



WUTONG HOLDING GROUP CO.,LTD

SPECIFICATION FOR APPROVAL

Customer Name : Hangzhou Hemai Power Electronics Co., Ltd

Item name : PCB antenna

Frequency : 650~960MHz/1710~2700MHz impedance 50ohm Cable RG-178

Brown RP-SMA-J connector 147*16*1.2mm FR4 black --40°C-+85°C

Vender Part No : WTTX230173B

Customer Part No : A6040443

Revision : A /1

Date : 2024-01-04

Supplier Signature

Audit	Confirmation	Approval

Customer Approval

Audit	Confirmation	Approval
Jiang Weiwei	Zhou Rong Yang Xiaoyu	Wu Kailun

WUTONG HODLING GROUP CO., LTD.

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Test Reports

Electrical Properties	
Frequency	650~960MHz/1710~2700MHz
Impedance	50Ω
V.S. W . R	≤3.0 (ForShell testing line length1m)
Gain (Peak)	4.5dBi
Return loss	≤-6dB (Test line length 1m)
Connector	RP SMA-J
Physical Properties	
PCB Spec	L147mm*W16mm T=1.2mm
Cable Spec	RG178 Cable
Operating Temp	-40°C~85°C
Storage Temp	-40°C~85°C



一、Part drawing

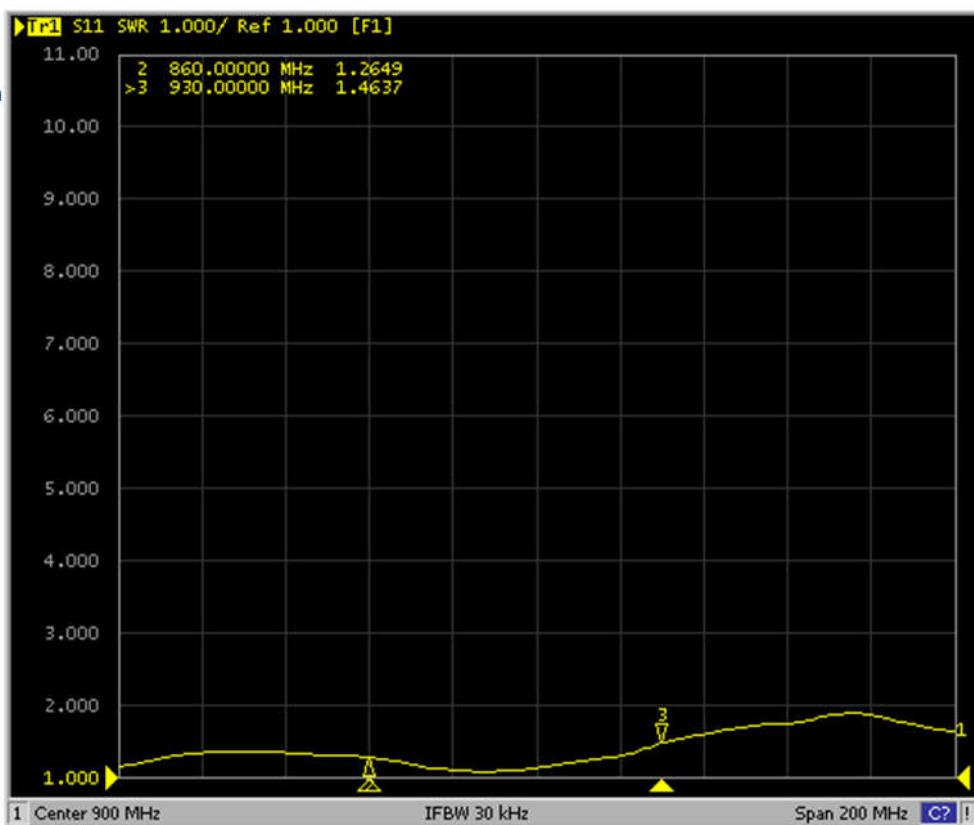
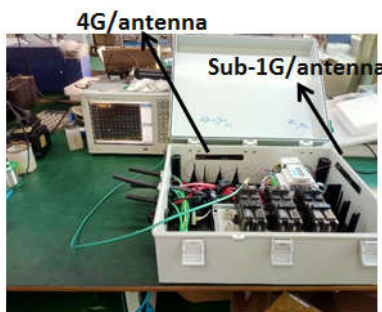
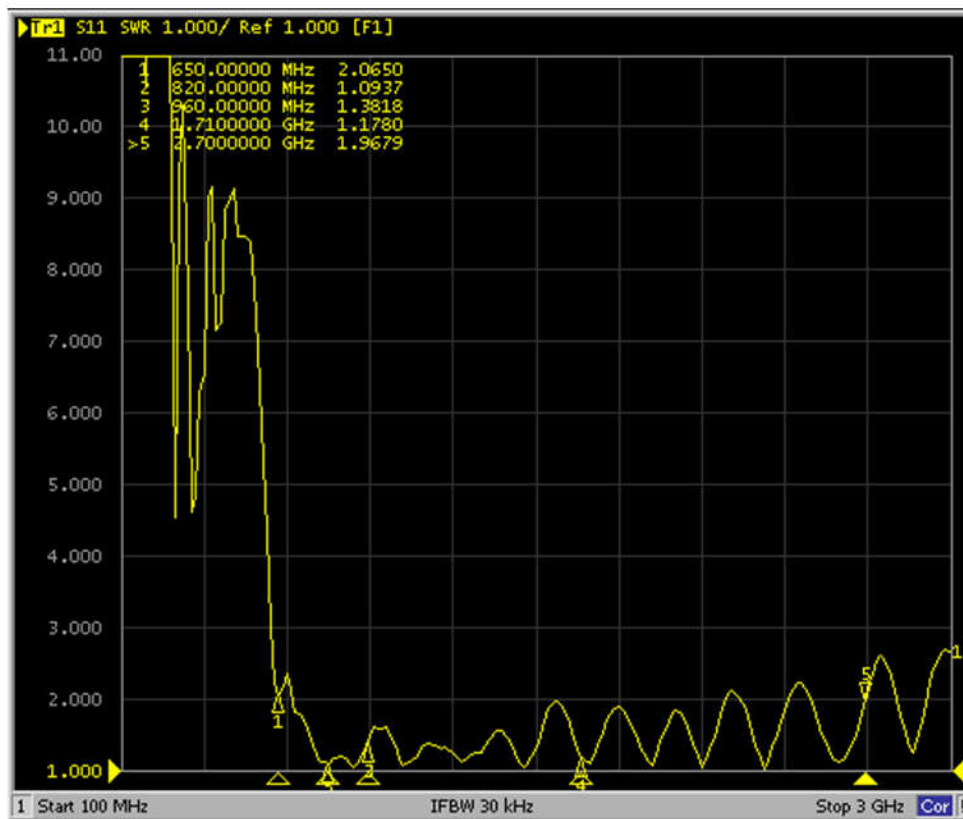
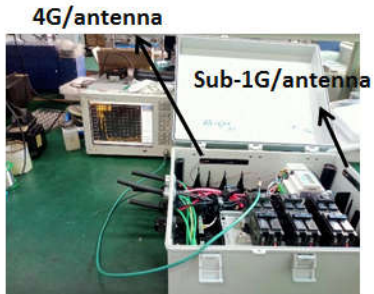
1	A	B	C	D	E	F	G
						产品开发履历表 Product development resume 版次 Edition XI 发行日期 Issue date 2023/11/24 简要描述 Describe INITIAL RELEASE ECN编号 Number	
1. Working frequency: 650~960MHz/1710~2700MHz 2. Standing wave ratio: ≤ 3.0 (FOR casing test) 3. The shape and size of the product knife mold should be strictly controlled; 4. The surface should be free of oil stains, impurities, burrs, etc; 5. Packaging and quality standards refer to Wutong Packaging Specification and Wutong Quality Standard respectively; 6. The product meets ROHS environmental requirements; 7. Marking "*" indicates strict size control by quality control							
5. Foam Adhesive EVA/Foam, 3M9448A/Adhesive 4. Acetic acid adhesive tape Acetic acid adhesive tape, 15*60mm 3. Heat shrink tubing Thin type; black 2. Cabel /Connector RC-178; Color transparent brown, L=403mm; Connector/RP-SMA-J 1. PCB FR4/1147mm*W16mm T=1.2mm Surface black oil							
6. number Name Specification Description Form number: WTTY/R-49							

备注/remarks 1. "*" Control the size for key points without indication (GB/T1804-M) Restricted substances Pb, Hg, Cd, Cr6+, PBB, PBFR, DBP, DEHP, DIBP, BPP The limit value of Cd is 100 ppm 1000ppm Visual angle	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">吴通集团 WUTONG GROUP</td> <td style="text-align: center;">吴通控股集团股份有限公司 Wutong Holding Group Co., Ltd</td> </tr> <tr> <td style="text-align: center;">产品名称 Product Name PCB Antenna</td> <td style="text-align: center;">审核: Approve:</td> </tr> <tr> <td style="text-align: center;">料号 P/No. WUTONG</td> <td style="text-align: center;">比例 Scale 1:2</td> </tr> <tr> <td style="text-align: center;">工程图号 Drawing Number WTTY230173B</td> <td style="text-align: center;">单位 Unit mm</td> </tr> <tr> <td style="text-align: center;">物料号 Material No. WUTONG</td> <td style="text-align: center;">幅面 Sheet A4</td> </tr> <tr> <td style="text-align: center;">版本 Version X</td> <td style="text-align: center;">原稿 Original 1/1</td> </tr> <tr> <td style="text-align: center;">高宽比 Aspect Ratio 1/1</td> <td style="text-align: center;">绘图: Drawing:</td> </tr> </table>	吴通集团 WUTONG GROUP	吴通控股集团股份有限公司 Wutong Holding Group Co., Ltd	产品名称 Product Name PCB Antenna	审核: Approve:	料号 P/No. WUTONG	比例 Scale 1:2	工程图号 Drawing Number WTTY230173B	单位 Unit mm	物料号 Material No. WUTONG	幅面 Sheet A4	版本 Version X	原稿 Original 1/1	高宽比 Aspect Ratio 1/1	绘图: Drawing:
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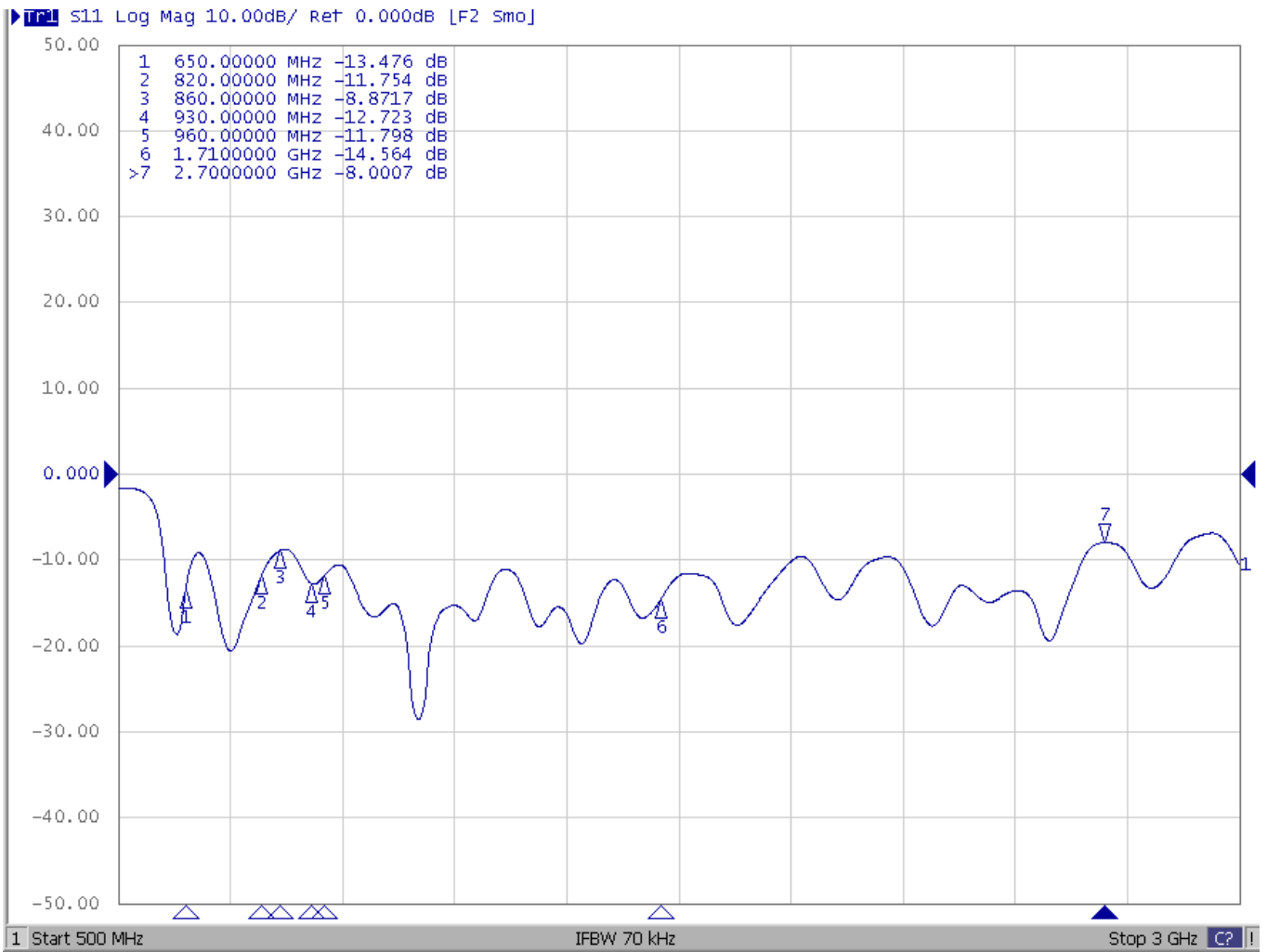
二、 Electrical test report

2.1/VSWR





2.2 /Return loss



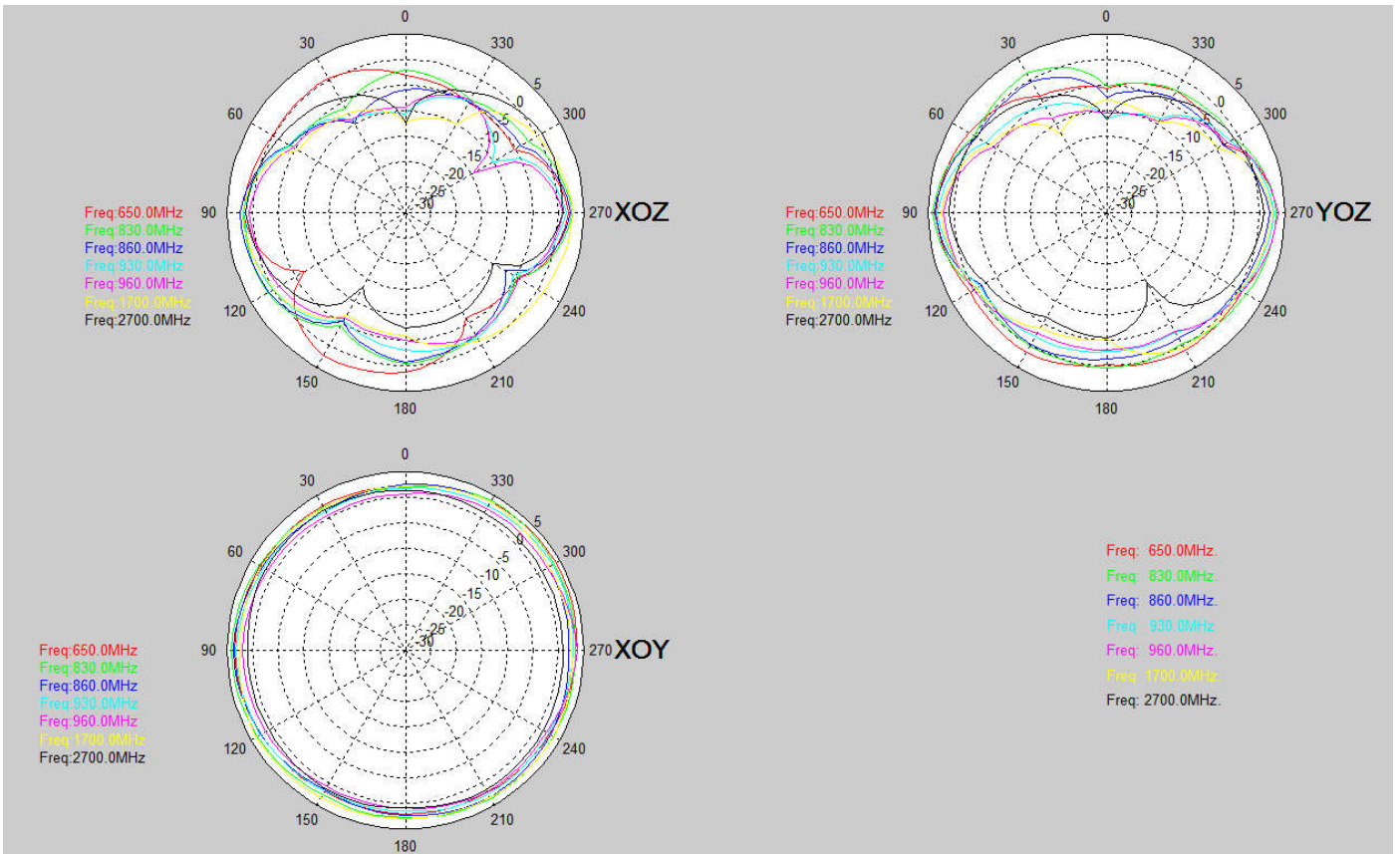


2.3 /Gain&Efficiency

Freq(MHz)	Effi (%)	Gain(dBi)
650	53.04	3.22
740	61.45	3.10
830	63.15	3.31
860	57.64	3.02
900	60.16	3.12
920	61.28	3.47
930	58.83	3.49
960	55.97	3.66
1700	55.31	3.97
1780	58.41	3.00
1860	51.37	2.94
1940	50.96	3.07
2020	51.22	3.32
2100	51.40	2.56
2180	64.78	3.87
2260	64.38	3.29
2340	50.06	2.51
2420	52.34	2.90
2500	52.58	2.65
2580	64.28	3.63
2660	55.21	2.80
2700	51.94	2.55

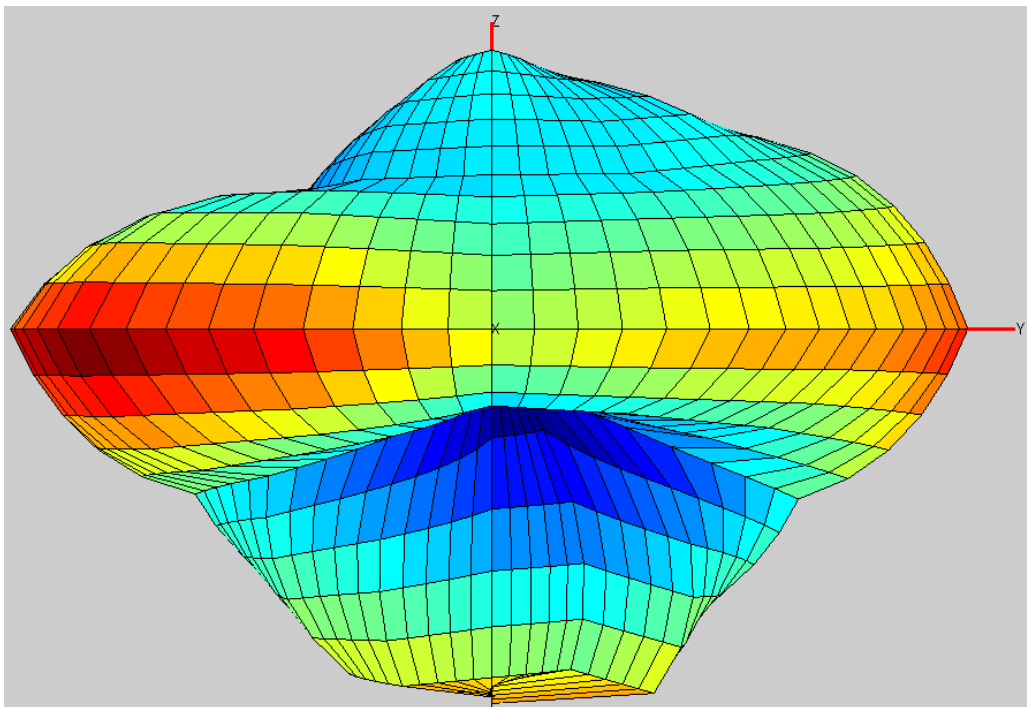


2.4/ 2D Directional diagram



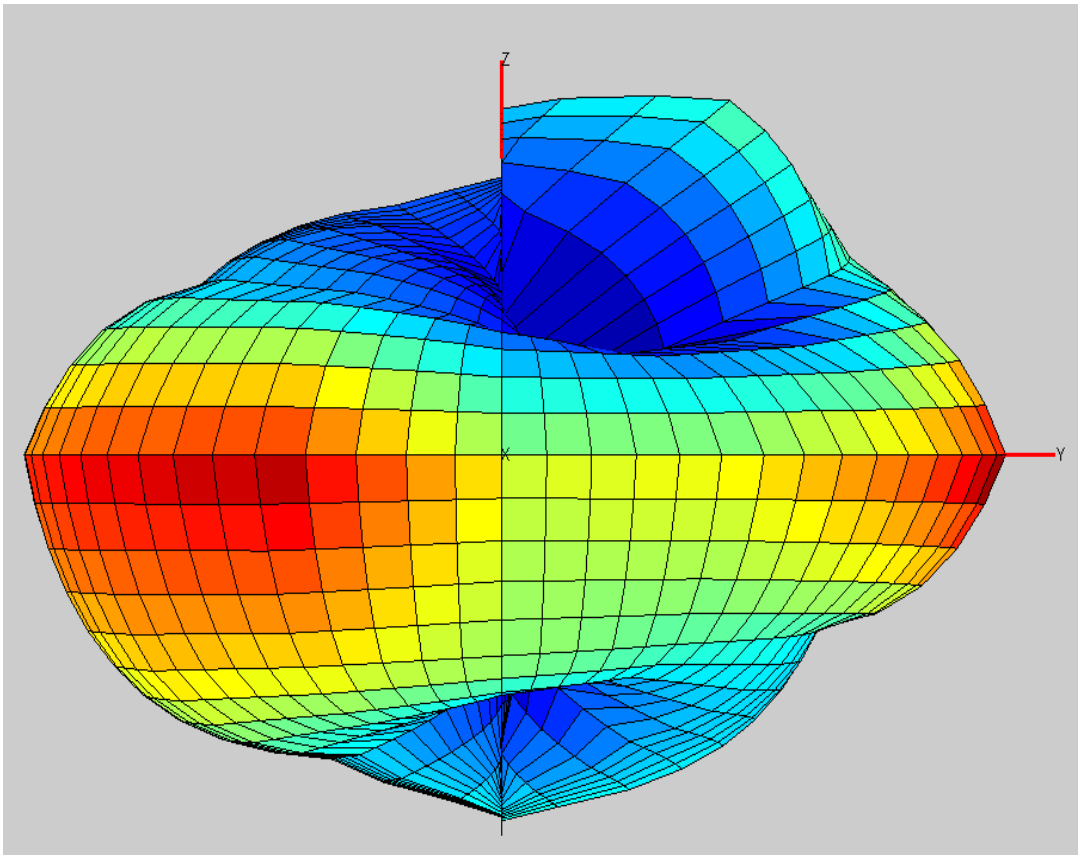
2.5/ 3D Directional diagram

650 MHz

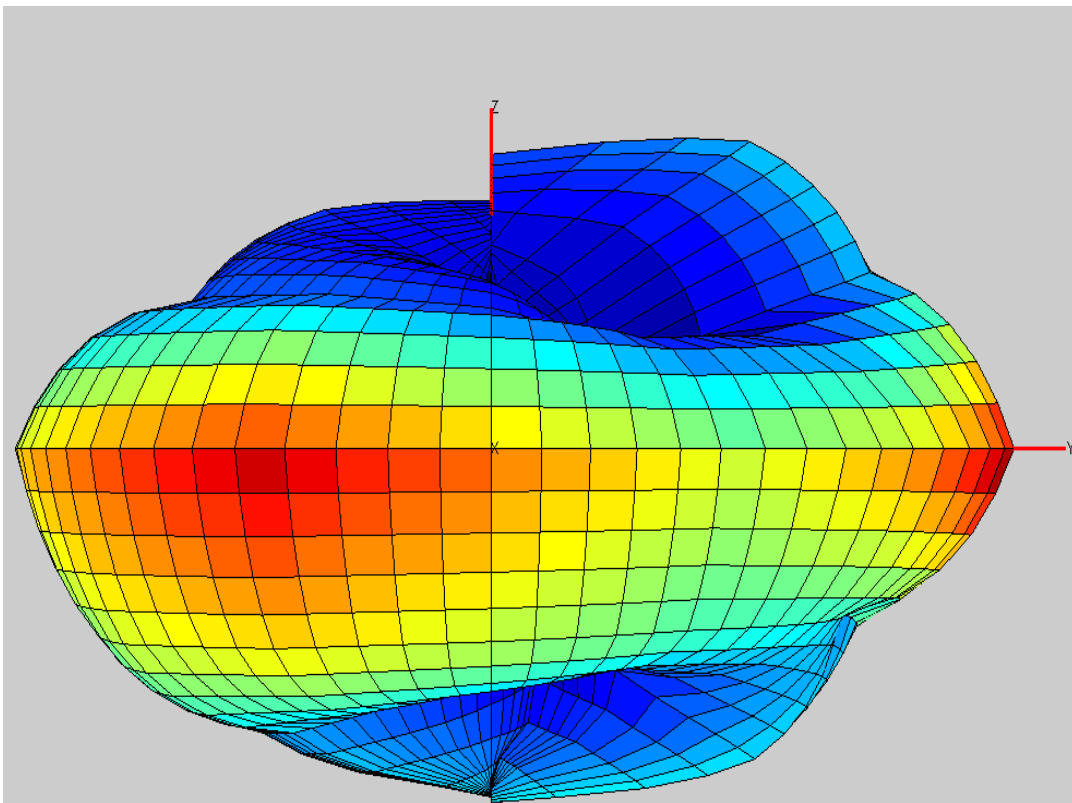




830 MHz

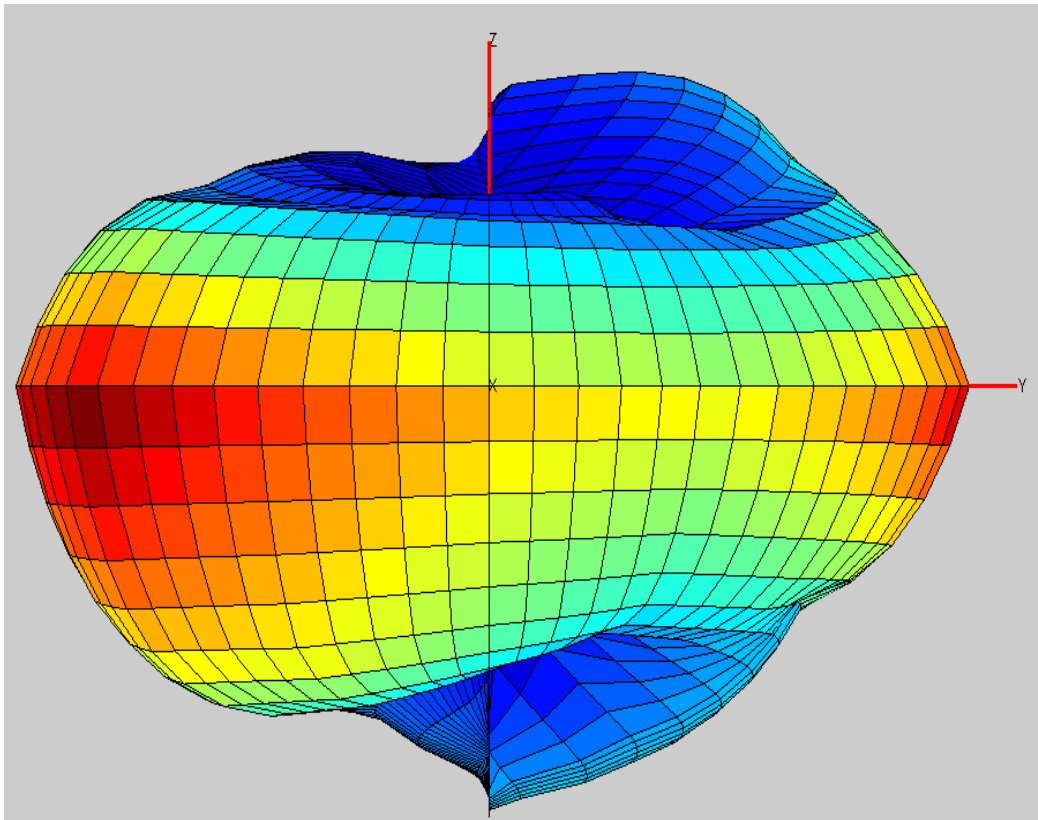


860 MHz

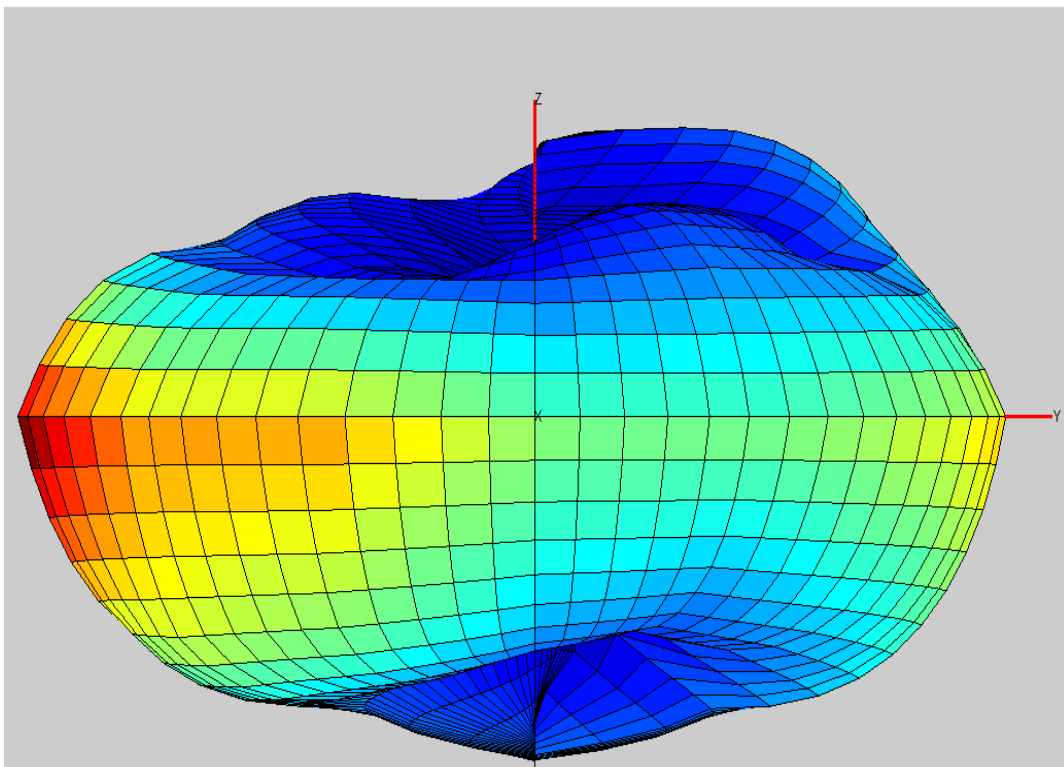




930 MHz

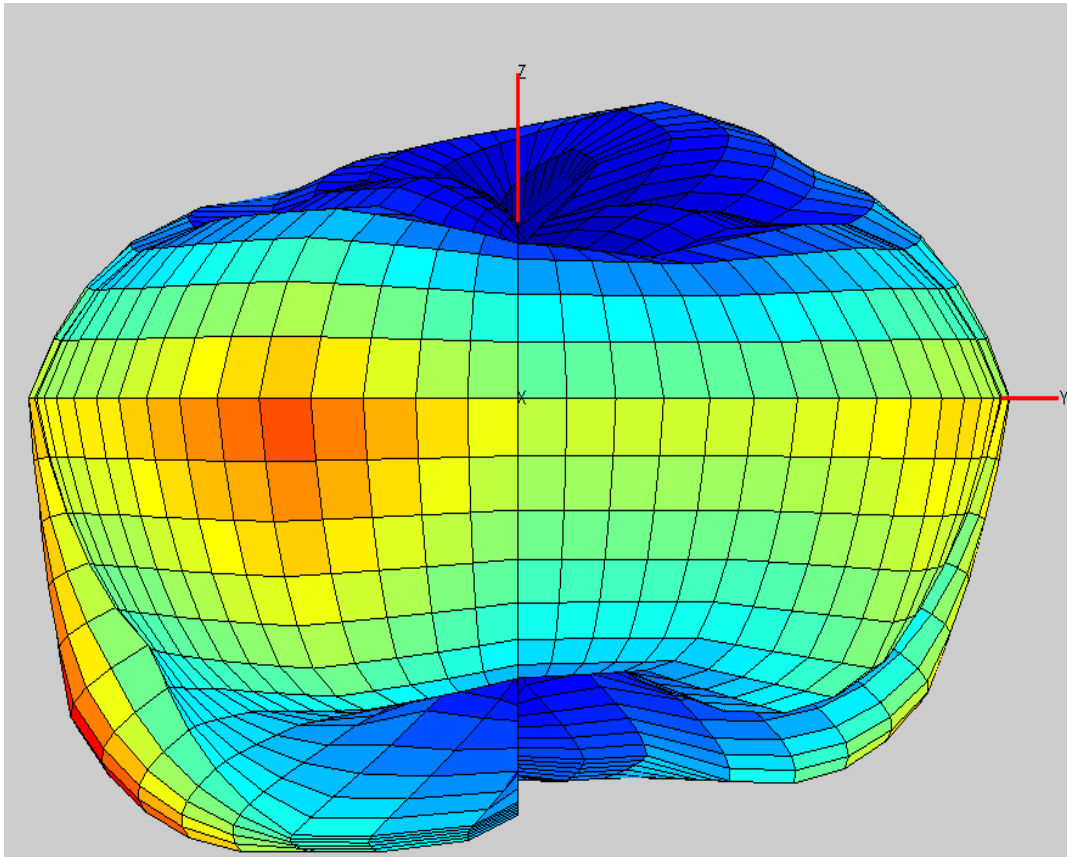


960 MHz

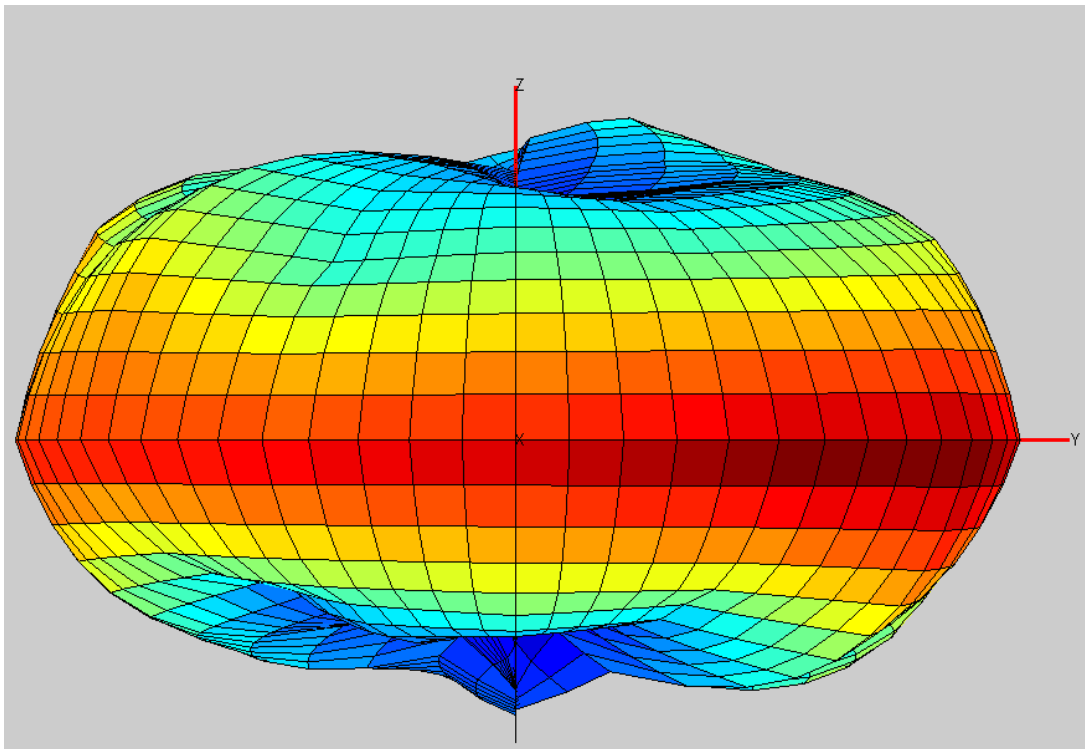




1700 MHz



2700 MHz





三、Physical product photos

