High Efficiency, High Integration (MCU+POWER STAGE) Wireless Power Transmitter

1 Features

- Wide Input Voltage: 4.5V to 14V
- Integrated High-Efficiency Full- Bridge FETs and FET Driver Optimized for Low EMI
- Integrated 4.8V and 1.8V LDO
- High-Accuracy, Lossless Current Measurement for FOD and In-Band Communication
- Integrated high precision Q Factor Measurement
- Integrated Low-Error-Rate Digital Demodulation
- Robust OVP, OCP, SCP, OJP (Juggle Protection) and OTP Protection
- I2C and UART Interfaces
- 11 channel, 15-bit ADC
- Integrated 92MHz, 32Bit/32K MTP/2K SRAM MCU Core
- Integrated QC/PD3.0/SCP/AFC protocol function
- Ultra-Low quiescent current in SLEEP mode: <20uA
- 4mm×4mm QFN Package

2 Applications

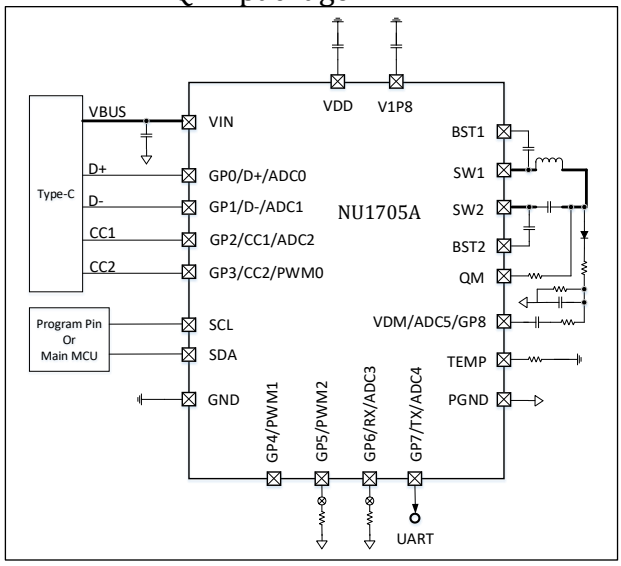
- Wireless Power Transmitter Compliant with WPC V1.2.4 Basic Power Profile (BPP). Maximum 15W wireless transfer power
- Wireless Power Transmitter for Consumer, Industrial, Automotive Aftermarket, and Medical Applications

3 Descriptions

NU1705A is a new generation of highly integrated wireless power transmitter solution, it integrates a full-bridge power stage designed for a wide frequency range, a 32bit MCU core and a fast charge block of QC/PD protocol.

The power system integrates all critical functions, such as high-efficiency power FETs, low-EMI FET drivers, bootstrap circuit, 4.8V/1.8V integrated LDO power supply, lossless current measurement. The proprietary current-measurement circuit provides the accurate current reading used for the FOD (Foreign Object Detection) power measurement, in-band communication, Q factor detection, and digital demodulation. It also includes protection functions such as input under-voltage lockout, over-voltage protection, over current protection, innovative unique Juggle Protection circuit, and thermal shutdown. These provisions further enhance the reliability of the total system solution.

The device is housed in a thermally enhanced 4mm×4mm QFN package.



Simplified Application Diagram

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