Freescale Semiconductor
User Guide

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WCT-15W1COILTX User Guide

1 Introduction

This document describes how to use 15W medium power wireless charger transmitter WCT-15W1COILTX designed by Freescale.

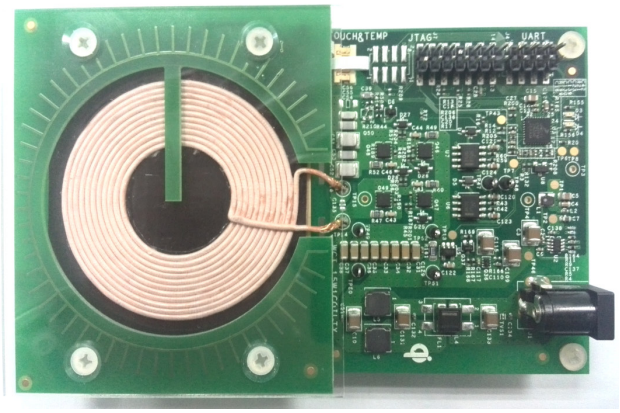

Figure-1 WCT-15W1COILTX

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2 System Features

The WCT-15W1COILTX reference board has following features:

- Compliant with WPC Qi specifications to support up to15W power transfer.
- Compliant with WPC low power (5W) specification.
- Integrated digital demodulation in chip.
- Supports two-way communication, transmitter to receiver by FSK and receiver to transmitter by ASK.
- Support multiple types RX modulation signals (AC capacitor, AC resistor and DC resistor).
- Support low power FOD.
- Super low standby power by Freescale touch technology.
- Support various power control techniques: frequency control, duty cycle control, phase shift control and topology switch.
- LED for RX and TX alignment indication.
- Input voltage/current, coil current sensing for protection.
- Free position charging.

3 Getting Started

WCT-15W1COILTX is easy to use, and can convenience to charging the mobile equipment that support the Qi wireless charging, below is the detail step to power up the system and use.

Step 1: power on the Transmitter, plug the 12V adaptor to the AC power line, and plug the adaptor output port to the transmitter input port, and the LED D4 will be blanking.

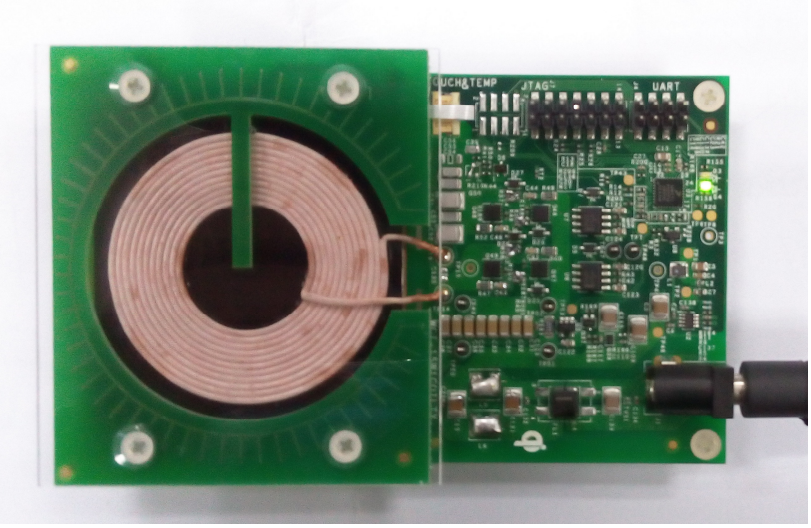

Figure-2 WCT-15W1COILTX powered on

Step 2: Place the wireless charging RX or some equipment that support the Qi wireless charger (such as cell phone, battery and so on) on the WCT-15W1COILTX's coil surface, then the transmitter will charge

the equipment, under the normal charging states, LED D4 will be turned on all the time, and LED D3 will be blanking, and the RX will powered on the equipment normally.

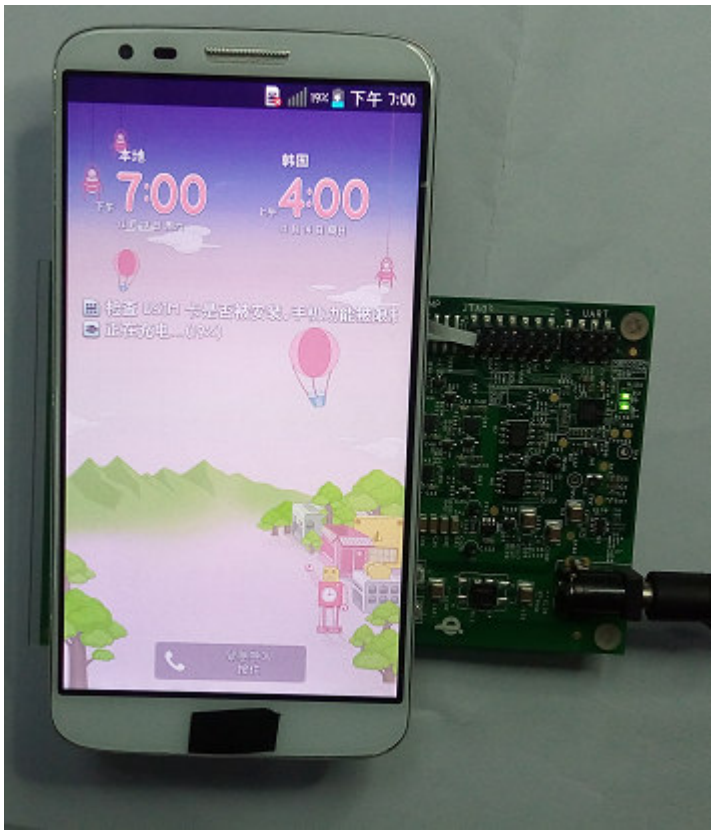

Figure-3 WCT-15W1COILTX charging the equipment

Others Indicates: when the Transmitter get the end power communication information, it will stop the charging and wait until the RX is removed, under this state LED D3 will be turned off, and LED D4 will be turned on all the time. When some fault found, the transmitter will turn off LED D4, and turn on LED D3 until the fault is removed, fault include the FOD fault, OVP, OTP and so on.

4 Cautions

- This device has been tested and found to comply with the limits pursuant to Part 18 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.
- If this equipment does cause harmful interference to other electronic equipments, which can be determined by turning the equipment OFF and ON, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the equipment
- Increase the separation

- In order to use the equipment safely，please don’t open the case when powered on，and don’t touch the PCB and components with hand.
- Don’t place some metal things between the TX surface and the RX surface, otherwise the metal things will be heated, it the temperature is too high, the Transmitter will shut down for protection.

This device complies with Part15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

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