

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

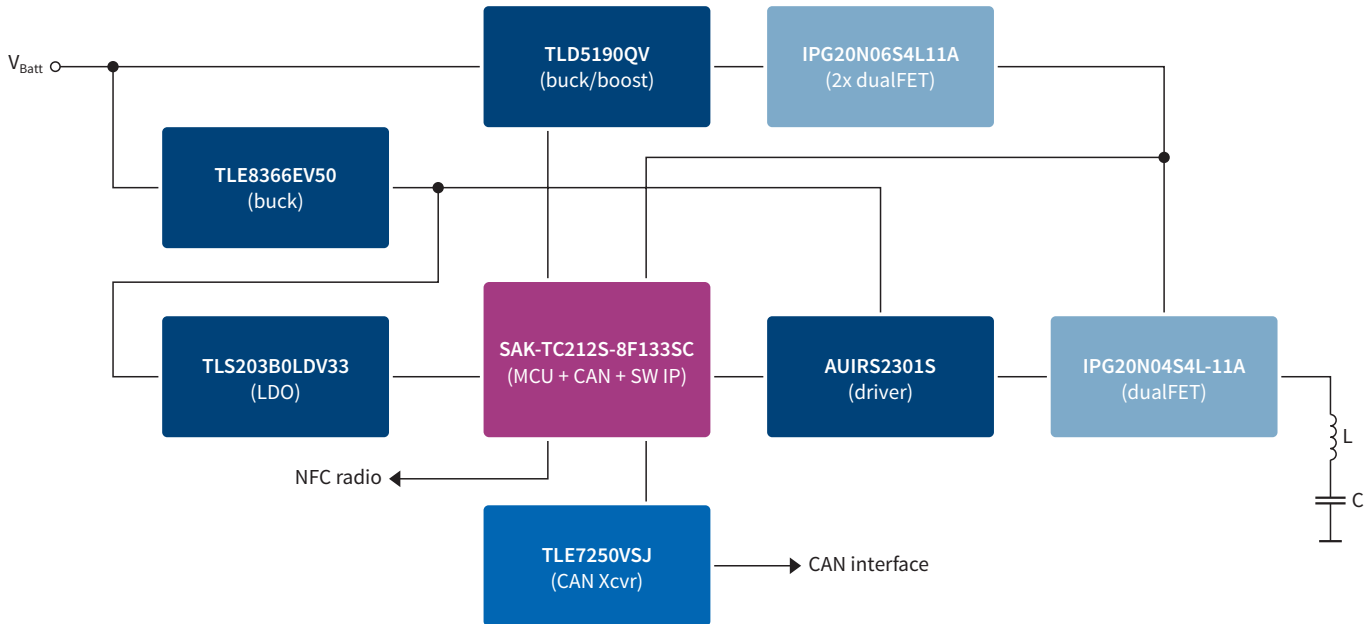
Transmitter features

- › 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

AURIX™ – wireless power controller

Enabling wireless charging transmitter applications

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 ²⁾	133	56	TQFP-80	-40 ... +125	Including wireless charging IP
SAK-TC213S-8F133SC ¹⁾	512	64 ²⁾	133	56	TQFP-100	-40 ... +125	Including wireless charging IP
SAK-TC222S-16F133SC ¹⁾	1000	96 ²⁾	133	96	TQFP-80	-40 ... +125	Including wireless charging IP
SAK-TC223S-16F133SC ¹⁾	1000	96 ²⁾	133	96	TQFP-100	-40 ... +125	Including wireless charging IP
SAK-TC224S-16F133SC ¹⁾	1000	96 ²⁾	133	96	TQFP-144	-40 ... +125	Including wireless charging IP
SAK-TC233S-32F200SC ¹⁾	2000	128 ²⁾	200	192	TQFP-100	-40 ... +125	Including wireless charging IP
SAK-TC234S-32F200SC ¹⁾	2000	128 ²⁾	200	192	TQFP-144	-40 ... +125	Including wireless charging IP
SAK-TC237S-32F200SC ¹⁾	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)

Published by
Infineon Technologies AG
81726 Munich, Germany

© 2019 Infineon Technologies AG.
All Rights Reserved.

Please note!

THIS DOCUMENT IS FOR INFORMATION PURPOSES ONLY AND ANY INFORMATION GIVEN HEREIN SHALL IN NO EVENT BE REGARDED AS A WARRANTY, GUARANTEE OR DESCRIPTION OF ANY FUNCTIONALITY, CONDITIONS AND/OR QUALITY OF OUR PRODUCTS OR ANY SUITABILITY FOR A PARTICULAR PURPOSE. WITH REGARD TO THE TECHNICAL SPECIFICATIONS OF OUR PRODUCTS, WE KINDLY ASK YOU TO REFER TO THE RELEVANT PRODUCT DATA SHEETS PROVIDED BY US. OUR CUSTOMERS AND THEIR TECHNICAL DEPARTMENTS ARE REQUIRED TO EVALUATE THE SUITABILITY OF OUR PRODUCTS FOR THE INTENDED APPLICATION.

WE RESERVE THE RIGHT TO CHANGE THIS DOCUMENT AND/OR THE INFORMATION GIVEN HEREIN AT ANY TIME.

Additional information

For further information on technologies, our products, the application of our products, delivery terms and conditions and/or prices, please contact your nearest Infineon Technologies office (www.infineon.com).

Warnings

Due to technical requirements, our products may contain dangerous substances. For information on the types in question, please contact your nearest Infineon Technologies office.

Except as otherwise explicitly approved by us in a written document signed by authorized representatives of Infineon Technologies, our products may not be used in any life-endangering applications, including but not limited to medical, nuclear, military, life-critical or any other applications where a failure of the product or any consequences of the use thereof can result in personal injury.