
JXC8720-18 V1.1

Datasheet

PMN:GELRTL

Version: V1.0

Change History

Version	Description	Prepared By	Date
V1.0	1 st edition	YangYong	2023/01/31

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement

Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 5cm between the radiator & your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 5cm de distance entre la source de rayonnement et votre corps.

FCC Statements

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.

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

FCC Radiation Exposure Statement

The modular can be installed or integrated in mobile or fix devices only. This modular cannot be installed in any portable device, for example, USB dongle like transmitters is forbidden. 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.

If simultaneous with other transmitters is required, re-evaluation of RF Exposure is required according to KDB 996369. This equipment should be installed and operated with minimum distance 5cm between the radiator & your body.

If the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains Transmitter Module FCC ID: PUU-GEL-RTL.

When the module is installed inside another device, the user manual of this device must contain below warning statements:

The devices must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product.

The host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.

The end user manual shall include all required regulatory information/warning as shown in this manual, include:

This product must be installed and operated with a minimum distance of 5cm between the radiator and user body.

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.

When the module is installed inside another Host, the user manual of host must contain below warning statements:

1. 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.

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

The devices must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product.

The host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.

The end user manual shall include all required regulatory information/warning as shown in this manual, include: This product must be installed and operated with a minimum distance of 5 cm between the radiator and user body.

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chart 1 Module Physical picture (TOP)



chart 2 Module Physical picture (BOT)

*The pictures are for reference only, please refer to the received material object.

1 Overview

The JXC8720-18 V1.1 Module is 2.4GHz WiFi and Bluetooth combo module, meet the wireless standard IEEE 802.11b/g/n and Bluetooth 4.2 standard. JXC8720-18 V1.1 single dual-mode module can access the network and wifi distribution network through Bluetooth, greatly improving the success rate of distribution network and customer experience. This module is specially designed for IOT products and support multiple product forms such as gateway, smart socket and lamp.

2 Features

- WiFi and Bluetooth combo module
- Support local Bluetooth access and Wifi distribution
- Support local Bluetooth control and Wifi remote control
- Automatic recovery after Wifi connection is disconnected
- Support OTA upgrade
- PCB on-board antenna, no need for customer RF debugging
- Module size: 24.5x15mm
- Operating temperature:
-40 to 105 °C

3 Applications

- Gateway
- Smart home
- Intelligent lighting

4 Certification information

	Certification name	Yes/no	ID	DID	QDID
Official certification	BQB	/	O	/	/
	SRRC	√	2022DP8474	O	O
	FCC	/	/	O	O
Platform certification	Ali (tmall spirit)	/	/	O	O
	Huawei (HiLink)	/	/	O	O

Note: marking “/” means none, marking “O” means not applicable

5 Module Block Diagram

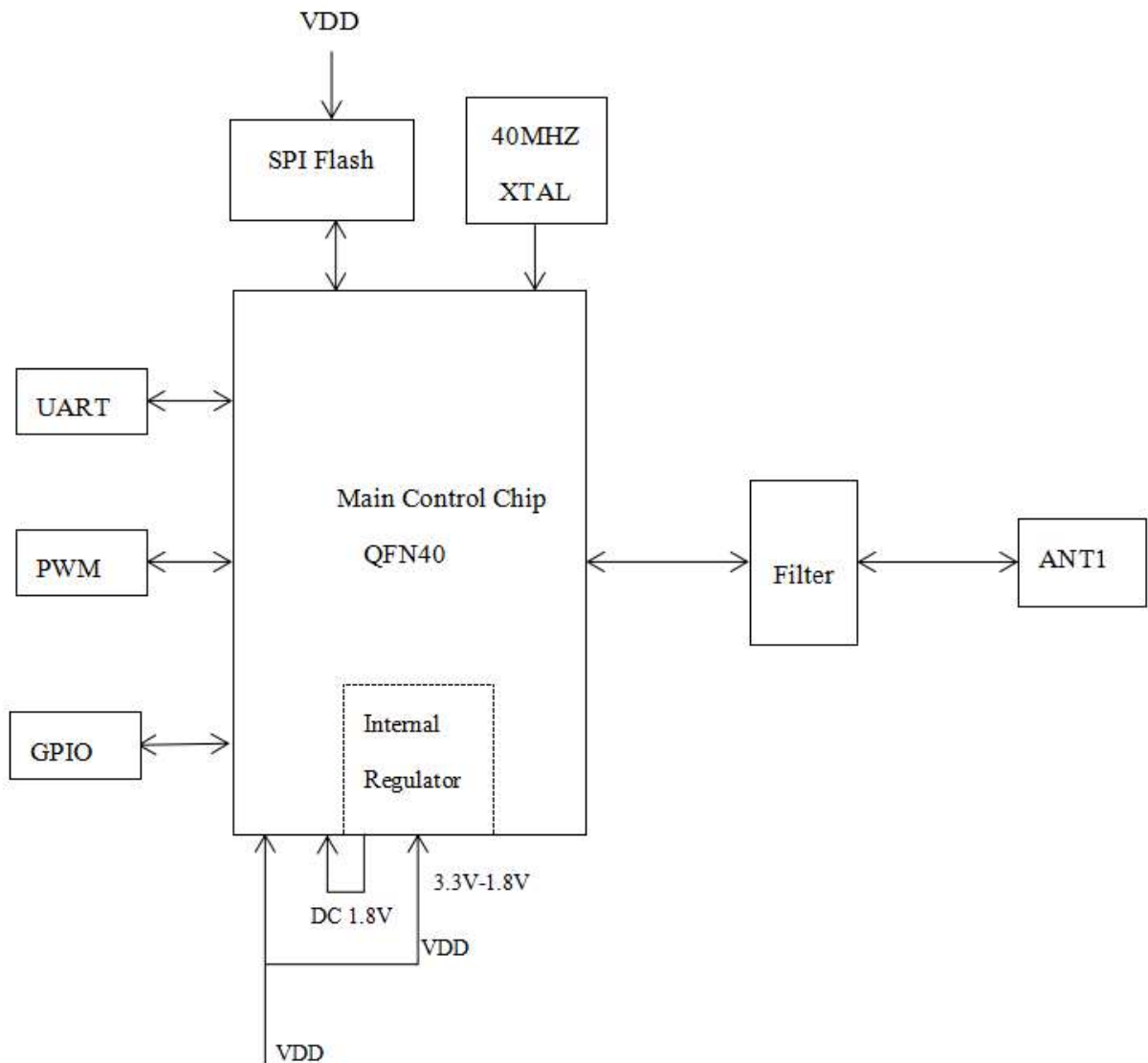


chart 3 Module Block Diagram

6 Module Pin Definition

6.1 Pin assignment chart

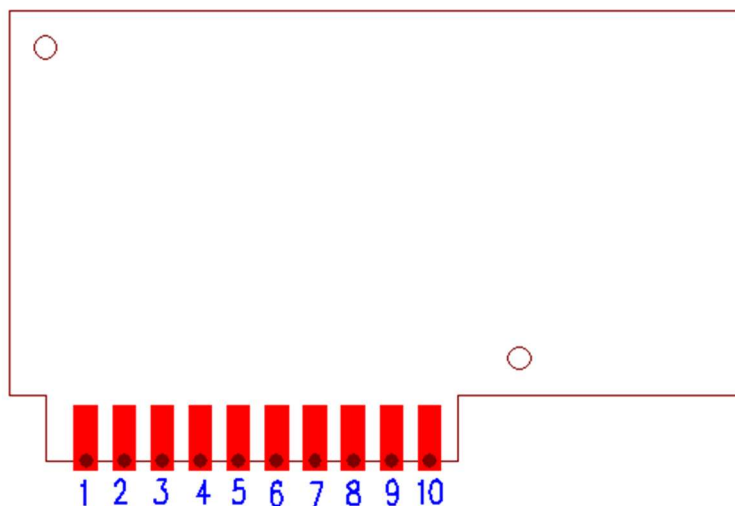


chart 4 Pin assignment chart (TOP View)

6.2 Pin definition table

table 1 module pin description table

number	name	type	Pin description	remarks
1	VDD	P	3.3V Power Supply Input	\
2	GND	P	Power Supply ground	\
3	P04	I/O	GPIOA_4/PWM4/SPI_MOSI/UART1_CTS/JTAG_TRST	PIN20
4	P17	I/O	GPIOA_17/PWM5/SPI_M_D2/SD_CMD	PIN38
5	P18	I/O	GPIOA_18/PWM6/SPI_M_D3/SD_CLK	PIN39
6	P19	I/O	GPIOA_19/PWM7/I2C_SCL/SPI_MOSI/UART2_CTS/SPI_M_D0/SD_D0	PIN40
7	P20	I/O	GPIOA_20/PWM0/I2C_SDA/SPI_MISO/UART2_RTS/SPI_M_D1/SD_D1	PIN1
8	P14	I/O	GPIOA_14/PWM2/UART0_OUT/SDIO_INT	PIN34
9	P03	I/O	GPIOA_3/PWM3/I2C_SDA/SPI_SCL/UART1_OUT/JTAG_TDI	PIN19
10	P02	I/O	GPIOA_2/PWM2/UART1_IN/I2C_SCL/SPI_CS/JTAG_TDO	PIN18

7 Electrical Characteristics

7.1 RF Characteristics

table 2 RF Characteristics table

RF Characteristics					
WIFI					
Network standard	Wireless standards: IEEE 802.11b、IEEE 802.11g、IEEE 802.11n				
Channel Numbers	1-14(different channels according to different national standards)				
Frequency range	2.412-2.484GHz (frequency range is different national standards)				
Transmit power	Test items	MIN	TYPE	MAX	Unit
	802.11b 11M, RF average output power	-	17	20	dBm
	802.11g 54M, RF average output power	-	14	20	dBm
	802.11n(HT20) MCS7, RF average output power	-	13	20	dBm
	Frequency error	-30	+/-10	30	KHZ
EVM	802.11b 11M EVM	-	-25	-10	dB
	802.11g 54M EVM	-	-35	-25	dB
	802.11n(HT20) MCS7	-	-36	-27	dB
Receive Sensitivity	802.11b 11M Receive Sensitivity	-	-90	-76	dBm
	802.11g 54M Receive Sensitivity	-	-77	-65	dBm
	802.11n(HT20) MCS7 Receive Sensitivity	-	-74	-64	dBm
BlueTooth					
Wireless standards	BT4.2				
Frequency range	2402-2480MHZ				
Power	Max. 10dBm				
Sensitivity	-99dBm				

7.2 DC Characteristics

table 3 Electrical Characteristics table

DC Electrical Characteristics				
Item	MIN	TYPE	MAX	Unit
Operation Voltage*	3.0	3.3	3.6	V
3.3V Power consumption	—	—	450	mA
Input High Voltage	2.8	—	3.6	V
Input Low Voltage	−0.3	—	0.3	V
Output High Level	2.2	—	3.45	V
Output Low Level	—	0	0.4	V
Output current at High level	—	5	—	mA
Output current at Low level	—	5	—	mA

*Note: Please ensure that the supply module voltage is within the specified range. If there is surge or other shock wave at the moment of power failure is higher than the specified voltage, the chip may be damaged.

It is recommended to add a tube at the power supply pin of the module backplane.

7.3 Power Consumption

table 4 Power Consumption table

Operation Mode	Mode	Rate	TX/RX	TYPE	Unit
TX	WIFI 11b	11M	18dBm	242	mA
	WIFI 11g	54M	15dBm	162	mA
	WIFI 11n	MCS7	14.5dBm	156	mA
	BLE	1M	4dBm	98.8	mA
RX	WIFI 11b/g/n	\	Continue RX	62	mA
	BLE	1M	Continue RX	60	mA
Networked standby	\	\	\	61	mA
Distribution network	\	\	\	68	mA

8 Module Structure

8.1 Dimension Diagram

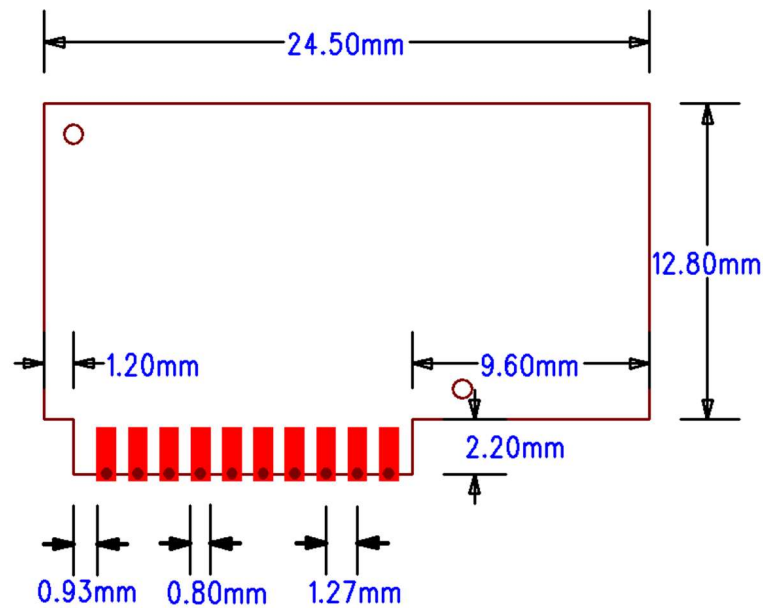


chart 5 Dimension chart (TOP View)

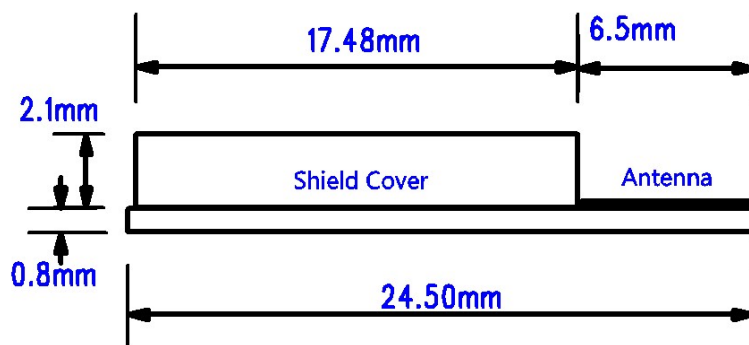


chart 6 side view chart

※ PCB thickness: $0.8 \pm 0.12\text{mm}$, Shield Cover height: 2.1mm, Module Total height: 2.9mm。

※ All dimension tolerance meet GB/T1804-m unless other specified.

8.2 Recommended Layout

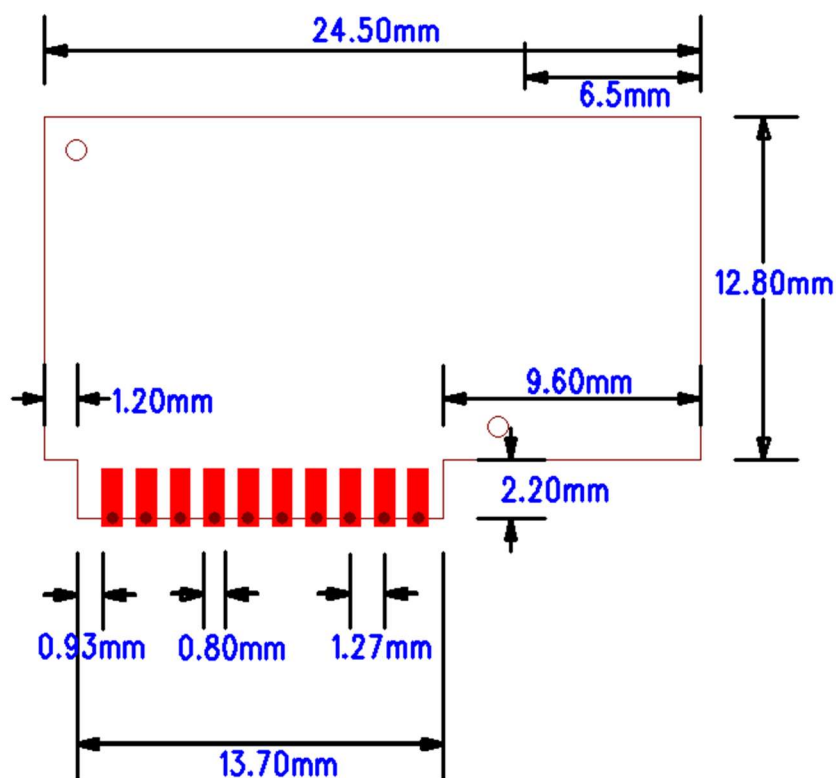
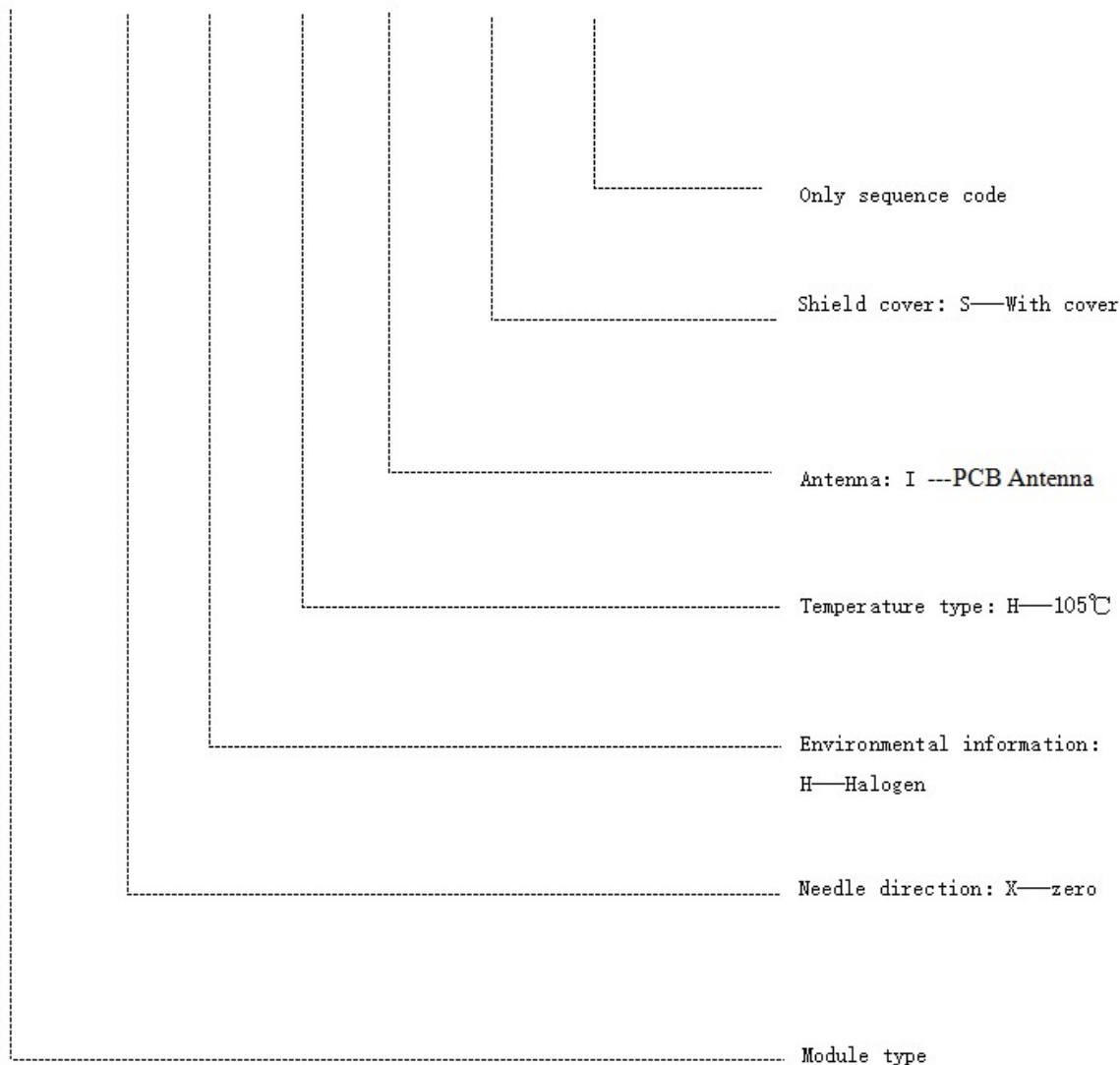


chart 3 PCB Layout Recommended (TOP View)

※ The above package is for reference only, please adjust it according to the process, installation method and other factors.

9 Ordering Information

JXC8720-18 -X H H I S 00



10 Package



chart 4 Product packaging chart

11 Storage and production

11.1 storage

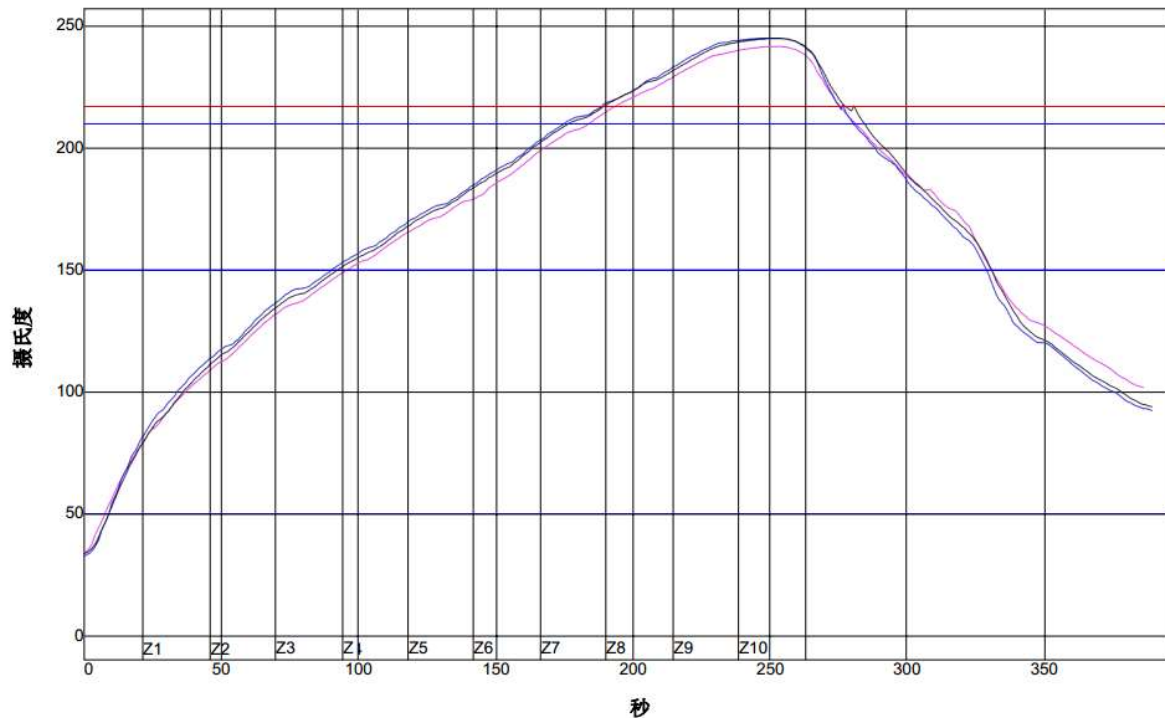
- ◆ It is recommended to store in the environment with temperature $<30^{\circ}\text{C}$ and humidity $<85\% \text{ RH}$;
- ◆ If the storage is not good (especially for a long time),it will lead to serious oxidation of PCB pad in gold deposition process,and it is very likely to lead to false soldering and missed soldering during chip placement.
- ◆ The shelf life of products packed in dry vacuum is 6 months from the date of sealing.
- ◆ After unpacking,please complete the placement within 24 hours;or vacuum package again,and bake the module before the next placement.
- ◆ According to the instruction of humidity card,please bake ($125^{\circ}\text{C} \pm 5^{\circ}\text{C}$) before mounting.

table 5 corresponding table of baking time

Humidity card indication	Baking time
30%、 40%、 50% color rings are blue	2 hours
30% color rings turns pink	4 hours
30%、 40% color rings turns pink	6 hours
30%、 40%、 50% color rings turns pink	12 hours

11.2 Reflow Profile

The temperature curve of module reflow soldering is shown in chart below. It is recommended that reflow times should not exceeds 2.



PWI= 87%	预热 50至150°C	恒温时间150至210°C	回流时间 /217°C	最高温度	斜率1 (50-150°C)	斜率2 (150-210°C)
<TC5>	81.81 45%	85.85 -14%	84.50 68%	243.01 -40%	2.09 39%	0.80 60%
<TC6>	75.74 5%	82.47 -25%	88.25 87%	245.43 9%	2.47 64%	0.79 58%
<TC7>	76.06 7%	83.66 -21%	86.73 79%	245.11 2%	2.52 68%	0.79 59%
温差	6.07	3.38	3.75	2.42	0.43	0.01

制程界限:

System Default for Reflow			
统计数名称	最低界限	最高界限	单位
斜率1 (目标=1.5) 介于 50.0 和 150.0 (计算斜率的时间距离= 20 秒)	0.0	3.0	度/秒
斜率2 (目标=0.5) 介于 150.0 和 210.0 (计算斜率的时间距离= 20 秒)	0.0	1.0	度/秒
预热时间 50-150°C	60	90	秒
恒温时间150-210°C	60	120	秒
回流以上时间 - 217°C	50	91	秒
最高温度	240	250	摄氏度

chart 9 temperature curve of reflow soldering

12 Precautions

The module supports PCB antenna. the following are antenna precautions and module placement rules.

- 1》on the user' s PCB ,the area corresponding to the lower chart red area(12.8x6.5mm)cannot place components and lay gnd,so the pcb needs to be hollowed out.
- 2》the antenna should be away from the metal ,at least 10mm away from the surrouding high components.
- 3》the antenna part shall not be covered by the metal shell.

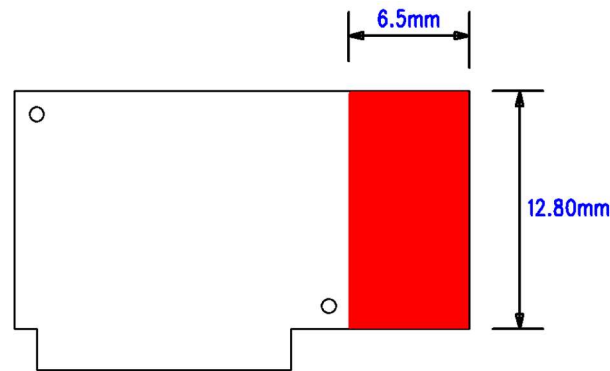


chart 10 Module Antenna Area Diagram

4》As far as possible,it should be placed in the following areas of the user board to reduce the impact on the antenna and wireless signal.You can contact jingxun technical support personnel for assistance.

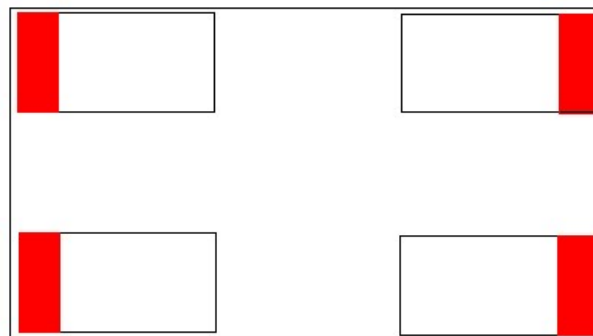


chart 11 Antenna Area Diagram of backplane module

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