

Product Specification

Product name: WIFI BLE Module ~~WIFI module~~

Product model: C-3031U

1. Product Overview:

C-3031u is based on BK7231U QFN32 chip scheme of Shanghai broadcom company. It is internally integrated with 2.4ghz wi-fi BLE 4.2 1T1R advanced technology, with the best power consumption performance, radio frequency performance, stability, versatility and reliability, suitable for various applications and different product requirements.

C-3031u is an industry-leading wi-fi BLE solution, MCU USES ARM9 frequency: up to 120MHz, and integrates antenna switch, power amplifier, low noise amplifier, filter, power management module, support 802.11e and wmm-ps protocol, support WPA, WPA2 WAPI and BLE security protocol.

2. Application Fields:

- ※ Internet of things
- ※ Smart Home
- ※ Industrial Control
- ※ Smart
- ※ Network Equipment

3. The basic characters:

※Support BLE 4.2

※Support 802.11 b/g/n

--802.11b: 1, 2, 5.5, 11

--802.11g: 6, 9, 12, 18, 24, 36, 48, 54

--802.11n HT20: MCS0~7

--802.11n HT40: MCS0~7

※Support 802.11 b/g/n 1x1 TCP

※Support 20/40 MHz band width and STBC

※Support STA/AP/Direct/Repeater network model

※Support SGI、 Green-Field Preamble and A-MPDU

※Support WPA, WPA2, WAPI security mechanism

※Support UART

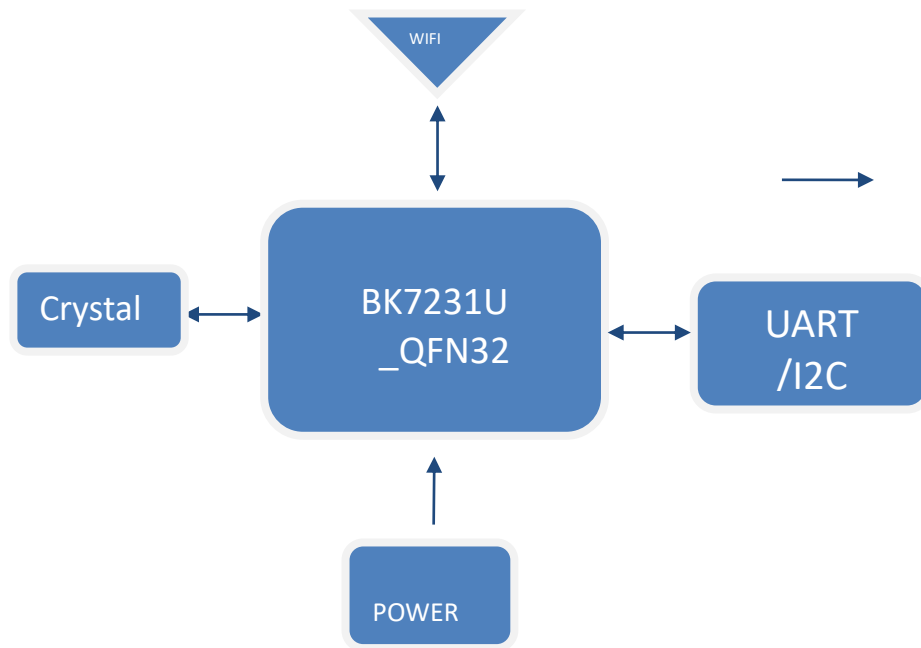
※On chip FLASH, Support transparent download

※Support piece of reply

※Support Fragmentation and recombination

※Support Infrastructure BSS Station pattern/SoftAP pattern

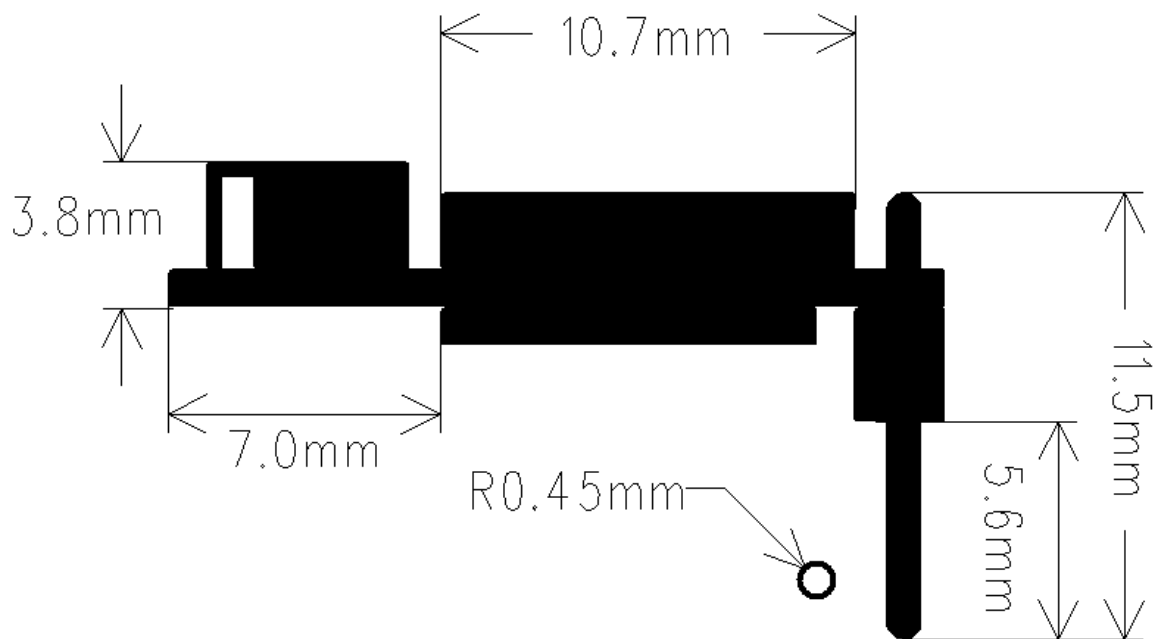
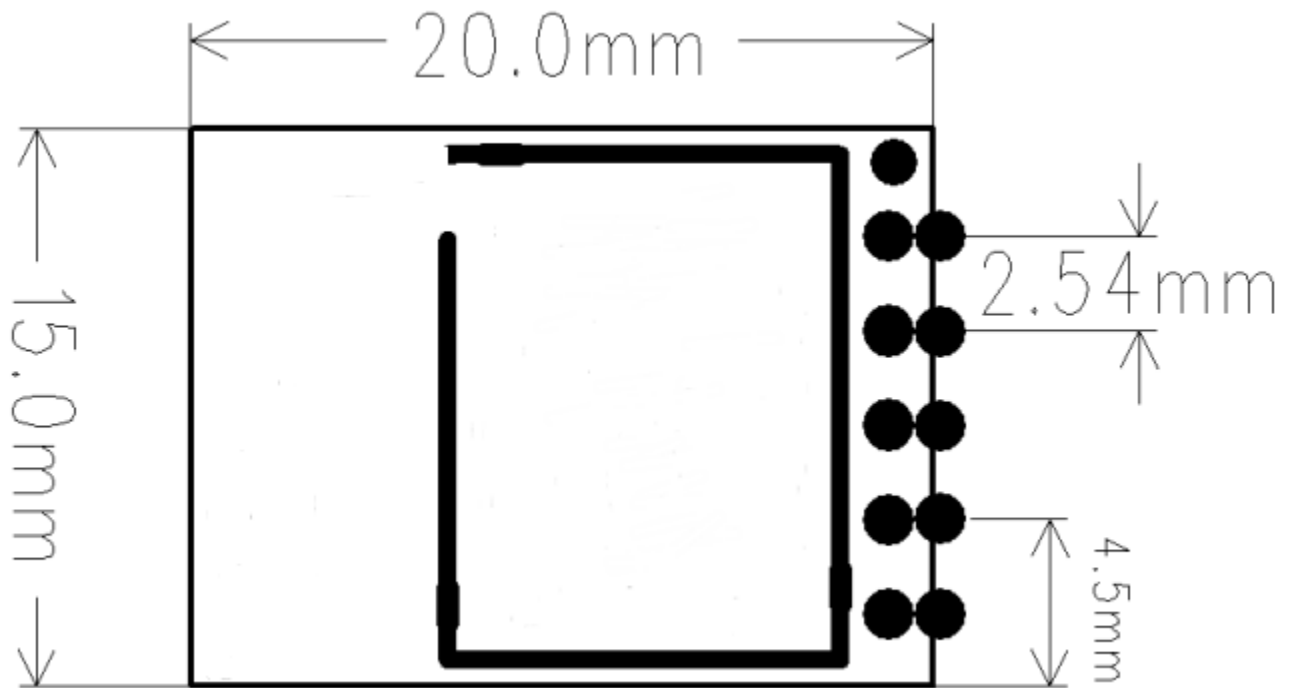
4. block diagram



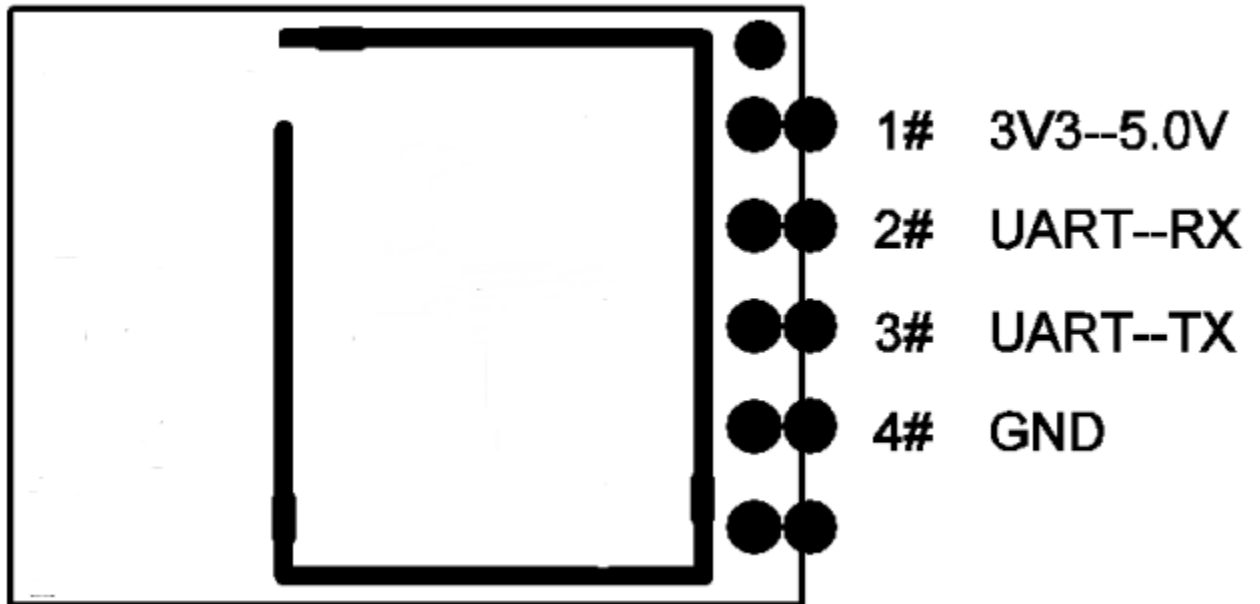
5. Performance parameter:

Specifications	Model	C-3031U	
	Standard authentication	FCC/CE/SRRC	
	Wireless standards	802.11b/g/n, BLE 1T1R	
	Frequency Range	2.4GHz - 2.5GHz	
	Transmitted power	IEEE802.11b	17 dBm
		IEEE802.11g	14 dBm
		IEEE802.11n	13 dBm
BLE 4.2		6 dBm	
Adjacent channel rejection ratio	11b <-85dBm 11g <-70dBm 11n <-65dBm BLE<-85dBm		
BLE receiving sensitivity	BLE receiving sensitivity		
Hardware parameters	Working voltage	3.3V--5.0V	
	Working current	<250MA	
	Operating temperature	-10°C~75°C	
	Storage temperature	-20°C~85°C	
	WiFi transmission distance	<100 米	
	Expansion interface	UART / I2C	
	Size	20*15*11.5MM (LxWxH)DIP	
Software Parameters	Wireless network type	AP ClientPattern	
	Security mechanism	WPAI、WPA、WPA 2、BLE	
	Encryption type	WEP64/WEP128	
	Online update	Support	

6.Module size drawing:



7.Module footer definition diagram:



8.Pin function description:

Symb	I/O	Description
3.3V-5.0V	P	Power 3.3V-5.0V
UART RXD	I/O	GPIO1 or UART2 RXD or I2C2 SDA
UART TXD	I/O	GPIO0 or UART2 TXD or I2C2 SCL
GND	G	GND

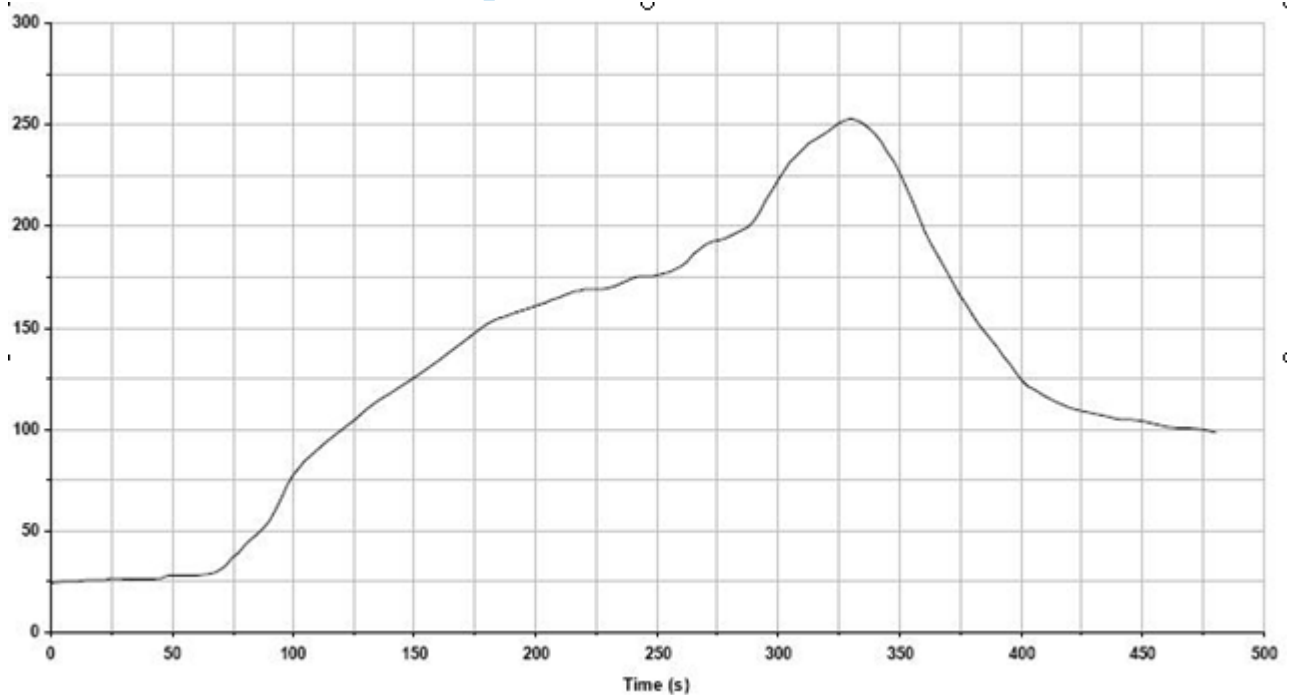
9.Matters need attention:

A.As for the use environment of WIFI, wireless signals are easily affected by the surrounding environment. For example, obstacles such as trees and metals will absorb wireless signals to some extent, so that the distance of data transmission is affected to some extent in practical applications.

B.It is recommended that the metal enclosure be not installed in the metal enclosure as it is shielded from radio frequency signals.

C.PCB board: as the metal will weaken the function of the antenna, when distributing the board to the module, it is strictly prohibited to lay the floor and wire under the module antenna. It is better if it can be hollowed out.

10.Recommended reflow temperature:



Key features of the profile:

- Initial Ramp=1-2.5°C/sec to 175°C equilibrium
- Equilibrium time=60 to 80 seconds
- Ramp to Maximum temperature (250°C)=3°C/sec Max
- Time above liquidus temperature(217°C): 45 - 90 seconds
- Device absolute maximum reflow temperature: 250°C

(OEM) Integrator has to assure compliance of the entire end-product incl. the integrated RF Module. For 15 B (§15.107 and if applicable §15.107) compliance, the host manufacturer is required to show compliance with 15 while the module is installed and operating.

Furthermore the module should be transmitting and the evaluation should confirm that the module's intentional emissions (15C) are compliant (fundamental / out-of-band). Finally the integrator has to apply the appropriate equipment authorization (e.g. Verification) for the new host device per definition in §15.101.

Integrator is reminded to assure that these installation instructions will not be made available to the end user of the final host device.

The final host device, into which this R F Module is integrated" has to be labelled with an auxilliary lable stating the FCC ID of the RF Module, such as "Contains FCC ID: 2AG94C-3031U"

"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: 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.

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



Module statement

The single-modular transmitter is a self-contained, physically delineated, component for which compliance can be demonstrated independent of the host operating conditions, and which complies with all eight requirements of § 15.212(a)(1) as summarized below.

- 1) The radio elements have the radio frequency circuitry shielded.
- 2) The module has buffered modulation/data inputs to ensure that the device will comply with Part 15 requirements with any type of input signal.
- 3) The module contains power supply regulation on the module.
- 4) The module contains a permanently attached antenna.
- 5) The module demonstrates compliance in a stand-alone configuration.
- 6) The module is labeled with its permanently affixed FCC ID label
- 7) The module complies with all specific rules applicable to the transmitter, including all the conditions provided in the integration instructions by the grantee.
- 8) The module complies with RF exposure requirements.

This transmitter/module must not be collocated or operating in conjunction with any other antenna or transmitter.