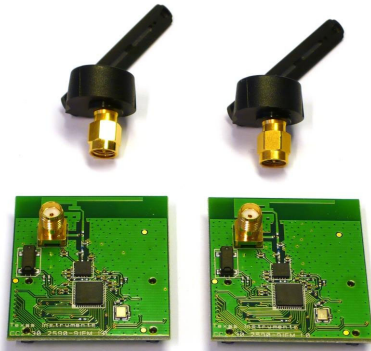


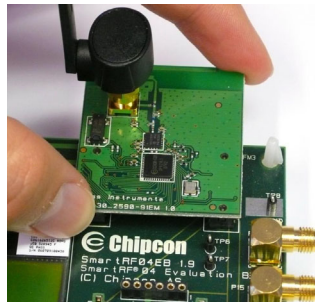
CC2430-CC2590EMK Quick Start Guide

1. Kit Contents



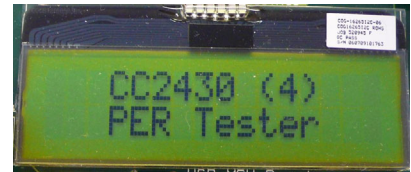
2 x CC2430-CC2590EM and antennas
 Documentation

2. Plug EM into SmartRF04EB



The CC2430-CC2590EM can be plugged into the SmartRF04EB. Please refer to the CC2430DK User Guide for more information about SmartRF04EB.

3. Packet Error Rate (PER)



When power is applied to the SmartRF04EB, the preprogrammed PER test on the CC2430 will start running. The LCD will display the screen as shown in the picture above. The number in the parentheses is the revision of the CC2430. Press Button S1 to enter the menu.

4. Set channel



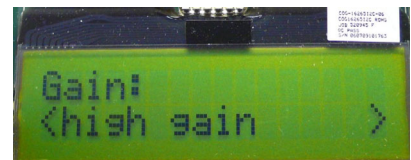
Select a channel between 11 and 26 (2405-2480 MHz). The channel is selected by navigating the joystick to the right or left. Confirm the selection by pressing Button S1.

5. Select TX or RX



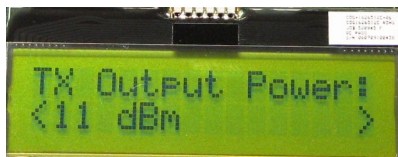
Select receiver on one of the SmartRF04EB's and transmitter on the other. Use the joystick to select mode. Confirm the selection by pressing Button S1.

6. RX: Select Gain



Select LNA gain on the CC2590 with the joystick. Either high gain or low gain mode are possible settings. Normally, high gain mode should be selected. Confirm the selection with Button S1. The receiver is now ready to receive packets.

7. TX: Select Output Power



On the transmitter node, select the TX output power (signal strength). Use the joystick to select between -13 dBm, -3 dBm, 5 dBm, 10 dBm or 11 dBm. Confirm the selection with Button S1.

8. TX: Select # of Packets



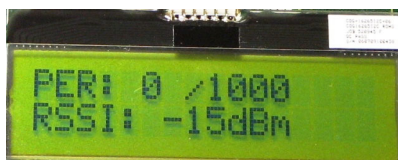
Select burst size (number of packets to send) by using the joystick, either 1000, 10K, 100K or 1M packets. Confirm the selection with Button S1.

9. TX: Start PER Test



The transmitter is now configured for the PER test. The PER test is started by pushing the joystick (as a button). The transmitter will display the number of packets sent during the PER test. The PER test is stopped by pushing the joystick again.

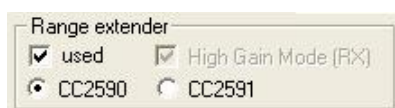
10. RX: Observe PER



The PER test receiver will display the PER value (number of lost and erroneous packets divided by the total number of packets sent, displayed as a fraction of 1000). It will also display a moving average RSSI value (received signal strength). The test can be reset by pressing Button S1.

11. SmartRF Studio

SmartRF® Studio supports the CC2430-CC2590. When the board is connected to the SmartRF04EB, it is possible to select either CC2590 or CC2591, depending on the combo board you have.



Studio will then make sure that CC2430 is set up correctly to support controlling of the CC2590.

12. More Information

For more information about the CC2590, please visit the product web page on www.ti.com.

Kit and Software

The source code for the PER tester and EM reference design can be downloaded from the CC2430-CC2590EMK web page. The latest version of SmartRF® Studio can be downloaded from www.ti.com/smarterstudio

We hope you will enjoy working with the CC2590 and associated LPRF products from Texas Instruments.

IMPORTANT NOTICE

Texas Instruments Incorporated and its subsidiaries (TI) reserve the right to make corrections, modifications, enhancements, improvements, and other changes to its products and services at any time and to discontinue any product or service without notice. Customers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All products are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its hardware products to the specifications applicable at the time of sale in accordance with TI's standard warranty. Testing and other quality control techniques are used to the extent TI deems necessary to support this warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

TI assumes no liability for applications assistance or customer product design. Customers are responsible for their products and applications using TI components. To minimize the risks associated with customer products and applications, customers should provide adequate design and operating safeguards.

TI does not warrant or represent that any license, either express or implied, is granted under any TI patent right, copyright, mask work right, or other TI intellectual property right relating to any combination, machine, or process in which TI products or services are used. Information published by TI regarding third-party products or services does not constitute a license from TI to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

Reproduction of TI information in TI data books or data sheets is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. Reproduction of this information with alteration is an unfair and deceptive business practice. TI is not responsible or liable for such altered documentation. Information of third parties may be subject to additional restrictions.

Resale of TI products or services with statements different from or beyond the parameters stated by TI for that product or service voids all express and any implied warranties for the associated TI product or service and is an unfair and deceptive business practice. TI is not responsible or liable for any such statements.

TI products are not authorized for use in safety-critical applications (such as life support) where a failure of the TI product would reasonably be expected to cause severe personal injury or death, unless officers of the parties have executed an agreement specifically governing such use. Buyers represent that they have all necessary expertise in the safety and regulatory ramifications of their applications, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of TI products in such safety-critical applications, notwithstanding any applications-related information or support that may be provided by TI. Further, Buyers must fully indemnify TI and its representatives against any damages arising out of the use of TI products in such safety-critical applications.

TI products are neither designed nor intended for use in military/aerospace applications or environments unless the TI products are specifically designated by TI as military-grade or "enhanced plastic." Only products designated by TI as military-grade meet military specifications. Buyers acknowledge and agree that any such use of TI products which TI has not designated as military-grade is solely at the Buyer's risk, and that they are solely responsible for compliance with all legal and regulatory requirements in connection with such use.

TI products are neither designed nor intended for use in automotive applications or environments unless the specific TI products are designated by TI as compliant with ISO/TS 16949 requirements. Buyers acknowledge and agree that, if they use any non-designated products in automotive applications, TI will not be responsible for any failure to meet such requirements.

Following are URLs where you can obtain information on other Texas Instruments products and application solutions:

Products

Amplifiers	amplifier.ti.com
Data Converters	dataconverter.ti.com
DSP	dsp.ti.com
Clocks and Timers	www.ti.com/clocks
Interface	interface.ti.com
Logic	logic.ti.com
Power Mgmt	power.ti.com
Microcontrollers	microcontroller.ti.com
RFID	www.ti-rfid.com
RF/IF and ZigBee® Solutions	www.ti.com/lprf

Applications

Audio	www.ti.com/audio
Automotive	www.ti.com/automotive
Broadband	www.ti.com/broadband
Digital Control	www.ti.com/digitalcontrol
Medical	www.ti.com/medical
Military	www.ti.com/military
Optical Networking	www.ti.com/opticalnetwork
Security	www.ti.com/security
Telephony	www.ti.com/telephony
Video & Imaging	www.ti.com/video
Wireless	www.ti.com/wireless

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
Copyright © 2008, Texas Instruments Incorporated