAN |
| Dimensions -----             | 482X314.5X88mm  |
| Weight, Net / Shipping ----- | 11.80 Kg / 13.00 Kg   |