

NU1030/NU1033 High Efficiency Full-Bridge Power Stage Wireless Power Transmitter

1 Feature

- PVIN input voltage range: 3V to 20V(NU1030)/ 3V to 23V(NU1033)
- Integrated high-efficiency full-bridge FETs and FET driver optimized for low EMI
- Integrated 4.8V&3.3V LDO(NU1030)
- Integrated 4.8V&3.3V LDO, 5.0V BUCK(NU1033)
- Integrated two channel high-side drivers to drive external FETs
- High-accuracy input current sense for FOD and in-band communication
- Integrated dual channel demodulation including phase demodulation
- Over voltage/current/ temperature protection
- Under voltage lockout
- Low R_{ds(on)} for good thermal performance
- Ultra-Low quiescent current in sleep mode: <20uA
- 4mm x 4mm QFN package

signal to MCU used for the FOD (Foreign Object Detection), it can be used to measure the input power without extra sense resistor. NU1030/NU1033 also supports various protection functions such as input under voltage lockout, over voltage protection, over current protection, and over temperature protection. These provisions further enhance the reliability of the total system solution. The demodulation function is enhanced with two parallel channels, special phase demodulation is designed for MPP application. The device is available in a thermally enhanced 4mm × 4mm QFN package.

Device Information

PART NUMBER	package	Package size
NU1030	QFN22	4mm×4mm
NU1033	QFN22	4mm×4mm

2 Applications

- Wireless power transmitter compliant with WPC V2.0 extended power profile (EPP) and magnetic power profile (MPP), maximum 20W(NU1030)/30W(NU1033) wireless power transfer
- Wireless power transmitter for consumer, industrial, automotive aftermarket, and medical applications

3 Descriptions

NU1030/NU1033 is a new generation of high efficiency power transmitter, it contains a full-bridge power stage, high accuracy current sense and high side driver to drive external FETs. It supports a wide range switching frequency.

The build-in full-bridge with adaptive deadtime control makes strong robustness and high efficiency. Slew rate control optimizes the low-EMI design. VDD supply optionally be able to output 4.8V by LDO or 5.0V by BUCK (NU1033) and another 3V3 LDO can be used for the external MCU. The proprietary current-sense circuit provides an accurate current

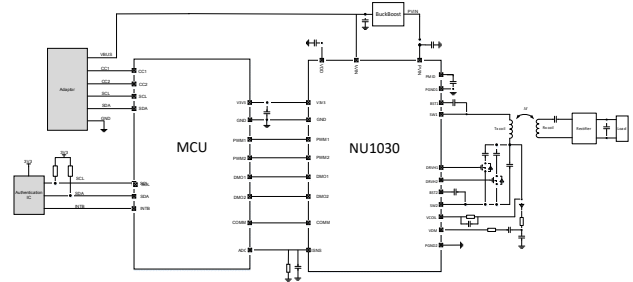


Figure 1. NU1030 Simplified Application Diagram

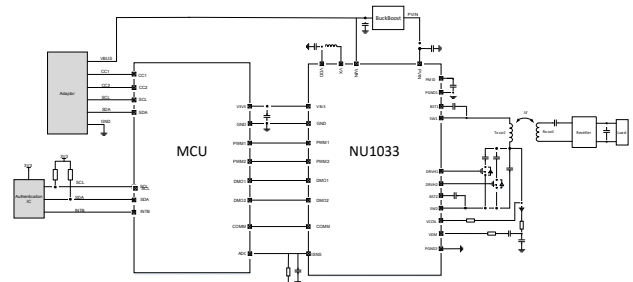


Figure 2. NU1033 Simplified Application Diagram