# 25 Series RF Transceiver Module

Linx
TECHNOLOGIES

The 25 Series RF transceiver module is designed for reliable bi-directional transfer of digital data over distances of up to 1 mile (1.6km) line of sight. Operating in the 902 to 928MHz frequency band, the module is capable of generating +13dBm into a 50-ohm load and achieves an outstanding typical sensitivity of –105dBm.

The module implements a Frequency Hopping Spread Spectrum (FHSS) protocol along with networking and assured delivery features. It has a Universal Asynchronous Receiver Transmitter (UART) serial interface that can be connected directly to microcontrollers, RS-232 converters or USB adaptors. The module automatically handles all radio functions resulting in a UART-to-antenna wireless link. All configuration settings and data are accessed through the UART interface.
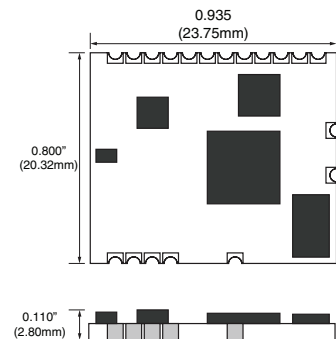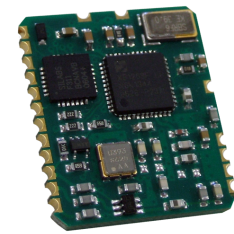
**Interface:** The transceiver has a UART serial interface and is designed to create a UART-to-antenna wireless solution.

**Power:** Low power modes as well as adjustable transmitter output power allow the designer to optimize the current consumption for the available power supply in the application.

**Configuration:** The transceiver contains several registers that control its configuration and operation. The registers are accessed through the UART and enable a great deal of optimization.

**Protocol:** The transceiver has a robust built-in protocol. A Carrier Sense Multiple Access (CSMA) algorithm makes sure the channel is clear before sending data. Networking and assured delivery enable many system configurations.

**Evaluation Module:** An evaluation module is available that has the module on a board with an antenna connector and voltage regulator. This module has obtained United States FCC certification. This greatly reduces the expense and time to implement a wireless solution.

0.935
(23.75mm)

0.800"
(20.32mm)

0.110"
(2.80mm)

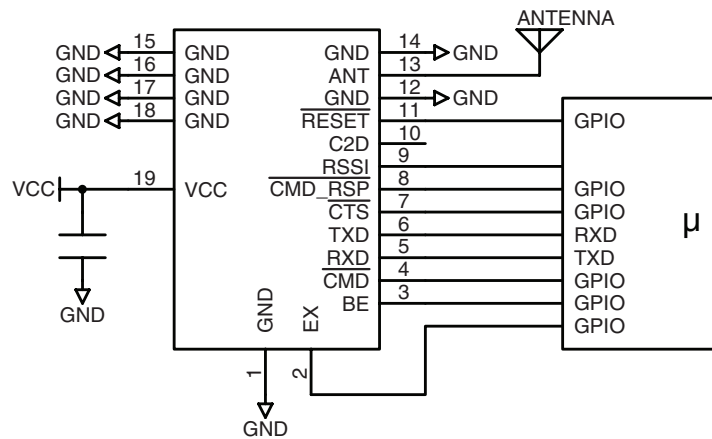| Specifications | |
|---|---|
| Operating Voltage | 3.0 to 3.6V |
| TX Supply Current | |
| @ 13dBm | 65mA |
| @ –2dBm | 30mA |
| RX Supply Current | 20mA |
| Standby Current | 2.1mA |
| Deep Sleep Current | 3µA |
| TX Output Power | –2 to +13dBm |
| Max RX Sensitivity | –105dBm |
| Max Data Rate | 115.2kbps |
| Operating Temperature Range | –40 to +85°C |

## Applications

- Direct RS-232/422/485 Wire replacement
- Asset tracking
- Automated meter reading
- Industrial / home automation
- Remote data logging
- Wireless sensors
- Long range data links

## Typical Applications

The figure below shows the 25 Series transceiver connected to a microcontroller.



The 25 Series Transceivers are configured through a UART interface.

## Configuration Options

- Set the frequency hop pattern
- Configure the transmitter output power level
- Configure the data rate
- Configure the module address and network mode
- Configure the power state
- Configure the packet size and parameters

| Ordering Information | | |
|---|---|---|
| **Product Part No.** | **Description** | **Radiotronix Part No.** |
| TRM-915-R25 | 900MHz 25 Series FHSS Data Transceiver | Wi.232FHSS-25-R |
| EVM-915-025-FCx | 900MHz 25 Series FHSS Data Transceiver Evaluation Module | Wi.232FHSS-25-FCC-xx-R |
| x = 'R' for right angle connector, 'S' for straight connector | | |

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