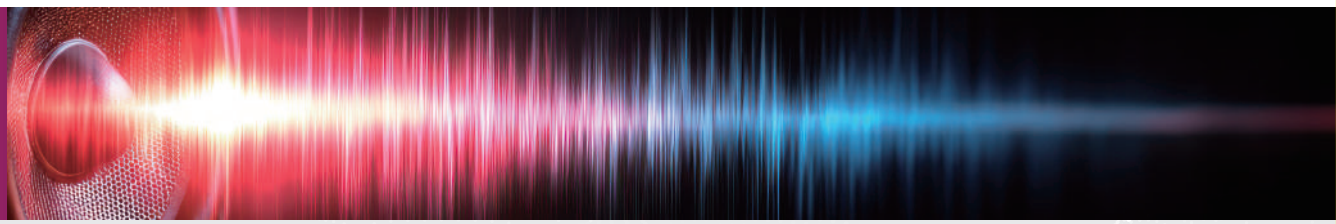
CRI-D-AMP™

Audio Output Middleware

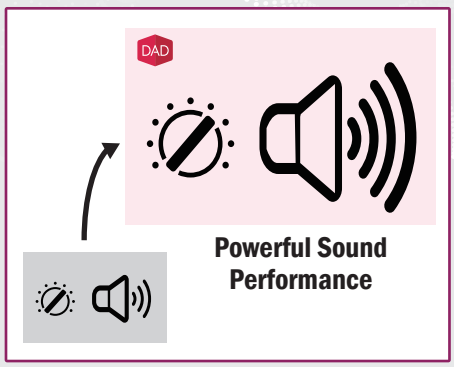
CRI D-Amp Driver™

CRIWARE™

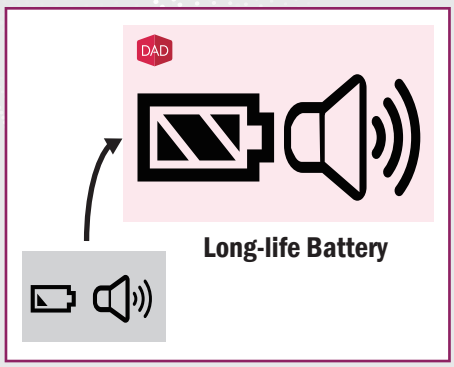


Software-Defined Full-Digital Amplifier

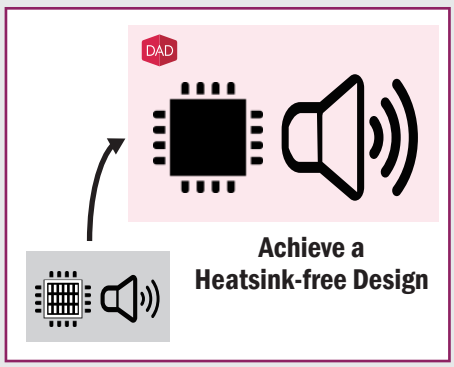
High Sound Pressure Level



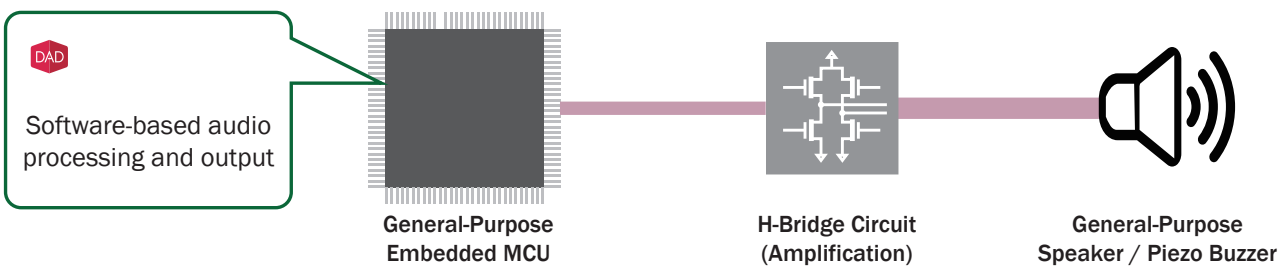
Low Power Consumption



Heat Reduction

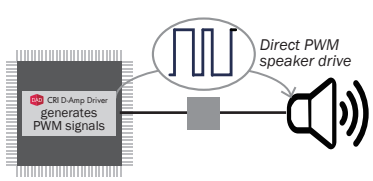


Simple System Architecture



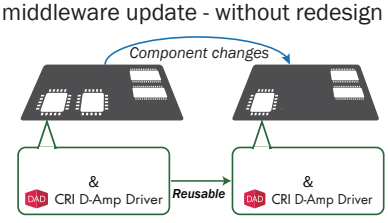
- **Pure sound quality**

Significant low noise and preserves quality by the simple architecture



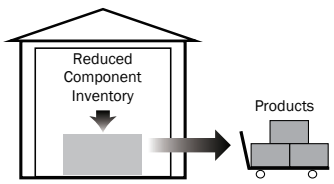
- **Standardized design**

Component replacement with only a middleware update - without redesign



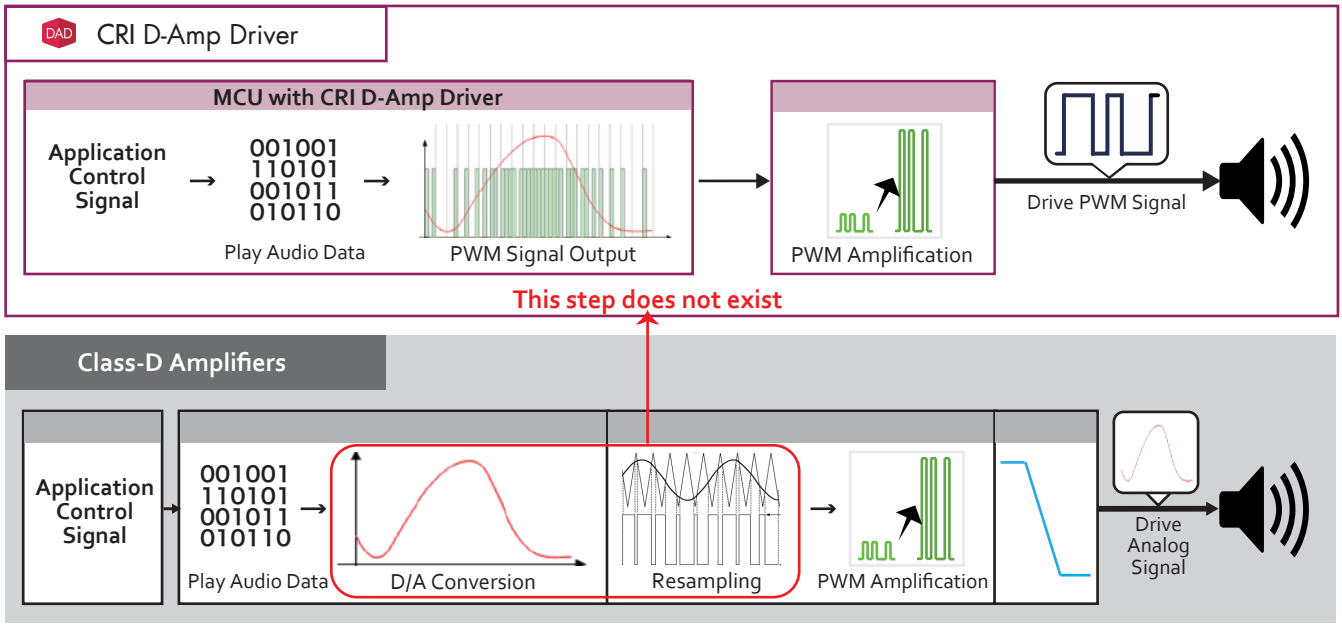
- **Reduce Supply Chain Risks**

Reduce procurement costs and inventory risks through standard components



Difference from Class-D Amplifiers

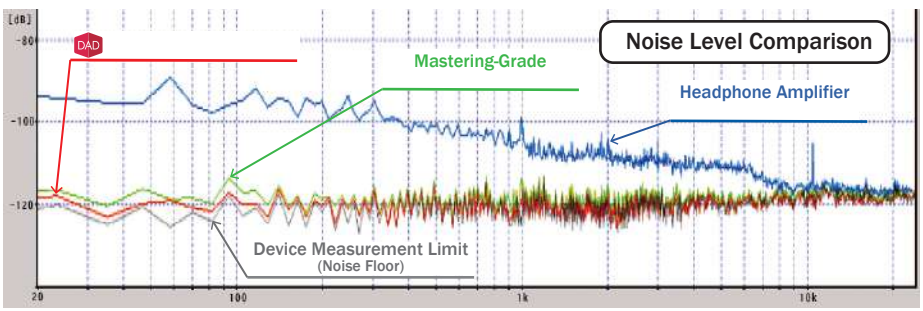
Complete Digital Audio Output without the Analog Stage

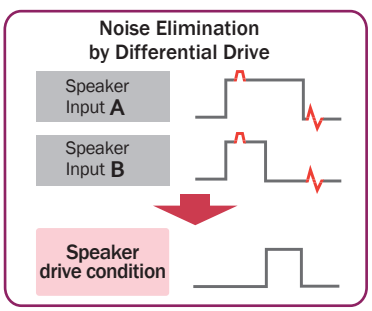


Superior Sound Quality

Low Noise and High Immunity

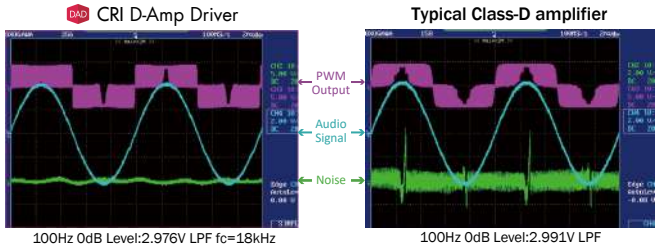
Our fully digital design and unique output method minimize noise levels.
The differential drive system removes noise superimposed on the signal applied to the speaker.





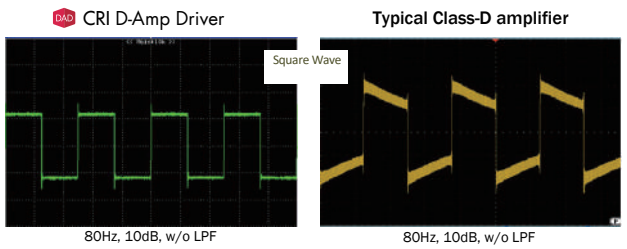
Faithful Hi-Fi Reproduction

Enables more faithful reproduction of the original sound, especially at low frequencies.



100Hz 0dB Level:2.976V LPF fc=18kHz

100Hz 0dB Level:2.991V LPF



80Hz, 10dB, w/o LPF

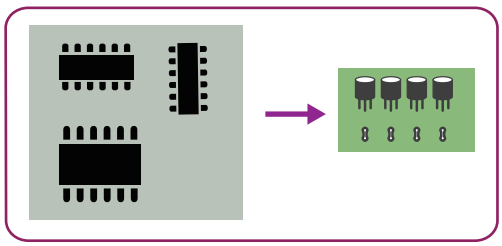
80Hz, 10dB, w/o LPF

Our Measurements

4 Easy Implementation

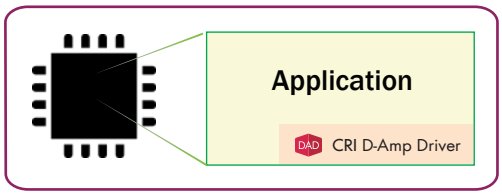
Component Cost Reduction

Just a simple H-bridge circuit—just transistors and a few resistors—is required in addition to the MCU, significantly lowering overall component costs.



Compact Software Module

The software implemented in the MCU is a lightweight, compact module with minimal processing load, making it easy to integrate even in environments with limited resources.



Comprehensive Hardware Compatibility (Outputs & MCUs)

Multiple Audio Devices Support

Speaker

Music (Hi-Fi), Voice, Chime

High efficiency
CD-quality sound reproduction

Home & Car Audio, Automotive & Industrial Equipment, Portable & Consumer Electronics, PA & Amusement Systems

Piezo Buzzer

Warning Sounds, Chime

Operates on battery power
Reliable even in harsh environments

Safety & Residential Equipment, Healthcare & Office Devices

Exciter

Vibration, Bass

High driving force
Operates reliably even in harsh environments

Automotive & Industrial Equipment, Healthcare Devices

Verified MCU and FPGA

Manufacturer	Verified MCU and FPGA
Infineon	F2MC-16FX,FR81S,FM0+,FM3, FM4,PSoC,PRoC,Traveo
Renesas	SuperH,RL78,RX,RZ,RA,RE RH850,R-Car
TOSHIBA	TZ2100,TXZ3,TXZ4

Manufacturer	Verified MCU and FPGA
STMicro	STM32
NXP	Kinetis,LPS
Microchip	PIC24F,SAM,dsPIC33
NORDIC	nRF52,nRF54
Efinix	Titanium series (FPGA)

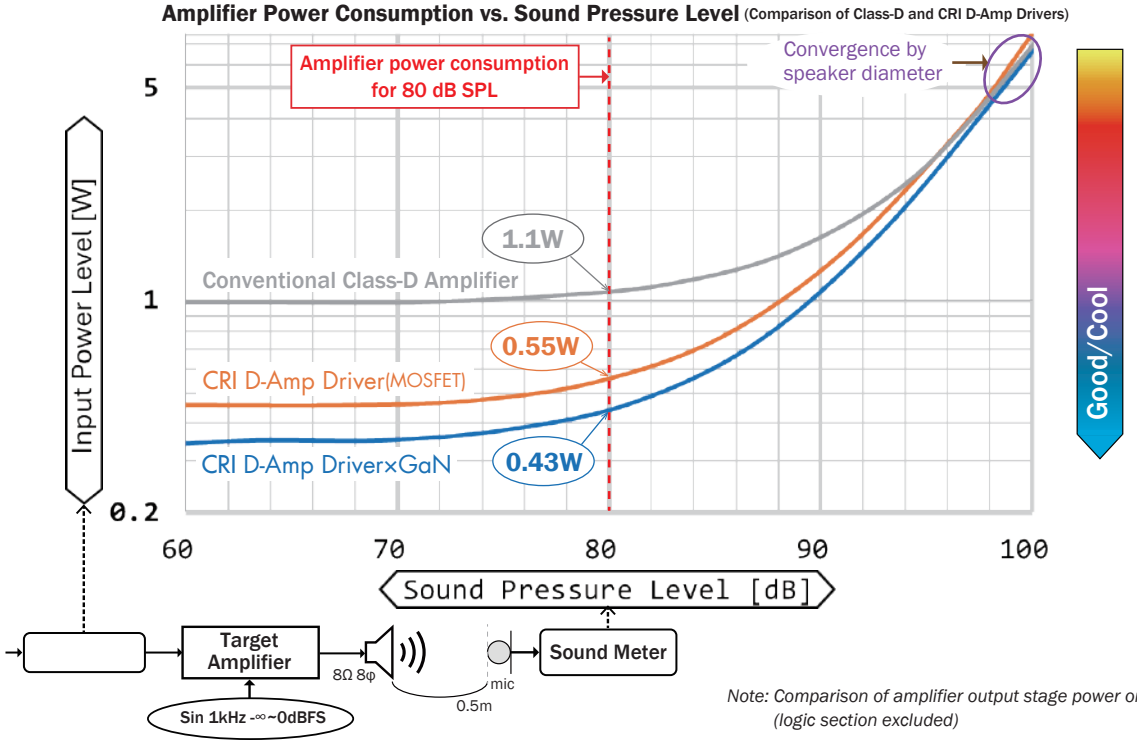
We can also provide support tailored to the MCU you use. For details, please feel free to contact us.

Power Saving

About 50% Lower Power Consumption (Up to 60% Less with GaN FETs)

Compared to conventional Class-D amplifiers, the same sound pressure can be achieved with approximately 60% less power consumption (based on our measured data).

Amplifier Power Consumption vs. Sound Pressure Level (Comparison of Class-D and CRI D-Amp Drivers)

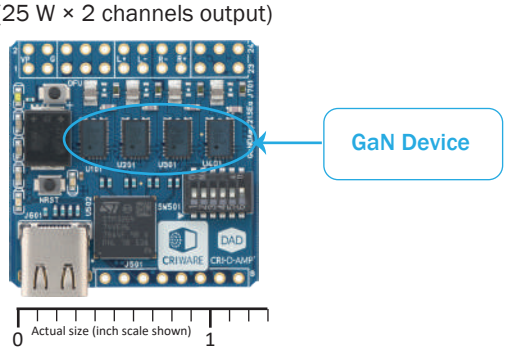


Note: Comparison of amplifier output stage power only (logic section excluded)

CRI D-Amp Driver × GaN

By using Gallium Nitride (GaN) FETs in the H-Bridge circuit of the CRI D-Amp Driver, achieves about 60% lower power consumption compared to conventional Class-D amplifiers, as shown above.

Actual Size: 1.3 × 1.3 inch
(25 W × 2 channels output)



Full-Digital Ultra-Compact Audio Amplifier Design

Product Website

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https://www.cri-mw.co.jp

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