NXP Semiconductors
Release Notes

Document Number: WCT101XAV41RN
Rev. 4.1, 03/2019

WCT1011A/WCT1013A Automotive MP-A9 Release Notes

Contents

1. Overview

WCT1011A/WCT1013A Version 4.1 provides the automotive 15 W multi-coil transmitter solution using the WCT1011A/WCT1013A chip and the MP-A9 Automotive Reference Design board.

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

2. Supported HW SoC/Board

WCT1011A/WCT1013A MP-A9 Rev.1 board (MP-A9_Rev1_SCH-29323_B2, MP-A9_Rev1_LAY-29323_B2)

3. What Is in This Release

- Software package:
  - WCT_MPTXAUTO_V4.1

    Application example code in the source format and the Wireless Charging Transmitter (WCT) library for the WCT1011A/WCT1013A Automotive MP-A9 solution in the binary format
- Documentation:
  - *WCT1011A/WCT1013A Automotive MP-A9 V4.1 Wireless Charging Application User's Guide* (WCT101XAV41AUG)
  - *WCT1011A/WCT1013A Automotive MP-A9 V4.1 Transmitter Library User's Guide* (WCT101XAV41LIBUG)
  - *WCT1011A/WCT1013A Automotive MP-A9 V4.1 Run-Time Debugging User's Guide* (WCT101XAV41RTDUG)
  - *WCT1011A/WCT1013A Automotive MP-A9 V4.1 Release Notes* (WCT101XAV41RN)

4. Features

- Compliant with Medium Power Wireless Power Consortium (WPC) Qi Version 1.2.4 specification.
- MP-A9 15 W automotive wireless charging transmitter platform:
  - Full-bridge power stage
  - Voltage control (1 V – 24 V)
  - Multicoil (maximum 10 coils)
  - Operation frequency in [120 – 130] kHz (default 127.772 kHz), duty cycle 50%
- 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 free resonance Q factor measurement method.
- Supports Foreign Object Detection (FOD), including FOD based on Q factor and calibrated power loss accounting.
- Supports LED to indicate power transfer status.
- Supports input voltage, input current, and coil current sensing for protection.
- Supports the FreeMASTER GUI tool to enable customization and calibration.

- Supports boot loader for WCT1011A/WCT1013A.
- Supports NFC feature.
- Supports fast charging.
- Supports Pre-FOD feature.

5. What's New in This Release

- Optimized maximum power limit function.
- Added Pre-FOD feature.
- Added duty cycle control mechanism.
- Added Q factor temperature calibration mechanism.
- Optimized maximum voltage limit function.
- Supports quick removal detection for RX.
- Supports Low power mode.

6. Known Issues

- NFC card protection in FreeMASTER GUI is not stable. Sometimes TX charges RX with NFC TAG/Card on it. The root cause is that the NFC module cannot detect the NFC TAG/Card stably.

7. Note

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

8. Revision History

Table 1. Revision history

Revision number	Date	Substantive changes
GA 3.1	09/2017	Initial release.
GA 4.0	05/2018	Updated according to the WCT SW v4.0
GA 4.1	03/2019	Updated according to the WCT SW v4.1

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