

# EAS DigiGaN-400S Product Brief



Class-D High-Performance eGaN FET Amplifier Module w/DSP

## Gallium Nitride

### Complete Class-D Amplifier Solution

- I2S Digital Audio Input
- S/PDIF Input/Output
- GaN FET Half-Bridge Output Stages
- Half-Bridge or Bridge-Tied Load (BTL) Output Topology
- Easy Integration w/EAS SMPS Solutions

### High-Performance Audio Reference

- 100W per Channel x 4 into 8 ohms
- 400W per Channel (BTL) x 2 into 8 ohms
- > 112dB SNR and Dynamic Range
- < 0.1% THD+N (8Ω, 1W, 20Hz to 20kHz)
- 20Hz-20kHz +/-0.2dB Frequency Response (8Ω)

### +/- 42VDC Power Supply Requirement

### 96% Efficiency Reduces Heat and System Size

### Graceful Protection and Auto Recovery

- Complete Non-Intrusive Short-Circuit, Thermal and Over-Current Protection
- Over-Voltage and Under-Voltage Protection
- Graceful Handling of Complex and Lower Impedance Loads

### Package Configurations

- Complete GaN FET Class-D Amplifier Module

### Integrated Fully Programmable DSP

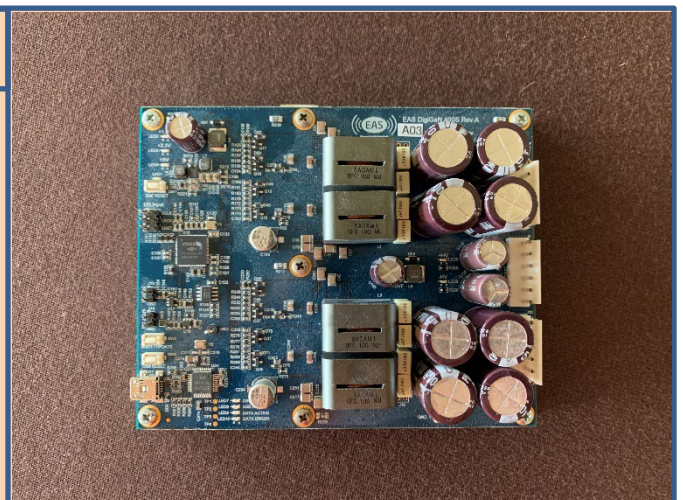
- EAS DSP Solution w/D2Audio DAE-3HT
- Customer Programming of DSP Audio Signal Flow
- Integrated I<sup>2</sup>S and S/PDIF Digital Inputs

The EAS™ DigiGaN4002 is a self-contained 400 watts per channel Class-D Amplifier Module for manufacturers of Powered Loudspeakers and stand-alone Stereo and Multi-Channel Amplifiers. The DigiGaN4002 is a totally digital Class-D Amplifier solution developed around the next-generation Driver technology and the new eGaN FET Power Device technology. These next-generation technologies are combined with highest quality Output Filters for uncompromised audio quality and sound. The DigiGaN4002 is designed as four independent Half-Bridge Outputs, for use in Stereo and Multi-Channel applications. The DigiGaN4002 includes a fully programmable DSP with Open-Loop Output Stage Topology.

The Module is designed with best-practices EMI considerations, and for compliance with FCC, UL, CSA and CE requirements.

## EAS™ DigiGaN-400S

- Complete Stand-alone Class-D Amplifier Module
- 400 watts/channel, 8 ohms, BTL x 2
- 100 watts/channel, 8 ohms, x 4 Half-Bridge
- < 0.1% THD+N, > 110dB SNR
- Digital I<sup>2</sup>S and Digital S/PDIF Inputs
- Quad Half-Bridge or Dual Bridge-Tied-Load (BTL) Topology with Ground-Referenced Output
- Integrated, non-intrusive over-current, short-circuit and over-voltage protection



## 1. PERFORMANCE PLOTS

To be replaced

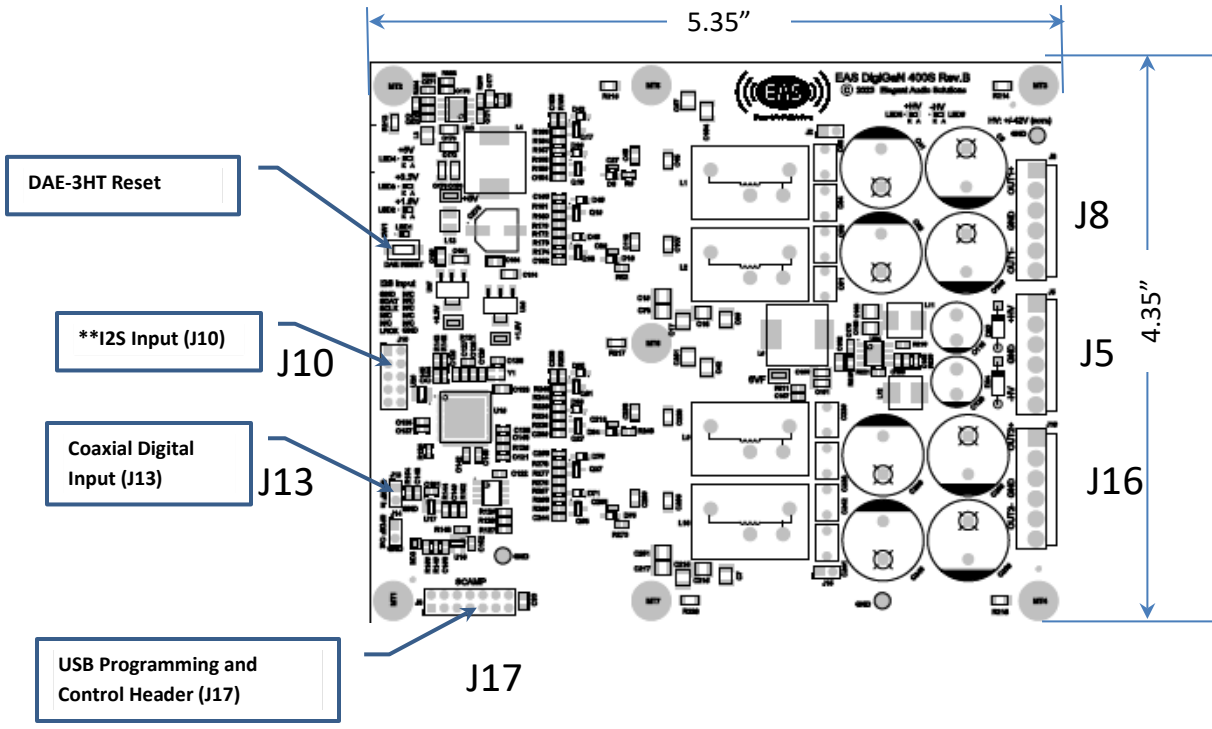
### ABSOLUTE MAXIMUM RATINGS

Operation beyond these limits may cause catastrophic and irreversible damage

Parameter	Rating	Units	Comments
Power Supply Voltage	+/- 45	V	Over-Voltage will Shut-Down Unit
Peak Output Current	20	A	Maximum Current Limit @ 18A
Ambient Temperature	25	°C	Normal Operation w/o Heat Sink
Heat Sink Temperature	90	°C	

### RECOMMENDED OPERATING CONDITIONS

Parameter	Min	Typical	Max	Units	Comments
Power Supply Voltage	+/- 20	-	+/- 42	V	UnderVoltage @ +/-18V
Load Impedance	2	8	-	Ω	
Source Impedance	-	-	-	Ω	N/A
Effective Power Supply Capacitance	4000μ	-	-	F	Per rail, per attached Amplifier Module



**\*\*NOTE: SCLK, LRCK and SDAT for a single I<sup>2</sup>S Input (2 Channels) are provided**

## 2. CONNECTIVITY

Connector: J5 (Mating JST Connector: VHR-6N; Pin: SVH-41T-P1.1)

Pin	Type	Description
1, 2	Input	+HV Power Supply Rail
3, 4	Input	Power Supply Ground
5, 6	Input	-HV Power Supply Rail

Connector: J13

Pin	Type	Description
1	Input	S/PDIF Coaxial Digital Audio
2	Input	Digital Ground

Connector: J10

Pin	Type	Description
1	Input	Ground
2,4,6,7,8	N/C	N/C
3	Input	I2S SDAT0
5	Input	I2S SCLK
9	Input	I2S LRCK
10	Input	Ground

Connector: J3 (SCAMP)

Pin	Type	Description
1,2,12,14	Input	Ground
3	Input	SCL
4	Input	SDA
5,6,8,9,10	N/C	N/C

7	Input	DAE_NRST
11	Input	BOOT_FLASH/I2C
13	Input	+5V

**Connector: J8 (Mating JST Connector: VHR-2N; Pin: SVH-41T-P1.1)**

<b>Pin</b>	<b>Type</b>	<b>Description</b>
1,2	Output	Positive BTL Audio Amplifier #1 Output
3,4	Output	Ground (Not Used w/BTL Output)
5,6	Output	Negative BTL Audio Amplifier #1 Output

**Connector: J16 (Mating JST Connector: VHR-2N; Pin: SVH-41T-P1.1)**

<b>Pin</b>	<b>Type</b>	<b>Description</b>
1,2	Output	Positive BTL Audio Amplifier #2 Output
3,4	Output	Ground (Not Used w/BTL Output)
5,6	Output	Negative BTL Audio Amplifier #2 Output