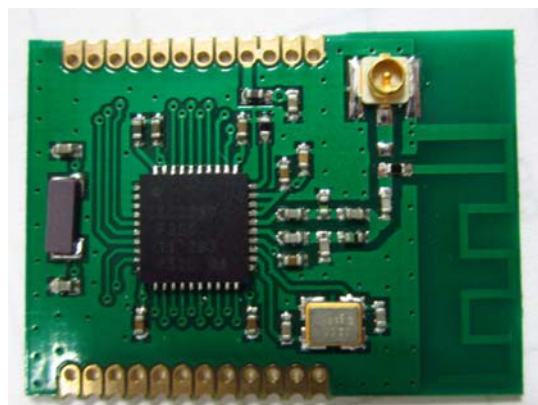# CC2530 Zigbee Module SZ1

• General Description

The SZ1 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°C, VCC = 3.3V

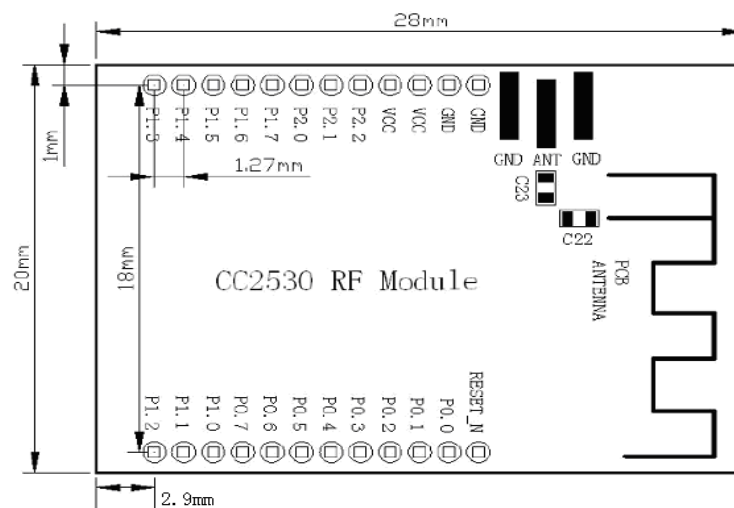| ITEM	PARAMETER			UNIT
	MIN	TYPICAL	MAX	
Voltage supply	2.1	3.3	3.6	V
Transmitting current	36	38	40	mA
Receiving current	25	26	27	mA
Sleep consumption		0.3		uA
frequency	2.405		2.485	GHz
Output power	3.5	4.0	4.2	dBm
Receiving sensitivity		−97		dBm
Data rate		250		Kbps
Transmit distance		150		m
Baud 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

• datarate: 250 kBps

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

• 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.

Regulatory information for the OEMs and Integrators

The guidelines described within this document are provided to OEM integrators installing
Zigbee module in notebook and tablet PC host platforms. Adherence to these requirements is necessary
to meet the conditions of compliance with FCC rules, including RF exposure. When all antenna type and
placement guidelines described herein are fulfilled the Zigbee module may be incorporated
into notebook and tablet PC host platforms with no further restrictions. If any of the guidelines described
herein are not satisfied it may be necessary for the OEM or integrator to perform additional testing
and/or obtain additional approval. The OEM or integrator is responsible to determine the required host
regulatory testing and/or obtaining the required host approvals for compliance
· Zigbee module are intended for OEMs and host integrators only.
. The Zigbee module must be operated with an access point that has been approved for the
country of operation.
. Changes or modification to Zigbee module by OEMs, integrators or other third parties is not
permitted. Any changes or modification to Zigbee module by OEMs, integrators or other third
parties will void authorization to operate
 This module is not masked, and the end user needs to increase the mask.

Information to Be Supplied to the End User by the OEM or Integrator

The following regulatory and safety notices must be published in documentation supplied to the end user
of the product or system incorporating the Amplified Zigbee module, in compliance with local regulations.
Host system must be labeled with "Contains FCC ID: 2AHI9CC2530   ", FCC ID displayed on label.
The Zigbee module must be installed and used in strict accordance with the manufacturer's
instructions as described in the user documentation that comes with the product. Intel Corporation is not
responsible for any radio or television interference caused by unauthorized modification of the devices
included with the wireless adapter kit or the substitution or attachment of connecting cables and
equipment other than that specified by Intel Corporation. The correction of interference caused by such
unauthorized modification, substitution or attachment is the responsibility of the user. Intel Corporation
and authorized resellers or distributors are not liable for any damage or violation of government
regulations that may arise from the user failing to comply with these guidelines.

This device has been evaluated and shown compliant with the FCC RF Exposure limits under fixed
exposure conditions (antennas are greater than 20cm from a person's body)when installed in certain
specific configurations.
The host system shall have a label showing: Contains FCC ID: 2AHI9CC2530
When the user selects U.FL RF connector antenna, it requires the a complete the antenna. the kind
of antenna that users can be use: 2.4 G RF antenna U.FL. RF connector(antenna type: FPC antenna,
Integral antenna）
(The gain of antenna : 2.0dBi)

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

15.105 Information to the user.

(b) For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note: This equipment has been tested and found to comply

with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which

the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
This equipment should be installed and operated with minimum distance 20cm between the radiator
and your body.

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination.

The firmware setting is not accessible by the end user.

The final end product must be labelled in a visible area with the following:

"Contains Transmitter Module 2AHI9ÔÔ2530"