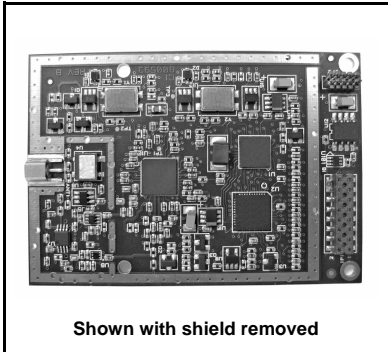


**WIT2450M2**

**Low-Cost  
FHSS  
Transceiver  
Module**



**Features:**

- **High speed wireless serial data transmission**
- **Robust 2.4 GHz frequency hopping spread spectrum technology**
- **3.3 volt operation**
- **Small size, light weight**
- **Certified for unlicensed operation in the USA, Canada and Europe**

**Benefits:**

- **Suitable for point-to-point and point-to-multipoint networks**
- **High immunity to interference and multipath fading**
- **Easy to integrate**
- **Worldwide license-free operation**
- **RoHS Compliant**
- **Low cost**

WIT2450M2 low-cost transceiver modules are designed to transmit serial data using robust 2.4 GHz frequency hopping spread spectrum (FHSS) technology. WIT2450M2 modules employ Murata's beacon-synchronized CSMA at an RF data rate of 460.8 kb/s to support a large number of remotes. WIT2450M2 transceivers are suitable for both point-to-point and point-to-multipoint networks. FHSS technology provides immunity to both interference and multipath fading. The small size and light weight of these transceiver modules make them suitable for a variety of applications. WIT2450M2 modules are certified for unlicensed operation in the USA, Canada and Europe.

**General Specifications**

|  |  |                     |                          |                            |                     |                  |
|--|--|---------------------|--------------------------|----------------------------|---------------------|------------------|
| RF Frequency Range   | 2400 to 2483 MHz   |                     |                          |                            |                     |                  |
| Radio Certifications   | FCC Part 15.247, Canadian RSS-210 and European ETS 300.328   |                     |                          |                            |                     |                  |
| Operating Range  | Indoor - 450 to 900 ft, outdoor -3000 ft with dipole antenna, more than 6 miles with gain antennas |                     |                          |                            |                     |                  |
| Network Topologies   | Point-to-point and point-to-multipoint (star)  |                     |                          |                            |                     |                  |
| Network Protocol   | High remote capacity CSMA with option for limited TDMA   |                     |                          |                            |                     |                  |
| Error Detection and Correction   | 24-bit CRC and ARQ   |                     |                          |                            |                     |                  |
| Serial Data Interface  | Asynchronous (UART) CMOS signals, 3.3 V, 5 V tolerant  |                     |                          |                            |                     |                  |
| Serial Data Rate   | Up to 230.4 kb/s, software selectable  |                     |                          |                            |                     |                  |
| RF Data Rate   | 460.8 kb/s   |                     |                          |                            |                     |                  |
| Number of Frequency Channels   | 86   |                     |                          |                            |                     |                  |
| RF Bandwidth   | 900 kHz  |                     |                          |                            |                     |                  |
| Transmit Power Output  | 10, 18 or 24 dBm, software selectable  |                     |                          |                            |                     |                  |
| Receiver Sensitivity   | -92 dBm @ 10-5 BER   |                     |                          |                            |                     |                  |
| Supply voltage   | 3.3 to 10 V, 5 to 10 V required for 24 dBm transmit power  |                     |                          |                            |                     |                  |
| Current Consumption<br>24 dBm Transmit Power,<br>115.2 kb/s Serial Data Rate | Remote<br>Operation:   | Power Down<br>Sleep | 2 $\mu$ A<br>750 $\mu$ A | Base Station<br>Operation: | Receive<br>Transmit | 155 mA<br>250 mA |
|  |  | Unlocked Receive    | 150 mA                   |                            |                     |                  |
|  |  | Locked Receive      | 75 mA                    |                            |                     |                  |
|  |  | Transmit            | 250 mA                   |                            |                     |                  |
| Size   | 69.85 x 47.75 x 4.57 mm  |                     |                          |                            |                     |                  |
| Weight   | 28 g   |                     |                          |                            |                     |                  |
| Operating Temperature  | -40 C to +70 C   |                     |                          |                            |                     |                  |
| Humidity   | 20% to 90% (non-condensing)  |                     |                          |                            |                     |                  |

## Large Network Support

WIT2450M2 modules transmit at an RF data rate of 460.8 kb/s using beacon-synchronized CSMA to support large point-to-multipoint (star) network applications. Serial communications between a WIT2450M2 module and its host can run at up to 230.4 kb/s to further speed data communication.

## Reliable

WIT2450M2 modules provide both reliable communication and reliable operation. Using robust frequency hopping spread spectrum technology, WIT2450M2 modules provide immunity to interference and multipath fading. Using a 24-bit CRC for error detection, automatic retransmit request (ARQ) and a 3K data buffer, error-free transparent communication is automatic. Built-in data scrambling adds a measure of security. Reliable operation is assured through RFM's stringent QA processes. All WIT2450M2 modules are manufactured in an ISO9000 certified facility.

## Simple

Simple to integrate and use, the WIT2450M2's default parameter settings work for most applications. For other applications, software control makes changing parameter settings easy. The WIT2450M2, with its small size and low power consumption, is simple to integrate into your product. The WIT2450M2's RS-232 style interface with standard 3.3 volt CMOS signal levels makes integration easy. Since WIT2450M2 modules are certified for license free operation in the USA, Canada and Europe, your WIT2450M2 based product does not have to repeat radio regulatory approval.

## Versatile

WIT2450M2 operating parameters are configurable under software control. Even the transmitter power level can be selected using a straight- forward command set. Both point-to-point and point-to-multipoint modes are supported. Baud rates from 1.2 to 230.4 kb/s are provided for serial communication between a WIT2450M2 and its host. Measuring just 69.85 x 47.75 x 4.57 mm and weighing 28 grams, the WIT2450M2 can be integrated into fixed, portable or handheld devices with little impact on the size and weight.

## Connector I/O Pins

| Pin | Signal      | Type   | Description  |
|-----|-------------|--------|--|
| 1   | GND         | -      | Signal and chassis ground  |
| 2   | TxD         | Input  | Data input to be transmitted   |
| 3   | RxD         | Output | Received data output   |
| 4   | CFG         | Input  | Configuration select, used to switch radio between data and control mode |
| 5   | RTS         | Input  | Request to send input, used for receive flow control by the host         |
| 6   | Sleep/DTR   | Input  | Module sleep/DTR input, sleep is active high                             |
| 7   | DCD         | Output | Data carrier detect, indicates FHSS synchronization on remotes           |
| 8   | CTS         | Output | Clear to send output, used for receive flow control by the radio         |
| 9   | RSSI        | Output | Received signal strength indicator (analog signal)                       |
| 13  | RSSI Strobe | Output | High signal indicates valid RSSI   |
| 14  | Power Down  | Input  | Low power mode input, active low   |
| 16  | Vcc         | Power  | Positive supply - minimum 3.3 V, nominal 5.0 V, maximum 10.0 V           |

## Physical Specifications - dimensions in inches

