

# EAS™ eGaNAMP2016 Product Brief

## Class-D High-Performance eGaN FET Amplifier Module

# Gallium Nitride

### Complete Class-D Amplifier Solution

- Differential Analog Audio Input
- Phase-Shift Modulator
- Integrated Synchronous Bootstrap
- eGaN FET Half-Bridge Output Stage
- Bridge-Tied Load Output Topology

### High-Performance Audio Reference

- 200W per Channel into 8 ohms
- 400W per Channel into 4 ohms
- > 102dB SNR and Dynamic Range
- < 0.05% THD+N (8Ω, 1W, 20Hz to 20kHz)
- 20Hz to 20kHz +/-0.5dB Frequency Response

### 96% Efficiency Reduces Heat and System Size

- No Heat Sink Required
- Easy Attachment to Chassis

### Graceful Protection and Auto Recovery

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

### Package Configurations

- Complete Module with Mounting
- 10mm Stand-offs with Mounting Screws

### Customer DSP Solutions

- Easy Integration w/EAS DSP Solutions
- Customer Programming of DSP Audio Signal Flow
- Integrated I<sup>2</sup>S Digital, S/PDIF and Auxiliary Analog Inputs

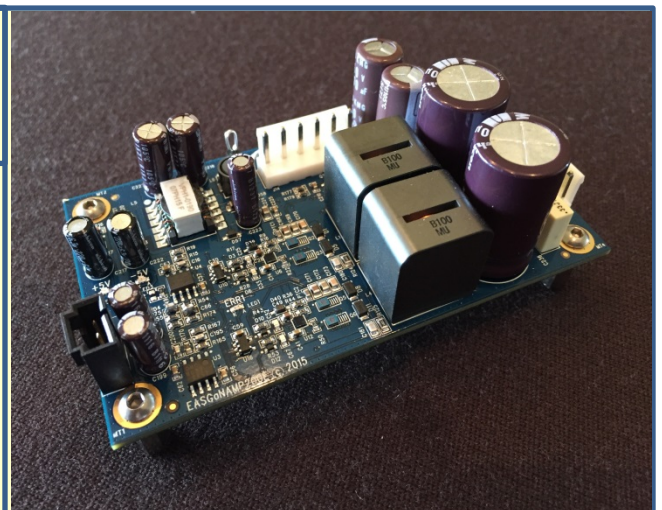
The EAS™ eGaNAMP2016 is a self-contained 200 watts per channel Class-D Amplifier Module for manufacturers of Consumer Powered Loudspeakers and stand-alone Power Amplifiers. The eGaNAMP2016 is developed around the next-generation MOSFET Driver technology and the new eGaN FET Power Device technology. These next-generation technologies are combined with highest quality Output Filters for uncompromised audio quality and sound.

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

Mounting stand-offs are provided for stand-alone operation, or for mounting to a customer's heat sink/cooling configuration.

## EAS™ eGaNAMP2016

- Complete Stand-alone Class-D Amplifier Module
- 200 watts/channel, 8 ohms
- < 0.05% THD+N, > 102dB SNR
- Differential Analog Input
- Bridge-Tied-Load (BTL) Topology for Ground-Referenced Output
- Integrated over-current, short-circuit and over-voltage protection



# 1. PERFORMANCE PLOTS

Test Conditions: Topward 6306D Power Supply, 25 degrees C Ambient, 1kHz Analog Audio Input

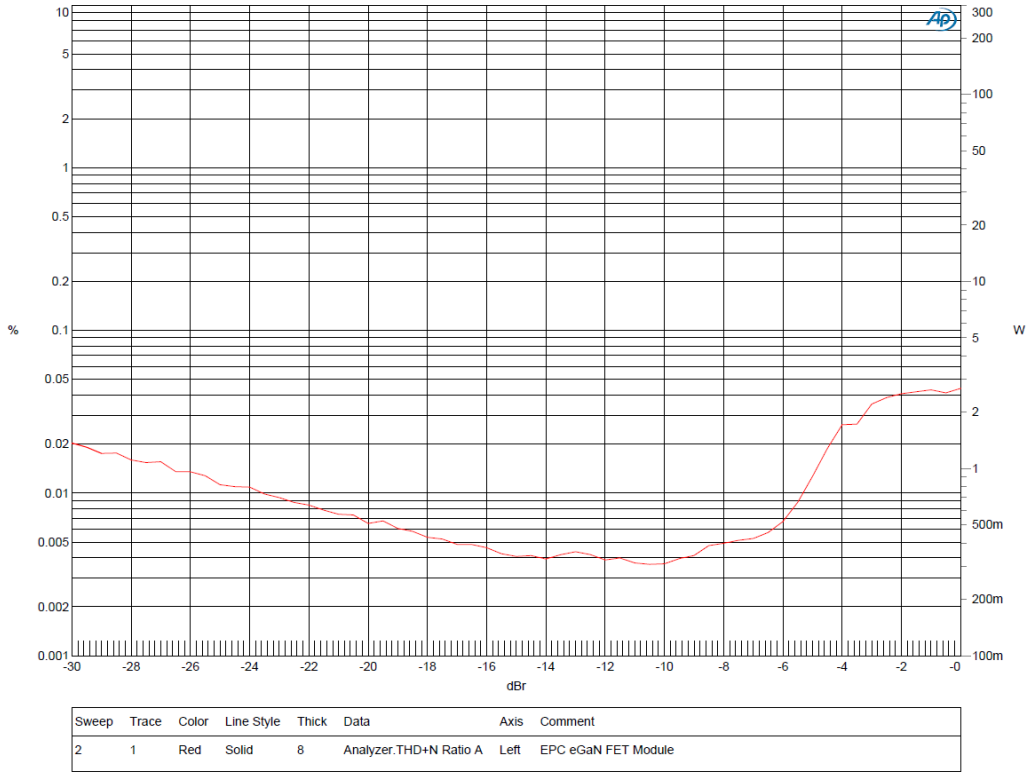


Figure 1-1 THD+N vs. Power

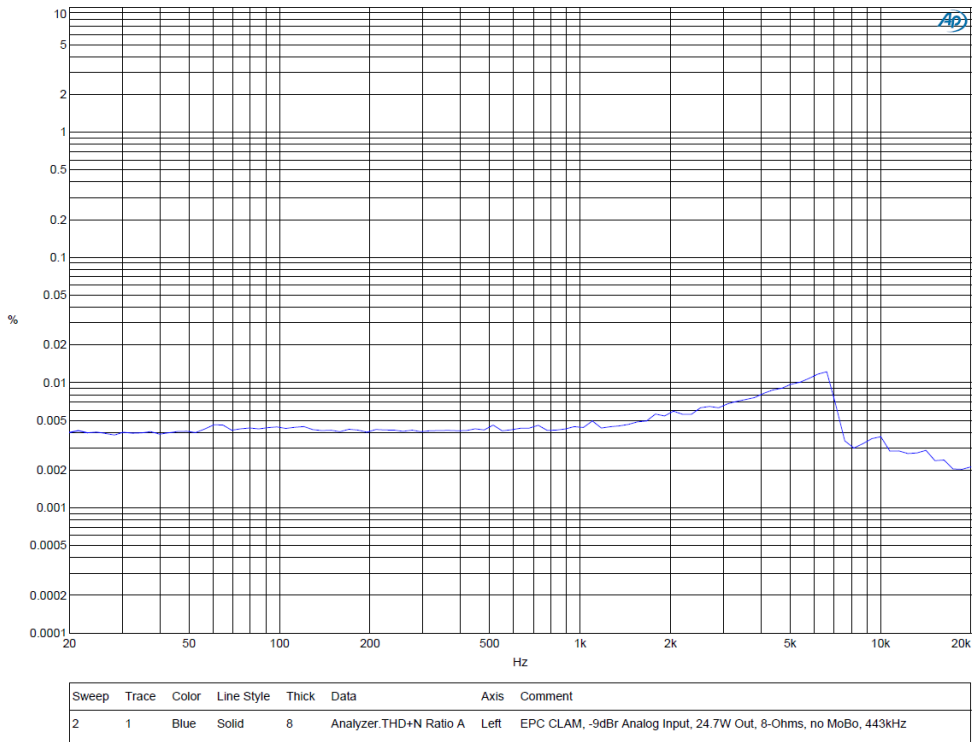


Figure 1-2 THD+N vs. Frequency

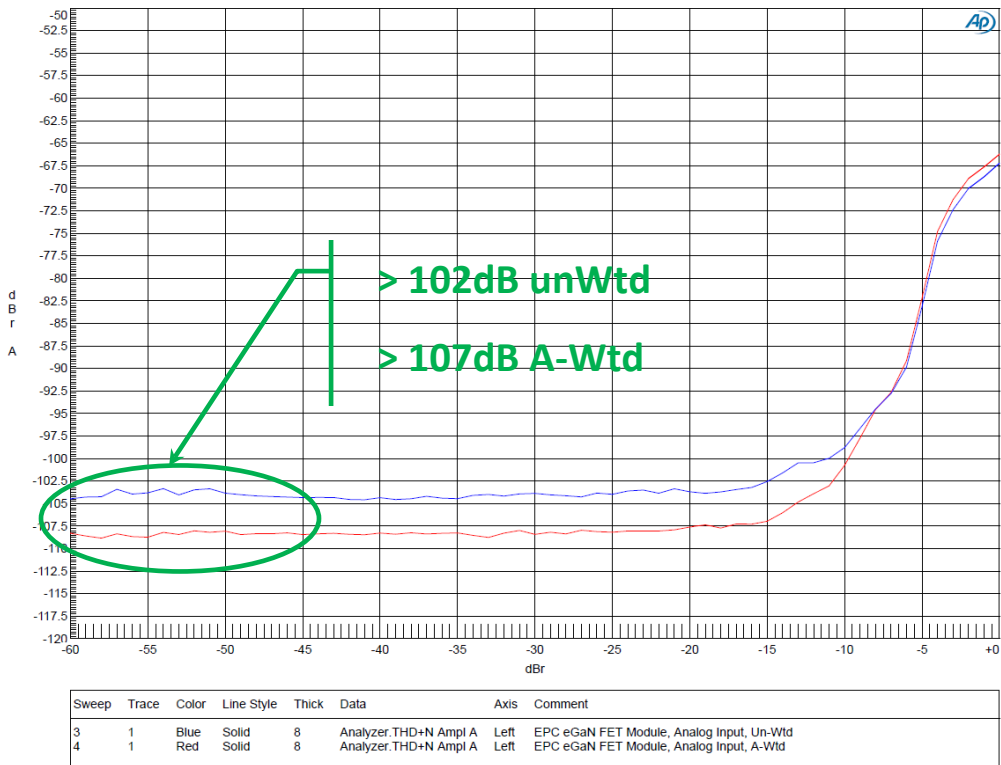


Figure 1-3 Noise Floor

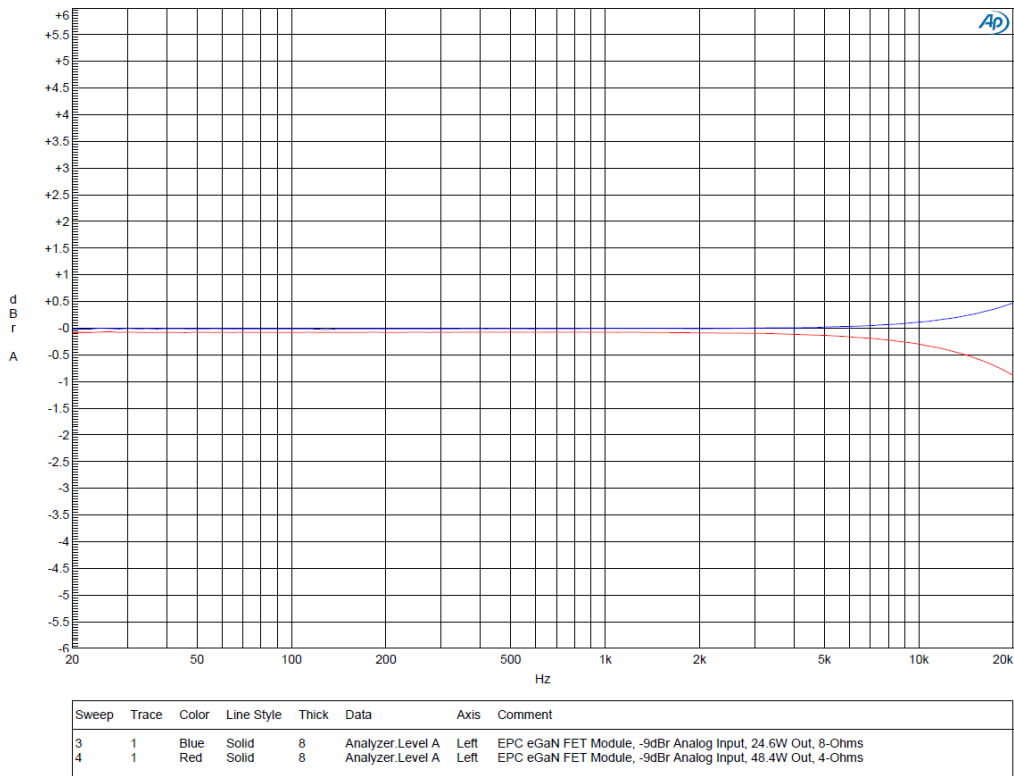
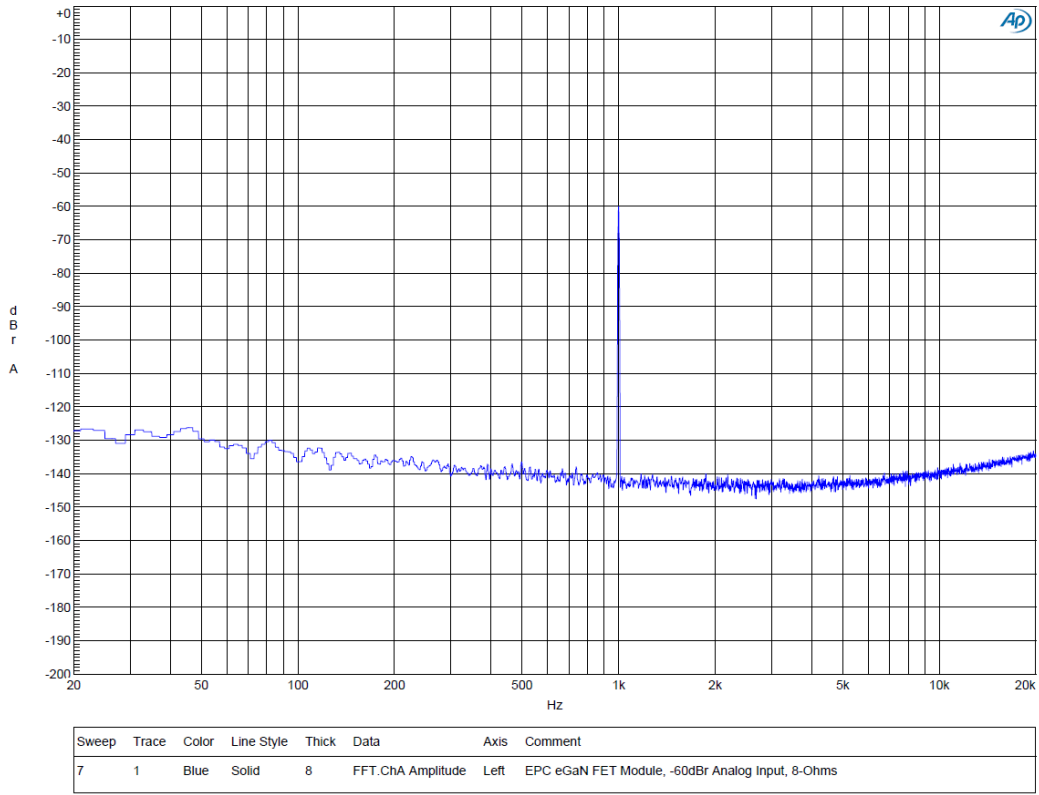


Figure 1-4 Frequency Response



**Figure 1-5 FFT Multi-Channel with -60dB Audio Input Signal**

## PERFORMANCE DATA

Power Supply = +/-32VDC, Load = 8Ω

Parameter	Min	Typical	Max	Units	Comments
Output Power	200W			W	THD < 0.05%
Distortion	-	-	0.05	%	THD+N
Output Noise	102	-	-	dB	Unwtd, 200W/8Ω
Frequency Response	10	-	20k	Hz	+/- 0.5dB
Voltage Gain	+25.5	+26	+26.5	dB	
Current Limit	15	16	18	A	
Power Supply Rejection	+65			dB	Either Rail

## AUDIO INPUT CHARACTERISTICS

Parameter	Min	Typical	Max	Units	Comments
Input Impedance	-	100k	-	Ω	Either Input to Ground
Common-Mode Rejection	-	75	-	dB	20Hz to 20kHz

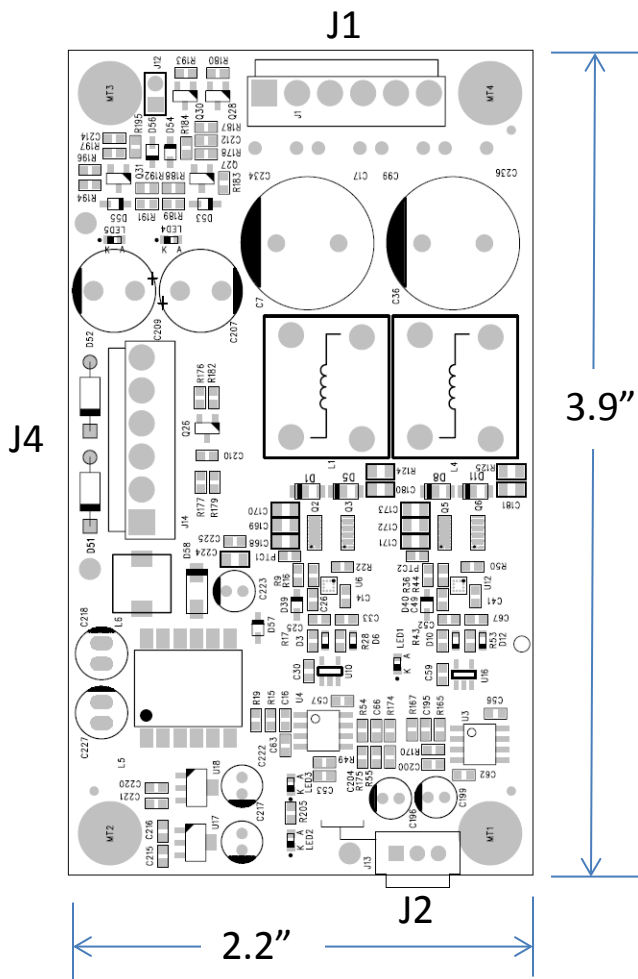
## ABSOLUTE MAXIMUM RATINGS

Operation beyond these limits may cause catastrophic and irreversible damage

Parameter	Rating	Units	Comments
Power Supply Voltage	+/- 37	V	Over-Voltage will Shut-Down Unit
Peak Output Current	20	A	Maximum Current Limit @ 18A
Ambient Temperature	35	°C	Effects Operation w/ Heat Sink
Heat Sink Temperature	90	°C	Additional Heat Sink might be required

## RECOMMENDED OPERATING CONDITIONS

Parameter	Min	Typical	Max	Units	Comments
Power Supply Voltage	+/- 20	-	+/- 32	V	
Load Impedance	2	-	-	$\Omega$	
Source Impedance	-	-	10k	$\Omega$	
Effective Power Supply Capacitance	1000 $\mu$	-	-	F	Per rail, per attached Amplifier Module



## 2. CONNECTIVITY

### Connector: J4

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

### Connector: J2

Pin	Type	Description
1	Input	Positive Audio Signal Input
2	Input	Signal Input Ground
3	Input	Negative Audio Signal Input

### Connector: J1

Pin	Type	Description
1, 2	Output	Positive Audio Amplifier Output
3, 4	Output	Audio Amplifier Output Ground
5, 6	Output	Negative Audio Amplifier Output