

WIFI+BT Module

IEEE 802.11 b/g/n 1T/1R

Model Number: WT8LR1000

Product Description

WT8LR1000 is a 2.4GHz WIFI 1x1 module. This module provides a high level of integration with a dual-stream IEEE 802.11n MAC/ base band /radio and Bluetooth 4.2.The WLAN operation supports 20MHz,40MHz channels for data rates up to 150Mbps. It fully complies with IEEE 802.11 b/g/n feature rich wireless connectivity at high standards,delivers reliable,cost-effective, throughput from an extended distance.

Product Features

- ◆ Complies with IEEE 802.11b/g/n for 2.4GHz.
- ◆ Bluetooth v4.2
- ◆ One transmit and One receive path(1T1R)
- ◆ Works with all existing network nfastructure.
- ◆ Capable of up to 128-Bit WEP Encryption.
- ◆ Freedom to roam while staying connected.
- ◆ UP to 300 Mbps High-Speed Transfer Rate in 802.11n mode of operation.
- ◆ Operating Systems: Linux,Win7, Win8, Win10,XP
- ◆ Low power consumption.
- ◆ Easy to install and configure.
- ◆ High speed USB 2.0 interface

Product Specification

Model	WIF+BT Module
Product Name	WT8LR1000
Standard	802.11 b/g/n
Interface	USB
Data Transfer Rate	1,2,5,5,6,11,12,18,22,24,30,36,48,54,60,90 and maximum of 150Mbps
Modulation Method	GFSK,π/4-DQPSK,8DPSK(blueetooth) DQPSK,DBPSK,CCK(802.11b) QPSK,BPSK,16QAM,64QAM with OFDM (802.11g) QPSK,BPSK,16QAM,64QAM with OFDM (802.11n)
Frequency Band	BLUETOOTH 2402~2480 MHz WIFI 2.4G: 2412~2462 MHz
Operation Mode	Infrastructure
Security	WEP, TKIP, AES, WPA, WPA2
Operating Voltage	3.3V±10%
Current Consumption	<1000mA
Antenna Type	PIFA
Antenna Gain	2dBi
Operating Temperature	0 ~ 60°C ambient temperature
Storage Temperature	-40 ~ 80°C ambient temperature
Humidity	5 to 95 % maximum (non-condensing)

NOTICE:

- ◆ please keep this product and accessories attached to the places which children can't touch;
- ◆ do not splash water or other liquid onto this product, otherwise it may cause damage;
- ◆ do not put this product near the heat source or direct sunlight, otherwise it may cause deformation or malfunction;
- ◆ please keep this product away from flammable or naked flame;
- ◆ please do not repair this product by yourself. Only qualified personnel can be repaired.
- ◆ it is Limited module procedures and the module must be installed on the mainboard of the product with a RF shielding

Installation Precautions:

This manual does not contain any installation instructions. The OEM foundry must refer to the target host to determine the installation method.

This product has been configured and benchmarked before being shipped to our customers so that it can be fully connected to the host when it is powered on. After the installation is complete, the host needs to be powered on to verify the RF function of the module and prepare the system for customer use.

FCC Statement

- List of applicable FCC rules

This device complies with FCC part 15C : 15.247.

- Summarize the specific operational use conditions

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter. And the module should be installed at a minimum distance of 20 cm away from person nearby. The host product manufacturer should state this information to the host instruction manual.

- Trace antenna designs

Not applicable.

- RF exposure considerations

This modular complies with FCC RF 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. This modular must be installed and operated with a minimum distance of 20 cm between the radiator and user body.

- Antennas

Antenna Type: PIFA Antenna

Antenna Gain: 2 dBi Max

The limited modular use a specific antenna, refer to Annex for information.

When the module is applied to the host, if the antenna changes, C2PC certification is required.

- Authentication protocols.

Within the space of module-to-antenna authentication protocols, there exist authentication frameworks and authentication methods ensure that only authorized modules and authorized antennas work together.

- Label and compliance information

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.

Caution: The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance 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.

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: 2AC23-WT8L Or Contains FCC ID: 2AC23-WT8L".

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

- Information on test modes and additional testing requirements

Any final host product with the modular transmitter installed should be under test according to guidance given in KDB 996369 D04. To enter test mode for module, MP_Kit_RTL11n_8723DU_v1.11_20170821 software and command is necessary. When something wrong happens in configuring test modes for host product with module, host product manufacturer should coordinate with module manufacturer for technical support. It is recommended that some investigative measurements should be taken to confirm that host product with module installed does not exceed the spurious emissions limits or band edge limits.

- Additional testing, Part 15 Subpart B disclaimer

The modular transmitter is only FCC authorized for the specific rule parts (FCC Part 15.247) list on the grant, and that 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 when contains digital circuitry.

Annex (antenna information)

1. Electrical Specifications

1.1 Frequency Band

Frequency Band	Frequency
2.4G	2400-2500MHZ

1.2 VSWR And GAIN

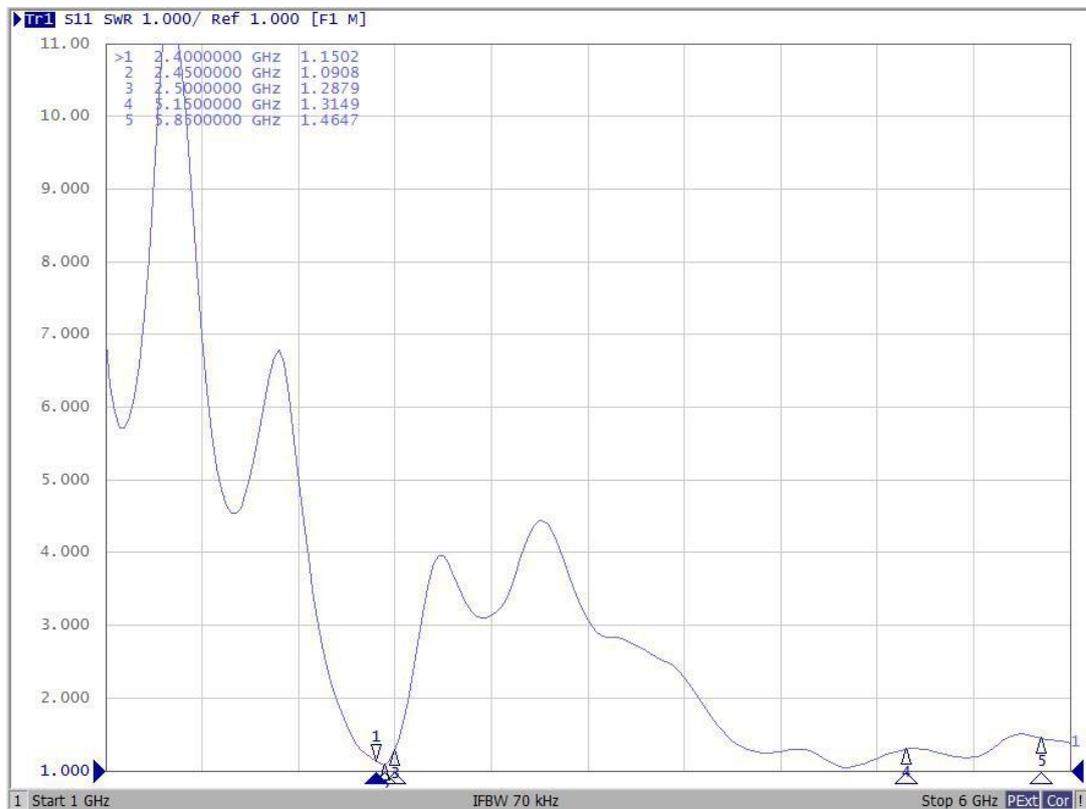
VSWR		GAIN	
Freq. Band	OPEN SPEC	Band Freq.	OPEN SPEC
2400MHz	$\cong 2.0$	2400MHz	$\cong -1.0\text{dBi}$
2500MHz	$\cong 2.0$	2500MHz	$\cong -1.0\text{dBi}$

※Measuring a 50Ω test jig is connected to a network analyzer to measure the VSWR.

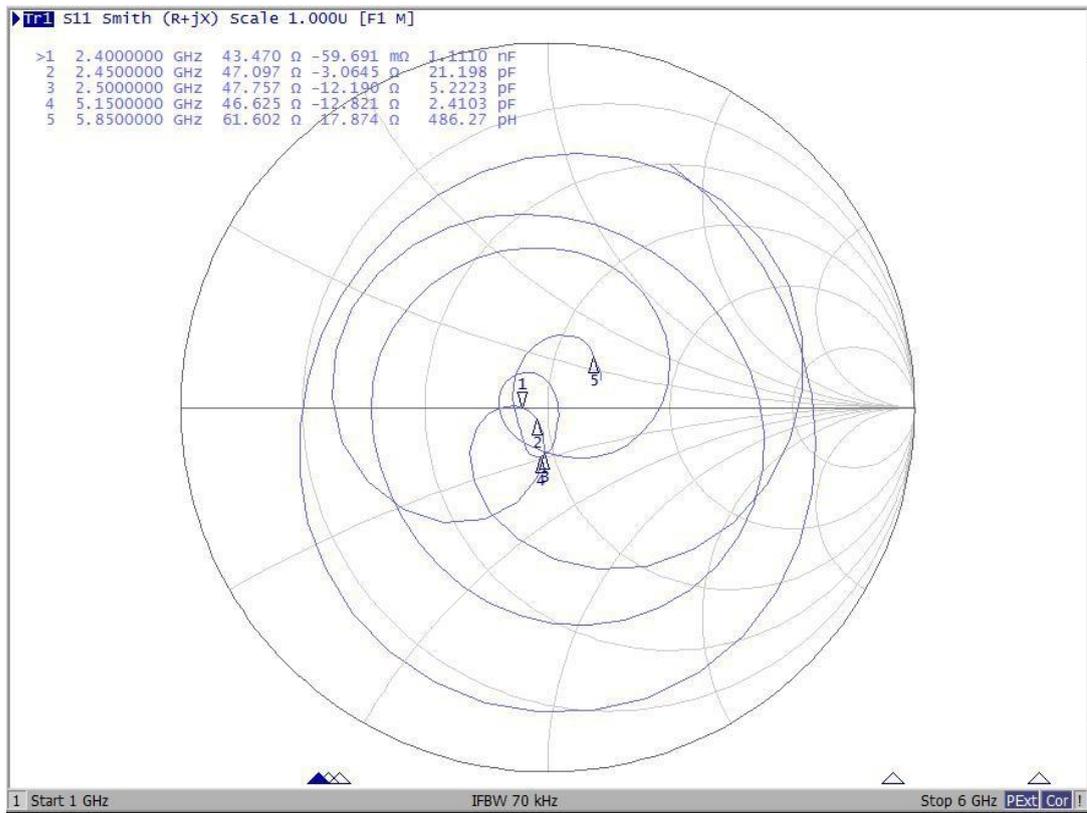
※※All test value is done in customer approval fixture.

2. Antenna test data

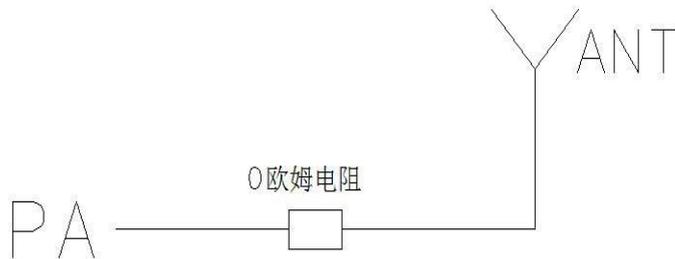
2.1 VSWR



2.2 Smith Chart



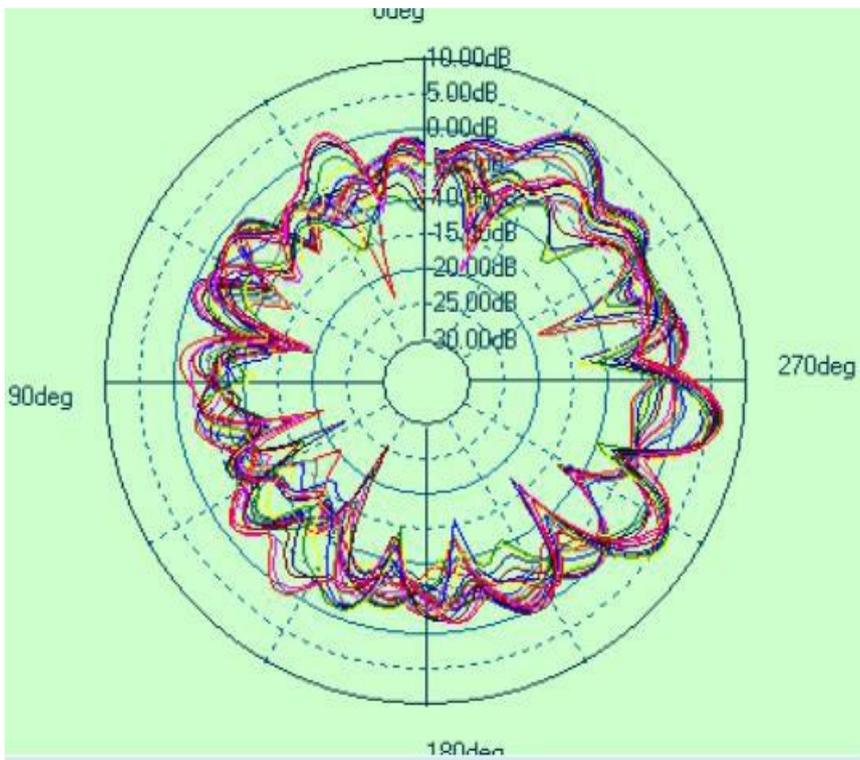
2.3 Matching circuit



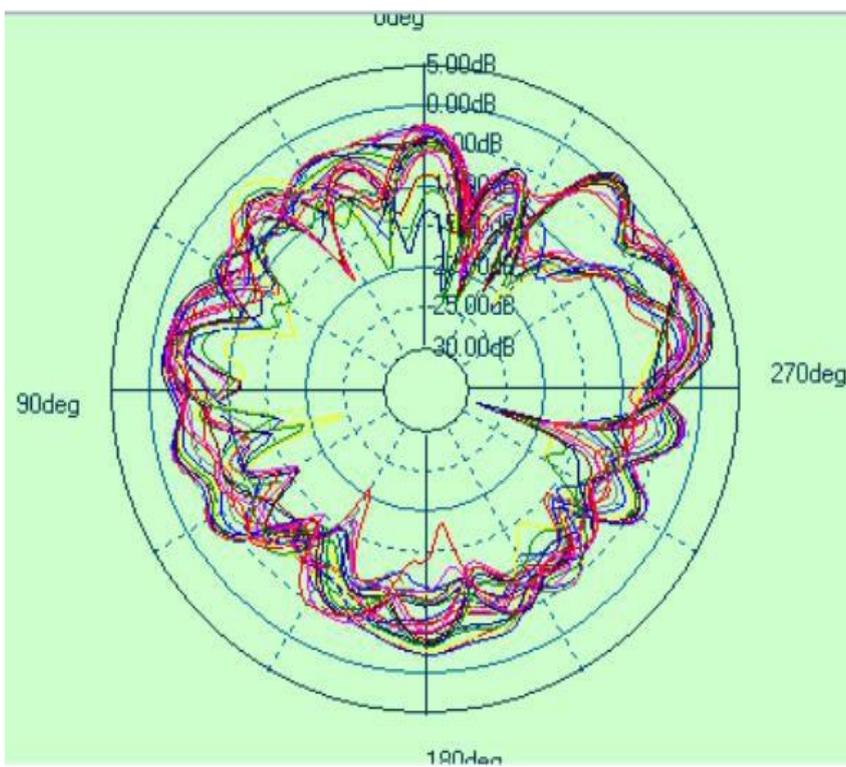
2.4 No-source test data

Frequency (MHz)	2400	2450	2500
Gain Efficiency (dB)	1.82 (44%)	2.00 (48%)	1.88 (45%)

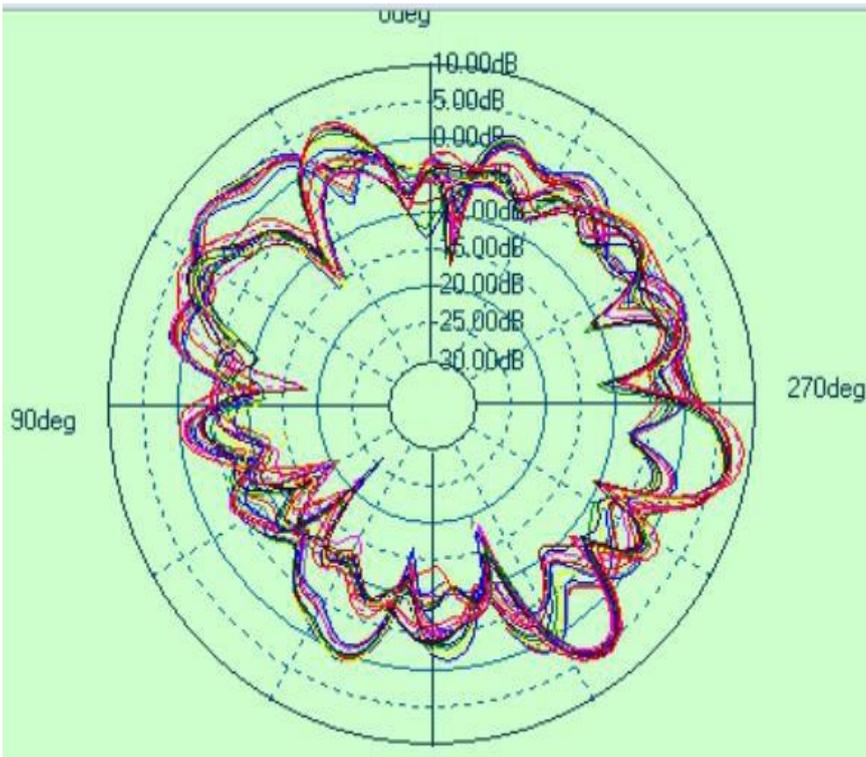
2.5 Directional drawing of horizontal plane of



Theta 90deg



Phi 0deg



Phi 90deg

3. Mechanical Specification

3.1 Mechanical Configuration(2.4G)

版本	说明	审核	日期	批准	日期

展开图

立体图

备注:

1. 角度尺寸模具设计时依据图纸尺寸作参照, 样品及量产实配即可;
2. 打"*"为严格控制尺寸 (IQC必测等级A);
3. 号码说明(采用宋体, 要求字迹清晰, 弹片无变形);
4. 产品不能有油污、毛刺、利边、缺料、变形、压印过深等不良;
5. 需通过48小时盐雾测试;
6. 包装时需将吸塑盒摆放整齐, 运输过程中产品不能挤压碰撞等;
7. 未经过ZTX公司确认, 材料不能随意更改;

未注明公差	±0.08	制	第一版	日期	2017/04	审核	AI	比例	1:1	物料编号	1.01.00350
5 UND	±0.10	制	李方森	日期	2017/04	审核	AI	比例	1:1	物料编号	1.01.00350
5-10	±0.12	制	李方森	日期	2017/04	审核	AI	比例	1:1	物料编号	1.01.00350
10-35	±0.15	制	李方森	日期	2017/04	审核	AI	比例	1:1	物料编号	1.01.00350
35-50	±0.18	制	李方森	日期	2017/04	审核	AI	比例	1:1	物料编号	1.01.00350
50-100	±0.20	制	李方森	日期	2017/04	审核	AI	比例	1:1	物料编号	1.01.00350
100 0VB	±0.20	制	李方森	日期	2017/04	审核	AI	比例	1:1	物料编号	1.01.00350

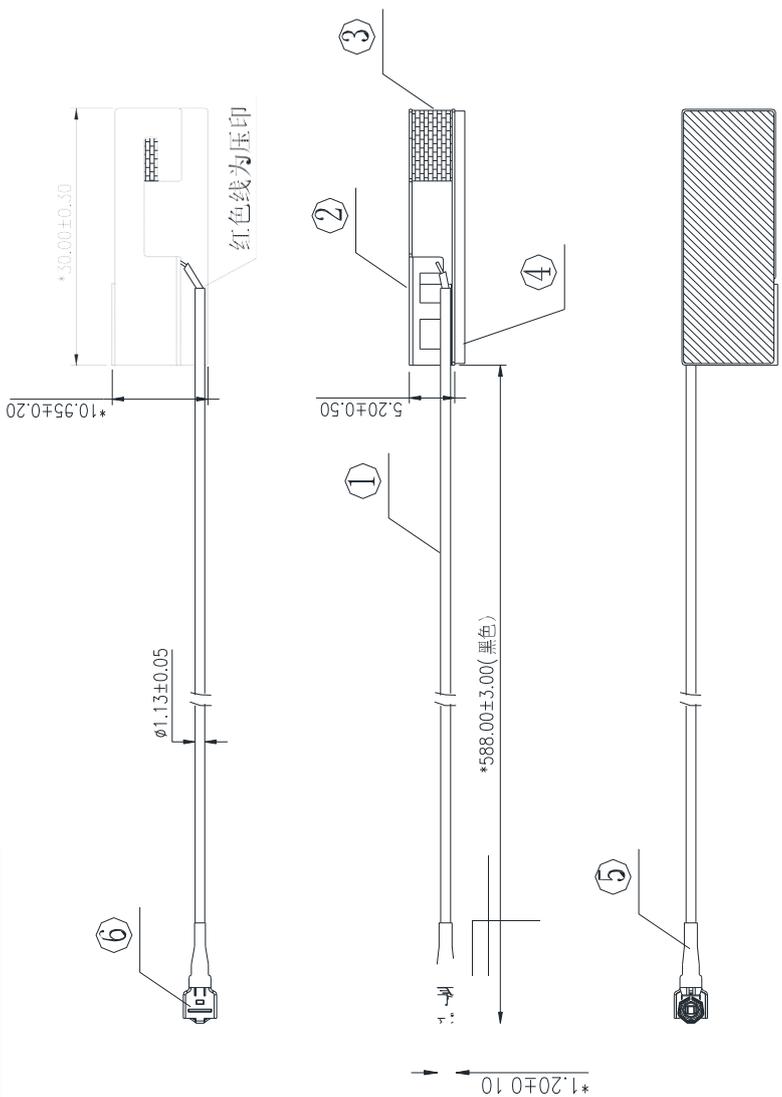
MATTER	RoHs (PPM)				
Cd	<100	<100	<100	<100	<100
Pb	<1000	<1000	<1000	<1000	<1000
Hg	<1000	<1000	<1000	<1000	<1000
Cr6+	<1000	<1000	<1000	<1000	<1000
PBB	<1000	<1000	<1000	<1000	<1000
PBDE	<1000	<1000	<1000	<1000	<1000

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3.2 Mechanical Configuration(Antenna components)

版本	说明	审核	日期	批准	日期

端子与板端扣合后拔去力(Unmating force):
初次5N以上; 30次插拔后3N以上;



材质说明:

序号	结构说明	材质	工艺	备注
①	RF同轴线	PEP (F46) / 黑色		料号:ST113.3*065
②	WiFi弹片	SUS304 T0.30mm	镀镍	
③	支撑泡棉	防火EVA 3M 9495	通过UL-94	
④	固定泡棉胶	泡棉胶 3M RP45	通过UL-746C	
⑤	护套	黑色热缩套管		
⑥	RF端子4代	磷青铜	镀金 厚度 > 1μ"	料号: 588*1.13*0.01*0.10

注: 带*号尺寸为CPK检测尺寸

未注明公差		日期	版本	版次	日期
5 UND	±0.08	2018.11.21	A1	1:1	2018.11.21
10.95	±0.10	射频	李芳涛	006	1/1
1.13	±0.12	射频	李芳涛	006	1/1
5.20	±0.15	审核		006	1/1
588.00	±0.18	批准		006	1/1
100.0%	±0.20	批准		006	1/1

环保要求:

MATERIAL	RoHS (PPM)
CA	<1000
Pb	<1000
Hg	<1000
Cr6+	<1000
PBB	<1000
PBDE	<1000

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图例: 0.5mm 1:1

零件号: 274605-001.0