

High Frequency High Integration Wireless Power Transmitter

1 Feature

- Support smart watch 1.78MHz wireless charging
- Integrated Boost converter
- Integrated input capacitor and snubber
- Input voltage range: 2.9V to 18V
- Integrated 32bit 36MHz core, 8KB SRAM, 64KB Flash
- 144MHz clock for a pair of precise phase shift PWM control with dither function
- 36MHz clock for 2 Basic PWMs
- Dedicated high-speed 4MHz ADC for magnitude-phase demodulation
- 2 channels low-speed 1MHz ADC
- Integrated high-efficiency full-bridge FETs and driver optimized for low EMI
- Integrated two channel high-side drives to drive external FETs for switched capacitor
- Input current measurement for FOD and In-band communication
- Integrated multi-channels demodulation including magnitude, phase, voltage, average current demodulation
- Integrated 4.8V&3.3V&1.5V LDO
- Robust UVLO / OVP / OCP and thermal shut down protection
- Support 2 x I²C interface: one I²C master and one I²C slave
- Support UART interface
- Up to a pair of CC
- A pairs of D+/D- interface
- Support Type-C DRP and PD 3.1 with PPS
- Support BC1.2, QC 3.0, FCP/SCP charging sink protocols
- 5mm x 5mm 46 pin QFN Package

2 Applications

- Smart watch wireless transmitter
- Wearable device wireless transmitter

3 Descriptions

NU11011 is a high frequency, high integration transmitter IC for 1.78MHz wireless charging. NU11011 integrated Boost converter, 32bit 36MHz MCU core, 8KB SRAM and 64KB Flash, and fast charging block PD/BC1.2/QC/FCP/SCP. NU11011 integrates all critical functions of power system, bootstrap circuits for external resonant capacitor switches, 4.8V/3.3V/1.5V LDO and input current measurement. NU11011 integrates input capacitor and snubber. Controllable slew rate/ dead time of gate driver and PWM frequency dither function of TX power FET can further reduce the EMI of power system. NU11011 supports FSK communication, multi channels ASK demodulation, Q factor detection and power loss based foreign object detection. I²C and UART interface are used to communicate with other devices. NU11011 also includes under voltage lockout UVLO, over voltage protection OVP, over current protection OCP and thermal shutdown.

Part Number	package	Package size
NU11011	QFN46	5mmx5mm

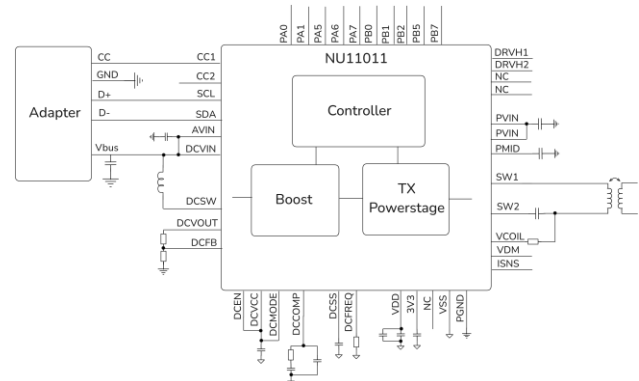


Figure 1 Simplified Application Diagram