22W wireless power transmitter with integrated USB PD and certified Qi® EPP

WCT-15W1CFFPD Qi Wireless Charging Transmitter Solution

The 22-watt, Qi-certified WCT-15W1CFFPD transmitter solution enables the convenience of fast and safe wireless charging for all of the latest Qi smartphones.

TARGET APPLICATIONS

- Qi mobile phone charging
- Home appliance
- Medical Devices

OVERVIEW

Based on NXP's MWCT101x wireless charging IC, WCT-15W1CFFPD platform provides efficient and safe wireless power delivery for Qi smart devices. Using the MP-A11* topology with Extended Power Profile (EPP), 22W system architecture, WCT-15W1CFFPD leads the market to enable fast wireless charging. The design is optimized for iPhone and supports other popular fast charging schemes.

This fully certified Qi hardware reference design includes professional grade Qi-certified application software libraries.

*MP-A11 topology was defined and developed by NXP

KEY FEATURES

- MWCT101x wireless charging ICs
- MP-A11 Wireless Power Consortium (WPC) Qi EPP specification design
- NXP low power object detection technology or analog PING to detect a mobile device for charging while using the lowest possible standby power
- Accurate fixed-frequency control, operation frequency: 125 ± 5 kHz for Qi devices
- Integrated digital demodulation on chip
- USB PD stack integration
- Variable input power supports: 5V DC to 19V DC, PD+PPS adapter and QC adapter

NXP SUPPORT

NXP provides all the necessary hardware documentation: schematics, layout and assembly files, as well as a complete BOM. NXP also provides a firmware example project with a certified library that contains all the necessary wireless charging control blocks. Users access the library via an API which lets the user interact with parameters and settings contained in the firmware, providing maximum control to the users. Customers can apply a ready-to-use binary file from NXP or build an application around the firmware library.

DEVELOPMENT TOOLS

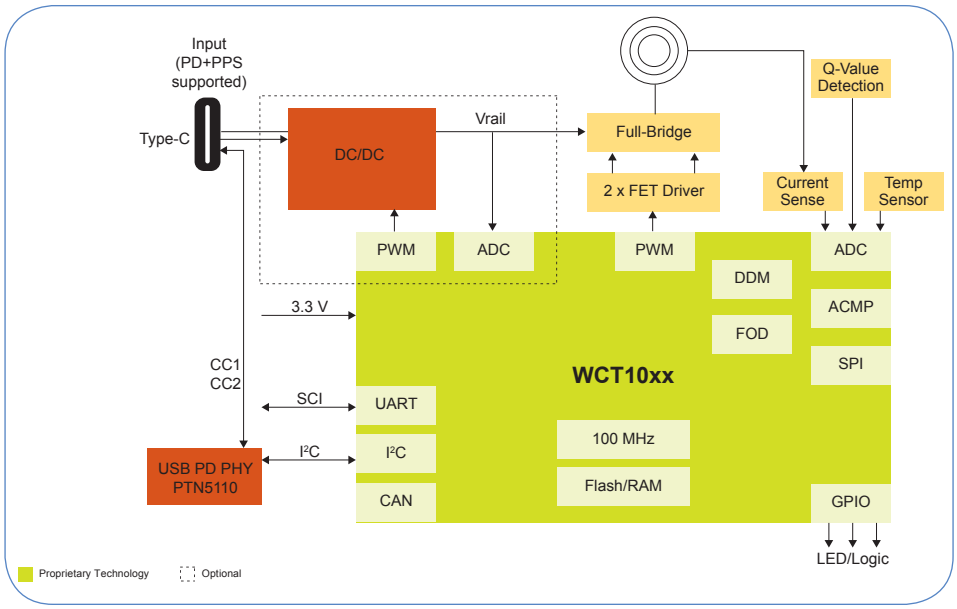
Eclipse-based CodeWarrior® Development Studio for Microcontrollers

A complete integrated development environment (IDE) provides a highly visual and automated framework to accelerate the development of the most complex embedded applications.

Easy-to-use Wireless Charging GUI

The easy-to-use FreeMASTER GUI tool has configuration, calibration and debugging functions to provide a user-friendly design experience and reduce time-to-market.

WCT-15W1CFFPD 22W WIRELESS POWER TRANSMITTER BLOCK DIAGRAM



WCT-15W1CFFPD FEATURES AND BENEFITS

Features	Benefits
Compliant with latest extended power profile WPC Qi® specification	Ensures end solution meets latest industry specification
Transfer efficiency greater than 75%	Maximizes energy transfer and lower thermal footprint
Meets Q-factor and latest power loss FOD requirements	Ensures foreign objects are detected and provides safety function
Supports any extended power profile transmitter	Offers a customizable platform, supported with easy to use tools
Low standby power	Low power operating modes translate into lower power consumption during periods of inactivity
On-chip digital demodulation	Lower system bill-of-materials (BOM) and greater performance
Supports operation frequency dithering technology	Eliminates interference and noise in radio, capacitive touch or speaker applications
Software based solution	Provides the maximum design freedom and customer product differentiation

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