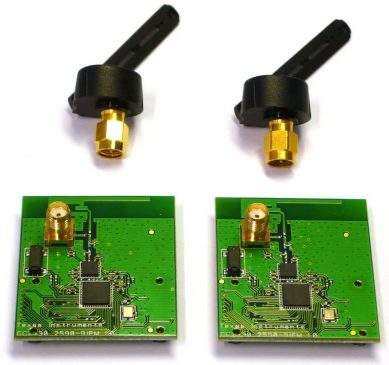
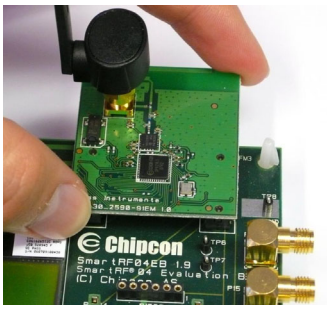
CC2430-CC2590EMK Quick Start Guide

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.

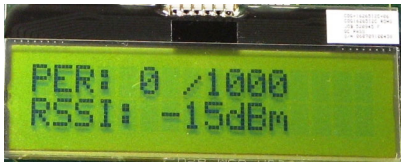
8. TX: Select # of Packets

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 toselect 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/smartrfstudio

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

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