

Powered Loudspeaker Applications

Unique and Powerful Turn-Key Solutions For Your Powered Speaker Products

Active Monitor • PA • Loudspeaker • Column Array • Bi-Amp • Tri-Amp • Multichannel

The Industry's Most Advanced Technology – Perfectly Designed For Powered Speakers!

Get the benefits from using D2Audio's amp solutions for your product!

- Flexible, customizable, complete amp sub-systems
- Quicker time to market
- Less product development time, effort and risk
- High performance and quality assured
- Product differentiation and category leadership!



The only complete turn-key
amplifier solutions!

The market is embracing the unique advantages of digital audio processing for powered speakers and active monitors. D2Audio uniquely brings together the sophisticated audio processing you need along with very high performance, high quality all digital power. D2Audio has a breadth of Class D solutions optimized for powered speakers and offering the highest performance available.



A Controller Chip
Like No Other!

Our unique PWM Processor IC is in every one of our amplifier solutions. It's the industry's only fully programmable and customizable PWM controller that offers:

- Powerful embedded DSP core – fully customizable 48bit signal processing
- Sample Rate Converter (SRC) front end – virtually eliminates jitter and noise
- D2Audio's proprietary "Adaptive Performance Optimization" – industry leading performance
- Sophisticated graceful protection – keeps your audio playing and protects

Designing Is As Easy As 1 – 2 – 3 !

D2Audio's complete amplifier solutions along with our supporting power supply products and development platforms give you everything you need to quickly convert existing speaker designs or to develop new active designs quickly. World class quality, features and flexibility help ensure your end product is quick to market and meets the most stringent performance expectations.

Select The Right D2Audio Product – Mechanical Package, Power, Channel Count

D2Audio has a diverse line-up of amplifier product platforms and configurations. One is sure to meet your need. Use the tables below to get an overview of our products optimized for powered speaker applications. Once you have selected the optimum solution, complete technical datasheets are available along with supporting application notes and design resources.

Every D2Audio Amp Solution for Powered Speakers has the following features/options:

- D2Audio's PWM Processor IC with embedded 48-bit, 150 MIP DSP
- Advanced fully customizable crossovers on every channel – up to 4th order
- Comprehensive signal processing chain on every channel
- Complete "User Interface" controls included: bass, treble, volume, on/off/standby LED - no microcontroller required!
- Ability to "save your custom settings" as the amp default
- Sophisticated "Graceful Protection" – anti-clipping, short circuit, over-current, thermal
- Options for S/PDIF and analog inputs
- Paralleled outputs for high-powered bass channels (some models)
- D2Audio's powerful "D2Audio Canvas" GUI control interface – Simple yet powerful design tool!



XS/XA Large Module Options
6 to 8 channels



XS Small Module Options
2 to 4 channels



MXS Configuration
2 channels

D2Audio's product options allow you to optimize your design. Select the best module "platform" configuration (below) and packaging option (next page) for your application. Then select your specific power and channel configuration.

D2Audio's physical packaging options – platform features and benefits

XS/XA Large Module Options 6 to 8 channels	XS Small Module Options 2 to 4 channels	MXS Configuration 2 channels
 Full Module (integrated variable speed fan) Size: 6.8 x 4.7 x 2.5 in., 17.3 x 12.0 x 6.4cm Weight: 2.0 lbs, 910 g  Flat Top Module Size: 6.8 x 5.3 x 1.3 in., 17.3 x 13.5 x 3.3cm Weight: 1.5 lbs, 680 g Key Features and Benefits <ul style="list-style-type: none"> • XS100-6/8 for general multichannel • XA100-6/8 specifically for column arrays • Complete thermal and EMI solution • Flat-top option mounts to your heat sink • Great for "distributed" systems as well as multichannel "integrated" products 	 Full Module Size: 4.8 x 3.6 x 1.9 in., 12.2 x 9.2 x 4.9cm Weight: 1.2 lbs, 550 g  Flat Top Module Size: 5.3 x 3.6 x 1.3 in., 13.5 x 9.2 x 3.3cm Weight: 0.7 lbs, 320 g Key Features and Benefits <ul style="list-style-type: none"> • Great for Bi-amp, Tri-amp and 4-way solutions • Flat-top option mounts to your heat sink • Robust enclosure – full EMI/thermal • Designed for high power applications • Each channels' power level can be set and fixed to what you need on each driver 	 Size: 2.4 x 3.5 x 1.1 in Weight: 3 oz. Key Features and Benefits <ul style="list-style-type: none"> • Tiny package – big clean power! • Flexible mounting and integration • Great for Bi-amp applications

Table of Primary Module Configurations

Output Channels	Power/Ch. (Power as rated into 8 ohms)	THD+N (full power)	SNR	Inputs** (Audio Channels)	MXS "Mini" Board Platform	XS Small Module Platform	XS Large Module Platform
2	Up to 50W/ch. (2x)	<0.15%	>100dB	2	MXS50-2		
	Up to 100W/ch. (2x)	<0.15%	>100dB	2	MXS100-2		
	Up to 125W/ch. (2x)	<0.10%	>105dB	4		XS125-2	
	Up to 125W/ch. + 250W* (4 Ohm)	<0.10%	>105dB	4		XS250-2	
3	Up to 125W/ch. (3x)	<0.10%	>105dB	4		XS125-3	
	Up to 125W/ch. + 250W* (4 Ohm)	<0.10%	>105dB	4		XS250-3	
4	Up to 125W/ch. (4x)	<0.10%	>105dB	4		XS125-4	
6 to 8	Up to 100W/ch. (6x or 8x)	<0.10%	>105dB	8			XS100-6/8
	Up to 100W/ch. (6x or 8x)	<0.10%	>105dB	8			XA100-6/8 (array)

* 2 channels paralleled into 4 ohm single channel output.

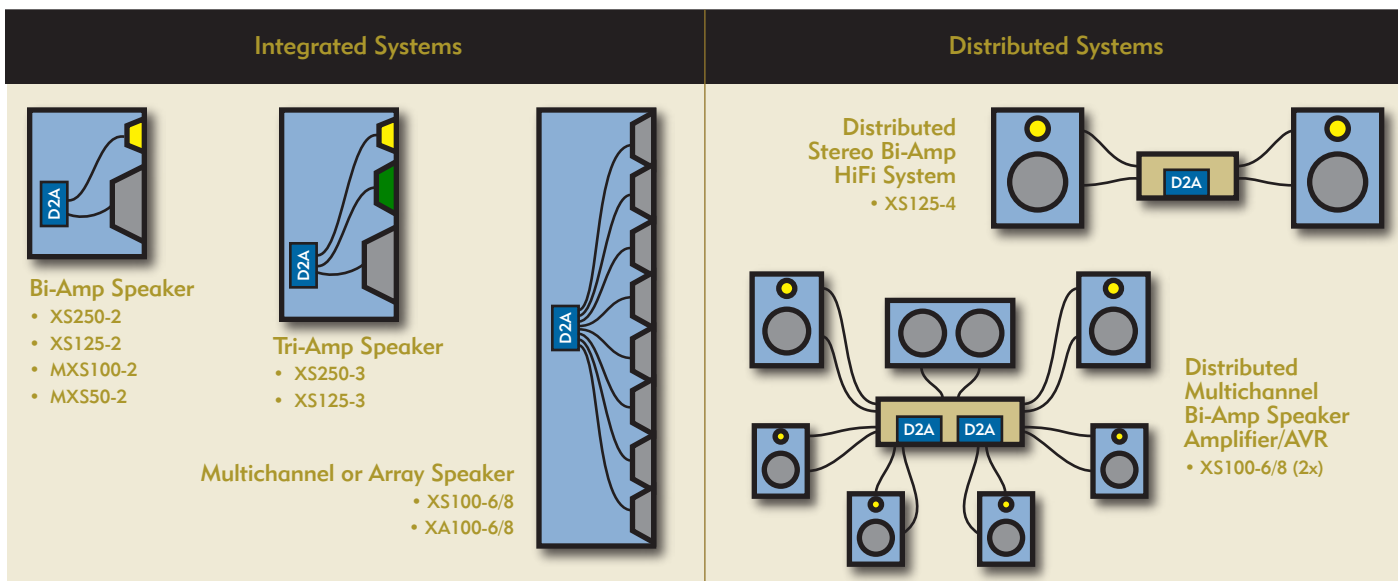
** All modules come standard with digital I²S/left justified digital audio interface and have analog and SPDIF input options.

Power to spare! Driving complex or low impedance loads? *No problem!*

Each product's power stage can drive various loads. This chart shows the related trade-offs between power, THD+N and speaker load.

Power Stage	8 Ohms			6 Ohms			4 Ohms		
THD+N:	≤0.15%	≤1%	≤10%	≤0.15%	≤1%	≤10%	≤0.15%	≤1%	≤10%
MXS 50W	50w	60w	70w	60w	70w	85w	60w	70w	85w
MXS 100W	100w	130w	150w	150w	160w	200w	170w	220w	270w
XS/XA 100W	100w	130w	150w	150w	160w	200w	170w	220w	270w
XS 125W	125w	135w	160w	160w	175w	205w	200w	250w	270w
XS 250W channel (Parallel into 4 Ohm)	n/a	n/a	n/a	n/a	n/a	n/a	250w	270w	310w

System and Product Configuration Options with Recommended Amp Modules



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Customize and Optimize Your Product

D2Audio's unique and powerful fully customizable signal processing capabilities help you optimize for your specific design and components. Our unparalleled audio processing flexibility and simple graphical interface allow you to optimize amplifier and speaker performance without the need for costly additional components or extensive lab development time.

Audio Processing Chain as shown in "D2Audio Canvas" GUI (XS125-4 Crossover Block expanded)



Crossovers are key!

We provide very high quality and flexible Crossover capability across all channels for bi-amp, tri-amp, 4-way and up to 8-way multichannel designs.

Advanced, fully customizable active crossover options include:

- Butterworth
- Bessel
- Linkwitz-Riley

Optimize Speaker Frequency Response

Up to 8 bands of Parametric EQ are at your fingertips. Easy click & drag GUI control over parameter based EQ, Tone and Crossover settings. These can be customized and then saved to our module EEPROM as the new 'default' power-on settings.

Input Channel Processing

- Input Selector
- Tone Control
- 5-Band Parametric EQ
- Matrix Mixer
- Programmable Crossover

Output Channel Processing

- 3-Band Parametric EQ
- Driver Alignment/Time Delay
- Compression/Limiting
- Independent Channel Gain Control
- Master Volume Control
- Loudness Contour

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Select The Right Power Supply Solution

There are several power supply options that require you to balance power, size and cost. Class D amplifiers provide the best performance with Switch Mode Power Supplies (SMPS), but can also work well with traditional linear supplies. D2Audio both recommends existing “off the shelf” SMPS products as well as providing some of our own. The distinct feature of the D2Audio designed SMPS products, jointly produced with partners, are their unique “designed for audio” features and capabilities. Below are some recommendations for power supplies.

Manufacturer	Continuous Power (W)	Peak Power (W)	Model No.	Web Page	Size LxWxH	Weight
D2Audio/Celetronix	350W	1000W	CX350	d2audio.com	6.8x4.7x2.52 in.	775 grams
D2Audio/Celetronix	200W	300W	CX200	d2audio.com		
D2Audio/Celetronix	100W	200W	CX100	d2audio.com		
Skynet	300W		SNP-Z30T	Skynetpower.com		
Skynet	200W		SNP-Z20T	Skynetpower.com		
Skynet	100W		SNP-Z10T-MA	Skynetpower.com		
Abletec	250W	600W	PSU 250	Abletec.com		

D2Audio’s Unique “Designed For Audio” SMPS Solutions



D2Audio CX350



D2Audio CX200



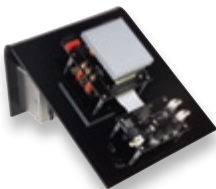
D2Audio CX100

The D2Audio designed SMPS’s feature unique advantages in audio applications.

- High peak power transient capability
- Low noise and “quiet” power
- Provide all necessary regulated power output to connect directly to the amp (5v, 12v, 36~50v)
- Communicates with amp – volume control, thermal management

D2Audio’s Comprehensive Development Platforms – Optimized For Powered Speaker Applications!

D2Audio offers simple evaluation and development platforms optimized for powered speaker applications. Each module product line has a unique kit that serves as an evaluation platform as well as a reference design for your powered speaker application. In fact, the eval kits themselves are designed to be easily integrated into an existing product for very rapid prototyping!



MXS Development Kit



XS4 Development Kit



XS8/XA8 Development Kit



XS4 Reference Design Kit

D2Audio Provides a Comprehensive Set of Design Tools and Technical Support Material

Extensive “tool kit” all provided to help you quickly complete a successful design and develop the optimal product. Below is a list of items available from D2Audio:

- Secure online “Customer Support Area” – access to materials just for you!
- Comprehensive module technical datasheet (for each amp product)
- Evaluation/development kit
 - Socketed amp receiver board with power supply
 - I/O board complete with I2S, analog and S/PDIF inputs
 - Microcontroller and USB interface for customizing, Canvas and control
 - D2Audio Canvas CD – Application along with GUI programming interface guide
 - Evaluation Kit Users Guide
- Reference design packages
 - Development lit mounting and interface boards
 - XS4 Powered Speaker specific reference design
 - Schematics, PCB layout files, gerber files, etc.
- Application notes
 - Designing for Audio, X-Series Programming, X-Series Control Interface, and many more...