NXP Semiconductors
Release Notes

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WCT1012VLF/WCT1013VLH Consumer MP-A11 (WCT-15W1CFFPD) Release Notes

1. Overview

WCT1012VLF/WCT1013VLH Version 1.0 (WCT-15W1CFFPD) pack provides the consumer a 15 W (up to 22 W) single-coil transmitter solution using the WCT1012VLF/WCT1013VLH chip and the MP-A11 consumer reference design board (WCT-15W1CFFPD).

It is compliant with the EPP WPC 1.2.4 specification. It passes the Qi 1.2.4 certification.

Contents

2. Supported hardware SoC/board

WCT1012VLF/WCT1013VLH MP-A11 Rev. B board (MP-A11_Rev2_SCH-32212_B, MP-A11_Rev2_LAY-32212_B).

3. What is in this release

- Software package:
    - WCT-15W1CFFPD_V1.0.

      Application example code in the source format and the Wireless Charging Transmitter (WCT) library for the WCT1012VLF/WCT1013VLH Consumer MP-A11 solution in a binary format.
- Documentation:
    - *WCT1012VLF/WCT1013VLH Consumer MP-A11 (WCT-15W1CFFPD) V1.0 Wireless Charging Application User's Guide* (document WCT101XV10AUG).
    - *Qi PC0 Transmitter Library User Guider* (document QIPC0TLIBUG).
    - *WCT1012VLF/WCT1013VLH Consumer MP-A11 (WCT-15W1CFFPD) V1.0 Runtime Debugging User's Guide* (document WCT101XV10RTDUG).
    - *WCT1012VLF/WCT1013VLH Consumer MP-A11 (WCT-15W1CFFPD) V1.0 Release Notes* (document WCT101XV10RN).

4. Features

- Compliant with the EPP Wireless Power Consortium (WPC) Qi Version 1.2.4 specification.
- MP-A11 15 W consumer wireless charging transmitter platform:
    - Full-bridge power stage.
    - Voltage control (3 V – 18 V).
    - Single-coil.
    - Operation frequency of 120 kHz ~130 kHz (default is 127.772 kHz), 50 % duty cycle.
- Supports Qi Extended Power Profile (EPP) Receiver with 15 W output power capability.
- Supports Qi Baseline Power Profile (BPP) Receiver with 5 W output power capability.
- Supports two-way communication.
- Supports digital demodulation for multiple modulation types of AC capacitor, AC resistor, and DC resistor.
- Supports WPID.
- Supports Q factor measurement method.
- Supports Foreign Object Detection (FOD), including FOD based on the Q factor and calibrated power loss accounting.
- Supports pre-FOD feature.

- Supports FOD recharging retry based on the Q factor method.
- Enables fast exiting recharge retry state by the Q factor method.
- Stable measured Q factor by carrying out multi Q factor measurement.
- Supports LED to indicate the power transfer status.
- Supports input voltage, input current, and coil current sensing.
- Support active power protection function.
- Supports the FreeMASTER GUI tool to enable customization and calibration.
- Supports bootloader for WCT1012/WCT1013.
- Supports quick removal detection for the receiver.
- Supports low-power mode.
- Support USB PD 2.0/3.0.
- Support QC 3.0.
- Support maximum power limit function.
- MISRA-compliant code.

5. Known issues

No known issues.

6. Note

Ensure that there is no object on the TX surface when the TX runs for the first time after being flashed with an image to get correct parameters for the rail voltage, Q factor, and quick removal calibration.

7. Release components version information

The following table summarizes all the version-related information of the hardware and software included in this solution release.

Table 1. Revision history

Solution	Design File	Version	Description
WCT-15W1CFFPD	Schematic	Ver B	SCH-32212 Schematic (MP-A11_Rev2_SCH-32212_B)
	BOM	Ver B	WCT-15W1CFFPD BOM
	PCB Layout	Ver B	SCH-32212 PCB layout (MP-A11_Rev2_LAY-32212_B)
	Software	Ver 1.0	WCT-15W1CFFPD Software Version 1 (MPA11_15W1CFFPD_WCT1013.zip)
	WCT Library User guide	Ver 4.1	Qi PC0 Transmitter Library User Guide Ver4.1
	App User's Guide	Ver 1.0	WCT1012VLF/WCT1013VLH Consumer MP-A11 (WCT-15W1CFFPD) V1.0 Wireless Charging Application User's Guide

Table 1. Revision history

Solution	Design File	Version	Description
	Runtime Debugging user's guide	Ver 1.0	WCT1012VLF/WCT1013VLH Consumer MP-A11 (WCT-15W1CFFPD) V1.0 Runtime Debugging User's Guide
	Release Notes	Ver 1.0	WCT1012VLF/WCT1013VLH Consumer MP-A11 (WCT-15W1CFFPD) V1.0 Release Notes

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