

Overview

The WiSE250 ZigBee Wireless Module is the ideal solution for OEMs ready to take their products wireless. Whether you're in the development stage or ready to mass manufacture, the WiSE250 will provide the reliable, standards-compliant, guaranteed performance you need.

Product Highlights

Pin compatible to the Ember EM250 RCM

Affordably expand your development inventory, or seamlessly transition from development to production with a fully compatible and Ember recommended module.

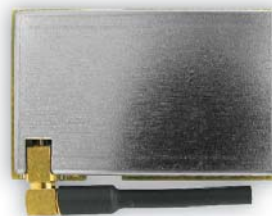
RF Performance Optimized and Guaranteed

WiSE250 modules are thoroughly optimized and tested to ensure consistent, superior RF performance.

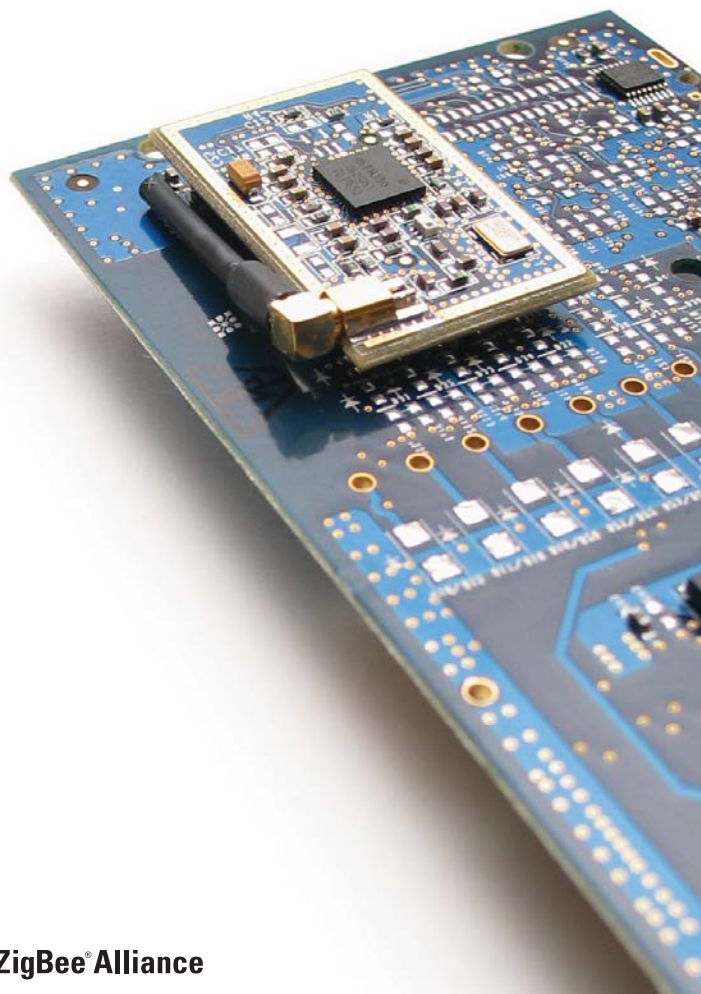
Small Form Factor

The WiSE250's minimal size - slightly smaller than the EM250 RCM, makes it easy to integrate into existing enclosures.

WiSE250



Actual Size (shown with whip antenna)



A Solid Platform with Flexible Options

Firmware

We can provide customized firmware on the module for our customers. Please contact us to discuss your application's needs.

GPIO

17 GPIO connections (with alternate functions) are available on the module. (See the module connector pin-out on reverse.)

Module Power Consumption Profile

Continuous background current of 0.6uA.

TX/RX current of 35mA.

A 'sleepy' module will last **up to 6 years** on two AA batteries.

Antenna Options

The module may be ordered with one of two antenna options. A flexible wire antenna, or a connection to an external SMA antenna. (SMA antenna is a typical 2.4 GHz router antenna.) SMA antennas are recommended where the module needs to be enclosed in a metal box.

Other Features

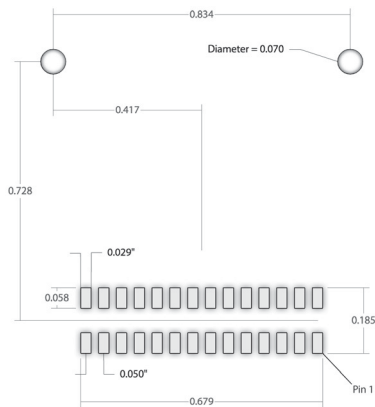
RoHS compliant modules available.

Industry standard 128 bit AES compliant encryption engine.

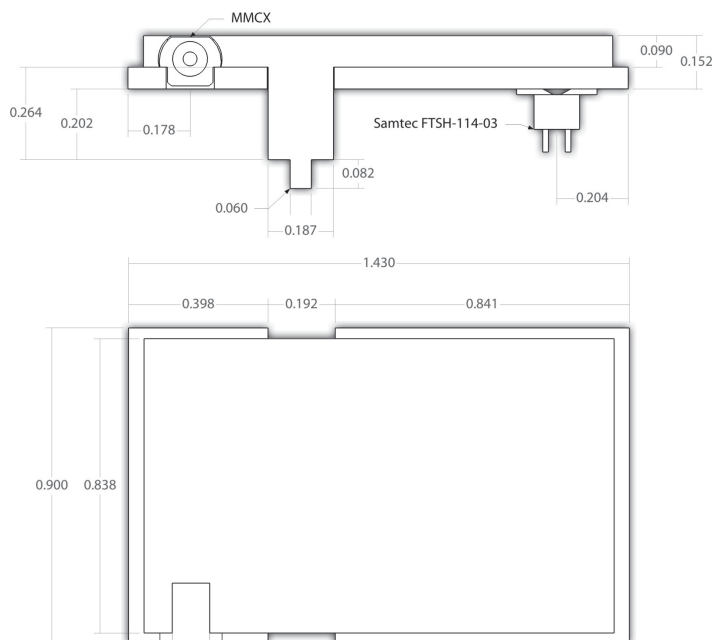
Module Connector Specifications

VBRD	1	2	VBRD	Connector	Samtec FTSH-114-03
GPIO[1]	3	4	GPIO[2]	VBRD	3.3 VDC
GPIO[12]	5	6	GPIO[0]	SPI	GPIO 0,1,2 Up to 920 Kbps
GPIO[3]	7	8	GPIO[11]		
GPIO[5]	9	10	GPIO[4]	I2C	GPIO 1,2
GPIO[7]	11	12	GPIO[6]	UART	GPIO 9,10 RS232/485 Up to 115 Kbps
GPIO[9]	13	14	GPIO[8]	ADC (Analog to Digital)	GPIO 5,4,6,7 0-3.3V, 12 bit resolution
RSTB	15	16	GPIO[10]		
GND	17	18	GND	Timers	Two 16 bit general purpose timers and one 16 bit sleep timer
SIF_CLK	19	20	SIF_MISO	Digital I/O	GPIO 1-17
SIF_MOSI	21	22	SIF_LOADB	Wakeup	All GPIOs
GPIO[16]	23	24	GPIO[15]	Hardware Interrupt	GPIO 8,14,15,16
GPIO[14]	25	26	GPIO[13]		
GND	27	28	GND		

Module Footprint



Module Dimensions



Compliant Specifications



IEEE 802.15.4	ZigBee v1.0 (2004)	ZigBee PRO draft
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RF Characteristics

Outdoor LOS range	250m
TX Power	Up to 5dBm
RX Sensitivity	-95 dBm (1% PER)
Frequency	ISM 2.405 - 2.480 GHz
Data Rate	250 Kbps

Power Requirements

Supply Voltage	2.7 - 3.6 VDC
TX / RX Current	35 mA (nominal)
Idle / Napping Current	8.5 mA
Sleep Current	0.6 uA
Wake Up /Sleep Time	64 ms from/to Sleep < 1 ms from/to Idle / Napping

Physical Specifications

Dimensions	1.43 x 0.9 inch / 36.3 x 22.9 mm
Operating Temperature	-40 to 85 °C / -40 to 185 °F
Antenna Connector	Edge Mounted MMCX
Antenna Options	Included monopole whip Manufacturer: Riga Development PN: MMCXANT RP-SMA Dipole antenna with gain up to 3.2 dBi Manufacturer: Pulse Engineering PN: W1027

FCC / IC Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

This device has been designed to operate with the antennas listed below, and having a maximum gain of 3.2 dBi. Antennas not included in this list or having a gain greater than 3.2 dBi are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that permitted for successful communication.

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

When integrating the WiSE250 into your own product, you must:

Use only the provided antenna(s)

Operate the module according to the specifications listed in this data sheet

Include a label clearly visible on the exterior of the product which states:
"Contains FCC ID: VFH-WISE250 / IC: 7195A-WISE250"

Ordering Information / Part Numbers

WiSE250	Module with whip antenna
WiSE250-RoHS	RoHS compliant module with whip antenna
WiSE250-HG	Module with high-gain antenna
WiSE250-HG-RoHS	RoHS Compliant module with high-gain antenna



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