LS12Q

4 Channel DSP Network Amplifier

2U · 4 CHANNELS · DSP ON BOARD · AUDIO NETWORK · SAFETY RELIABILITY · SRM · FIXED SWITCHING FREQUENCY · PFC · Armonía+ Plus System Manager

LS12Q Amplifier

- 4 Channel Touring-grade amplifiers, 2u package
- Manufactured in Italy by Powersoft for Logic System
- Two models: LS8Q 4x2000W, LS21Q 4x2700W
- Powerful DSP processing
- Dante® and AES67 Audio
- Ethernet control via Armonia Plus
- Supplied pre-loaded with Logic System presets

Logic System loudspeaker products are designed to be used with the LS8Q and LS12Q four channel power amplifiers. Made for Logic System by Powersoft, they feature sophisticated power supplies, powerful DSP processing and Dante® as standard, in a 2u package. The rugged construction and Neutrik® connectors, allow use in touring or installation applications.

The PFC (Power Factor Corrected) power supply allows operation on standard mains voltages, anywhere in the world. Powersoft's SRM (Smart Rails Management) technology ensures electrical efficiency by only delivering the full rail voltage when the signal requires it to, which also reduces power draw (and heat dissipation) to less than 34W when idling.

The powerful DSP can work with a 48 or 96kHz sampling rate, via an internal sample rate converter. Low and high pass filters up to 48dB/octave, plus parametric, all-pass and shelving type IIR filters are available, as well as up to 2048 tap FIR filters on each channel. In addition, Raised Cosine filters are also implemented, which are particularly useful for system tuning, due to their wide and narrow band equalisation flexibility.

Audio inputs are provided by analogue, AES3, Dante® and AES67. The integrated gigabit Ethernet switch allows connection via star or daisy-chain wiring. Control of the LS amplifiers via Armonia+ can also be performed over the same Ethernet network. Usefully, the LS amplifiers can be used as an "on ramp" for converting analogue or AES3 input signals to Dante® or AES67 for audio distribution over a wired Ethernet network.

LS amplifiers can be operated directly from the front panel, via the large colour touchscreen display, or over wired Ethernet, via the Armonia+ application. The amplifiers come pre-loaded with Logic System presets, for plug and play operation.

The LS8Q can deliver peak output voltages up to +/-155V, with the more powerful LS12Q able to deliver an even greater +/-180V to maximise system headroom, when driving Logic System loudspeakers. Power output for both models is shown in the table below for a variety of symmetric/asymmetric loads, plus bridging options.

Application:

- Club and KTV
- Small to medium scale touring systems
- Arenas & concert halls
- Stadiums & open-air events
- Multi-zone venues & live clubs

LS12Q

4 Channel DSP Network Amplifier

Channel Handling

Outputs.....4 x Speakon NL4
.....4 Dante/AES67 TX (from local input or DSP)

Inputs

Analog.....4 XLR female
.....4 XLR male (LINK)
Digital AES3.....2 XLR female (4 x audio channels)
.....2 XLR male (LINK)
Digital Dante/AES67.....2 XLR Ethercon (4 x audio channels)

Audio

Input sensitivity @ 8 Ω.....3.22 Vrms with Gain 32dB
S/N (20Hz-20kHz @ 8 Ω).....110 Typ.
Max input level .....24 dBu
Frequency Response @ 8 Ω load.....20Hz-20kHz +/- 1.0 dB
Crosstalk (1 kHz).....-75 dB typ.
Input impedance..... 20 kΩ Balanced
CMRR.....65 dB typ.
THD+N (from 0.1 W to Half Power)..... < 0.1% (typical < 0.05%)
SMPTE IMD (from 0.1 W to Half Power)..... < 0.1% (typical < 0.05%)
Output impedance at 100 Hz..... 30 mΩ

DSP

AD converters.....24 Bit Tandem™ @ 48 kHz
..... 125 dB-A Dynamic Range - 0.005 % THD+N
DA converters.....24 Bit Tandem™ @ 48 kHz
..... 117 dB-A Dynamic Range - 0.003 % THD+N
Sample rate converter..... 24 Bit @ 96 kHz
..... 140 dB Dynamic Range - 0.0001 % THD+N
Internal precision.....32 bit floating point
Latency..... 2.5 ms fixed latency architecture
Memory/Presets .....50 amplifier snapshots, virtually unlimited speaker presets
Delay.....2 s (input) + 100 ms (output) for time alignment
Equalizer..... Raised-cosine, custom FIR, parametric IIR: peaking, hi/lo-shelving, all-pass, band-pass, band-stop, hi/lo-pass
Crossover..... linear phase (FIR), Butterworth, Linkwitz-Riley, Bessel: 6 dB/oct to 48 dB/oct (IIR)
Limiters..... TruePower™, RMS voltage, RMS current, Peak limiter
Damping control..... Active DampingControl™ and LiveImpedance™ measurement

Display Specs

Resolution.....480x272, 4.3" diagonal
Brightness.....600 nit
Control..... Multitouch capacitive. Rotary encoder 20 steps/turn with pushbotton

Output Satge

Max output power
per channel @ 8 Ω (symmetrical)*.....1800 W
per channel @ 4 Ω (symmetrical)*.....2700 W
per channel @ 2 Ω (symmetrical)*.....2000 W
per channel @ 8 Ω (asymmetrical)**.....1900 W
per channel @ 4 Ω (asymmetrical)**.....3000 W
per channel @ 2 Ω (asymmetrical)**.....2000 W
@ 8 Ω bridged.....5400 W
@ 4 Ω bridged.....4000 W
Maximum unclipped output voltage..... 180 Vpeak
Maximum output current..... >55 Apeak
*All channels driven and loaded symmetrically
**All channels driven, but channels 2 and 4 at -6dB

Power & Thermal

@ 100V
Standby Power.....15.8 W
Idel Power.....33.7 W
1/8 Power @ 4 Ω Power.....1570 W
1/8 Power @ 4 Ω Current Draw.....16.5 A_{rms}
1/8 Power @ 4 Ω Thermal Loss.....1670 BTU/h
@ 240V
Standby Power.....17.2 W
Idel Power.....33.5 W
1/8 Power @ 4 Ω Power.....1940 W
1/8 Power @ 4 Ω Current Draw.....8.9 A_{rms}
1/8 Power @ 4 Ω Thermal Loss.....2000 BTU/h
Power supply.....Universal regulated switch mode with PFC, SRM
Nominal voltage (±10%) .....100-240 VAC @ 50-60Hz
Operating voltage .....90-264 VAC @ 50/60Hz
AC Mains connector.....IEC C20 inlet (20 A max)

Networking

Connectivity.....Two Gigabit Ethernet ports, integrated switch, Ethercon connectors
Supported topologies.....Star, Daisy Chain
Remote interface.....ArmoniaPlus or other preferred software

Construction

Dimensions.....483 x 381 x 88.9 mm (19 x 15 x 3.5 in)
Weight.....11.3 kg (24.91lb)