

15W Fully Integrated Receiver/Transmitter IC for Wireless Power Applications

DESCRIPTION

The MAP2501 is a Wireless Power Transmitter and Receiver IC for wireless charging systems. It can be configured for receiving or transmitting inductive coupled or magnetic resonance WPT systems. When it is used as a transmitter, it provides 20V Class-D amplifier, PWM generator, analog ASK demodulation circuit for voltage/current mode and digital FSK modulation circuit. As a receiver, Class-D amplifier operates as an fully active rectifier for receiving AC power signal. To support Qi and PMA receiver application, ASK modulation switches, OVP drivers and digital FSK demodulation circuits are integrated. Therefore, it is ready to support WPC Qi V1.2.x compliant Tx/Rx applications.

The integrated 32bit processor and built-in non-volatile memory provides powerful, flexible and compact design for any wireless power systems. The IC includes various serial communication devices such as master/slave I2C, serial debugging interface and UART. For user convenience, 12bit ADC, GPIOs, LED and Buzzer driver are provided.

APPLICATIONS

- Mobile phone, handsets & accessories
- Game console, STB, audio systems
- Furniture and intelligence kitchen system

FEATURES

- **High Efficiency Wireless Power Receiver**
 - Fully integrated 20V, 100kHz ~ 6.78MHz active rectifier
 - Built-in 20V ASK modulation switches
 - Built-in 20V OVP clamp switches
 - Digital FSK demodulation circuit
- **Highly integrated Wireless Power Transmitter**
 - Fully integrated 20V Class-D Amplifier
 - Symmetric/Asymmetric Digital PWM generator
 - Analog ASK demodulation circuit
 - Digital FSK modulation circuit
- **High voltage and current LDO for Rx output**
 - Programmable output voltage: 5V ~ 20V
 - Over-current limit
 - High efficient and extremely low drop-out voltage
- **Supports 12bit ADC**
- **Integrated 32bit Micro Processor**
 - Programmable non-volatile memory
 - SRAM for data memory
 - Debugging Interface
- **Low Dropout Regulator**
 - 20V high-voltage 5V LDO
 - 3.3V LDO
 - 1.8V LDO
- **Current Sensing**
 - Direct current sensing from LDO
 - Additional 20V high-side current sense amp
- **Digital Communication**
 - I2C Interface (Master/Slave)
 - UART Interface
- **LED and Buzzer Drivers**
- **GPIOs and Open-drain IOs**
- **WLCSP Assembly**
 - 10x8 ball WLCSP TBDxTBDmm²
- **Green & RoHS**

TYPICAL APPLICATION: (TRX COMBO application)

