

## MDA88F

# 8-CHANNEL DSP POWER AMPLIFIER

MDA88F is a highly Flexible and intelligent digital audio matrix mixer with 8-Channel Class D power amplifier delivering up to a total of 2000W@40. To guarantee maximum reliability, it includes 2 highly efficient Switch Mode Power Supplies with PFC, each independently powering a set of 4 channels. The 8 output stages use the well-known Class D - full bandwidth PWM modulator obtaining ultra low distortion, high efficiency and also equipped with a full set of circuit protections. Designed to meet the most demanding multizone application sound systems, it provides a full set of value added features such as 8 independently switchable Line/Mic inputs with Phantom power supply, 8 Line outputs, supporting a full matrix mixing mode where inputs may be routed/mixed in any ratio to any output. MDA88F also provides a variety of Eqs, Noise Gate function, Gain control, X-over, RMS compressor, Peak Limiter and Delay. In addition Mic inputs include a Feedback Eliminator, based on a powerful "Pitch Shifting" algorithm, particularly suitable for voice applications. Automixing function automatically adjusts input level to make operating easier using either NOM (Number of Open Mics) attenuation function or Gain Sharing algorithm. In addition Ducking process enforces a "priority order" of open Mics in order that high-priority inputs attenuate lower-priority inputs. For remote configuration and control the MDA88F can be connected via Ethernet, USB or RS485 by using the control remote PC software. In addition, it can be managed by an Apple iPad® device, using the dedicated DPA880xT software setting all parameters and showing real time levels. For complex systems, 8 digital IN/OUT ports are provided for GPIO Integration. Furthermore the MDA88F can be connected via RS485 to the optional CP4 Wall Panel control that allows selection of 4 assigned presets and master volume control.



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## PRODUCT DETAILS

### KEY FEATURES

Outstanding Performance: High power output: - 8 x 250 W@4ohm or 4 x 500W @8ohm (Bridge Mode)- Two Switched-Mode Power Supplies with active PFC and auto voltage sensing- Class D full bandwidth PWM modulator with ultra low distortion- Full protection circuitry including Over-Current, Over/Under-Voltage, Output DC and Over-Temperature- 8 processed outputs for use in driving additional poweramplifiers- Excellent sonic performance with 24bit high end converters coupled with 48kHz sample rate- 8 Mic/Line inputs, 8 outputs with full matrix mixing

Top-grade DSP Engine: - 3 band parametric equalization per input channel- 5 band parametric equalization per output channel- Each band can be switched to Peaking, Low/High Shelving with variable Q response- Crossover filters with slopes from 6dB/Octave up to 48dB/Octave including Butterworth, Bessel, Linkwitz-Riley and customizable topologies- Gain Control, Noise Gate, Feedback Eliminator (Mic input only) per input channel- Peak Limiter and RMS Compressor with selectable ratio and variable knee per output channel- Automixing functions include NOM (number of Open Mics) attenuation and Gain Sharing algorithm- Adjustable Delay time up to 850 ms for every input and output channel

Direct PC/Network Connection: - Front panel USB connector for direct PC communications- Ethernet interfaces, RS485 connection for system setup, monitoring and control via manageable remote PC software

Control: - Front panel interactive LCD display for local access and configuration- 4 digital input ports for additional 4 preset selections with priority configuration- 4 digital output ports for triggering external devices- DPA880xT software for Apple iPad® device allowing simultaneous control up to 32 units, setting all parameters and showing real time levels- Optional Marani CP4 Wall Panel control allowing selection of 4 assigned presets and master volume control

### SPECIFICATIONS

<b>//POWER &amp; AMPLIFIER SECTION//Number of Channels</b>	8
<b>Max Output Power @8ohm</b>	8 x 125W 4 x 250W (Bridge)
<b>Max Output Power @4ohm</b>	8 x 250W; 4 x 500W (4? BTL Mode selected)
<b>Output Circuitry</b>	Class D - full bandwidth PWM modulator with ultra low distortion
<b>Output Voltage</b>	70 Vp / 140 Vpp (unloaded) / Bridged 140 Vp / 280 Vpp (unloaded)

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<b>THD @ Rated power 4ohm (1kHz)</b>	<0.05% (20 Hz - 20 kHz, (8ohm load, 3dB below rated power)
<b>Signal To Noise Ratio</b>	>120 dB (A-weighted, 20 Hz - 20 kHz, 8ohm load)
<b>Frequency Response</b>	20 Hz - 20 kHz $\pm$ 0,15 dB (8ohm load, 1 dB below rated power)
<b>Damping Factor</b>	>1000 (8ohm load, 1kHz and below)
<b>Power Supply</b>	Two independent Switch mode power supplies with PFC (Power Factor Correction)
<b>Operating Range</b>	Universal Mains, 85-265V
<b>Consumption/Current draw and Thermal dissipation @230V</b>	- 22.4W / -A / 76.6 BTU/h (Idle)- 346W / -A / 286.8 BTU/h (l/8 max. power@4ohm)
<b>Protections</b>	Over-Current, Over/Under Voltage, Output DC and Over-Temperature
<b>Analog Input</b>	8 electronically balanced; Max Input Level
<b>Analog Output</b>	8 electronically balanced; Max Output Level
<b>//DSP &amp; Processing//AD &amp; DA Converters</b>	1x AK5385B 24bit, 2x AK4358 24bit
<b>DSP Engine</b>	Dream SAM3716, 24bit (data) x 96 bit (coeff.)
<b>DSP Resolution</b>	24x32 bit for filtering process96 bits; resolution on intermediate computation results
<b>Input Equalization</b>	3-band parametric selected as Peaking or Low/High Shelving with variable Q per input channel
<b>Output equalization</b>	5-band parametric EQ selected as Peaking or Low/High Shelving with variable Q per output channel
<b>Filter Gain</b>	From -12dBu up to +12dBu by 0.5dBu resolution steps
<b>Center Frequency</b>	Selectable with a 1/24th of octave resolution step from 20Hz up to 20kHz
<b>Filter Q/BW</b>	Q from 0.4 up to 10 by 0.1 resolution steps
<b>Crossover Section HPF/LPF</b>	- Butterworth 6/12/18/24/48dB per octave- Bessel, Linkwitz-Riley and custom 12/18/24/48dB per octave.- Filter resolution 1/24th of octave
<b>RMS Compressor and Peak Limiter</b>	- Threshold from 18dBu up to -30dBu- Attack time from 5ms up to 200ms (1ms resolution up to 20ms, 10ms resolution up to 100ms and 20ms resolution up to 200ms)- Release time from 0.1 sec up to 3 sec (0.1sec resolution)- Ratio from 1:1 to 32:1 (Compressor only)- Adjustable Soft or Hard Knee (Compressor only)
<b>Feedback</b>	Ditch Shifting algorithm only for Mic input channels