

Automotive Audio Amplifiers

Unique and Powerful Turn-Key Solutions For Your Automotive Audio Products

High-Power Multichannel Amplifiers • Bi-amp & Tri-amp Systems • Subwoofer Channel Options

The Industry's Most Advanced Technology – Perfectly Designed For Automotive Audio!

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

- Flexible, customizable, complete amp sub-systems
- 93% efficient, low heat, high power and high performance
- 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 amplifiers and audio processing for Multichannel Audio. D2Audio uniquely brings together the sophisticated audio processing you need along with very high performance, high quality all digital power. Delivering over 93% efficiency along with the industry's best performance, we'll help make your products smaller, lighter, cooler and yet more powerful than ever before. D2Audio has a breadth of Class D solutions optimized specifically for automotive audio products.



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 Processor 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 DC power designs and development platforms give you everything you need to get your new innovative products designed quickly. World class quality, features and design resources help ensure your end product is quick to market and meets the most stringent performance and quality expectations.

1

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 for each of your product applications. Use the tables below to get an overview of our products optimized for multi-channel audio. Once you have selected the optimum solution, complete technical datasheets are available along with supporting application notes and product design resources.

Every D2Audio Amp Solution For Automotive Audio has the following features/options:

- D2Audio's PWM Processor IC with embedded 48-bit, 150 MIP DSP
- 93% efficient with intelligent "Dynamic Thermal Management – ultra-low heat
- Advanced fully customizable crossovers on every channel – up to 4th order
- Comprehensive signal processing chain on every channel
- Ability to "save your custom settings" as the amp default
- Sophisticated "Graceful Protection" – anti-clipping, short circuit, over-current, thermal
- Optional S/PDIF input – perfect for moving pure digital audio from the head unit
- Paralleled outputs for high-powered bass channels (some models)
- D2Audio's powerful "D2Audio Canvas" GUI control interface – Simple yet powerful design tool!



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.



XS Large Module Options
6 to 8 channels



XS Small Module Options
2 to 4 channels



MXS Configuration
2 channels

D2Audio's physical packaging options – platform features and benefits

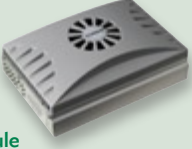
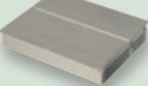
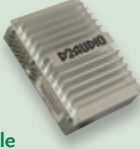
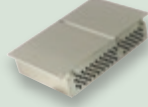

XS Large Module Options 6 to 8 channels	XS Small Module Options 2 to 4 channels	MXS Configuration 2 channels
 Full Module (integrated variable speed fan) Size: 6.8 x 4.7 x 2.5 in., 17.3 x 12.0 x 6.4cm Weight: 2.0 lbs, 910 g  Flat Top Module Size: 6.8 x 5.3 x 1.3 in., 17.3 x 13.5 x 3.3cm Weight: 1.5 lbs, 680 g Key Features and Benefits <ul style="list-style-type: none"> • Industries best digital performance • Robust design for very high power • Digital inputs with analog option • Full crossover/mixing customization • Complete thermal and/or EMI solution • Flat top option mounts to your heat sink 	 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 performance • Digital inputs with analog options • Full crossover/mixing customization • Small yet high performance package • Flat top option mounts to your heat sink 	 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! • Can be used for 2 channel and scalable channel/power designs • Full crossover/mixing customization • Heat sink it your way

Table of Primary Module Configurations

Output Channels	Power/Ch. (Power as rated into 4 ohms)	Total Power (CEA-2006)	THD+N (rated power)	SNR	Inputs** (Audio Channels)	MXS "Mini" Board Platform	XS Small Module Platform	XS Large Module Platform
2	60w per channel (2x)	140w	<0.15%	>100dB	2	MXS50-2		
	150w per channel. (2x)	440w	<0.15%	>100dB	2	MXS100-2		
	200w per channel (2x)	500w	<0.10%	>105dB	2		XS125-2	
3	200w per channel (3x)	750w	<0.10%	>105dB	2		XS125-3	
	200w/ch (2x). +250W*	750w	<0.10%	>105dB	4		XS250-3	
4	200w per channel (4x)	1000w	<0.10%	>105dB	2		XS125-4	
6 to 8	170w per channel (6x-8x)	1200/1600w	<0.10%	>105dB	4-8			XS100-6/8

* 2 channels paralleled into 4 ohm single channel output.

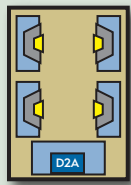
** All modules come standard with digital I²S/left justified digital audio interface and have analog and SPDIF input options.

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

Each products power stage can drive various loads. The following chart shows the related trade-offs between power, performance and speaker load.

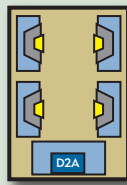
Power Stage	6 Ohms			4 Ohms		
THD+N:	≤0.15%	≤1%	≤10%	≤0.15%	≤1%	≤10%
MXS 50W	60w	70w	85w	60w	70w	85w
MXS 100W	150w	160w	200w	150w	220w	270w
XS 125W	160w	175w	205w	200w	250w	270w
XS 100W	145w	160w	190w	170w	200w	250w

System and Product Configuration Options with Recommended Amp Modules



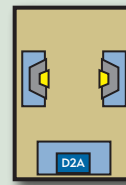
8 Speaker System
(or 4 Bi-amp'd sets)

- XS100-8



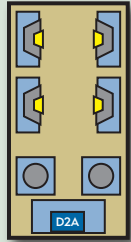
4 Speaker System

- MXS50-2 (2x)
- MXS100-2 (2x)
- XS125-4



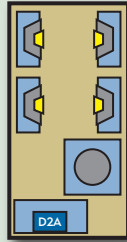
2 Speaker System

- MXS50-2
- MXS100-2
- XS125-2



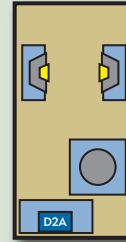
6 Speaker System
(4 Standard – 2 Subs)

- XS100-6
- XS100-8 (paralleled subs)



5 Speaker System
(4 Standard – 1 Sub)

- XS100-6 (paralleled sub)



3 Speaker System

- XS125-3
- XS250-3 (paralleled sub)

2

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

Take Advantage of D2Audio's Unique Capabilities!

Once you determine your product configuration and become familiar with D2Audio's advanced signal processing, you can customize and create a unique and compelling product.

- The new CEA-2006 Amplifier Power standard is here...Leverage D2Audio's high performance capability
- Win the power/performance rating war
- Generate custom/optimized amp "presets" for speaker types, configurations and even car make/model!

3

Select The Right Power Supply Solution

For automotive applications, the power supply solution is quite straightforward. D2Audio provides a turn-key reference design for DC-to-DC converters that deliver the voltages and power you need to drive our amp sub-systems. Just these two boards along with our amp module will enable a powerful and compelling new product. Take a look below for the primary specifications.

The D2Audio designed DC-to-DC Up-Converter features unique advantages in audio applications.

- High peak power capability
- Low noise and "quiet" power
- Provides all necessary regulated power output to connect directly to D2 amps (5v, 12v, 36v-50v)

D2Audio's Unique "Designed For Auto" Power Solutions



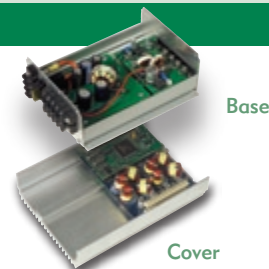
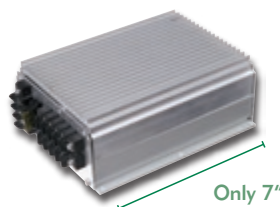
DC-to-DC Up-Converter



Amp Power Converter Board

Example - Complete 4 Channel Auto Amp Solution

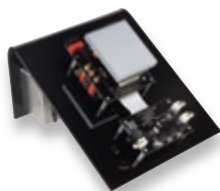
Leveraging D2Audio's XS amp module along with the above power boards, we constructed this powerful prototype in just a matter of days!



Complete prototype based on XS125-4 module. Very Compact.
Total CEA-2006 system power of 1,000w, <1% THD, 20Hz-20kHz!

D2Audio's Comprehensive Development Platforms – Enable Quick Design!

D2Audio offers simple evaluation and development platforms optimized for product design and integration. Each module product line has a unique kit that serves as an evaluation platform as well as a reference design for getting your product development off to a strong start. In fact, the eval kits themselves can be integrated into an existing product for very rapid prototyping!



MXS Development Kit



XS4 Development Kit



XS8/XA8 Development 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 kit mounting and interface boards
 - Automotive specific Power Converter reference designs
 - Schematics, PCB layout files, gerber files, etc.
- Application notes
 - Designing for Audio, X-Series Programming, X-Series Control Interface, and many more...