

# Plate Amplifiers

## for Active Speakers - PDA281PAF

PDA281PAF is a complete solution dedicated to 2-way self-powered loudspeakers. In addition, it offers a full set of value adding features such as on board DSP, Wifi Connection, and optional extension of Dante™, Ethernet and Bluetooth with aptX™. To guarantee maximum reliability, PDA281PAF includes a highly



PDA281PF with Dante™, TCP/IP, and aptX™ Bluetooth Extension

Factor Correction) which provides power of 280W+100W @ 4ohm to the 2 output channels, using the Class D module - full bandwidth PWM modulator obtaining ultra low distortion, high dynamic range and also equipped with a full set of circuit protections. PDA281PAF includes a set of sophisticated processes for loudspeaker, implemented by the powerful MARANI® DSP running 48kHz/24bit [96 bits precision for the internal intermediate processes]. 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. FIR is embedded inside as well: for input part, can set to correct phase; and output channel FIR is up to 512 taps, with FIR coefficients generated from the Third Party Applications can be imported as .txt or .csv file. Moreover the Peak 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 a reliability without compromises. 12dB ADC Headroom is available. All setup parameters for input mixing, DSP features and the limiter setting are accessible by using the remote PC software. To make it a more flexible device for audio applications, PDA281PAF guests a WIFI module, allowing user connect the unit to PC via WIFI.

### Features

#### Outstanding Performance

Excellent sonic performance with 24bit high end converters coupled with 48kHz sample rate; High power output: 280W + 100W @ 4ohms Switched-Mode Power Supply with auto voltage sensing; Class D Amp Module - full bandwidth PWM modulator with ultra low distortion; Full protection circuitry including Over-Current, Over/Under-Voltage, Output DC and Over-Temperature; Supports Dante, Bluetooth with aptX, Ethernet up to user's preference

#### Top-grade DSP Engine

10 band PEQ on input channel, selected as Lo/Hi-Shelving, Bell and Notch filter  
8 band PEQ on output channel, selected as Lo/Hi-Shelving, Bell and Notch filter  
FIR OR IIR Filters for X-OVER:  
The X-Over can be implemented both by FIR filters OR IIR Hp/Lp, as desired by the user which can select the FIR or IIR use by Sw. FIR: Crossover filters 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 or .csv file from external applications

IIR: HP/LP filters with slopes from 6dB/Octave up to 24dB/ Octave including Butterworth, Bessel, Linkwitz-Riley

Each output features a precision Peak Limiter with selectable Attack/Release time and Threshold. Adjustable Delay time up to 250.998 ms for input and 40.998 ms for output ; Input channel includes FIR Phase Correction, Noise Gate, RMS compressors, while output channels includes Peak Limiter  
Dynamic Filter and +12dB ADC Headroom are available

#### Network Connection & Control

USB connector for system setup, monitoring and control via fully manageable remote PC software (ETHERNET is optional as well)  
Remote PC SW control can be also realized by WIFI connection, 3 Preset Selection

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### Power & Amplifier Sections

Number of Channels -----	2
Max Output Power -----	280W + 100W @ 4ohms
Output Circuitry -----	Class D - full bandwidth PWM modulator with ultra low distortion
THD+N -----	<0.003%
Signal To Noise Ratio -----	>105 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)
Power Supply -----	Integrated power supply and auto voltage sensing
Operating Range -----	Universal Mains, 110-240 V
Protections -----	Over-Current, Over/Under Voltage, Output DC and Over-Temperature
Maximum Input Level -----	+12 dB
Maximum Output Level -----	+10 dB

### Audio

Analog Input -----	1 x XLR electronically balanced, +12dB
Analog Output -----	1 x XLR electronically balanced, +10dB
AD & DA Converters -----	24bit

### DSP & Processing

DSP Engine -----	MARANI® DSP
DSP Resolution -----	24bit (data) x 24 bit (coeff.), 54 bit accumulation registers 96 bit precision on intermediate processing data
Parametric Equalization -----	10 filters per input channel; 8 filters per output channel
Filter Type -----	Bell, Low/High Shelving variable Q, and Notch
Filter Gain -----	From -15dBu up to +15dBu by 0.5dBu resolution steps
Center Frequency -----	Selectable with a 1Hz resolution step from 20Hz up to 20kHz
Filter Q/BW -----	Bell Type Q: from 0.4 up to 128 Lo/Hi-Shelving Type Q: from 0.1 up to 5.1 Notch Type Q: from 4 up to 104
Crossover section FIR-----	From 256 to 512 taps coefficients, FIR type selection and out of band attenuation, operating from 250Hz, up as Xover point; accepted coefficients generated by external applications.
Crossover section IIR-----	HPF/LPF up to 24dB/Oct, selected as Butterworth, Bessel, Linkwitz Riley
Input Special Filters-----	FIR for System Phase Correction High Pass Filter with slope up to 48dB/Oct, Butterworth, Bessel, Linkwitz Riley
Input Noise Gate -----	Threshold from -80~-50dBu; Release time: 1~1000ms; Attack time: 30~1000ms
Input RMS Compressor -----	Threshold from -18dBu up to +12dBu; Attack time from 0.1ms up to 5k ms; Knee 0~100%; Ratio from 2:1 to 32:1; Release time from 100ms up to 15k ms, with Make up -/+ 12dB
Output Peak Limiter -----	Threshold from -18dBu up to +12dBu Release time 0.1ms ~ 5ms; Attack time 1ms ~ 1k ms;
Delay -----	up to 250.998 ms on Input Channel and 40.998ms on output Channel

### General

Panel -----	PRESET button 1 x 50mm Antenna, 1 x XLR female connector (Input), 1 x XLR male connector (Link Output) , 1 x RJ45 (for TCP/IP or for Dante, optional) , 1 x Ground-lift toggle Switch , 2 x Locking PowerCON® 20A: AC Mains (blue) - AC Link (white) On/Off Power Switch
Dimensions -----	132mmX355mmX65mm
Weight, Net / Shipping -----	6.09 lbs (2.76 Kg) / 8.83 lb (4 Kg)