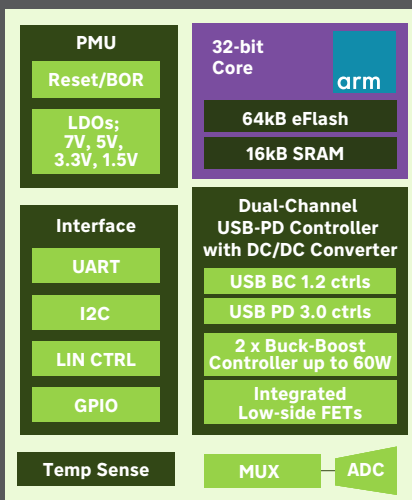


iND87300

Highly Integrated Dual-Channel USB Power Delivery System

iND87300 Features

- 60W integrated standalone dual-channel USB-PD Controller
- 2x synchronous DC/DC buck-boost controllers with low-side FETs
- USB BC 1.2 and USB PD 3.0 controllers
- Supports BC 1.2 DCP, CDP, and proprietary charging modes
- Internal temperature monitor
- GPIO with PWM, UART, LIN, and LED drivers
- Supports Type A + Type C connectors
- Qualified to AEC-Q100 grade 1
- Available as a complete reference design



Applications

- Automotive USB-PD dedicated charging ports
 - Head unit charger
 - Driver and passenger charging station
 - Rear-seat entertainment consoles and chargers
- Automotive USB-PD charging downstream ports with external USB host controller

The iND87300 is a dual-channel USB-PD controller with integrated buck-boost that supports USB battery charging (BC1.2) and USB power delivery (PD 2.0/3.0). It is a unique, full-system solution that integrates the low-side FETs and includes an Arm® Cortex® M0 core processor with 64kB Flash and 16kB SRAM to provide system control and flexibility.

iND87300 is fully compliant with BC1.2, as well as proprietary charging modes. It supports charging downstream port (CDP), downstream charging port (DCP) in addition to Apple and Samsung charging schemes. It includes VBAT voltage tolerance up to 40V, USB IO fault tolerant to VBAT and GND, and VBAT short-to-ground protection on the USB connectors.

The iND87300 includes a USB-PD PHY, and firmware stack and supports USB-C channel configuration and PD port control. The integrated 32-bit MCU with embedded Flash memory allows vendor-specific message configuration as well as field upgradeability and over-the-air (OTA) updates.

The iND87300 integrated buck-boost controller with co-packaged lowside power FETs (RDSON < 12mOhms) support maximum current up to 5A and can deliver up to 60W output power. The power controller has a programmable output between 3.3 and 21V and uses a spread-spectrum switching scheme to minimize EMI. It incorporates cycle-by-cycle current limiting with over-voltage, under-voltage, and over-temperature protection. It has a programmable reverse current limit, VBUS slew rate, soft-start timer, and operates at >95% efficiency.

This device is fully qualified to AEC-Q100 Grade 1 and contains ESD protection for all data and CC pins: 8kV HBM and 15kV air (IEC 61000-4-2). indie offers a complete reference design with all the components, including the mechanical package, to rapidly develop a USB-PD solution.

Ordering Information

Device Name	Platform	Temp Range	Package	Pins
iND87300	Automotive	-40C to +125C	8.8x10 mm QFN	44 Pins @ 0.5 mm Pitch

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