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Powersoft Ottocanali 8K4 DSP+D multi channel amplifier

by Mark Johnson



The first power amps that were used to drive large-scale sound reinforcement loudspeaker systems were behemoths. And, while they were powerful for their day, the power-to-weight ratio was always tilted in favour of weight. The first amps were single-channel devices, gradually giving way to two-channel models. Some of the first amps used for sound reinforcement were in fact designed for use in hi-fi systems. As professional sound systems became more specialised, amplifier design innovation did as well. The next generation of amps made more power; still weight was an issue, since a large transformer was needed for the amp to develop the power to drive large-scale systems. For the most part at that time, anything with more than two channels was too big and heavy to be practical, but that didn't stop people from trying - which generally resulted in some really large and heavy four- to eight-channel monstrosities. The development of switch mode power supplies was the first step in reducing weight

and that opened the door to the ability to manufacture multiple channel amplifiers that were practical.

Initially the job of the amp was to just take the input signal and amplify it to drive the loudspeaker system. Not much more was asked of the amplifier. And while a seemingly simple task, powering a PA system could and would wreak havoc on amps. Often, the early amplifiers were the weakest link in high-power PA systems. High-power requirements, unknown speaker loads, the rigours of travelling - all these things contributed to amplifier designers having to design and build bullet-proof systems that could be used under many different circumstances.

Amplifier design has advanced incrementally over the last decade or so to the point where now we have high-power multichannel amplifiers (four to eight channels), Digital Signal Processing and networkability.



Powersoft Ottocanali front panels removed, showing the blue input attenuators and other controls on the left side. The magnetic disks on either side help to secure the panels.



Front panel controls.



Channel LED indicators.

New Kid on the Block

Even though Powersoft is a relative newcomer to the world of pro audio, the Italian amplifier manufacturer has made some serious headway into the multichannel, Class D amplifier marketplace as well as building amplifier modules for use by various manufacturers of self-powered loudspeaker systems. Founded 21 years ago in 1995, in Scandicci, Florence, Italy by Luca and Claudio Lastrucci, and Antonio Peruch, Powersoft not only designs and builds amplifiers for professional audio, they also have a second business unit involved in telematics services for fleet management - although the pro audio unit is where our particular interest lies!

In 2010 Powersoft Advanced Technologies was formed to help strengthen the brand's US presence. The US office is headquartered in Camarillo, California and the facility stocks and services the amplifiers for the North American market. Powersoft designs and builds amplifiers for basically three applications: touring, installation, and amplifier modules for self-powered loudspeakers.

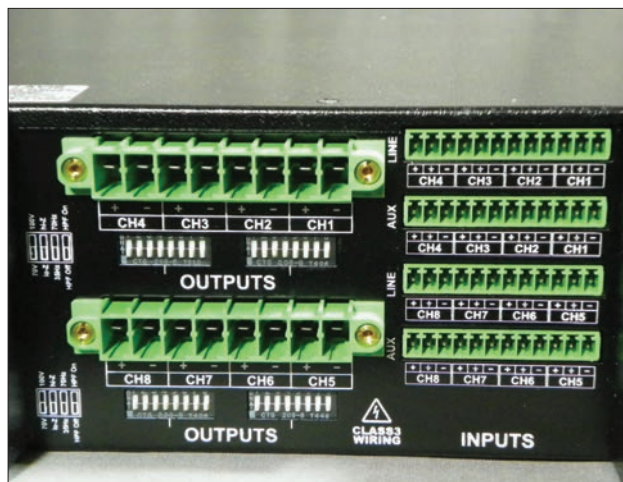
The Powersoft Ottocanali 8K4 DSP+D already has a pretty good pedigree, being recognised as best of class in various readers' choice awards and winning best of show at a couple of industry trade events. The 8K4 DSP+D is one of three models in the Ottocanali series. There are also the 4K4 (500W maximum output per channel at 4 Ohms) and the 12K4 (1500W maximum output per channel at 4 Ohms).

Flexibility & Features

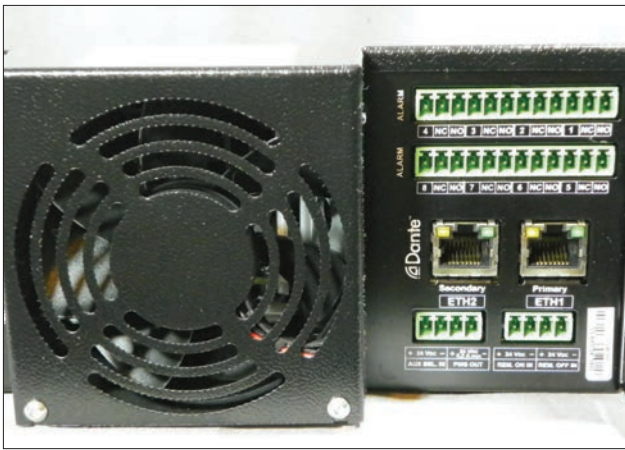
The Ottocanali's name says exactly what it is: Ottocanali is "eight-channel" in Italian. The amplifier also provides up to 8,000 watts of Class D amplification across the eight channels at a 4-Ohm load (1000W per channel). The most recent version also features DSP+D, incorporating digital signal processing and two redundant Dante digital streams. The DSP provides for routing and mixing ability, multi-stage equalisation, delay for input processing and time alignment, gain and polarity adjustment, crossover, peak limiters and Powersoft's TruePower limiters and Active Damping Control. Designed for installation rather than touring the Ottocanali 8K4 can drive practically any combination of loudspeaker loads, mono-bridged channel pairs, and 70V/100V distributed systems without requiring transformers. The Ottocanali 8K4 also features switchable main and aux inputs, and provides system control, alarms, GPI/O, and monitoring functions, in addition to options for equalisation.



Cooling vent intake.



Rear panel with Phoenix connector inputs and outputs.



Rear panel cooling fan, Phoenix connectors for alarms and control, and dual Dante Ethernet ports.

The Ottocanali 8K4 utilises redundant universal switch mode power supplies with PFC (Power Factor Correction) and patented SRM (Smart Rails Management) technology, which helps to facilitate energy efficiency and reduced power consumption.

The wild thing about this amp is that it's only two rack units tall. The left and right faces of the amp feature perforated, removable stainless steel covers, which are securely attached by magnets. The left cover affords some ventilation but primarily hides the controls, the right is for ventilation; there are foam filters behind each cover to help protect the innards from dust. The centre section of the amplifier face houses the LED input and status indicators: Aux, Ready, Signal, -24dB, -12dB, -6dB/TEMP and CLIP/PROT - with one line of LED indicators per channel.

The controls on the left side comprise eight small attenuator pots; CALL, SOFT RESET, HARD RESET and FW UPDATE switches;



Rear panel cooling fan plus mains connector and power switch.

ENERGY SAVE switch; and four OFF/ON dip switches for channels 1 to 8, in pairs). There is also a USB connector (for firmware updates).

An Eye on the Environment

Powersoft strives to develop amplifiers that are highly efficient, and environmentally friendly. Even though it is a powerhouse, the Ottocanali features Powersoft's Green Audio Power to help minimise the carbon footprint of the amp, along with an additional Energy Save function. Energy Star qualification is currently pending for the amp: when you are looking at an installation with amplifiers in multiples of 10 (or more), energy saving can be a big consideration.

The rear of the amp (from left to right) features the mains connector with a power switch. The amplifier uses a 20 Amp mains connector - an IEC20 A - which features a different pin configuration than the ubiquitous IEC14, commonly seen on many pro audio products.

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The IEC20 A is used to help ensure reliability and safety. Since it is not as prevalent as the IEC14, be careful not to misplace it during the installation process.

Next comes one of two cooling fans, which occupies the entire 2U height of the amp. To the right of the fan are two large Phoenix connectors, each with eight terminals for the + and - connections for the loudspeakers. Under each set of Phoenix connectors are two banks of eight dip switches each, which control high pass filter off and on, high pass frequency selection (35 or 70Hz), hi or lo-Z output, and 70 or 100V selection. Next are the Line, and redundant Aux inputs (four sets of connectors, each facilitating four inputs). To the right of the input connectors is the other fan. And on the far right hand side are two banks of connectors for alarm outputs, two Ethernet connectors for Dante networking, and then two more small Phoenix connectors for Aux input selection, 24V DC output, Remote Aux supply, and Remote On/Off switch. There's a lot going on! Oh, and the AC mains will operate with voltages between 100 and 240V AC, with no adjustment or selection required.

Inputs and outputs are all facilitated via Phoenix connectors. Powersoft includes the necessary I/O connectors with the amp, however it was up to me to fabricate the gazintas and gozoutas with XLRs and Speakons to get signal into, and out of the amp - though it's an easy task if you're in the installation market. In order to get signal into and out of the amp I had to cannibalise some of my existing cables and make up a few new ones (this amp is designed specifically for installation and not touring, so as noted above, the connectors are different). They are the thing for installation. The multiple ins and outs can be pre-wired in the equipment rack in the shop, and the amp can be installed at the job site with all inputs and outputs terminating to a few Phoenix connectors. In practical application, interfacing the amp is a relatively quick and easy process. Once I got my cabling sorted out, I connected the outputs of my mixer, plugged it in and turned it on and I was passing signal! I had way more power available than I could use (at least without disturbing the neighbours). But, it was still fun to run it up a bit to see what it could do.

Living in Harmony

Aside from the ability to deliver lots of power in a relatively small package, the thing that distinguishes amplifiers today from their brethren of yore is DSP and networking.

The Ottocanli's DSP is controlled via Powersoft's Armonía Pro Audio Suite software, which is available for PCs via a free download from the Powersoft website. Actually, that's the only thing that I think could be improved upon. There are many Mac users and there are a lot of control and monitoring programs that are either platform agnostic or available in both OS versions.

The Armonía Pro Audio Suite provides the ability for control and monitoring of the amplifier. Some of the features include those listed earlier, as well as onscreen, email and SMS (text) alerts, plus logging of the alerts, individual channel input EQ, and networkability.

Powersoft has posted an extensive series of video tutorials for Armonía on their website that will help to get up and running and provide information on other aspects such as network configuration, presets, and working offline. Also available are NWare and Q-Sys Plugins to enable the monitoring and control of the amplifier via MediaMatrix NWare and Q-Sys. In addition, AMX Modules and Crestron Macros are available for control and monitoring via these platforms.

The Ottocanli could be used in practically any installed situation where multiple channels of amplification are needed - driving a main PA system, monitors, delays and fills, even background music systems. As the 'new kid on the block' Powersoft has made some serious inroads into professional audio in a relatively short period of time, and can already be found powering loudspeaker systems in some very high profile applications worldwide. They are as about as energy efficient as a high-powered professional power amplifier could be. They are easy to set up and operate. And, they provide lots of power in a compact package. What's not to like?

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Rear panel.

adindex . . .

Acass-Systems	35
Acoustic Development	78
Altman Lighting	65
Avolites	33
Ayrton	5
Chainmaster	7
Chauvet	63
Clay Paky	26
Current RMS	25
d&b audiotechnik	OBC
Eaton / Zero 88	18/41
Elation	69
EM Acoustics	13
ER Productions	11
ETC	15/17
Funktion One	37
Gearsource	36
GLP	59
Handheld Audio	27
Harlequin	23
Highlite	19
James Eade	68
K-Array	43
L-Acoustics	IFC
Le Maitre	55
Lee Filters	6
Leisuretec	IBC
Look Solutions	8
Lumen Radio	21
MA Lighting	51
Martin Professional	61
Meyer Sound	9
Pearce Hire	10
Philips Entertainment Lighting	3
PLASA Events	4/75
Pro Tapes	73
Prolyte	49
RC4	71
Rigging Services	68
Robe	31
Rose Bruford	55
Rubber Box	74
Sennheiser	45
Shure	53
SNP Productions	78
Steinigke	29
Straightpoint	74
Unusual Rigging	67
Victory	42