High Integration Wireless Power Transmitter Controller with Private Encryption

1 Features

- Input voltage range: 2.5V to 5.5V
- Integrated 32bit 36MHz MCU core, 8KB SRAM,
- 128KB Flash
- 144MHz clock for 2 pairs of precise phase shift PWM control
- 36MHz clock for 4 Basic PWMs
- 11 channels low-speed 1MHz ADC
- 1 channel high-speed 4MHz ADC
- Integrated 1.5V LDO for digital power supply
- Robust PVD (programmable voltage detector) and thermal shut down protection
- 5 enhanced captures
- 4 timers
- 23 GPIOs and 7 GPINs.
- Support 2 x I²C module: one I²C master and one I²C 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
- Support private encryption
- 4.5mmx4.5mm 36 pin QFN Package

2 Applications

- Qi 2 wireless power transmitter controller
- Support private encryption

3 Descriptions

NUQ1520 integrates 32bit 36MHz MCU core, 8KB SRAM and 128KB Flash which contains Application ROM (120KB), Security Protection ROM (8KB). Security Protection ROM supports private encryption. NUQ1520 integrates programmable system clock source which supports 8/16/24MHz external crystal input or 8 MHz internal oscillator. NUQ1520 supports 64 kHz internal low-power oscillator for Watchdog Timer and idle wake-up. 6 pins of NUQ1520 can be configured as interrupt source with edge detection, 4 I/O pins have wakeup function.

NUQ1520 provides 4 channels 32-bit timers with one 5-bit pre-scalar independent clock source for each timer. NUQ1520 provides continuous capture function which can continuously capture rising, falling, both rising and falling edge on one signal. NUQ1520 provides 144MHz clock for precise phase shift PWM control which integrates FSK and dither function. NUQ1520 provides 1 high speed ADC channel, which is13-bit ADC with 4MSPS (maximum) and 1 sign bit,12-bit ENOB.NUQ1520 provides 11 low speed ADC channel, which are 13-bit ADC with 1Msps and 1 sign bit,12-bit ENOB.

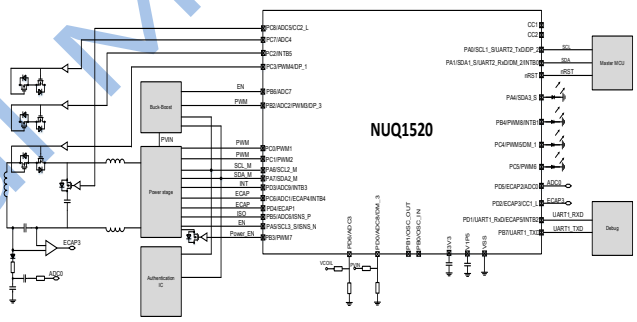

Figure 1 Simplified application diagram for wireless power transmitter controller

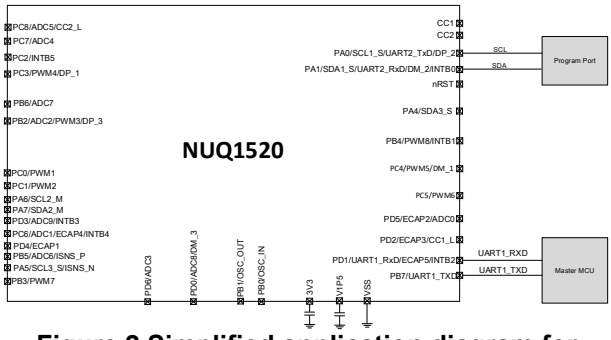

Figure 2 Simplified application diagram for private encryption