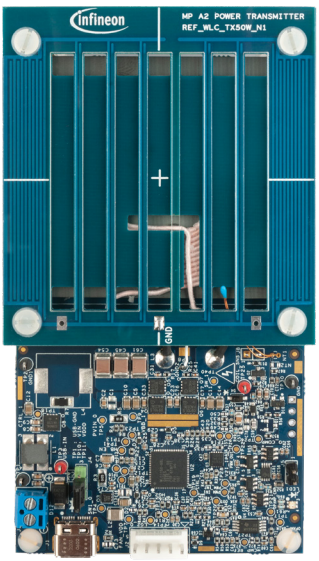
Quick start guide

WLC MP-A2 50-W wireless power transmitter reference board

REF_WLC_TX50W_N1

The WLC MP-A2 50-W wireless power transmitter reference board (REF_WLC_TX50W_N1) demonstrates the functionality of Infineon's 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).

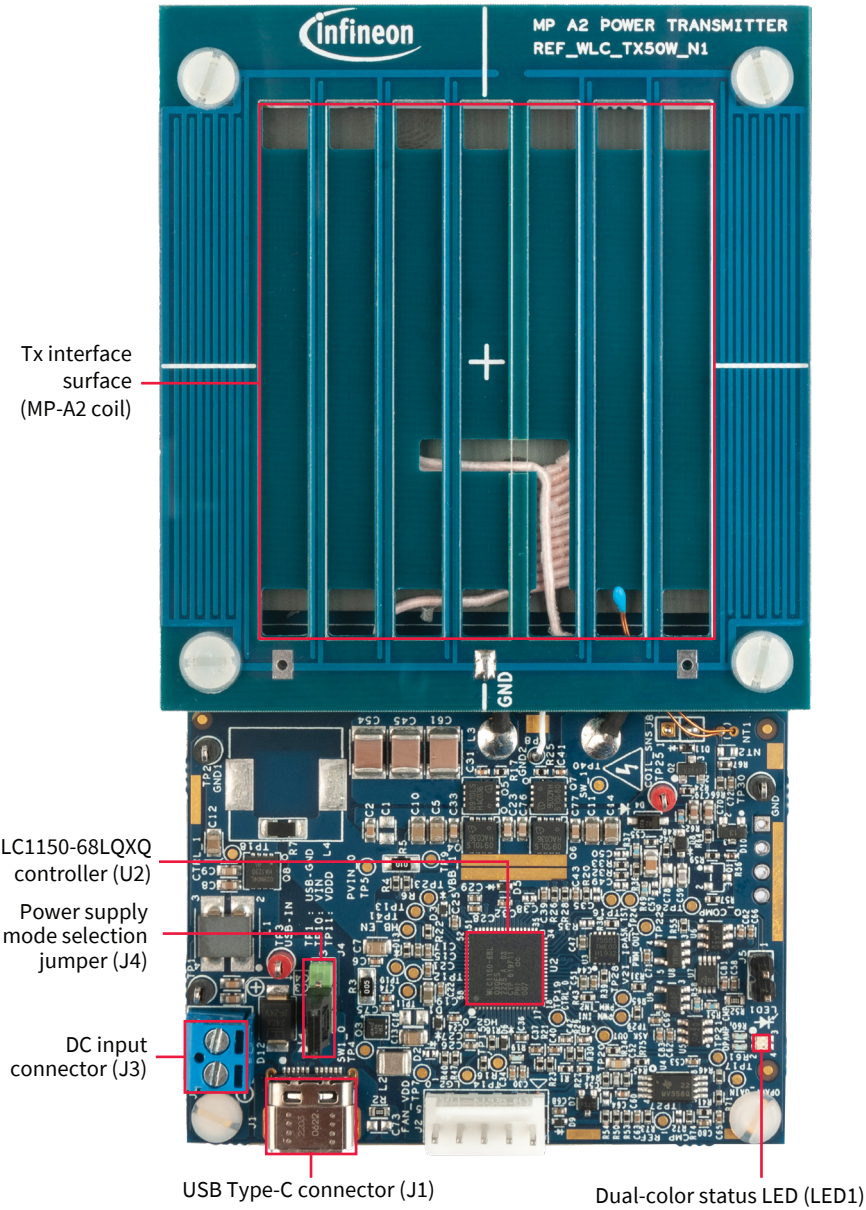
This reference board can be powered using a USB Type-C power adapter compliant with USB PD 3.1 Programmable Power Supply (PPS) specification (factory default mode for REF_WLC_TX50W_N1) or using a DC supply.



REF_WLC_TX50W_N1 board

Kit contents

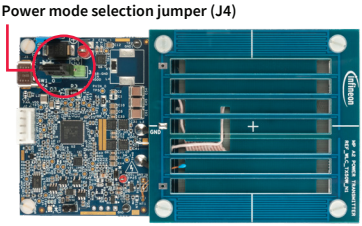
1. REF_WLC_TX50W_N1 reference board
2. 65-W PPS-compatible USB-C PD power adapter
3. USB Type-C cable
4. Infineon 50-W Rx board (REF_WLC_RX50W_N1)
5. HPI dongle (HPI_DONGLE) for programming/debugging
6. USB Micro-B cable for programming/debugging
7. Jumper wires (x4)
8. Quick start guide (this document)



REF_WLC_TX50W_N1 board interfaces

Before you start

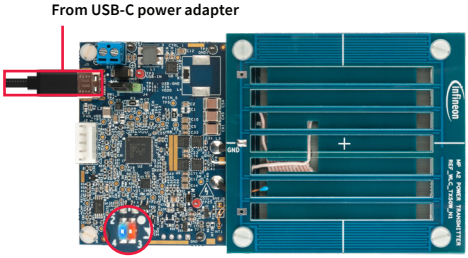
1. Ensure that a jumper shunt is placed at position 1 and 2 of the power mode selection jumper (J4) to power the board using USB-C PD adapter.
2. (Optional) Get a Qi-compatible phone/receiver to test the wireless power transfer functionality using the Qi protocol.



REF_WLC_TX50W_N1 board

Step 1: Hardware connection

1. Connect the USB-C power adapter to the USB Type-C connector (J1) of the Tx reference board.
2. Confirm that the status LED (LED1) blinks five times in blue and red. Now, the board is ready for use.

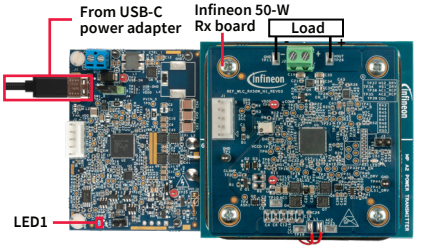


Powering the REF_WLC_TX50W_N1 board

Step 2: Start wireless power transfer using high power proprietary protocol

1. Place the Infineon 50-W Rx board on the Tx interface surface of the REF_WLC_TX50W_N1 board. Attach a load rated for 50-W to the terminals of the Rx board. Ensure that the load is in OFF state. The status LED (LED1) on the REF_WLC_TX50W_N1 board glows blue when power transfer is in progress.
2. Increase the load in maximum step of 20-W to exceed 40-W. Observe that the fan located on the bottom side of the REF_WLC_TX50W_N1 board turns on when power transferred exceeds 40-W or when the Tx interface surface temperature sensed by the thermistor on the REF_WLC_TX50W_N1 board exceeds 45°C.

   Note: Avoid short circuiting the output load terminals of the Rx board. This may result in damage to the Rx board.
3. During the power transfer the load on the Rx board can be varied up to 50-W. However the maximum load step size during application/removal should not exceed 20-W.
4. Observe that the status LED turns OFF when the receiver is removed or when the receiver communicates End of Power Transfer (EPT).



Wireless power transfer using high power proprietary protocol

See the following table for system states and corresponding status LED indications of the REF_WLC_TX50W_N1 reference board

System states and Status LED indications

System state	Status LED indication
Idle state	No LED indication
Configuration of power transfer parameters in progress	Blinks blue
Power transfer/charging is in progress	Glows blue
Power transfer/charge complete	No LED indication
Foreign object (FO) such as a metal coin/clip detected	Glows red until FO is removed
Fault during power transfer	Blinks red until the fault is cleared
Abrupt End of Power Transfer (EPT) initiated by the receiver	Blinks red

Next steps

1. Download the reference board release package from WLC product page (www.infineon.com/wirelesscharging-ics)
2. See the user guide to learn:
   - How to configure the firmware parameters and download them onto the Tx reference board using Wireless Charging Configuration Utility and HPI dongle
   - How to power the board using DC supply
   - About hardware design of the WLC1150-based REF_WLC_TX50W_N1 reference board
   - How to charge a Qi compatible phone/receiver

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