

The first 2.1-MHz Class-D audio amplifier

TAS6424-Q1

SLYW067

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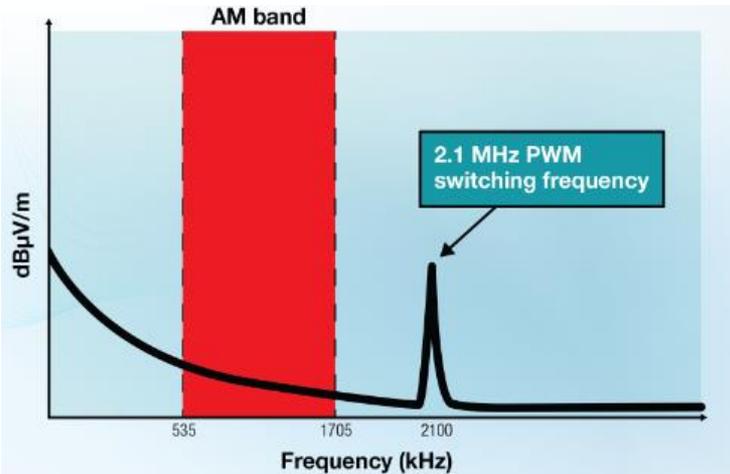
TAS6424-Q1: Why do we need it?

Automotive infotainment applications like head units **need smaller** and smaller designs, while delivering **higher output power** in a thermally challenging environment.

Designers need solutions that provide **high resolution audio** quality in the **smallest footprint** possible, without complicated, space-hogging implementations.

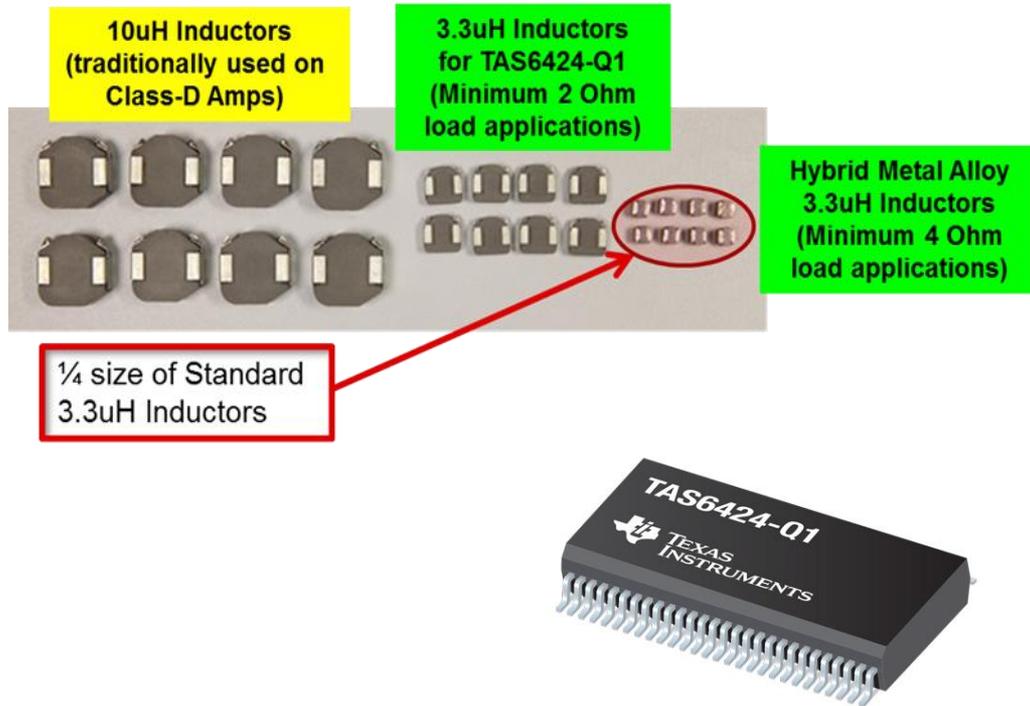


Key features and benefits



- Industry's first 2.1 MHz PWM switching frequency
 - Switches above the AM band, eliminating the need for complex EMI avoidance schemes
- Industry's smallest four-channel Class-D design
 - High-fidelity audio quality with 96 kHz high resolution digital input
- Rich, integrated functionality
 - Enables the use of smaller external filters and eliminates up to 18 external components, reducing system size up to 75 percent
- Low impedance support
 - Remains stable while driving speakers with impedance of 2 ohm to maintain high audio quality
- 4.5 V to 26.4 V supply voltage
 - Supports start-stop without additional power supply components

2.1MHz Switching allows use of Smaller Inductors

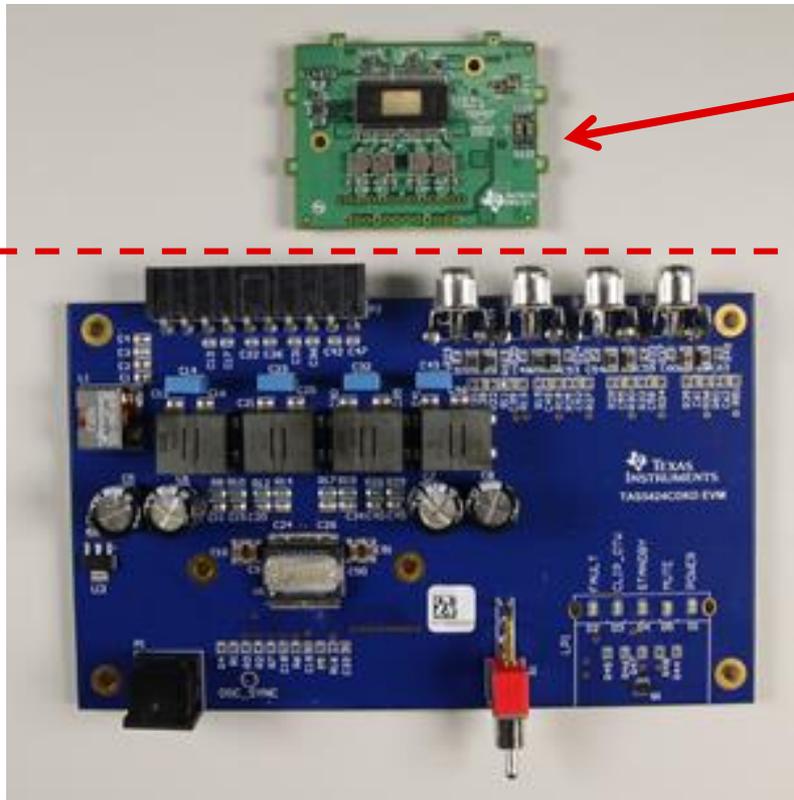


- TAS6424-Q1 2.1MHz Switching enables use of smaller 3.3uH Inductors
- As opposed to larger 10uH Inductors traditionally used on Class-D amplifiers)
- Smaller 3.3uH Inductors drive BOM cost savings
- 3.3uH Inductors weigh less; thereby enabling greater fuel economy

2.1MHz Switching enables Smaller System Design

TAS6424-Q1 size
27mmX22mm = 5.9cm²

Current Class-D size
57mmX45mm = 25.7cm²



TAS6424-Q1 4Ch
Class-D is 75%
smaller size

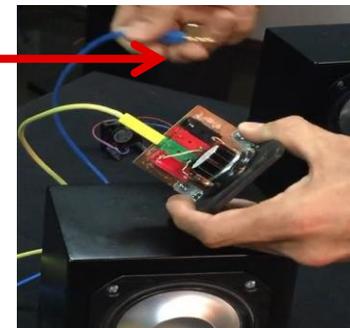
Advanced AC diagnostics

Channel	Gain	AC LD Enable	Impedance	Phase
CH1	1	✓	4.0 Ω	1°
CH2	1	✓	4.0 Ω	1°
CH3	1	✓	4.0 Ω	0°
CH4	1	✓	219 Ω	-39°

- High accuracy, on-chip impedance and phase measurements
- Programmability for flexible car production-line testing and calibration

Open tweeter detection

Impedance & phase measurements



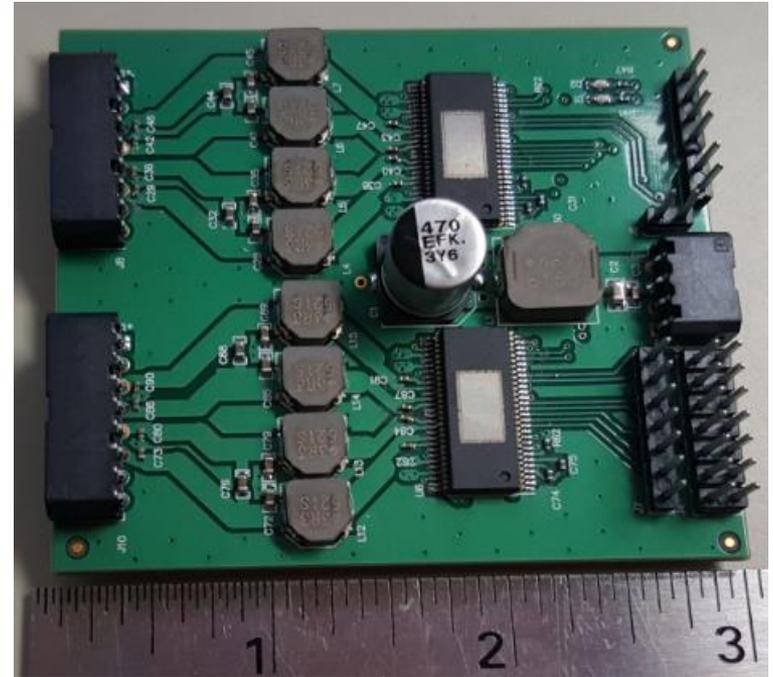
Designing with the TAS6424-Q1

Applications

- Infotainment
- Digital Radio
- Automotive head unit
- Automotive external amplifier
- Automotive seat vibration

TI reference design TIDA-00733

- An eight-channel infotainment reference design that demonstrates the use of the TAS6424-Q1, PCM1865, and an LM53636L 2.1 MHz Buck Regulator in a fully tested design intended as a reference for automotive head-unit and amplifier designers. Using two TAS6424-Q1 Class-D amplifiers, designers can configure up to eight channels of audio output to deliver high switching power. The PCM1865 provides analog inputs and timing for the TAS6424.
- Planned release by end of year 2016.



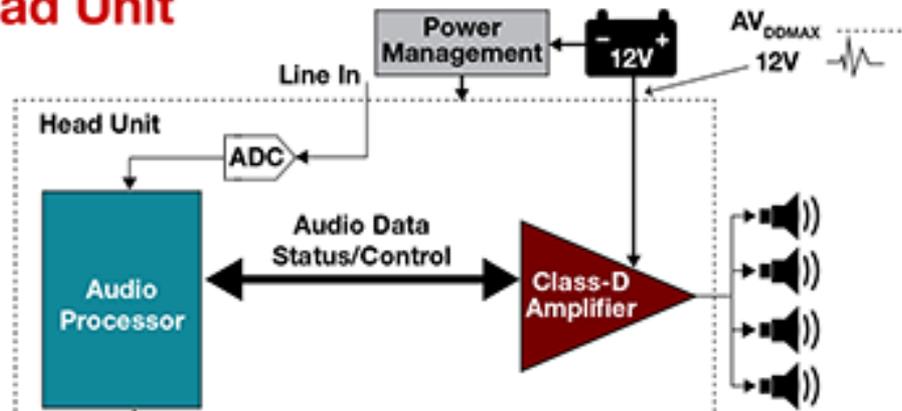
Eight-channel design

TAS6424-Q1: The details

Learn more about TI's [proven audio innovation](#):

- Download the [TAS6424-Q1 data sheet](#).
- Watch a short video that outlines the [benefits of TAS6424-Q1](#).
- Request a [TAS6424-Q1 evaluation module](#)
- Read the latest Blog [Switching above the AM band](#)

Head Unit



See the TAS6424-Q1 at CES in TI's booth at LVCC North Hall, #N118.

Thank you

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