

CC2430DK Quick Start Instructions

Revision 1.0, 2005-12-02

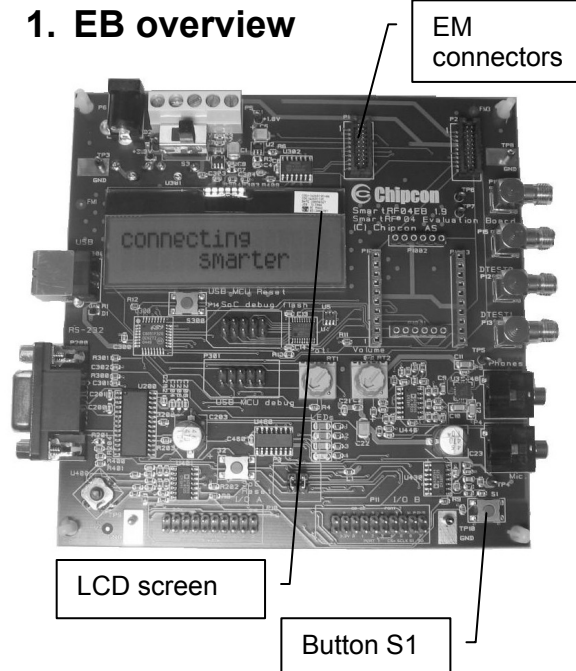
RF/Packet Error Rate Test

0. Kit Contents



- 2 SmartRF04EB
- 2 CC2430EM
- 2 antennas
- 2 USB cables

1. EB overview



2. Plug EM into EB



Insert a CC2430EM into both SmartRF04EBs. The connectors will only fit in one position, so that the EM cannot be inserted the wrong way. Do not force the EM.

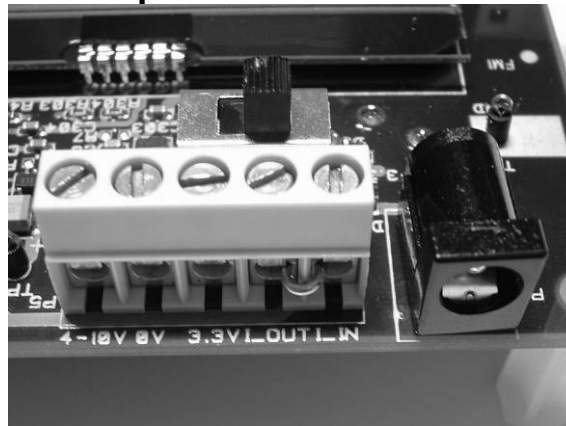
3a. Battery power



There are three different ways of applying power to the EB:

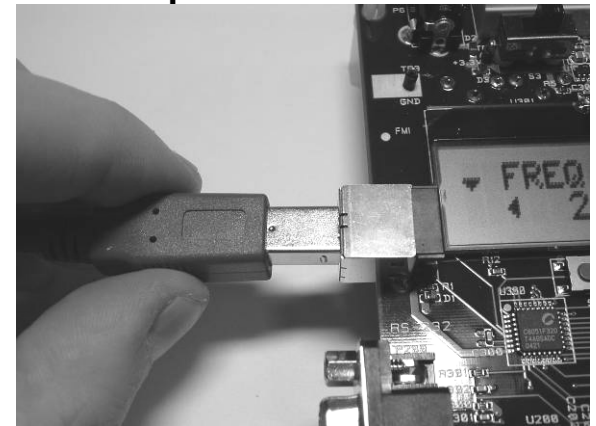
The first method involves using a battery, either a 9V or a 4xAAA battery pack connected to the battery connector on the bottom side of the board

3b. DC power



The second method applies DC power using the DC input jack (right in picture, centre is +, sleeve is ground), or by connecting a 4-10V voltage source between the 4-10V and 0V terminals of the power connector (left in picture). It is also possible to connect a 3.3V voltage source between the 3.3V and 0V terminals. The on-board voltage regulators will be bypassed in this case.

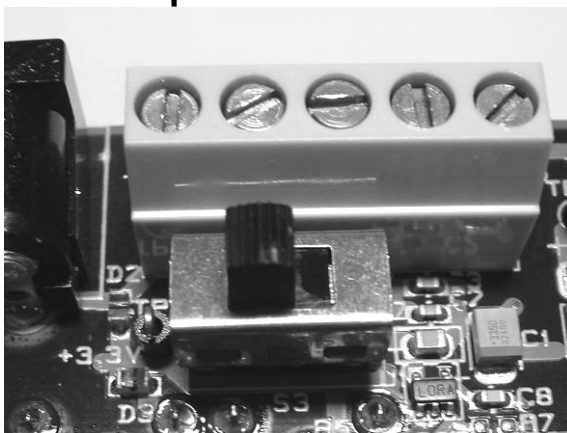
3c. USB power



The EB can also be powered from the USB bus. Make sure that the SmartRF® Studio software is installed before connecting the EB to the PC, otherwise you may experience problems in installing it later due to driver issues.

Note that if multiple power sources are connected, the source with the highest voltage will power the EB. This means that you should disconnect any attached battery when using a lab supply or USB power, otherwise the battery will be drained.

4. Set power switch



If a 3.3V source is used as described in 3b above, the switch should be set to the leftmost position. For all other cases, the switch should be set to the rightmost position. This switch can be used to turn off the EB by switching it to the opposite position of that used to turn it on.

5. Packet error rate test



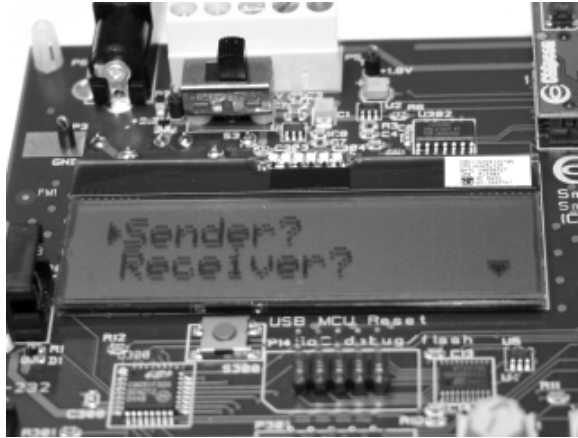
When power is applied to the board, the test program will start. You should see the Chipcon logo shown above on the LCD display on both EBs. Moving the joystick down will show the first menu item.

6. Select RF Test



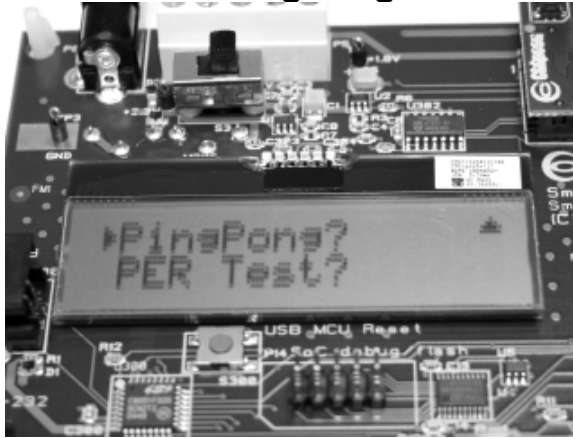
The first menu item is RF Test. Select this test by moving the joystick to the right.

7. Select Sender/Receiver



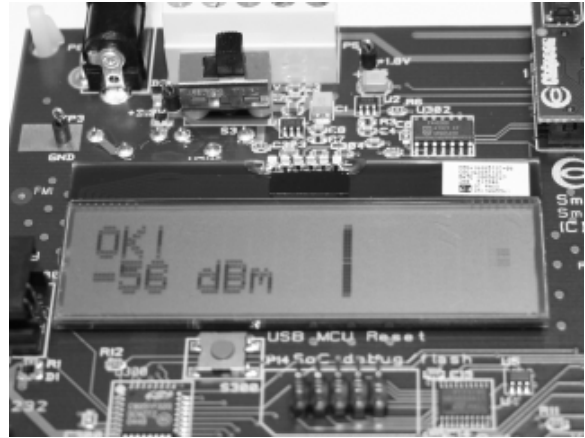
Select Sender on one EB and Receiver on the other by moving the joystick. Confirm by moving the joystick to the right. The Receiving node will display “Waiting”.

8. Select PingPong



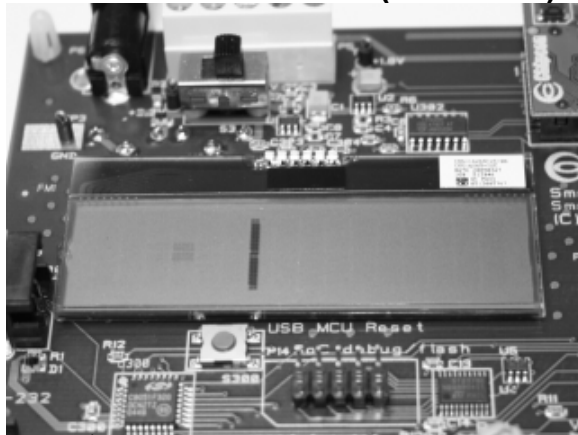
On the sender select PingPong and confirm by moving joystick to the right. The board set up to be the sender will start to send packets and the Receiver board will send back a response.

9. Sender notification



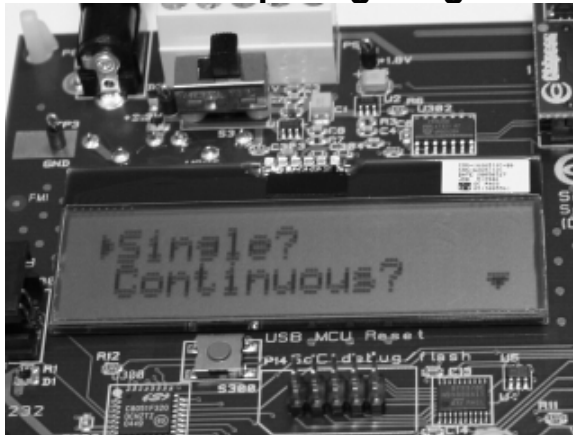
If the Sender gets the acknowledgment from the second board “OK!” and the received signal strength will be displayed.

10. 2nd Board (Receiver)



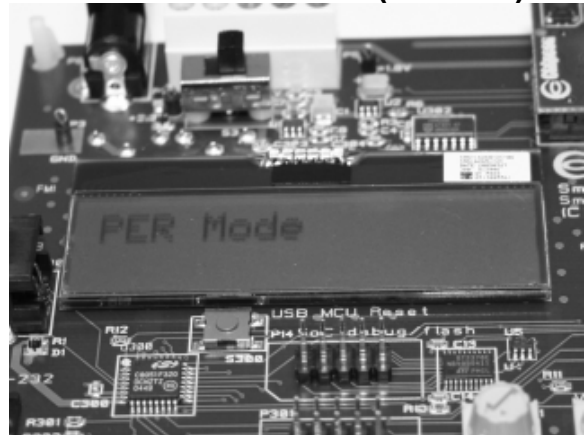
The 2nd board (Set up as “Receiver”) will show a graphical presentation of the packets sent.

11. Stop PingPong



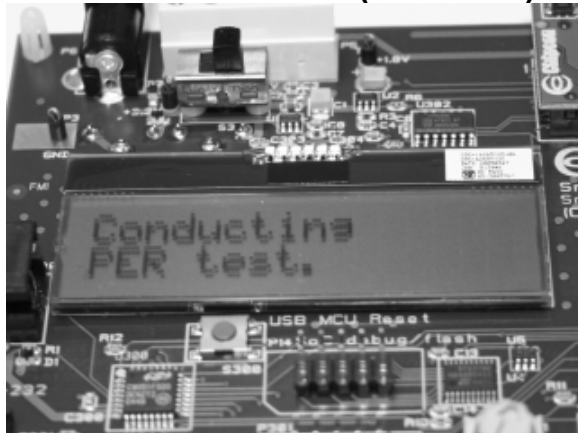
To stop the PingPong application on the Sender move and hold the joystick to the left. This will take you back to the previous menu. This time select “PER Test”.

12. PER Test (Sender)



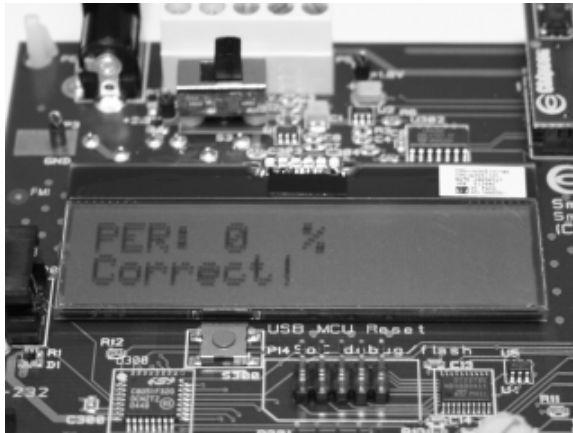
The Sender will show “PER Mode”. The Sender will send a request to the Receiver to send it 1000 packets. It will then calculate the PER rate.

13. Per Test (Receiver)



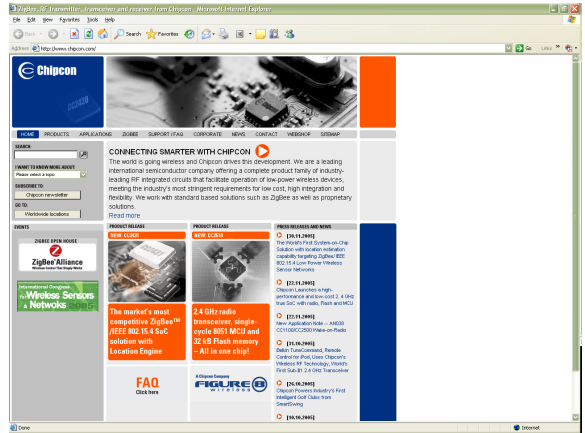
The Receiver will display “Conducting PER test” while it is sending the requested 1000 packets.

14. Per Test results



Once the PER test is ready the result will be displayed on the Sender. In this case no packets were lost.

15. Documentation

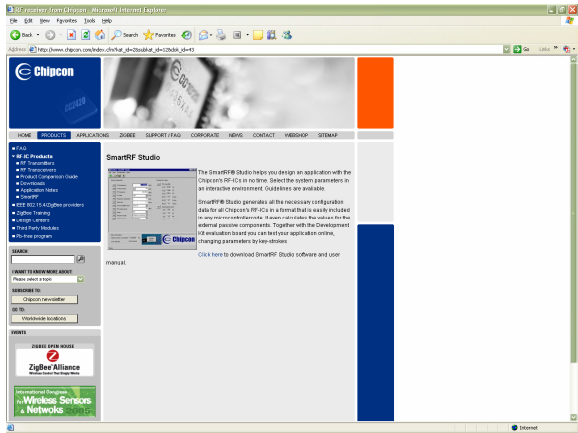


Please visit www.chipcon.com to download the CC2430DK User Manual, the SmartRF®Studio software, examples, as well as relevant datasheets and application notes.

If you for some reason cannot access the Chipcon web site and download the files, please contact your local Chipcon representative for assistance.

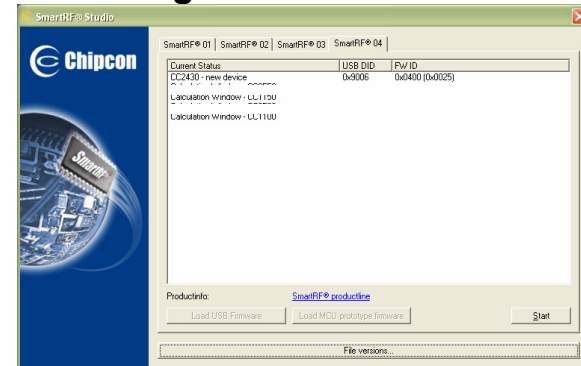
SmartRF® Studio

1. Download



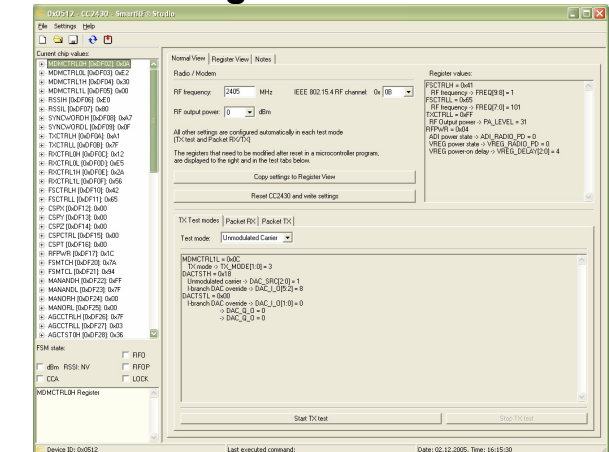
Before connecting the EB to your PC, download SmartRF® Studio from www.chipcon.com. To find it, click on Products. SmartRF® Studio is listed under Development Tools. Install the program.

2. Plug in EB



After the install program finishes, connect the EB to the PC using the USB cable. Run SmartRF® Studio. Select the SmartRF®04 tab. Select the CC2430 board, and click the Run button.

3. Configure



You can now configure the radio chip, run tests or communicate with another EB.