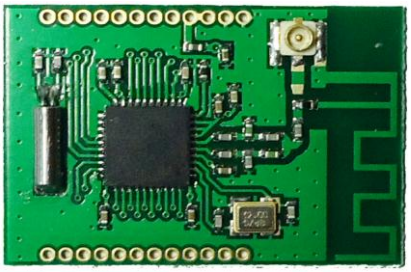
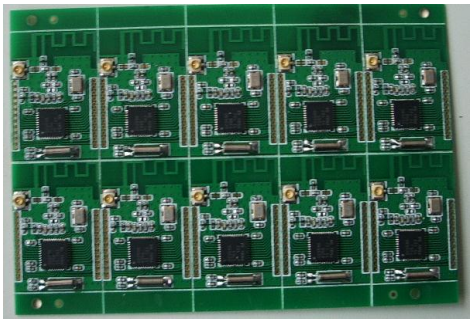
CC2530 Zigbee Module

CC2530 Zigbee Wireless RF Module





General Description

The **CC2530 Zigbee** 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 applications.

Electrical Characteristics

Ta = 25℃, VCC = 3.3V

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

ITEM	PARAMETER			UNIT
	MIN	TYPICAL	MAX	
Voltage supply	3.0	3.3	3.6	V
Transmitting current	36	38	40	mA
Receiving current	25	26	27	mA
Sleep consumption		1		uA
frequency	2.405		2.485	GHz
Output power	3.8	4.0	4.2	dBm
Receiving sensitivity		-97		dBm
Data rate		250		Kbps
Transmit distance		100		m

Baud Rate	2400	9600	115200	bps
Operating temperature	-40		80	℃
Package size	28×20×2 mm			

Radio

·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: 250kBank

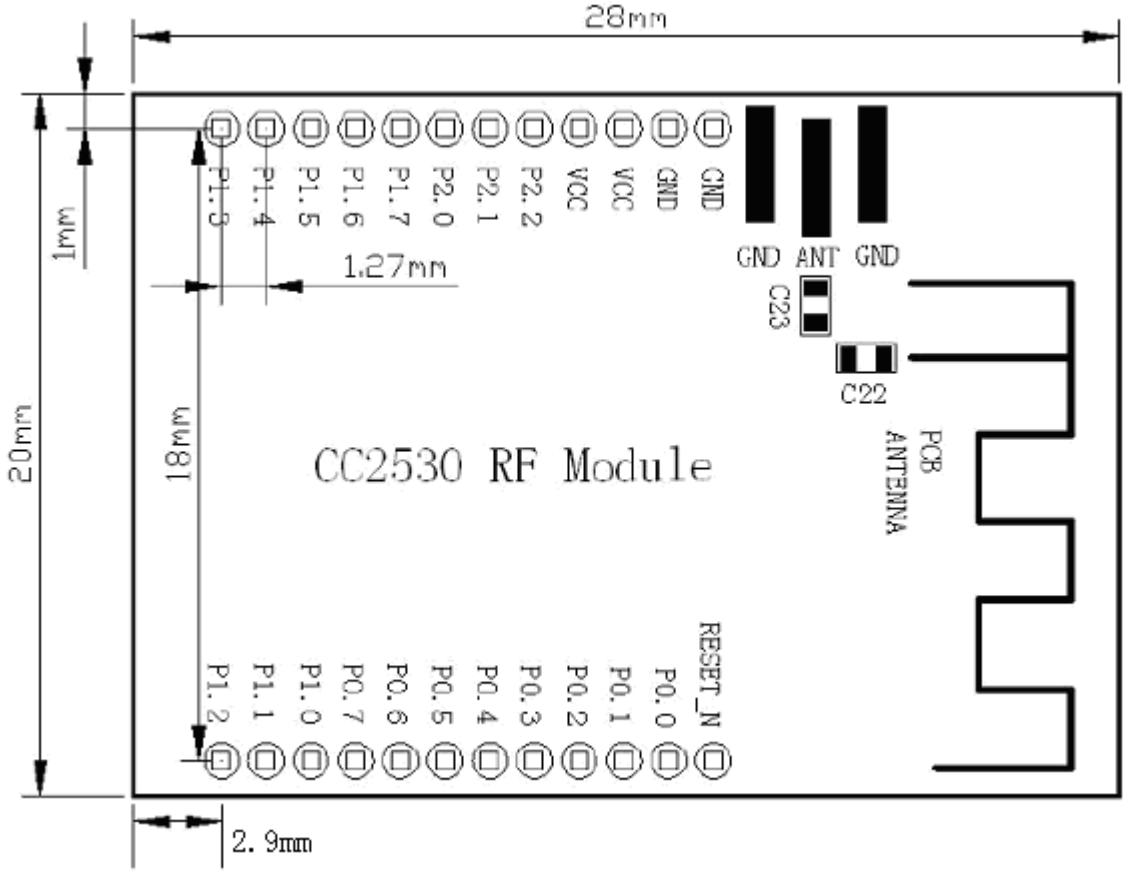
8051 MCU

·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

·Applications

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

·**Package Description**



Pin Description

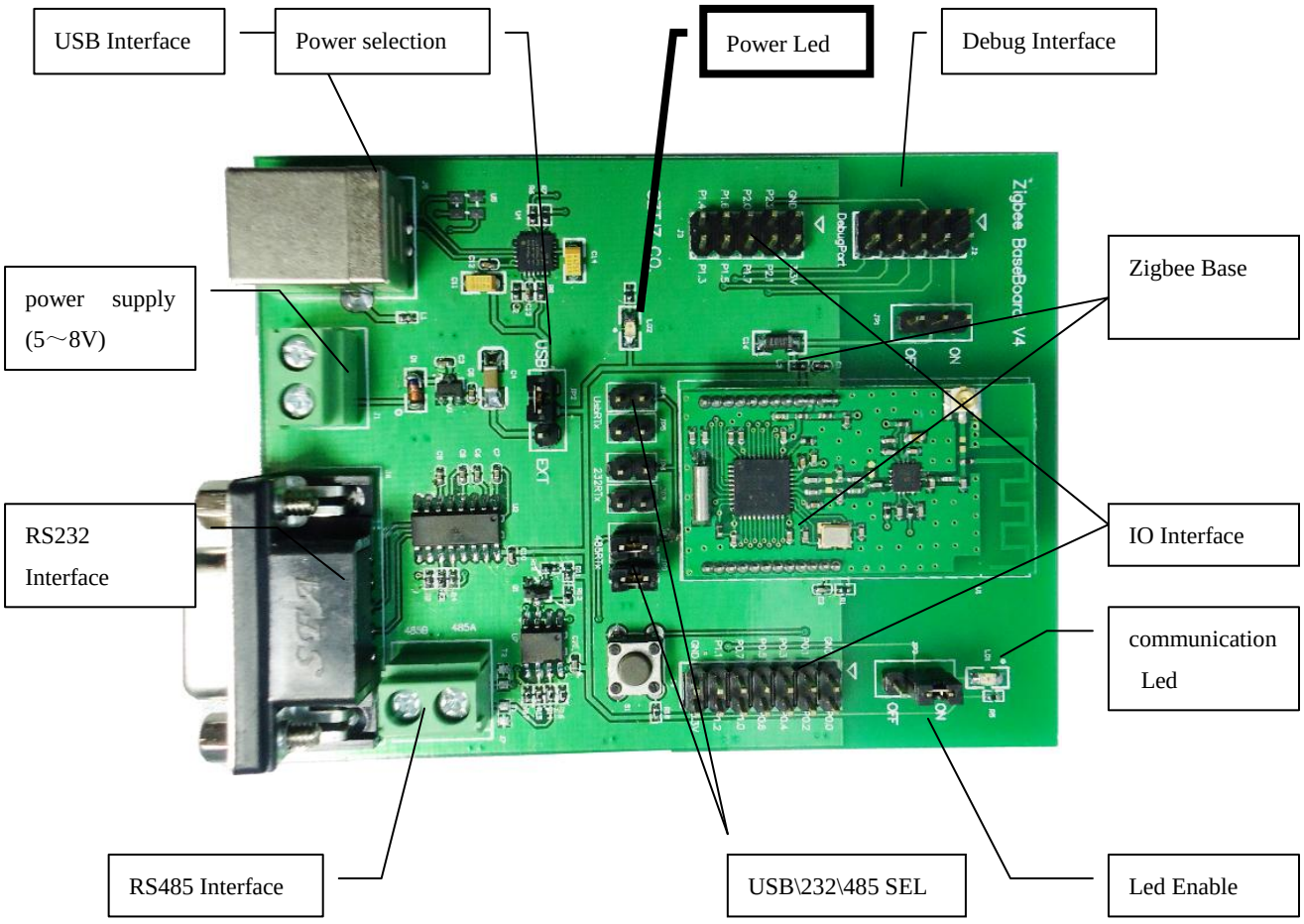
Pin name Pin type Description

Pin namee	Pin typ	Description
VCC	Power	DC 2.0—3.6V
GND	Ground	GND
RESET_N	reset	CC2530 RESET
P0.0	Digital I/O	CC2530 P0.0
P0.1	Digital I/O	CC2530 P0.0
P0.2	Digital I/O	CC2530 P0.2
P0.3	Digital I/O	CC2530 P0.3
P0.4	Digital I/O	CC2530 P0.4
P0.5	Digital I/O	CC2530 P0.5
P0.6	Digital I/O	CC2530 P0.5
P0.7	Digital I/O	CC2530 P0.5
P1.0	Digital I/O	CC2530 P1.0

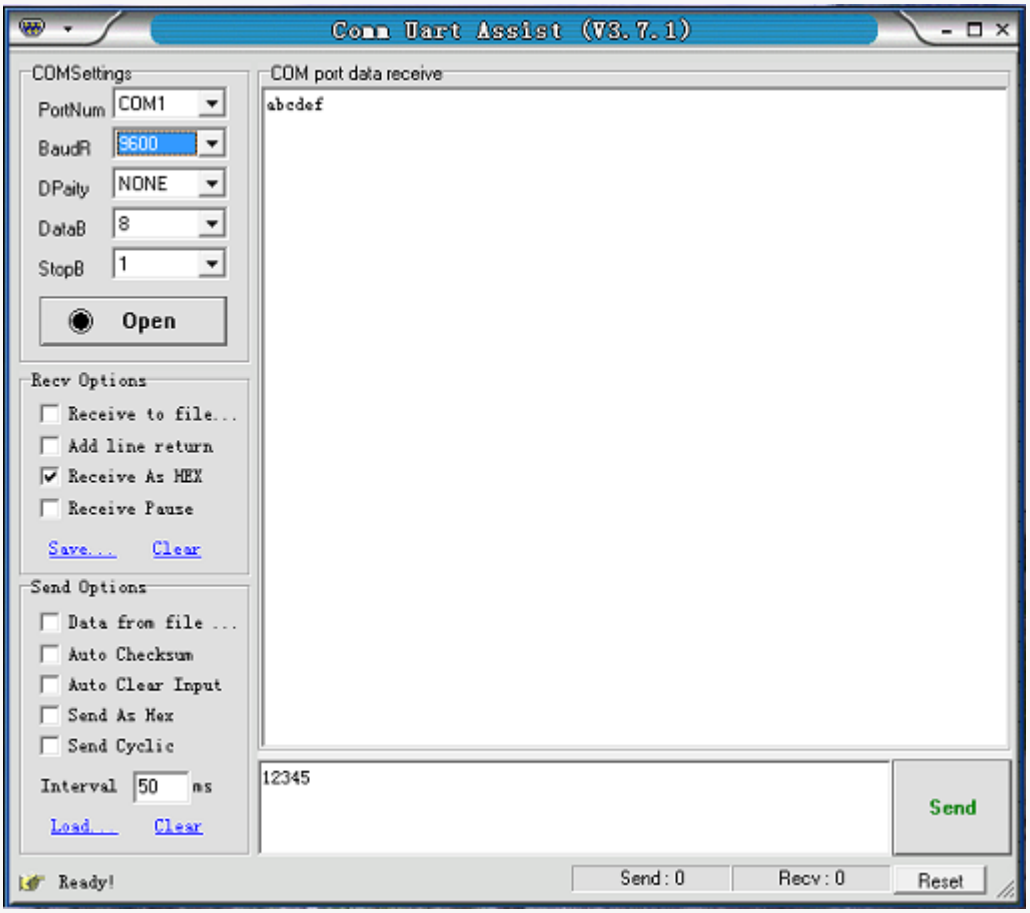
P1.1	Digital I/O	CC2530 P1.1
P1.2	Digital I/O	CC2530 P1.2
P1.3	Digital I/O	CC2530 P1.3
P1.4	Digital I/O	CC2530 P1.4
P1.5	Digital I/O	CC2530 P1.5
P1.6	Digital I/O	CC2530 P1.6
P1.7	Digital I/O	CC2530 P1.7
P2.0	Digital I/O	CC2530 P2.0
P2.1	Digital I/O	CC2530 P2.1
P2.2	Digital I/O	CC2530 P2.2
ANT	Antenna interface	50ohm
Note: 1. P2.3 and P2.4 connect to a 32768 KHz crystal. 2. Spring Antenna or PCB Antenna can be choice. 3. Read *TI CC2530 datasheet* for detail.		

Develop & Debug

Using Zigbee base board, it is easy to develop wireless application.



Inserting Zigbee module into base board, then, Connecting computer and Zigbee base board. In computer, running Comm UART Assist or other Comm debug software, As shown in the following illustration.



Setting com port, Baudrate etc, Default Baudrate setting 9600, parity NONE, DataBit 8, StopBit 1. then send data, zigbee module transmit RF data, other zigbee module receive data.