

Antenna Specification

1. Application:

This application shall apply for antenna unit which shall be used such as automotive, conventional communications, smart home, etc..

1. Electrical Specification:

Those specifications were specially defined for customer's model, and all characteristics were measured under the model's handset testing jig .

2-1. Frequency Band:

Frequency Band	MHz
BT	2400-2500

2-2. Impedance

50 ohm nominal

2-3. VSWR

2-3-1.Measurement frequency points and VSWR value

	2400	2450	2500
Frequency Band(MHz)			
2-3-3. Typical Value:	1.28	1.44	1.63

2-3-2. Peak Gain

Frequency Band(MHz)	Max Gain
2-3-3. Typical Value:	1.04dBi

Model Name: MQS001

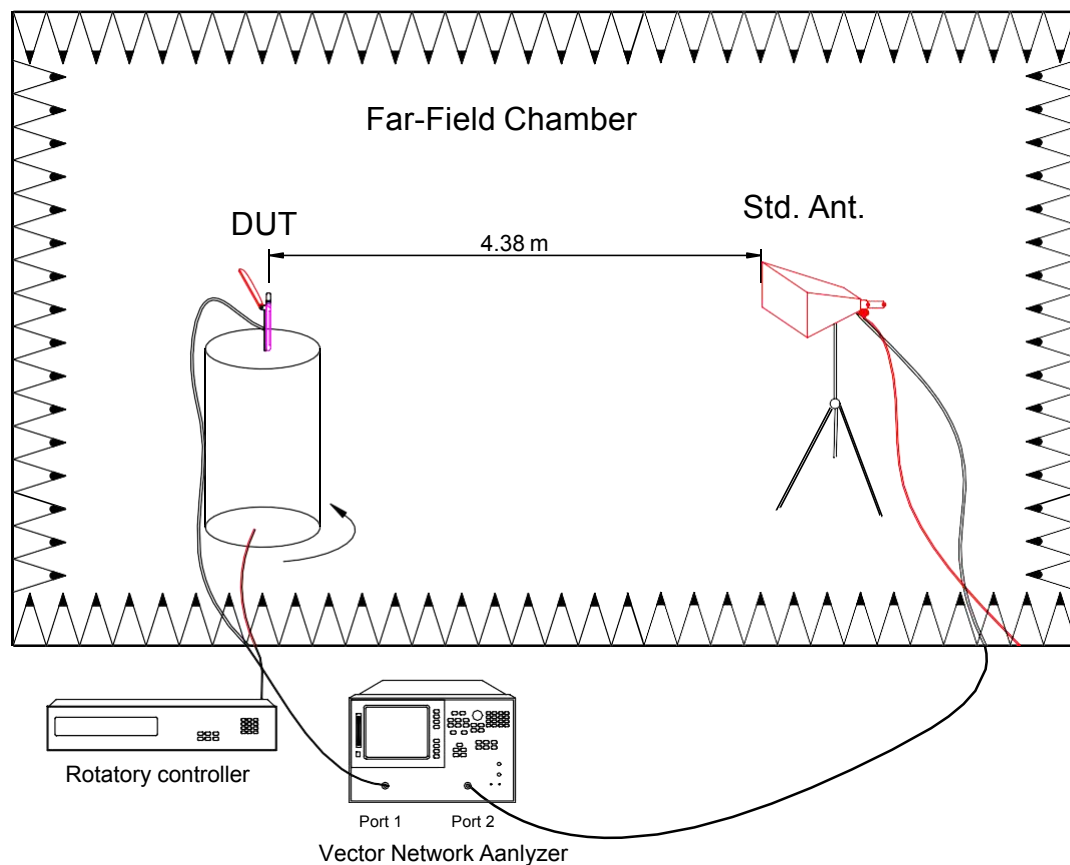
2-3-3Measuring Method	<div>1. A 50Ωcoaxial cable is connected to the antenna. Then this cable is connected to a network analyzer to measure the VSWR.</div> <div>2. Keeping this jig away from metal at least 20 cm</div>																																	
2-3-4 Picture	<div><div>E5071C Network Analyzer</div><div>1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State</div><div><div>Tr1 S11 Smith (R+jX) scale 1.000u [F1]</div><div><table><tr><td>1</td><td>2.4000000 GHz</td><td>52.987 Ω</td><td>-12.418 Ω</td><td>5.3402 pF</td></tr><tr><td>2</td><td>2.4500000 GHz</td><td>50.858 Ω</td><td>-18.662 Ω</td><td>3.4809 pF</td></tr><tr><td>>3</td><td>2.4835000 GHz</td><td>48.436 Ω</td><td>-24.261 Ω</td><td>2.6414 pF</td></tr></table></div></div><div><div>Tr2 S11 Log Mag 10.00dB/ Ref 0.000dB [F1]</div><div><table><tr><td>1</td><td>2.4000000 GHz</td><td>-18.193 dB</td></tr><tr><td>2</td><td>2.4500000 GHz</td><td>-14.816 dB</td></tr><tr><td>>3</td><td>2.4835000 GHz</td><td>-12.402 dB</td></tr></table></div></div><div><div>Tr3 S11 SWR 1.000/ Ref 1.000 [F1]</div><div><table><tr><td>1</td><td>2.4000000 GHz</td><td>1.2808</td></tr><tr><td>2</td><td>2.4500000 GHz</td><td>1.4439</td></tr><tr><td>>3</td><td>2.4835000 GHz</td><td>1.6312</td></tr></table></div></div><div><div>1 Start 2 GHz</div><div>IFBW 70 kHz</div><div>Stop 3 GHz</div><div>Meas Stop ExtRef Svc</div><div>2023-03-21 09:53</div></div></div>	1	2.4000000 GHz	52.987 Ω	-12.418 Ω	5.3402 pF	2	2.4500000 GHz	50.858 Ω	-18.662 Ω	3.4809 pF	>3	2.4835000 GHz	48.436 Ω	-24.261 Ω	2.6414 pF	1	2.4000000 GHz	-18.193 dB	2	2.4500000 GHz	-14.816 dB	>3	2.4835000 GHz	-12.402 dB	1	2.4000000 GHz	1.2808	2	2.4500000 GHz	1.4439	>3	2.4835000 GHz	1.6312
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2-4. Efficiency and Gain

2-4-1 Measure method

1. Using a low loss coaxial cable to link a standard handset jig
2. Fixed this handset jig on chamber's rotator plane
3. Linking jig into network analyzer port and using a probing horn antenna to collect data.
4. Using another standard gain horn antenna to calibrated those data

2-4-2 Chamber definition

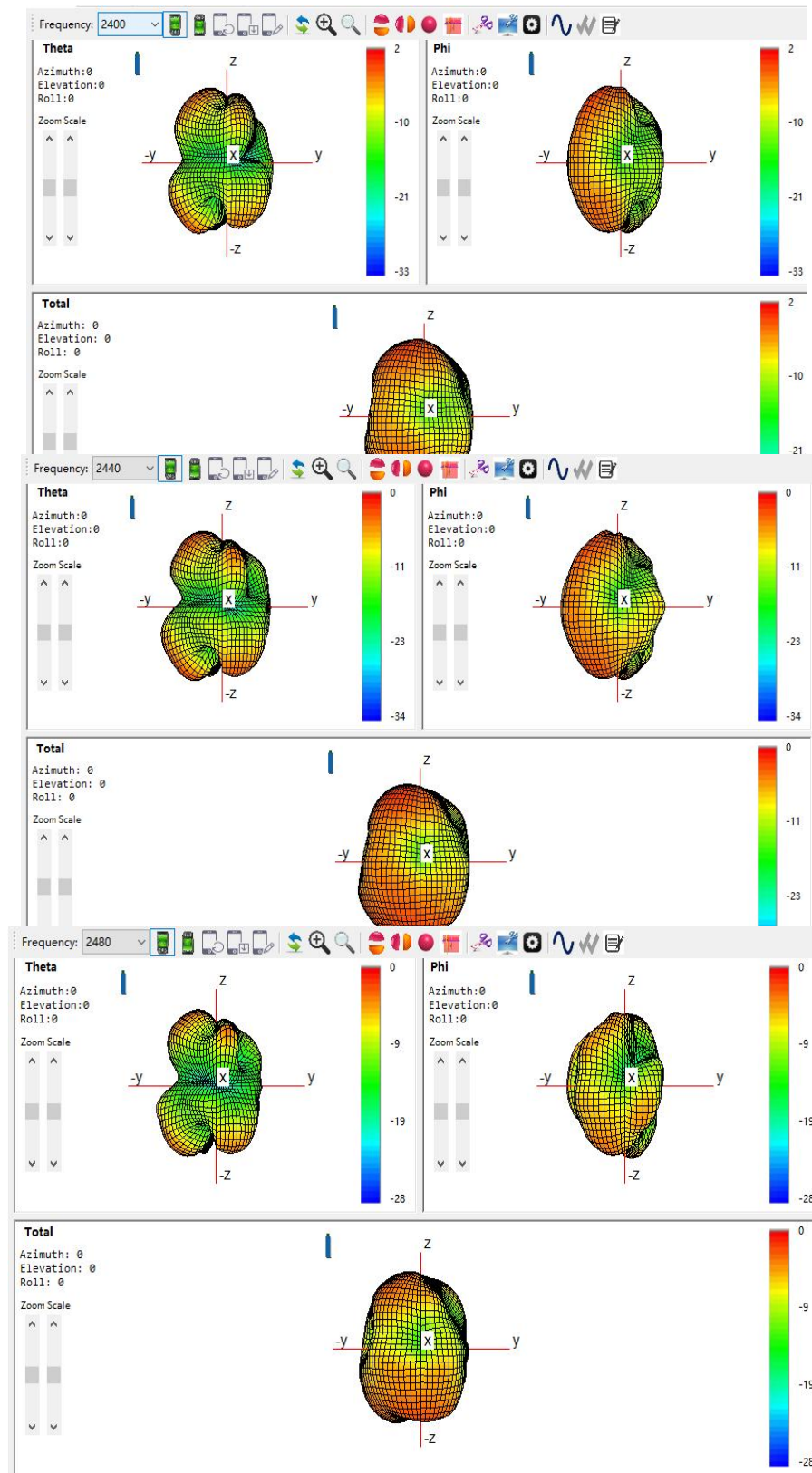


1. An anechoic chamber (7mx4mx3m) which satisfied far-field condition was applied to avoid multi-path effect
2. The quiet room region is 40cmx40cmx40cm at the center of rotator
3. The distance between DUT and standard antenna is 4.38 m
4. Probing antenna (9120D horn antenna) and standard gain horn antenna (BBHA9120 LPF 700MHz ~6GHz)

2-5 Efficiency and Gain

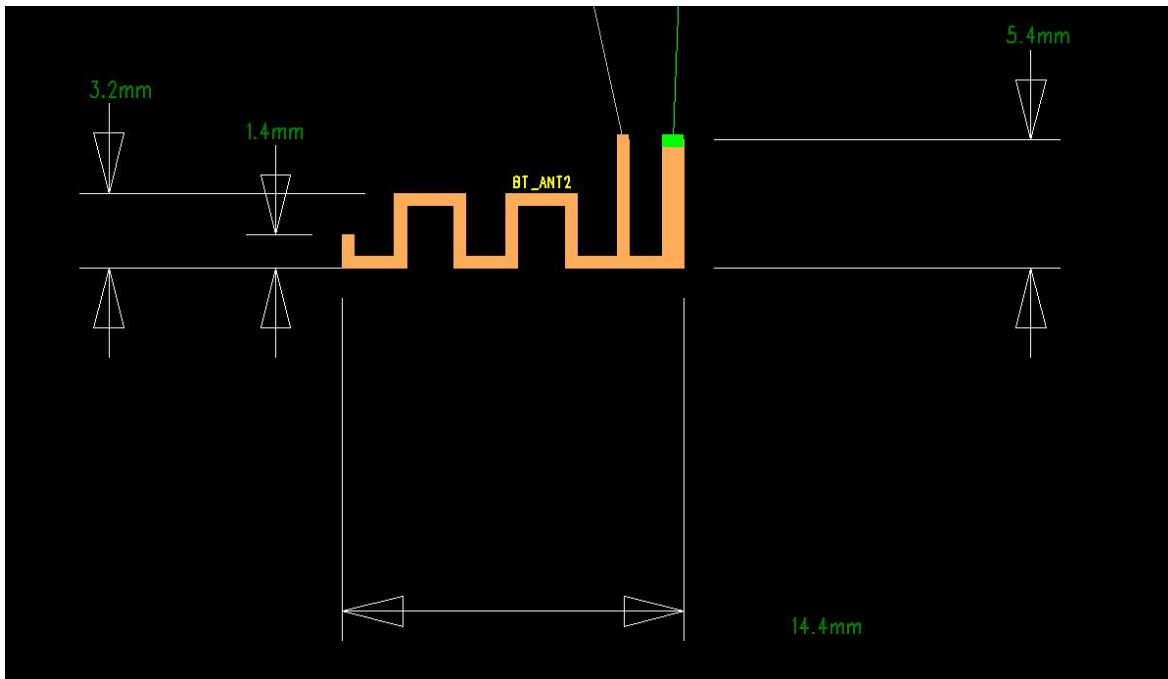
Frequency (MHz)	Gain (dBi)	Efficiency (%)
2400	0.23	42.81
2410	0.76	42.41
2420	0.43	43.28
2430	1.04	42.96
2440	-0.11	43.12
2450	-0.33	42.97
2460	-0.5	43.98
2470	-0.69	41.73
2480	-0.69	42.03
2490	-0.52	42.17
2500	-0.43	43.18

2-6 3D Radiation Pattern

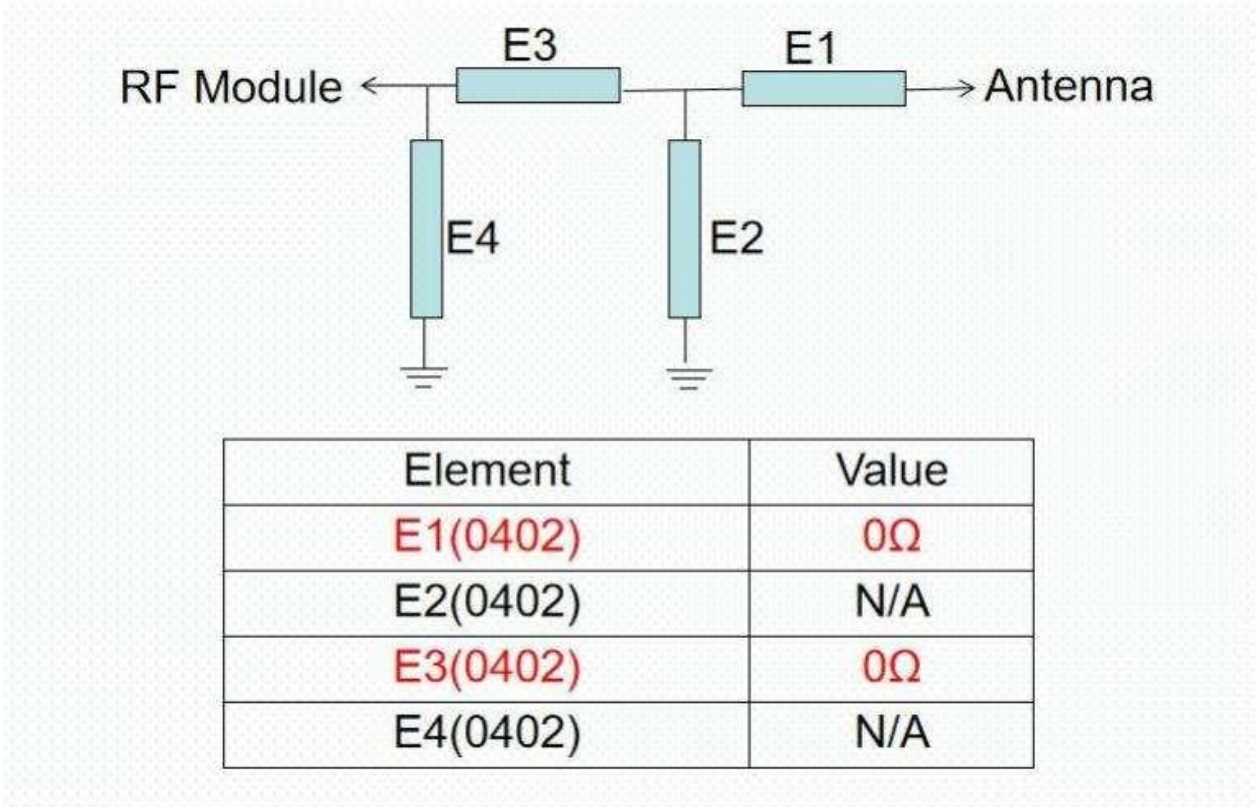


3. Mechanical Specification:

1. Mechanical Configuration (Unit: mm)
2. The appearance of the antenna is according to drawing



4. Matching Circuit



5. Antenna manufacturer:

name: Shenzhen Shiyu Circuit Board Technology Co. LTD

address: Floor 1, Building 4, Qinji Circuit Board Factory,
West Industrial Park, Shatou Community, Shajing Street,
Baoan District, Shenzhen City, Guangdong Province