

## Electronics

### Ultra Linear High Performance DSP Controllers

# Audio Performance ALC48 Digital Controller



Due to the flexibility of its processing, Audio Performance new digital Advanced System Controller (ALC) is equally suited for duty as a high performance loudspeaker crossover or for overall system control and management.

The ALC takes audio performance to the next level with new audio converters and advanced DSP algorithms that make full use of the processing power offered by the latest 4th generation SHARC DSPs. Unique to the industry on the ALC are the revolutionary new LIR Linear Phase crossover filters, and for the ultimate in driver protection with maximum SPL, the new VX Limiters. These are not marketing gimmicks: they are carefully implemented, powerful tools that allow OEMs to extract the maximum performance from their systems, safely. Couple all this with integrated 'plug-and-play' Ethernet connectivity that does not require an IT consultant to configure..

### Introduction / Key Features

The Audio Performance Loudspeaker Controller (ALC) is a high performance, easy to use signal processor for loudspeaker systems, providing processing for up to 4 inputs and 8 outputs. Taking advantage of the latest advances in analogue to digital conversion and digital signal processing technologies the units achieve performance levels higher than previous devices.

The ALC provides generous amounts of signal processing capability and a wide variety of crossover shapes. The package is complemented by a highly flexible parameter hiding arrangement, and presets for both the OEM and the user. The ALC includes Audio Performance minimal signal path design, and a 96kHz sampling frequency provides for a nominally flat response beyond 40kHz. Three rotary encoders, illuminated buttons and graphical display provide a rapid, intuitive and user-friendly control interface. Powerful Drive Module concept which allows for abstraction from device centric to speaker based control. High speed capable and flexible Ethernet communications that supports DHCP, static-IP and auto-P and direct connection to a computer without the need for a router or a switch. Class-leading sonic performance achieved by the use 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. Innovative limiter suite which includes; VX limiter providing dynamic control for passive 2-way enclosures, an Xmax excursion limiter with sliding High Pass Filter which retains dynamic impact whilst effectively protecting drivers.

## IDEAL FOR

Four input & Eight output channels

AES3 inputs & outputs selected in pairs

Dante networked audio option

LIR Linear Phase crossovers

Multi-stage peak & RMS limiters

Virtual Xover Limiter for passive systems

PEQ & FIR equalisers on all inputs

Easy PodWare PC control over Ethernet

Electronics

ALC48 Specifications

**GENERAL**

Inputs.....	Four
Input Impedance.....	> 10k Ohm Electronically balanced
Maximum Input level.....	+20dBu
Outputs.....	Eight
Output Impedance.....	<100 Ohm, ground balanced
Maximum Output Level.....	+18dBu into 600ohm load
Sample Rate.....	96kHz
Bit Depth.....	24 bit
Frequency Response.....	10Hz to 40kHz, +/- 3dB (filters disabled) - 20Hz to 20kHz, +/- 0.5dB (filters disabled)
THD.....	<0.01%, (+10dBu, 20Hz to 20kHz, 30kHz bandwidth)
Dynamic Range.....	>120dB (A weighted, 22kHz bandwidth)

**PROCESSING**

Gain.....	+20dB to -80dB and mute, 0.2dB steps
Output Ch. Source.....	Input A, Input B and SUM
HP filter frequency.....	Off, 10Hz to 25.4kHz, 1/36 octave steps
LP filter frequency.....	Off, 10Hz to 25.4kHz, 1/36 octave steps
LP / HP filter type.....	12, 18 & 24dB/octave Bessel and Butterworth - 12, 24 and 48dB/octave Linkwitz Riley 4th or 8th order Hardman
Delay.....	Input 400us, output 80us
Limiter.....	High performance limiter, adjustable threshold in 0.2dB steps, automatic time constants
EQ frequency.....	10Hz to 25kHz, 1/36 octave steps
EQ gain.....	+15dB to -15dB, 0.2dB steps
EQ width.....	5.0 to 0.1 octaves bandwidth, 1/36 octave steps

**CONNECTORS**

Audio inputs.....	3 pin female XLR
Audio outputs.....	3 pin male XLR
Serial comms.....	Future option
Network comms.....	Future option
Mains.....	3 pin IEC
Mains Power.....	Universal switch-mode PSU, 85v to 250v AC, 50 / 60Hz
Consumption.....	30Watts
Dimensions.....	44mm (H), 482mm (W), 254mm (D)
Weight .....	2.7 kg net

