WLC1150 MP-A2 50-W wireless power transmitter (REF_WLC_TX50W_N1) release notes

About this document

Scope and purpose

Thank you for your interest in the WLC1150 MP-A2 50-W wireless power transmitter (REF_WLC_TX50W_N1) reference solution. This solution demonstrates the functionality of the Infineon WLC1150 wireless charging transmitter controller. It supports 50-W wireless charging using Infineon's High-Power Proprietary protocol. It also implements the Qi 1.3.2 specification and supports 15-W wireless charging using Qi Extended Power Profile (EPP). For receivers that do not support EPP, it supports 5-W charging using Qi Basic Power Profile (BPP).

This document lists the reference board package contents, installation requirements, documentation, limitations, and known issues.

Intended audience

This document is intended for users of the REF_WLC_TX50W_N1 reference solution.

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1 Release contents

1.1 Reference board package contents



Figure 1 REF_WLC_TX50W_N1 reference board package contents

The WLC1150 50-W wireless power transmitter reference board package contains the following:

- WLC1150 50-W wireless power transmitter reference board (REF_WLC_TX50W_N1)
- 65-W PPS-compatible USB-C PD power adapter
- USB Type-C cable
- Infineon 50-W Rx board (REF_WLC_RX50W_N1)
- Host Programming Interface (HPI) dongle (HPI_DONGLE) for programming and debugging
- USB micro-B cable
- Quick start guide
- Jumper wires (x4)

Note: The following items may be required for evaluating the wireless power transmitter capabilities of the reference board. Note that these are not included in the reference board package.
1. Qi-compatible mobile phone/receiver
2. PC running Windows 10 or higher to run Infineon Wireless Charging Configuration Utility

1.2 REF_WLC_TX50W_N1 release package

Download the release package from the WLC product webpage. The release package includes the following documents and firmware:

1.2.1 Documentation

The documents include:

- Quick start guide
- Test report
- User guide
- WLC1150 datasheet
- Release notes (this document)

The hardware design files package includes:

- Schematics
- Bill of materials (BOM)
- Layout files

1.2.2 Firmware

The REF_WLC_TX50W_N1 reference solution supports five modes of operation. The release package includes three firmware files to support these modes. Table 1 describes the features supported in each mode and the associated firmware.

Table 1 Five modes of operation and the associated firmware

Mode #	Input power	Output power	Protocol	Firmware
1	20V Fixed DC (65 W)	50 W 20 V, 2.5 A	Infineon high power protocol	REF_WLC_TX50W_N1_FW_Mode1.hex
2	USB PD 20V PDO (65 W)	50 W 20 V, 2.5 A	Infineon high power protocol	REF_WLC_TX50W_N1_FW_Mode2-5.hex
3	USB PD 15V PDO (30 W)	15 W	Qi EPP - compatible	
4	USB PD 45W PPS (5 V to 16 V)	15 W	Qi EPP - compliant	
5	USB PD 45W PPS (5 V to 16 V)	7.5 W	iPhone 7.5 W charging	

Note: Make sure that the appropriate firmware is loaded on the 50W Tx reference board based on the features which need to be evaluated. Refer to the REF_WLC_TX50W_N1 User Guide to get more details about the procedure to download the firmware using the HPI Dongle and Wireless Charging Configuration Utility.

1.2.3 Wireless Charging Configuration Utility

Wireless Charging Configuration Utility supports the following key features:

1. Download firmware onto the 50-W Tx reference board.
2. Configure the firmware parameters and download the updated configuration onto the 50-W Tx reference board's flash memory.
3. Monitor and log the system parameters while the 50-W Tx reference board is operational.
4. Configure the firmware parameters dynamically and download the updated configuration onto the 50-W Tx reference boards' RAM.

The Wireless Charging Configuration Utility can be downloaded from the WLC product webpage. Install the utility on a Windows PC (Windows 10 or higher) and see the Utility User Guide for more details. In addition, see the reference REF_WLC_TX50W_N1 user guide to understand the usage of this utility.

1.3 Reference solution revision

This release is the second revision (Rev. *A) of the REF_WLC_TX50W_N1 reference solution. This revision of the solution uses REV04 of the REF_WLC_TX50W_N1 board. The board identifier (600-60631-01) and revision (REV04) are marked on the bottom silkscreen of the board.

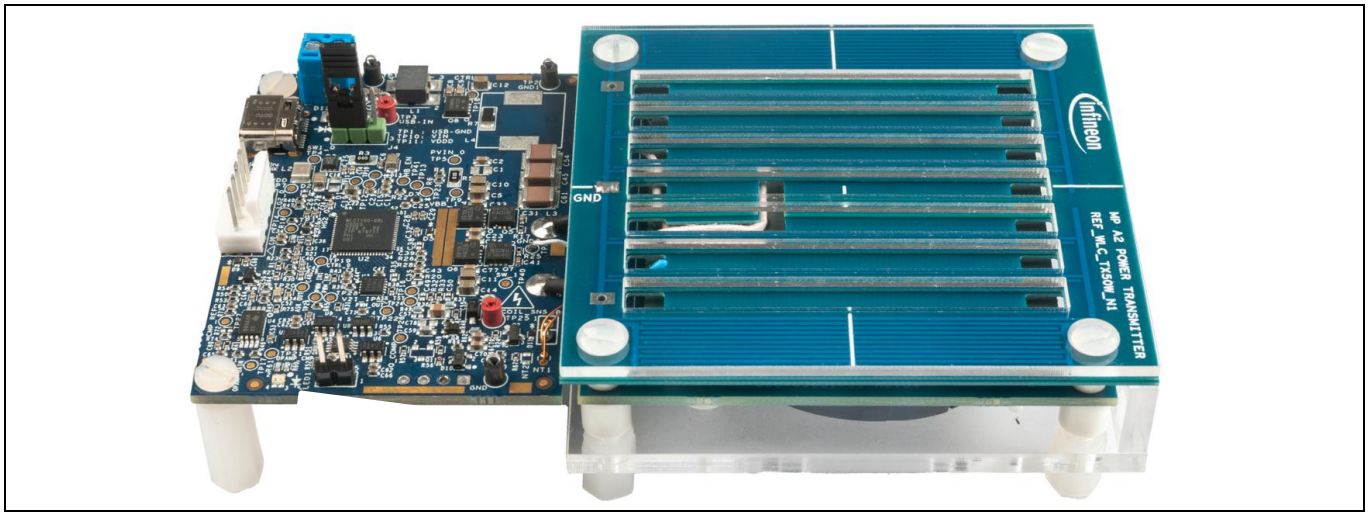


Figure 2 REF_WLC_TX50W_N1 board

1.4 Limitations and known issues

The following are the limitations and known issues in this revision of the REF_WLC_TX50W_N1 solution.

1.4.1 Known limitations

- Foreign Object Detection (FOD) in the Infineon proprietary high-power mode is measured to be 15-mm radius from the center of the Tx coil. The FOD tests are performed with a d_z of 3 mm on Tx and d_z of 1.5 mm on Rx.
- The REF_WLC_TX50W_N1 reference board with factory default firmware may exhibit timeout bound retry of Qi power contract under extremely noisy ASK modulated signal conditions with some phones and receivers. This does not affect the wireless charging performance.

1.4.2 Known issue

- **Issue:** While downloading the configuration data to the REF_WLC_TX50W_N1 board using the Dynamic Configuration feature of the Wireless Charging Configuration Utility, the download operation may fail occasionally with a DLL call error message. This issue does not occur while using the Static Configuration feature.
  Workaround: Power cycle the REF_WLC_TX50W_N1 board and repeat the Dynamic Configuration.
  Fix plan: This issue shall be fixed in future releases.

1.5 Silicon datasheet

The latest version of the WLC1150 datasheet can be downloaded from the WLC product webpage.

1.6 Technical support

Visit community.infineon.com to ask your questions in the developer community.

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