# RWF111

## 802.11b/g RF Front End Module


### Product Description

The RWF111 is an integrated RF Front End Module designed for 802.11 b/g WLAN applications at 2.4-2.5 GHz. The device consists of an integrated Power Amplifier, LNA and Switch. This module supports a data rate of 54 Mbps and is capable of delivering linear power at 16 dBm for 802.11g and 19dBm for 802.11b with a very low current. It can deliver a max. output power of 23dBm @ 0dBm Pin. The FEM is fully matched internally to a 50ohm input/output impedance.

### Applications

- 802.11b DSSS WLAN
- 802.11g OFDM WLAN
- 2.4GHz Cordless Phones
- 2.4GHz ISM Radios
- 2.4GHz Digital Home Wireless Audio/Video
- IEEE 802.15.4 and ZigBee Systems
- Wireless Audio Systems
- Wireless Consumer Systems
- Wireless Sensor Networks
- All 2.4GHz ISM Band Systems
- Wireless Industrial Systems

### Features

- Frequency range of 2.4 GHz to 2.5 GHz
- Integrated PA/LNA/SPDT switch
- 802.11g/54 Mbps- 4% EVM at Pout=16dBm with a very low current
- Pout = 23 dBm @ Pin 0dBm, Vcc - 3.6V
- Integrated Power Detector
- Operation from 2.9 V to 4.5V
- Package: 3.0 x 3.0 x 0.75mm$^3$ QFN16 Package

### Advantages

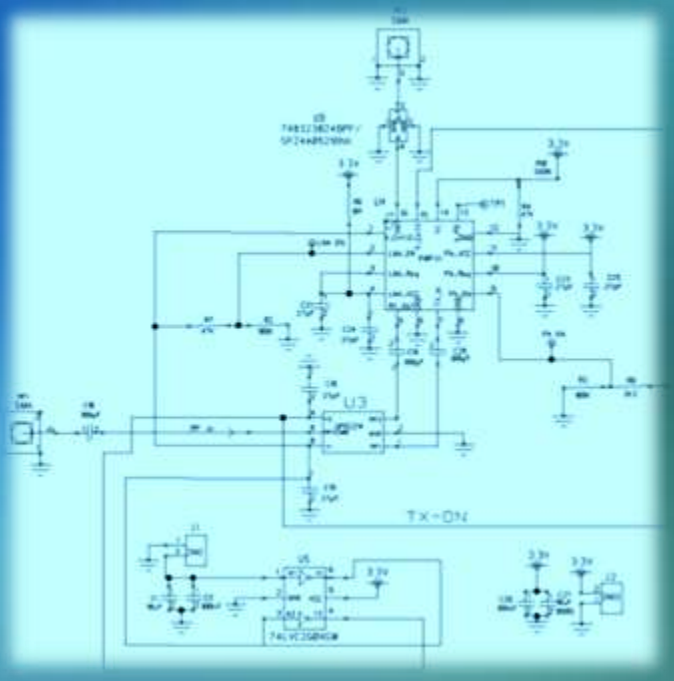
- Integrated Single Chip Solution
- Integrated Power Detector
- Very Low Current Consumption
- Low Noise Figure
- Miniature Package

### Transmit Path Electrical Characteristics at 25° C

| Name | Condition | Unit | Typical |
|---|---|---|---|
| Frequency | | GHz | 2.45 |
| Small Signal Gain | | dB | 28 |
| P1dB | | dBm | 22 |
| EVM | Pout @ 16 dBm OFDM/54 Mbps<br>Pout @ 19 dBm CCK/11 Mbps | %<br>% | 4<br>1.2 |
| Quiescent Current | Vcc @ 3.6 V | mA | 57 |
| Current at 3.6 V under modulating signal | Pout @ 16 dBm<br>Pout @ 19 dBm | mA<br>mA | 97<br>125 |
| Output Power | Vcc @ 3.6 V, Pin @ 0 dBm | dBm | 23 |
| Peak Current | Pout @ 23 dBm | mA | 205 |
| Input Return Loss | | dB | 11 |
| Output Return Loss | | dB | 10 |
| Isolation<br>Tx-Rx<br>Rx-Antenna | | <br>dB<br>dB | <br>22<br>22 |
| 2nd Harmonic | Pout @ 16 dBm | dBm | -14 |
| 3rd Harmonic | Pout @ 16 dBm | dBm | -27 |
| IM3 | Pout @16 dBm, 1MHz, 5 MHz | dBc | -35 |

### Receiver Path Electrical Characteristics at 25° C

| Name | Condition | Unit | Typical |
|---|---|---|---|
| Frequency | | GHz | 2.45 |
| Small Signal Gain | | dB | 14 |
| Noise Figure | | dB | 2.2 |
| P1dB | | dBm | 14 |
| Quiescent Current | Vcc @ 3.6 V | mA | 9 |
| IIP3 | | dBm | 3 |
| Input Return Loss | | dB | 9 |
| Output Return Loss | | dB | 7 |
| Tx-Antenna Isolation | | dB | 22 |



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