



**Shenzhen unity wireless technology co., ltd**

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# ANT SPEC

customer name: Shenzhen Research Norda Technology Co., LTD

Customer project: Q63

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The city material number: 01.02.0137

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product description: FPC WIFIantennae L=50MM 0.81black 2 IPEX

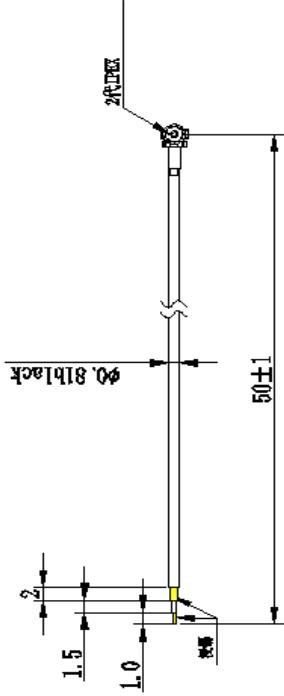
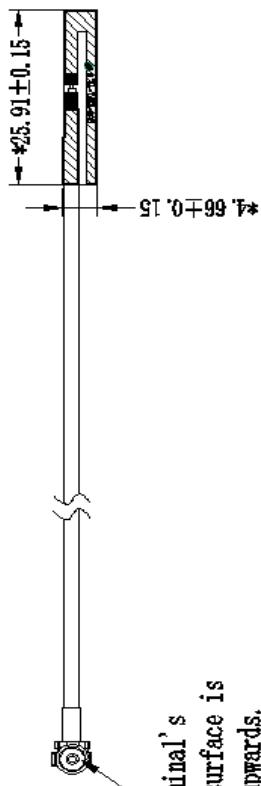


## Document development / revision / repeal of the CV:

## **Engineering drawing:**

版本	描述	制图	日期
V1.0	First sample		2024.4.11

The terminal's mating surface is facing upwards.



单位:  $\mu\text{m}$

Shenzhen Zhongcheng Wireless  
Technology Co., Ltd.

材料	没有特殊要求的公差如下 线性公差 = $\pm 0.15$ 角度公差 = $\pm 0.5^\circ$	项目名称: Q63-WIFI
表面处理/颜色 black	黑	单核 Alex Henry 标准 第 1 页共 1 页

100

### Key points:

1. The wire is clean, with no damage to the outer skin, no oil stains, spots, or other defects.
2. The welding point cannot be higher than 1.8MM.
3. Connector pull force MMCX: 1KG IPEX: 0.5KG
4. All input materials comply with ROHS.

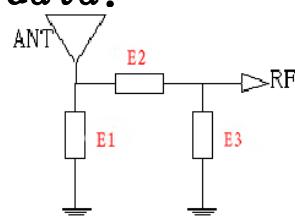


### Product Parameter

name of a part;	FPC antenna
frequency rang (MHz)	2400-2500
Polarization Type	Linear polarization
VSWR	The physical prototype shall prevail
input impedance ( $\Omega$ )	50
Cable length (mm)	50MM
Cable Colour	black
Connector Type	fastening; snap-fit
Operation temperature (°C)	-40~+85
Store temperat (°C)	-40~+85

## 1. Antenna passive efficiency test data:

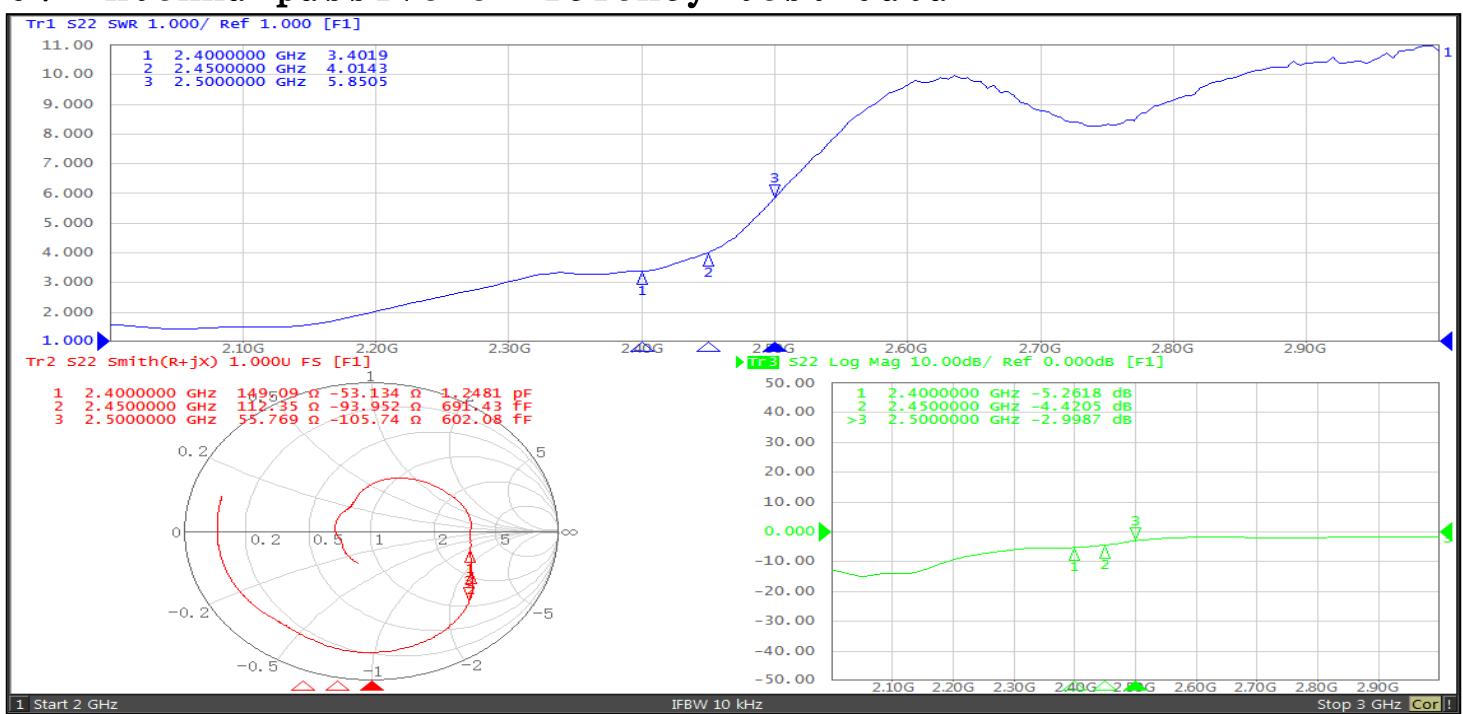
	E1	E2	E3
WIFI ANT			



## 2. Antenna installation position:



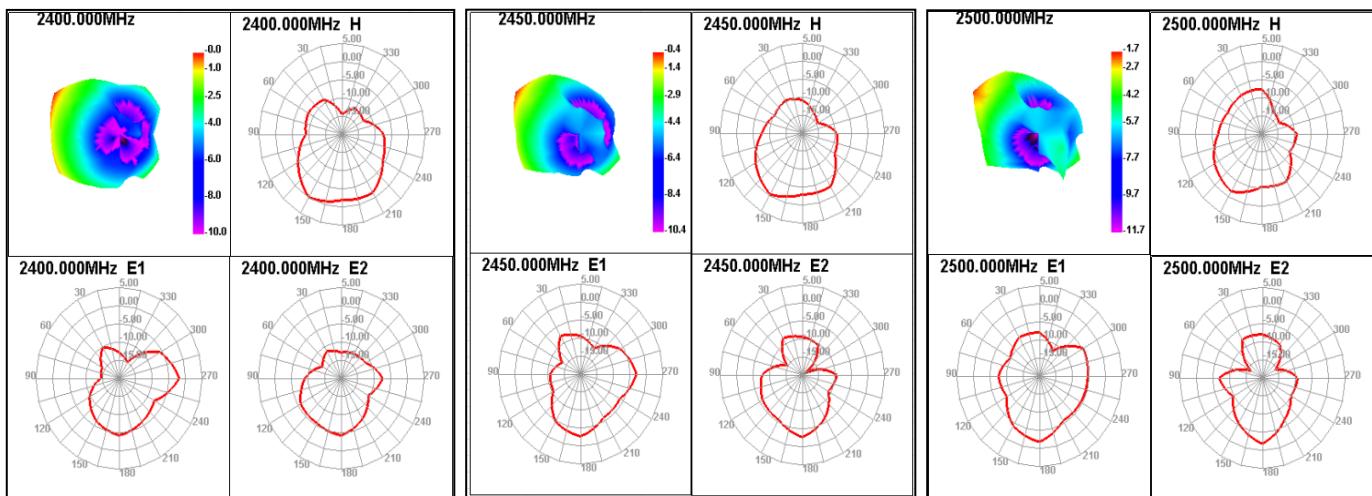
## 3. Antenna passive efficiency test data



#### 4. Antenna passive efficiency test data:

Freq (MHz)	Effi (%)	Gain (dBi)
2400	20.7	-0.05
2410	21.72	0.23
2420	18.84	-0.49
2430	18.17	-0.8
2440	20.03	-0.4
2450	20.08	-0.44
2460	21.57	-0.35
2470	22.89	-0.58
2480	21.78	-1.09
2490	24.65	-0.73
2500	20.65	-1.68

#### Antenna passive efficiency test data:





on-product information													
customer name		Item name / model number		project name		manufacturer							
Research Norda		01.02.0137		Q63		Shenzhen Zhongcheng Wireless Technology Co., LTD							
Product composition information													
order number	Part name	Third-party inspection repor		Limited substance content PPM									
		date	number	lead (Pb)	cadmium (Cd)	mercury (Hg)	hexavalent chromium	Polybrominated biphenyl	PBDE				
1	3M9471 (gum)	2024/12/6	SHAEC24027480901	○	○	○	○	○	○				
2	Substrates (copper foil)	2024/12/20	SHAEC24028809006	○	○	○	○	○	○				
3	pad (OSP)	2024/3/14	CANEC24004013302	○	○	○	○	○	○				
4	Wlet (electric gold)	2024/3/30	A2240158803101001E	○	○	○	○	○	○				
5	Ink (resistance welding)	2024/6/14	ETR24600712	○	○	○	○	○	○				
6	Ink (character)	2024/9/23	ETR24902229M01	○	○	○	○	○	○				
7	wire stock	2024/1/12	XMP24-000173	○	○	○	○	○	○				
8	terminal; post	2024/4/25	27322E20188R1M	○	○	○	○	○	○				

Note:

1. Please indicate with ○, compliance of six restricted substance content; compliance with ○; non-compliance.

## testing facility:

Measurement instrument: microwave dark room, network analyzer, standard antenna. Description of microwave dark room: This is the microwave dark room set in Shenzhen by our company. This microwave dark room is a far field measuring system. The size of the dark room is 7.0 m x 4.0 m x 3.0 m, and the size of the static area (quiet zone) is 15 cm x 15 cm x 15 cm.

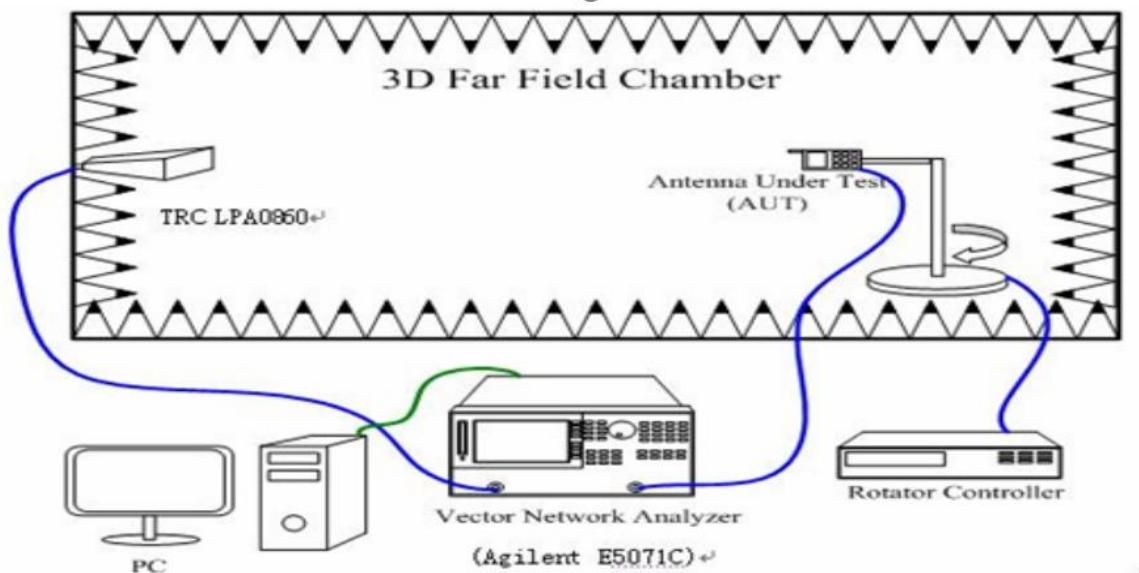


图. 1. 微波暗室内部仪器设置 r. +

graph. 1 is the instrument setting of the microwave room and the connection diagram of the network analyzer. The distance between the transmitting antenna (the transmitting antenna used in the room is trc lpa0860 800mhz-6 ghz) and the antenna to be tested (aut) is 1.35 meters. The antenna to be measured is placed on the rotating platform, and the antenna can be measured by the Angle of rotation from the control table. Place the measured antenna on the rotating table and measure the 360 degree field strength data of each plane (zy plane and zx plane). Then the antenna to be tested is replaced by a standard dipole antenna (the standard dipole antenna model used in this dark room is trc ad series dipole antenna 800mhz ~ 2500 mhz) and the field strength data of 360 degrees is measured to convert the gain standard value. The gain value and direction map of the antenna to be measured can be obtained through the conversion of equation 1.

$$G_{AUT} = G_{stand} + P_{AUT} - P_{stand}$$

$G_{AUT}$ : Gain of AUT

$G_{stand}$ : Gain of Standard Gain Antenna

$P_{AUT}$ : Measured Power of AUT

$P_{stand}$ : Measured Power of Standard Gain Antenna

## Environmental and Reliability Testing

project	Reference standards, and experimental conditions	Judgment basis	Sample quantity / bad quantity (PCS)	Test / test the equipment
collide	GB/T 2423.6-1995 Acceleration: 200m / s <sup>2</sup> Collision pulse duration: 6ms Number of collisions per minute: 40~80 times Total collisions: 400 vertical direction, front and back Left and right horizontal direction each 300 times, a total of 1000 times.	It should meet the requirements of electrical characteristics, and the mechanical properties are normal, but the appearance of touch marks, whitening and bending in the allowable range.	5/0	Collision experiment machine
vibrate	GB/T2423.10-1995 Test the FcFrequency: 10~30; 30~50Hz; Resonance point amplitude: 0.35mm Amplitude: 0.75mm Duration: X, Y & Z, 0.5 hours per direction. Cycle: 1min; Test for 1 hour after completing the experiment.	And firmware without loose, parts without rupture or fatigue; No original fall off, no solder point fracture; The electrical performance index meets the requirements of the technical specifications;	5/0	Vibration test machine
retentivity	Verification conditions: both ends of the joint and wire are fixed on the drawing machine fixture, and the pulling force returns to zero Verification method: manually pull to the product IPEX connector and wire fall off	>10N	5/0	Pull force test machine



decline	GB/T2423.8-95 From 100cm height to the floor 10 times. GB/T2423.8-95	1. No significant abnormality in appearance 2. After the test, the electrical performance shall meet the requirements of the electrical characteristics, and the mechanical performance shall be normal, but the external collision marks, whitening and bending shall be in the allowable range.	5/0	Drop test machine
high-temperature storage	GB/T 2423.2-2001 trial B Ambient conditions: +85 ± 3°C for 96H The experiment was completed 24 hours after room temperature.	The surface coating shall have no peeling, crack, wrinkle and separation; the non-metallic structures have no permanent deformation, cracking, bonding; the mobile components are not stuck or detached; the electrical performance indexes meet the requirements of technical specifications	10/0	Temperature and humidity cycle test box
Low temperature storage	The gb / t 2423.1-2001 test a ambient conditions: -40 ± 3°C for 96h was tested 24 hours after the experiment was at room temperature.	The surface coating shall have no peeling, crack, wrinkle and separation; the non-metallic structures have no permanent deformation, cracking, bonding; the mobile components are not stuck or detached; the electrical performance indexes meet the requirements of technical specifications	10/0	Temperature and humidity cycle test box



High and low temperature cycle	gb/t2423. 22-2002 Test n: Place the antenna in t1= -40°C incubator for 30 minutes, then raise the temperature for 60 minutes to t2=80°C, then keep the temperature for 30 minutes, relative humidity at 50% rh, and the cycle is repeated 20 times.	The surface coating shall have no peeling, crack, wrinkle and separation; the non-metallic structures have no permanent deformation, cracking, bonding; the mobile components are not stuck or detached; the electrical performance indexes meet the requirements of technical specifications	10/0	Temperature and humidity cycle test box
humid heat test;	Test gb / t 2423. 3-1993 ca: ambient conditions: 40 ± 2°C, relative humidity 80 ~90% for 96 hours. The experiment was completed 24 hours after room temperature.	2. After the test, the electrical performance meets the specification requirements, and the electrical performance meets the specification range.	10/0	Temperature and humidity cycle test box
salt spray test	The gb / t 2423. 18-2000 test kb places the test in a salt spray chamber with saline injection concentration (5 ± 1)%, 35°C± 1°C, sedimentation rate (1-2) ml / 50mm2 * h, 48 hours, check the appearance.	No rust phenomenon, mechanical performance and electrical performance to meet the range of specification.	5/0	Saline spray machine



## Packaging specification

Product material number :01.02.0137

size of product: FPC WIFIantennae L=50MM 0.81black 2 代 IPEX

1. Labeling requirements (according to the customer name reference corresponding finished product label production requirements, no requirements, according to the ordinary label requirements)

2. The inner label is about 8cm long and 5.5cm wide

		深圳众城无线技术有限公司	
SHENZHEN UNITY WIRELESS TECHNOLOGY., LTD			
客户		规格型号	
订单号		送货数量	
客户料号		众城无线料号	
日期		生产批次	
TEL:0755-23285621	FAX:0755-23285621		

The outer label is about 8cm long and 5.5cm wide

		深圳众城无线技术有限公司	
SHENZHEN UNITY WIRELESS TECHNOLOGY., LTD			
客户		规格型号	
订单号		送货数量	
客户料号		众城无线料号	
日期		生产批次	
TEL:0755-23285621	FAX:0755-23285621		

### 二、The packing requirements

job description:

1. inner packing:

Product according to actual packaging quantity pcs / pouch,

Quantity of pcs / large bag according to the actual package

2. Packaging:

Quantity / box according to the actual packing

**matters need attention:**

1. Whether to add a partition board, pearl cotton;

2. Label, such as rohs, etc.;