CC1111F8RSP
1k units from:
**€ 4.18**

CC1111F16RSP
1k units from:
**€ 4.43**

CC1111F32RSP
1k units from:
**€ 4.79**

CC1111EMK868-915
Evaluation Kit
**€ 35**

# CC1111

## First RF SoC with USB Controller

Lionel Deflandre, Silica France

The CC1111 introduced by TI is the industry's first sub-1GHz radio-frequency (RF) system-on-chip (SoC) with an integrated USB controller, enabling a fast and easy bridge between PCs and RF. The CC1111 combines the excellent performance of TI's state-of-the-art RF transceiver (CC1101) with an enhanced 8051 microcontroller (MCU), 8/16/32kB of in-system programmable flash memory and a full-speed USB controller for improved low-power wireless sensor networking.

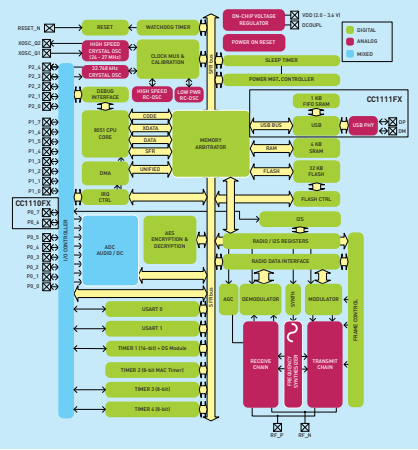
The 8051 is an one clock per cycle instruction as opposed to 12 bits clock instruction in standard 8051. The CC1111 provide a low power and compact PCB RF to USB solution. The power consumption is only 0.3µA in case of external interrupt wake up and 0.5µA in case of timer or external interrupt.

This system on chip solution is supported by the SimliciTI software, which can help the customer to quickly develop their application. The SimpliciTI software that is available from TI web site at no cost, no royalty, is available for all sub GHz (CC1xxx) and 2.4 GHz transceiver (CC25xx). This stack, will allow you to develop wireless networks solution. Different configuration are available: start or point to point. Up to 256 node can be used in a star configuration network.

The advantage of SimpliciTI is also the minimal resources of the MCU he required. SimpliciTI is supplied as full source code and the supplied projects can be compiled using the IAR MSP430 compiler.

The CC1111 include a security 128 AES coprocessor. His data rate is programmable from 1.2 up to 500kbps in FSK and MSK modulation and up to 250kbps in GFSK modulation. All the CC11xx devices are register compatible and includes the famous Wake On Radio function (WOR).

A package sniffer software is also available. The CC1111 is pin to pin and register compatible with the CC1110 (sub-1GHz SoC), CC2511 (2.4GHz SoC with USB) and CC2510 (2.4GHz SoC).




## Key Features

- $V_{CC}$ 2...3,6V
- Sleep current consumption of 0.3µA (see text)
- Transceiver:
  - -110dBm @ 1,2kbps
  - 500Kbps data rate (programmable)
  - Up to 10dBm output power
  - 300...928MHz
  - Digital RSSI
  - 128bits AES support
- Microcontroller:
  - 8051 with 4k RAM
  - DMA (e.g.: direct transfer from ADC to RF)
  - 8/16/32KB
  - Full speed USB with 1KB dedicated SRAM
  - 8-channel, 12-bit- ADC
  - I²S, 2 UART
  - Software compatible with CC25xx

## Key Applications

- Alarm
- Security systems
- Automatic meter reading
- Industrial monitoring
- Control, home and building automation
- Active RFID
- Remote controls

## Key Design Tips

- Complete design kit: CC1110/2510 DK. The kit comes with two system on chip debug plug-in board that provide additional physical Soc debug/programming interface for the SmartRFstudio. These daughter boards, are compatible with the Evalutation Module (EMK)
- Evaluation kit: CC1111EMK (USB dongle with CC1111 and chip antenna) http://focus.ti.com/docs/toolsw/folders/print/cc1111emk868-915.html CC1110DK is needed to programm the CC1111
- Software solution: Simpliciti http://focus.ti.com/docs/toolsw/folders/print/simpliciti.html

Service available or already delivered T&R from Manufacturer.

Tapes are available, but not stocked at Avnet Logistics due to low demand.

Device supported by or programming equipment, but the socket for this package must be provided by customer.

| P/N | Package | Programming | Taping & Reeling | Marking |
|---|---|---|---|---|
| CC1111F8RSP | 36-lead QFN | | | |
| CC1111F16RSP | 36-lead QFN | | | |
| CC1111F32RSP | 36-lead QFN | | | |
| CC1111EMK868-915 | Tool | | | |