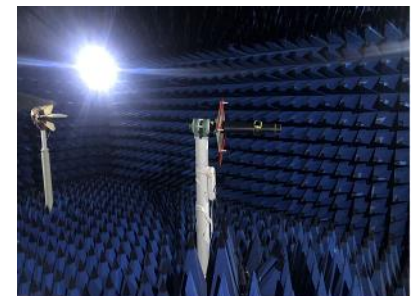


The T811 antenna test report

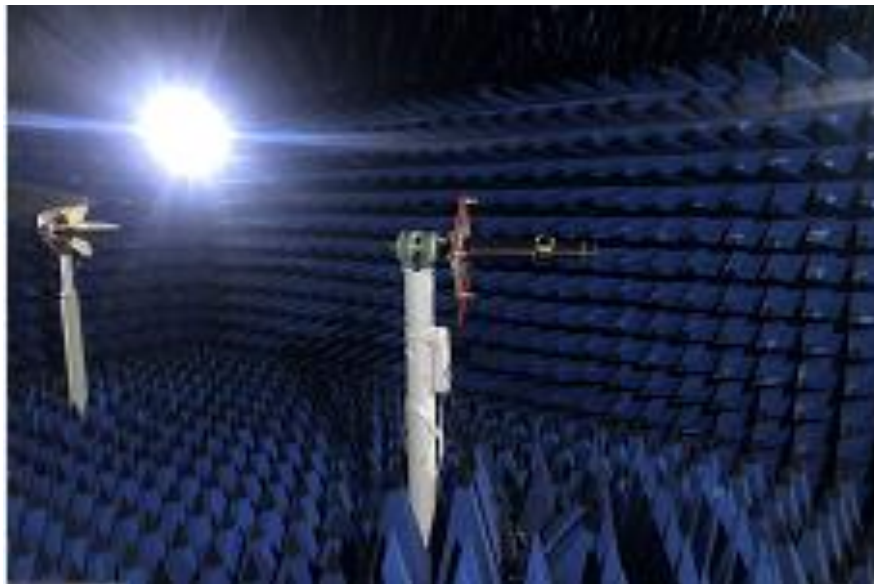
Radio frequency: Chen
Konghong

Date: 2023-7-24



Project development environment

We are moving from the Internet era to the intelligent era, and the country is building a digital society and a smart city. In the next 5-10 years, there is a huge development potential in both the consumer electronics market and the Internet of Things market. The field of wireless communication is very diversified. In the future, relying on the customer platform advantage of the main antenna industry and its own comprehensive strength, Yusheng will strive to provide customers with professional product solutions with market competitiveness.



Yu Sheng communication products cover almost all wireless terminal equipment antenna applications, including car antenna, high precision surveying and mapping antenna, drone ground and satellite data navigation, high precision positioning antenna, medical equipment wireless transmission, consumer antenna (mobile phone antenna, PAD, laptop antenna), base station / indoor distribution antenna, smart wear antenna (smart watches, TWS headphones), security household antenna and a variety of wireless data transmission and wireless control of intelligent equipment antenna, etc.

1

Project commissioning brief

2

Outline of the report version

3

Antenna active parameters

4

Antenna passive parameter

5

Antenna environment treatment and improvement

6

Summary & additional note

Project commissioning
brief

type	dull and stereotyped			
template	motherboard			
Frequency band and antenna material		frequency range		material quality
	Other antennas	GWB	1575. 42MHz/2. 450G/5. 8G	FPC
performance requirement	According to the customer's requirements			

Antenna active parameters

	802.11	channel number	OTA	
			TRP (db)	TIS (dbm)
WIFI	11B	CH1	11.24	-82.18
		CH7	11.56	-81.30
		CH13	10.85	-81.17
	11G	CH1	11.01	-70.65
		CH7	10.09	-70.37
		CH13	9.98	-71.42
	11N	CH1	10.08	-70.26
		CH7	10.36	-70.54
		CH13	10.14	-69.78
	11A	CH36	9.65	-68.89
		CH64	9.74	-68.01
		CH165	9.28	-67.65

Antenna efficiency- -GWB

Freq	Efficiency (%)	Freq	Efficiency (%)
1550MHZ	34.1%	2400MHZ	22.4%
1555MHZ	32.3%	2410MHZ	25.3%
1560MHZ	33.5%	2420MHZ	29.9%
1565MHZ	32.4%	2430MHZ	31.2%
1570MHZ	20.9%	2440MHZ	32.3%
1575MHZ	34.1%	2450MHZ	34.1%
1580MHZ	34.3%	2460MHZ	35.4%
1585MHZ	33.5%	2470MHZ	34.5%
1590MHZ	32.5%	2480MHZ	35.3%
		2490MHZ	32.0%
		2500MHZ	31.5%

Antenna efficiency- -GWB

Freq	Efficiency (%)
5100MHZ	30.2%
5200MHZ	32.1%
5300MHZ	34.2%
5400MHZ	33.6%
5500MHZ	35.3%
5600MHZ	30.3%
5700MHZ	29.7%
5800MHZ	38.6%

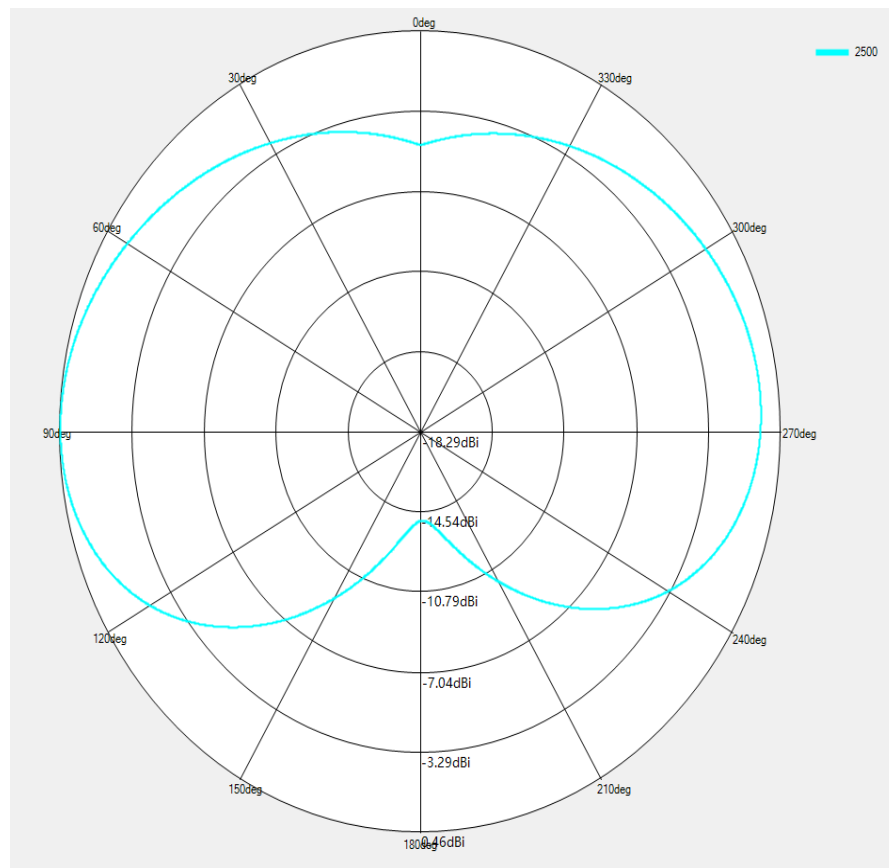
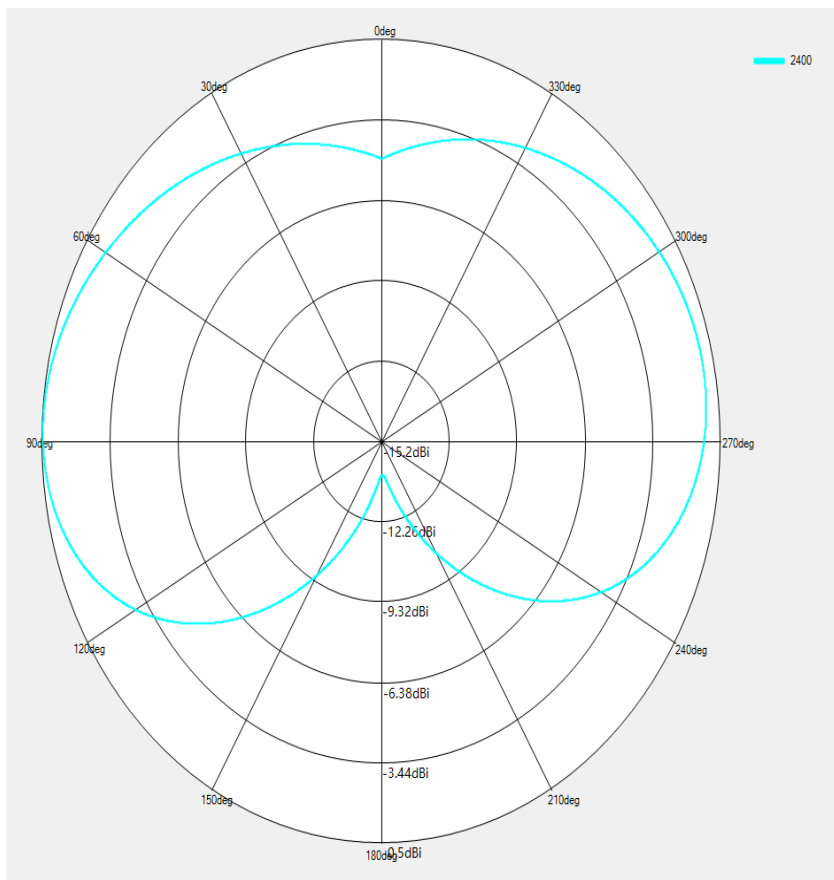
Antenna Gain- -GWB

Freq	Gain (dbi)	Freq	Gain (dbi)
1550MHZ	-1.53	2400MHZ	-1.51
1555MHZ	-1.34	2410MHZ	-1.35
1560MHZ	-1.26	2420MHZ	-1.32
1565MHZ	-1.01	2430MHZ	-1.02
1570MHZ	-0.84	2440MHZ	-0.35
1575MHZ	-0.54	2450MHZ	0.21
1580MHZ	-0.98	2460MHZ	-0.10
1585MHZ	-1.23	2470MHZ	-1.32
1590MHZ	-1.45	2480MHZ	-1.40
		2490MHZ	-1.32
		2500MHZ	-1.45

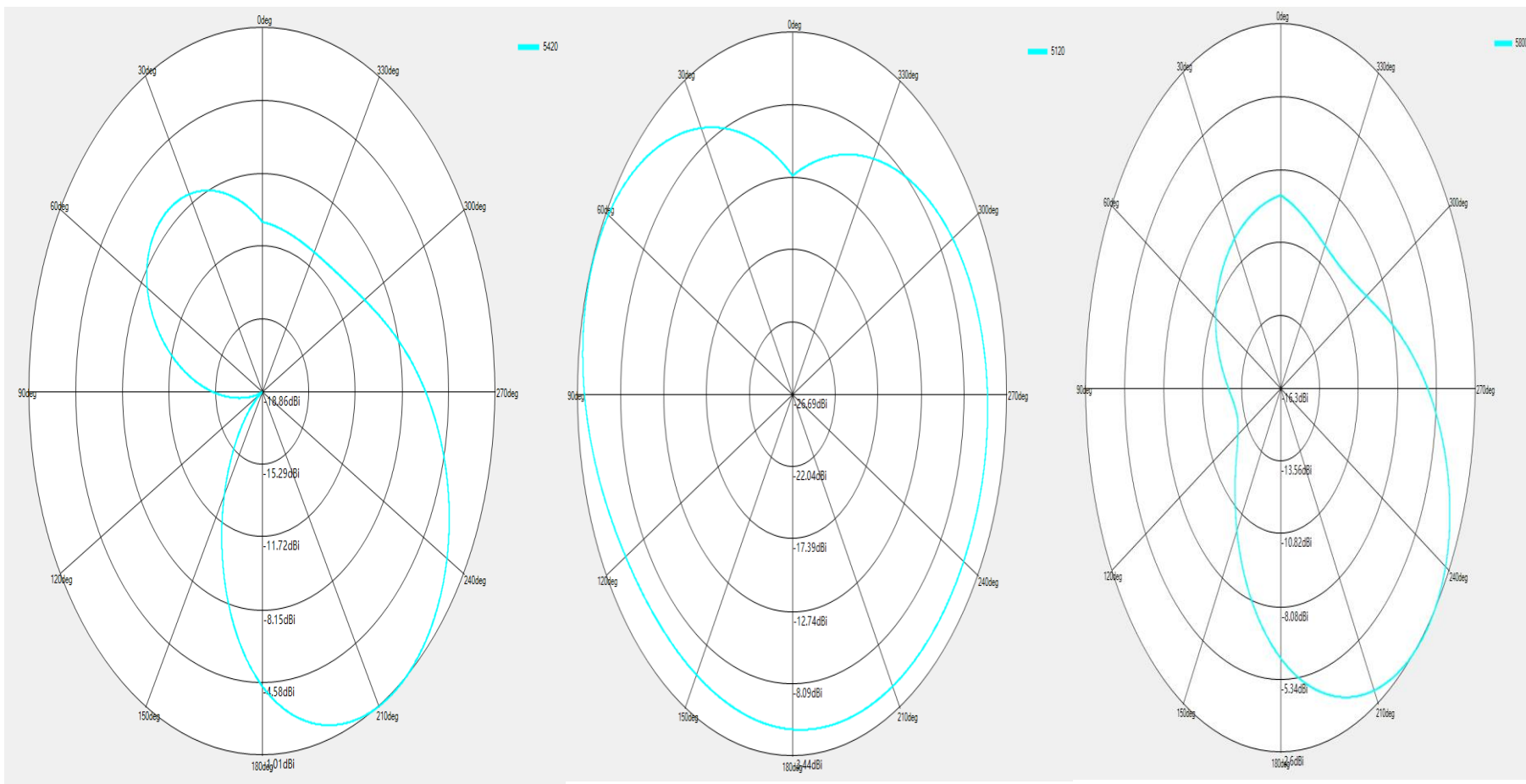
Antenna Gain- -GWB

Freq	Gain(dbi)
5100MHZ	-3.68
5200MHZ	-3.40
5300MHZ	-3.52
5400MHZ	-3.61
5500MHZ	-3.50
5600MHZ	-3.49
5700MHZ	-3.29
5800MHZ	-3.50

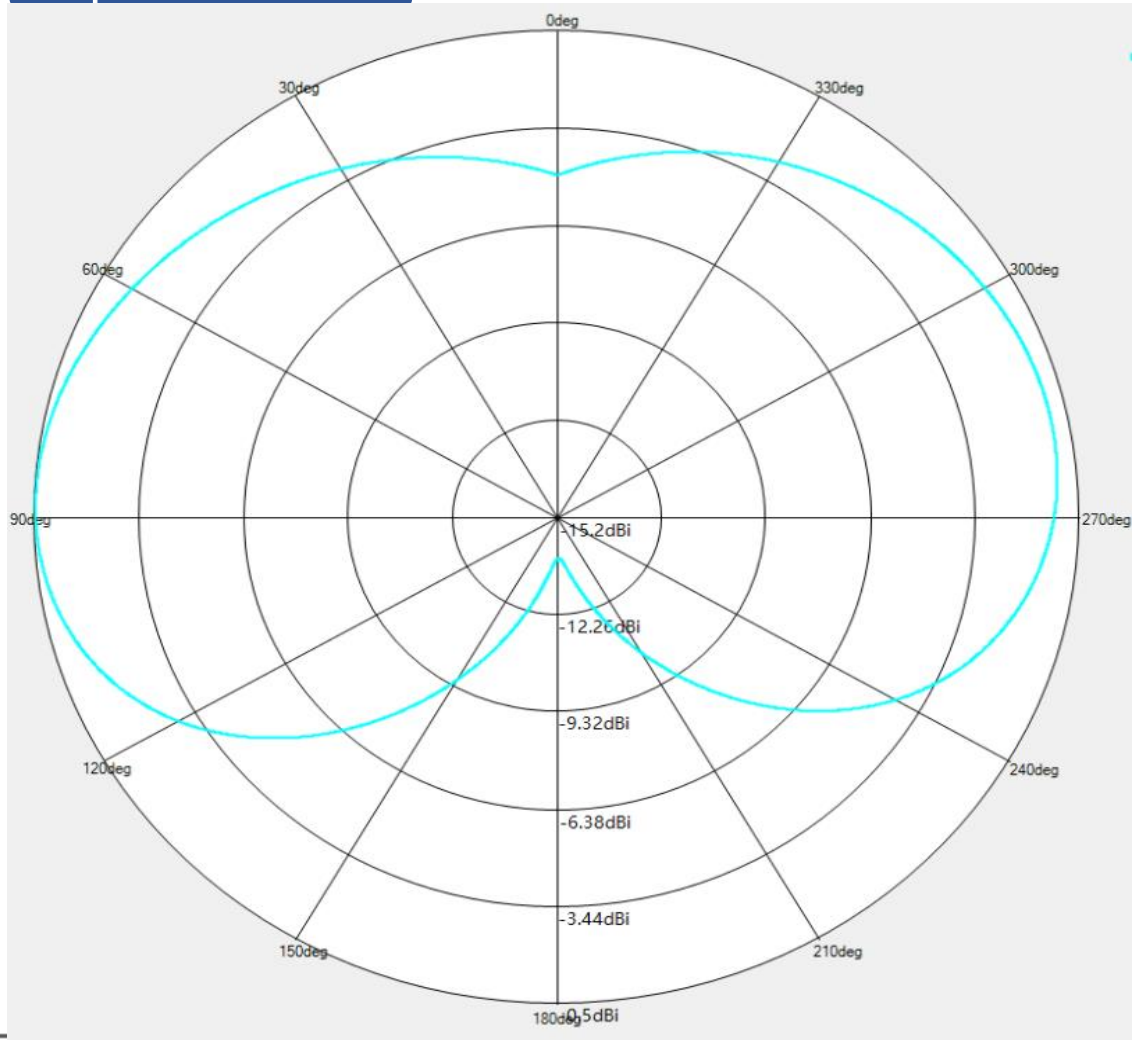
Field strength map-
2.4G-WIFI



Field strength map- 5G-wifi



field strength
pattern-GPS



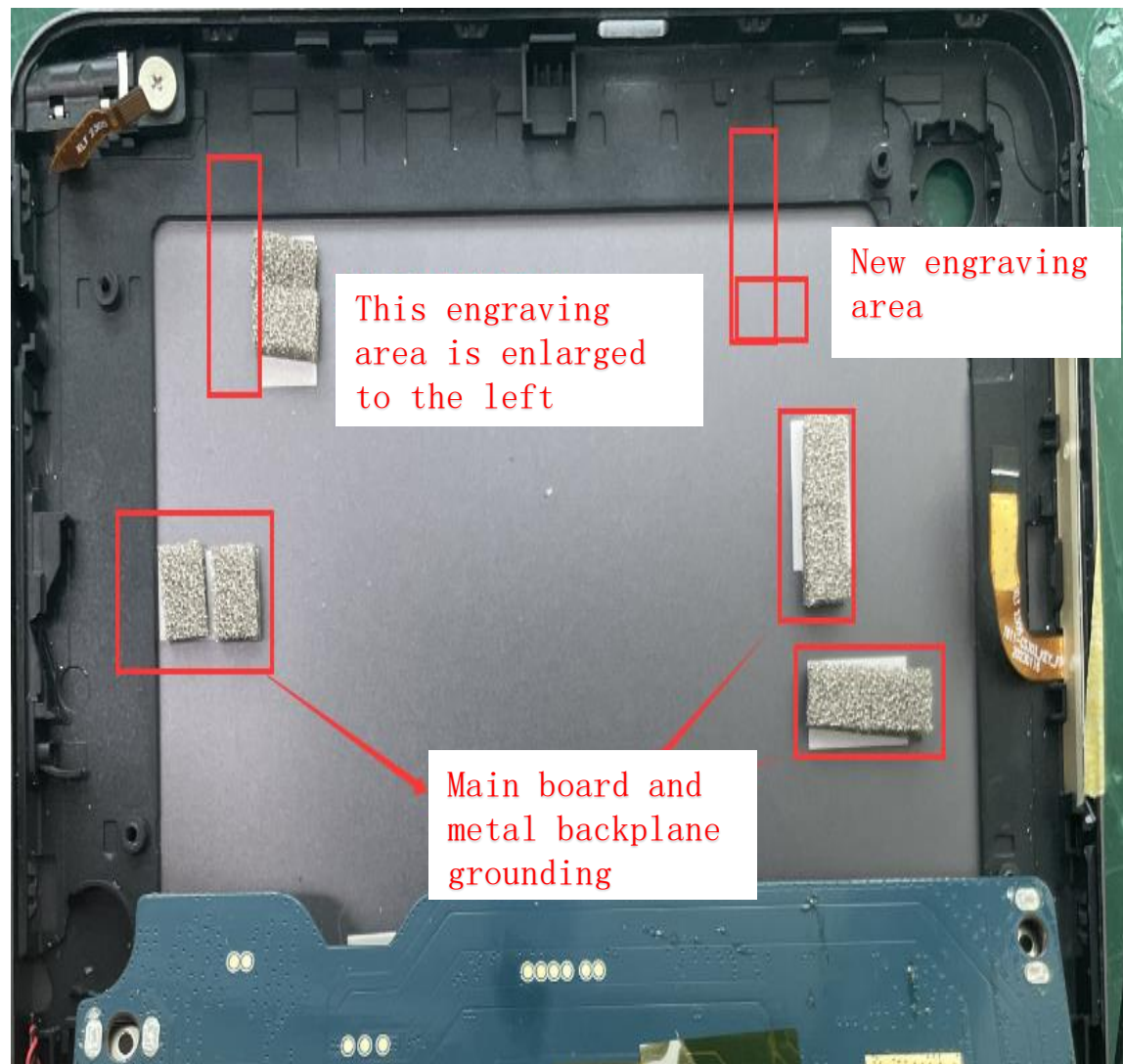
Antenna environment
treatment and improvement

Figure grounding

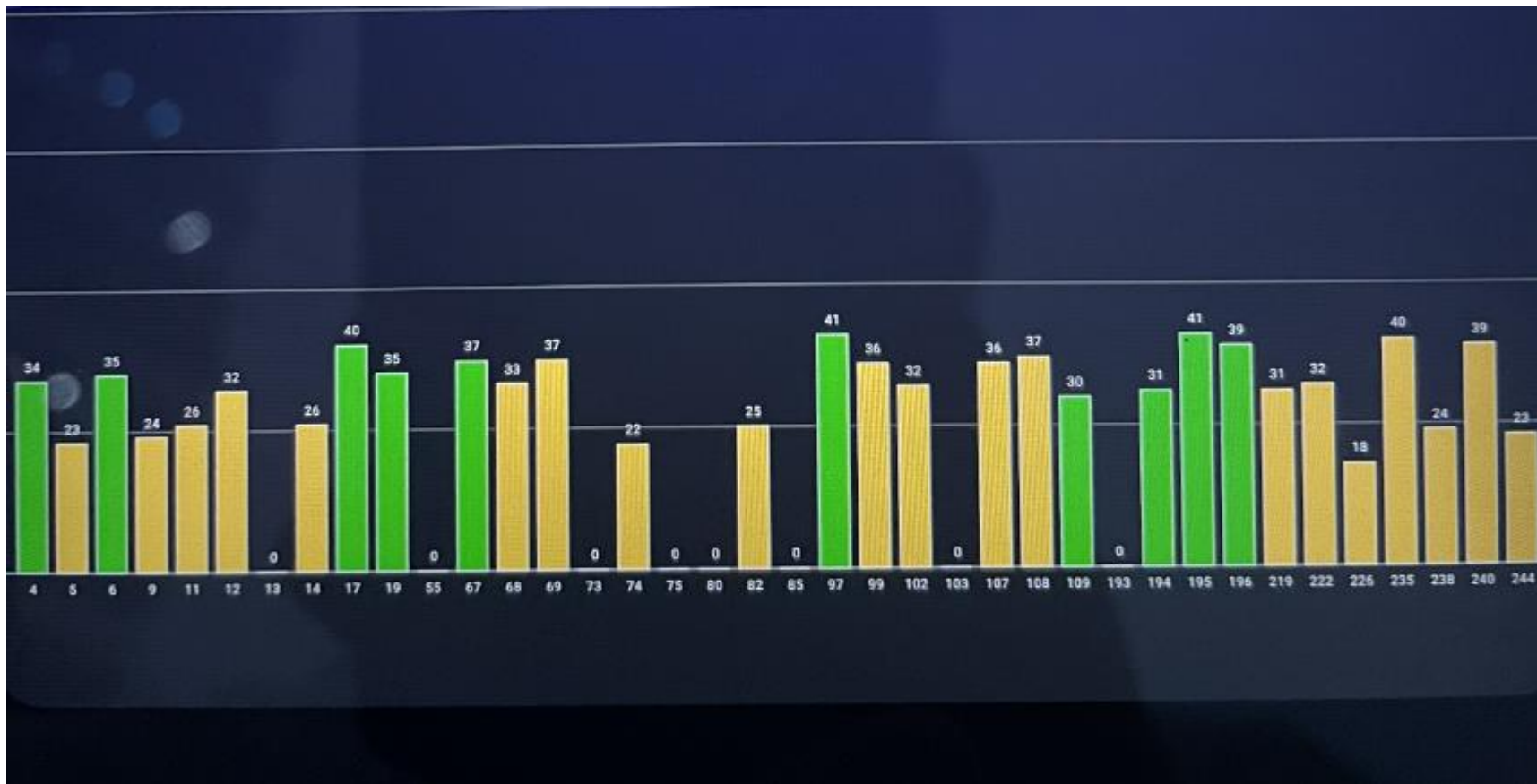


Antenna environment treatment
and improvement

The environment is
treated as
described in Fig



GPS test data



A																																																																															
	skills requirement: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">1.FPC substrate specifications:</td> <td style="width: 30%;">PI substrate:</td> <td style="width: 40%;">Electrolytic copper (half to half)</td> </tr> <tr> <td></td> <td>Electrolytic copper:</td> <td>0.5oz (20)</td> </tr> <tr> <td></td> <td>Double-sided tape:</td> <td>TESA 68632</td> </tr> <tr> <td>2.Electroplating specifications:</td> <td>Nickel plated:</td> <td>3~8um</td> </tr> <tr> <td>3.Surface ink requirements:</td> <td>Surface ink color:</td> <td>Matt black</td> </tr> <tr> <td></td> <td>Printing font color:</td> <td>Bright black</td> </tr> <tr> <td></td> <td>Printing font height:</td> <td>According to drawings</td> </tr> </table>								1.FPC substrate specifications:	PI substrate:	Electrolytic copper (half to half)		Electrolytic copper:	0.5oz (20)		Double-sided tape:	TESA 68632	2.Electroplating specifications:	Nickel plated:	3~8um	3.Surface ink requirements:	Surface ink color:	Matt black		Printing font color:	Bright black		Printing font height:	According to drawings																																																		
	1.FPC substrate specifications:	PI substrate:	Electrolytic copper (half to half)																																																																												
		Electrolytic copper:	0.5oz (20)																																																																												
		Double-sided tape:	TESA 68632																																																																												
2.Electroplating specifications:	Nickel plated:	3~8um																																																																													
3.Surface ink requirements:	Surface ink color:	Matt black																																																																													
	Printing font color:	Bright black																																																																													
	Printing font height:	According to drawings																																																																													
4.Reliability requirements: - Reliability test: salt spray test\rubber friction test\alcohol resistance test\100 grid test. - The front ink, the surface of the ink is required to be folded in half without cracking, scratching, etc.																																																																															
5.Tolerance requirements: - Shape tolerance ± 0.10; - Copper foil circuit tolerance ± 0.05; - The position of the copper foil to the shape is ± 0.15; - Hole-to-hole position tolerance ± 0.10; hole-to-shape position tolerance ± 0.15; - The size tolerance of gold finger is ± 0.20. - For other unmarked dimensions, refer to 2D drawings.																																																																															
D	6.Key control size: The dimensions marked with numbers are regarded as important dimensions, and the others refer to 2D drawings				ShenZhen Yu Sheng Communication Equipment Co.,Ltd.																																																																										
	7.Environmental requirements: Parts meet ROHS2.0/REACH/GP environmental protection requirements																																																																														
	8.Packaging requirements: Packed in PE bags, the quantity of each bag is 100PCS, there is a mark on the outside of the bag																																																																														
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">DATE</td> <td style="width: 35%;">Modify the content</td> <td style="width: 15%;">Version</td> <td style="width: 15%;">Revise</td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> </tr> </table>				DATE	Modify the content	Version	Revise	1	2	3	4	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">0~10</td> <td style="width: 10%;">±0.10</td> <td style="width: 10%;">○</td> <td style="width: 10%;">0.02</td> <td style="width: 10%;">Model</td> <td style="width: 10%;">TS11</td> <td style="width: 10%;">DATE</td> <td style="width: 10%;">20230625</td> </tr> <tr> <td>10~20</td> <td>±0.12</td> <td>◎</td> <td>0.03</td> <td>Name</td> <td>BCW antenna</td> <td>Design</td> <td>JFB</td> </tr> <tr> <td>20~40</td> <td>±0.15</td> <td>⊥</td> <td>0.02</td> <td>Part NO</td> <td>337055-IC</td> <td>Review</td> <td>MD JFB</td> </tr> <tr> <td>40~50</td> <td>±0.20</td> <td>⌵</td> <td>0.04</td> <td>Material quality</td> <td>Electrolytic copper (half to half)</td> <td>RF</td> <td>CKH</td> </tr> <tr> <td></td> <td></td> <td>⌵</td> <td>0.02</td> <td>Sold surface treatment</td> <td></td> <td>confirm</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>Appearance treatment</td> <td></td> <td>UNIT</td> <td>mm proportion FIT Revise R:A</td> </tr> <tr> <td></td> <td>位置</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>				0~10	±0.10	○	0.02	Model	TS11	DATE	20230625	10~20	±0.12	◎	0.03	Name	BCW antenna	Design	JFB	20~40	±0.15	⊥	0.02	Part NO	337055-IC	Review	MD JFB	40~50	±0.20	⌵	0.04	Material quality	Electrolytic copper (half to half)	RF	CKH			⌵	0.02	Sold surface treatment		confirm						Appearance treatment		UNIT	mm proportion FIT Revise R:A		位置														
DATE	Modify the content	Version	Revise																																																																												
1	2	3	4																																																																												
0~10	±0.10	○	0.02	Model	TS11	DATE	20230625																																																																								
10~20	±0.12	◎	0.03	Name	BCW antenna	Design	JFB																																																																								
20~40	±0.15	⊥	0.02	Part NO	337055-IC	Review	MD JFB																																																																								
40~50	±0.20	⌵	0.04	Material quality	Electrolytic copper (half to half)	RF	CKH																																																																								
		⌵	0.02	Sold surface treatment		confirm																																																																									
				Appearance treatment		UNIT	mm proportion FIT Revise R:A																																																																								
	位置																																																																														

Thank you!



**Shenzhen address: 4th floor, Building 2,
South Taiyue Cloud Chuanggu, Guangming
Avenue, Guangming New District, Shenzhen
City**

Tel.: 0755-23984257

Fax: 0755-86090455