

Quick start guide

Reference design – 15 W Qi transmitter (Tx) for charging smartphones

REF_10WTX_QI_4102

Features

- Up to 15 W wireless power transfer
- WPC Qi v1.2.4 certified
- Fixed frequency power transfer
- Supports fast charging for Samsung and Apple phones
- MP-A11 coil configuration
- V_{IN} range: 9-12 V
- 83% peak efficiency
- To be operated with Q.C. 3.0 adapter
- Improved accuracy of foreign object detection (FOD)
- Cost-optimized architecture with low BOM count
- Two LED indicators for power transfer and fault conditions
- EMC, CISPR 22 compliant with no EMI choke
- 25°C to +85°C temperature range

Key Infineon products

- Wireless power controller XMC™-SC (XMC6521SC-Q040X)
- OptiMOS™ 40 V (BSZ097N04LS)
- EiceDRIVER™ 1EDN (1EDN7512B)
- Wireless charging driver IC (WCDSC006)
- Monolithically integrated low-drop voltage regulator (IFX20002MB V33)
- OptiMOS™ n-channel MOSFET (BSS138WH)

For more information visit:

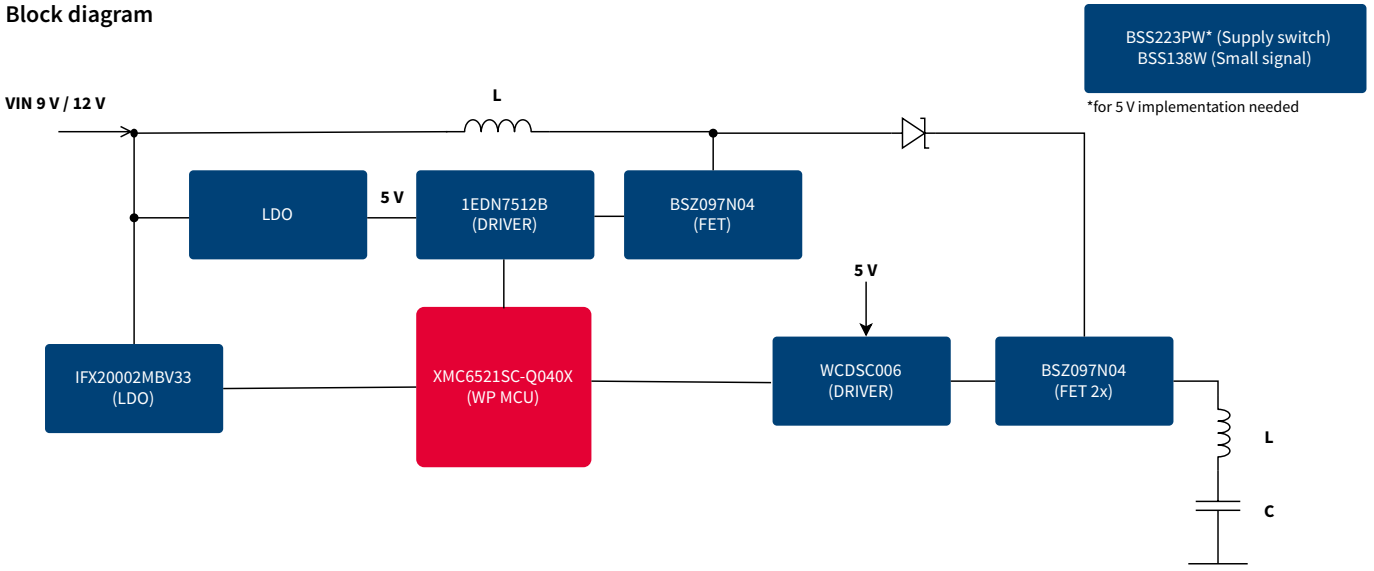
www.infineon.com/wirelesscharging

Operation

- Download expert documentation
- Remove REF_10WTX_QI_4102 from ESD bag
- Select appropriate AC plug and attach to DC power supply
- Plug DC power supply into REF_10WTX_QI_4102 and into AC outlet
- Place smartphone on charging surface
- Download GUI via partner Spark Connected: www.sparkconnected.com (optional)
- Install and start GUI (optional)
- Plug USB serial programming cable into computer and REF_10WTX_QI_4102 (optional)

Please note: The board supports an input voltage range of 9-12 V and is compatible with QC 2.0/3.0 adapters. The 5 V implementation is only available on demand.

Block diagram



Solution max. power capability [W]	Frequency	Input power supply	Topology	Power regulation method	Rx-Tx communication	Supports	Charging rates Rx	FOD measurements calculated Tx power	DC-DC efficiency	Dimension	Coil type
7.5 W / 10 W	fixed 127.8 kHz (Apple iOS), variable (Android)	USB QC 3.0 (9 V/ 12 V)	Boost topology (Half-bridge solution)	variable voltage Boost (added frequency control for Android)	In-band communication (bi-directional)	WPC 1.2.4 EPP	Up to 15 W	Direct AC measurements at coil	83%	L: 85 mm W: 50 mm H: 6.4 mm Active Area: L: 45 mm W: 40 mm	MP-A11

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Spark Connected Inc. is our official partner for Wireless Charging.
The software IP is provided by our partner.

For details visit:
www.sparkconnected.com

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