

HFDA AND FDA SERIES

Audio amplifiers for car infotainment systems



ST's HFDA & FDA combine high-quality audio with automotive robustness

With a wide bandwidth, our new HFDA80x 2-MHz Class-D audio amplifiers offer high-frequency switching ideal for inexpensive, compact, audio applications. For low-frequency switching applications, our FDA80x and FDA90x Class-D audio amplifiers ensure unrivaled efficiency.

Designed for automotive applications, our HFDA and FDA fully digital audio amplifiers deliver a high level of load detection accuracy, diagnostics, protections and advanced real-time load monitoring functions.

KEY FEATURES & BENEFITS

- Class-D efficiency, above 90%
- Dedicated family with extremely low power dissipated in the low output level
- I²S or TDM digital input
- Low latency option available for ANC applications
- Input and output voltage or current offset detector
- DIM /DAM to monitor the speakers impedance values
- Very low output noise
- Compact solution
- Real-time load current monitor (optional)

- High-definition audio, 80kHz bandwidth (HFDA801A)
- Compact packages with optimized pin-outs
- Spread spectrum reduces radiated emissions
- Full real-time diagnostics for ASIL-compliant systems

KEY APPLICATIONS

- Head units / smart cockpit
- Sound systems and boosters
- Telematics audio and eCall
- Acoustic Vehicle Alerting Systems (AVAS)

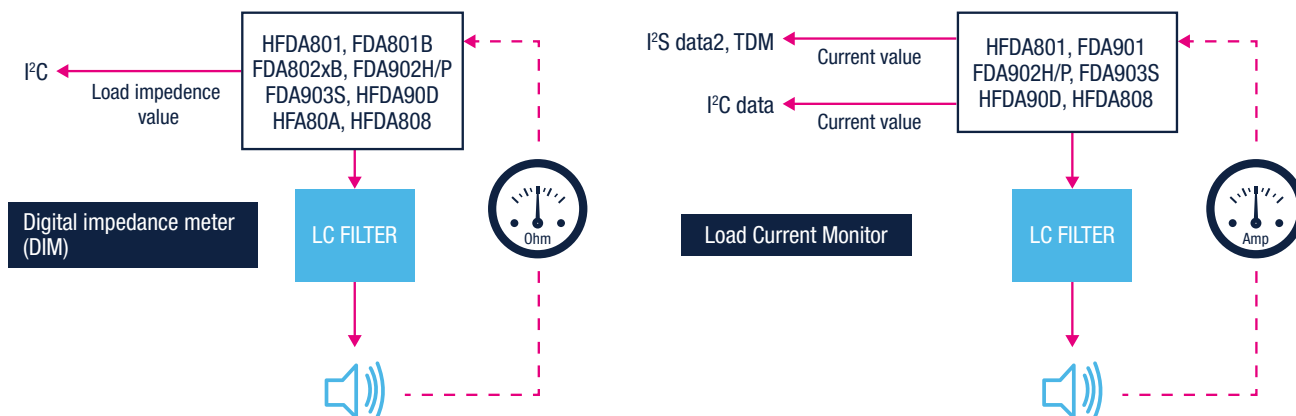
HFDA & FDA PRODUCT FAMILY

ST automotive full digital amplifiers eliminate the cost of an external DAC and capacitors (removing the risk of DC offset for leakage), are immune to RF noise injection (mobile phones) and have excellent audio performance. ST's amplifiers implement innovative features that help to comply with international EMI standards, allows the use of compact and low-cost external components, makes diagnostics very precise and reliable and also improves the amplifier sound quality. All products are housed in small packages to ensure compact designs.

The HFDA and FDA amplifiers achieve over 90% efficiency, reducing dissipated power and optimizing performance for high output power at low to medium levels. Most of the HFDA/FDA products have an embedded digital impedance meter, an innovative feature that measures load impedance, making load diagnostic routines simple and reliable with any kind of speaker connection and configuration. The FDA802x, FDA902H and HFDA808 are compatible with a 48/50 V supply voltage, adding support for 8 Ohm speakers at full power. There is a full range of devices

embedding a real-time load current monitoring feature that enables the continuous control of the speakers, helping to build systems that enhance audio performance and maintain sound quality over the system lifetime with added robustness. Able to operate at voltages as low as 3.3V, the FDA803x/ FDA903x are designed to support audio applications, telematics systems, eCall boxes, and sound generators for electric vehicles. HFDA80x, enables the design of compact and un-expensive application, thanks to the 2Mhz switching PWM.

HFDA & FDA FAMILY INNOVATIVE FEATURES



DEVICE SUMMARY

Part number	Description
FDA801/FDA801B /FDA901	4 x 50 W Class-D digital input power amplifier with I2C diagnostics, 25V operation and DIM (B version), load current monitor (FDA901)
FDA802A/FDA802AB FDA802P/FDA802PB	2 x 125 W Class-D digital input power amplifier with I2C diagnostics, 50V operation and DIM (A and AB version, 40V operation and DIM (P and PB version))
FDA803D/U/Q FDA903D/U/Q	1 x 45 W Class-D digital input power amplifier with I2C diagnostics and load current monitor (FDA903D/U/Q) for car audio and telematics
FDA803S/FDA903S	1 x 10 W Class-D digital input power amplifier with I2C diagnostics and load current monitor (FDA903S) for car audio and telematics
HFDA801A	4 x 80 W Class-D digital input power amplifier with Hi-Fi audio quality, advanced diagnostics, load current monitoring, 2MHz switching frequency and high-resolution bandwidth, 25V operation
HFDA802	2 x 80 W Class-D digital input power amplifier with Hi-Fi audio quality, advanced diagnostics, load current monitoring, 2MHz switching frequency and high-resolution bandwidth, 25V operation
HFA80A	4-channel analog input class-D automotive audio amplifier with Hi-Fi audio quality, advanced diagnostics and 2MHz switching frequency
HFDA80D/HFDA90D	4-channel digital input class-D automotive audio amplifier with Hi-Fi audio quality, in-play diagnostics, 2MHz switching frequency with load current monitor (HFDA90D)
HFDA808*	4-channel, digital input automotive (48 V) class-D audio amplifier with advanced real-time diagnostics, load current monitor, 2MHz switching frequency and Hi-Fi audio quality.

* Coming soon



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