Plate Amplifiers

for Active Speakers - PDA500P/F

PDA500P

PDA500P is a complete solution dedicated to 1-way or 2-way self-powered loudspeakers. Designed to meet different applications, it provides 2 channels with output power of 2x500W@4 Ohm or 2x250W@8 Ohm. Morever the 2 channels can be bridged into a powerful single 1x1kW@4Ohm or 1x900W@8Ohm channel in order to drive i.e. Subwoofers or Multiple Ways Cabinets with Passive Xovers. In addition it offers a full set of added value features such as on board DSP and RS485 connection for monitoring and control via dedicated PC software. To guarantee maximum reliability, the PDA500P includes a highly efficient universal switch mode power supply with PFC (Power Factor Correction) which provides a total 1kW power to the 2 output channels. The 2 output stages use the Class D module. The PDA500P includes a set of sophisticated processes for loudspeaker,implemented by the powerful MARANI® DSP running 96kHz/24bit (96 bits precision for the internal intermediate processes) and high performance 24bit AD/DA Converters. Processes as Noise Gate, crossover filters, parametric EQs per input and output sections,RMS compressor, alignment delay and All-Pass filters are available, all in all everything needed to optimize a self-powered loudspeaker. Morever the Clip/Limiter function per channel 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. Furthermore the PDA500P is also equipped with a Dynamic Loudness function and an useful Pink/White noise generator. All setup parameters for input mixing, DSP features and the limiter setting are accessible by using the remote PC software. High Band can be splited or not in two sub-band. When the Xover split freq is enabled then the RMS compressor working on the lower band and a additional volume (hi_level) working on the Higher band. PDA500PF is a special version supporting up to 512 taps FIR filters for X-over, and for System Phase Correction.

Features

Outstanding Performance

High power output: 2 x 500W @ 4Ω or 1 x 900W @ 8Ω (Bridge Mode) or 1 x 1000W @ 4Ω (BTL mode 4 Ω selected);Switched-Mode Power Supply with PFC and auto voltage sensing Class D Amp Module - full bandwith PWM modulator with ultra low distortion;Full protection circuitry including Over-Current, Over/Under-Voltage, Output DC and Over-Temperature
Excellent sonic performance with 24bit high end converters coupled with 96kHz sample rate

Top-grade DSP Engine

5 band parametric equalization per input channel
7 band parametric equalization per output channels
2 filter can be switched to Bell, Low/High Shelving, per channel;Low/High Shelving, can be selected as variable Q response;Crossover filters with slopes from 6dB/Octave up to -48dB/Octave including Butterworth, Bessel, Linkwitz-Riley
Output features a precision dynamic range controller composed of a RMS Compressor with selectable ratio and variable knee Input features a precision dynamic range controller composed of a RMS Compressor with selectable ratio, variable knee and Hold Time.
4 Additional All-Pass filter up to 2nd order per output channel;Adjustable Delay time up to 10 ms for input and output channels;Input channel includes a Noise Gate function, Pink/White noise generator, sophisticated Dynamic Loudness function and a High-Pass filter with slopes from 6dB/Octave up to -48dB/Octave including Butterworth, Bessel, Linkwitz-Riley
FIR Crossover filters are from 256 up to 512 taps, FIR type and Out Band attenuation is selectable (for PDA500PF ONLY)

Network Connection and Control

Rs485 connection for system setup, monitoring and control via fully manageable remote PC software
Simultaneous control up to 32 units via PC software
8 Preset Selection by using rotary encoder switch
Security Lockout

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PDA500P

Power & Amplifier Sections

Number of Channels	2	
Max Output Power @ 8 ohms	2 x 250W	1 x 900W (Bridge)
Max Output Power @ 4 ohms	2 x 500W	1 x 1000W (4Ω BTL Mode selected)
Output Circuitry	Class D - full bandwith PWM modulator with ultra low distortion	
Output Voltage	+/-70 V (SE Mode unloaded) / Bridged +/-140V(BTL Mode unloaded)	
THD+N	<0.01% (20 Hz - 20 kHz, 8Ω load, 3dB below rated power)	
Signal To Noise Ratio	>102 dB (A-weighted, 20 Hz - 20 kHz, 8Ω load)	
Frequency Response	20 Hz - 20 kHz ± 0,15 dB (8Ω load, 1 dB below rated power)	
Damping Factor	>1000 (8Ω load, 1kHz and below)	
Power Supply	Switch mode power supply with PFC (Power Factor Correction) and integral standby converter	
Operating Range	Universal Mains, 85-265V	
Consumption / Current draw and	11.2W / -A / 38.3 BTU/h (Idle)	
Thermal dissipation @ 230 V	173W / -A / 143.4 BTU/h (1/8 max. power@4Ω)	
Protections	Over-Current, Over/Under Voltage, Output DC and Over-Temperature	
Maximum Input/Output Level	+12dB	

Audio

Analog Input	1 x XLR electronically balanced, +12dB
Analog Output	1 x XLR electronically balanced (Link)
AD & DA Converters	24bit

DSP & Processing

DSP Engine	MARANI® DSP
DSP Resolution	24bit (data) x 24 bit (coeff.), 54 bit accregisters, 96 bit precision on intprocessing data
Parametric Equalization	5 filters per input channel; 7 filters per output channel
Filter Type	Bell, Low/High Shelving variable Q, gain from -12dBu to +6dBu
Center Frequency	Selectable with a 1Hz resolution step from 20Hz up to 20kHz
Bell Filter Q/BW	Q from 0.5 up to 10 by 0.1 resolution steps
Low/High ShelvingFilter Q	Q from 0.5 up to 3 by 0.1 resolution steps
Crossover section HPF/LPF	Butterworth 6/12/18/24/48 dB/oct; Linkwitz-Riley 12/24/36/48 dB/oct; Bessel 12/24 dB/oct. Sophisticated Dynamic Loudness function and additional High-Pass filter per input section All-pass filter up to 2nd order per output section
Crossover section FIR (for PDA500PF ONLY)	From 256 to 512 taps coefficients, FIR type selectable and out of band attenuation, operating from 250Hz to Xover point
OutPut RMS Compressor	Drive from -12 to 6dBu; Threshold from-18dB up to +12dBu; Attack time from 5ms up to 500ms; Knee 0~100%; Ratio from 2:1 to 100:1; Release time from 40ms up to 1000ms (10ms resolution).
Input RMS Compressor	MakeUp from -12 to +12dBu; Threshold from -18dBu up to +12dBu; Knee 0~100%; Ratio from 2:1 to 100:1; Attack time from 5ms up to 500ms; Release time from 40ms up to 1000ms. Input Hold-Time up to 10sec.
Clip Limiter	Bypass, soft and Hard Threshold
Delay	10 ms 10.4us increment/decrement steps per channel
Slipt Band X-over(only High Band)	Freq from 5kHz to 20kHz step 1Hz resolution, slope: bypass, 1st order butterworth and 2nd order Linkwitz-Riley
Ground Noise	-86 dBu

General

Dimensions	355x70x155mm
Weight, Net / Shipping	6.61 lbs (3 Kg) / 8.82 lb (4 Kg)