Product Specification

Product name：WIFI BLE Module

Product model：C-8133U

1. Product Overview::

C-8133u is a wireless communication module using BK7231U_QFN32 embedded low-power WIFI and BLE. It is suitable for smart families and can provide network services for home appliances in an easy way.The hardware interface of this module is simple and the protocol is clear, which can make it convenient for customers to integrate the module into household appliances at the fastest speed.The chip used in this module is the highest integrated IEEE 802.11n SoC in the industry at present, supporting ieee802.11b /g/n wireless standard, supporting wireless working in STA/AP/Direct/Repeater mode, FLASH in the chip, supporting transparent download, with the characteristics of low cost and low power consumption, it is very suitable for low flow control and data acquisition applications such as smart home, Internet of things, industrial control and so on.

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/Repeaternetwork model

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

※SupportWPA,WPA2,WAPI security mechanism

※Support UART

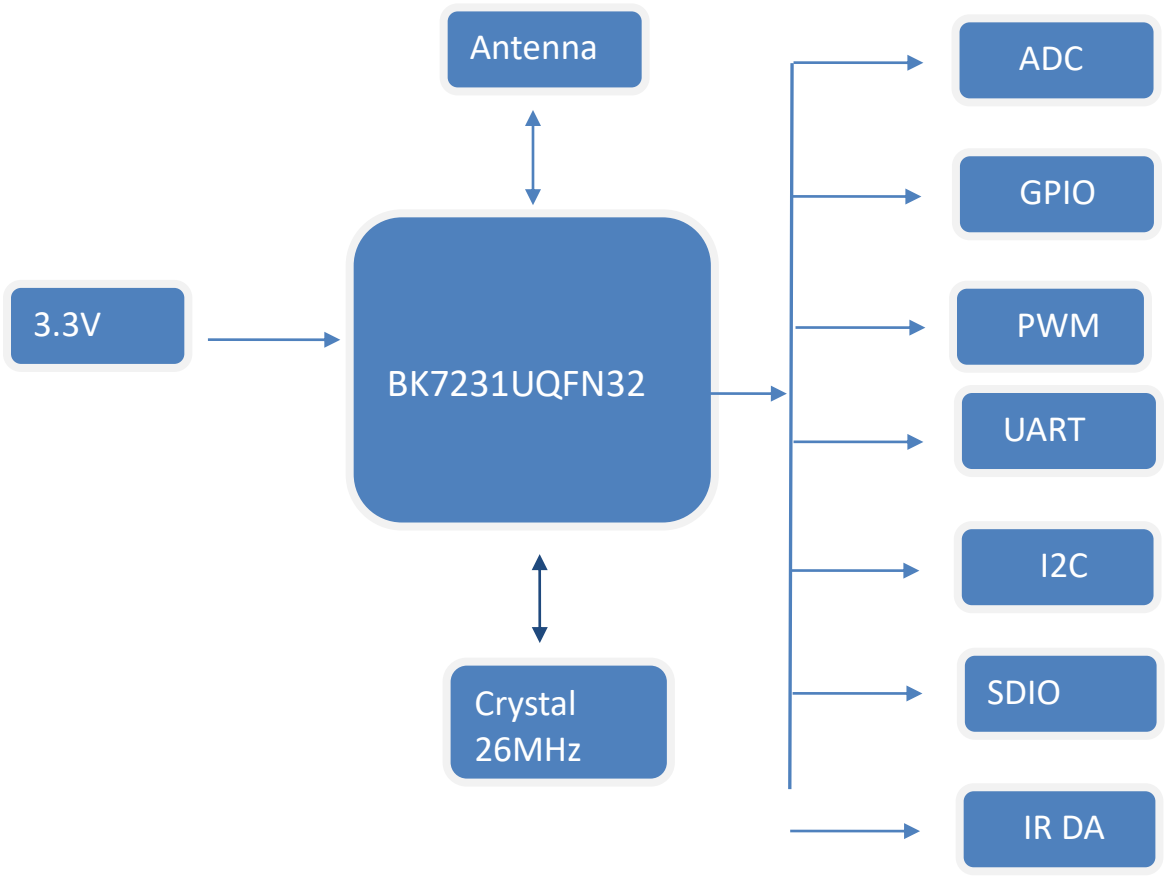
※On chip FLASH，Support transparent download

※Support piece of reply

※Support Fragmentation and recombination

※Support　Infrastructure BSS Station pattern/SoftAP pattern

4. block diagram

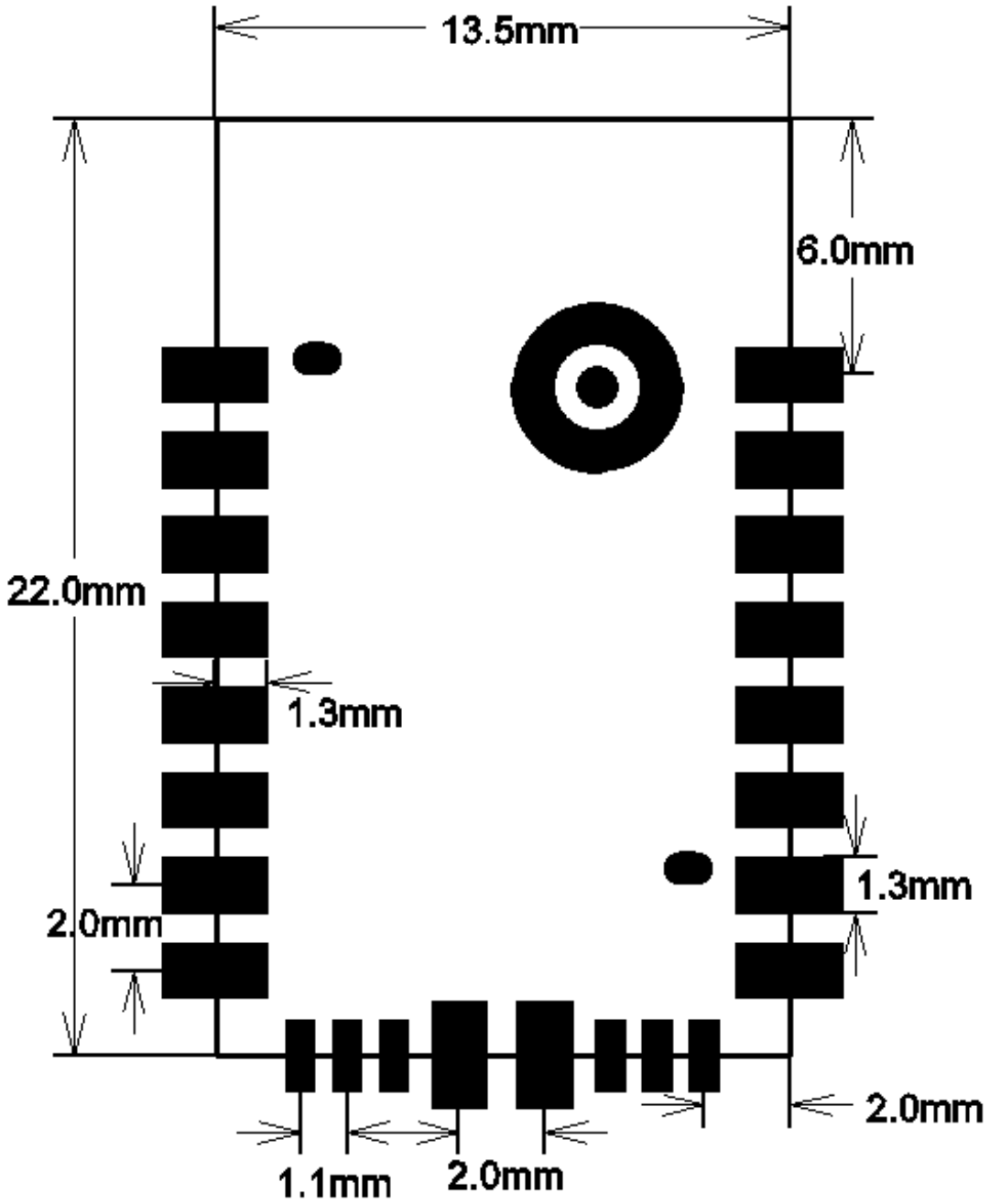


5.Performance parameter：

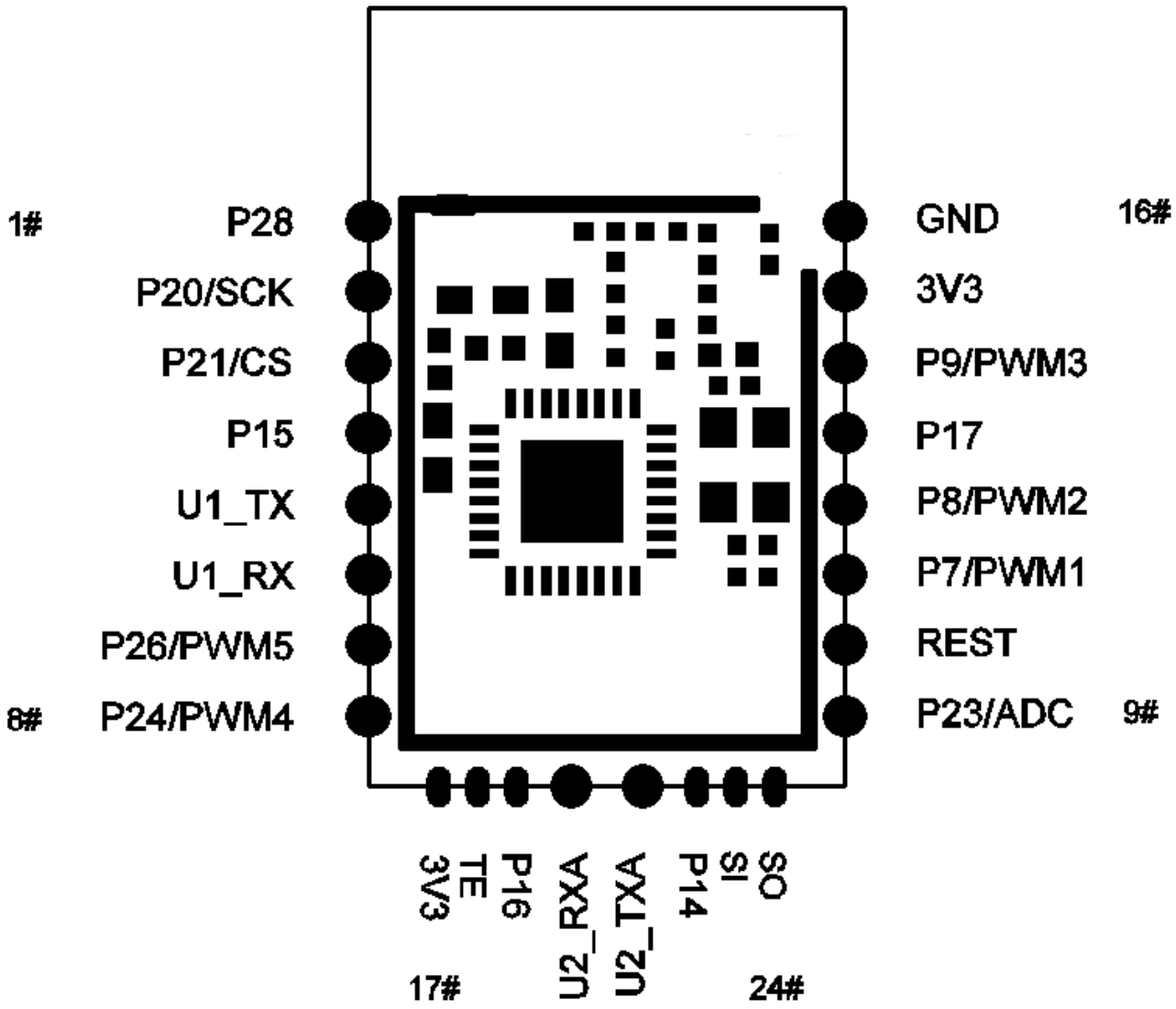
	Model	C-8133U
	Standard authentication	FCC/CE/SRRC
	Wireless standards	802.11b/g/n,1T1R

Specifications	Frequency Range	2.400GHz - 2.500GHz
	Transmit Power	HT40 MCS7 (Tpy): 13dBm
		HT20 MCS7(Tpy): 13dBm
		54 Mbps OFDM(Tpy) : 14dBm
		11 Mbps DSSS(Tpy) : 17dBm
	BLE power	BLE 6dBm
	Adjacent channel rejection ratio	54 Mbps OFDM(Tpy): 17dB
		11 Mbps DSSS(Tpy): 41dB
	Transmitted power	HT40 MCS7 (Tpy): < -69dBm
		HT20 MCS7(Tpy): < -71dBm
		54 Mbps OFDM(Tpy): < -74dBm
		2 Mbps DSSS(Tpy): < -93dBm
	BLE receiving sensitivity	BLE < -88dBm
	Antenna	Internal Antenna
Hardware parameters	Working voltage	3.3V
	Working current	<3.3V 250MA
	Transmitting operating current	120mA
	Receiving working current	90mA
	Operating temperature	-10℃ ~ 85℃
	Storage temperature	-20℃ ~ 90℃
	WiFi transmission distance	<100m
	Expansion interface	UART, GPIO, PWM,ADC,I2C,SDIO,IRDA
	Size	22*13.5*3MM
Software Parameters	Wireless network type	AP ClientPattern
	Security mechanism	WPA/WPA2/WAPI
	Encryption type	WEP64/WEP128
	Online update	Support

6.Module size drawing：



7.Module footer definition diagram:



8.Pin function description：

Pin	Symb	I/O	Description
1	P28	I/O	P28general IO
2	P20/SCK	I/O	p20 or I2C1 SCL, or JTAG TCK or QSPI IO3 Flash download port clock signal at download mode
3	P21/CS	I/O	P21 or I2C1 TMS, or JTAG TMS or QSPI IO2 Flash download chip enable signal at download mode

4	P15	I/O	P15 SD_CMD or SPI CSN or QSPI FLASH CSN
5	TX1	I/O	P11/UART1_TXD is usually used for debugging UART sending
6	RX1	I/O	P10/UART1_RXD is usually used for debugging UART receiving
7	P26/PWM5	I/O	P26 or IrDA input or PWM 5 or QSPI RAM CSN
8	P24/PWM4	I/O	P24 or low power clock output or PWM 4 or QSPI RAM clock
9	P23/ADC	I/O	P23 or ADC or JTAG TDO, or QSPI IO0 FLASH download data output at download mode
10	REST	I	Chip enable, active high
11	P7/PWM1	I/O	P7 or Wi-Fi active output or PWM 1
12	P8/PWM2	I/O	P8 or Bluetooth active input or PWM 2
13	P9/PWM3	I/O	P9 or Bluetooth priority input or PWM 3
14	P17	I/O	P17 or SD Card DATA1 or SPI MISO or QSPI IO1
15	3V3	P	Power in dc 3.3V
16	GND	G	Power Ground
17	3V3	I	Power in dc 3.3V
18	TE	I	Chip enable, active high
19	P16	I/O	P16 or SD Card DATA0 or SPI MOSI or QSPI IO0
20	RX2	I/O	P1 port or UART2 RXD or I2C2 SDA, through Commonly used for user UART receiving, rf calibration test command control
21	TX2	I/O	P0 or UART2 TXD or I2C2 SCL, through Commonly used for user UART transmission, rf calibration test command control
22	P14	I/O	P14 or SD Card Clock or SPI Clock or QSPI FLASH clock
23	SI	I/O	P22 or Crystal clock output,or JTAG TDI or QSPI IO1
24	SO	I/O	P23 or ADC or JTAG TDO, or QSPI IO0 FLASH download data output at download mode

九、**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.

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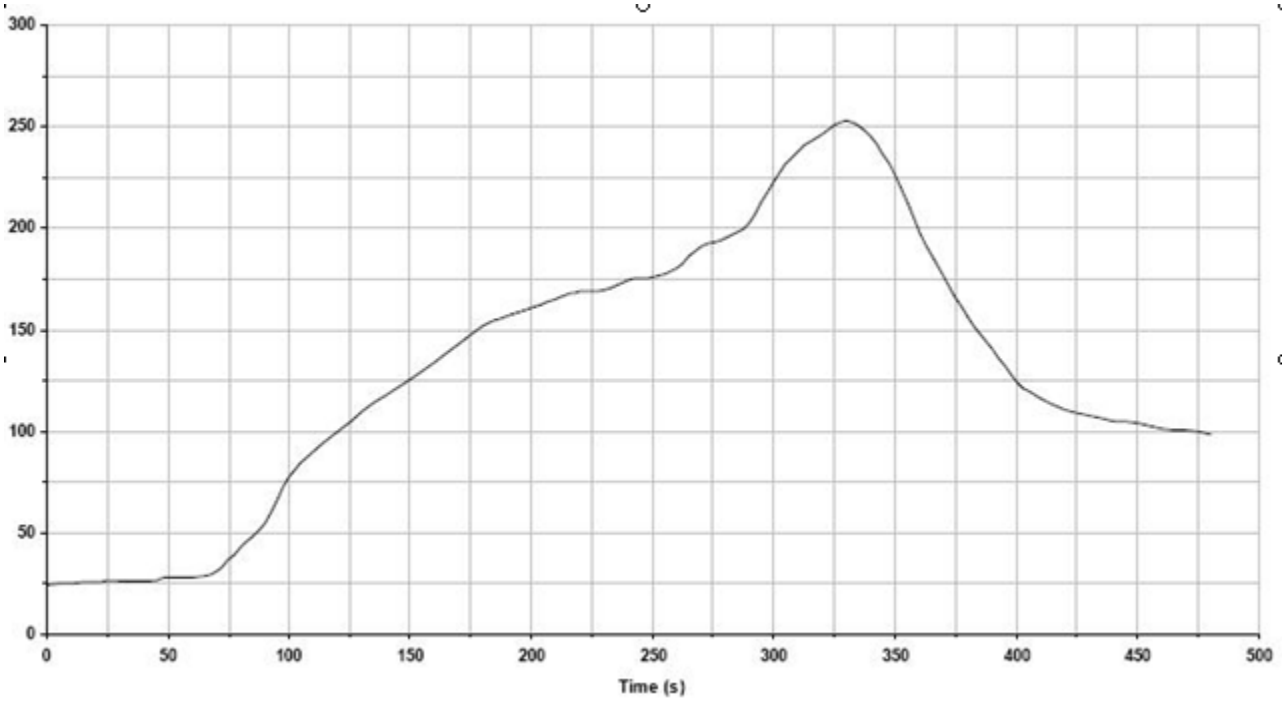
10.Recommended reflux temperature:



Key features of the profile:

-Initial Ramp=1-2.5℃/sec to 175℃ equilibrium

-Equilibrium time=60 to 80 seconds

-Ramp to Maximum temperature (250℃)=3℃/sec Max

-Time above liquidus temperature(217℃): 45 - 90 seconds

-Device absolute maximum reflow temperature: 250℃

11.Application schematic:

Lease refer to the application schematic diagram for reference only!

(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 isintegrated" hasto be labelled with an auxilliary lable stating the FCC ID of the RF Module, such as "Contains FCC ID: 2AR7VC-8133U"

"This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:
(1) this devicemay not cause harmful interference, and
(2) this devicemust accept any interference received, including interference thatmay 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.