

## Product brief

# AURIX™ – wireless power controller

## Enabling wireless charging transmitter applications

Infineon's AURIX™ wireless power controller, based on the TriCore™, provides a flexible platform for high performance, smart and safe wireless charging applications.

The AURIX™ wireless power controller helps the next-generation in-cabin wireless charging systems meet strict automotive safety, security, environmental and regulatory requirements, while still enabling industry-leading charging performance and efficiency. This controller works seamlessly with Infineon's power and interface devices to provide a complete charging solution for smartphones and other connected devices.

### Key benefits

- › Supports 15 W charging and all existing standards, including 7.5 W and fast charge smartphones
- › Easily support future standards with a software update
- › Single MCU supports wireless charging, system application, CAN and external NFC interface
- › Infineon power drive stage improves EMI performance 10–15 dB over existing solutions
- › Foreign Object Detection (FOD) with improved accuracy quality-factor monitoring
- › Foreign Object Detection (FOD) capability can be extended beyond existing standards to improve detection
- › Supports custom coils, and greater than three coils
- › Supports charging two devices using a single controller
- › Full power charging with a 6–19 V input supply
- › Built in security functionality meets latest automotive requirements

### Key features

#### Features SAK-TC212S-8F133SC

- › TriCore™ with 133 MHz
- › TriCore™ DSP functionality
- › 0.5 MB flash w/ECC protection
- › 64 KB EEPROM at 125 k cycles
- › Up to 56 KB RAM w/ECC protection
- › 16x DMA channels
- › 24x 12-bit SAR ADC converter
- › Powerful Generic Timer Module (GTM)
- › 4x SENT sensor interfaces
- › State of the art connectivity: 2x LIN, 4x QSPI, 3x CAN including data rate enhanced CAN FD
- › Single voltage supply 3.3 V
- › TQFP-80 package
- › On demand:
  - 100/144 pin package
  - TC22xSC, TC23xSC

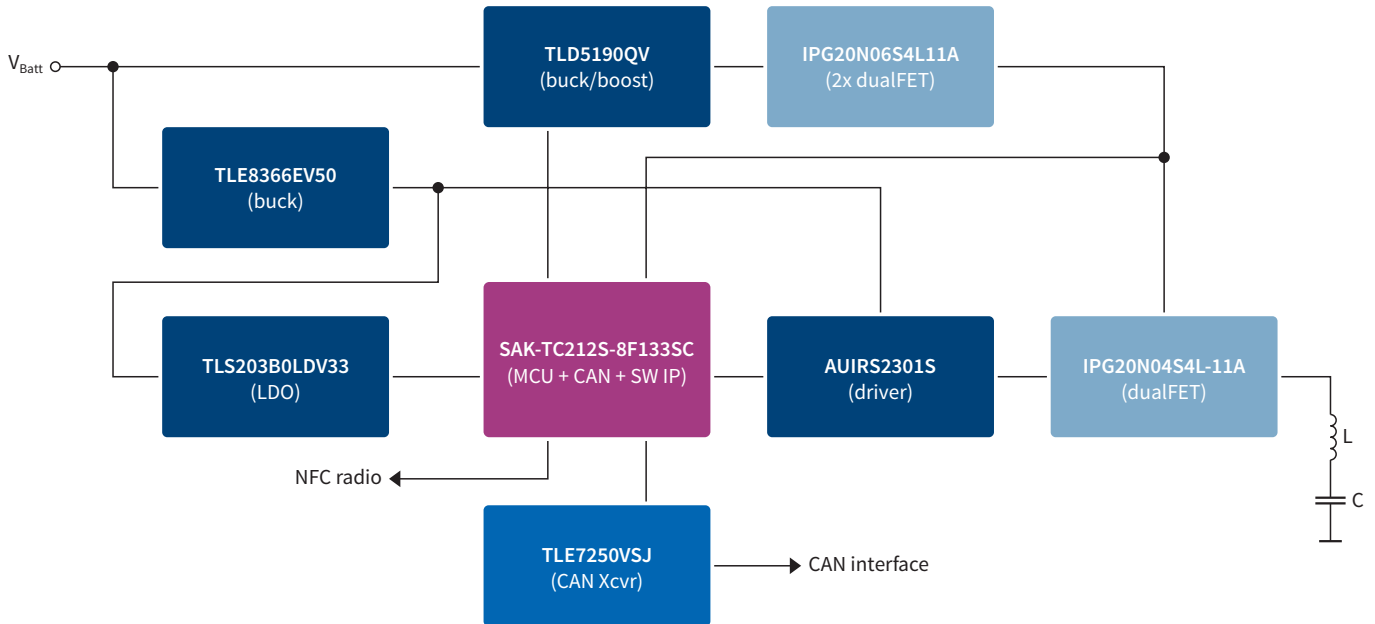
#### Transmitter features

- › Supports 15 W power output
- › Multiple industry standard and custom charging profiles using the same hardware architecture
- › Single and multi-coil architectures
- › Full-bridge support
- › Fixed frequency transmitter types
- › Buck/boost topology for support of full automotive power supply range

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## Application diagram



Single-coil automotive in-cabin charger. Also supports multi-coil designs.

## Product summary

Type	eFlash [KB]	Data flash [KB]	Frequency [MHz]	SRAM [KB]	Package	Temp. range [°C]	Remarks
SAK-TC212S-8F133SC	512	64 <sup>2)</sup>	133	56	TQFP-80	-40 ... +125	Including wireless charging IP
SAK-TC213S-8F133SC <sup>1)</sup>	512	64 <sup>2)</sup>	133	56	TQFP-100	-40 ... +125	Including wireless charging IP
SAK-TC222S-16F133SC <sup>1)</sup>	1000	96 <sup>2)</sup>	133	96	TQFP-80	-40 ... +125	Including wireless charging IP
SAK-TC223S-16F133SC <sup>1)</sup>	1000	96 <sup>2)</sup>	133	96	TQFP-100	-40 ... +125	Including wireless charging IP
SAK-TC224S-16F133SC <sup>1)</sup>	1000	96 <sup>2)</sup>	133	96	TQFP-144	-40 ... +125	Including wireless charging IP
SAK-TC233S-32F200SC <sup>1)</sup>	2000	128 <sup>2)</sup>	200	192	TQFP-100	-40 ... +125	Including wireless charging IP
SAK-TC234S-32F200SC <sup>1)</sup>	2000	128 <sup>2)</sup>	200	192	TQFP-144	-40 ... +125	Including wireless charging IP
SAK-TC237S-32F200SC <sup>1)</sup>	2000	128	200	192	LFPGA-292	-40 ... +125	Including wireless charging IP

1) On request

2) EEPROM emulation (up to 125 k w/e cycles)

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