# RADIOTRONIX Embedded Wireless Modules

RADIOTRONIX™ life without wires

**Products may be RoHS compliant.**
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## WI.232FHSS-25/250 FREQUENCY HOPPING EMBEDDED WIRELESS MODULES

### WI.232FHSS-25

The Wi.232FHSS-25 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. With a simple UART interface, a 111dB link budget, and very low power operation modes the Wi.232FHSS-25 module is excellent for AMR, RFID, Home Automation, and any other application requiring long range (< 1500 feet, line of sight) and long battery life.

### WI.232FHSS-250

The Wi.232FHSS-250 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. With a simple UART interface, a 125dB link budget, and very low power operation modes the Wi.232FHSS-250 module is excellent for AMR, RFID, Home Automation, and any other application requiring long range (7 miles LOS, 1500 feet indoors) and long battery life.

**Features:**
- Frequency Hopping Spread Spectrum
- 30mW TX and 250 mW TX versions
- No RF PCB Layout Necessary
- Pick and Place compatible package
- 2.7 - 3.6V power supply
- Channels: 32
- Transparent and Networking modes
- Small size: 0.8"x.935"x.08" thick for Wi.232FHSS-25
  1.25"x1.25"x .08" thick for Wi.232FHSS-250
- Hopping sequences: 6
- Max Data Rate: 115 kbps
- Temperature Range: -20º to +70ºC
- Max RX Sensitivity: -104dBm

**Development Kit Contents:**
Qty 2 –RAD boards
Qty 2 – EVM populated with the appropriate modules
Qty 2 – Whip antennas
Qty 2 – RS-232 cables
Qty 2 – USB cables
Qty 1 – Documentation/Software CD
Qty 6 – AAA batteries

### WI.232FHSS Development Kits

| MOUSER STOCK NO. | Radiotronix Part Number | Frequency (MHz) | Description | Price Each |
|---|---|---|---|---|
| 509-RK-WI232FHSS-25 | RK-Wi.232FHSS-25 | 902-928 | Wi.232FHSS-25 Rapid Development Kit | 249.00 |
| 509-RK-WI232FHSS-250 | RK-Wi.232FHSS-250 | 902-928 | Wi.232FHSS-250 Rapid Development Kit | 249.00 |

Wi232FHSS-250 Illustrated

### WI.232FHSS Embedded Modules

For quantities of 100 and up, call for quote.

| MOUSER STOCK NO. | Radiotronix Part Number | Frequency (MHz) | Description | Price Each 1 | 10 | 25 |
|---|---|---|---|---|---|---|
| **25mW Transmit** | | | | | | |
| 509-WI232FHSS-25 | Wi.232FHSS-25 | 902-928 | 25mW Wi.232DTS Frequency Hopping Transceiver | 36.01 | 33.13 | 30.47 |
| 509-232FHSS-25-EVM | Wi.232FHSS-25-EVM | 902-928 | Wi.232FHSS-25 Evaluation Module | 47.62 | 43.81 | 40.29 |
| **250mW Transmit** | | | | | | |
| 509-WI232FHSS-250 | Wi.232FHSS-250 | 902-928 | 250mW Wi.232DTS Frequency Hopping Transceiver | 43.66 | 40.17 | 36.94 |
| 509-232FHSS-250-EVM | Wi.232FHSS-250-EVM | 902-928 | Wi.232FHSS-250 Evaluation Module | 53.36 | 49.09 | 45.15 |

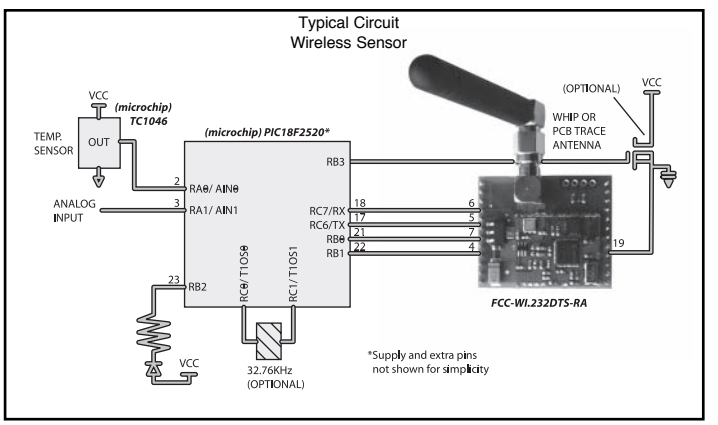
## FCC PRE-APPROVED UART-TO-RF EMBEDDED WIRELESS MODULES

The FCC-Wi.232DTS/FHSS features our powerful and popular Wi.232DTS/FHSS modules in a FCC modular approved solution. It is designed to greatly simplify implementation of the Wi.232DTS module into a working design without the complications of FCC testing.

**Features:**
- FCC modular approved
- FCC ID: Q7V-3F090003X
- Temperature Range: -20º to +70ºC
- Through-Hole/ Socket Mounting
- 4.5-16VDC Supply Voltage
- RP-SMA Antenna Connection
- Data Rate: 152.34 kbit/sec.
- Size: 1.5" x 1.25"
- 24Pin DIP Package

**Applications:**
- Remote Control
- Wire Replacement
- Automated Meter Reading
- Industrial Automation
- Medical
- Security
- Home Automation
- HVAC

Typical Circuit
Wireless Sensor




### Wi.232DTS-FCC

The Wi.232DTS-FCC module is a pre-certified version of the Wi.232DTS-EVM module. It is certified for use in the US and requires no FCC testing when used with any of the Radiotronix antennas. The only physical difference between the Wi.232DTS-EVM and the Wi.232DTS-FCC is that the antenna connector on the FCC version is a reverse polarity SMA. The module requires a 3.6 - 9V power supply capable of supplying 175mA continuously.

### Wi.232FHSS-250-FCC

The Wi.232FHSS-250-FCC module is a pre-certified version of the Wi.232FHSS-250-EVM module. It is certified for use in the US and requires no FCC testing when used with any of the Radiotronix antennas. The only physical difference between the Wi.232FHSS-250-EVM and the Wi.232FHSS-250-FCC is that the antenna connector on the FCC version is a reverse polarity SMA. The module requires a 3.6 - 9V power supply capable of supplying 175mA continuously.

### FCC-Wi.232DTS/ FHSS Embedded Modules

For quantities of 100 and up, call for quote.

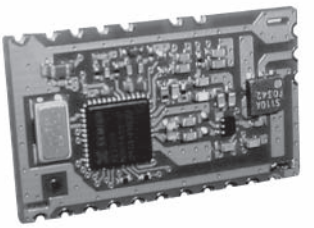
| MOUSER STOCK NO. | Radiotronix Part Number | Frequency (MHz) | Description | Price Each 1 | 10 | 25 |
|---|---|---|---|---|---|---|
| 509-FCC-WI232DTS-STR | WI.232DTS-FCC-ST-R | 915 | FCC Pre-approved Wi.232DTS Module with Vertical RP-SMA Antenna Jack | 56.37 | 51.86 | 47.70 |
| 509-FCC-WI232DTS-RA | WI.232DTS-FCC-RA | 915 | FCC Pre-approved Wi.232DTS Module with Right Angle RP-SMA Antenna Jack | 56.37 | 51.86 | 47.70 |
| 509-FHSS-25-FCC-ST | WI.232FHSS-25-FCC-ST | 915 | FCC Pre-approved 25mW Wi.232FHSS Module with Vertical RP-SMA Antenna Jack | 59.25 | 53.99 | 49.07 |
| 509-FHSS-25-FCC-RA | WI.232FHSS-25-FCC-RA | 915 | FCC Pre-approved 25mW Wi.232FHSS Module with Right Angle RP-SMA Antenna Jack | 59.25 | 53.99 | 49.07 |
| 509-FHSS-250-FCC-ST | WI.232FHSS-250-FCC-ST | 915 | FCC Pre-approved 250mW Wi.232FHSS Module with Vertical RP-SMA Antenna Jack | 67.29 | 61.91 | 56.94 |
| 509-FHSS-250-FCC-RA | WI.232FHSS-250-FCC-RA | 915 | FCC Pre-approved 250mW Wi.232FHSS Module with Right Angle RP-SMA Antenna Jack | 67.29 | 61.91 | 56.94 |

## WI.M900X-DP/WI.M868X-DP EMBEDDED WIRELESS MODULES

The Wi.M900X-DP/ WI.M868X-DP module is a microcontroller-less version of our popular Wi.232DTS/EUR module. It is a drop replacement for the DP1203 from Xemics. It offers the same excellent RF performance, yet allows the design engineer to control the radio at the physical level using any microcontroller. The module supports two modes of operation: wide-band and narrow-band. In wide-band mode, the channel width is 600kHz and in narrow-band mode the channel width is 200kHz. The module is configured via a simple SPI style serial interface. Data is transmitted and received using a separate digital serial interface that includes pre-amble and start of packet detection. A typical circuit consists of a low-cost microcontroller, a power source, a Wi.M900X-DP/ Wi.M868X-DP module and an antenna.

**Features:**
- Based on the Xemics XE1203F transceiver
- Drop in replacement for DPI 203
- Instant physical radio solution - no external RF components required
- Supports frequency hopping
- Simple FCC certification as digital spread spectrum device
- Automatic packet start detection
- 2.4 - 3.6 volt operation
- 1.2 - 152.34 k/bit sec. data rate
- A SPI style digital serial interface
- Small size ( .8"x .935"x .08" thick)
- Maximum output power = +15 dBm
- Maximum RF sensitivity = 1 12 dBm
- RF sensitivity @ max data rate = -103 dBm typ
- TX current = 52 mA @ 15 dBm typ.
- RX current = 12 - 13 mA typ.
- Sleep current = 0.2 ÌA typ.

**Development Kit Contents:**
Qty 2 – RAD boards
Qty 2 – EVM populated with the appropriate modules
Qty 2 – Whip antennas
Qty 2 – RS-232 cables
Qty 2 – USB cables
Qty 1 – Documentation/Software CD
Qty 6 – AAA batteries



### WI.M900X-DP/ WI.M868X-DP Development Kits

| MOUSER STOCK NO. | Radiotronix Part Number | Frequency (MHz) | Description | Price Each |
|---|---|---|---|---|
| 509-RK-WIM900X-DP | RK-Wi.M900X-DP | 902-928 | Wi.M900X-DP Rapid Development Kit | 249.00 |
| 509-RK-WIM868X-DP | RK-Wi.M868X-DP | 868-870 | Wi.M868X-DP Rapid Development Kit | 249.00 |

### WI.M900X-DP/ WI.M868X-DP Embedded Modules

For quantities of 250 and up, call for quote.

| MOUSER STOCK NO. | Radiotronix Part Number | Frequency (MHz) | Description | Price Each 1 | 10 | 25 | 100 |
|---|---|---|---|---|---|---|---|
| 509-WIM900X-DP | Wi.M900X-DP | 902-928 | Wi.M900X-DP Drop-in Embedded Wireless Module (North America) | 23.81 | 21.91 | 20.15 | 18.54 |
| 509-WIM868X-DP-RS | Wi.M868X-DP-R | 868-870 | Wi.M868X-DP Drop-in Embedded Wireless Module (Europe ) (RoHS) | 23.81 | 21.91 | 20.15 | 18.54 |

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