

# DDC520

## Digmoda™ DDC520 Two-Channel Plate Amplifier with Integral D-Pro DSP

In today's cost-conscious marketplace, powered loudspeaker systems are often the first choice for production studios, sound-reinforcement operators and high-end consumers. Loudspeaker manufacturers have several available options. Source a conventional amplifier and hope that it provides the features you need, or try to design your own amplifier modules. Alternately, why not take advantage of an all-digital solution from digmoda™ – in other words, a Digmoda™ Class-D Plate Amplifier with an integral DSP section– and one that provides affordable, simple-to-fabricate configurable designs. Existing loudspeaker systems also can benefit from Digmoda's D-Pro™ DSP to fine-tune the system's frequency response and/or add specific characteristics for a target marketplace or end user. There is, quite literally, unlimited potential for improvement.

Digmoda™ Digital Plate Amplifiers offer original equipment manufacturers a unique, easily implemented solution. Our Class-D Plate Amplifiers with user-programmable D-Pro™ Digital Audio Processor can turn any studio monitor or sound-reinforcement loudspeaker into a better sounding, self-contained, active system that extends your market opportunities.

The DDC520 Two-Channel Plate Amplifier is the ideal choice for fabricating traditional bi-amped loudspeaker systems. The unit features a 500W amp for powering a low-frequency driver, and a 250W amp used for providing power to a MF or a HF driver. Programmable DSP lets you tailor the output of each of these two sections to match the requirements of the chosen loudspeaker components; crossover frequencies, overall equalization, component-overload protection, level trims and time-alignment delays. Easily saved to a configuration file.

The built-in D-Pro™ Digital Audio Processing System consists of two components: a Windows® compatible D-Pro™ Software Application which, via an easy-to-use Graphical User Interface, lets users adjust each system parameter; and a DP Series Digital Audio Processor (DAP) Module included within each plate amplifier that utilizes up to 16 Bi-quad filters per channel to provide ultra-precision, 24-bit/96 kHz DSP functions to implement the system settings developed by the D-Pro Software. To program, you simply connect a PC or laptop to the plate amplifier via a USB port, and Flash the crossover, EQ, overload protection and delay settings into the amplifier's non-volatile flash memory. **It couldn't be easier.**

- **Reduced Time to Market ...**

New and updated products can be designed and put into production in a fraction of the time required with conventional amplifier designs and analog components.

- **No Tolerance Stack ...**

All-digital D-Pro circuits are totally predictable and produce results accurate to a fraction of a dB at any crossover frequency, bandwidth and level adjustment. Ultra-accurate results are just a keystroke away.

- **More Granular System Performance ...**

Because they are generated with all-digital precision, D-Pro crossovers, dynamics and EQ circuits are surgically accurate, which translates to tight, predictable response across the entire frequency range.

- **One SKU Fits All ...**

Any Digmoda Plate Amplifier can be used within a number of different loudspeaker models, with configuration-specific D-Pro system settings to suit different drivers and cabinet designs.

### Consider the many practical and financial advantages of the Digmoda Plate Amplifiers:

Speed up system development and evaluation.

Eliminate component errors via all-digital circuitry.

Add enhanced systems performance.

Dramatically reduce inventory.

Utilize side-chain processing.

The DDC520 unit is designed to mount into a rear-panel outout on the loudspeaker cabinet.

The plate amplifier is secured to the enclosure via screws that connect through the rear panel to the amplifier's aluminum enclosure, a supplied rubber gasket ensures an air-tight fit. Only 2.5 inches of depth is required within the speaker cabinet, making it suitable for even slim-line designs.

For ultra-precision audio quality, we use only Class-D Power Amplifiers with analog feedback. To ensure audiophile-quality, Digmoda Class-D circuits utilize a proprietary topology that converts a low-level analog signal into a high-power pulse-width modulated (PWM) output. All our models are more than 80% efficient, thanks to a highly-evolved Class-D design and power supplies. They produce very little heat – a useful feature for high-power plate amplifiers.

## Digmoda

The Digmoda® Professional Power Amplifier Systems with integral D-Pro™ DSP filters, crossovers and delay, enable loudspeaker engineers to quickly create and voice self-powered loudspeaker systems. The combination of powerful easy-to-use D-Pro™ calibration software, coupled with fully configurable onboard signal processing, significantly reduces product development time. Allowing an engineer to quickly adjust frequency-response, time, phase and power anomalies in real time. Once completed, configuration settings are quickly flashed into the DSP's non-volatile memory, you're ready to listen to or measure for final adjustment. A complete line of Digmoda™ Plate Amplifiers is available in a variety of power levels; one, two or three-channel models.

### Key Digmoda Series

#### "Top Five" Benefits:

1. One-stop, all-digital Power Amplifier and Signal Processing solution.
2. Integral DSP functions for digital crossovers, system equalization and driver protection.
3. Interactive Windows® D-Pro™ Software Application for real-time system adjustment.
4. High-efficiency switching power supply for high-power density and small form factor.
5. Global feedback for high damping factors, producing ultra-precise control of transducers.

## Input/Output Connection

- Single six-way Molex connector on rear of amplifier chassis connects individual loudspeaker drivers.
- Line-level Audio-In via industry-standard XLR connectors on front of chassis (pin #2 Hot).
- Front-panel Signal-Overload Indicator and Power-on LEDs.
- Input sensitivity: Average 1.28V RMS variance
- Input impedance: 36 k $\Omega$ , balanced; 18 k $\Omega$ , unbalanced
- DAP Communications Port via bi-directional USB connector for DSP adjustments.
- Power In/Out via industry-standard PowerCon® lockable connectors; available as 115V or 230V.
- RoSH compliant

## Digmoda™ Amplifier channel configurations

| Model:    | 1000W* | 500W* | 250W* | DSP    | Dim. |
|-----------|--------|-------|-------|--------|------|
| DDC520    |        | 1     | 1     | Mono   | A    |
| DDC550    |        | 2     |       | Mono   | A    |
| DDC552    |        | 2     | 1     | Mono   | A    |
| DDC1000   | 1      |       |       | Mono   | B    |
| DDC1000SW | 1      |       |       | Stereo | C    |
| DDC1050   | 1      | 1     |       | Mono   | B    |
| DDC1055   | 1      | 2     |       | Mono   | B    |
| DDC1055SW | 1      | 2     |       | Stereo | C    |
| DDC1100   | 2**    |       |       | Mono   | B    |
| DDC1150   | 2**    | 1     |       | Mono   | B    |

\* Based on 4-ohm load (1% THD+N (P<sub>o</sub>) (AES17 filter))

\*\* Second 1000W channel band-limited to 3kHz.

A = 18.6 x 7 x 2.8 (in.), 47.2 x 17.8 x 7.1 (cm.)

B = 21 x 7 x 3.6 (in.), 53.4 x 17.8 x 9.1 (cm.)

C = 14.5 x 14.5 x 3.3 (in.), 36.8 x 36.8 x 8.4 (cm.)

Corner Radius for all models = 0.39 (in), 10 (mm)

Mounting Flange width all models = 0.6 (in)

### Typical electrical performance:

|  |                                 |         |
|--|---------------------------------|---------|
| THD+N in 4 (AES17 filter)                | f = 1 kHz, P <sub>o</sub> = 1W  | 0.019 % |
| Nominal Voltage Gain (A <sub>v</sub> )   | f = 1 kHz                       | 29.98   |
| Frequency Response (P <sub>o</sub> = 1W) | f = 2 Hz - 20 kHz               | ±0.5    |
| Signal to Noise Ratio 4                  | 0db=1% THD, 1 kHz               | -110    |
| Damping Factor (DC <sub>clip</sub> )     | f = 100 kHz, R <sub>L</sub> = 8 | 2000    |
| Power Draw at Idle P <sub>idle</sub>     | (115VAC/60 Hz)                  | 19.33   |

### Weight ea./Pkg. Wt. ea.

| Weight ea./Pkg. Wt. ea.           | Model                       |
|-----------------------------------|-----------------------------|
| 13.2 / 16.5 LBS<br>(6 / 7.5 kg)   | DDC1150, DDC1055, DDC1055SW |
| 12.5 / 15.8 LBS<br>(5.7 / 7.2 kg) | DDC1050                     |
| 11.8 / 15 LBS<br>(5.4 / 6.8 kg)   | DDC552                      |
| 12.7 / 14 LBS<br>(5.8 / 6.4 kg)   | DDC1000SW, DDC1000          |
| 9.7 / 13 LBS<br>(4.4 / 5.9 kg)    | DDC520, DDC550              |