Duecanali 3904 DSP+AESOP

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

☐ Touring
☑ Installation

2 CH

DSP on board

1U

- Medium to large-scale venues
- Main systems, central or distributed, subwoofers, hi-Z/lo-Z
- Emergency systems (IEC 60849)
- Stadiums, arenas
- Theaters, concert halls
- Houses of worship
- Convention centers
- Amusement parks, themed entertainment
- Cruise ships

2-channel mode				mono-bridged mode	
4 Ω / Ch	8 Ω / Ch	70 V 1)	100 V 1)	4 Ω / Ch pair	8 Ω / Ch pair
1,950 W	1,000 W	1,800 W	2,400 W	4,800 W	3,900 W

1) DSP preset must include HP filter and voltage limiter (70 V/100 V)

EIAJ Test Standard, 1 kHz, 1% THD

Designed for long-term safe and reliable operation, the **Duecanali 3904 DSP+AESOP** suits both low impedance and constant voltage systems equally well.

A fully integrated state-of-the-art DSP yields extensive system management functionality. In addition to sound shaping and limiter functions in unique Powersoft style, the DSP hardware and Armonía Pro Audio Suite™ software enable compliance with IEC 60849 for the crucial requirements of sound systems for emergency purposes.

The AESOP interface provides two standard Ethernet ports and 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.

Powersoft's legendary efficiency saves valuable energy, keeping both operational cost and 'carbon footprint' at a minimum: the **Duecanali 3904 DSP+AESOP** shines with outstandingly low power consumption and heat dissipation; this has direct positive effects on investment and recurring costs from the AC mains supply and air conditioning/cooling systems – not to mention the benefits to the environment for a more eco-friendly planet.

- ✓ **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 (1U) and 8 kg/17.6 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
- ✓ **Compliant with IEC 60849 for emergency sound systems**
- ✓ **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
- ✓ **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
  - Compatible with 3rd-party software
  - AES3 digital audio distribution over Cat-5e cable: two streams equaling four analog channels, low latency, glitchless fallback to analog backup signal
- ✓ **Practically versatile:**
  - Directly driving either low impedance loads or 70 V/100 V lines
  - 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
- ✓ Front panel SmartCard reader/writer for firmware updates and preset storage
- ✓ 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
  - Armonía Pro Audio Suite, free at www.armoniasuite.com

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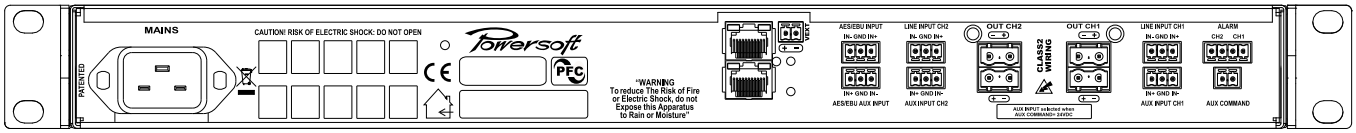

Specifications

General							
	Number of channels	2					
	Output power	stereo mode				mono-bridged mode	
	EIAJ Test Standard, 1 kHz, 1% THD	2 Ω/ch	4 Ω/ch	8 Ω/ch	70 V/ch [1]	100 V /ch [1]	4 Ω	8 Ω
		2,400 W	1,950 W	1,000 W	1,800 W	2,400 W	4,800 W	3,900 W
	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		2.25 V		1.59 V
	Max input level	27 dBu		24 dBu		21 dBu		18 dBu
	Gate	-54 dBu		-57 dBu		-60 dBu		-63 dBu
	Frequency response	20 Hz - 20 kHz (1 W @ 8 Ω, ±0.5 dB)						
	S/N ratio (amplifier section)	>110 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 & presets	8 MB (RAM) plus 2 MB (flash for presets); 50 presets 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, 6 dB/oct to 48 dB/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						
Pilot Tone Detection, Generation and Output Load Monitor							
	Input pilot tone detection	0 V_{RMS} - 1 V_{RMS} in steps of 10 mV_{RMS}; 20 Hz - 22 kHz in steps of 10 Hz						
	Output pilot tone detection	0 V_{RMS} - 30 V_{RMS} in steps of 0.1 V_{RMS}; 20 Hz - 22 kHz in steps of 10 Hz						
	Impedance alarm	20 Ω - 1000 Ω in steps of 0.1 Ω; 20 Hz - 22 kHz in steps of 10 Hz; Impedance vs frequency measurement						
	Output generator	1 V_{RMS} - 10 V_{RMS} in steps of 1 V_{RMS}; 20 Hz - 22 kHz in steps of 10 Hz, one independent generator for each channel						
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						
	Maintenance	SmartCard reader/writer for firmware updates and preset storage. Dust filter foam behind front panel						
Rear Panel							
	Audio signal input connectors	Analog: main & aux each 2 x 3-pin Phoenix MC1.5/3-ST-3.81, electronically balanced (aux activated per aux voltage)						
	Loudspeaker output connectors	4 x 2-pin Phoenix type GMSTB2.5/2-ST						
	Fault alarm connector	1 x 4-pin Phoenix type MC1.5/2-ST-3.81						
	Aux command input	1 x 2-pin Phoenix MC1.5/2-ST-3.81						
	Aux external voltage	1 x 2-pin Phoenix MC1.5/2-ST-3.81						
	Network data port Ethernet	2 x RJ45 with activity LEDs						
	Network dataport AESOP incl. AES3	AES3: main & aux each 2 x 3-pin Phoenix MC1.5/3-ST-3.81, electronically balanced (aux activated per aux voltage)						
	AC mains	IEC C19/22.2 20 A, AC mains cord with 20 A 3-pin plug 20 A for US, IEC Schuko 16 A for every other nation						
	Controls	1 x link switch, linking analog inputs 1 and 2						
Construction							
	Dimensions	W 483 mm / 19", H 44.5 mm / 1 RU, D 360 mm / 14.2"						
	Chassis	1 mm / 0.04" steel chassis; 3 mm / 0.12" screw hole protection, side reinforcement & rear support, 0.8 mm (0.03") steel removable dust cover						
	Weight	8 kg (17.7 lb)						

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Data is subject to change without notice.

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