High Efficiency High Integration Wireless Power Transmitter

1 Feature

- Support WPC Qi2 wireless charging
- Input voltage range: 3V to 23V(NU1712X)
- Integrated 32bit 36MHz MCU core, 8KB SRAM, Up to 128KB Flash
- 144MHz clock for 2 pairs of precise phase shift PWM control with dither function
- 36MHz clock for 4 Basic PWMs
- Dedicated high-speed 4MHz ADC for magnitude-phase demodulation
- Up to 10 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
- High-accuracy 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, integrated 5.0V Buck
- Robust UVLO / OVP / OCP and thermal shut down protection
- Up to 5 enhanced captures
- Up to 4 timers
- Support 2 x I^2C interface: one I^2C master and one I^2C slave
- Support 2 x UART interface
- Up to 2 pairs of CC
- Up to 3 pairs of D+/D- interface
- Support Type-C DRP and PD 3.1 with PPS
- Support BC1.2, UFCS, QC 3.0, FCP/SCP, AFC charging sink protocols
- 4.5mmx3.5mm 35 pin QFN Package or 5mmx5mm 47pin QFN Package

2 Applications

- Qi2 wireless transmitter
- 3 in 1 wireless transmitter

3 Descriptions

NU171XX are high efficiency, high integration Qi2 compliant transmitter IC for wireless charging. NU171XX integrate low R_{dson} Full bridge FETs and gate driver, 32bit 36MHz MCU core, 8KB SRAM and 128KB Flash, and fast charging block TCPC/PD/BC1.2/QC/FCP/ SCP. NU171XX integrate all critical functions of power system, such us low-EMI FET drivers, Bootstrap circuits for external resonant capacitor switches, 4.8V/3.3V/1.5V LDO and 5V Buck converter power supply, high-accuracy current measurement. Controllable slew rate/ dead time of gate driver and PWM frequency dither function can further reduce the EMI of power system. NU171XX support 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. NU171XX also include under voltage lockout UVLO, over voltage protection OVP, over current protection OCP and thermal shutdown.

Part Number	package	Package size
NU17111A	QFN35	4.5mm×3.5mm
NU17112A	QFN47	5mm×5mm
NU17121	QFN47	5mm×5mm
NU17122	QFN47	5mm×5mm

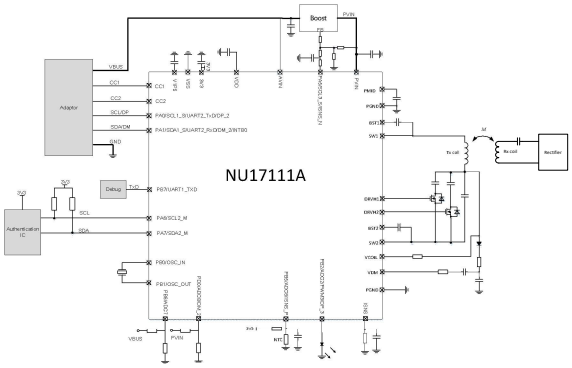

Figure 1 Simplified Application Diagram

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