PRODUCT BRIEF

OPTIGA™ Trust Charge Automotive

The trusted authentication solution for Qi wireless charging in cars

An increasing number of products and applications are designed to support wireless charging. Wireless charging is easy and convenient, but the wrong power supply can harm a device. The wireless charging technology used should offer proven interoperability with common handhelds. There are many reasons why the Qi wireless charging standard is increasingly emerging as the standard of choice for automotive applications.

The new wireless charging authentication solution for in-car devices
Infineon offers the OPTIGA™ Trust Charge Automotive turnkey solution for secured authentication of in-car wireless charging devices. OPTIGA™ Trust Charge Automotive supports device authentication for inductive wireless charging in full compliance with the latest Qi wireless charging standard. Qi authentication with OPTIGA™ Trust Charge Automotive contributes to device safety, enabling tier 1 s and OEMs to invest into future-proof security (Based on CC EAL 6+ (high) certified hardware) and reduced risks regarding in-field maintenance.

The Qi wireless charging standard
Issued by the Wireless Power Consortium (WPC), the Qi standard governs wireless charging of electronic devices. WPC members collaborate with a common purpose, namely to promote worldwide compatibility of all wireless chargers and wireless power sources. The latest Qi standard mandates a secure storage subsystem (= secure element) inside the charger for fast charging (5-15 W, EPP). With the help of this secure storage subsystem, the chargers have to authenticate to the devices to prove their authenticity and compliance with the standard. Devices and wireless chargers are thoroughly tested for safety, reliability, and compatibility with all other Qi products before they can receive Qi certification so users can look forward to a seamless, satisfying wireless charging experience.

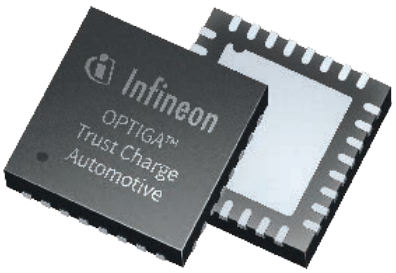
Enhanced security
The OPTIGA™ Trust Charge Automotive authentication solution is based on CC EAL 6+ (high) certified hardware, thus exceeding the requirements of the Qi standard. Infineon is able to provide personalization and injection of WPC-mandated certificates and keys at its secured and certified production environment, making it easy for customers to build in security capabilities.

Key features

- WPC QI authentication (Qi2 and higher)
- Based on CC EAL 6+ (high) certified hardware
- AEC-Q100 qualification
- ECDSA P-256 authentication
- NIST P-256, SHA-2 cryptography
- SPI protocol
- VQFN package
- Full turnkey solution including drivers, software library, and provisioning with keys and certificates according to WPC requirements

Applications

- Mobile phones, tablets,
- Accessories and other small personal electronic devices supporting wireless charging according to the Qi standard



www.infineon.com/OPTIGA-Trust-Charge-Auto

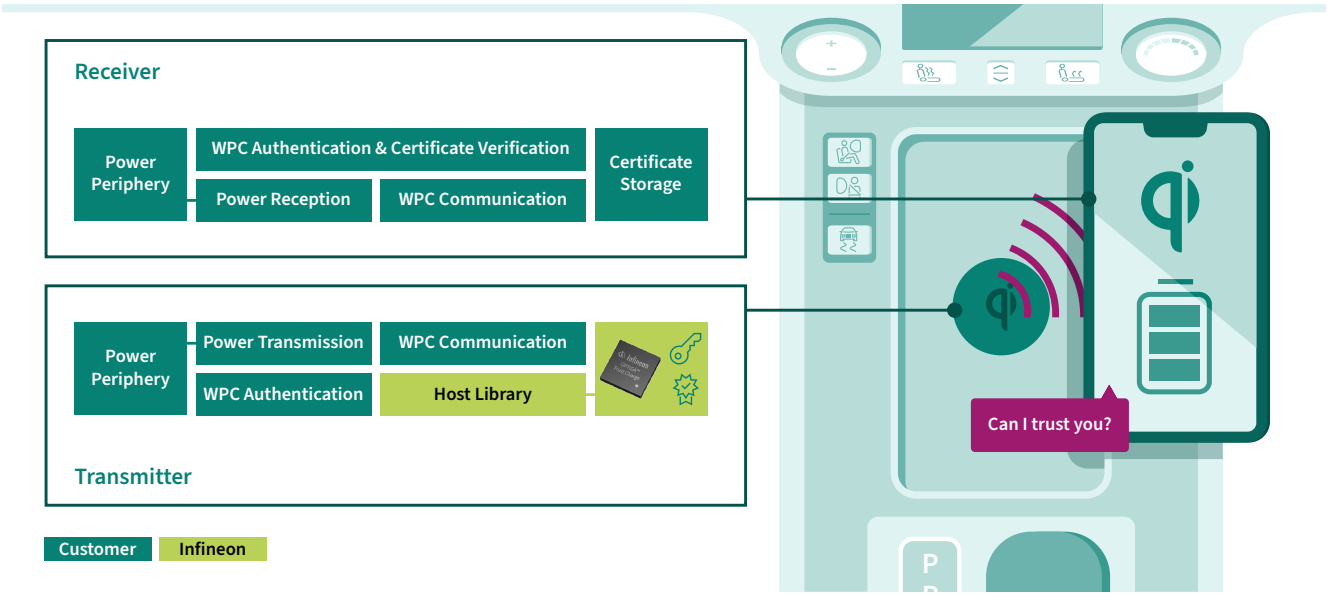
Fast and easy integration

This turnkey solution – with full system integration support and all key and certificate material preprogrammed – minimizes customer effort for design, integration, and deployment. OPTIGA™ Trust Charge Automotive comes with preprogrammed OS/application code and host-side modules to integrate with host microcontroller software. Integration support includes an evaluation board and documentation for rapid design-in.

Benefits

- Exceeds WPC's security requirements
- Easy integration thanks to complete, turnkey solution including embedded software, host software, a development board and documentation
- Preloading of WPC-specific personalized keys and certificates at secured Infineon fabs and backends to simplify key logistics and security integration in full compliance with Qi authentication.

Infographic OPTIGA™ Trust Charge Automotive



Product summary

Sales code	Package	SP number for sample ordering	Target applications
SLS37CSAE20TC	VQFN-32 (SPI only)	SP005734532	Qi authentication

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