

# WI.232FHSS-250-FCC-R™

FCC certified Wireless Module  
915 MHz, 152.34 kbit/sec.



## DESCRIPTION

The Wi.232FHSS-250-FCC-R™ FCC certified module combines a state-of-the-art low power wireless transceiver with a powerful multipoint-to-multipoint frequency protocol controller to form a complete wireless communication solution. This module is a modular certified version of our core Wi.232FHSS-250-R base module. It has the module and shield, reverse polarity antenna SMA circuit and also a voltage regulator on board from 4-15VDC. With a simple UART interface, a 132.5dB link budget, and very low power operation modes, the Wi.232FHSS-250-FCC-R™ module is excellent for AMR, RFID, Home Automation, and any other application requiring long range (3.5 miles plus LOS with a 2 dBi gain 1/2 wave dipole antenna with long battery life and low cost. The Wi.232FHSS-250-R™ is ideal for portable applications.

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. The module is designed to be totally transparent. 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) protocol.

A wide range of data rates can be supported, allowing the designer to tune the module's performance to meet the application's throughput and range requirements. The RF data rate is programmed to optimally match the UART data rate, which can be programmed from 2.4 to 115.2 kbit/second. The maximum RF data rate is 152.34kbit/second.

The Wi.232FHSS-250-FCC-R™ module employs frequency hopping spread spectrum 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. These techniques allow the Wi.232FHSS-250-R™ to operate co-located networks without interference. The Wi.232FHSS-250-R™ also has new adjustable output power settings and automatic gain control (AGC) features which allow for the use of the radios in close proximity, but capable of long range output. The Wi.232FHSS-250-R™ has a compatibility mode to enable the module to communicate with the smaller 25mW version, Wi.232FHSS-25-R™. The certified modules come in two options: Wi.232FHSS-250-FCC-RA- R™ (right angle reverse polarity SMA connector) and Wi.232FHSS-250-FCC-ST-R™ (straight reverse polarity SMA connector); in addition, the module is certified with ¼ and ½ wave dipole antennas.

## APPLICATIONS



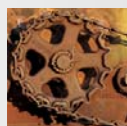
Oil Sensing



Medical



(AMR) Automated Meter Reading



Industrial



Fleet Management

## RELATED PRODUCTS

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

## CERTIFIED ANTENNAS

ANT-915-06A (1/2 wave dipole RPSMA connector)  
ANT-915-07A (Helical right angle RPSMA connector)  
ANT-915-08A (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. FCC certified product
2. Frequency Hopping Spread Spectrum
3. **Features the Analog Devices ADF 7020 transceiver chip**
4. Variable Output Power  
(4 steps from +8 dBm to 23.5 dBm)
5. Automatic Gain Control (AGC)
6. 250mW Power amplifier
7. True UART to Antenna solution
8. 152.34 kbit/ sec. Max RF data rate
9. MAC addressing mode
10. Link layer supports assured delivery
11. 4.5 V - 15 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. 32 Channels
  - b. 6 Hopping Sequences
  - c. 115 kbps Max RF Data Rate (effective)\*
  - d. +23.5 dBm TX Power\*\*
  - e. -104 dBm Max RX Sensitivity\*\*\*
3. Power
  - a. VDD: 4.5 V to 15 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

\*Single packet with overhead

\*\*50 ohm load, VDD= 3.3 V

\*\*\*measured @ 9600 baud



| Part Number             | Description                |
|-------------------------|----------------------------|
| Wi.232FHSS-250-FCC-ST-R | With straight connector    |
| Wi.232FHSS-250-FCC-RA-R | With right angle connector |

REV.002

# Mouser Electronics

Authorized Distributor

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