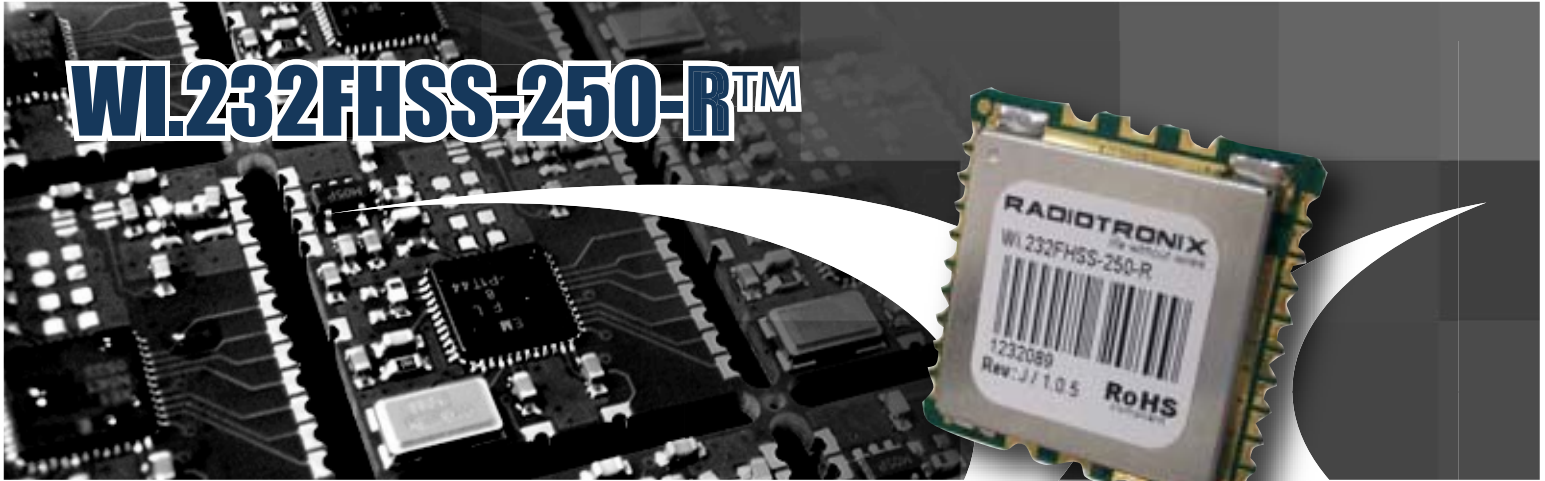


# Wi.232FHSS-250-R™



## Embedded Wireless Module 915 MHz, 152.34 kbit/sec.



### DESCRIPTION

The Wi.232FHSS-250-R™ embedded RF Module combines a state-of-the-art low power Analog Devices ADF7020 chip-based-transceiver with a powerful multipoint-to-multipoint frequency Silicon Labs C8051F311 protocol controller to form a complete wireless communication solution. With a simple UART interface, a 132.5dB link budget, and very low power operation modes, the Wi.232FHSS-250-R™ module is excellent for automatic meter infrastructure (AMI), oil and gas monitoring, fleet management, and any other application requiring reliable communications around buildings but running off a battery (Range exceeds 5 miles + LOS with a -2 dBi gain 1/2 wave dipole antenna life and low cost.

The module can operate as a transparent wire replacement solution; it can also operate in a peer-to-peer networked mode that supports node addressing and assured delivery. Data is validated using an internally generated CRC-16 and encoded using a proprietary algorithm. Multiple modules can operate on the same channel because of the built-in carrier-sense-multiple-access (CSMA) feature inside the on-board controller.

The module allows users to select the best data rate to optimize the application's data throughput and range requirements. The module has a raw maximum RF data rate of 152.23kbit/second and can be optimally matched to the UART data rate, which can be programmed from 2.4 to 115.2 kbit/second.

The Wi.232FHSS-250-R™ module employs frequency hopping spread spectrum (FHSS) modulation. There are thirty-two separate hopping channels in a hopping table, and the designer can program the module to use one of six hopping sequences.

The module has been equipped with four variable power adjustable steps and automatic gain control (AGC) that allows for multiple modules operating in close proximity. The module has two digital RSSI registers available to the user. Finally, a compatibility mode has been added to allow for backward compatibility communication with our previous 25mW Wi.232FHSS-25-R version that is based on a Semtech XE1203F transceiver.

### APPLICATIONS



Oil Sensing



Medical



(AMR) Automated Meter Reading



Industrial



Fleet Management

### RELATED PRODUCTS

Wi.232USB-250-R (base station)

### CERTIFIED ANTENNAS

- ANT-915-04A (Helical straight RPSMA connector)
- ANT-915-02A (1/4 wave whip RPSMA connector)
- ANT-915-07A (Helical right angle RPSMA connector)
- ANT-915-06A (1/2 wave dipole RPSMA connector)

### PLACING ORDERS

The part number is provided below to ensure ordering correctly. Pricing is available at qualified Radiotronics distributors. For more product lines and all distributor information contact Radiotronics sales at 405.794.7730, visit [www.radiotronics.com](http://www.radiotronics.com), or email [sales@radiotronics.com](mailto:sales@radiotronics.com).

### FEATURES

1. Frequency Hopping Spread Spectrum
2. **Features the Analog Devices ADF 7020 transceiver chip**
3. Variable Output Power (4 steps from +8dBm to 23.5 dBm)
4. Automatic Gain Control (AGC)
5. 250mW Power amplifier
6. True UART to Antenna solution
7. 152.34 kbit/ sec. Max RF data rate
8. 32 bit MAC addressing mode assigned at factory
9. 16 and 32 user defined addresses available
10. Link layer supports assured delivery
11. 2.7 V - 3.6 V power supply
12. Size 1.20" x 1.20"
13. 132.4dB link budget

### SPECIFICATIONS

1. Frequency Band: 902 to 928 MHz
2. RF Performance
  - a. 6 Hopping Sequences
  - b. 115 kbps Max RF Data Rate (effective)\*
  - c. +23.5 dBm TX Power\*\*
  - d. -104 dBm Max RX Sensitivity\*\*\*
3. Power
  - a. VDD: 2.7 V to 3.6 V
  - b. TX IDD: 195 mA @ +23.5 dBm
  - d. RX IDD: 25 mA\*\*
  - e. Deep Sleep: 3 µA
  - f. Sleep/ Standby: 1500 µA/ 1500 µA
4. Operating temperature: -40 degrees C to +85 degrees C
5. FCC certified version available

\*Single packet with overhead  
 \*\*50 ohm load, VDD= 3.3 V  
 \*\*\*measured @ 9600 baud



Part Number	Description
Wi.232FHSS-250-R	Embedded Wireless Module