

STMicroelectronics reveals space-saving, high-freq digital automotive audio amplifiers for smart-cockpit applications

Tiny 7mm x 7mm HFDA80D and HFDA90D simplify design and cut bill of materials

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STMicroelectronics has revealed new class-D automotive audio amplifiers for smart-cockpit applications, engineered for tiny overall dimensions and with a digital input that simplifies circuit design.



The new [HFDA80D](#) and [HFDA90D](#) extend ST's family of high-frequency automotive amplifiers, complementing the HFA80A analog-input IC. All the devices operate at a switching frequency of 2MHz to save PCB space and lower the bill of materials. Also containing architectural innovations that minimize the package pin count and external components, the ICs deliver four 27W output channels from a 7mm x 7mm exposed-pad-up LQFP48 package.

With their digital inputs, the HFDA80D and HFDA90D further ease integration, simplify design, and save extra space by eliminating analog conversion. The devices increase audio clarity and elevate efficiency above the typical value for this type of device.

Configured and fully addressable through their I2C bus interface, the HFDA80D and HFDA90D deliver high output power for in-car infotainment audio applications. Also featuring low audio-processing latency, they can be used in active noise cancellation (ANC) and road-noise cancellation (RNC) applications.

Featured to handle the challenges of the automotive electrical environment, the amplifiers are immune to pop and tick noise caused by battery variations and switching transients. The spread-spectrum modulation ensures native CISPR25 class V compliance. There are also rich diagnostics, including in-play open-load detection, overcurrent protection, short-to-Vcc or ground on startup, output diagnostics, and thermal warnings. By including a digital admittance meter (DAM), as well

as a load-current monitor in the HFDA90D, the new amplifiers let designers customize the diagnostics as well as ensuring superior speaker linearization.

The HFDA80D and HFDA90D are in production now, in the LQFP48 package, and available from \$4.80 for orders of 1000 pieces.

Please visit <https://www.st.com/hfda-audio-amplifiers> for more information.

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