

# M50Q HDSP+ETH



4-Channel Power Amplifier with DSP and Ethernet for Portable and Permanently Installed Applications



- ✓ Touring
- ✓ Installation

## 4CH



**DSP**  
on board



- ▶ Small to medium-scale systems, portable and installed
- ▶ Stage monitoring
- ▶ Bi-amped/tri-amped loudspeakers
- ▶ Hotels, restaurant and bars
- ▶ Amusement parks, themed entertainment
- ▶ Houses of worship, auditoriums
- ▶ Educational facilities
- ▶ Live and dance clubs
- ▶ Mobile DJ's

Equally versatile in both portable and installed system configurations and with its 4 channels delivering up to 5,000 W all neatly packed in one single rack unit weighing just over 7 kg / 16 lb, the **M50Q HDSP+ETH** is an incredibly flexible, cost-effective solution for small to medium sound systems.

The **M50Q HDSP+ETH** provides unparalleled levels of control and monitoring through the Armonia Pro Audio Suite™ software, with the same user interface and on the same network as all Powersoft amplifiers. Locally, the **M50Q HDSP+ETH** lets the user access up to four presets per pushbutton on the rear panel. Furthermore, the high-performance DSP is tucked away inside and safe against accidental or intentional tampering.

Benefitting from core technologies of Powersoft's flagship K Series, the **M50Q HDSP+ETH** sets a class standard in efficiency leading to low power consumption, and consequently to less money spent on electricity, all in an eco-friendly way.

The **M50Q HDSP+ETH** comes with 4 years warranty and, like all Powersoft products, is entirely designed and made in Italy.

4-channel mode				mono-bridged mode
4 Ω / Ch	8 Ω / Ch	70 V <sup>1)</sup>	100 V <sup>2)</sup>	8 Ω / Ch pair
1,250 W	750 W	1,000 W	1,250 W	2,500 W

EIAJ Test Standard, 1 kHz, 1% THD

- ✓ **Legendary Powersoft efficiency:**
  - ▶ Compact and space saving: 4 channels in 1 RU at 358 mm / 14.1" depth
  - ▶ Green Audio Power®: minimal "carbon footprint" and operational cost of electricity
  - ▶ More watts, less weight: up to 5,000 W in 7.3 kg / 16 lb
- ✓ **Driving distributed line systems:**
  - ▶ Able to drive 70 V/100 V distributed lines directly without the need for transformers<sup>1) 2)</sup>
- ✓ **Unique Powersoft technology for efficient, reliable performance:**
  - ▶ Switch mode power supply, internally switchable 230/115 V nominal
  - ▶ Fixed frequency switch mode amplifier output stages
  - ▶ Patented amplifier output filters with ripple cancellation network
- ✓ **Direct PC/network connection:**
  - ▶ Ethernet interface for system setup, monitoring and control
  - ▶ Fully manageable via Armonia Pro Audio Suite™ software
  - ▶ On the same network as all the other Powersoft amplifiers
- ✓ **Top-grade DSP on board:**
  - ▶ Dual 24-bit A/D & D/A with high dynamic range; crossover filters for bi-amped and tri-amped systems; separate input and output EQ's with numerous filters of various types up to 48 dB/oct; peak, RMS, and frequency dependent RMS limiters; delay for driver time alignment
  - ▶ Comprehensive system/load monitoring
- ✓ Four presets on board with selection button
- ✓ Optimized for 4 Ω loads, thus ideally matching real-world scenarios in targeted applications
- ✓ Fully protected circuit design:
  - ▶ AC protection: shuts down power supply when AC mains voltage is outside operating range
  - ▶ Clip limiter: prevents severely clipped waveforms from reaching loudspeakers, while still maintaining full peak power output
  - ▶ DC protection: protects against infrasonic signal at the outputs
  - ▶ VHF protections: protects the loudspeakers against destructive non-audible, non-musical high frequency signals
  - ▶ Short circuit protection: protects the amplifier from short circuit or similar events on the outputs; with automatic protection reset
  - ▶ Thermal protection: mutes outputs once output devices reach 75 °C / 167 °F; automatic unmute once temperature is down to 65 °C / 149 °F
- ✓ Temperature controlled continuous variable speed fan, front to rear airflow
- ✓ Recessed stepped level attenuators
- ✓ Full four years warranty
- ✓ Also available as M50Q without DSP and Ethernet port

1) DSP preset with high-pass filter and output voltage limiter required.

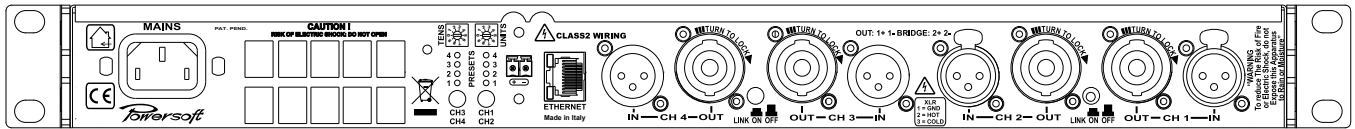
2) DSP preset with high-pass filter required.



# M50Q DSP+ETH



4-Channel Power Amplifier with DSP and Ethernet for Touring and Install Applications



## Specifications

<b>General</b>					
Number of channels	4				
Output power	4-channel mode				mono-bridged mode
EIAJ Test Standard, 1 kHz, 1% THD	4 Ω / Ch	8 Ω / Ch	70 V <sup>1)</sup>	100 V <sup>2)</sup>	8 Ω / Ch pair
	1,250 W	750 W	1,000 W	1,250 W	2,500 W
Max output voltage / current	135 V <sub>peak</sub> / 65 A <sub>peak</sub>				
<b>AC Mains Power</b>					
Power supply	Universal, regulated switch mode				
Operating voltage / Inrush current	115 V / 230 V (factory selection) ± 15%, 50 Hz - 60 Hz / < 34 A <sub>RMS</sub>				
Consumption / current draw	@ 230 V		@ 115 V		
Idle	64 W	0.51 A	64 W		0.6 A
1/8 of max output power @ 4 Ω	905 W	5.8 A	905 W		11.6 A
1/4 of max output power @ 4 Ω	1,772 W	11.1 A	1,772 W		22.2 A
<b>Thermal</b>					
Environmental operating temperature	0° - 45° C / 32° - 113° F				
Thermal dissipation	Fan, continuously variable speed, temperature controlled, front to rear airflow				
Idle	218 BTU/h		55 kcal/h		
1/8 of max output power @ 4 Ω	955 BTU/h		241 kcal/h		
1/4 of max output power @ 4 Ω	1,781 BTU/h		449 kcal/h		
<b>Audio</b>					
Gain	32 dB, 30 dB, 28 dB, 26 dB, 24 dB, 22 dB, 20 dB, 18 dB, 14 dB, 4 dB, -∞, user selectable				
Frequency response	10 Hz - 30 kHz (1 W @ 8 Ω, ± 3 dB)				
S/N ratio (amplifier section)	108 dBA (20 Hz - 20 kHz, A weighted)				
Crosstalk separation	>70 dB @ 1 kHz				
Input sensitivity @ 8 Ω	1.94 V / 7.97 dBu				
Max input level	6 V / 17.8 dBu				
Input impedance	10 k Ω				
THD+N / SMPTE IMD	< 0.08% @ 1/2 of full power				
DIM100 IMD	typ. < 0.005% (< 0.02% @ > 0.1 W)				
Slew rate	40 V/μs @ 8 Ω, input filter bypassed				
Damping factor @ 8 Ω	>5000 @ 100 Hz				
<b>DSP</b>					
A/D converter	CS5381, 2 channels, 24 bit / 48 kHz, 120 dB SNR				
D/A converter	CS4398, 2 channels, 24 bit / 48 kHz, 120 dB SNR				
Frequency response @ -3 dB	7 Hz - 22 kHz				
THD	< 0.01% (20 Hz - 20 kHz)				
Presets	Bank of 4 presets, management and upload via Armonia Pro Audio Suite™				
Delay for time alignment	10 ms per output				
Crossover filters	Butterworth, Linkwitz-Riley, Bessel, 6 dB/oct to 48 dB/oct				
Output equalizer	up to 12 biquad fully parametric per channel: peaking, hi/lo shelving, hi/lo pass, band pass, band stop, all pass.				
Input equalizer	up to 5 biquad filters (PEQ, shelving, band pass, band stop, all pass)				
Limiters	Peak limiter, RMS limiter, frequency dependent RMS limiter				
Damping control	< 120 Hz, range ± 2 Ω				
System Delay	up to 170 ms for 2 IN/2 OUT or 340 ms for 1 IN/2 OUT				
<b>Front Panel</b>					
Indicators	4 LEDs per channel: 3 x green, 1 x red 2 status LEDs: 1 x green, 1 x yellow				
Controls	1 stepped level attenuator pot per channel; mains switch				
Maintenance	Dust filter foam behind front panel				
<b>Rear Panel</b>					
Audio signal input connectors	4 x balanced Neutrik® XLR female				
Loudspeaker output connectors	4 x Neutrik® Speakon NL4MD				
Network data port Ethernet	1 x RJ45 with activity LED with 2 rotary address switches				
DSP preset selection	2 x Pushbutton (stepping through bank of 4 presets); 2 x 4 LED preset indicators				
Aux voltage	1 x 2-pin Phoenix type MC 1.5/2-ST-3.81				
AC mains	IEC C13 16 A connector; AC mains cord with 3-pin plug 15 A for US, IEC Schuko 16 A for every other nation				
Controls	2 x link switch, linking analog inputs 1 & 2 and 3 & 4				
<b>Construction</b>					
Dimensions	W 483 mm / 19", H 44.5 mm / 1.75", D 358 mm / 14.1"				
Chassis	1 mm (0.04") steel chassis and steel removable dust cover, 3 mm (0.12") steel front panel, screw hole protection, steel side reinforcement & rear support				
Weight	7.3 kg / 16 lb				

1) DSP preset with high-pass filter and output voltage limiter required.

2) DSP preset with high-pass filter required.

Data is subject to change without notice.

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