

NU1677 High Efficiency, High Integration Wireless Power Receiver and Transmitter

1 Feature

- Integrated 30V high-efficiency synchronous rectifier.
- Integrated LDO to provide regulated output programmable VOUT from 3.5V to 23V with 10mV resolution.
- Low dropout of LDO.
- Integrated full bridge inverter and PWM controller for transmitter.
- Integrated V5V0 LDO and 1.5V LDO for analog and digital power supplies.
- Capless 1.8V LDO and 1.2V LDO for GPIO output.
- Robust and quick-responsive OVP, OCP, OTP, SCP protections.
- High accuracy current sense and voltage sense.
- 10 Channel, 14bit ADC.
- Integrated 32Bit MCU core.
- 400kHz IIC interface.
- In-system programmability.
- Build-in bi-directional communications: ASK/FSK modulation and ASK/FSK demodulation.
- Enhanced iload ASK modulation for MPP.
- Integrated Q factor and LC resonant frequency measurement.
- Integrated ping detect function and support MPP cloak mode
- Programmable FOD gain and offset.
- INT output.
- 40-WCSP, 0.4mm pitch.

2 Applications

- WPC Qi2.1 compliant receiver with maximum 50W receiver output power
- WPC MPP 25W compliant receiver
- WPC 5W BPP compliant transmitter for receiver power output with maximum 20W transmitter power input
- Smartphones, Pad, Smartwatch
- Medical, Industrial and Consumer Equipment

3 Descriptions

NU1677 is a highly integrated and efficient wireless power receiver and suitable for up to 30W output power application. It integrates a synchronous rectifier and a programmable low drop-out regulator. The regulator can provide a wide range regulated voltage. NU1677 can conduct bi-directional communication with a transmitter system through ASK and FSK. The communication is compliant with WPC Qi2.2 spec.

NU1677 can also be operated as a transmitter (Tx) to charge another receiver.

NU1677's flexibility is provided by an on-chip 32Bit MCU which can customize and optimize the device for various applications and custom needs. The programmability includes output power, bidirectional communication scheme, system protection, status reporting and error reporting.

NU1677 protection includes standard such as input under-voltage lockout, short-circuit protection, over-voltage protection, over-current protection, and over-temperature protection.

Device Information

PART NUMBER	PACKAGE	BODY SIZE (NOM)
NU1677	WLCSP	3.323mm x 2.393mm

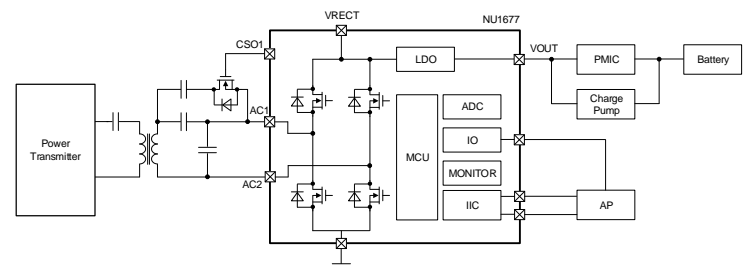


Figure 1. Simplified Application Diagram