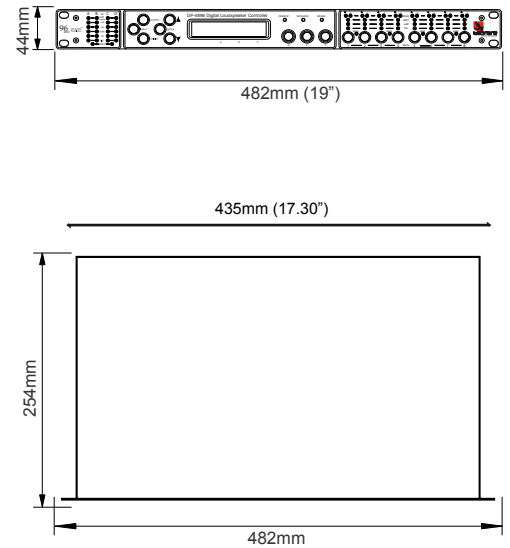


DP4896: Digital Loudspeaker Controller



MAIN FEATURES

- ✦ 96kHz 4th generation SHARC DSP algorithms
- ✦ AES3 inputs & output selected in pairs
- ✦ 4 input & 8 output channels
- ✦ Dante networked audio option
- ✦ LIR Linear Phase crossovers
- ✦ **V**irtual **X**over Limiter for passive systems
- ✦ Contact closure 'Snapshot' recall
- ✦ PEQ & FIR equaliser on all inputs
- ✦ Easy Podware Control software over Ethernet
- ✦ Easy User grouping & Overlay

DESCRIPTION

The DP-4896 Digital loudspeaker Controller is a one rack spacer, 4 input/8 output and digital matrix, high performance signal processor for loudspeaker systems

Two-pair of balanced XLR connector feeding state-of-the-art A/D converters operating at 24-bit resolution, 96 kHz sample rate provides for nominally flat response beyond 40 kHz.

One or more input pair can be switched to operate as standard stereo AES3, with the option of a Dante® audio networking card. 8 outputs can be switched to operate as analog output or as AES3 (two channel per output 1-2, 3-4, 5-6, 7-8) output.

Three velocity-sensitive rotary encoder, illuminated buttons and graphical display provide a rapid and intuitive control from its front panel.

The Device includes a comprehensive arsenal of powerful signal processing tools. Input processing function offers gain, high-pass filter, high and low shelving, 6-band parametric EQ, delay and polarity. Output processing function offers gain, crossover, high and low shelving, 8-band parametric EQ, polarity, delay, and innovate suite which includes VX limiter providing dynamic control for passive 2-way enclosures, an Xmax excursion limiter with sliding High pass filter and Tmax transducer thermal modelling.

The accompanying Podware software is easily installed and intuitive to use provides comprehensive control of all parameters from Windows® based computer via Ethernet protocol.

A large library of preset is included for systems ranging from small Tecnare loudspeaker all the way up to complex Array Series line array products.

DP-4896 DSP

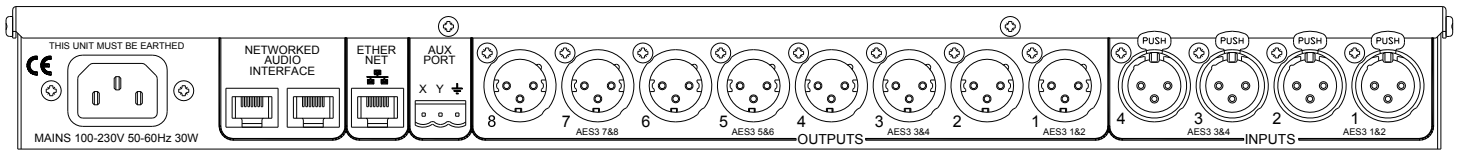
The **DP-4896** follows the "minimum signal path" philosophy. A careful choice of converters and many years of expertise in DSP algorithm design for professional audio provide a comprehensive arsenal of powerful signal processing tools for tuning and aligning of FOH systems. The large number of functions, in addition to standard like gain and polarity reverse, the DP4896 has an generous range of EQ and filtering capable of addressing phase alignments, as well as range of acoustic anomalies, preventing shifts in phase and degrade intelligibility and signal clarity.

The **DP-4896** uses 96 kHz sampling and powerful 4th generation **SHARC®** Digital Signal Processor. All this adds up to deliver the ultimate in sonic transparency and a stunning open sound quality.

As well as the standard Butterworth, Bessel, Linkwitz-Riley and Hardman filters, DP4896 offers a unique "Linea Impulse Response" (LIR) crossover filter which gives a Linear Phase crossover that has a constant delay regardless of frequency (unlike other types of crossover which delay different frequencies to a different extent, thus smearing the arrival time).

The **LIR** crossover can thus be described as having a flat Group Delay response, and thus entirely free of Group Delay Distortion, this is exactly the same as can be provided by common FIR filtering but without the complications and disadvantages inherent with the FIR technique. The shape of the LIR crossover filter is similar to a 4th order Linkwitz-Riley filter, and maintains zero phase difference between the adjacent bands across the crossover region to keep the polar response rock steady.

DP-4896 HARDWARE



Tecnare DP4896 Rear Panel Digital and Analog connection, interface and communication

DP series

The Tecnare **DP4896** features four analog inputs with balanced XLR connectors and state-of-the-art A/D converters operating at 24-bit resolution with 96 kHz sampling frequency which together the "minimal signal patch" design, provides for a nominally flat response beyond 40 kHz. The inputs can be switched in pair to configure as stereo standard AES3 digital input and with the option of a Dante® audio networking.

There are eight XLR audio outputs which provide eight channels of analog output and can be switched to provide 8 channels of standard AES3 digital outputs (two channels per output 1-2, 3-4, 5-6, 7-8). The analog output feature balanced XLR connectors with high resolution 96 kHz, 24-bit D/A converters.

Designed and engineered in UK, the DP4896 is built around of state-of-the-art converters, a 4th Generation Analogue Devices Sharc DSP and highly advanced DSP algorithms.

Unique LIR linear phase crossover shapes giving FIR-like performance without the drawbacks. Also Linear phase HF system EQ profiling which provides perfect integration between enclosures. The result is "best in class" audio performance and feature set

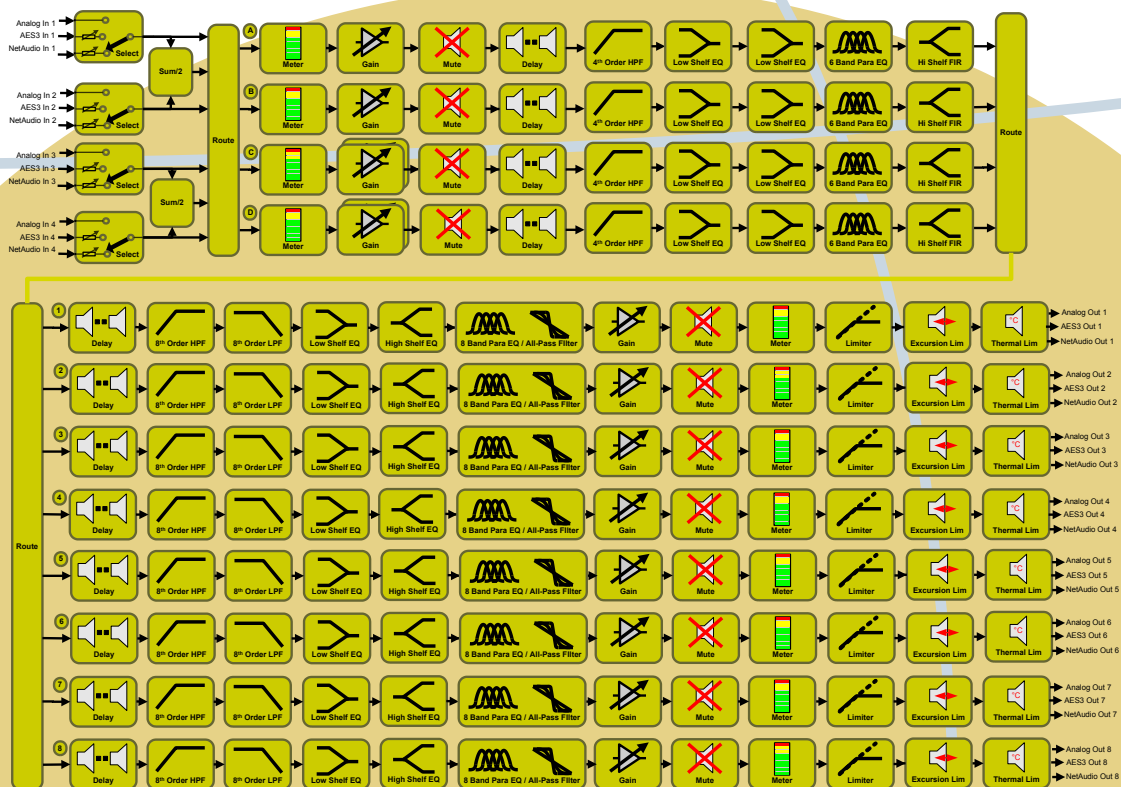
The rear panel includes one standard Ethernet port Rj45. A unique design that permits plug-and-play Ethernet communication. High speed capable and flexible Ethernet communications that supports DHCP, static-IP and auto-IP and direct connection to a computer without the need for a router or a switch.

The front panel display the DSP input level with 6-LED meters with variable color. Illuminate output mute switch are also available. Three velocity-sensitive rotary encoders provide intuitive parameter control and configuration.

Snapshot (Partial or Full) may be recalled via AUX Port includes on the rear panel (see configuration in manual).

User Security

The DP4896 also has a SECURE LOCK feature accessible from the front panel, which enables users to view but not change parameters thus making the unit tamper-proof.

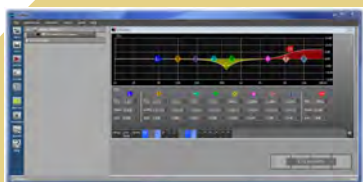


Signal Processing Bloq Diagram

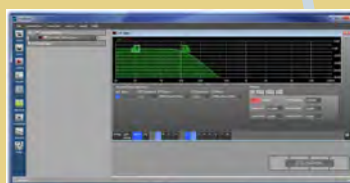
DP4896: Digital Loudspeaker Controller

Technical Specifications	
Audio Inputs	4 fem XLR (Analog or AES3). <i>Dante (optional)</i>
Audio Output	8 male XLR (Analog or AES3)
Input Impedance	> 10k Ohms, Electronically balanced
Output Impedance	<100 ohms, ground balanced
Maximum Input level	+20 dBu
Maximum Output level	+18 dBu into 600 Ohm load
Sample Rate / Bit Depth	96 kHz / 24 bits
THD (20 Hz - 20kHz)	<0,008 %, (+10 dBu, 20 Hz to 20 kHz, 30 kHz bandwidth)
Dynamic Range	Inp Dyn range >120dBa Typ. Out Dyn range >118dBa Typ.
Frequency Resp	10Hz -40kHz,+/-3db & 20Hz-20kHz,+/-0,5db(disabled filters)
Power Consumption	30W max
Mains Power	IEC. Universal switch mode PSU, 85v to 250 AC 50/60Hz
Weight	2.7kg (5,95 lb) net
Processing	
Input Gain	+20 dB to - 80 dB and mute, 0,2 dB steps
Virtual inputs	DSP's A, B, C, D linked to physical inputs (1,2,3,4 or combi)
Out channel sources	Selectable virtual input A, B, C or D
Low and High Pass Filter (LPF&HPF)	Off, 10 Hz to 25,4 kHz, 1/36 d'octave steps 1 st order, Bes12, But12, LR12, Bes18, But18, Bes24, But24
LPF and HPF Filter Sharpes	LR24, Hardman 4 th ord, But48, LR48, Hardman 8 th ord. LIR (Linear Phase Crossover Filtering), FIR
Delay	Input 998 ms, output 998 ms
Limiter	VX Limiter (Exclusive), Termal Limiter, Xmax. Limiter
PEQ Frequency	10 Hz to 25 kHz, 1/80 octave steps
PEQ Gain	-15 to +15 dB
PEQ Width	0.1 to 5.2 Oct, Q 0.2 to 14.2, 1/32 octave steps
Additional Feature and accessories	
NetworkPorts	Ethernet port Shielded Rj45
Network Audio	Dante Optional 2xRj45 (Primary & Secondary)
Auxiliar port	3 pins PHoenix connector

The control of all the features is paramount. **Podware®** software fulfills this requirement. Thanks to the power of Obcom, PodWare becomes much more than just a remote control panel for an DP4896. PodWare and any connected device(s) become intimately intertwined, faithfully duplicating any control adjustments whether they are made in PodWare or on the front panel of the device itself.



Each input and each output can be named in PodWare. These names not only appear for the User on the PodWare control panels, but also show when scrolling through the inputs and outputs on the device itself.



A large library of presets is included for systems ranging from two small **Tecnaire** loudspeakers all the way up to complex, "Array Series" line array products.