Product Brief
ENG6107 | Rev. 1.0

iND87200

In-Cabin Automotive Wireless Charging IC

The iND87200 is a highly integrated IC designed specifically for automotive in-cabin wireless charging applications. This device is compliant with the Wireless Power Consortium (WPC) 1.3 specification and enables support of the emerging maximum power point (MPP) wireless charging feature. An integrated boost converter can deliver up to 15W of power across the entire VBAT operating range.

Furthermore, iND87200 integrates advanced power sensing circuitry that monitors system impedance and phase in real-time. This advanced feature allows system designers the capability to optimize tuning and algorithms. This enables intelligent features such as adaptive foreign object detection not otherwise possible in alternative solutions.

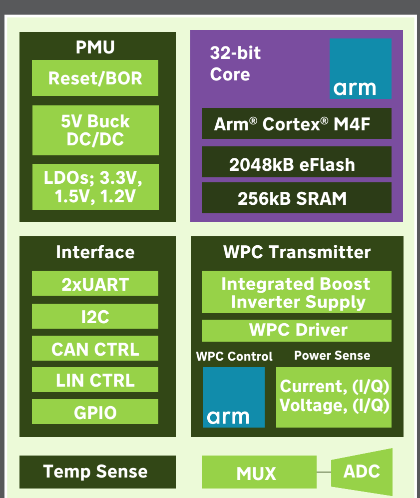
With a wide operating voltage and flexible power control, the iND87200 allows for greater flexibility to implement a wider range of AM filter topologies. Its unique amplitude-shift keying (ASK) demodulation engine enables robust operation over different filtering and coil matching combinations.

The iND87200 dual-core design combines an Arm® Cortex® M4F processor with 2MB of embedded Flash and 256kB of SRAM with a dedicated Arm® Cortex® M0 processor for the WPC stack. This frees the device to execute user-specific software without compromising the timing and interrupt constraints related to the WPC stack. The device has integrated power management capabilities that enable it to connect directly to an automotive power bus. It also contains a wide range of serial interfaces such as CAN 2.0B, LIN, I²C, and UARTs, supporting multiple connectivity options to the vehicle and other peripherals.

The iND87200 is qualified to AEC-Q100 Grade 2. Development kits are available to accelerate the design and production process and include both full-bridge and half-bridge evaluation boards, as well as an interactive GUI with real-time monitoring of relevant system information.

iND87200 Features

- Qi 1.3.2 compliant, Qi 2.0 compatible
- MPP compatibility
- Integrated WPC driver
- Dual Arm® Cortex® M0 and Arm® Cortex® M4 core processors
- Flexible half-or full-bridge configuration
- Integrated PMU
- Supports various interfaces: I²C, SPI, SWD, and UART
- Multiple coils supported
- Overvoltage protection
- Integrated buck regulator generates all required bias voltages
- Integrated boost regulator
- 2MB Flash memory
- NTC temperature monitoring
- ESD protection



Applications

- Wireless charging:
  - Console
  - Driver, passenger, and rear passenger hubs
  - Executive seats

Ordering Information

Device Name	Platform	Temp Range	Package	Pins
iND87200	Automotive	-40C to +105C	12x12 mm QFN	102 Pins

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