Synchronous boost power solutions for battery-powered audio and portable devices

Product Positioning

Boost converters can work with audio amplifiers to build a complete battery + boost + Class-H amplifier solution. They are suitable for single-cell or dual-cell lithium battery Bluetooth speakers, portable audio products and high-power battery devices.

Core Value

- Supports single-cell and dual-cell lithium battery boost to meet the dynamic PVDD needs of audio amplifiers.
- Fully integrated synchronous boost solutions can reduce external MOSFETs and save PCB area.
- External-MOS synchronous controllers are suitable for higher-voltage and higher-power designs.
- When paired with Class-H amplifiers, supply voltage can be adjusted dynamically according to the music signal.

Representative Models / Directions

Model	Function / Spec Summary	Suitable Scenario
ACM5618	Fully integrated synchronous boost, approx. 2.7 V-17 V input, 4.5 V-18 V output	Single-/dual-cell battery...
ACM5618L / ACM5620	Versions with different output-voltage and current capability	Higher-power portable...
ACM5807	3 V-36 V input, 5 V-36 V output, synchronous boost controller	High-voltage high-power...
ACM5412	2.7 V-7 V input, 2.5 A charging, 2-3 cell battery	Battery charging...

Typical Applications

Bluetooth Speakers | Trolley Speakers | Portable Audio | Power Banks | POS Terminals | Portable Devices

Customer Visit Talking Points

- If speaker battery life is insufficient, compare fixed boost with dynamic boost architecture.
- If board temperature is high, discuss boost efficiency, amplifier efficiency and PVDD dynamic range.
- If customers want a complete system proposal, recommend amplifier, boost converter and charger together.

Selection Checklist

- Confirm battery cell count and minimum / maximum voltage
- Confirm VOUT, maximum power and peak current
- Confirm whether external MOS or fully integrated MOS is required
- Confirm soft-start, current limit, compensation, OVP/OCP/OTP protection needs

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 Boost Converters 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.