

 Shenzhen VLG Wireless Technology Co., Ltd.	SPECIFICATION		Reference No.
	Product Description	VLG-OT-R05S1	
	BT Passive Antenna		

1、OVERALL PERFORMANCE(Antenna Element,Cable and connector)	
CHARACTERISTICS	SPEC
Dimensions	25mm(L)×25mm(W)×4.0mm(H) typ
Frequency	2402~2480MHz
Half power bandwidth	≥ 85 degree from 2.4~2.5GHz, step 2MHz
Gain	5.15dBi from 2.4~2.5GHz, step 2MHz
Efficiency	≥65% from 2.4~2.5GHz, step 2MHz
Output V.S.W.R	≤2 from 2.4~2.5GHz, step 2MHz
Output Impedance	50ohm
Polarization	R.H.C.P
Frequency Temperature Coefficient	0±10 (ppm/℃)
2、APPLICATION	
This application shall apply for antenna unit which shall be used with an engine for an automobile. (for impedance 50 ohm)	
3、OPERRATING CONDITION	
Temperature	-40℃ to +85℃
Humidity	10% to 95% RH

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4、STORAGE CONDITION

Temperature	-40℃ to +110℃
Humidity	10% to 95% R H

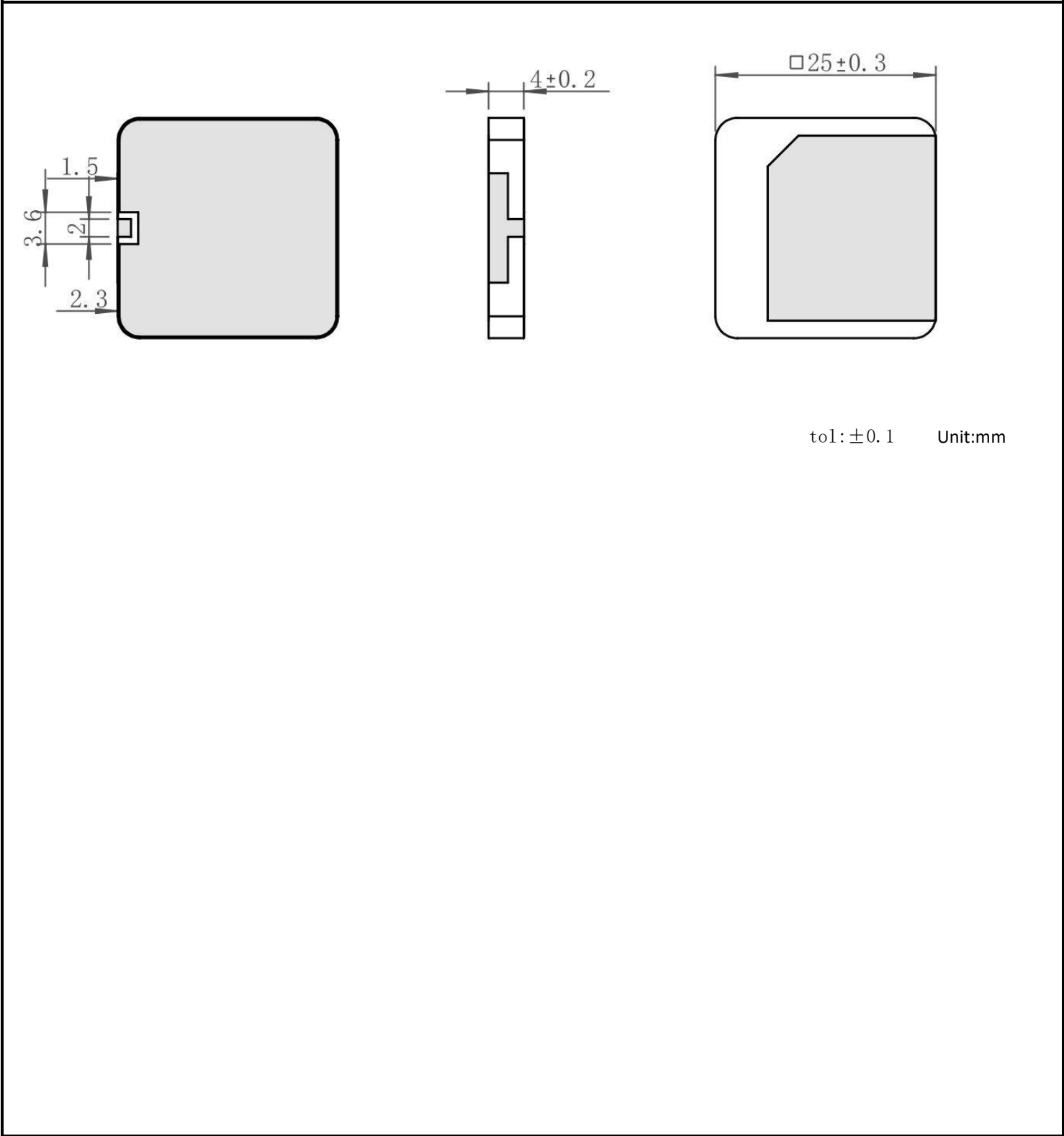
5、ANTENNA DIMENSIONS

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6、Environmental specifications

Base condition Temperature range $25\pm 3^{\circ}\text{C}$
Relative Humidity range 55~75%RH
Operating Temperature range $-40^{\circ}\text{C}\sim +85^{\circ}\text{C}$
Storage Temperature range $-40^{\circ}\text{C}\sim +110^{\circ}\text{C}$

6.1 Moisture Proof

The device should satisfy the electrical characteristics specified in paragraph 1 after exposed to the temperature $60\pm 2^{\circ}\text{C}$ and the relative humidity $95\pm 3\%$ RH for 96 ± 2 hours and 1~2 hours recovery time under normal condition.

6.2 Vibration Resist

Take the product is rigidly fixed on the test substrate, the device should satisfy the electrical characteristics specified in paragraph 1 after applied to the vibration of 10 to 55Hz with amplitude of 1.5mm, acceleration of 1g for 2 hours each in X, Y and Z directions.

6.3 High Temperature Endurance

The device should satisfy the electrical characteristics specified in paragraph 1 after exposed to temperature $90\pm 2^{\circ}\text{C}$ for 96 ± 2 hours and 1~2 hours recovery time under normal temperature.

6.4 Low Temperature Endurance

The device should also satisfy the electrical characteristics specified in paragraph 1 after exposed to the temperature $-40^{\circ}\text{C}\pm 2^{\circ}\text{C}$ for 96 ± 2 hours and to 2 hours recovery time under normal temperature.

6.5 Adhesion Strength of Soldering

Force of 5kg is applied to each lead in axial direction for $10\text{s}\pm 1\text{s}$ (see drawing). No visible damage and the device should also satisfy the electrical characteristics specified in paragraph 1

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7、Electrical Performance Report

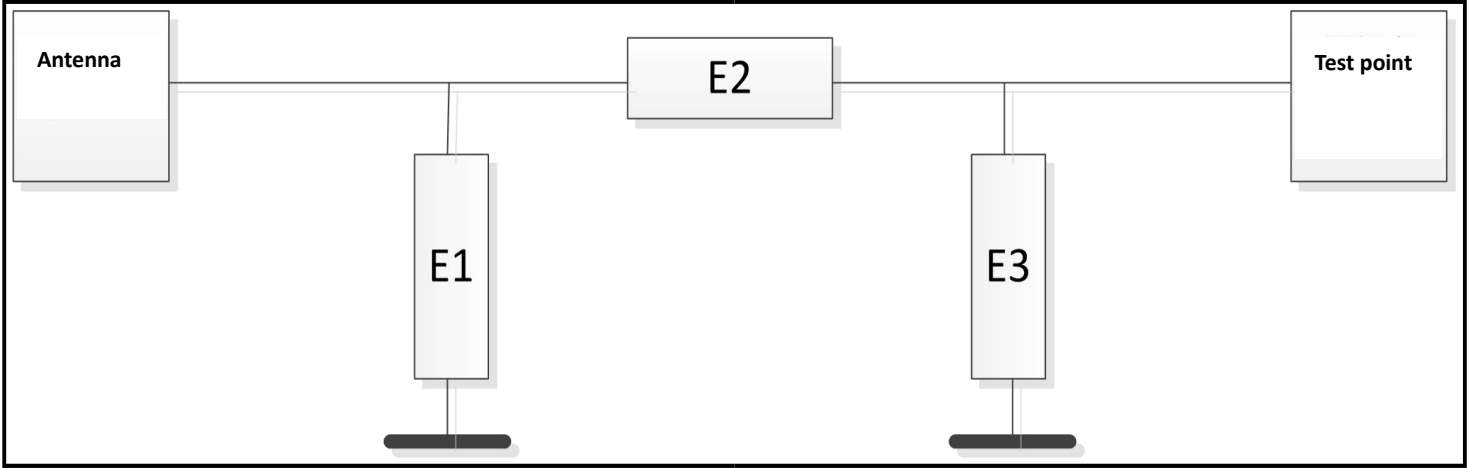
7.1 Efficiency and Gain (Test Frequency Range: 2.4 - 2.5 GHz, Step Size: 2 MHz)

Frequency (MHz)	Gain (dB)	Efficiency (%)			
			2450.00	5.12	0.81
2400.00	5.08	0.83	2452.00	5.11	0.81
2402.00	5.09	0.84	2454.00	5.10	0.82
2404.00	5.10	0.84	2456.00	5.08	0.82
2406.00	5.10	0.84	2458.00	5.05	0.82
2408.00	5.10	0.84	2460.00	5.04	0.81
2410.00	5.09	0.83	2462.00	5.03	0.82
2412.00	5.09	0.83	2464.00	5.02	0.82
2414.00	5.11	0.82	2466.00	5.00	0.82
2416.00	5.11	0.82	2468.00	4.94	0.82
2418.00	5.13	0.82	2470.00	5.05	0.82
2420.00	5.14	0.82	2472.00	5.01	0.82
2422.00	5.15	0.82	2474.00	4.97	0.82
2424.00	5.15	0.82	2476.00	4.94	0.82
2426.00	5.15	0.82	2478.00	4.89	0.81
2428.00	5.14	0.82	2480.00	4.84	0.81
2430.00	5.13	0.81	2482.00	4.80	0.80
2432.00	5.12	0.81	2484.00	4.77	0.80
2434.00	5.12	0.81	2486.00	4.73	0.79
2436.00	5.12	0.81	2488.00	4.70	0.79
2438.00	5.14	0.81	2490.00	4.68	0.79
2440.00	5.15	0.81	2492.00	4.66	0.79

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2442.00	5.15	0.81	2494.00	4.62	0.79
2444.00	5.15	0.81	2496.00	4.58	0.78
2446.00	5.15	0.81	2498.00	4.51	0.78
2448.00	5.13	0.81	2500.00	4.42	0.76

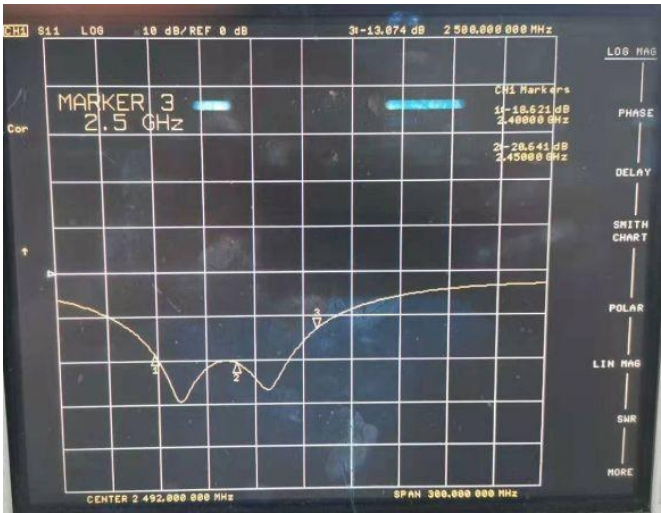
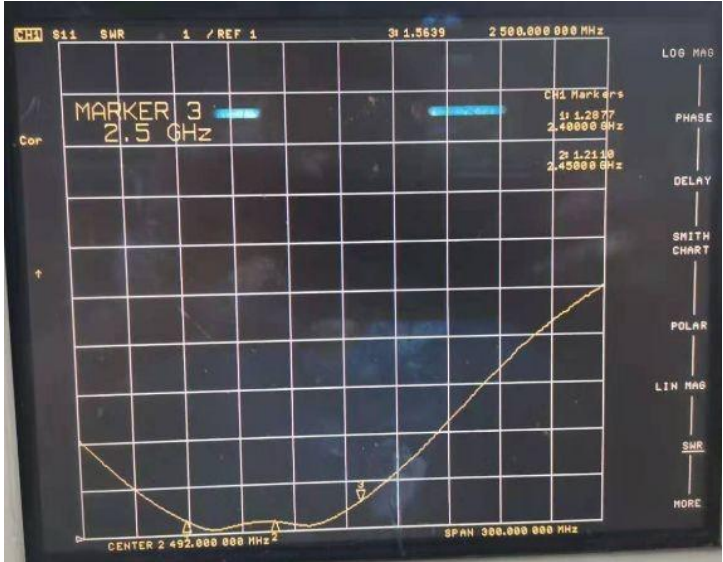
7.2 Matching circuit



	device [C/L]	Value
E1	NULL	NULL
E2	R	0 Ω
E3	NULL	NULL

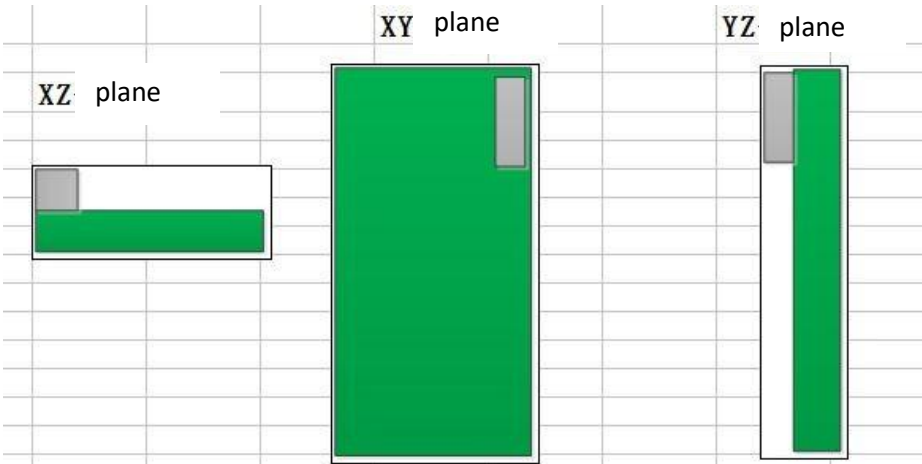
7.3 S11, VSWR, Smith Picture, Marking three points of frequency as 2.4, 2.45, 2.5Ghz

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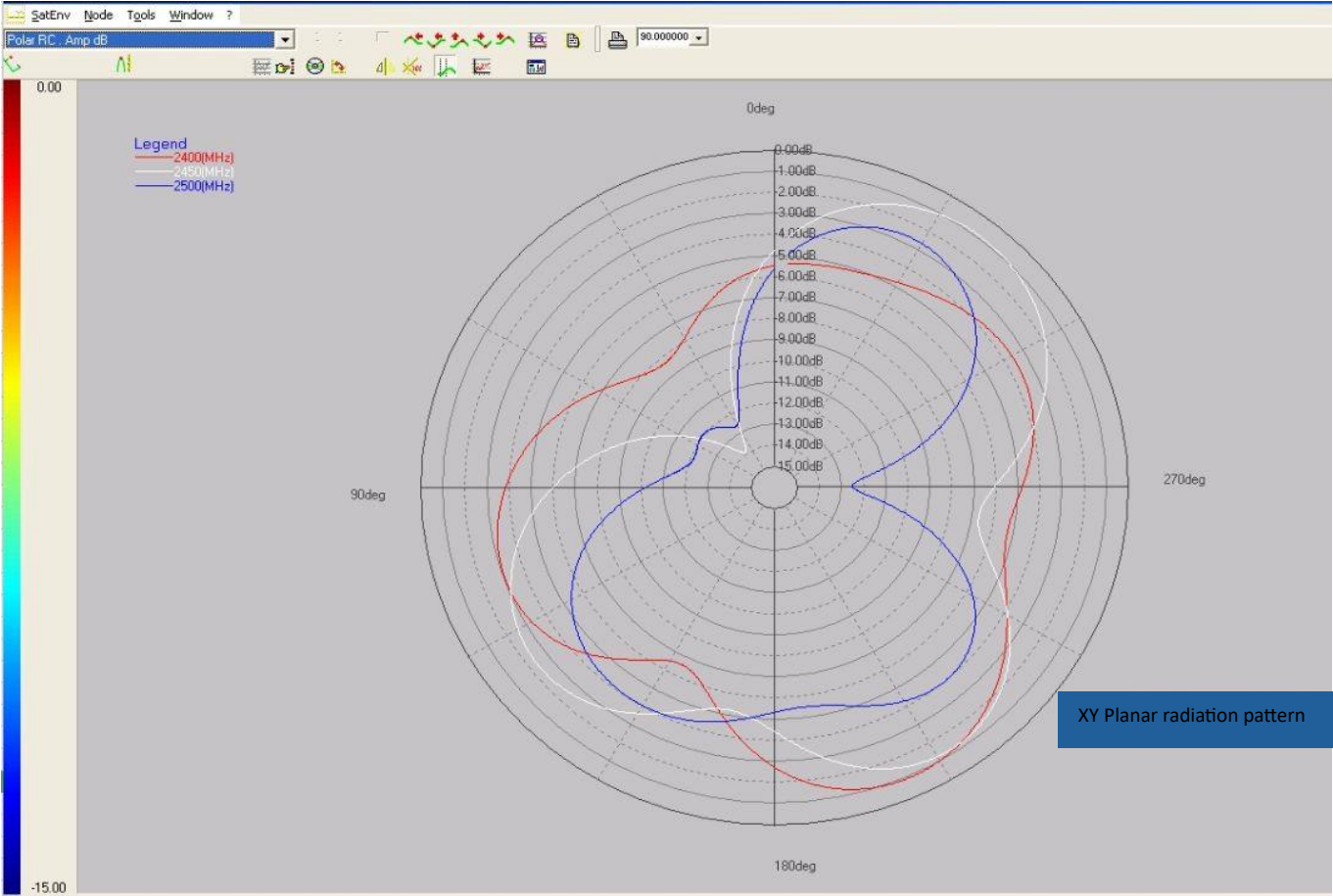


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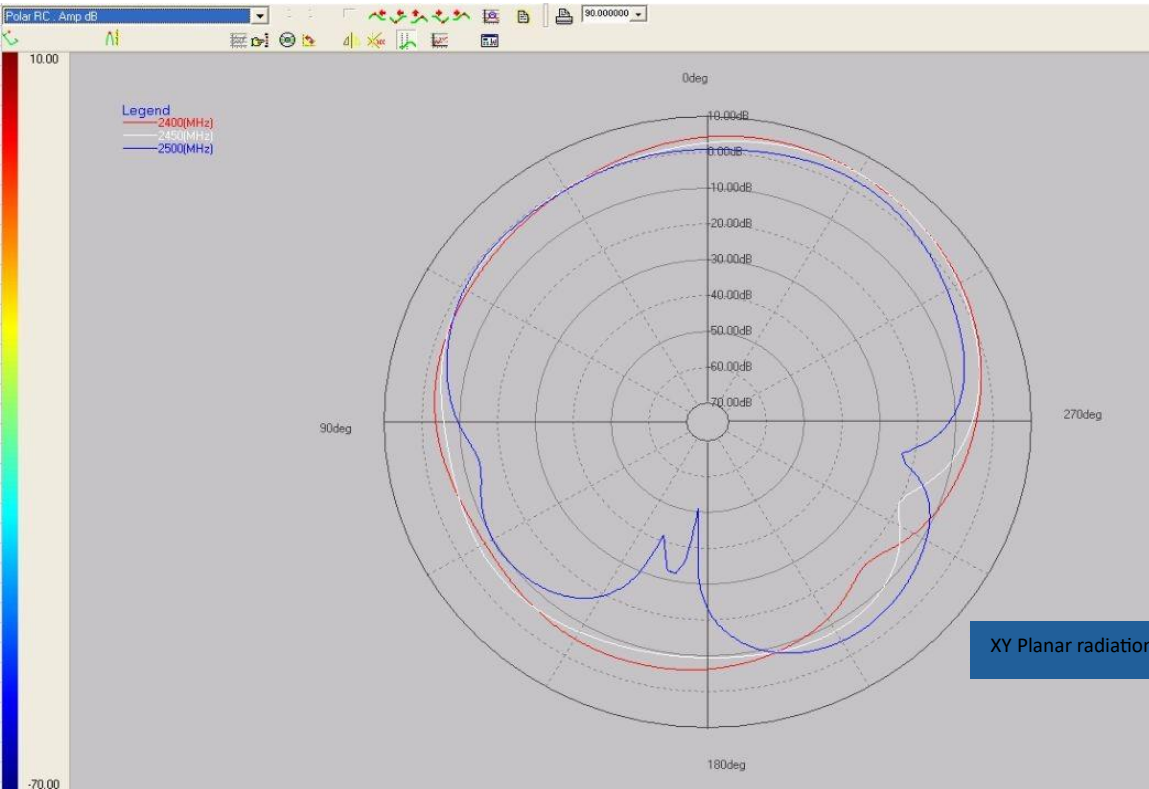
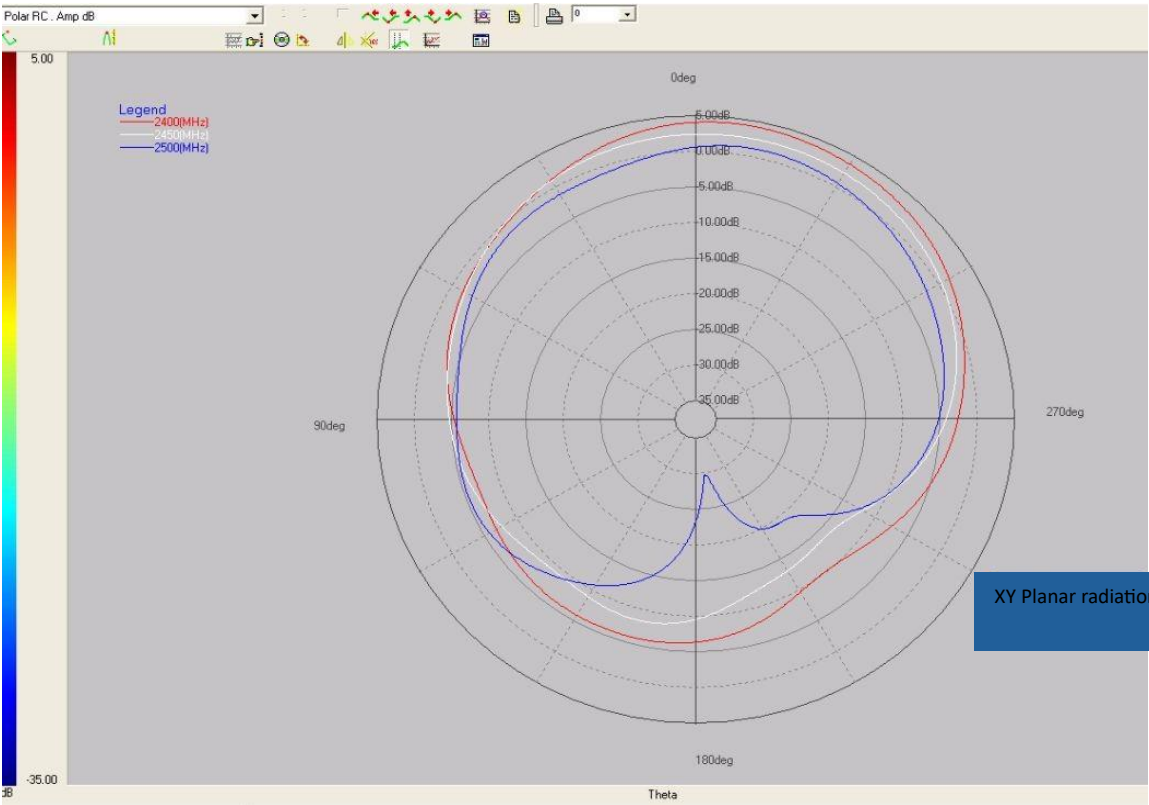
7. 4 Half-wave anechoic chamber test results: 2D far-field radiation patterns at 2.4, 2.45, and 2.5 GHz (provided for the XY, XZ, and YZ planes according to the test specimen orientation shown below), and 3D far-field radiation pattern at 2.45 GHz (refer to the 3D graphic screenshot below).



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