NU1619: High Efficiency, High Integration Wireless Power Receiver/Transmitter

Feature

- Integrated 28V high-efficiency synchronous rectifier
- Integrated Low-Dropout LDO to Provide Regulated Output Programmable Vout from 3.5V to 20V with 40mV step
- Programmable Iout regulation from 0.1A to 2.2A with 20mA step
- Local thermal loop to dynamically regulate output power
- Integrated full bridge inverter and PWM control
- Programmable FOD gain and offset
- 1.8V reference voltage output
- V5V supply path management
- Robust OVP, OCP, OTP, and SCP
- 10 Bits ADC for voltage, current and temperature measurement
- Integrated 32Bit MCU
- I^2C programmability
- In-system programmability
- Bi-directional communications ASK + FSK
- INT Output
- 54-WCSP 2.90mm x 4.04mm, 0.4mm pitch

Applications

- WPC 15W EPP Compliant Receiver with Maximum 40W Received Power
- WPC 5W BPP Compliant Transmitter with Maximum 10W Transmit Power
- Wireless Power Receiver for Smartphones, Power Bank
- Receiver with Custom Defined FSK and ASK Communication
- Wireless Power Receiver for Medical, Industrial and Consumer Equipment

Descriptions

NU1619 is a highly integrated and highly efficient wireless power receiver. It integrates a synchronous rectifier designed for a wide frequency range and a programable low drop- out regulator for the optimal system efficiency. The regulator can provide a wide range regulated voltage or current output; both can be programmable through an I2C interface. NU1619 can conduct bi-directional communication with a transmitter system through ASK and FSK. The communication is compliant with WPC.

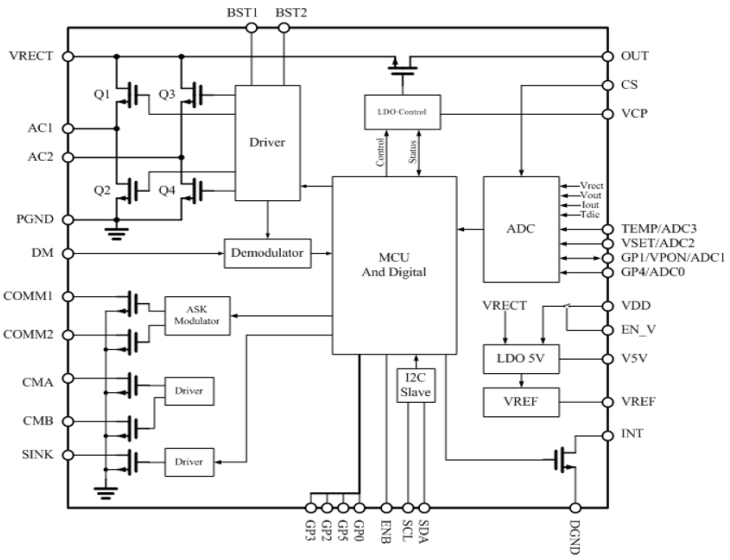
NU1619 can also be operated as a transmitter (Tx) to charge another receiver. Only few external components are needed and maximum 10W power can be transferred.

NU1619'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.

NU1619 also includes standard protection functions such as input under-voltage lockout, short-circuit protection, overvoltage protection and thermal shutdown. These provisions further enhance the reliability of the system solution.

The device is housed in a compact 2.90mm x 4.04mm WCSP package.

Functional Block Diagram



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