

# CC1111 USB Evaluation Kit 868/915 MHz Quick Start Guide

## 1. Kit Contents



- 1 x CC1111 USB Dongle (CC1111Dongle-868)
- This Quick Start Guide

The hardware in this kit is designed to comply with ETSI, FCC and IC regulatory requirements over temperature from 0 to +35°C.

## 2. Getting Started

The CC1111 USB Dongle can be used as a development platform for USB and RF applications.

An external development board or debugger, like the CC Debugger, SmartRF04EB or SmartRF05EB, is required to program and debug software running on the CC1111.

Note that the CC1111 USB Dongle is pre-programmed with the packet sniffer firmware.

**This Quick Start Guide will describe how to use the dongle with the packet sniffer and what would be the next steps for developing your own software.**

## 3. Preparations

Before proceeding, please download and install the following tools:

**SmartRF Flash Programmer**  
[www.ti.com/tool/flash-programmer](http://www.ti.com/tool/flash-programmer)

You will need this tool to program the packet capture firmware on the CC1111 USB dongle

**SmartRF Packet Sniffer**  
[www.ti.com/packetsniffer](http://www.ti.com/packetsniffer)

This is the PC tool that displays and parses the packets received by the capture device.

## 4. Programming the Dongle

For the USB dongle to operate as a packet capture device, it must be programmed with the packet sniffer firmware. By default, the dongle comes pre-programmed with this firmware.

Connect the USB dongle to the debugger or the development board with an appropriate 10 pin flat cable. The dongle must also be powered via the USB bus. Refer to picture below for an example.



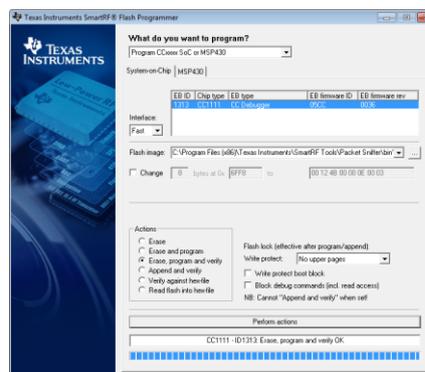
**Caution!** Avoid using other power sources for the dongle than a regular USB voltage source at max 5.5V, 500 mA.

## 5. Programming the Dongle

Launch the SmartRF Flash Programmer and make sure you select the “System-on-Chip” tab. The tool should show a line with CC1111 connected to a SmartRF04EB.

Next, locate the flash image **sniffer\_fw\_ccxx11.hex** in

“C:\Program Files\Texas Instruments\SmartRF Tools\Packet Sniffer\bin\general\firmware”



Select “Erase, program and verify” and press the “Perform Actions” button.

## 6. Install USB Driver

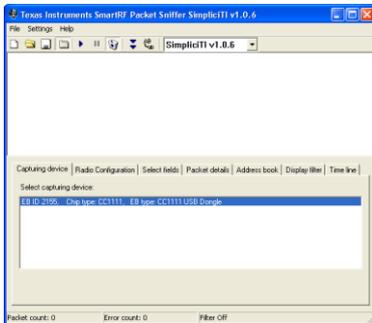
After programming the device, disconnect the dongle from the programming board and plug it into the PC. Windows’ new hardware wizard will appear.

Select the options for automatic installation and wait for the driver installation to complete. If the Wizard asks for a specific driver, point it to the cecal2.inf file located in “C:\Program Files\Texas Instruments\SmartRF Tools\Drivers\cebal\win\_<arch>-specific->”

After installation of the driver, the Packet Sniffer capture device is ready for use.

## 7. Packet Sniffer (1)

Launch the Packet Sniffer. A dialog will request the user to select a protocol. The CC1111 capture device can be used with the SimplicTI or the Generic (no parsing) protocols. A new window will appear.

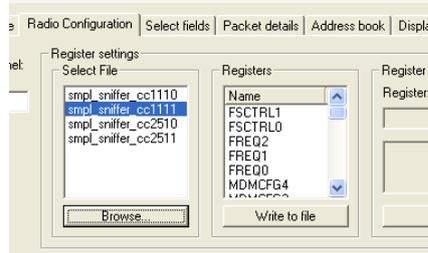


The USB dongle should be listed with chip type CC1111 and EB type CC1111 USB dongle in the “Capturing Device” tab.

Highlight the device to make it your capture device.

## 8. Packet Sniffer (2)

Next, select the Radio Configuration tab and make sure the radio registers on the device are set according to the format of the radio signals you are sniffing.



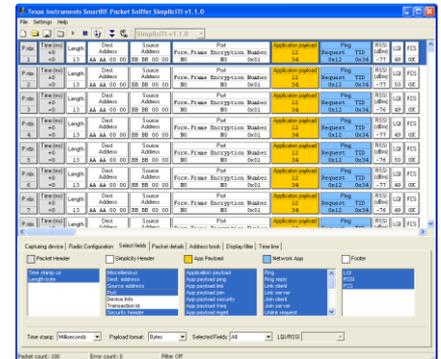
If this is the first time you use the tool, press the browse button to locate a .prs file with packet sniffer register settings for CC1111.

You can generate your own .prs files with the “Register Export” function in SmartRF Studio

## 9. Packet Sniffer (3)

Finally, press the small “play” icon on the tool bar to start sniffing packets.

If there are radio packets on the air, and the CC1111 has the appropriate radio settings, the captured packets will be displayed in the packet sniffer display window.



Enjoy!

## 10. Developing USB Software

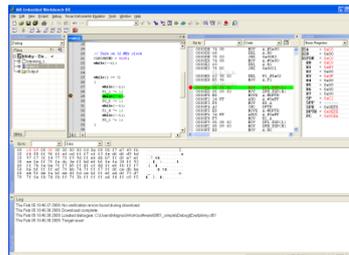
A good start for developing your own USB application for the CC1111 USB dongle would be the “CC USB Firmware Library and Examples” software package.

The Library contains a complete USB framework that allows the user to develop any USB device type. Examples showing implementations of a HID device and a CDC device are included.

The software can be downloaded from the CC1111EMK web page or directly from [www.ti.com/lit/zip/swrc088](http://www.ti.com/lit/zip/swrc088)

## 11. Development Tools

The preferred tool for developing software for CC1111 and for single stepping and debugging is IAR Embedded Workbench for 8051.



A free, code size limited version can be downloaded from the web. See [www.iar.com/ew8051](http://www.iar.com/ew8051)

## 12. Thank You!

We hope you will enjoy working with the CC1111 device and related Low-Power RF products from Texas Instruments.

The Low Power RF Online Community has forums, blogs and videos. Use the forums to find information, discuss and get help with your design. Join us at [www.ti.com/lprf-forum](http://www.ti.com/lprf-forum)



**Caution!** The kit contains ESD sensitive components. Handle with care to prevent permanent damage.

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### Applications

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Computers and Peripherals	<a href="http://www.ti.com/computers">www.ti.com/computers</a>
Consumer Electronics	<a href="http://www.ti.com/consumer-apps">www.ti.com/consumer-apps</a>
Energy and Lighting	<a href="http://www.ti.com/energy">www.ti.com/energy</a>
Industrial	<a href="http://www.ti.com/industrial">www.ti.com/industrial</a>
Medical	<a href="http://www.ti.com/medical">www.ti.com/medical</a>
Security	<a href="http://www.ti.com/security">www.ti.com/security</a>
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