## Analog-input Class-D amplifiers for replacing traditional analog audio power stages

### Product Positioning

A suitable product group for customers whose host controller already provides analog audio output and who want a simple system architecture while improving efficiency, reducing heat and extending playback time.

### Core Value

- Analog input makes replacement of traditional amplifier designs easier and can reduce board-change pressure.
- Class-D high-efficiency output fits portable speakers and high-power battery-powered audio products.
- Dynamic boost / Class-H architecture can regulate supply voltage according to the audio envelope.
- The product family covers a broad power range, from cost-sensitive to high-power thermal designs.

### Representative Models / Directions

| Model | Function / Spec Summary | Suitable Scenario |
|---|---|---|
| **ACM3106 / ACM3107** | 2 x 20 W class analog amplifiers | Cost-sensitive low- to... |
| **ACM3108** | Approx. 2 x 20 W / 2 x 25 W analog-input amplifier | Below 16 V, balanced... |
| **ACM3128A** | 2 x 42 W analog-input amplifier | Alternative direction for... |
| **ACM3129A** | 2 x 57 W high-power analog-input amplifier | Trolley speakers... |
| **PBTL Configuration** | Can be configured as higher-power mono output | Subwoofers and... |

### Typical Applications

Bluetooth Speakers | Trolley Speakers | Karaoke Speakers | Professional Speakers | Soundbars | Battery Audio Devices

# ACME | Analog Audio Amplifiers

Analog Audio Amplifier



## Customer Visit Talking Points

- If customers only have analog audio output from the main controller, start with analog-input amplifiers to reduce redesign effort.
- If battery life is the concern, emphasize the system value of dynamic boost plus efficient Class-D output.
- If heat is the complaint, discuss efficiency, Rdson, speaker impedance and thermal layout together.

## Selection Checklist

- Confirm input signal level and interface type
- Confirm 4 ohm / 6 ohm / 8 ohm load and THD+N power target
- Confirm whether PBTL mono high-power output is needed
- Confirm thermal method: PCB heat spreading or top-side heat sink

## Recommended Sales Scenarios

- The customer project matches the typical applications in this category.
- The existing design has heat, noise, EMI, battery-life or BOM-complexity issues.
- The customer wants local alternatives, shorter debugging cycles or technical support.
- Use "model + application + pain point" to quickly narrow down a product direction.

## Customer Requirement -> Recommended Direction

| Customer Pain Point | Key Questions | Recommended Approach |
|---|---|---|
| Insufficient output power / SPL | Speaker impedance, target THD+N, supply voltage | Select from Analog Audio Amplifiers by power class |
| Heat or battery-life issue | Battery cell count, playback time, heat-dissipation area | Consider Class-H / high efficiency / boost collaboration |
| Design-in risk | Package, lead time, software/debug support | Recommend mature models + demo + reference design first |

Reference: ACME official product page and public product selection materials. Final specifications should be verified with the latest datasheets.