

FCC ID:2AE8BFZB57A5PF

FZB57A5+

2.4GHz IEEE 802.15.4 ZigBeeModule

characteristicsFeatures:

- **ReservingSystem**
- **IEEE Std. 802.15.4**
- **Is the Chip Solution**
TI CC2530F256RHAR
- **Band**
2.4G
- **Size**
18mm*27.1mm*2.3mm



Model Overview:

Model	Installation method	Support standard	rate (MAX)	Band	Antenna interface	Remarks
FZB57A5+	SMT	IEEE 802.15.4	250kbps	2.4 GHz	IPEX	3.3V power supply

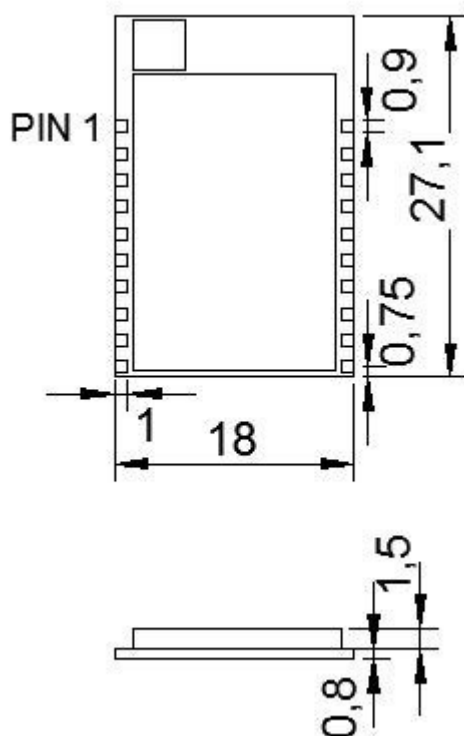
1.Briefdescription:

ZigBee module FZB57A5+ is based on TI CC2530F256RHAR, complied with IEEE, complied, and it is also known as "

The ZigBee module FZB57A5+ is a TI based CC2530F256RHAR development that supports the 2.4GHz IEEE 802.15.4 label

Quasi - maximum support for 250kbps rate wireless network connections.

2. Package outline and Mounting: (View direction: confront)



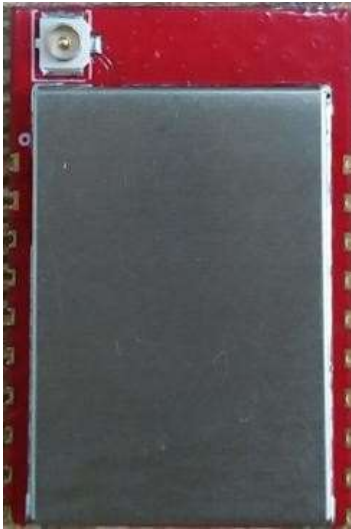
NOTE1: General tolerance $\pm 0.2\text{mm}$ unless otherwise stated

3. Pin Definition:

Pin#	Name	Description
1	GND	Ground connection
2	VCC	3.3V Main Voltage Source Input
3	P2_2	Digital I/O Port 2.2/JTAG DC
4	P2_1	Digital I/O Port 2.1/JTAG DD
5	P2_0	Digital I/O Port 2.0
6	P1_7	Digital I/O Port 1.7
7	P1_6	Digital I/O Port 1.6
8	P1_5	Digital I/O Port 1.5
9	P1_3	Digital I/O Port 1.3
10	P1_2	Digital I/O Port 1.2
11	P1_4	Digital I/O Port 1.4
12	P0_6	Digital I/O Port 0.6
13	P0_5	Digital I/O Port 0.5/UART RTS
14	P0_4	Digital I/O Port 0.4/UART CTS
15	P0_3	Digital I/O Port 0.3/UART TXD
16	P0_2	Digital I/O Port 0.2/UART RXD
17	P0_1	Digital I/O Port 0.1
18	P0_0	Digital I/O Port 0.0

19	RST	Reset
20	GND	Ground connection

1. ProductPicture:



TOP VIEW



BOTTOM VIEW

Silk screen Description:

- 1. the character in the red box is PCB figure number.
- 2. the character in the yellow box is the PCB supplier control character.
- 3. the character in the blue box is the PCB batch number.
- 4. the character in the green frame is PCB flame retardant grade.

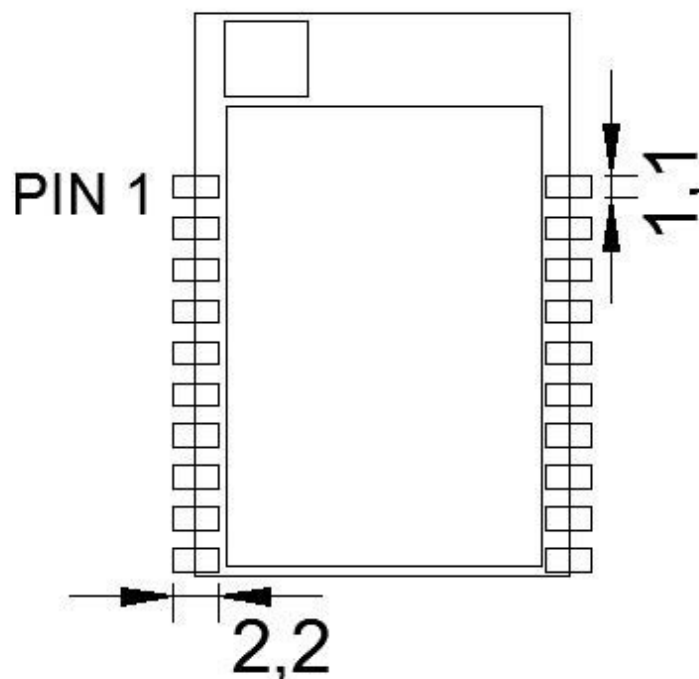
2. key materials:

Serial number	Key name	Model	Specification / material	Producer	Remarks
1	Integrated circuit	CC2530F256RHAR	VQFN	TI	
2	Integrated circuit	CC2592RGVR	PVQFN	TI	
3	PCB	JUB7.820.0245-2	FR-4,4LAY	The founding of the UK Sunlord	
4	crystal oscillator	E3SB32E00000BE	32M	Hosonic	
5	crystal oscillator	ETST00327000JE	32.768KHz	Hosonic	

3. General Requirements:

No.	Feature	Description
6-1	Operation Voltage	3.3±0.3V
6-2	TX Current Consumption	<150mA
6-3	Operation Temperature	-20°C ~ +60°C
6-4	Antenna Type	no antenna
6-5	CPU Type	8051
6-6	Storage Temperature	-40°C ~ +85°C

4. SMT Solder plate recommendation:



5. Electrical Characteristics:

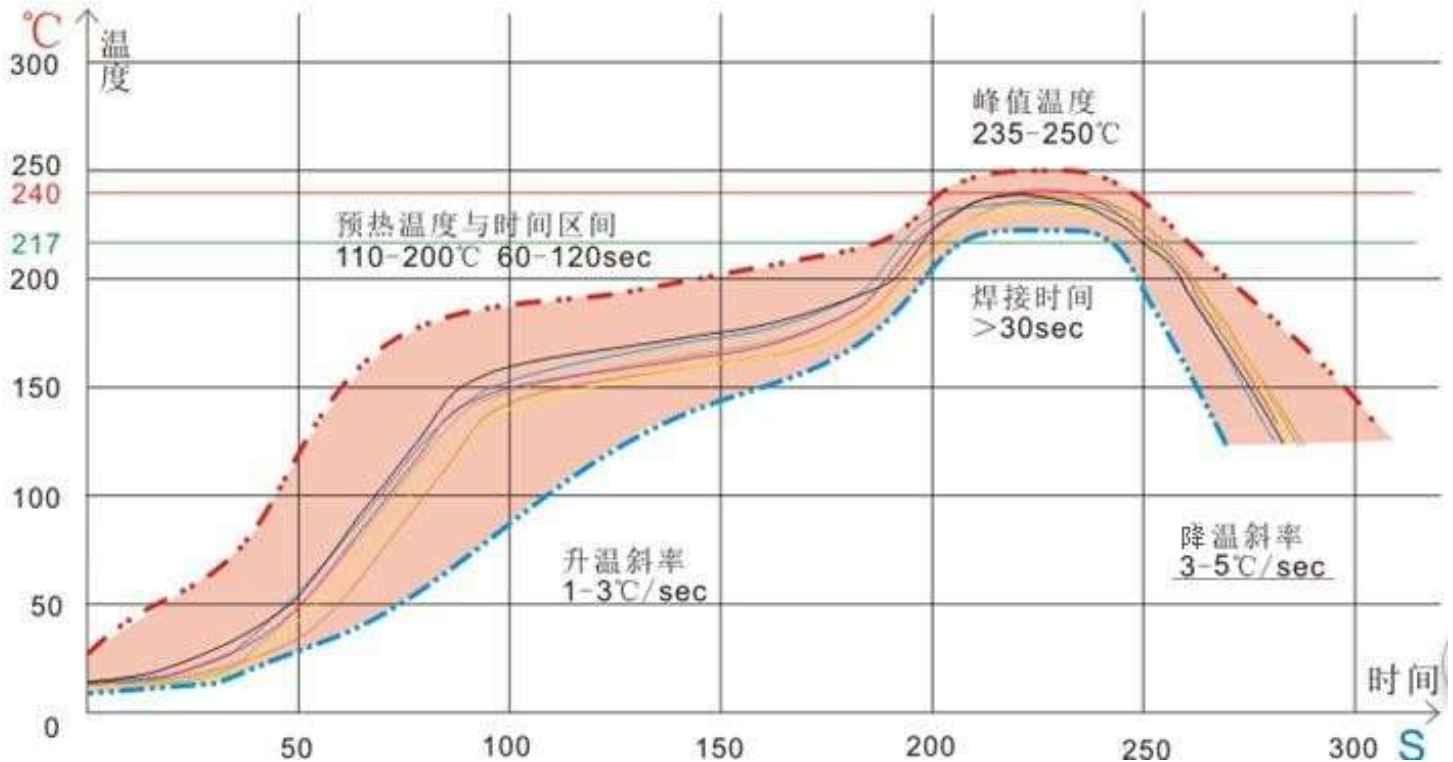
Items	Contents				
Specification	IEEE802.15.4				
Frequency	2400~2483.5MHz				
Channel	CH10 to CH26				
Data rate	250kbps/MAX				
	Min.	Typ.	Max.	Unit	Remark
TX Characteristics					
1. Power Levels(Calibrated)					
1) 21.1dBm Mode	18	19.5	21	dBm	
2) 19.7dBm Mode	17	18	19.5		
3) 11.8dBm Mode	9	10	11.5		
2. Spectrum Mask @ target power					
3 Constellation Error(EVM)@ target power	0%	10%	35%		
4. Frequency Error					
	-40	-10	40	ppm	
RX Characteristics					
5 Minimum Input Level Sensitivity(each chain)	/	-100	-85	dBm	
6 Maximum Input Level	/	/	-20	dBm	

6. Test Software Requirements:

Mfg. software tool version is SmartRFProgr_1.12.7 or later.

The version of the manufacturing software tool is SmartRFProgr_1.12.7 Or subsequent version.

7. Reflow Standard Condition:



Heating area: temperature: <150 C, time: 60~90 seconds, the slope control at 1~3 C between /S. Preheating constant temperature area: temperature: 150 ~ 200 c, time: 60-120 seconds, the slope is between 0.3-0.8. Reflow zone: peak temperature 235 C ~250 C (suggested peak temperature < 245 C), time 30-70 seconds.

Cooling area: temperature: 217 C ~170 C, the slope at 3~5 /S.

Solder is tin silver copper alloy lead-free solder / Sn&Ag&Cu Lead-free solder (SAC305).

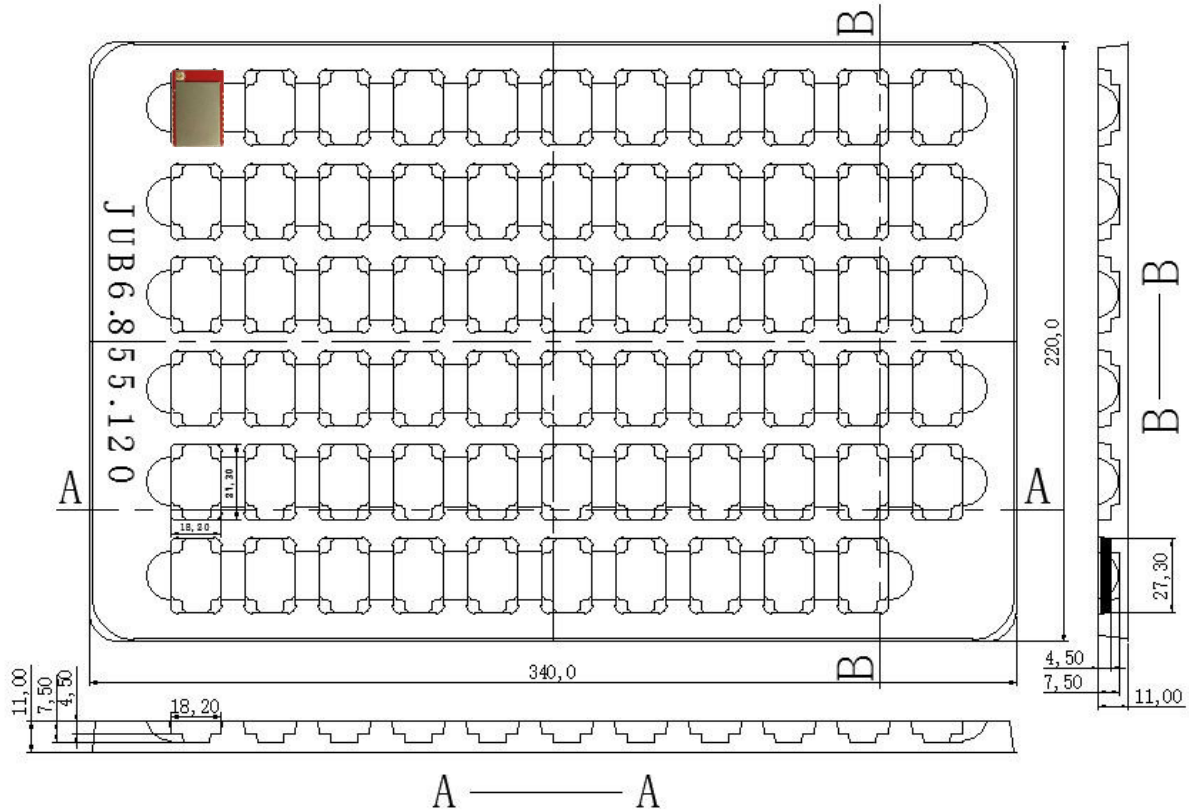
8. Mechanical, Environmental and Reliability Tests:

Test Items		Test Conditions	Qty	Criteria Condition
4-1	Drop test	The packed samples within 100Kg can be tested Drop height: Face Side: 800/600/450mm Edge line: 600/450/350mm Drop time: 1 each Face and edge.	1xBox	After drop test, the outer box and inner box will not be broken by appearance visual inspection.
4-2	Vibration test	X-Y-Z direction, first Frequency changing from 10Hz to 30Hz to 10Hz ,amplitude 0.75mm, 5 times vibrations, then frequency Changing from 30Hz to 55 Hz to 30 Hz, amplitude 0.15mm, 5 time vibration.	3	After test, the Appearance, Power EVM and Frequency error shall be satisfied with the specification.
4-3	Impact test	Impact acceleration: 50m/sec ² ; Impact duration: 16ms; Impact times: 1000.	3	After test, the Appearance, Power EVM and Frequency error shall be satisfied with the specification.
4-4	Soldering ability test	Soldering temperature: 235±5°C Soldering duration: 2±0.5S	3	1. After soldering, the soldered area must be covered by a smooth bright solder layer, some deficiencies such as a small amount of the pinhole, not wetting are allowed, but the deficiencies can not be in the same place; 2. At least 90% of soldered area shall be covered continuously by the soldering material.
4-5	Humidity test	Leave samples in 40±3°C, 93% RH @ 96 hours	3	Leave samples in standard test condition for 2 hours then test, the Appearance, Power, EVM and Frequency error functional parameter shall be satisfied with the test specification.
4-6	High temperature load life test	Thermostat cabinet temperature: 55±5°C Applied voltage: 110% rated voltage Working duration: 200 hour (Supply Voltage Cycle 23h power on, 1h power off)	60	After test, leave samples in standard condition for 1 hour and test, Power, EVM and Frequency error shall be satisfied with the test specification.
4-7	High temperature load test	Temperature: 55±5°C Samples work for 16 hours	3	After test, the Appearance, Power, EVM and Frequency error shall be Satisfied with the test specification.

4-8	Low temperature storage test	Leave the samples in $-25\pm 3^{\circ}\text{C}$ @24 hours	3	Leave samples in standard test condition for 2 hours then test, the Appearance, Power, EVM and Frequency error shall be satisfied with the test specification.
4-9	Low temperature load test	Leave samples in $-15\pm 3^{\circ}\text{C}$ @ 2 hours, samples' function shall be normal, the let samples work for 1 hour	3	After test, leave the samples in standard condition and tested the Appearance, Power, EVM and Frequency error shall be satisfied with the test specification.
4-10	Temperature circle test	One cycle duration $-10\pm 3^{\circ}\text{C}$ @3H $40\pm 3^{\circ}\text{C}$ @3H Total cycle: 10x	3	After test, leave the samples in standard condition and tested Power EVM and Frequency error shall be qualified and all the characters shall be satisfied with the test specification.
4-11	Continuous TP test	Twice cycle duration $-10\pm 3^{\circ}\text{C}$ @4H $+60\pm 3^{\circ}\text{C}$ @4H, $+25$ @2H@2H	3	During test, There will not been appeared signal disconnection or interruption between DUT and AP.
4-12	ESD	Discharge voltage: 2kV C: 150pF Discharge resistance: 330Ω Positive 10 times 1 time for each second	3	The products can recoverable smoothly after ESD test.

13. Packaging requirements:

(1) the size of the tray and the setting direction of the module, such as the following.



Federal Communication Commission (FCC) Radiation Exposure Statement

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.

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications or changes to this equipment. Such modifications or changes could void the user's authority to operate the equipment.

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.

Federal Communication Commission (FCC) Radiation Exposure Statement

When using the module, maintain a distance of 20cm from the body to ensure compliance with RF exposure requirements.

A certified modular has the option to use a permanently affixed label, or an electronic label. For a permanently affixed label, the module must be labelled with an FCC ID: 2AE8BFZB57A5PF. The OEM manual must provide clear instructions explaining to the OEM the labelling requirements, options and OEM user manual instructions that are required. For a host using a this FCC certified modular with a standard fixed label, if (1) the module's FCC ID is not visible when installed in the host, or (2) if the host is marketed so that end users do not have straightforward commonly used methods for access to remove the module so that the FCC ID of the module is visible; then an additional permanent label referring to the enclosed module:

“Contains Transmitter Module FCC ID: 2AE8BFZB57A5PF or “Contains FCC ID: 2AE8BFZB57A5PF ” must be used. The host OEM user manual must also contain clear instructions on how end users can find and/or access the module and the FCC ID.

Host product is required to comply with all applicable FCC equipment authorizations regulations, requirements and equipment functions not associated with the transmitter module portion. Compliance must be demonstrated to regulations for other transmitter components within the host product; to requirements for unintentional radiators (Part 15B). To ensure compliance with all nontransmitter functions the host manufacturer is responsible for ensuring compliance with the module(s) installed and fully operational. If a host was previously authorized as an unintentional radiator under the Declaration of Conformity procedure without a transmitter certified module and a module is added, the host manufacturer is responsible for ensuring that after the module is installed and operational the host continues to be compliant with the Part 15B unintentional radiator requirements. Since this may depend on the details of how the module is integrated with the host, we suggest the host device to recertify part 15B to ensure complete compliance with FCC requirement: Part 2 Subpart J Equipment Authorization Procedures, KDB784748 D01 v07, and KDB 997198 about importation of radio frequency devices into the United States.
