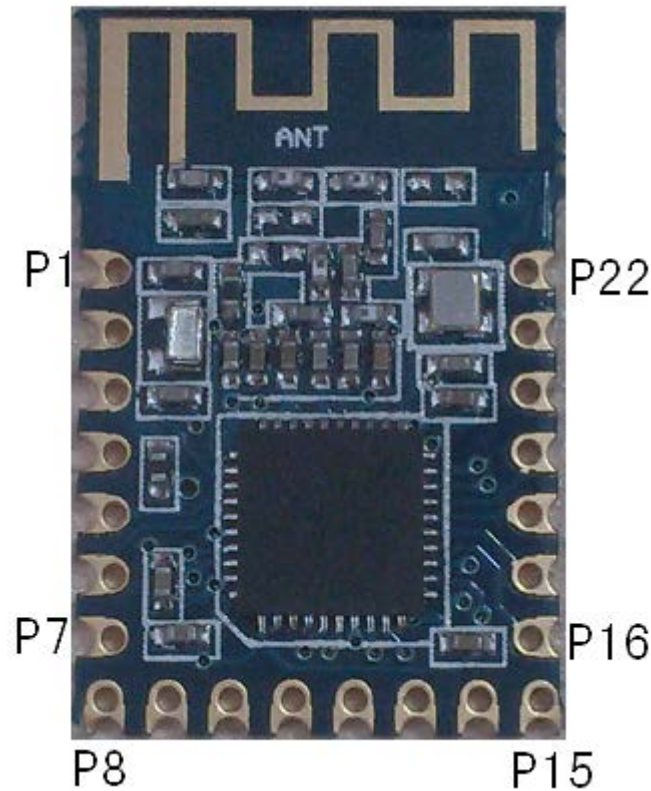




CC2530TR2.4Z-M

带 8051 内核的 ZigBee 无线收发数传模块



General Description

- The CC2530PATR2.4Z-M RF Module is a low-power, highly integrated 2.4-GHz transceiver that suitable for systems targeting compliance with worldwide radio-frequency.
- It's a true system-on-chip solution for 2.4-GHz IEEE802.15.4, ZigBee and RF4CE applications.
- 2.4-GHz IEEE802.15.4 compliant RF transceiver.
- Excellent receiver sensitivity and robustness to Interference, receiver sensitivity reach to -97dBm.
- Programmable output power up to 4.5dBm.
- Suitable for systems targeting compliance with worldwide radio-frequency
- Accurate digital RSSI/LQI support
- Data rate: 250kbps
- Modulation: O-QPSK



8051 MCU

- Powerful five-channel DMA
- 128KB in-system programmable flash, customization 32-,64-,256KB
- 8KB RAM with retention in all power modes
- CSMA/CA hardware support
- AES security coprocessor
- Battery monitor and temperature sensor
- 12-Bit ADC with eight channels and configurable resolution
- Two powerful USARTs with support for several serial protocols
- IEEE 802.15.4 MAC timer, general-purpose timers (One 16-Bit, Two 8-Bit)
- 32-kHz sleep timer with capture
- Watchdog timer
- 21 general-purpose I/O pins (19×4 mA, 2×20 mA)
- Hardware debug support
- Low Power
- Active-Mode RX (CPU Idle): 24 mA
- Active Mode TX at 1 dBm (CPU Idle): 29 mA
- Power Mode 1 (4 ms Wake-Up): 0.2 mA
- Power Mode 2 (Sleep Timer Running): 1 mA
- Power Mode 3 (External Interrupts): 0.4 mA
- Wide Supply-Voltage Range (2 V–3.6 V)



Applications

- 2.4-GHz IEEE 802.15.4 systems
- RF4CE remote control systems (64-KB flash and higher)
- ZigBee systems (256-KB flash)
- Home/Building automation
- Lighting systems
- Industrial control and monitoring
- Low-Power wireless sensor networks
- Consumer electronics
- Health care
- Industrial control

Electrical Characteristics

Ta = 25° C, VCC = 3.0V

Typically, equipment utilizing this device requires emissions testing and government approval, which is the responsibility of the equipment manufacture.

TEST ITEM	TEST CRITERIA &REQUIREMENT	REMARKS
Voltage supply	2.0—3.6V	DC
Center frequency	2394—2507MHz	Programmable
Frequency error	±40ppm	
Modulation	O-QPSK	
Output power	4.5dBm	Programmable
Receiving sensitivity	-97dBm	
Receiving current	24mA	
Transmitting current	29mA	
Sleep consumption	1uA	Power Mode 2
Data rate	250kbps	typical
Transmit distance	100M-200M	At open area
Antenna	50ohm	
Store temperature	-40—125° C	
Operating temperature	-40—125° C	
Package size	24.0*15.7mm	

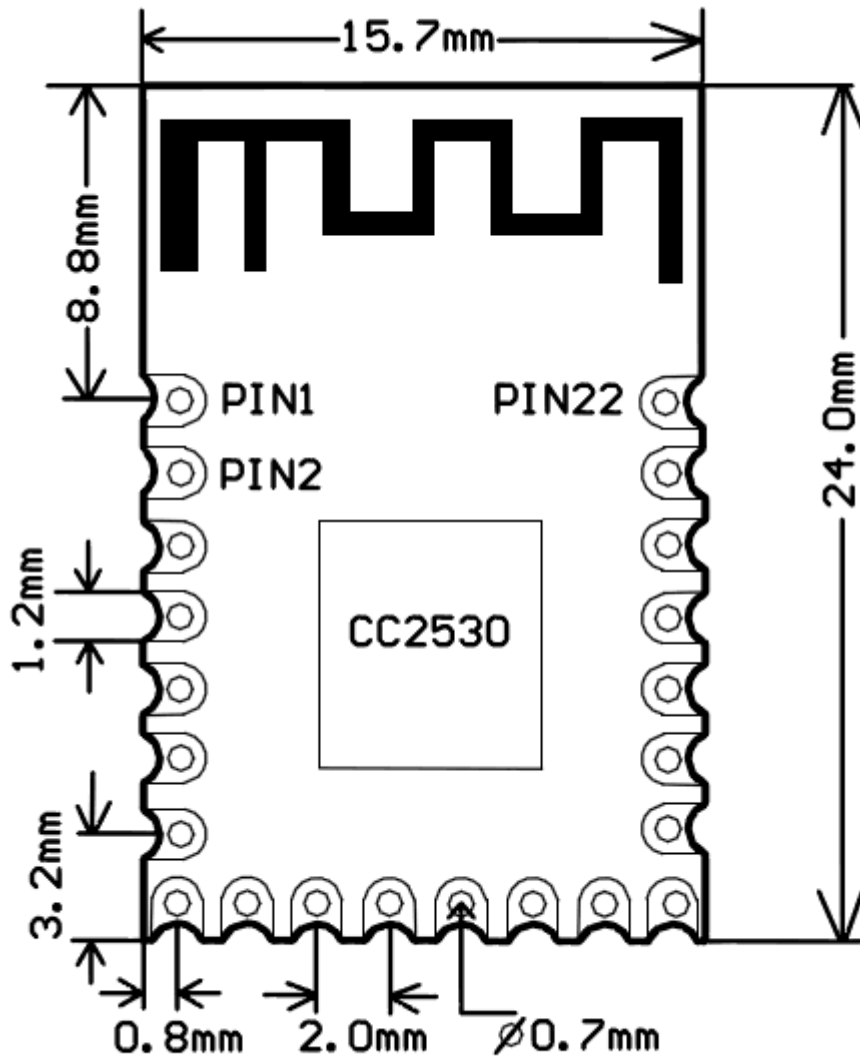
**Package Description**

*2-V-3.6-V digital power-supply connection

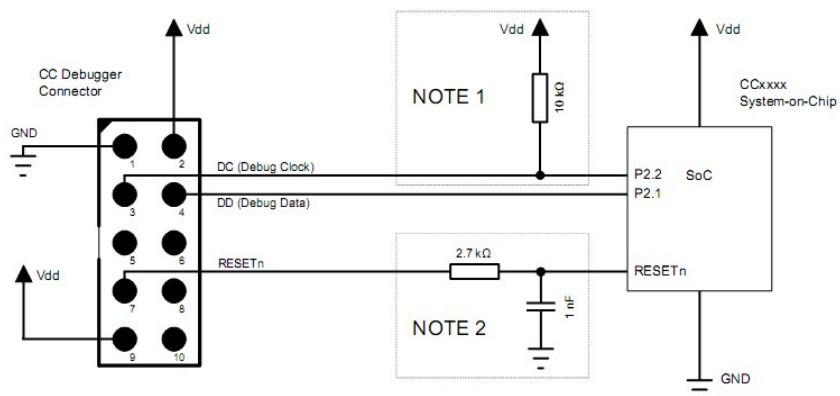
PIN	Interface	Description
1	P1.3	General I/O
2	GND	Ground
3	VCC	2V-3.6V DC power
4	RST	Reset function pin
5	P2.2/DC	CC Debugger DC or General I/O
6	P2.1/DD	CC Debugger DD or General I/O
7	P2.0	General I/O
8	P1.7	General I/O
9	P1.6	General I/O
10	P1.5	General I/O
11	P1.4	General I/O
12	P1.2	General I/O
13	P1.0	General I/O
14	P0.7	General I/O
15	P0.6	General I/O
16	P0.5	General I/O
17	P0.4	General I/O
18	P0.3	General I/O
19	P0.2	General I/O
20	P0.1	General I/O
21	P0.0	General I/O
22	P1.1	General I/O



- Package Description



Debugger and programmer connect





Development Tools

- TI CC2530 Development Kit
- TI CC2530 ZigBee Development Kit
- TI CC2530 Remo TI™ Development Kit for RF4CE
- TI SmartRF™ Software
- TI Packet Sniffer
- IAR Embedded Workbench™ Available

Tools & Software Download

Z-Stack:

<http://focus.ti.com.cn/cn/docs/toolsw/folders/print/z-stack.html>

SmartRF Flash Programmer:

<http://focus.ti.com.cn/cn/docs/toolsw/folders/print/flash-programmer.html>

SmartRF Protocol Packet Sniffer:

<http://focus.ti.com.cn/cn/docs/toolsw/folders/print/packet-sniffer.html>

SmartRF Studio:

<http://focus.ti.com.cn/cn/docs/toolsw/folders/print/smarterftm-studio.html>

CC2530-Software Examples

<http://focus.ti.com.cn/cn/lit/sw/swrc135b/swrc135b.zip>