



规格承认书

Approval Sheet

客户名称 本恩科技 Benn technology

(Customer Name)

产品名称 S300-62-4G Antenna

(Specification)

客户料号

(Customer P/N)

产品料号

(O/I)

送样日期 2024-11-25

(Date)

Frequency band	2G:900/1800, 850/1900 3G:1/2/4/5/8 4G:1/2/3/4/5/7/8/12/17/20/25/26/28AB ,34/38/39/40/41/66		
Version	A		
RF	Chenmeidui	Confirm	
Structural Engineer	Yangyuzhen		
Customer confirmation			
Date			

Catalogue

1. Project image

2. Test fixture

3. Matching circuit

4. S11 Test electrical performance

4.1 S11 Test Method Description Specification Standards

4.2 S11 Parameter

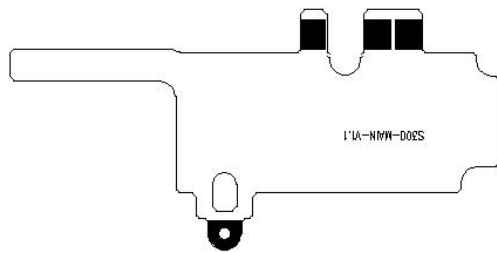
4.3 S11 Parameter image

5. Power and sensitivity testing

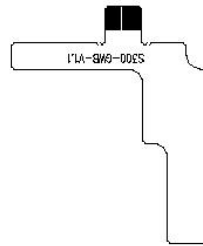
5.1 Test data

6. Structural drawings

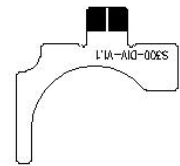
1. Project image (for reference only)



GSM Antenna



GPS/WIFI+BT Antenna

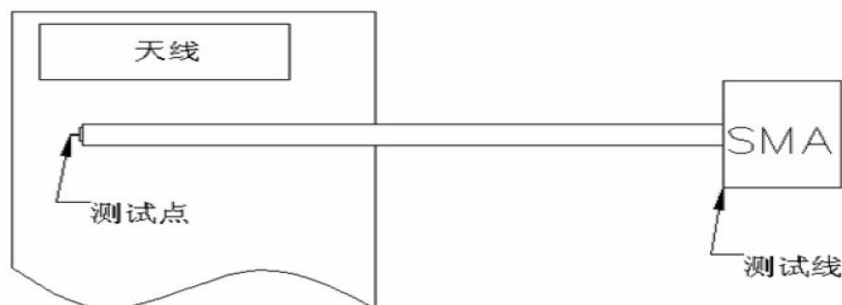


DIV Antenna

2. Passive Test

Purpose: To test the passive parameters of the antenna as accurately as possible.

Method: This fixture uses a 50 ohm coaxial cable, with one end connected to the test point at the back end of the matching circuit (RF test hole front section) of the mobile phone motherboard, and the other end connected to the SMA connector. As shown in the following figure:



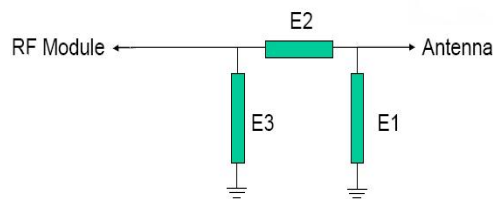
The following table shows the performance test indicators for S300-4Gmass-produced antennas:

S300 Antenna				
	Frequency (MHz)	VSWR	Frequency (MHz)	VSWR
Frequency band	Transmitting end		Receiving end	

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GSM850/W850	824-849	≤ 3.5	869-894	≤ 3.0
GSM900/WCDMA900	880-915	≤ 3.0	925-960/925-960	≤ 3.5
DCS1800	1710-1785	≤ 3.0	1805-1880	≤ 2.5
PCS1900/WCDMA-1900	1850-1910	≤ 2.8	1930-1990/1930-1990	≤ 3.2
WCDMA-2100	1920-1980	≤ 3.0	2110-2170	≤ 3.0
LTE-FDD-B2/1	1920-1980	≤ 3.0	2110-2170	≤ 3.0
LTE-FDD-B4/3/B25/66	1710-1785	≤ 3.0	1805-1880	≤ 3.0
LTE-FDD-B5/26	824-849	≤ 3.5	869-894	≤ 3.0
LTE-FDD-B7	2505-2565	≤ 3.0	2625-2685	≤ 3.0
LTE-FDD-B12/17	880-915	≤ 3.0	925-960	≤ 3.5
TDD-B34	2010-2025	≤ 3	2010-2025	≤ 3
TDD-B38	2580-2610	≤ 3	2580-2610	≤ 3
TDD-B39	1890-1910	≤ 3	1890-1910	≤ 3
TDD-B40	2310-2390	≤ 3	2310-2390	≤ 3
TDD-B41	2506-2593	≤ 3	2506-2593	≤ 3
LTE-FDD-B28AB	708-743	≤ 3.0	763-798	≤ 3.0

3. Matching circuit



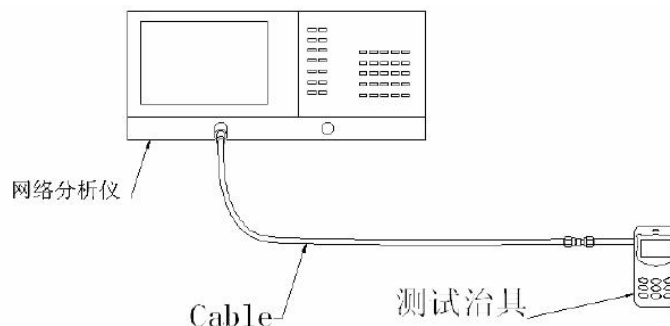
Element	Matching Value
E1	
E2	0
E3	

4. S11Test

4.1 S11Test Method Description Specification Standards

VSWR The testing devices are sequentially connected as follows :
E5071B Network analyzer → 50Ω Coaxial line → 120mm Copper tube → Test fixture.

Treatment of testing fixture: Use a hard cable to lead out the SMA-J connector from the 50 ohm test point of the antenna on the mobile phone PCB, connect it to a copper pipe with a choke ring, and then connect other devices in sequence.



Test diagram

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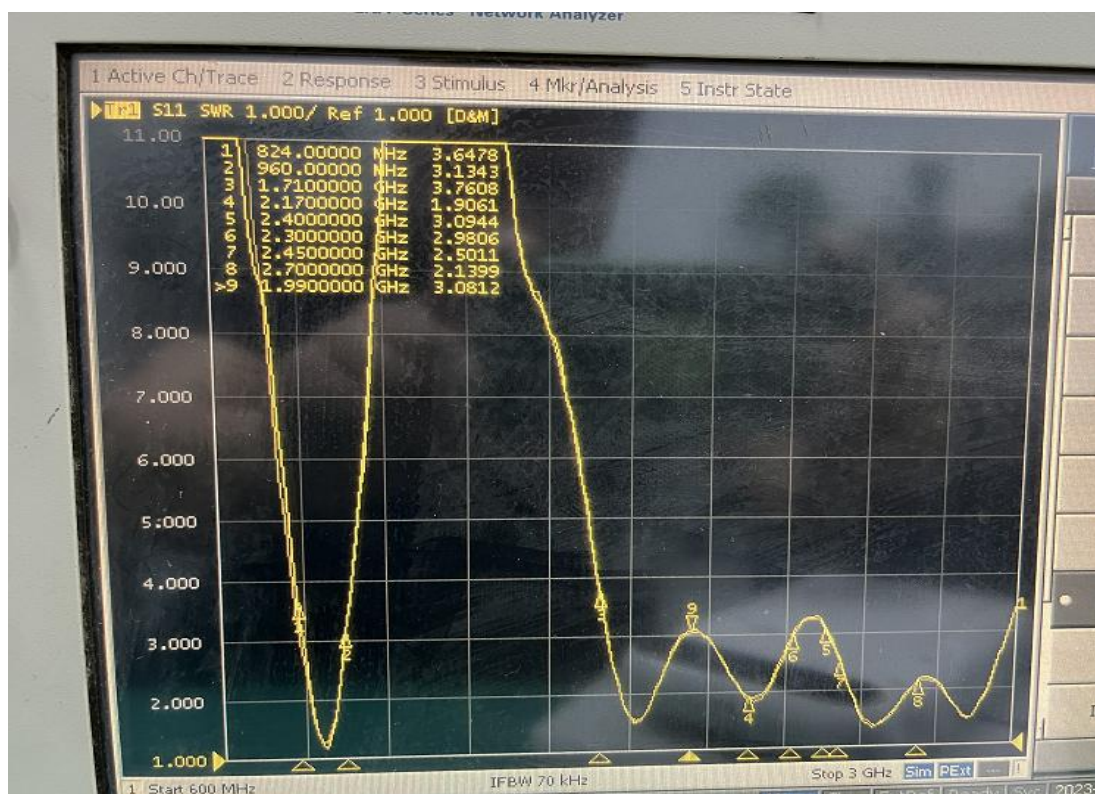
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4.2 S11Parameter

The following table shows the standing wave ratio values at the edge frequency points of the ME61 antenna operating frequency band. The waveform diagrams of Return Loss and VSWR obtained from the test are shown in the attachment.

	S300-62 Antenna				
Frequency(MHz)	824	960	1710	1990	2700
Free space	3.6	3.3	3.7	1.9	2.1

4.3 S11



5. Power and sensitivity testing

5.1 Test data

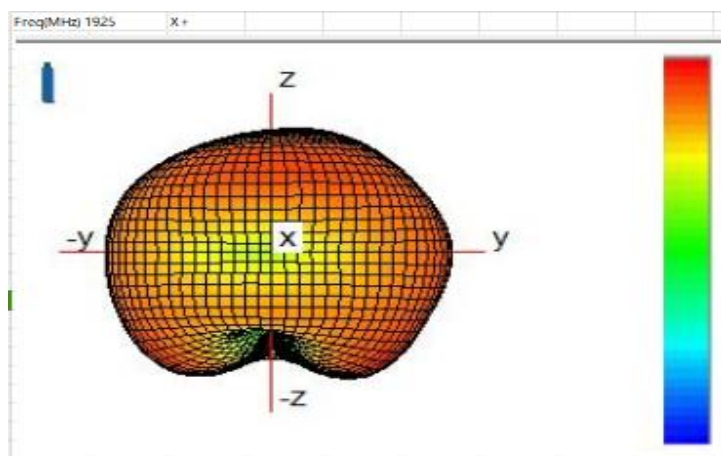
Band	CH	FS			CH	FS			CH	FS			CH	FS	
		TRP	IIS			TRP	IIS			TRP	IIS			TRP	IIS
GSM850	128	23.44		B1	18050	15.06		B17	23780	13.9		B40	38750	15.86	
	190	24.04			18300	15.6			23790	14.8			39150	15.96	
	251	24.94	-100.75		18550	17.01	-89.91		23800	14.4	-86.56		39550	16.51	-88.12
EGSM900	1	24.32		B2	18650	14.93		B20	24200	14.5		B41	40240	17.01	
	62	24.05			18900	15.01			24300	15.51			40620	16.75	
	124	23.76	-100.02		19150	15.56	-89.8		24400	14.69	-87.09		41140	15.63	-86.7
DCS1800	512	22.9		B3	19250	15.13		B25	26065	15.12		B66	132022	14.69	
	698	22.89			19575	15.09			26365	15.32			132322	15.54	
	885	22.68	-100.56		19900	14.84	-87.46		26665	15.13	-89		132622	15.44	-88.55
PCS1900	512	22.87		B4	20000	15.93		B26	26715	14.53					
	661	23.01			20175	15.43			26763	14.76					
	810	23.56	-101.43		20350	15.49	-89.62		27015	15	-90				
WCDMA Band1	10562	15.87		B5	20450	14.52		B28A	27300	14.01					
	10700	16.19			20525	14.09			27370	14.32					
	10838	17.07	-102.19		20600	14.09	-88.41		27430	14.12	-86				
WCDMA Band2	9662	15.72		B7	20800	17.08		B28B	27590	14.32					
	9800	15.04			21100	16.78			27600	14.04					
	9938	15.76	-102.88		21140	16.01	-88.1		27610	13.78	-85.45				
WCDMA Band4	1312	15.24		B8	21500	14.24		B34	1312	16.22					
	1413	15.49			21625	14.03			1413	16.24					
	1513	15.77	-101.27		21750	14.4	-87.47		1513	16.39	-91.53				
WCDMA Band5	4357	14.08		B12	23060	14.01		B38	27590	16.1					
	4408	14.27			23095	14.89			27600	16.3					
	4458	14.33	-101.59		23130	15.12	-87		27610	16.73	-87.77				
WCDMA Band8	2937	14.23						B39	38350	15.52					
	3013	14.01							38450	15.07					
	3088	14.62	-100.69						38550	15.02	-87.55				

5.2 Antenna gain

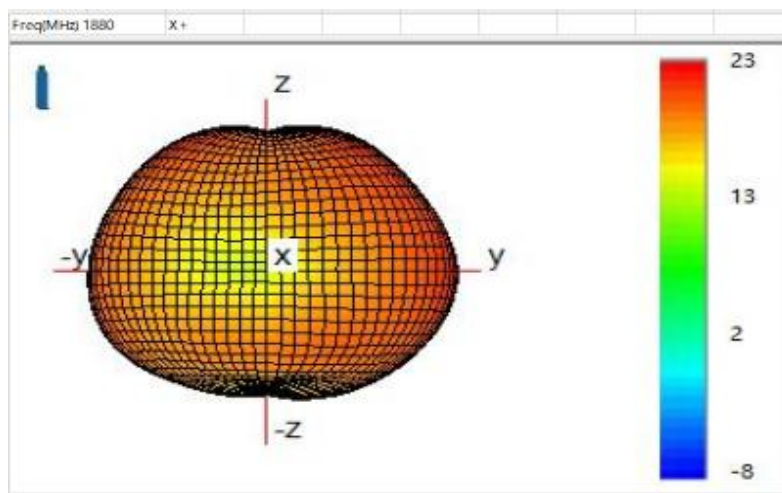
Band	增益 (dBi)	Band	增益 (dBi)
GSM850	-1.39	B17	-2
EGSM900	-1.23	B20	-1.39
PCS1900	0.56	B25	0.35
WCDMA Band1	0.72	B26	-1.39
WCDMA Band2	0.56	B34	0.56
WCDMA Band4	0.35	B39	0.72
WCDMA Band5	-1.2	B40	0.72
WCDMA Band8	-1.2	B41	1.12
B1	0.72	B28A/B	-2
B2	0.56		
B3	0.35		
B4	0.35		
B5	-1.39		
B7	1.12		
B8	-1.23		
B12	-2		

5.3 4G Antenna apple chart Test (3D)

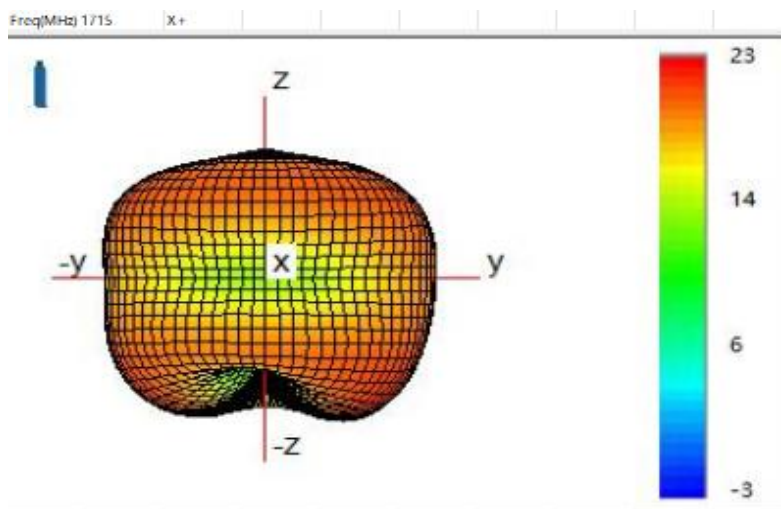
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BAND2:



BAND3:



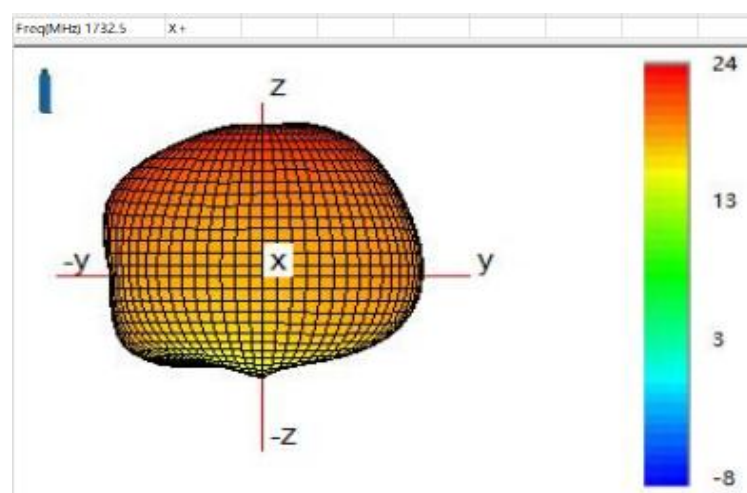
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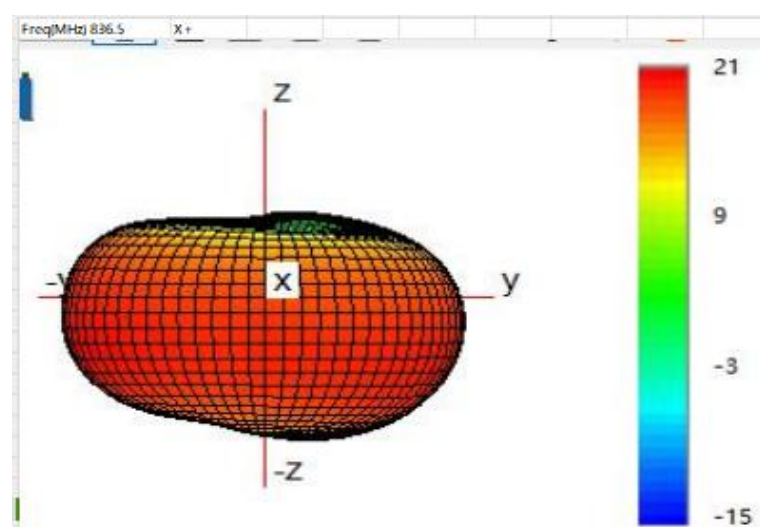
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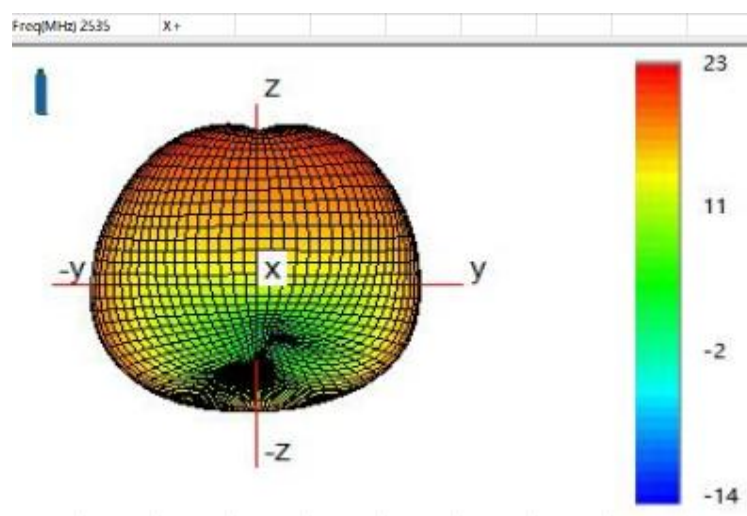
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BAND5:



BAND7:



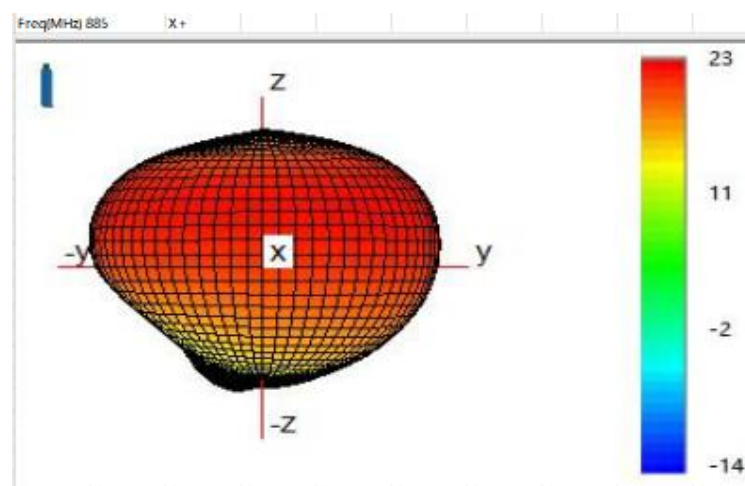
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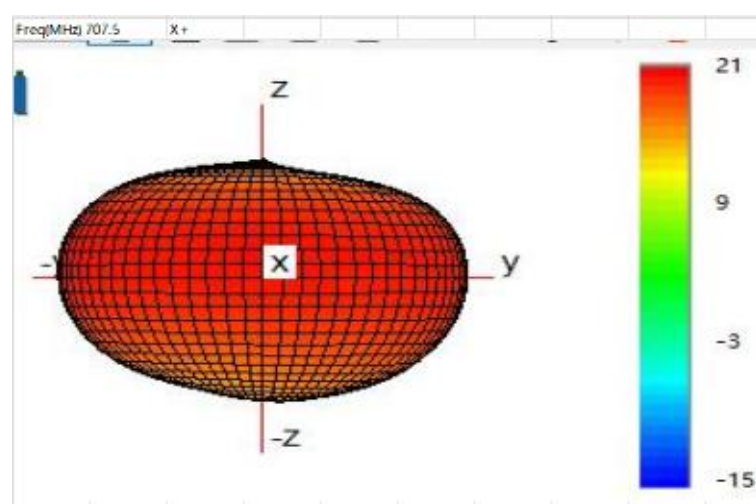
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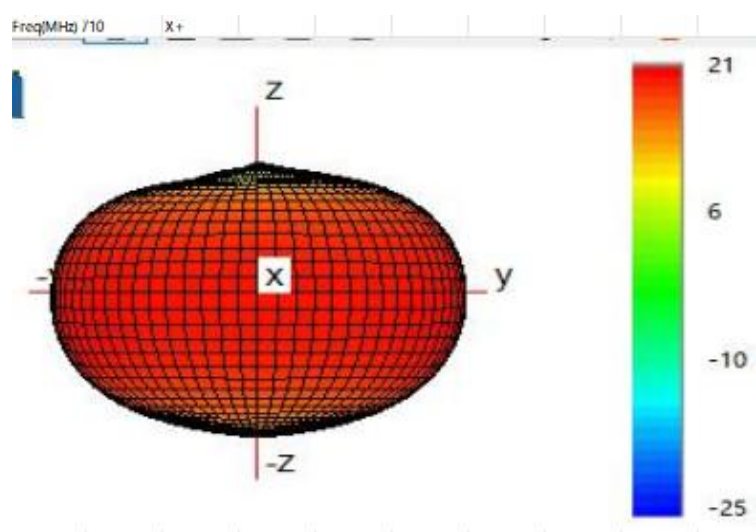
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BAND12:



BAND17:



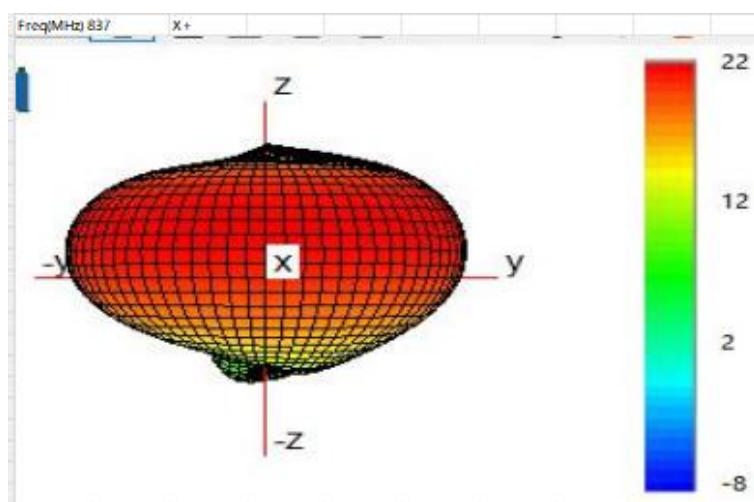
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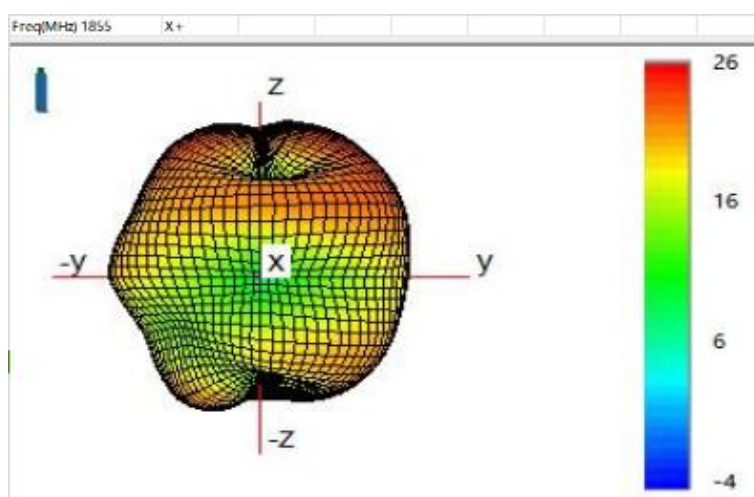
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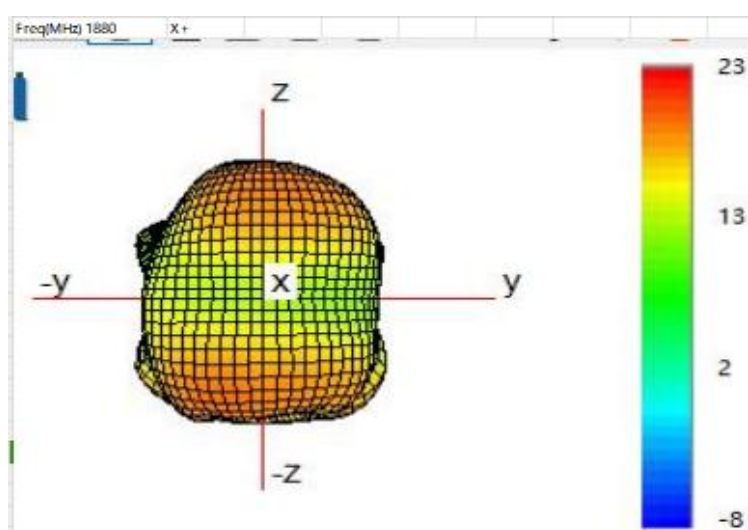
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BAND25:



BAND26:



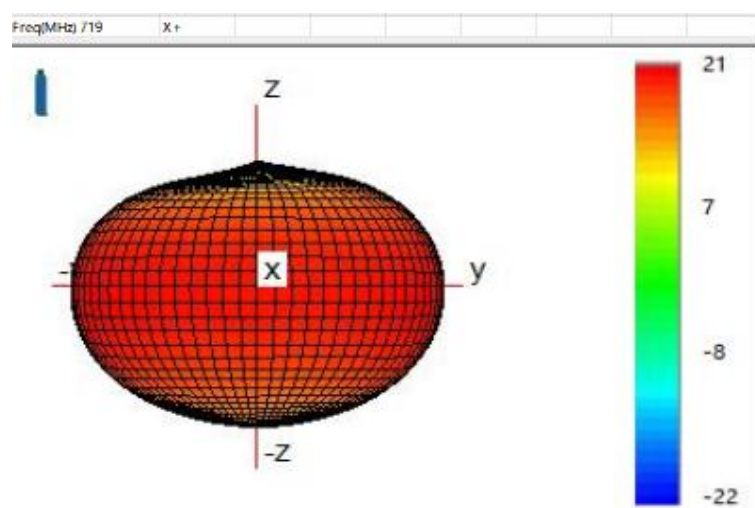
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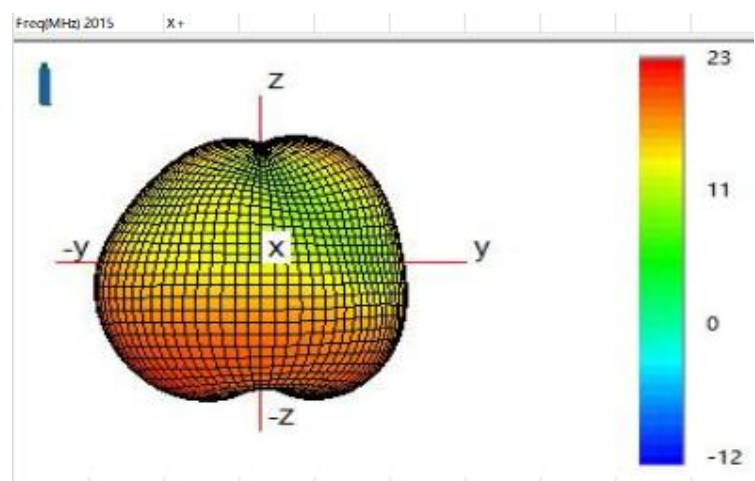
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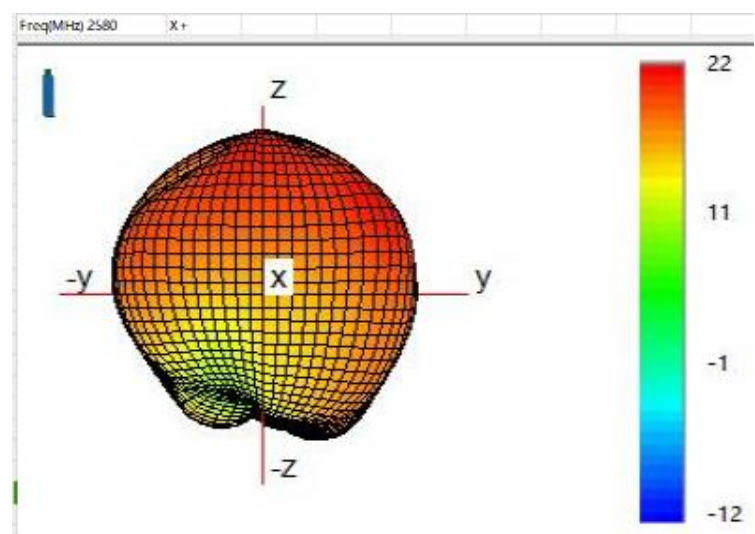
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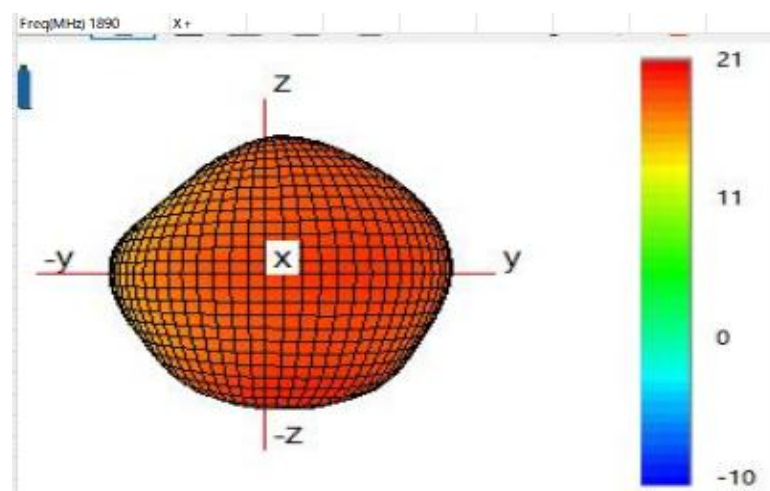
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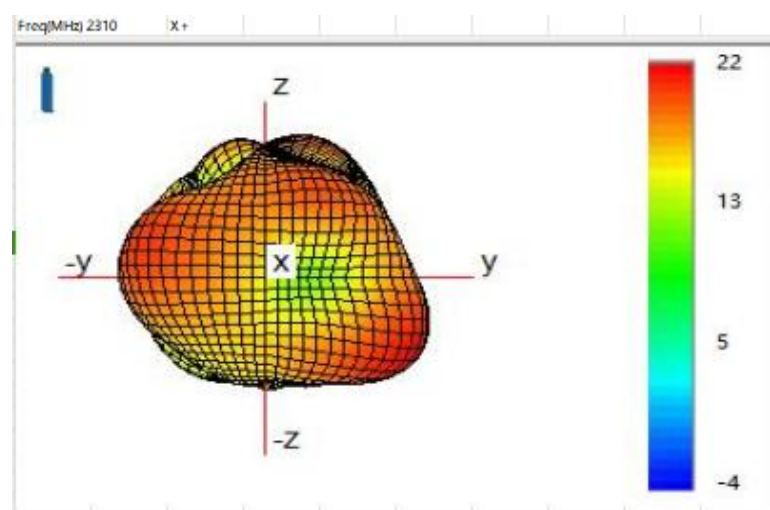
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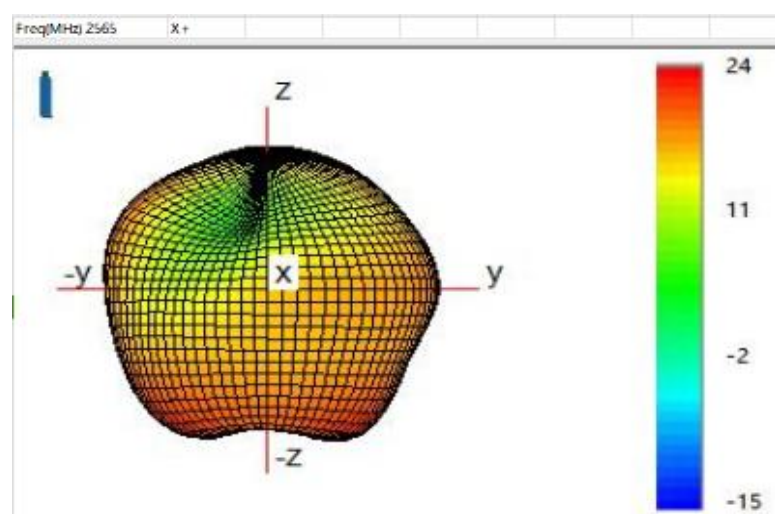
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BAND40:



BAND41:



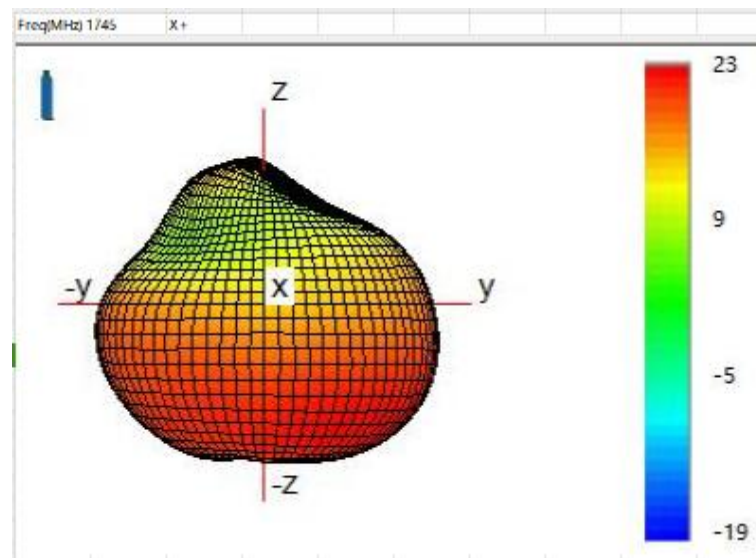
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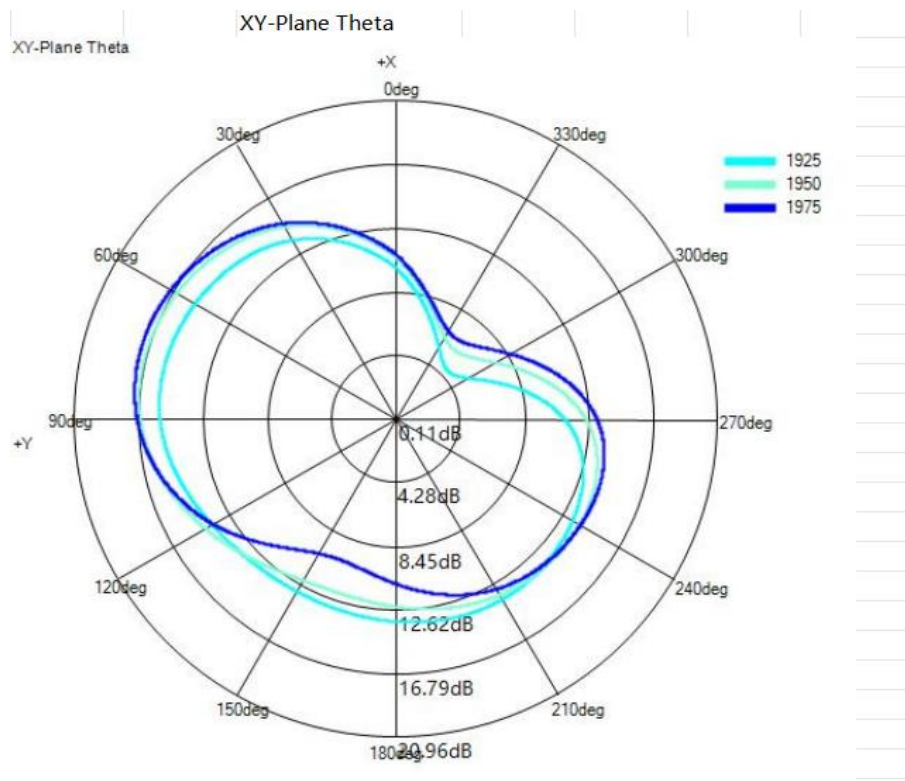
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BAND66:



5.4 4G Antenna apple chart Test (2D)

BAND1:



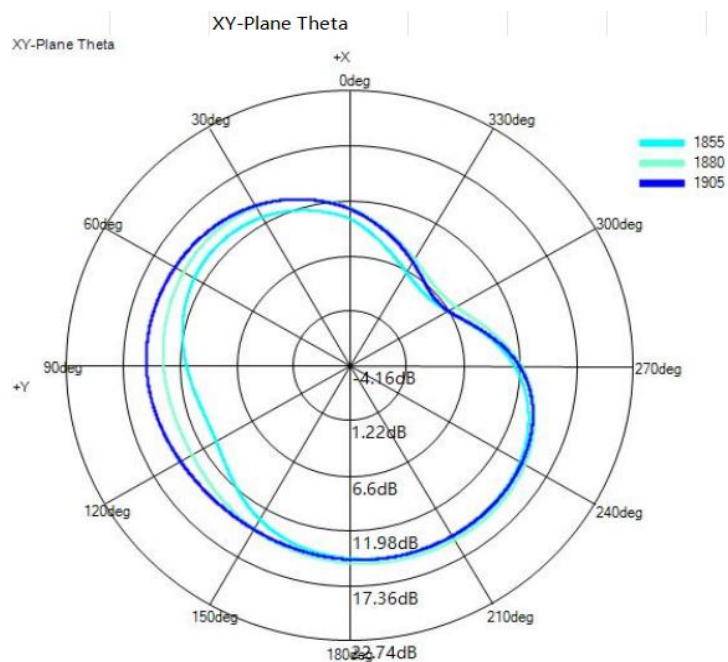
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Dosking MicroElectronics Co.,Ltd

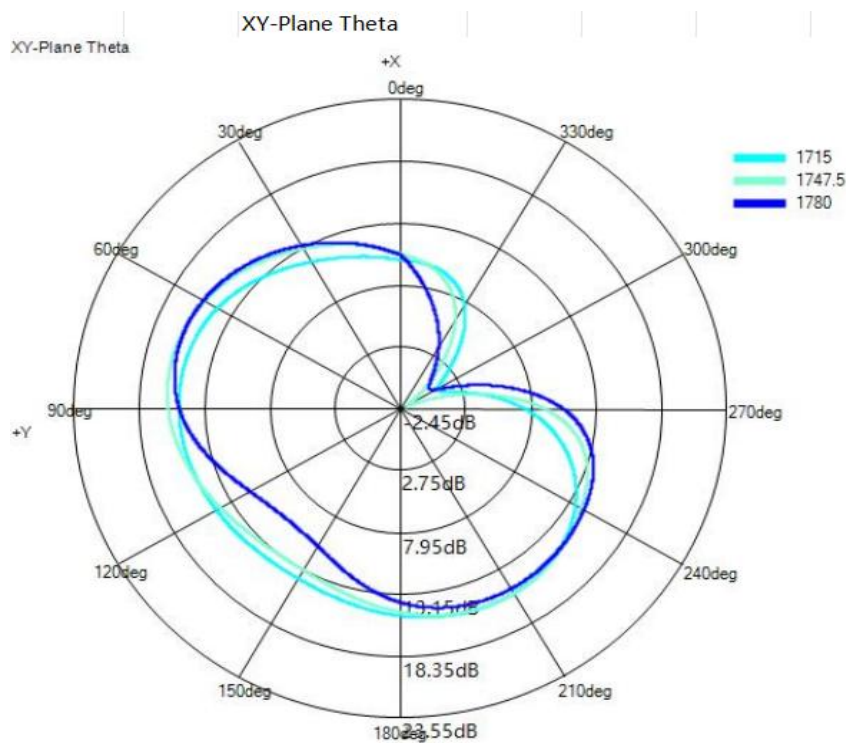
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BAND2:



BAND3:



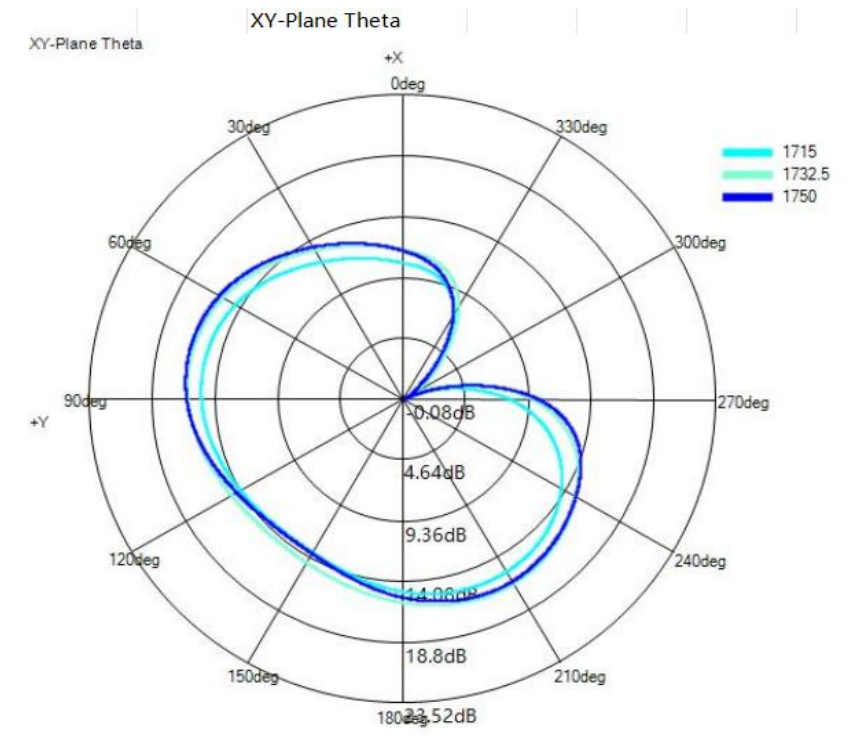
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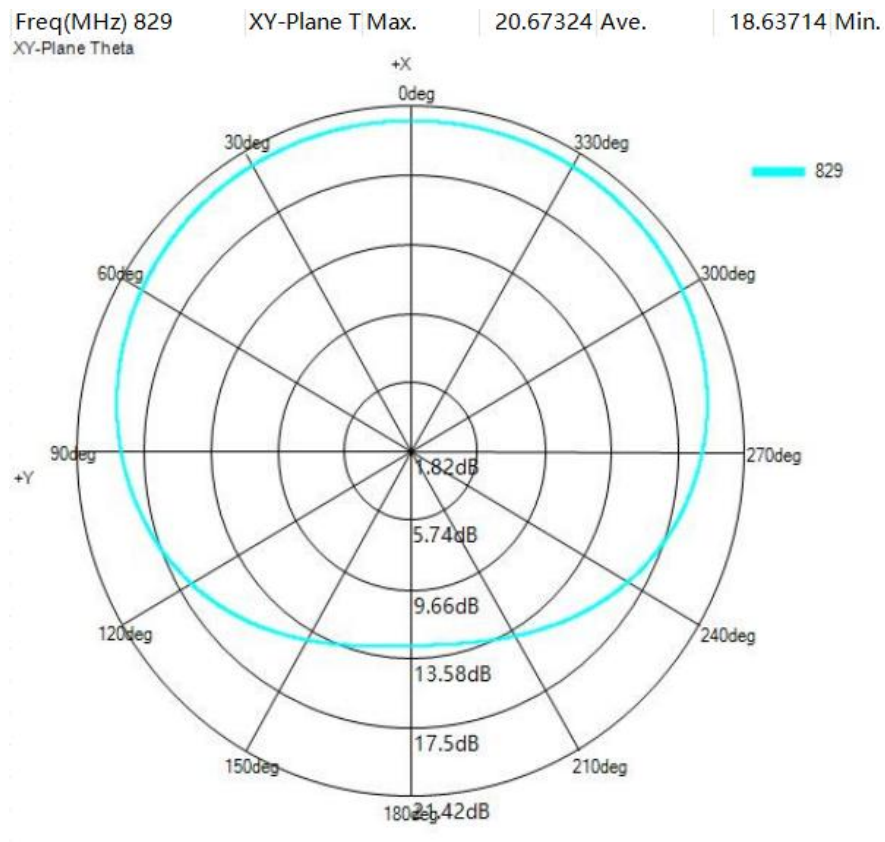
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BAND4:



BAND5:



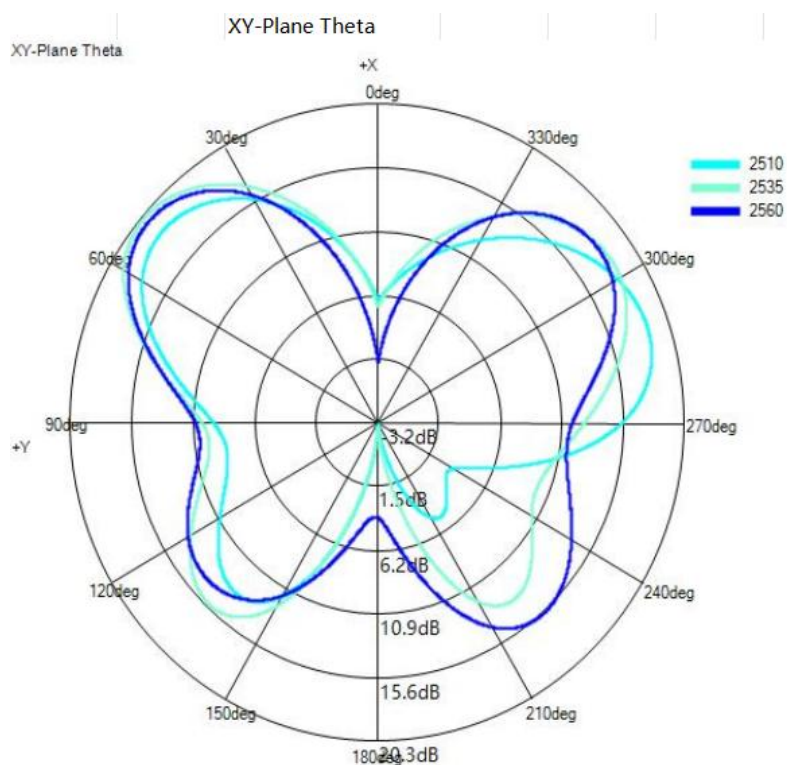
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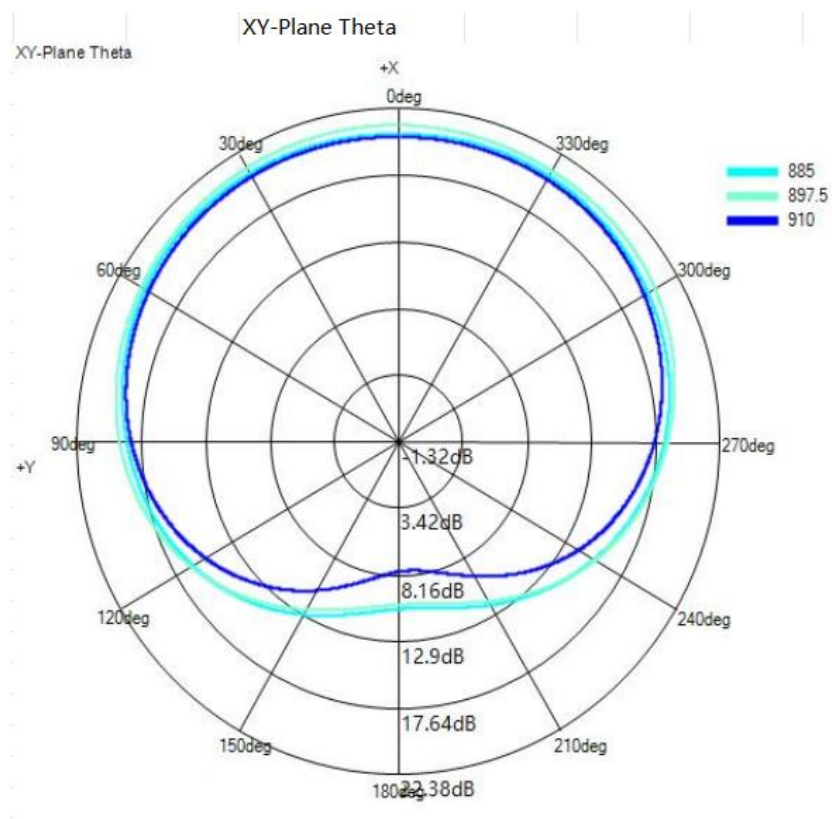
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BAND7:



BAND8:



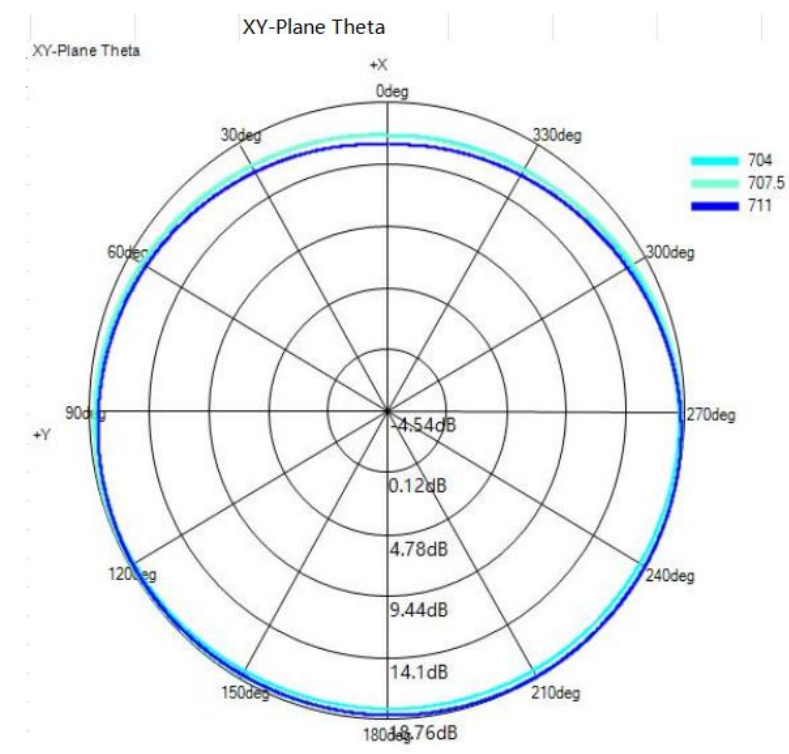
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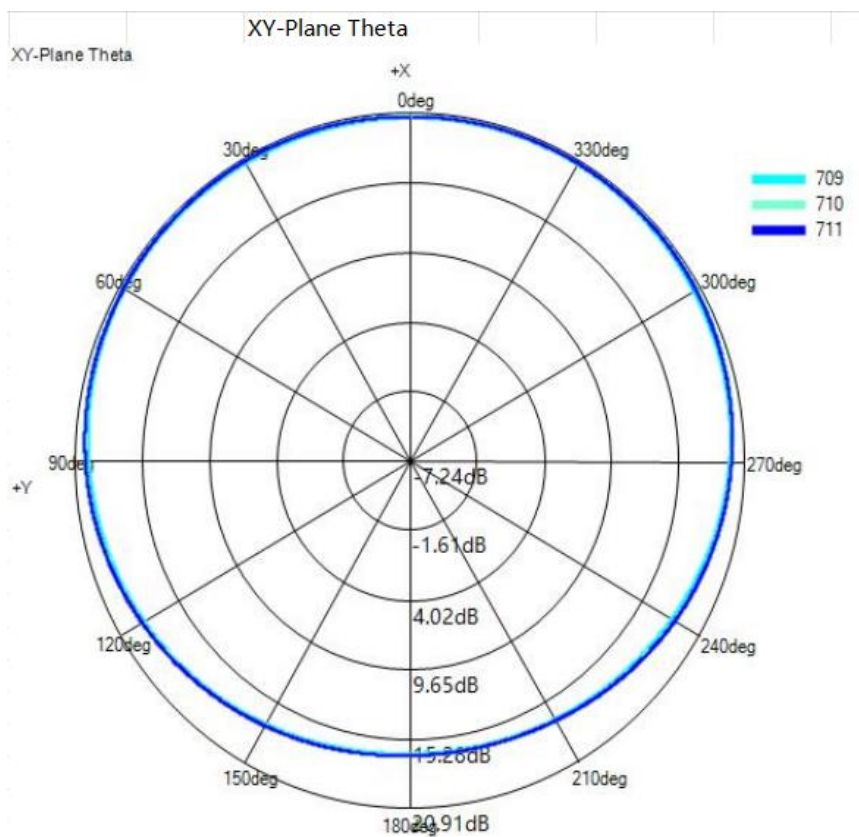
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BAND12:



BAND17:



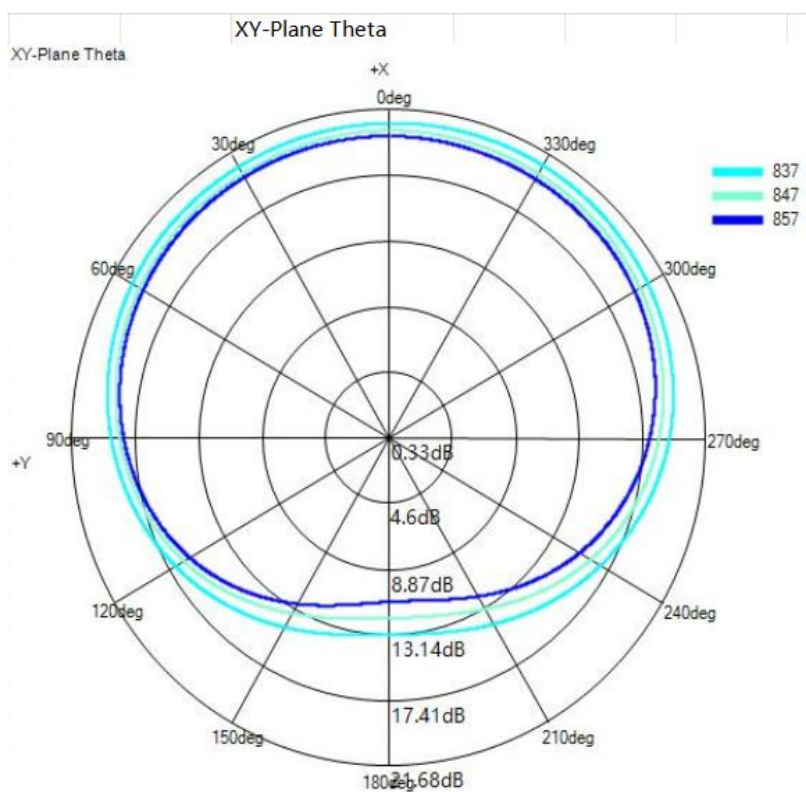
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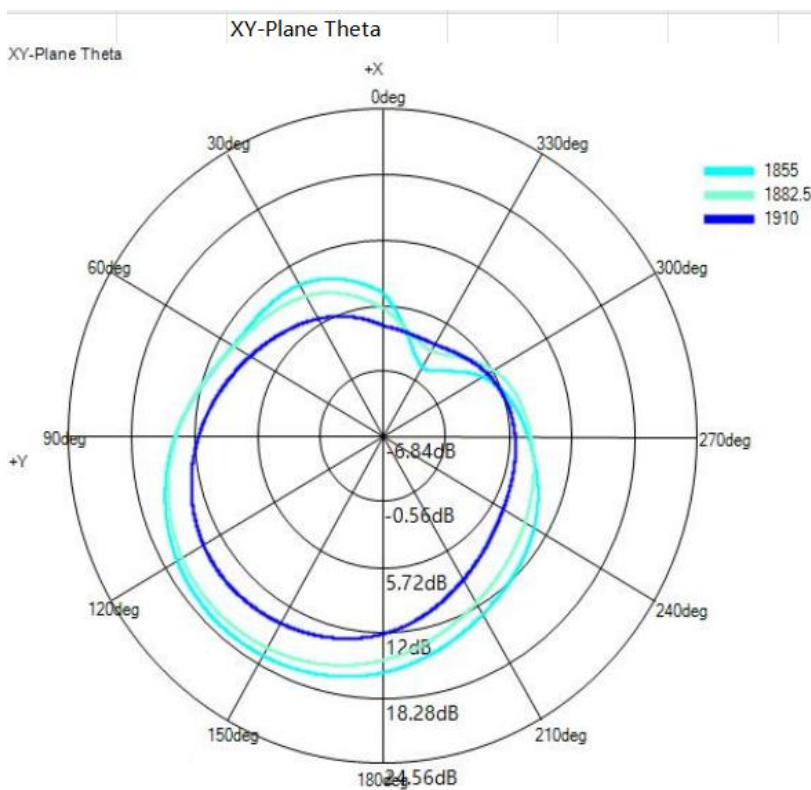
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BAND20:



BAND25:



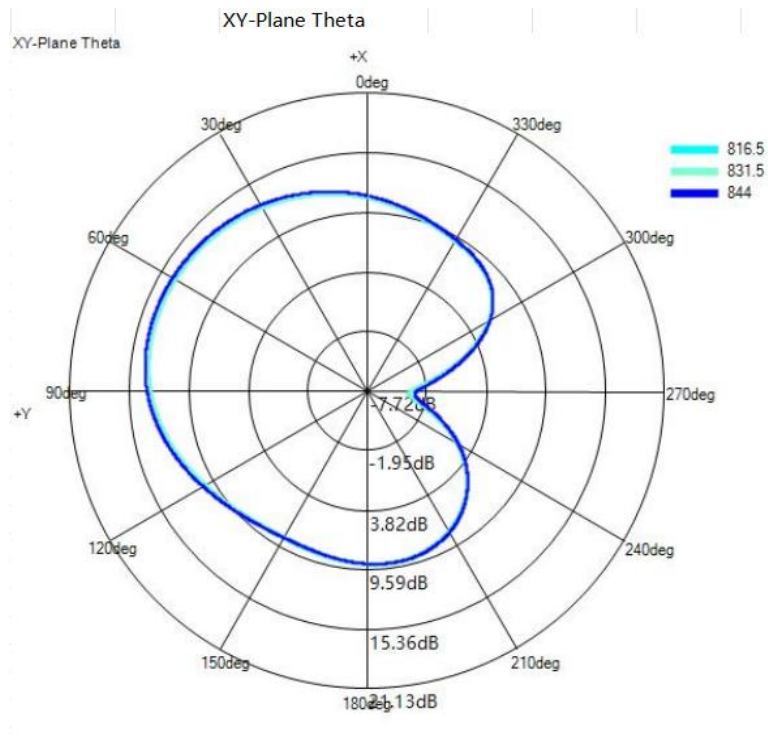
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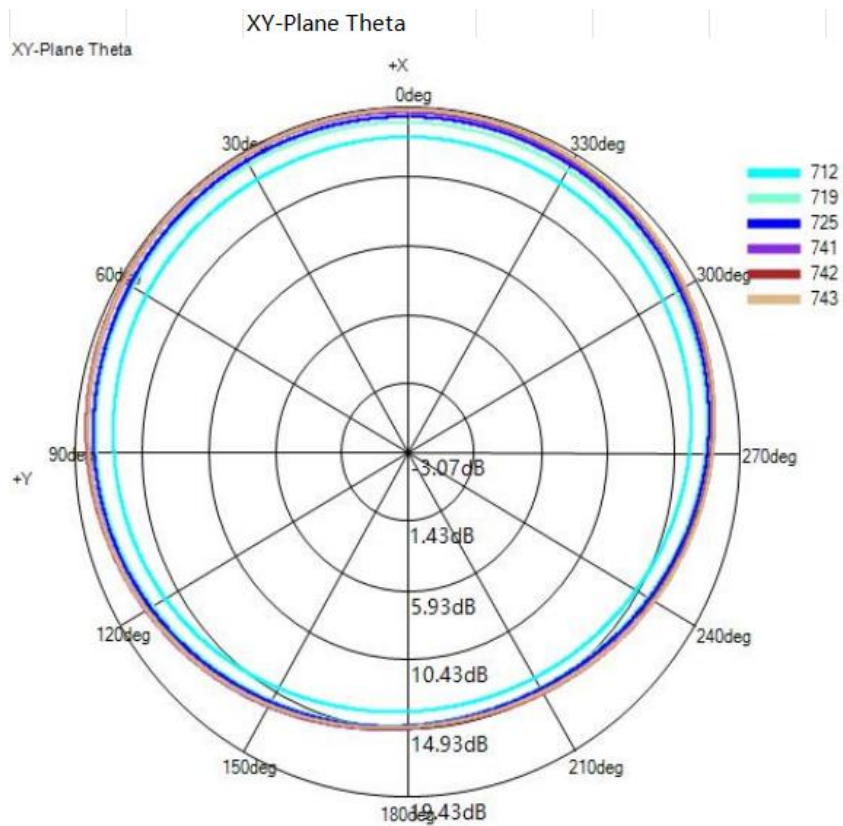
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BAND26:



BAND28:



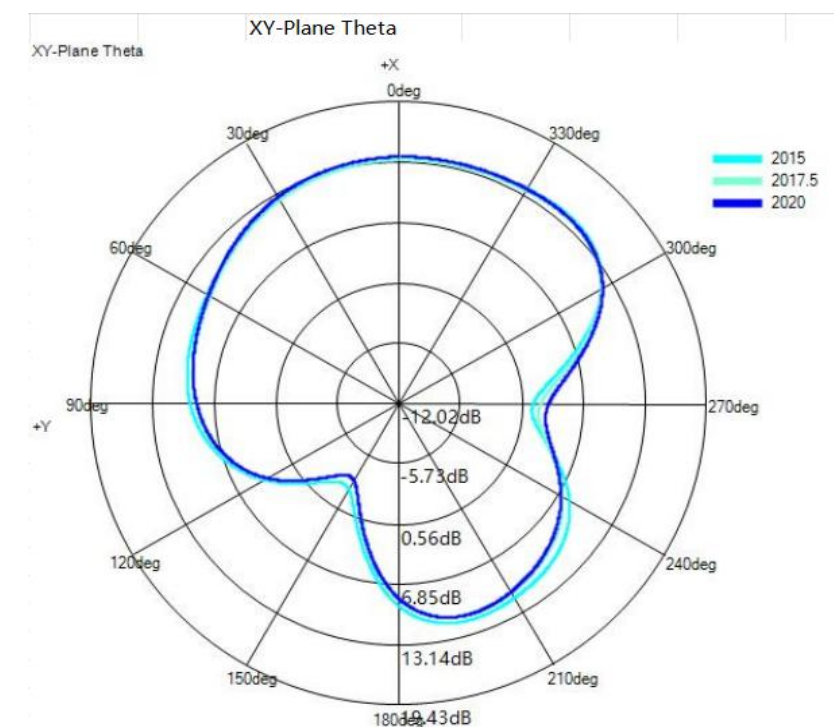
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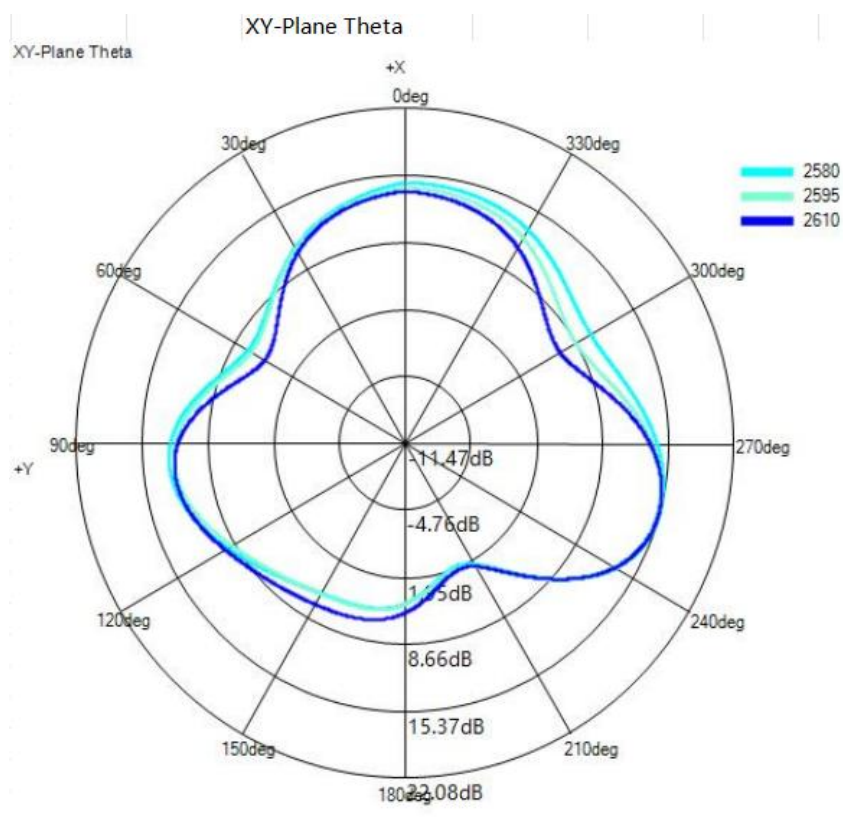
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BAND34:



BAND38:



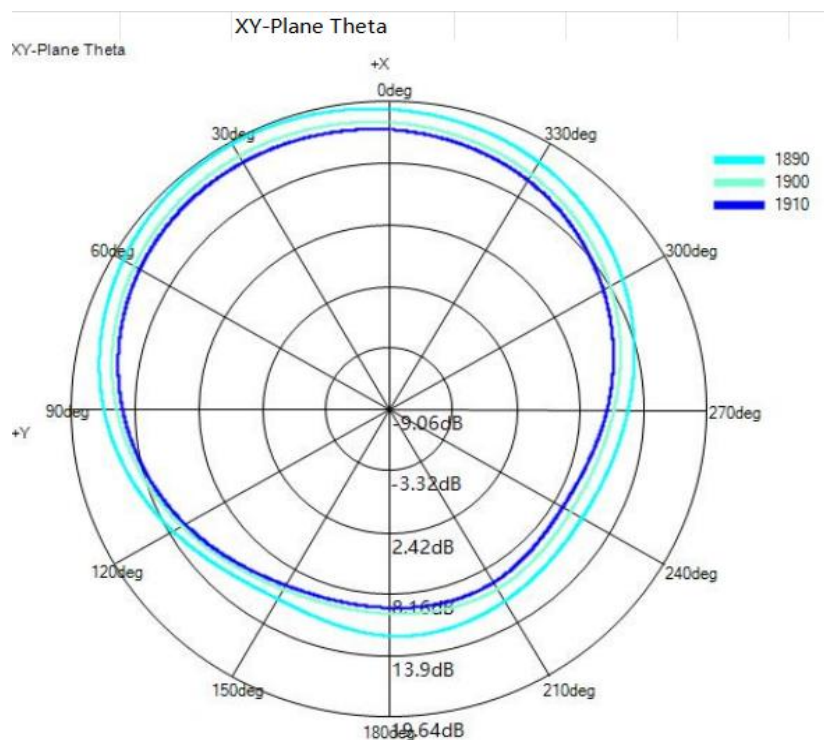
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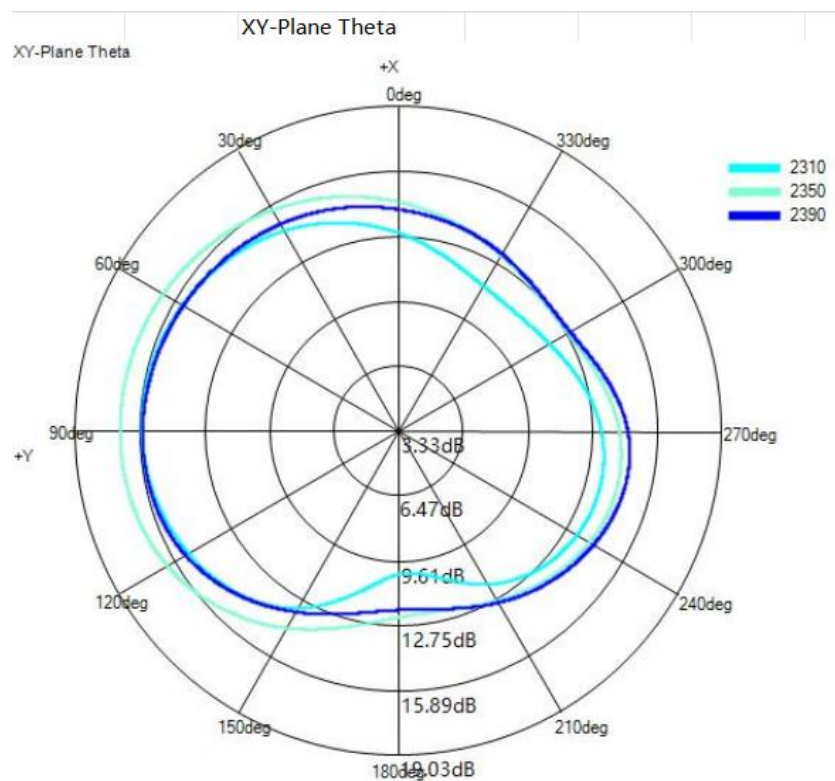
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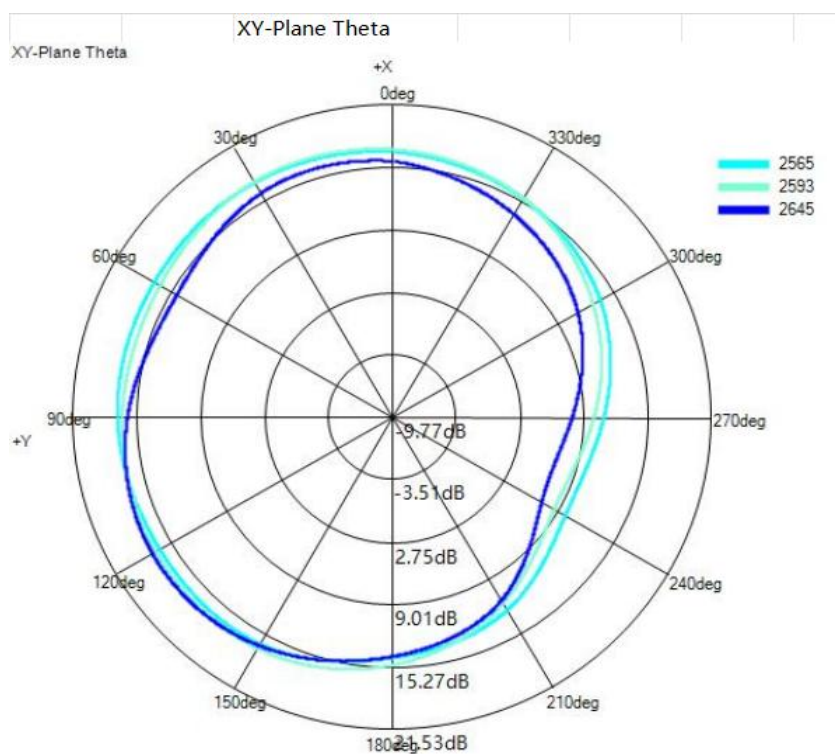
BAND39:



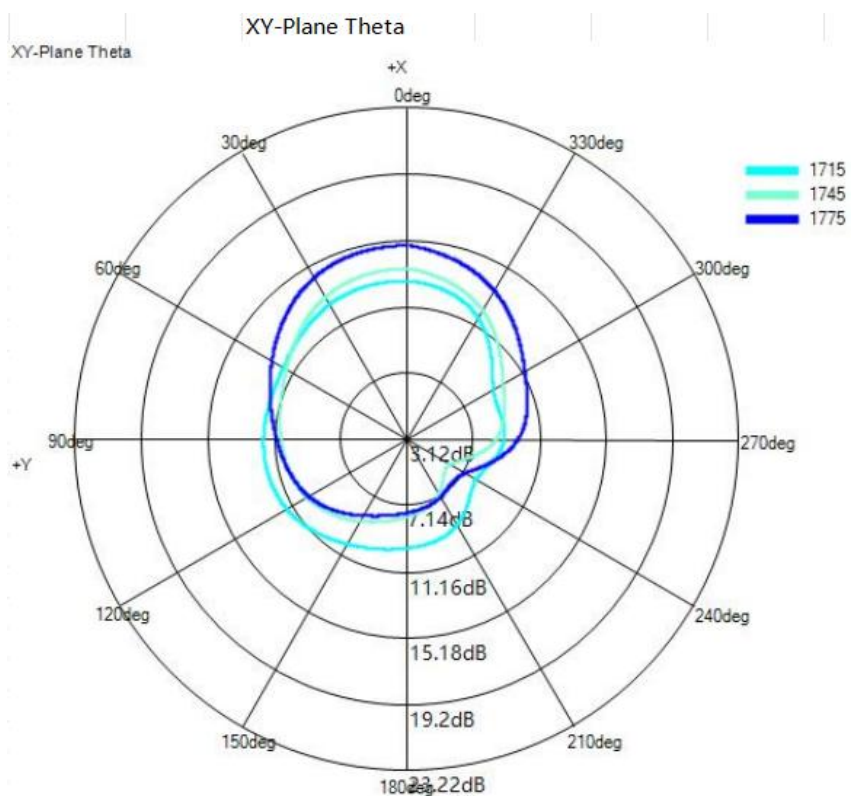
BAND40:



BAND41:



BAND66:



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5.5 GPS/WIFI+BT Antenna Test

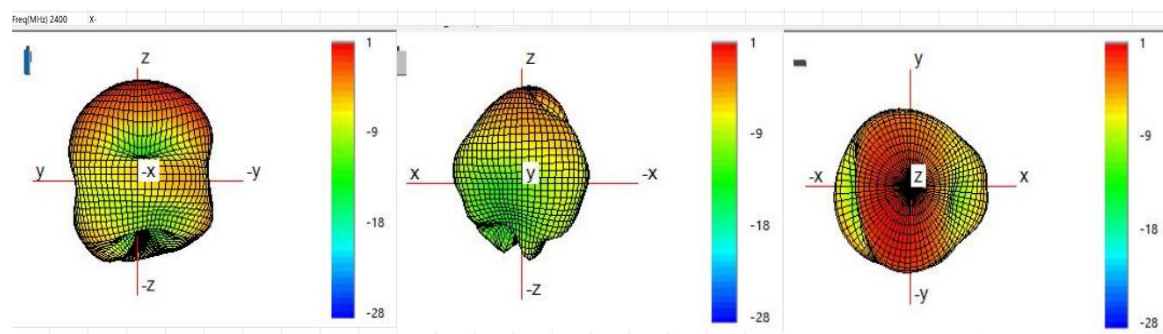
Channel	2.4G-11B			5.8G-11A		
	CH1	CH7	CH13	CH36	CH60	CH165
TRP	10.05	11.03	10.0	8.65	8.97	9.55
TIS	-79.53	-77.9	-77.62	-69.63	-70.01	-67.55
WIFI	2.4G 增益: 0.72			5.8G 增益: 1.2		
BT	2.4G 增益: 0.72					

WIFI/BT 无源参数: (2.4GWIFI 与 BT 重频段)

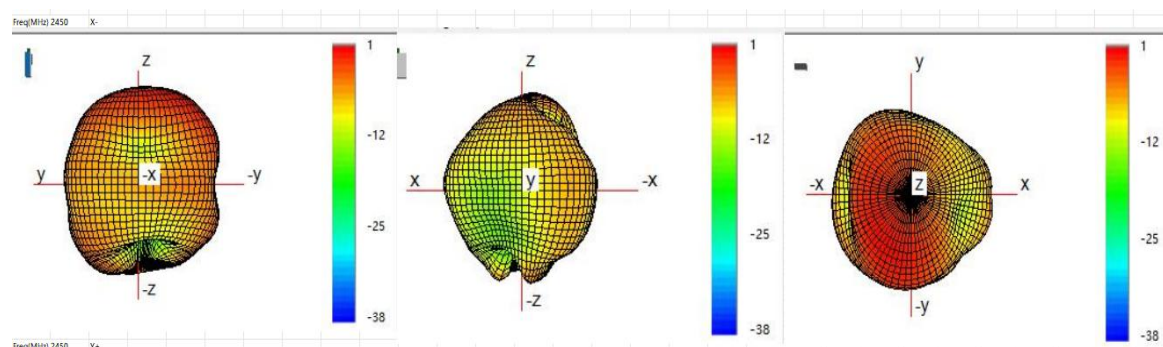
Passive Test For 2400-2500				Passive Test For 5150-5850			
Freq	Effi	Gain	Effi	Freq	Effi	Gain	Effi
(MHz)	(dB)	(dBi)	(%)	(MHz)	(dB)	(dBi)	(%)
2400	-3.42	0.66	45.48	5150	-3.79	1.05	41.82
2420	-3.52	0.72	44.45	5250	-4.11	1.09	38.78
2440	-3.63	0.69	43.31	5350	-4.74	1.2	33.55
2460	-3.84	0.63	41.28	5450	-5.12	1.12	30.76
2480	-4.23	0.66	37.72	5550	-4.85	1.06	32.74
2500	-4.47	0.06	35.71	5650	-4.16	1.02	38.37
				5750	-3.89	1.06	40.87
				5850	-4.46	1.12	35.83

WIFI/BT 无源苹果图:

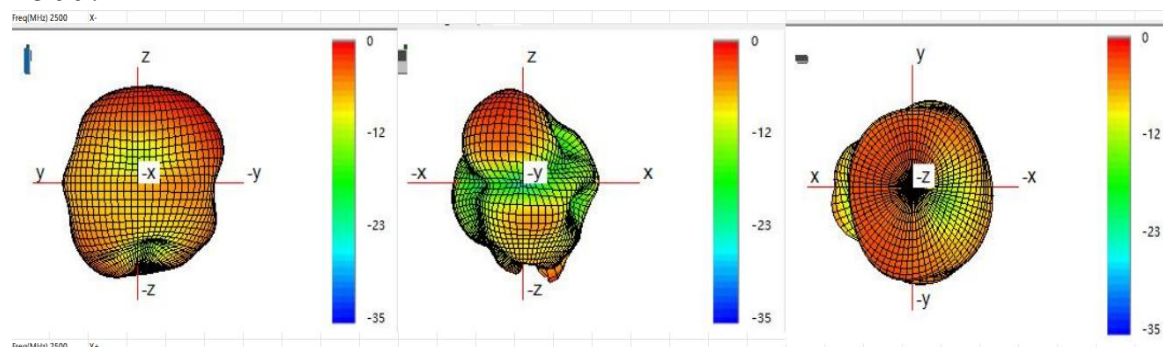
2.4G-2400:



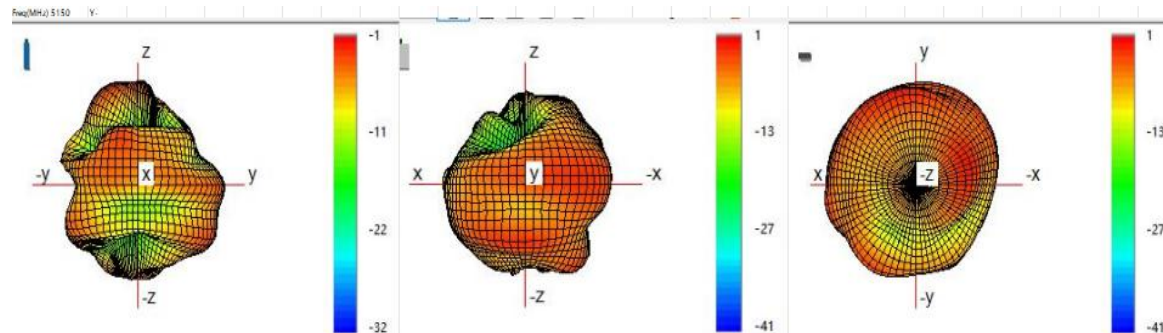
:2450:



2500:



5.8G-5100



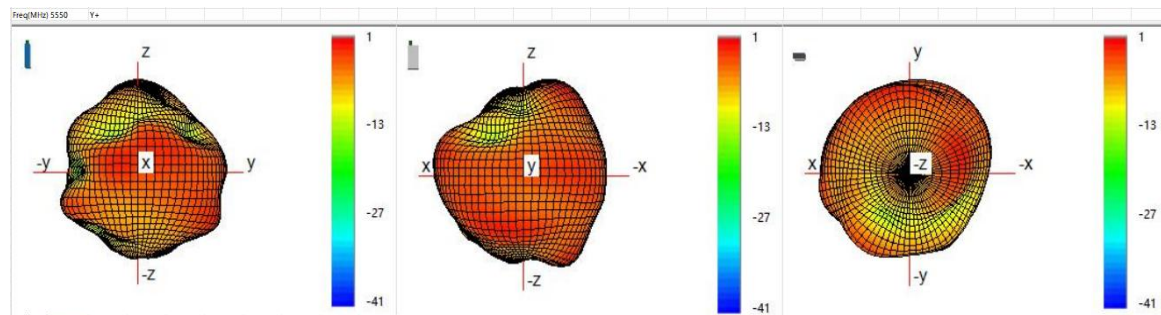
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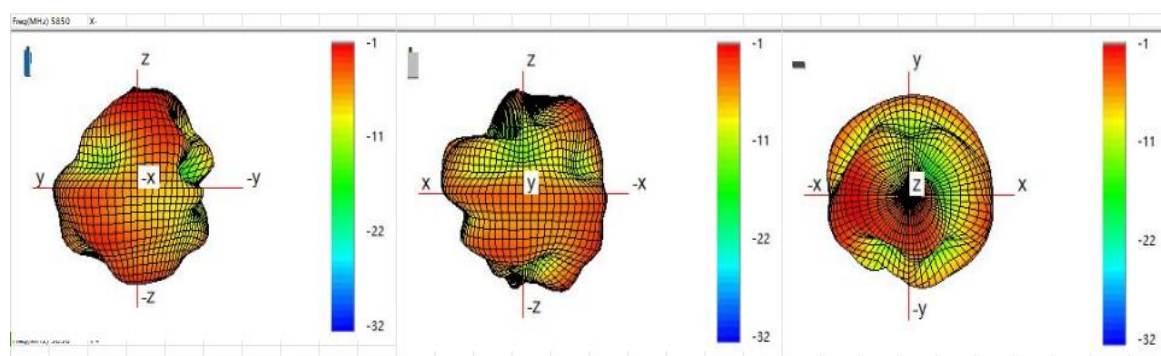
地址: 深圳市南山区西丽大学城民企科技园 2 栋 (港鸿基大厦) 西座 403

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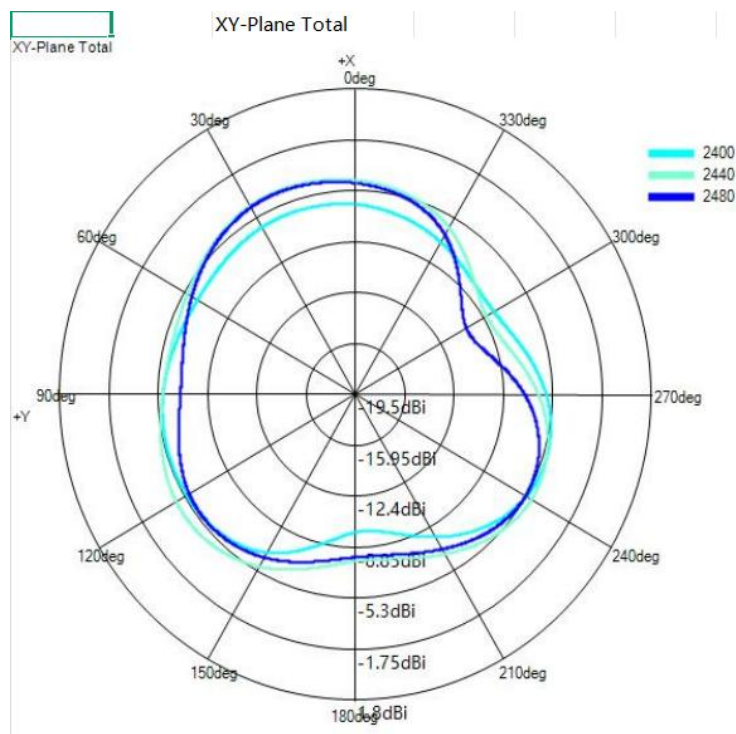
5550



5850



2.4G /BT Antenna apple chart Test (2D)



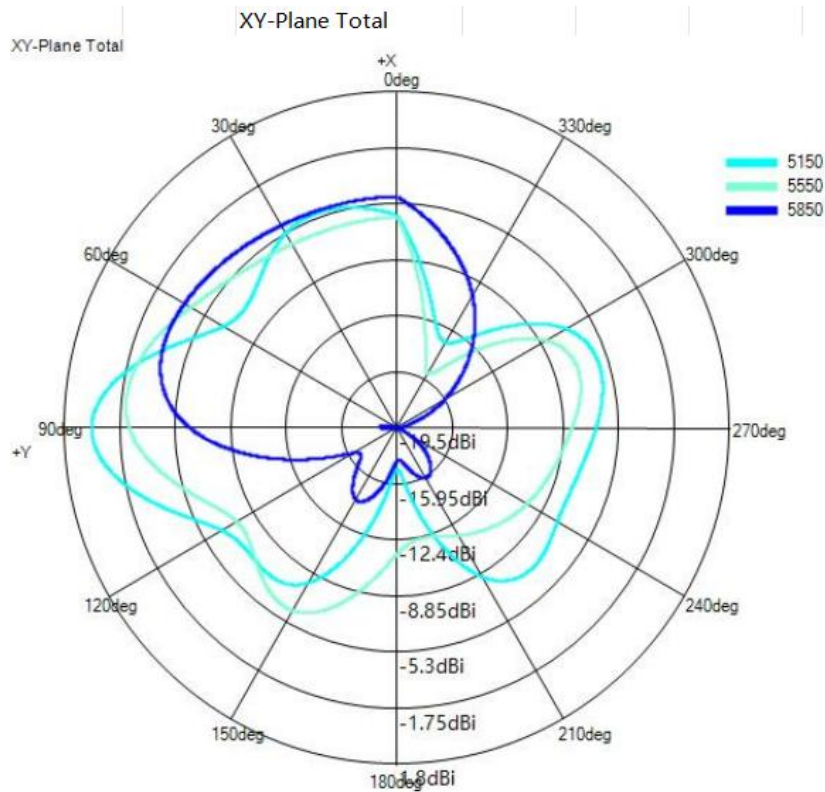
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5.8G Antenna apple chart Test (2D)

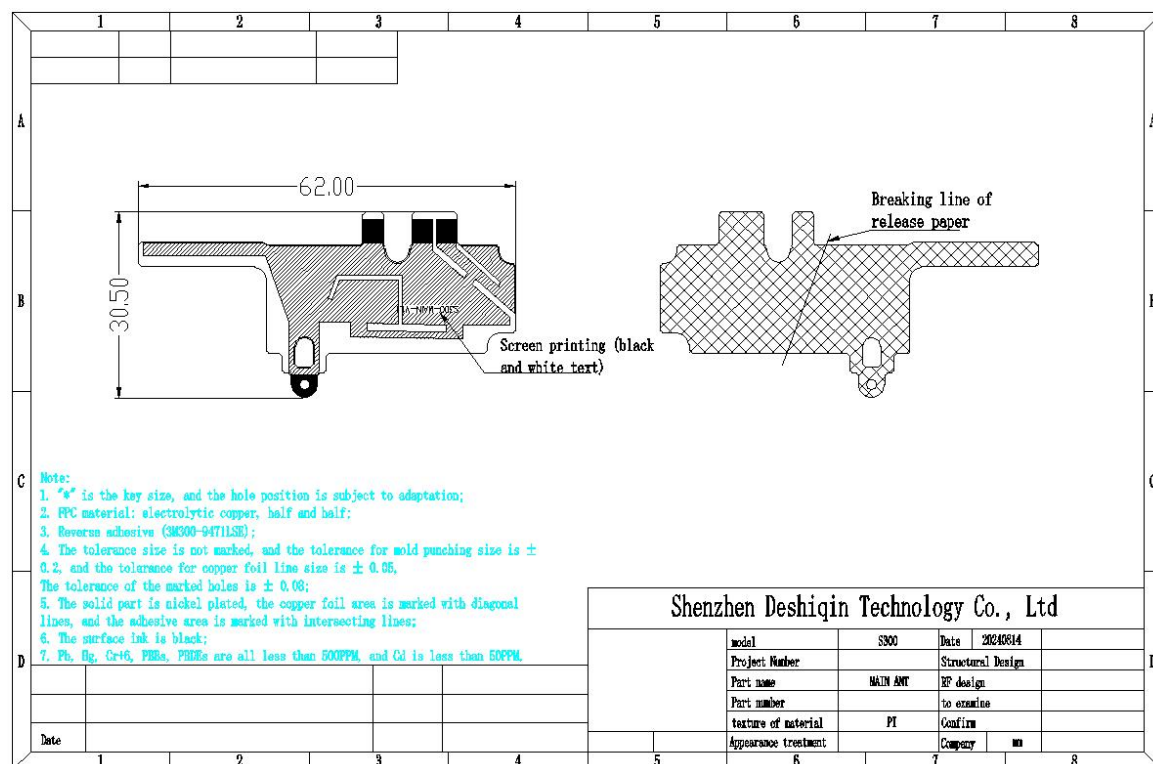


GPS/WIFI/BT 注:	GPS	Maximum signal strength	Number of received stars	Average positioning time (s)	Weather conditions
		39	4-7	120	晴
	WIFI	Normal internet distance (m)		Smooth distance for online browsing (m)	
		10-12		10-12	
	BT	Clear call distance (m)			
		10			

The actual test



6.Structural drawings



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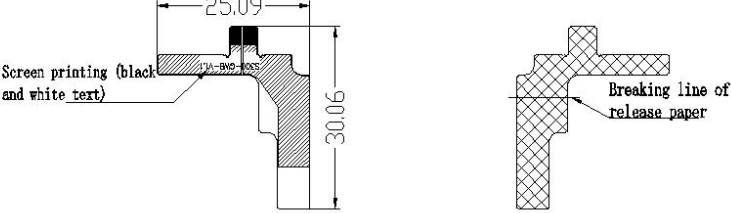
Dosking MicroElectronics Co.,Ltd

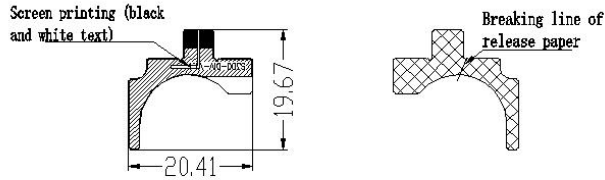
地址：深圳市南山区西丽大学城民企科技园 2 栋（港鸿基大厦）西座 403

TEL:0755-88602767

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德仕勤科技有限公司 - 承认书

	1	2	3	4	5	6	7	8																												
A																																				
B																																				
C																																				
D	Note: 1. "s" is the key size, and the hole position is subject to adaptation; 2. FPC material: electrolytic copper, half and half; 3. Reverse adhesive (3M300-9471LS2); 4. The tolerance size is not marked, and the tolerance for mold punching size is ± 0.2, and the tolerance for copper foil line size is ± 0.05, The tolerance of the marked holes is ± 0.03; 5. The solid part is nickel plated, the copper foil area is marked with diagonal lines, and the adhesive area is marked with intersecting lines; 6. The surface ink is black; 7. Pb, Bg, Cr+6, PBBs, PBDEs are all less than 500PPM, and Cd is less than 50PPM.				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="4" style="text-align: center;">Shenzhen Deshiqin Technology Co., Ltd</th> </tr> <tr> <td style="width: 25%;">model</td> <td style="width: 25%;">S300</td> <td style="width: 25%;">Date</td> <td style="width: 25%;">20240614</td> </tr> <tr> <td>Project Number</td> <td></td> <td>Structural Design</td> <td></td> </tr> <tr> <td>Part name</td> <td>MAIN ANT</td> <td>RF design</td> <td></td> </tr> <tr> <td>Part number</td> <td></td> <td>to examine</td> <td></td> </tr> <tr> <td>texture of material</td> <td>PI</td> <td>Confirm</td> <td></td> </tr> <tr> <td>Appearance treatment</td> <td></td> <td>Company</td> <td>mm</td> </tr> </table>				Shenzhen Deshiqin Technology Co., Ltd				model	S300	Date	20240614	Project Number		Structural Design		Part name	MAIN ANT	RF design		Part number		to examine		texture of material	PI	Confirm		Appearance treatment		Company	mm
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