

# Multi-Room Distributed Audio

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

Multichannel Amps • Local Zone Amps • 50W/ch to 100W/ch • Powered Zone Speakers • Power Supplies

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

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 amplifiers and audio processing for Multi-Room Distributed 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 industries 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 just for this market.



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 programmable 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 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.

## 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 distributed 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 has the following features/options:

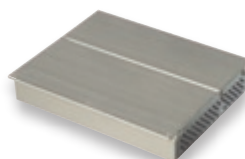
- D2Audio's PWM Processor IC with embedded 48-bit, 150 MIP DSP
- 93% efficient with intelligent "Dynamic Thermal Management – ultra-low heat
- Integrated multichannel I/O routing and mixing within the module
- Module-to-module mixing bus – "Multi-Mix" (some models)
- Comprehensive signal processing chain on every channel
- Ability to "save your custom settings" as the amp default
- Sophisticated "Graceful Protection" – anti-clipping, short circuit, over-current, thermal
- 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.



XM Large Module Options  
6 to 8 channel module



MXM Thin Module Options  
6 to 8 channel module



MXS Configuration  
2 channel module

## D2Audio's physical packaging options – platform features and benefits

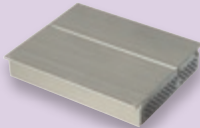
XM Large Module Options 6 to 8 channel mode	MXM Thin Module Options 6 to 8 channel mode	MXS Configuration 2 channel mode
 <p><b>Full Module</b> (integrated variable speed fan) Size: 6.8 x 4.7 x 2.5 in., 17.3 x 12.0 x 6.4cm Weight: 2.0 lbs, 910 g</p>  <p><b>Flat Top Module</b> Size: 6.8 x 5.3 x 1.3 in., 17.3 x 13.5 x 3.3cm Weight: 1.5 lbs, 680 g</p> <p><b>Key Features and Benefits</b></p> <ul style="list-style-type: none"> <li>• Highest performance module</li> <li>• Includes module-to-module mix buss</li> <li>• Option for digital + analog inputs</li> <li>• Complete thermal and/or EMI solution</li> <li>• Flat top option mounts to your heat sink</li> </ul>	 <p><b>Flat Top Module</b> Size: 4.8 x 3.6 x 1.9 in., 12.2 x 9.2 x 4.9cm Weight: 1.2 lbs, 550 g</p> <p><b>Key Features and Benefits</b></p> <ul style="list-style-type: none"> <li>• Great performance and cost</li> <li>• No module-to-module interface buss</li> <li>• Digital I<sup>2</sup>S inputs only</li> <li>• Solid performance and EMI contained</li> <li>• Thin module with heat sinking flexibility</li> </ul>	 <p>Size: 2.4 x 3.5 x 1.1 in Weight: 3 oz.</p> <p><b>Key Features and Benefits</b></p> <ul style="list-style-type: none"> <li>• Tiny package – big clean power!</li> <li>• Flexible mounting and integration</li> <li>• One gang box size envelope</li> <li>• Great for local zone amps</li> <li>• Great for powered bi-amp speakers</li> <li>• Option for digital + analog inputs</li> </ul>

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	MXM Thin Module Platform	XM 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		
6	50W/ch.	<0.15%	>100dB	8		MXM50-6	
	100W/ch.	<0.15%	>100dB	8		MXM100-6	
	100W/ch.	<0.10%	>105dB	8			XM100-6
8	50W/ch.	<0.15%	>100dB	8		MXM50-8	
	Up to 100W/ch. (8x)	<0.15%	>100dB	8		MXM100-8	
	Up to 100W/ch. (8x)	<0.10%	>105dB	8			XM100-8

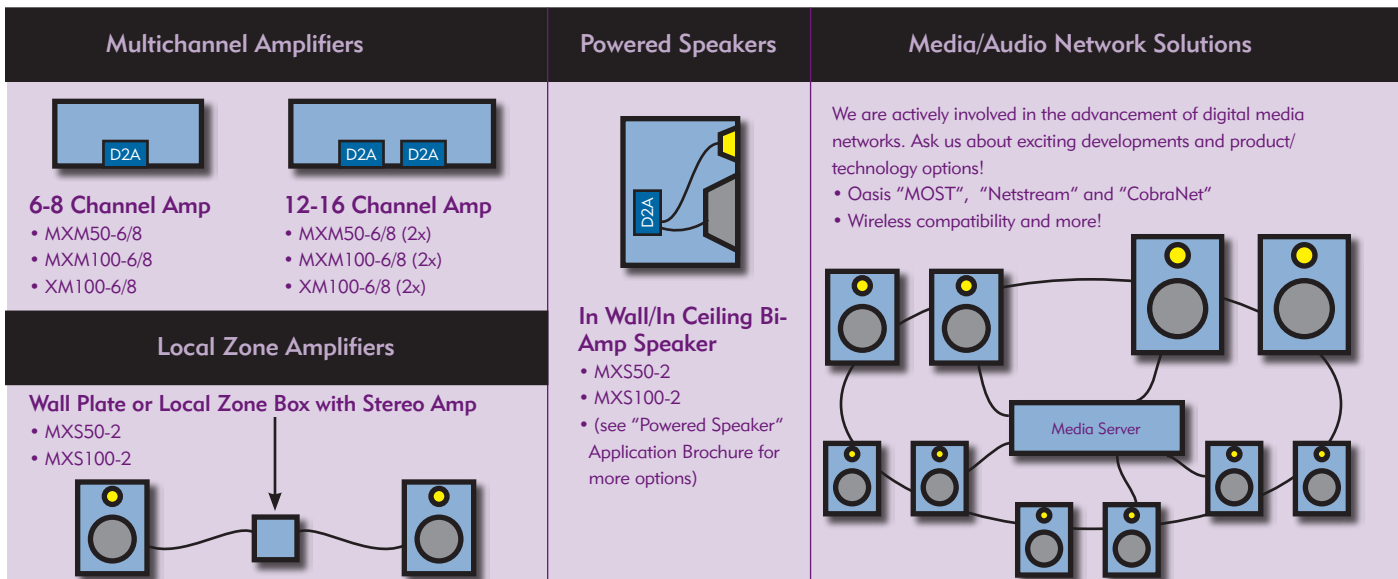
\* All modules come standard with digital I<sup>2</sup>S/left justified digital audio interface. Some models have optional analog and SPDIF input options.

### 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
MXM 50W	50w	60w	70w	60w	70w	85w	60w	70w	85w
MXM 100W	100w	130w	150w	150w	160w	200w	170w	220w	270w
XM 100W	100w	130w	150w	150w	160w	200w	170w	220w	270w

## System and Product Configuration Options with Recommended Amp Modules

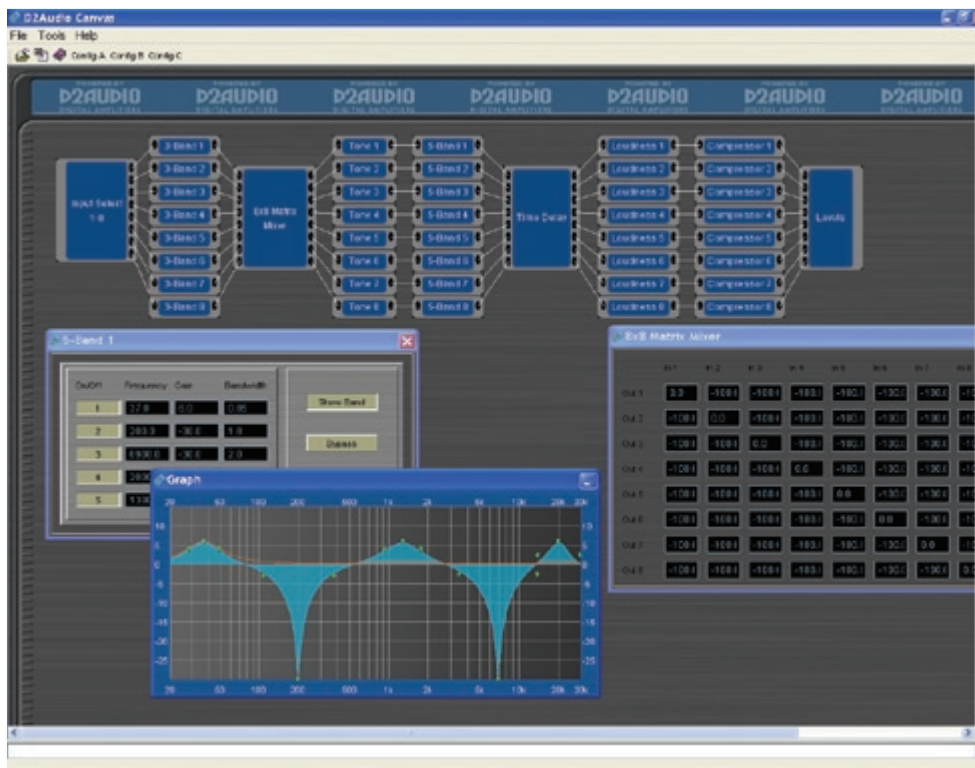


## 2

### 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 (XM100-8 Signal Chain expanded)



#### Full Matrix Mixing – Built In!

Each module solution has a built in mixer for managing inputs to outputs. It enables full matrix mixing, crossfading and signal routing.

#### XM Modules feature D2Audio's "Multi-Mix" module-to-module interface bus

- Simplifies product design
- Allows full matrix mixing between all inputs and outputs
- Enables unique advanced features with little development time and effort.

#### Optimize Speaker Frequency Response

Up to 8 bands of Parametric EQ are at your fingertips. Drag and drop GUI options or parameter based EQ settings can be customized and then saved along with all settings to our module EEPROM as the new 'default' power-on settings.

#### Input Channel Processing

- Input Selector
- Tone Control
- 5-Band Parametric EQ
- Matrix Mixer
- Loudness Contour

#### Output Channel Processing

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

# 3

## 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 you can also get very good performance with a traditional linear power supply for additional cost savings. D2Audio recommends both 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, is the 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	2.5x3.43x1.5 in.	TBD
D2Audio/Celetronix	100W	200W	CX100	d2audio.com	2.5x3.43x1.5 in.	TBD
D2Audio/Celetronix	800W	1200W	(Reference Design only)	d2audio.com	TBD	TBD
Skynet	300W	350W	SNP-Z30T	Skynetpower.com	5.0x9.0x1.28 in.	1446 grams
Skynet	200W	250W	SNP-Z20T	Skynetpower.com	4.2x8.0x1.5 in.	1350 grams
Skynet	100W	140W	SNP-Z10T-MA	Skynetpower.com	3.0x5.0x1.28 in.	247 grams
Abletec	250W	650W	CX250	Abletec.com	3.0x4.5x1.87 in.	454 grams

## D2Audio's Unique “Designed For Audio” SMPS Solutions



D2Audio CX350W



D2Audio 800W



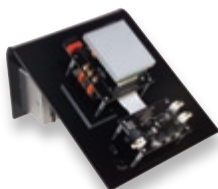
D2Audio 200W/100W

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

- High peak power 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 – 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



MXM Development Kit



XM 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 package
  - Development kit mounting and interface boards
  - MRDA specific design files
  - Schematics, PCB layout files, gerber files, etc.
- Application notes
  - Designing for Audio, X-Series Programming, X-Series Control Interface, and many more...