# 20W Wireless Rectifier IC for inductive and resonant Wireless Power Transfer systems

## DESCRIPTION

The MAP7502 is a Wireless Power Receiver IC which supports AirFuel resonant, WPC[(1)] and PMA[(2)] compliant wireless charging systems. The device receives an AC power signal from wireless power transmitter. The rectified output can be used with external buck converter or supply external devices directly in portable application.

It integrates an active rectifier which can operate for an AirFuel resonant, PMA and WPC(Qi) system, synchronous buck converter for internal circuit, low-dropout regulator for external devices, 10-bit ADC, antenna voltage protection, NFC protection circuit and digital communication($I^2C$) to show which kinds of wireless power transfer systems can be used to control the output of buck converter and to report temperature, the voltage and current of rectifier and buck converter.

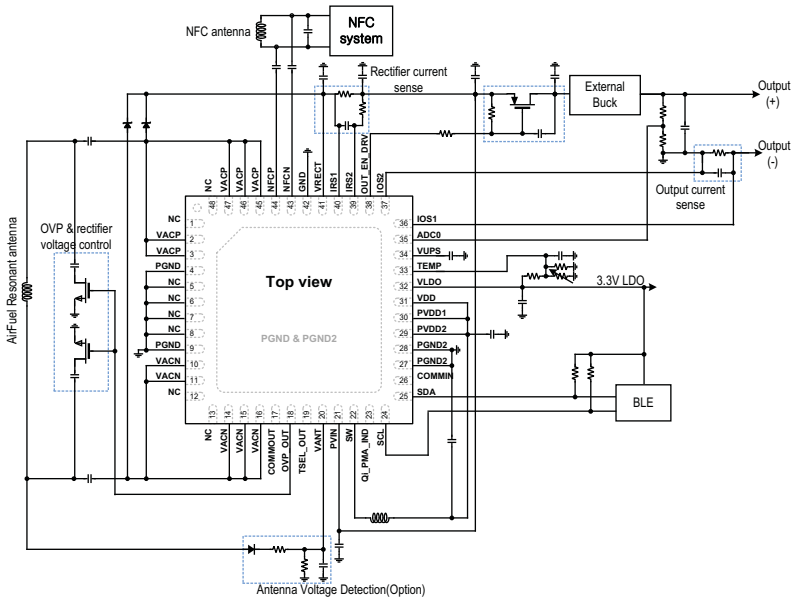
## APPLICATIONS

- *Mobile phone, tablet, Notebook*
- *Game console, Drone systems*
- *Furniture and intelligence kitchen system*

## FEATURES

- ***High Efficiency Wireless Power Rectifier***
- ***Highly Integrated Chip Solution***
  - *100kHz ~ 6.78MHz AC rectifier*
  - *Synchronous buck converter for internal circuitry*
  - *3.3V Low dropout regulator for external devices*
  - *NFC protection function*
  - *10 bit ADC and $I^2C$ protocol.*
  - *AirFuel Resonant/WPC(Qi)/PMA detection logic*
  - *PMOS FET driver circuit*
- ***Low dropout regulator***
  - *3.3V LDO for BLE*
  - *LDO short circuit current protection*
- ***Voltage & Current sensing***
  - *Rectifier output voltage*
  - *Rectifier output current*
  - *External buck voltage with external divided resistors.*
  - *External buck current*
- ***NTC for temperature monitoring available***
- ***$I^2C$ interface***
- ***Over voltage / current protection***
  - *Over voltage protection for Rectifier*
  - *Antenna over-voltage protection*
- ***Thermal shutdown***
- ***TQFN Assembly***
  - *48L QFN 6x6mm$^2$, 0.8Tmax Available*
- ***Green & RoHS***

## TYPICAL APPLICATION(1)




*AirFuel Resonant System Application Circuit*

*NOTE1) WPC v1.1.*

*NOTE2) PMA v1.1*