

D-Cell504

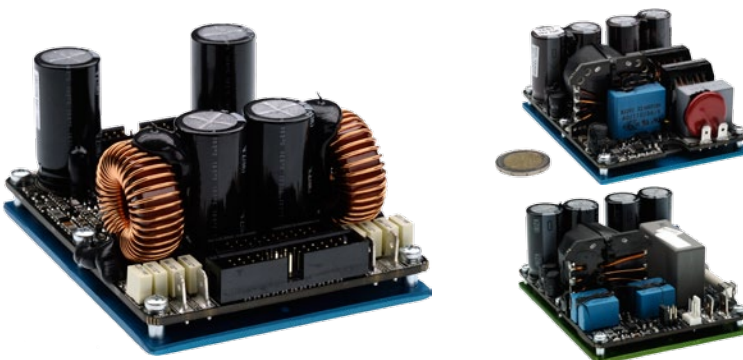
High Efficiency 2-Channel Class-D Amplifier Module for Professional Applications



D-Cell504 is a “small and smart” amplification platform consisting in two 100x78 mm boards – power supply and 2-channel output stage –, a tiny jewel of flexibility, high performance and compactness.

Able to deliver up to 700 W in bridged mode, the amplifier is available with an integrated DSP chip on board, allowing full customization of the processing architecture with no need for any additional boards or wiring.

The power supply, with PFC for worldwide operation and optimal performance in all conditions, can drive two amplifier units, making the D-Cell504 an ideal solution for 3-way systems. The DC version of the power supply further expands the range of possible applications, from roller coasters to car-audio to solar or battery-operated systems.



FIXED
switching
frequency

+2
ch
available

DSP
add-on

Armonía
Pro Audio Suite™

- ▶ Small Single Subwoofer
- ▶ 2-way Stage and Studio Monitor
- ▶ Small Power Active Mixers
- ▶ Small Double Subwoofer*
- ▶ Small 3-way Cabinets / Line Arrays*
- ▶ Small sub+satellites PA systems*

*when two amplifier units are used

- ▶ Thermal protections (power limiting - thermal shutdown)
- ▶ Short-circuit/overload/high frequency output protections
- ▶ Clip limiter, permanent signal limiter
- ▶ Auxiliary output voltages
- ▶ Bypass line outputs for external active/passive filters
- ▶ Mute command
- ▶ Temperature controlled internal fans and output
- ▶ Optional DSP boards
- ▶ Fully integrated in Armonía Pro Audio Suite™ for Monitoring, Remote Control & Networking with optional DSP board

Single subwoofer	700 W @ 8 Ω BTL
2-way unbalanced load	LF: 350 W @ 4 Ω SE
	MF/HF: 190 W @ 8 Ω SE
3-way unbalanced load with additional amplifier unit	LF: 700 W @ 8 Ω BTL
	MF: 350 W @ 4 Ω SE
	HF: 190 W @ 8 Ω SE
Max output voltage per channel	55 V _{peak}

- ▶ Premium Performance
 - ✓ Powersoft class-D technology used in DigiMod modules is an industry standard in terms of quality, reliability, robustness and attention to detail. Accurate design of the Pulse Width Modulation block guarantees maximum performance, high predictability and immunity from intermodulation artifacts.
- ▶ Modularity
 - ✓ Same form factor for power supply and output stag.
- ▶ Scalability
 - ✓ Plug an additional 2-channel amplifier to extend the range of possible applications using 4 output channels, (both pairs bridgeable) to drive 3-way systems or high power 2-ways systems even at higher load impedances.
- ▶ Powerful and flexible signal processing tools
 - ✓ The DSP version is completely supported in Armonía Pro Audio Suite™ allowing to tailor the module’s behavior to fit your design: from standard Linkwitz-Riley crossovers to FIR filters, from limiters to delays and everything in between.
- ▶ Complete set of protections
 - ✓ Powersoft amp modules are equipped with extensive protection circuitry: power limiters, thermal shutdown, short circuit and overload, clip limiter.
- ▶ Certification process made easy
 - ✓ Powersoft provides EMI/safety certifications, reports and documentation that will effectively cut certification costs on the final product.



D-Cell504

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Specifications

General

Number of channels	2 in / 2 out
Output power	
Maximum output power per channel @ 4 Ω	350 W
Maximum output power per channel @ 8 Ω	190 W
Maximum output power per channel @ 16 Ω	95 W
Maximum output power @ 8 Ω Bridged	700 W
Maximum output power @ 16 Ω Bridged	380 W
Max output voltage	55 V _{peak}
Max output current	35 A _{peak}

Audio

Gain	32 dB (x40 voltage gain)
Frequency response	10 Hz - 20 kHz (±3 dB) @ 1 W, 8 Ω
S/N ratio	> 113 dB (A weighted)
Input sensitivity @ 8Ω	0.94 V / 1.7 dBu
Max input level	4.36 V / 15 dBu
Input impedance	10 kΩ balanced
THD+N	< 0.05% from 0.1 W to full power (typically <0.01%)
DIM100	< 0.02% from 0.1 W to full power (typically <0.005%)
Slew rate	30 V/μs @ 8 Ω, input filter bypassed
Damping factor @ 8Ω	> 500 @ 100 Hz

DSP*

Architecture	Analog Devices ADAU® 1702 DSP architecture
Configuration	Configurable with Sigma Studio™ or predefined layout
Latency	0.644ms fixed latency architecture
Equalizer	fully parametric filters per channel, IIR: peaking, hi/lo-shelving, hi/lo-pass, band-pass, band-stop, all-pass
Crossover	Butterworth, Linkwitz-Riley, Bessel: 6 dB/oct to 48 dB/oct
Delay	up to 10 ms per output
Limiters	RMS voltage, RMS frequency dependent, Peak limiter

* Available on DSP version only.

Mains Power

Power supply	AC universal, regulated switch mode or DC regulated 12-48 V
Nominal power requirement AC	AC 100 V - 240 V, 50/60 Hz
Operating AC voltage	AC 90 - 264 V up to 80Hz
Nominal power requirement DC	12 - 48 V _{DC}
Operating DC voltage	DC 9.5 - 68 V
Power factor	cosφ > 0.85 @ 4 Ω full power

Consumption (AC mains power)

	@ 230 V		@ 115 V	
I/8 of max power @ 4 Ω	121 W	0.6A	122 W	1.08 A
I/4 of max power @ 4 Ω	225 W	1.04 A	229 W	2.04 A

AUX supplies

Max aux supply current draw @ ±12 V	250 mA
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Thermal

Environmental operating temperature	0° - 40° C / 32° - 104° F	
Thermal dissipation	passive	
	@ 230 V	
I/8 of max power @ 4 Ω	119.2 BTU/h	30.0 kcal/h
I/4 of max power @ 4 Ω	184.4 BTU/h	46.5 kcal/h

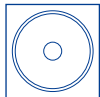
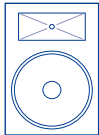
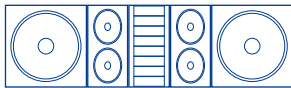
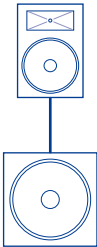
Construction

Dimensions (L x W x H)	100 mm x 78 mm x 45 mm
AMP and PS units	(4" x 3" x 1.8")
Weight	amplifier unit: 0.263 kg (0.56 lb); power supply unit: 0.3 kg (0.66 lb)

Application Examples

Please note that the following configuration examples do not cover all possible applications.

Power ratings could vary depending on acoustic design and speaker specifications. Contact Powersoft for support in selecting the ideal solution for your specific needs.

single subwoofer	2-way	3-way line array	sub + satellites
		 with additional amplifier unit	
700 W @ 8 Ω	MF/HF: 190 W @ 8 Ω or 95 W @ 16 Ω LF: 350 W @ 4 Ω or	HF: 95 W @ 16 Ω MF: 2x 190 W @ 8 Ω LF: 2x 350 W @ 4 Ω	MF/HF: 190 W @ 8 Ω LF: 350 W @ 4 Ω

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