

■ P Series Specifications

SPECIFICATIONS		P48D	P48
Sampling Rate		96kHz	
AD/DA Converter		24bit	
Audio System Delay		<2.1ms (analog input- analog output)	
Input	Analogue	4-channel electronically balanced input	4-channel electronically balanced input
	AES	4-channel AES input	4-channel AES input
	Dante	4-channel Dante input	/
Input Interface		4x Female XLR	
Output	Analogue	8-channel electronically balanced output	8-channel electronically balanced output
	Dante	4-channel Dante output	/
Output Interface		8x Male XLR	
DSP	EQ	Each input 15-band EQ, each output 10-band EQ; EQ types: PEQ, High/Low Shelf, All Pass, All Pass2, VariQ High/Low Pass, Phase, Elliptic High/Low Pass, High/Low Pass, Band Pass, Notch	
	DEQ	Each input with a 3-band DEQ	
	Delay	Input delay: each channel 2000ms ; Output delay: each channel 2000ms	
	FIR	Input FIR :each channel 512Taps(@48kHz); Output FIR:each channel 512Taps(@48kHz)	
	Crossover	Butterworth, Linkwitz-Riley, Bessel:6 dB/oct to 48 dB/oct	
	Limiter	Compressor + Limiter	
Input Impedance		≥10kΩ	
Output Impedance		<100Ω	
Maximum Input/Output Level		≥+20dBu	
Requency Response		±0.3dB, 20Hz-20kHz	
S/N Ratio		≥113dB @1kHz, A weighted	
THD+N		≤0.002% @1kHz, 0dBu, A weighted	
Crosstalk		≥105dB @1kHz	
Connection Type		USB/RS232/TCP/IP	
AC Power Operating Range		100-240V/(±10%, 50-60Hz)	
Power consumption		<20W	
Rack space		1U	
Dimension(WxHxD)		483x44x265mm	
Net weight		3.6kg	

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Dynamic Audio Solutions

BrainCore™  
Technology Inside



# P Series

## Professional Audio Processor

The P Series Professional Audio Processor integrates a variety of DSP functions, including compressors, crossovers, dynamic equalizers, delays, equalizers, input/output FIR filters, phase filters, and mixing matrices. With intuitive PC software, users can easily tune and monitor, ensuring the efficient construction and flexible operation of professional audio amplification systems.



# BrainCore™

BrainCore™ is an innovative core application technology independently developed by Audiocenter, dedicated to delivering audio systems with supreme performance and high reliability.

Utilizing advanced technology and scientific methods, BrainCore™ optimally analyzes and processes signals, power amplifiers, and speakers. This results in excellent frequency response and audio reproduction, even at high SPL levels.



Audinate's Dante audio network is a widely adopted network audio technology in the world, used in commercial installations, live performances, recording, and production.



The P series professional audio processor is equipped with complete Dante functionality, with a maximum channel capacity of 512x512, ensuring immediate and seamless compatibility with the full Dante ecosystem.

## Highlights

### ◆ Ultimate Sound Quality, Superior Performance

Equipped with high-performance AD/DA converter chips and a 96kHz 24-bit sampling rate, it accurately captures sound details, enhances dynamic range, reduces distortion, and delivers pure sound quality and efficient performance, meeting professional audio requirements.

### ◆ High-performance DSP Processing Technology

The 32-bit floating-point digital processor optimizes signal processing, with 3 bands of dynamic equalization (DEQ) on each channel that automatically adjust the frequency response. The combination of IIR and FIR filters preserves the original characteristics of the audio signal, generating precise linear phase curves, providing a balanced, natural, and transparent audio experience.

### ◆ 2000ms Ultra-Long Delay, Precision to 0.01ms

The system allows for input and output delays of up to 2000ms, with a precision of 0.01ms. This ensures precise synchronization in any audio application.

### ◆ Intelligent Audio System Management

#### Remote Monitoring and Control

The ability to remotely monitor and control the status of audio equipment, allowing for real-time adjustments to settings, greatly enhances the convenience and efficiency of monitoring.

#### Centralized Management and Maintenance

The P series manages the audio system centrally through the network, unifying software updates, parameter configuration, and maintenance, which effectively improves the efficiency of operation and maintenance.

#### Simplified Installation and Cost Reduction

Transmitting audio signals via the network reduces reliance on traditional audio wiring, simplifying the installation process and reducing construction costs and complexity.

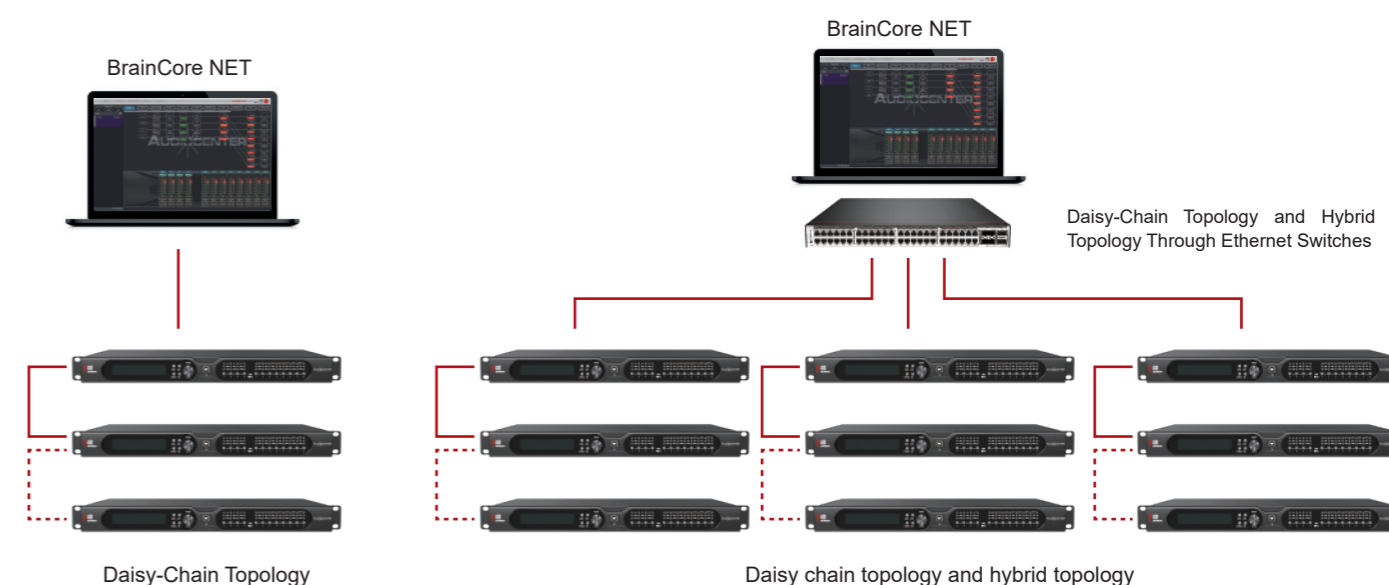
## Network Control

BrainCore NET network control system provides powerful real-time control and monitoring capabilities for complex systems, capable of managing up to 250 devices simultaneously.

Regardless of changes in DSP topology or device quantity, BrainCore NET software offers a centralized working platform, greatly simplifying the construction process of DSP design, making it easy to handle even complex DSP projects.

The system supports various network topologies and is easy to configure, allowing system designers to flexibly choose the topology that best suits the needs of each project.

It is particularly worth mentioning that Dante versions of the equipment integrate Dante network audio transmission and software network control connections on a single RJ45 port, achieving an integrated solution that brings higher convenience and efficiency to users.



## Ultimate Sound Quality, Superior Performance

### ◆ Powerful DSP Processing

#### High-Resolution Conversion

With a 96kHz sampling rate and 24-bit precision, it achieves very low noise and extended dynamic range.

#### Advanced Digital Processing

Equipped with the latest 32-bit floating-point digital processor, optimizing analog signal processing.

#### Dynamic Equalization (DEQ)

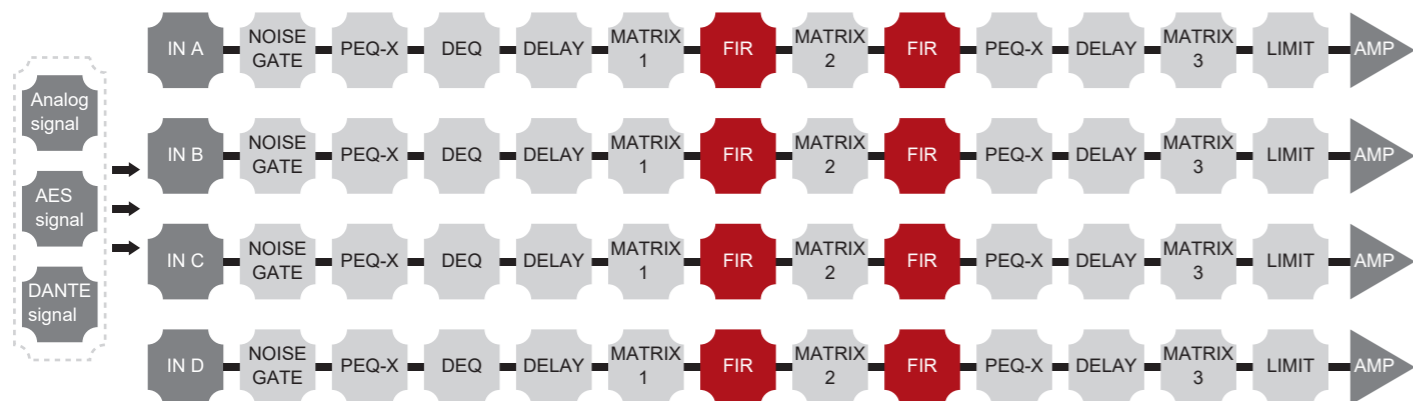
Each input channel is equipped with 3 bands of Dynamic Equalization (DEQ), which can dynamically adjust the frequency response of the audio signal based on changes in the input signal, providing more refined and automated audio control.

#### IIR Filters

The IIR filters provide a variety of filter options, including Bessel, Butterworth, and Linkwitz-Riley, supporting high-pass, low-pass, and parametric equalization. They easily achieve -48dB per octave adjustment and phase control.

#### FIR Filters

The FIR filter enhances the impact of the audio, ensuring a more dynamic and powerful sound experience. The linear phase response preserves the original transient characteristics of the audio signal, thereby producing more delicate and precise notes.



The P series, with its 96kHz sampling rate and 24-bit precision, combined with IIR and FIR filtering technologies, accurately generates linear phase curves, significantly improving the quality of the impulse response.

This combination of technologies meets the requirements of an ideal crossover, enabling sound engineers to precisely reproduce the perfect sound quality of speakers in live settings, providing users with a balanced, natural, transparent, and authentic auditory experience.

### ◆ Perfect Integration of BrainCore™ Technology

Perfectly integrating BrainCore™ technology, providing precise digital processing through superior Limita™ processing technology, ensuring the system operates safely and reliably.

### ◆ AES Digital Audio Input

The P series supports standard AES/EBU digital audio input, providing customers with a variety of widely recognized digital audio input solutions in the industry. This enables high-quality audio transmission and precise control of audio equipment.

### ◆ Dante Network Audio Transmission and Control

Integrating Dante network audio transmission and control technology, allowing for long-distance, high-precision audio signal transmission and control over Ethernet, ensuring stable and reliable sound quality.

## Manufactured to German precision craftsmanship standards, ensuring durability and longevity

### ◆ European R&D and Design, German Precision Manufacturing Standards

The DSP modules are designed by Audiocenter's European R&D team and manufactured to German precision standards, ensuring stable and efficient system operation and high-quality audio output.

### ◆ High Reliability

DSP modules have been sold globally for over 500,000 units and have proven to be very stable and reliable.

### ◆ High Standards

All input and output connectors are professional-grade quality components.

High-quality components ensure the amplifier operates stably in harsh environments.



#### 1. Display Screen

A 2402-character display screen to show various control parameters and menu options

#### 2. Display Screen Control Buttons

Quick access to function settings.

#### 3. USB Interface

Supports plug-and-play connection via the front panel USB, allowing users to flexibly transfer presets and device files, and update firmware from a driver to the processor, enabling extremely fast reconfiguration of the processor.

#### 4. Limiter Indicator

#### 5. Signal Indicator

#### 6. Edit/Mute Button

Press briefly to mute the channel; press and hold for 2 seconds to enter the edit mode for the channel.



#### 7. IEC Power Connector

#### 8. RS232 Interface

This port can be used to connect to computer control software, as well as to central control devices.

#### 9. Network Section

DANTE Network Cable Connector  
TCP/IP Network Cable Connector

#### 10. Signal Output

8-channel balanced analog signal XLR output interface

#### 11. Digital and Analog Hybrid Signal Input

AES/EBU Digital Signal XLR Input  
Balanced Analog Signal XLR Input

LCD Display

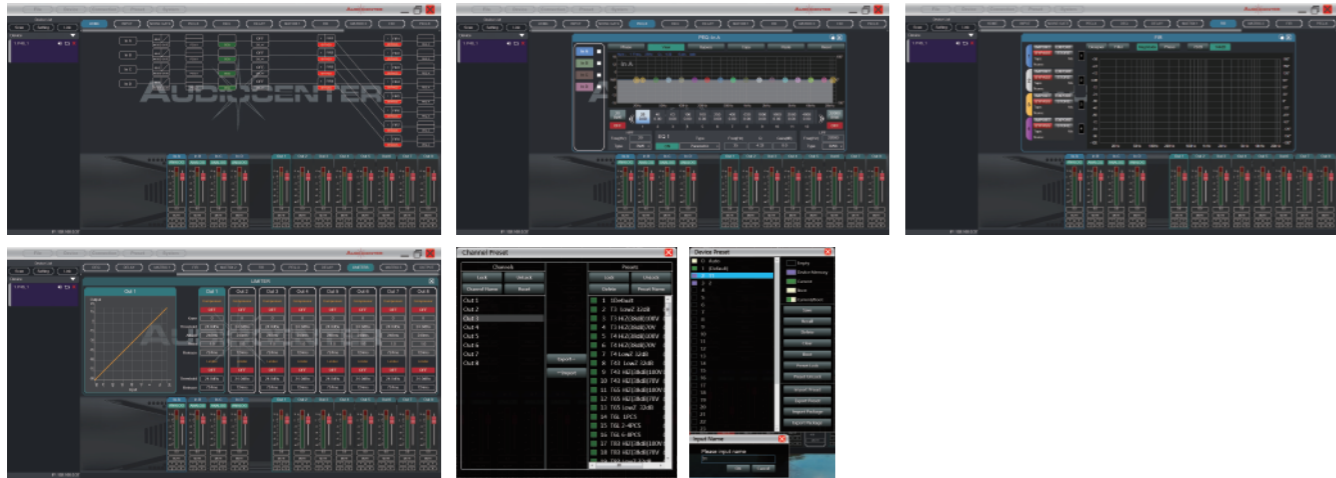


The front panel LCD display of the P Series audio processor provides users with an intuitive and convenient operating experience. It supports quick system and network settings, real-time monitoring of device status, and built-in preset memory functions, allowing for easy mode switching. Additionally, it enables instant muting of any channel, quick editing of frequently used parameters, and retrieval of presets, enhancing operational efficiency.

Intuitive PC Operation Software

The engineers at AUDIOCENTER have leveraged their extensive expertise and years of research to integrate advanced DSP processors into the P Series audio processors. This audio processor delivers exceptional sound quality that surpasses traditional analog signal processing technologies, providing an unprecedented auditory experience.

The device is easy to set up, adjust, load, and recall. Users can effortlessly load or recall their custom programs or use the manufacturer's preset speaker configurations.



Comprehensive EQ and Filter Options

Each channel is equipped with 15 bands of input EQ and 10 bands of output EQ, with 14 types of EQ filter options available for each band.

The high-pass and low-pass crossovers offer a selection of Butterworth, Bessel, Linkwitz, and slopes ranging from 6 to 48 dB/Oct.

2000ms Ultra-Long Delay, Precision to 0.01ms

Offers up to 2000ms of input and output delay with a precision of 0.01ms, ensuring precise synchronization in any audio application.

Professional FIR Filters

Supports importing from third-party software and capturing data through SMARTT tests, allowing for personalized editing directly in the software and saving for use.

Supports input of 4x512 taps and output of 8x512 taps, ensuring precise audio processing.

Limiter Management

Providing precise digital processing through superior Limita™ processing technology, ensuring the system operates safely and reliably.

Preset Management

The P series offers two preset management modes: channel preset management and whole-machine preset management.

Users can call up the corresponding presets with a single click, easily achieving satisfactory audio quality. This greatly simplifies operation, improves efficiency, and allows on-site application engineers to complete their work easily and efficiently.

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Crosstalk		≥105dB @1kHz
Connection Type		USB/RS232/TCP/IP
AC Power Operating Range		100-240V/(±10%, 50-60Hz)
Power consumption		<20W
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