

## Market News

### **Groundbreaking technology in the audio market: Infineon launches class D audio brand MERUS™ with integrated multilevel amplifier ICs**

Munich, Germany – 2 May 2019 – Infineon Technologies AG (FSE: IFX / OTCQX: IFNNY) launches its MERUS™ brand, uniting the existing portfolio of multi-chip modules and discrete audio products under one umbrella. The brand will spearhead the belief that the best audio amplifier ICs

- › produce sound in the speakers, not heat to the surroundings
- › are to be heard, but not seen
- › are smaller and lighter, not bulky and heavy
- › must be robust and flexible, not delicate and demanding.

Following these principles, Infineon is introducing a family of highly power efficient monolithic class D audio amplifier solutions that will propel audio performance to the next level.

Building block for this performance is a new technology: the multilevel switching technology for class D audio amplifiers. Setting a benchmark in the audio market, this positively affects the amplifier evaluation parameters such as power consumption, solution size, audio performance, electromagnetic interference, and BOM cost. As a result, up to five levels of output signal modulation become feasible. Compared to their traditional counterparts, multilevel amplifiers use additional on-chip MOSFETs and capacitors to produce outputs with higher signal granularity, i.e. higher switching frequencies and scalable output signal levels. This results in a small form factor and virtually no switching loss measurable in idle mode.

Building on the above, Infineon introduces a family of four integrated multilevel audio amplifiers, the MA12040/P and the MA12070/P in two versions, respectively. They boast power consumption in the 250mW range. For this reason, they are suited for portable battery powered products and applications with challenging thermal conditions meeting the critical design objectives for modern audio applications.

Traditional class D amplifiers are only efficient at highest music volume levels resulting in high THD, which renders quality less useful for practical implementations.

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In realistic audio playback situations they consume significantly more input power (~1 W on average) than the first generation of MERUS integrated multilevel audio amplifier ICs (~0.25 W).

The newly introduced devices support up to four channels, which can be configured in parallel bridge-tied-load (PBTL), in bridge-tied-load (BTL) or in single-ended (SE) mode. As such, a single IC can output up to 160 W peak (16 A max) in a single PBTL channel or, for instance, it can be set up as a 2.1 system with 2 x 20 W tweeters as SE channels and 1 x 40 W woofer speaker as BTL channel. In addition, the products feature an advanced digital power management scheme, low THD+N (0.003 percent) and low EMI emissions.

Multilevel technology allows heatsink-free operation without filters. This reduces the bill of material and overall system costs due to reduced component count and minimized cooling requirements. The MA12040/P and the MA12070/P feature several protection modes such as undervoltage lockout (UVLO), short-circuit/overcurrent and DC protection, and over-temperature warning and error. The MERUS integrated multilevel class D audio amplifier ICs come in a 64-pin thermally enhanced QFN package with exposed thermal pad (EPAD).

### **Availability**

The family of fully integrated ICs from the MERUS class D audio portfolio consists of the analog audio input versions, MA12040 and [WiSA™ Endorsed MA12070](#), and the I2S digital audio input versions, the MA12040P and the MA12070P. All four devices can be ordered now. More information is available at [www.infineon.com/merus](http://www.infineon.com/merus).

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