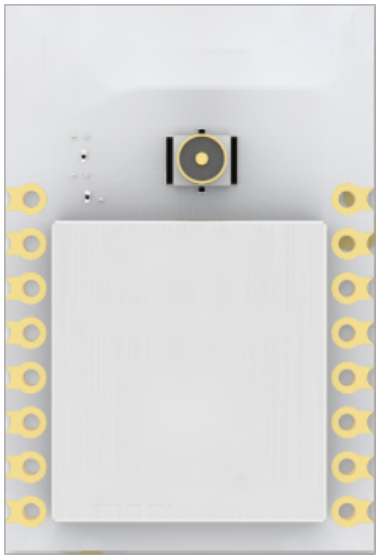
XJ-**WB62**

Wi-Fi 802.11b/g/n+ Bluetooth LE 5.0 **Combo** Module



目录

1.Summary

1.2Function

1.1.1Product characteristics

?802.11b/g/n，Wi-Fi+BluetoothLE5.0Combo，support STA，SoftAP&Sniffer

- Open source, autonomous and controllable RISC-V CPU，1～160MHz ，276KB SRAM
- Ultra low power consumption：Sleep power consumption only 0.5uA，Connected standby consumption 40uA(DTIM10)
- Ultra fast connection：Cold start fast connect only70ms
- Ultra Long Range：Maximum transmission power21dBm，sensitivity-98dBm
- High security：Support secure startup、Safety debugging、AES128/192/256encryption engine、WPA3 、MD5、SHA-1/224/256、PKA （RSA/ECC）encryption engine
- support Wi-Fi & BluetoothLE coexistence

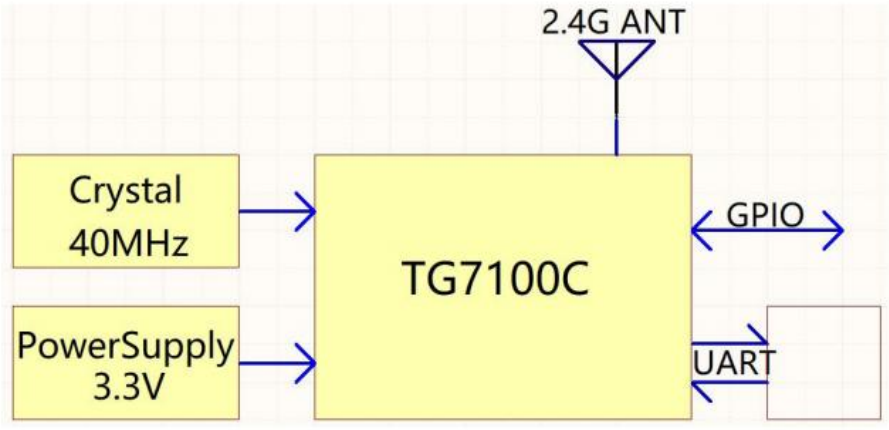
1.1.2 Application Scenario

- Smart lighting
- Smart switch
- Smart socket
- Smart appliance
- Monitoring and remote control

1.2 D escription

XJ-WB62 is Wi-Fi & BluetoothLE combination。Include 2.4GRF、Wi-Fi 802.11b/g/nandBLE b a s e b a n d / MACdesign。The power management unit provides flexible settings to achieve low power consumption mod e and supports multiple security functions.

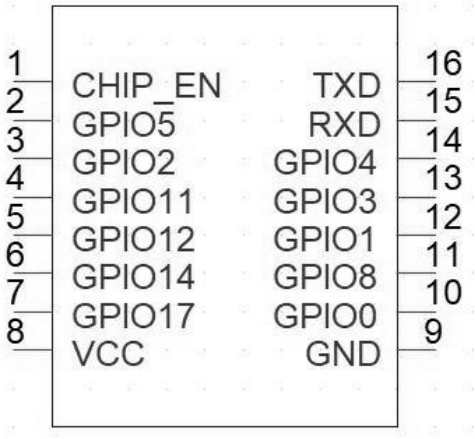
1.3 Functional Block Diagram



1.X J - W B 6 2 Functional Block Diagram

2.PINDefine

2.1PINInterface diagram



2.TGW206-16

2.2 Pin Function

NO	Name	IO Type	Description	Configurable Functions
1	CHIP_EN	I/O	Chip enable pin (active high)	
2	GPIO5	I/O	GPIO5	SDIO,SPI, I2C, UART, PWM0, ADC,ACOMP
3	GPIO2	I/O	GPIO2	SDIO, SFLASH, SPI, I2C, UART, PWM2
4	GPIO11	I/O	GPIO11	SPI, I2C, UART, PWM1, ADC,
5	GPIO12	I/O	GPIO12	SPI, I2C, UART, PWM2, ADC, ACOMP
6	GPIO14	I/O	GPIO14	SPI, I2C, UART, PWM4, ADC, ACOMP, DAC
7	GPIO17	I/O	GPIO17	SPI, I2C, UART, PWM2,
8	VCC	P	Power supply. 3.3V is required	
9	GND	P	Ground connections	
10	GPIO0	I/O	GPIO0	SDIO, SFLASH, SPI, I2C, UART, PWM0
11	GPIO8	I/O	GPIO8 (Boot option).	SPI, I2C, UART, PWM3
12	GPIO1	I/O	GPIO1	SDIO, SFLASH, SPI, I2C, UART, PWM1
13	GPIO3	I/O	GPIO3	SDIO, SPI, I2C,PWM3, 用户通讯串口 RXD
14	GPIO4	I/O	GPIO4	SDIO, SPI, I2C, PWM4, ADC, ACOMP,用户通讯串口 TXD
15	RXD	I/O	UART RX	该串口只能作为烧录及日志输出串口
16	TXD	I/O	UART TX	

3. Property Specifications

3.1 WiFi RF

Product Name	X J - W B 6 2 Module
Standard	IEEE 802.11b/g/n
Frequency Band	2.4~2.4835GHz ISM Band
Modulation Type	802.11b: CCK, DQPSK, DBPSK
	802.11g: 64-QAM,16-QAM, QPSK, BPSK
	802.11n: 64-QAM,16-QAM, QPSK, BPSK
Data Transfer Rate	1,2,5.5,6,11,12,18,22,24,30,36,48,54,65,72.2Mbps
Spread Spectrum	IEEE 802.11b: DSSS (Direct Sequence Spread Spectrum)
	IEEE802.11g/n: OFDM (Orthogonal Frequency Division Multiplexing)
RX Sensitivity	11b-1Mbps: -98dBm
	11b-11Mbps: -91dBm
	11g-54Mbps: -77dBm
	11n HT20-MCS0: -92dBm
	11n HT20-MCS7: -73dBm
Maximum Input Level	11b: 5dBm
	MCS0: -4dBm
	MCS7: -13dBm
Output Power	11b: 18.25dBm
	11g: 18.89dBm
	11n: 18.88dBm
Interface	UART
Power Supply	DC3.3V
Operating Temperature	-30℃ to +85℃
Size:	24mm×16mm×2.75mm

3.2 BLE RF

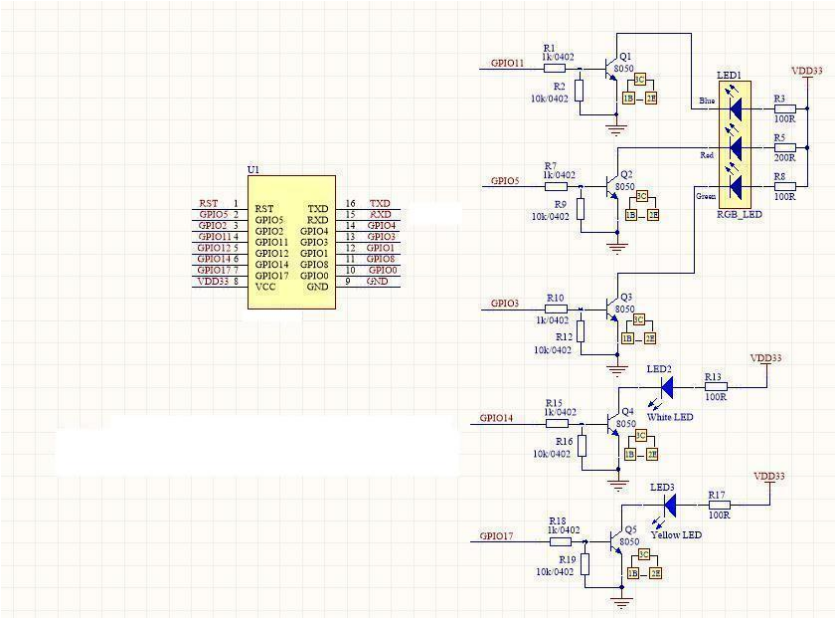
Parameter	Conditions	Minimum	Typical	Maximum	Unit
Frequency range		2402		2480	MHz
RX sensitivity	1 Mbps	-	-93	-	dBm
Initial carrier frequency offset		-24	5	24	KHz
Output power	BLE 1M	-	7.055	-	dBm

3.3 Electrical parameters

parameters	minimum value	Typical value	Maximum value	unit
VDD	2.2	3.3	3.6	V
Distribution current	-	120	-	mA
Work current	-	55	-	
Standby current	-	23	-	

4. Reference application & PCB Layout4.

1 Application schematic diagram

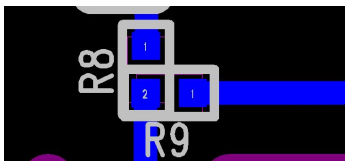


3. X J - W B 6 2

4.2 PCB Layout

4.2.1 Maintain clear space at the module antenna
4.2.2 Keep the module away from strong interference sources
4.2.3 Increase the capacitance at the power supply, and ensure that the wiring is short and thick
4.2.4 The module can be attached to the PCB board or welded to the PCB board with 2.0 pins. 4.2.5 The PCB can be connected to an onboard antenna or an IPEX socket to an external antenna (as follows)

- Onboard antenna：R8(0R) / R9（NC)
- PEX Seat external antenna:R8(NC) / R9（0R）

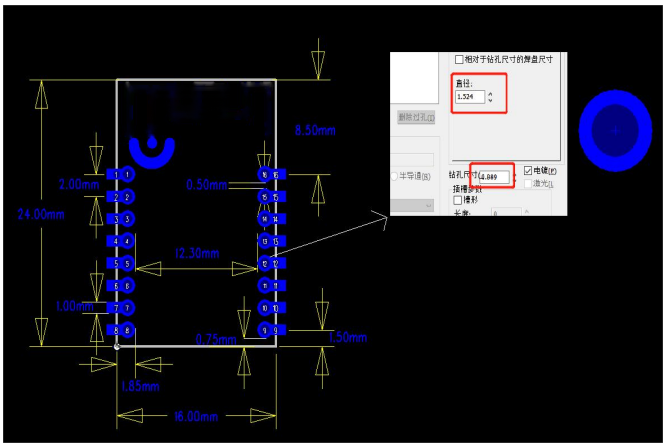


4.2.6 The recommended module layout is as follows

4 .X J - W B 6 2

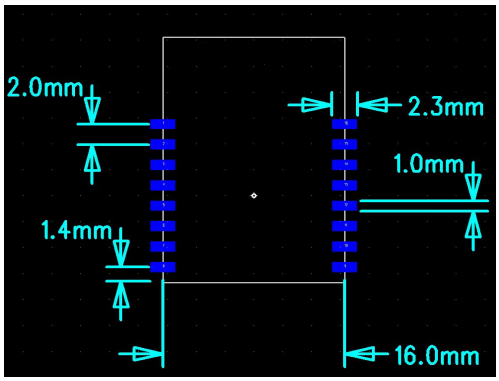
5.PCB package

5.1 package size



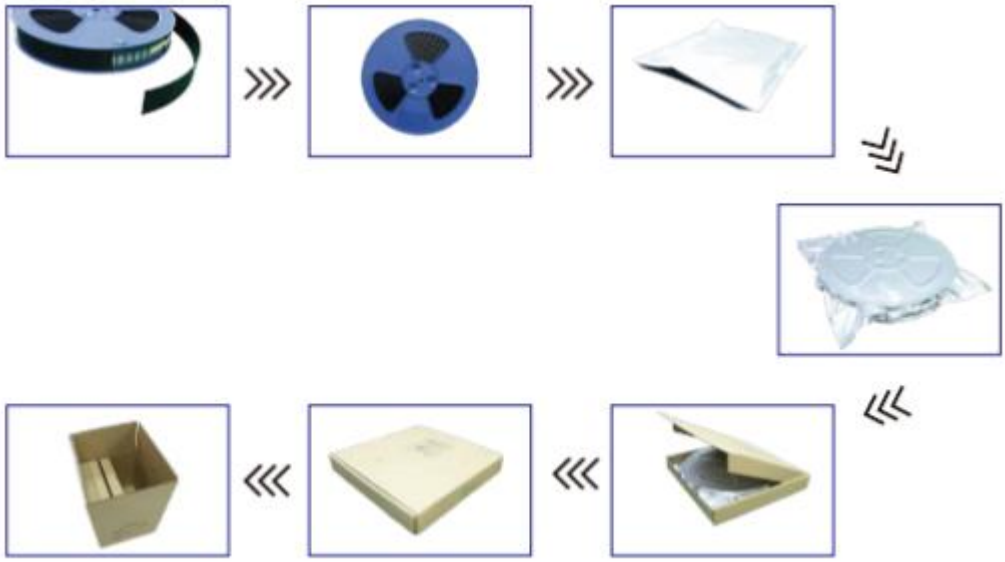
5.X J - W B 6 2

5.2 Pad



6.X J - W B 6 2

6. software package

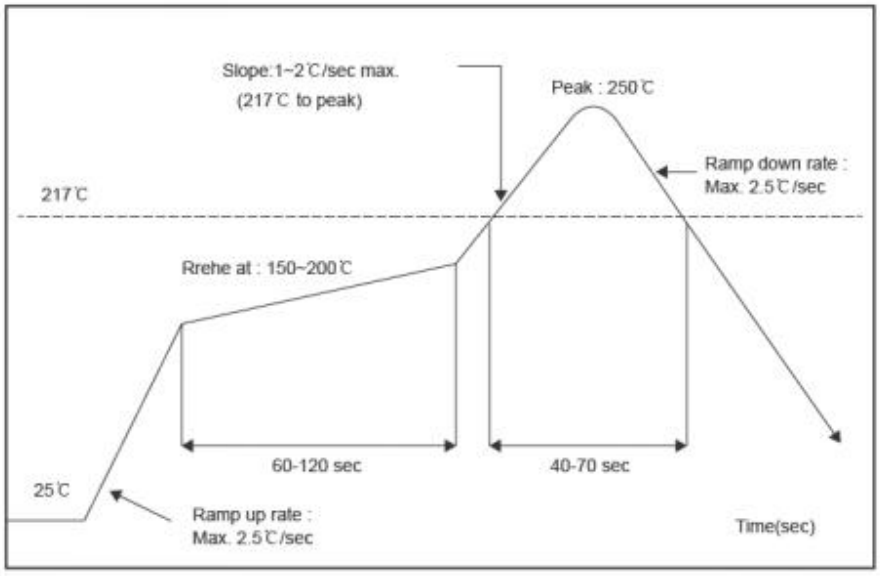


7. X J - W B 6 2

7.Reflow soldering curve

Referred to IPC/JEDEC standard.

Peak temperature: <250°C



8.Reflow soldering curve

8. Revision History

version	REVISION	Modified By	Date
V0.1	first edition	MJ	2020.08.09
V0.2	Update series naming	MJ	2020.10.27
V0.3	Update GPIO function description	MJ	2022.01.13

FCC 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.

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 guarant ee 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.

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

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environm ent. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This module is suitable for appliances such as heaters and heaters. When integrated into the main product, the main product will provide a voltage stabilizing circuit and a 3.3V power supply..

Manual Information to the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user’s manual of the end product which integrates this module.The end user manual shall include all required regulatory information/warning as show in this manual.

Integration instructions for host product manufacturers according to KDB 996369 D03 OEM Manual v01

2.2 List of applicable FCC rules

CFR 47 FCC PART 15 SUBPART C has been investigated. It is applicable to the modular transmitter

2.3 Specific operational use conditions

This module is stand-alone modular. If the end product will involve the Multiple simultaneously transmitting condition or different operational conditions for a stand-alone modular transmitter in a host, host manufacturer have to consult with module manufacturer for the installation method in end system.

2.4 Limited module procedures

Not applicable

2.5 Trace antenna designs

Not applicable

2.6 RF exposure considerations

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 & your body.

2.7 Antennas

This radio transmitter XJ-WB62 has been approved by Federal Communications Commission to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Antenna No.	Operate frequency band	Antenna Type	Maximum antenna gain
Antenna 1	2400MHz~2480MHz	FPC Antenna	3

2.8 Label and compliance information

The final end product must be labeled in a visible area with the following" Contains FCC ID: 2AXSO-XJ-WB62".

2.9 Information on test modes and additional testing requirements

Host manufacturer is strongly recommended to confirm compliance with FCC requirements for the transmitter when the module is installed in the host.

2.10 Additional testing, Part 15 Subpart B disclaimer

Host manufacturer is responsible for compliance of the host system with module installed with all other applicable requirements for the system such as Part 15 B.