

# SPECIFICATION

Shenzhen Strongpower Communication Co., Ltd

Shenzhen Strongpower Communication Co.  
NPD-03 bluetooth antenna product recognition

Customer	By Me	Frequency Band	2402MHz-2480MHz
Model	NPD-03		
Serial No	RQ03B143701B-L RQ03B143701B-R	Color	FPC
RF designer	He YIBAI	Structural engineer	Zhou Jun
Technical director	Fu Yicheng	Date	2024/01/16

Confirm by customer:

SHENZHEN STRONGPOWER COMMUNICATION CO.,LTD  
Room 502, building w2-a, gaoxinnan 4th Road, South District, high tech park, Nanshan District,  
Shenzhen

# INDEXES

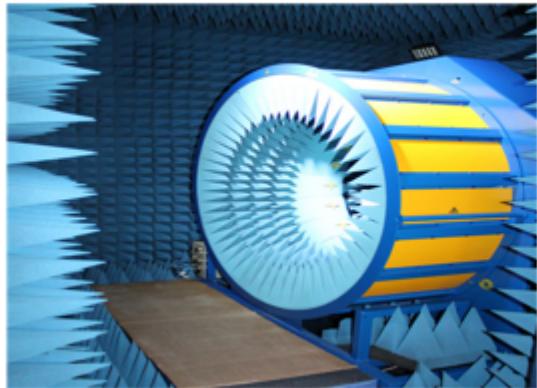
<b>1. The equipment of Active&amp;Passive test.....</b>	<b>3-4</b>
<b>2. Passive test.. .....</b>	<b>5-6</b>
<b>2.1 S Parameters.. .....</b>	<b>5</b>
<b>2.2 Passive Efficiency and Gain .....</b>	<b>5</b>
<b>2.3 Passive pattern.....</b>	<b>6</b>
<b>3.Active test.. .....</b>	<b>6</b>
<b>3.1 TRP&amp;TIS test.....</b>	<b>6-7</b>
<b>4.Matching Circuit..... .....</b>	<b>7</b>
<b>5.Engineering drawing .. .....</b>	<b>8</b>

Confidentiality requirements

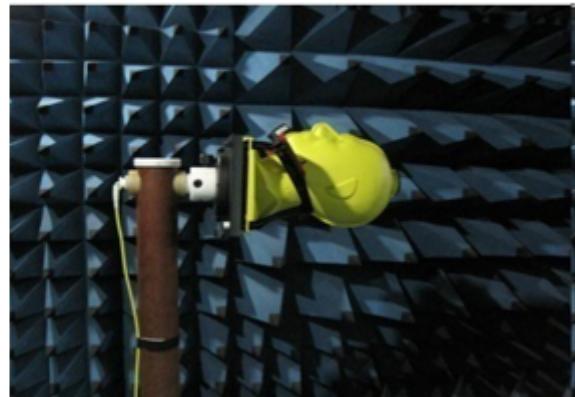
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## 1. The Equipment of Active&Passive Test

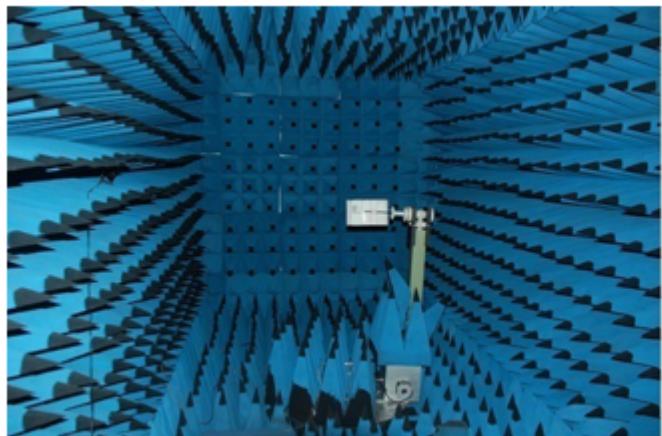
### chamber



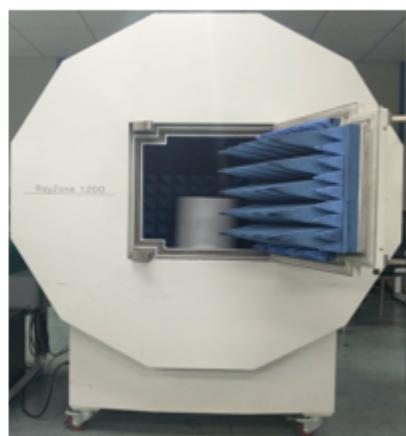
Satimo



Airlink



Guang Ping

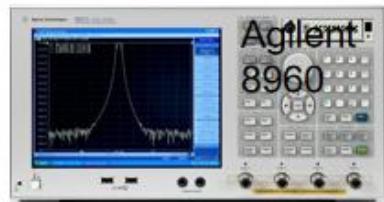


GTS

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# equipment



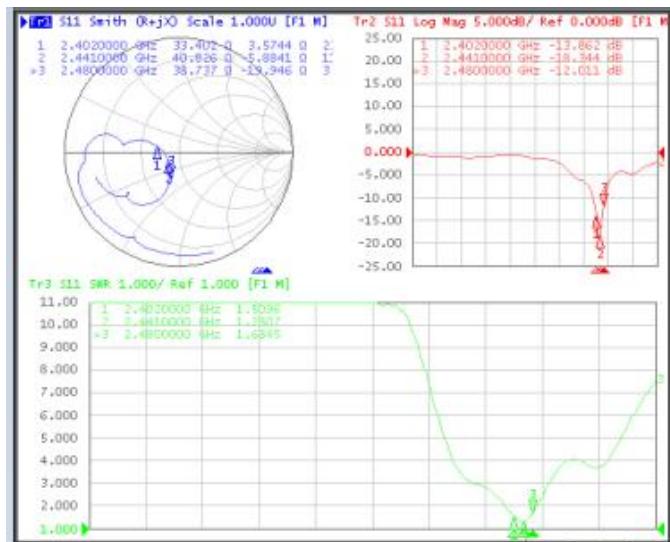
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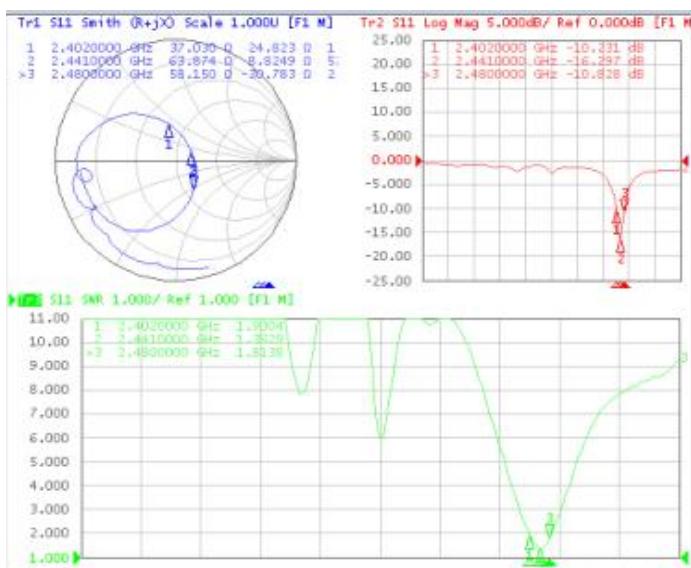
## 2. Passive Test

### 2.1 S Parameters, VSWR, Smith Chart

#### R: S11 Parameter (free space)



#### L: S11 Parameter (free space)



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## 2.2 Passive Efficiency and Gain

### L: Efficiency and Gain(free space)

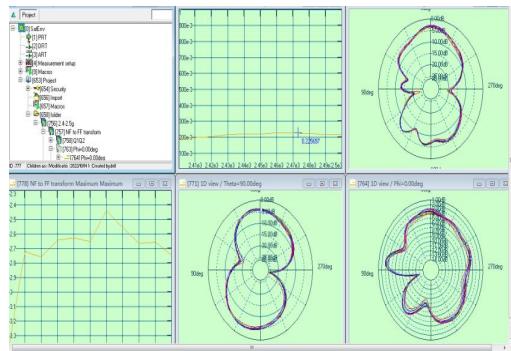
frequency (MHz)	Efficiency %	Gain dBi
2400	19%	-3. 39
2410	20%	-2. 72
2420	20%	-2. 76
2430	22%	-2. 64
2440	22%	-2. 63
2450	22%	-2. 65
2460	23%	-2. 44
2470	23%	-2. 55
2480	22%	-2. 66

### R: Efficiency and Gain(free space)

frequency (MHz)	Efficiency %	Gain dBi
2400	19%	-2. 41
2410	20%	-2. 39
2420	20%	-2. 22
2430	21%	-2. 29
2440	21%	-2. 26
2450	21%	-2. 07
2460	20%	-2. 10
2470	20%	-2. 36
2480	19%	-2. 46

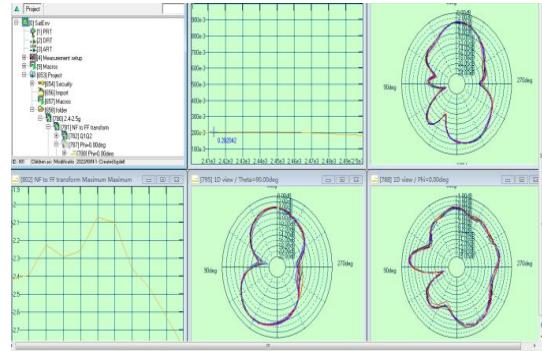
## 2.3 Passive pattern

L



Theta=90      Phi=0°      Phi=90°

R



Theta=90      Phi=0°      Phi=90°

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### 3.Active test

#### 3.1 TRP&TIS

##### FS-R

信道 CH	TRP (dBm)	TIS (dBm)
0	3.92	-88.38
39	3.9	-88.9
78	3.2	-88.45

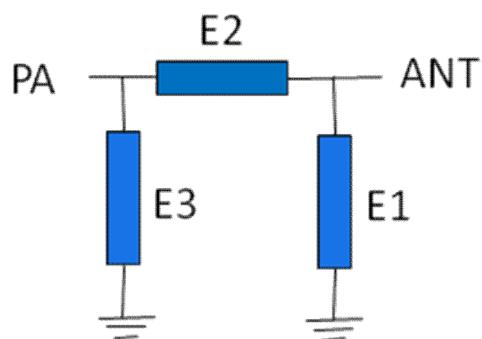
##### FS-L

信道 CH	TRP (dBm)	TIS (dBm)
0	3.68	-88.68
39	4.11	-89.43
78	3.7	-89.21

### 4. Matching Circuit

Left&Right are the same

Element	E1	E2	E3
Value	2PF	0 Ω	NC



### 5. Engineering drawing

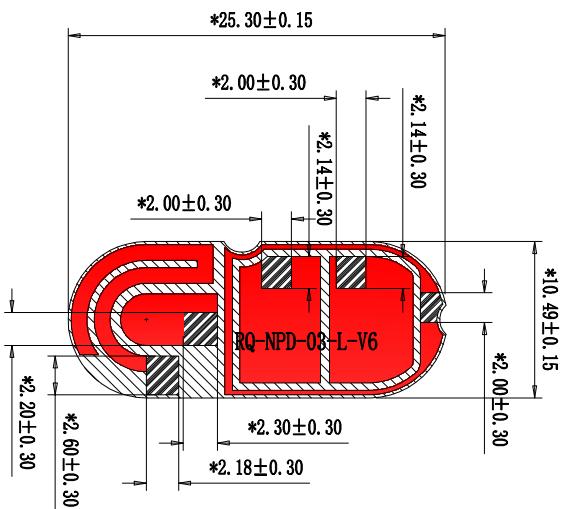
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1 2 3 4 5 6 7 8

Black matte ink for bright white fonts  
PE film board half-cut shipment



**NOTES:**

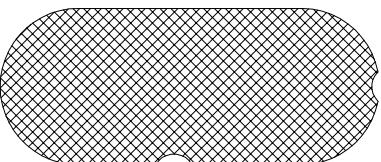
1. Red for copper; blank for substrate; yellow for gold plating; blue for back glue;
2. The die must not damage the line, and the gilded area must be communicated with the line.
3. No dirt, scratches, black spots, break and fall off after gold plating on the surface.
4. Materials: FPC single panel [ PI (ED) one-to-one substrate + adhesive (3M 94710.05 mm) + surface, black ink (U Li) (& GT; 0.01 mm) ] ;
5. Back Glue 3M 9471.
6. The gold finger was plated with gold (thickness: 0.5  $\mu$ m - 1.5  $\mu$ m) , without oxidation (salt spray test was needed) , no corrosion point and coating shedding occurred after 48  $\pm$  1 hour salt spray test.
7. Marked \* is the key dimension.

Please check the tolerance according to Class B tolerance if not marked.



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专业生产方案		RF PA	⊕ - □	机种	NPD-03	日期	2024.01.09
0~10	±0.10	○	0.02	品名	L-BT-FPC-V2.0	设计	
10~20	±0.12	◎	ø0.03	料号	RQ03B143701B-L	结构	
20~40	±0.15	⊥	0.02	材质	PI	审核	
40~50	±0.20	△	0.04	模面处理		射频	
	B	▽	0.02			确认	
日期		修 改 内 容	版 本	修 订	位 置	外 观 处 理	单 位
1	2	3	4	5	6	7	8



C

C

B

B

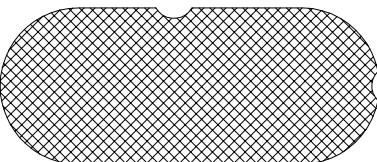
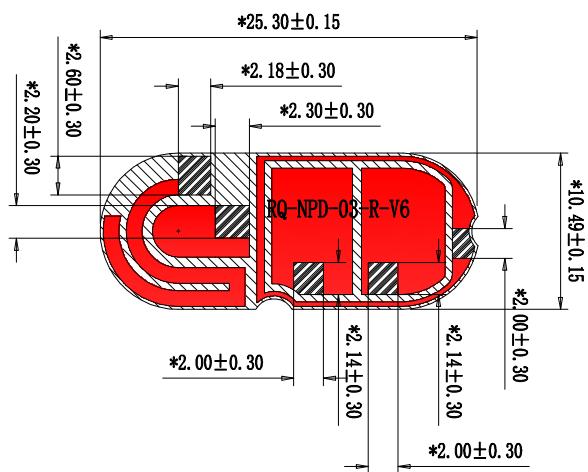
A

A

D

1 2 3 4 5 6 7 8

Black matte ink for bright white fonts  
PF film board half-cut shipment



### NOTES:

1. Red for copper; blank for substrate; yellow for gold plating; blue for back glue;
2. The die must not damage the line, and the gilded area must be communicated with the line.
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日期	修改内容			版本	修订	位置	外观处理	单位	比例	FIT	版本	V1
1	2	3	4	5	6	7	8					

C

C

B

B

A

A

D

D