

RF Evaluation Kit

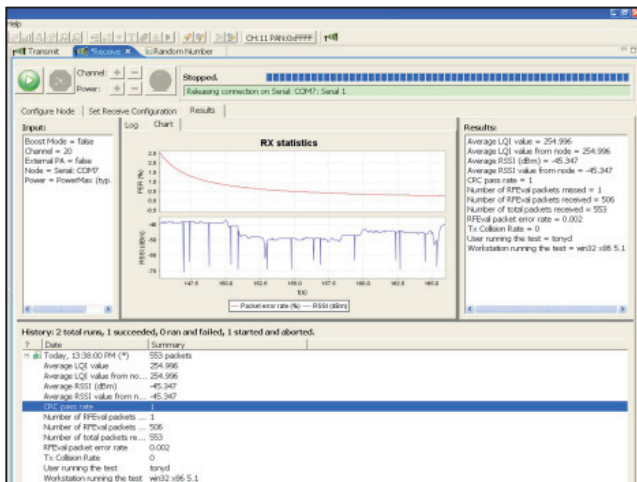
Complete System for EM250 and EM260 RF Performance Analysis

Tools

Fact Sheet



Carrier Boards with Radio Modules



InSight Desktop Evaluation Software

Introduction

Introducing the EM250/260 RF Evaluation Kit with InSight Desktop Software: The ideal RF evaluation platform for the EM250/260 family of transceivers.

The EM250/260 RF evaluation kit includes everything needed to assess RF-level connectivity in any environment you choose. This easy-to-use system is ready to go “out of the box” because there is no software programming required to perform tests. For RF evaluation out in the field, the system can also operate battery-powered for convenient portability.

The RF Evaluation Kit can measure the EM250/260 RF chip functionality in normal mode and optionally in “boost” mode for those applications requiring a higher level of RF performance.

RF Evaluation Hardware

The kit includes two EM250 radio modules with external antennas and two RF carrier boards. They combine to form the RF evaluation board which performs all the vital functions required to test RF communications. The RF Evaluation kit is applicable to both EM250 and EM260 transceivers because the EM250 and EM260 RF Transceivers share the same RF analog core. The evaluation boards can easily switch between line-powered and battery-powered modes.

Each evaluation board includes a full array of control buttons and jumpers to perform several RF-related tests including transmit/receive testing and packet error rate analysis. It also includes a 2-line LCD and buzzer to provide real-time visual and audio feedback. The evaluation boards can perform various functional tests in a portable stand-alone mode, or in combination with a PC running InSight Desktop software.

InSight Desktop Evaluation Software

The InSight Desktop Evaluation Kit software provides the ideal RF testing control console for hardware-level RF analysis. InSight Desktop runs on any windows-compatible PC and easily interfaces with the hardware evaluation boards via a USB cable. InSight Desktop allows you to quickly configure the RF evaluation boards to perform hardware tests right from the PC while providing graphical real-time testing feedback. In addition to hardware range testing, InSight Desktop tests other chip features such as the random number generator, ADC, and deep sleep functions. Further, InSight Desktop software includes test logging capability for detailed post processing by the user. The InSight Desktop Evaluation software is fully compatible with any customer-developed EM250-enabled module, as well as the EM250 radio modules included with the kit.

Summary

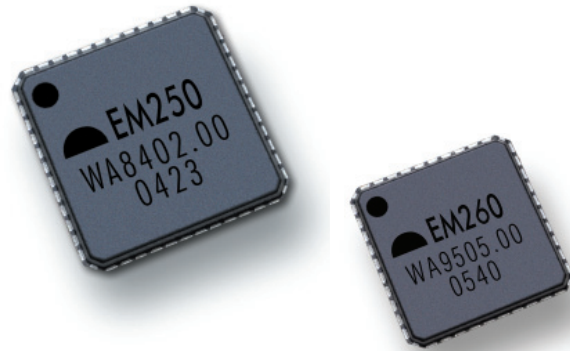
The EM250/260 hardware evaluation kit is the ideal system to calculate the performance of the EM250/260 under various RF conditions and during all stages of wireless evaluation and development.

Evaluation Kit Functional Tests

- Range testing
- RF Transmit Power
 - Tone test
 - Character stream test
- RF Receive sensitivity
- Energy scan test
- Deep sleep power usage test
- ADC test

Kit Contents

Item	Qty
Radio Module with Carrier Board	2
AA batteries	4
Power supply	2
USB Cables	2
Antennas	2
InSight Desktop Software	1
User Guide	1



EM250/EM260 RF Characteristics

Data Rate	250kbps
Frequency	2400 - 2485 16.5 MHz Channels
RX Sensitivity	-97.5 dBm - Normal Mode -98.5 dBm - Boost Mode
Adj Channel Rejection (15.4)	>35dB
Alt Channel Rejection (15.4)	>40dB
802.11g Rejection (+10 / -10 MHz)	>40dB
TX Power	-32 dBm to + 3 dBm - Normal Mode -32 dBm to + 5 dBm - Boost Mode

About Ember

Ember develops wireless sensor and control network technologies that help make our living and working environments safer, smarter, more comfortable and energy efficient. Ember's ZigBee-based semiconductors and software enable communication between devices embedded in a variety of building and home automation products. Ember is a lead member of the ZigBee Alliance, and its platform is the National Technical Systems' (NTS) "Golden Suite" for 802.15.4/ZigBee interoperability testing.

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