

K2 DSP+AESOP



2-Channel Power Amplifier with DSP and Networking for High-Performance Portable Sound Systems and Touring



Touring

Installation

2 CH



DSP
on board



- ▶ Small to medium-scale touring systems, FOH
- ▶ Fullrange loudspeakers
- ▶ Stage monitoring for
- ▶ Concert halls
- ▶ Live clubs
- ▶ Corporate events

Capable of delivering 4,800 watts, the **K2 DSP+AESOP** is the smallest amplifier in the K Series, at least at first glance. One may wonder how 'small' almost 5,000 watts of output power are, but other than that this amplifier leaves no questions unanswered. Built on the same unique technologies and features present in the much bigger models, it is a full-fledged member of Powersoft's most advanced line.

The **K2 DSP+AESOP** can be software upgraded to become a K3 DSP+AESOP, making it a safe investment that grows with loudspeaker systems without the need for replacing the amp hardware. With much more behind the front panel than meets the eye, the unit still takes only a single space in a 19" rack and weighs only 8 kg/17.7 lb, all a result of efficiency exceeding 85%.

A fully integrated state-of-the-art **DSP** yields extensive system management functionality. IIR/FIR filters, safety features like TruePower™ limiting and LiveImpedance™, as well as the convenient Active DampingControl™ are intuitively manageable with the free PC software Armonía Pro Audio Suite™.

The **AESOP** interface provides four standard Ethernet ports, plus adding hub functionality for two AES3 digital audio streams equivalent to 4 analog signal channels over the same RJ45, allowing for a redundant ring architecture too.

2-channel mode			mono-bridged mode	
2 Ω / Ch	4 Ω / Ch	8 Ω / Ch	4 Ω / Ch pair	8 Ω / Ch pair
2,400 W	1,950 W	1,000 W	4,800 W	3,900 W

EIAJ Test Standard, 1 kHz, 1% THD

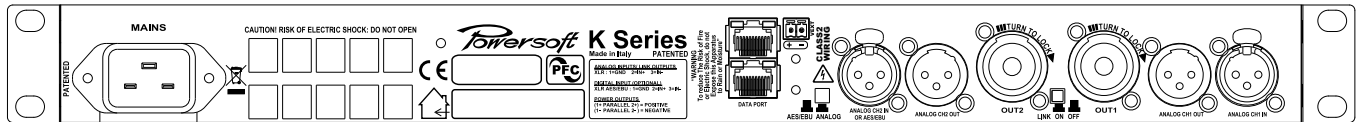
- ✓ **Legendary Powersoft efficiency:**
 - ▶ Unequaled Class D design with fixed switching frequency
 - ▶ Universal switch mode power supply with PFC (Power Factor Correction)
 - ▶ Space and weight saving: only one rack space (1 RU) and 8 kg/17.7 lb
 - ▶ Green Audio Power®: more amplifier output power from the AC mains power distribution due to >85% efficiency
- ✓ **Outstanding performance and operational safety:**
 - ▶ Excellent sonic quality by design, including amp clip limiters and patented ripple cancellation network
 - ▶ Proven reliability, yet downloadable log file of all functional fault events with time-related trace
 - ▶ Numerous amp/system/venue parameters can be configured, locked, and monitored; i.e. AC mains voltage/current draw to protect from breaker tripping
- ✓ **Highly integrated:**
 - ▶ Top-grade DSP with high dynamic range and extensive feature set
 - ▶ Separate input/output EQ's with numerous filters of various types up to 48 dB/oct (IIR), linear phase (FIR), and hybrid (FIR+IIR)
 - ▶ Sophisticated limiter system comprising peak, RMS voltage, RMS current, and TruePower™ limiting
 - ▶ Speaker wire compensation with Active DampingControl™
 - ▶ LiveImpedance™ load monitoring with regular musical signal
- ✓ **Plug & play communication and redundancy for control and digital audio:**
 - ▶ Fully digitally controlled amplifier providing feedback of all status information
 - ▶ 4-port AESOP Ethernet/AES3 interface allowing daisy-chaining and redundant ring architecture
 - ▶ Fully manageable via Armonía Pro Audio Suite™ software, intuitive system setup and maintenance, control and monitoring
 - ▶ AES3 digital audio distribution over Cat-5e cable: two streams equaling four analog channels, low latency, glitchless fallback to analog backup signal
- ✓ **Safe investment: Step-up program allows smooth upgrade to K3 DSP+AESOP**
- ✓ **Practically versatile:**
 - ▶ Mono-bridgeable amplifier channels; switch for linking analog signal inputs
 - ▶ AC inrush current limiting; channel output voltage limiting
 - ▶ Digital gain attenuator for gain/sensitivity selection
- ✓ Front panel interactive LCD display for local access and configuration
- ✓ SmartCard reader/writer for firmware updates, preset storage, and Step-up
- ✓ Front-to-rear airflow cooling with variable-speed fan, temperature controlled
- ✓ Full protection circuitry: over/under AC voltage; troublesome signals (clipping, VHF, long-term RMS); DC; thermal; short circuit; mute at power on/off
- ✓ Full four years warranty
- ✓ **Options & accessories:**
 - ▶ SmartCard, for firmware updates or preset storage; step-up card
 - ▶ Armonía Pro Audio Suite, free at www.armoniasuite.com



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Specifications

General	
Number of channels	2
Output power	stereo mode
EIAJ Test Standard, 1 kHz, 1% THD	2 Ω/ch 4 Ω/ch 8 Ω/ch
Max output voltage / current	140 V _{peak} / 102 A _{peak}
AC Mains Power	
Power supply	Universal, regulated switch mode with PFC (Power Factor Correction)
Operating voltage	100-240 V ±10%, 50/60 Hz
Power factor cos (φ)	>0.95 @ >500 W
Consumption / current draw	@ 230 V @ 115 V
Idle	88 W 1.35 A 69 W 1.2 A
1/8 of max output power @ 4 Ω	609 W 3.1 A 609 W 6.3 A
1/4 of max output power @ 4 Ω	1,219 W 5.7 A 1,219 W 11.4 A
Thermal	
Environmental operating temperature	0° - 45° C / 32° - 113° F
Thermal dissipation	Fan, continuously variable speed, temperature controlled, front to rear airflow
Idle	382 BTU/h 96 kcal/h
1/8 of max output power @ 4 Ω	722 BTU/h 182 kcal/h
1/4 of max output power @ 4 Ω	1,062 BTU/h 268 kcal/h
Audio	
Gain, selectable	26 dB 29 dB 32 dB 35 dB
Input Sensitivity @ 8 Ω	4.48 V 3.17 V 2.47 V 1.59 V
Max input level	27 dBu 24 dBu 21 dBu 18 dBu
Gate	-52 dBu -55 dBu -58 dBu -61 dBu
Frequency response	20 Hz - 20 kHz (1 W @ 8 Ω, ±0.5 dB)
S/N ratio (amplifier section)	>106 dBA (20 Hz - 20 kHz, A weighted)
Crosstalk separation	> 70 dB @ 1 kHz
Input Impedance	10 k Ω balanced
THD+N/SMPTE IMD/DIM 100 IMD	<0.2% from 1 W to full power (typically <0.05%)
Slew rate	50 V/μs @ 8 Ω, input filter bypassed
Damping factor @ 8 Ω	>5000 @ 20-200 Hz
DSP	
A/D converter	Dual 24bit 96 kHz Tandem® architecture with 127 dBA of dynamic range and THD <0.005% (20 Hz - 20 kHz)
D/A converter	Dual 24bit 96 kHz Tandem® architecture with 122 dBA of dynamic range and THD <0.003% (20 Hz - 20 kHz)
Memory	8 MB (RAM) plus 2 MB (flash for presets)
Presets	50 stored locally + 150 stored on a smartcard
Digital audio input	AES3 (glitchless fallback to analog audio selectable)
Delay for time alignment	up to 4 s on the input section, up to 32 ms per output, sample-by-sample stepping
Crossover filters	Butterworth, Linkwitz-Riley, Bessel, Arbitrary Asymmetric, 6dB/oct to 48dB/oct (IIR), linear phase (FIR), hybrid (FIR+IIR)
Output equalizer	16 fully parametric filters per channel, IIR: peaking, hi/lo shelving, hi/lo pass eq, band pass, band stop, all pass. Custom FIR up to 384 taps @ 48 or 96 kHz
Input equalizer	Three layers (PEQ, raised cosine, shelving), 32 filters each + group filters, up to 256 filters per channel
Cable compensation network	up to 2 Ω negative/positive wire compensation (Active DampingControl™)
Limiters	Power limiter (TruePower™, RMS voltage, RMS current) + Peak Limiter
Front Panel	
Indicators	7 meter LEDs: 5 x green, 1 x yellow, 1 x red, top yellow and red show alarm with protect description on LCD panel
Controls	4 pushbuttons, function depending on user menu; mains switch
Network data port AESOP incl. AES3	2 x RJ45 with activity LEDs
Maintenance	SmartCard reader/writer for firmware updates and preset storage. Easily accessible dust filter foam behind two steel covers
Rear Panel	
Audio signal input connectors	Analog: 2 x balanced Neutrik® XLR female; AES3: use channel 2 XLR
Audio signal output connectors	Analog: 2 x balanced Neutrik® XLR male
Loudspeaker output connectors	2 x Neutrik® Speakon NL4MD
Network data port Ethernet	2 x RJ45 with activity LEDs
Aux voltage	1 x 2-pin Phoenix P. 3.81mm
AC mains	IEC20A with IEC20A Schuko for EU, IEC20A/American 15 A pin plug
Controls	1 x link switch, linking analog inputs 1 and 2; AES3/analog input switch
Construction	
Dimensions	W 483 mm / 19", H 44.5 mm / 1.75", D 380 mm / 15"
Chassis	1 mm / 0.04" steel chassis and removable dust cover; 3 mm / 0.12" steel front panel, screw hole protection, side reinforcement & rear support
Weight	8 kg (17.7 lb)

Data is subject to change without notice.
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