Electrical Performance of Bluetooth Antenna

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1.Introduce

This report summarizes the electrical performance structure drawings confirmed by the customers of RING project.The antenna is an assembly Inside the Finger ring machine (see Figure1).

The gain and efficiency of the antenna was measured in the Blue test chamber. The chamber provides less than –40 dB reflectivity from 600MHz through 6GHz.

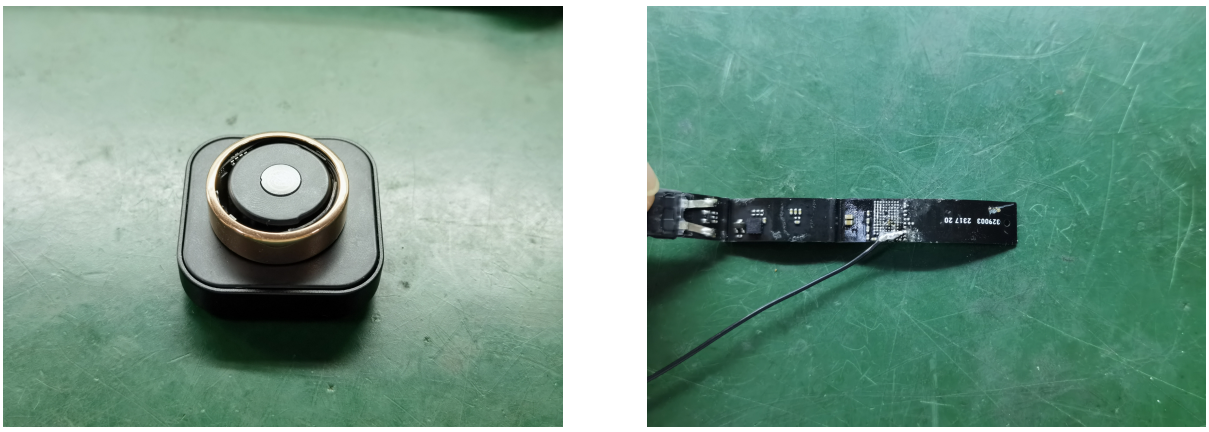

Figure 1: Proposed Antenna

Description of the RING Antenna information						
1	Antenna shape		board antenna			
2	Antenna type		Bluetooth			
3	Material		RN001			
4	Frequency	HZ	:BT 2.4G 2400M-2500M			
5	Efficiency	%	≥5			
6	Impedance	Ω	:50Ω			
7	Color		Black			
8	Edition		T01			
9	Other attributes			NO		
10	Manufacturer		SPEED			
11	Manufacturer model					

2. Measurement Data

2.1 Bluetooth Antenna

VSWR measurements (S11) were performed using Agilent 5071C Network Analyzer. The testing was performed in free space. This section summarizes the electrical performance structure drawings confirmed by the customers, 2400MHZ ~ 2500MHZ Bluetooth antenna.

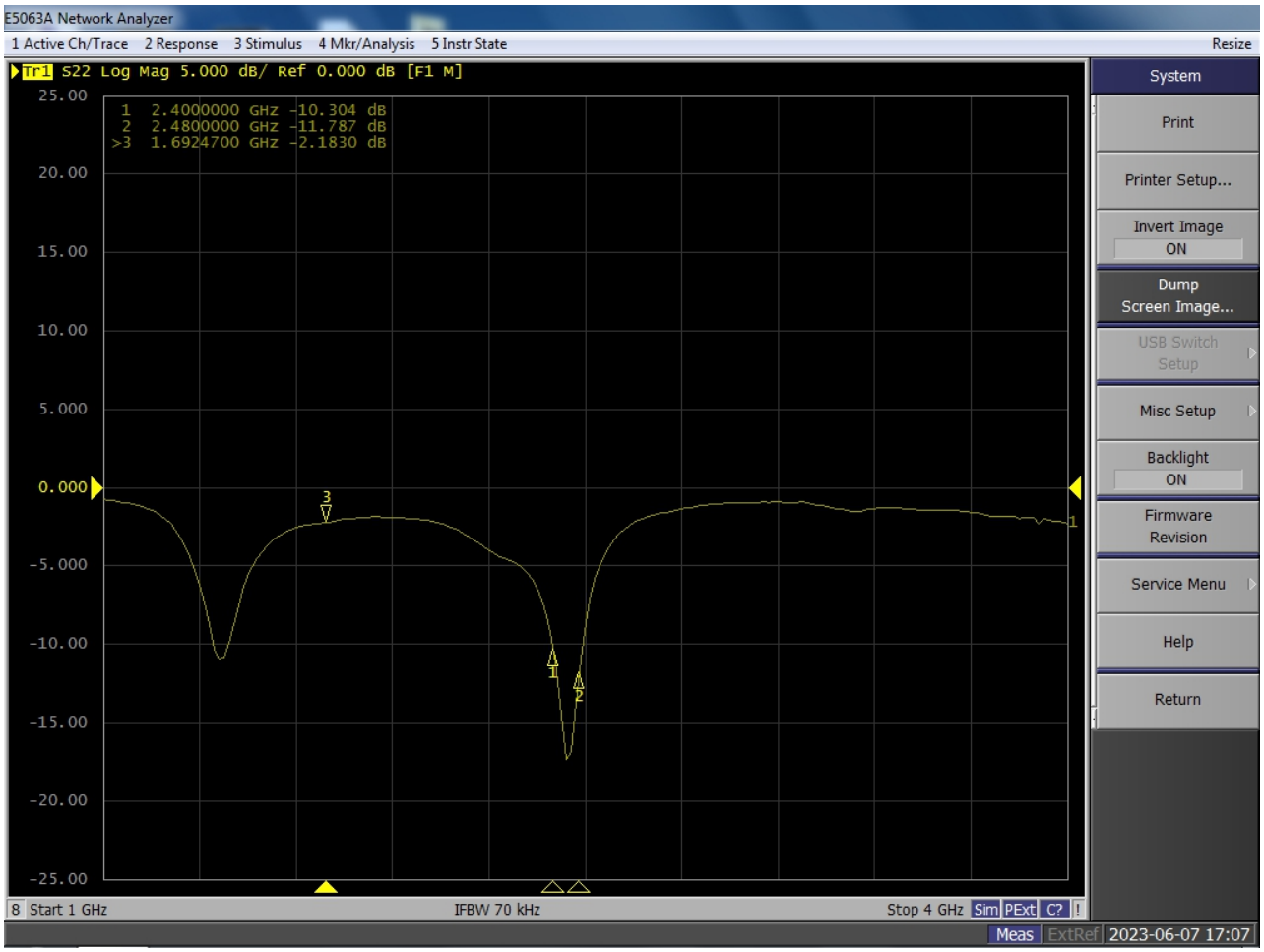

Figure 2: RETURN LOSS

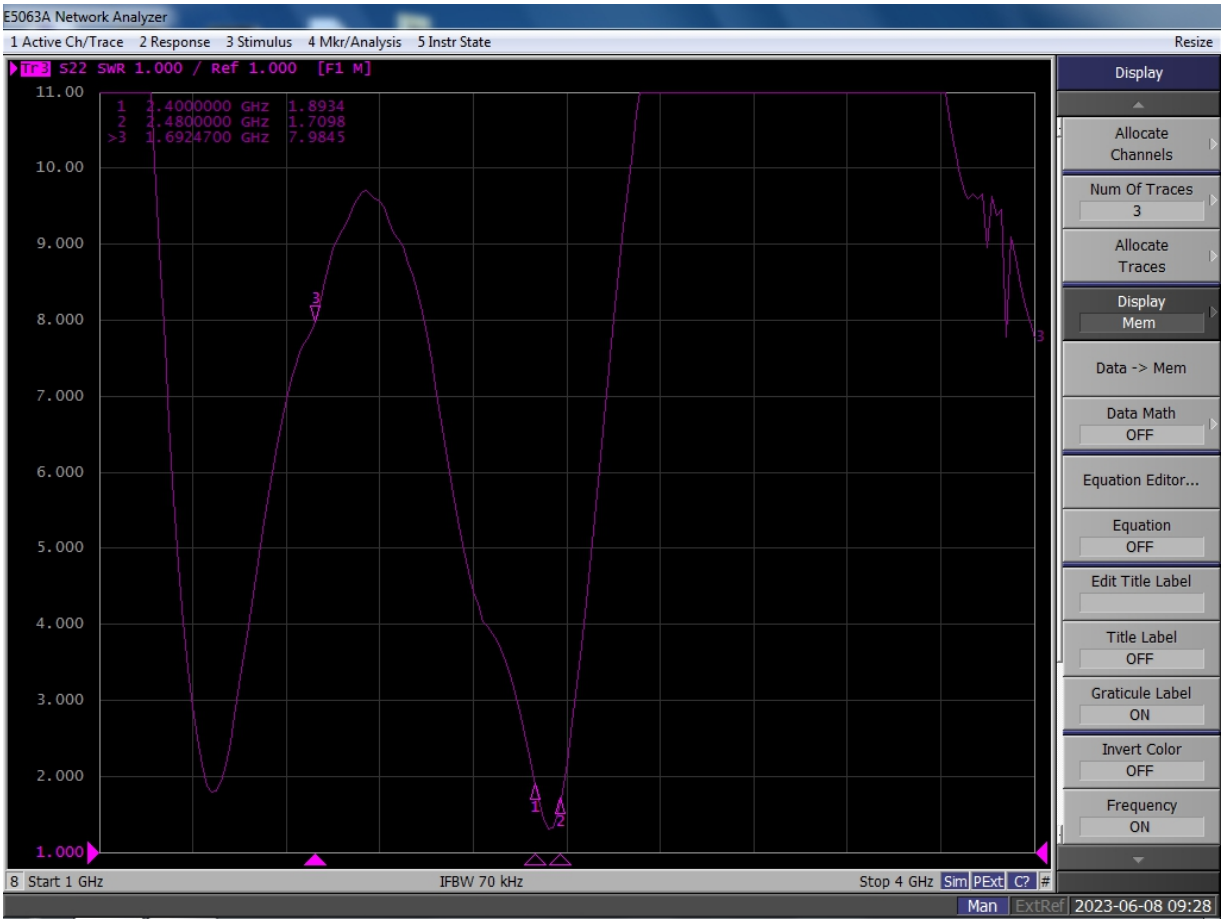

Figure 3: SWR

2.2 Gain

Frequency(MHZ)	Efficiency(db)	Efficiency(%)	Peak Gain（dbi）
2400	-12.5	5.63	-6.37
2410	-12.6	5.53	-6.47
2420	-12.5	5.69	-6.37
2430	-12.4	5.76	-6.27
2440	-12.2	6.08	-5.87
2450	-11.9	6.47	-5.59
2460	-11.9	6.46	-5.39
2470	-12	6.33	-5.67
2480	-12.4	5.8	-6.27
2490	-12.5	5.68	-6.37
2500	-12.5	5.63	-6.48

2.3 Directional Diagram

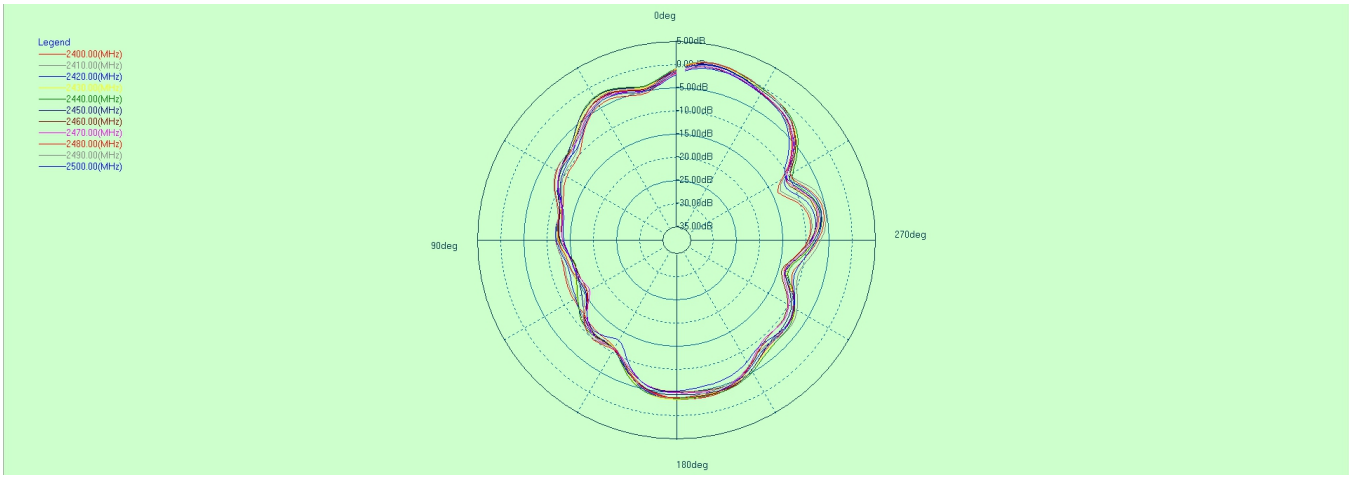

Figure 4: Theta=90°

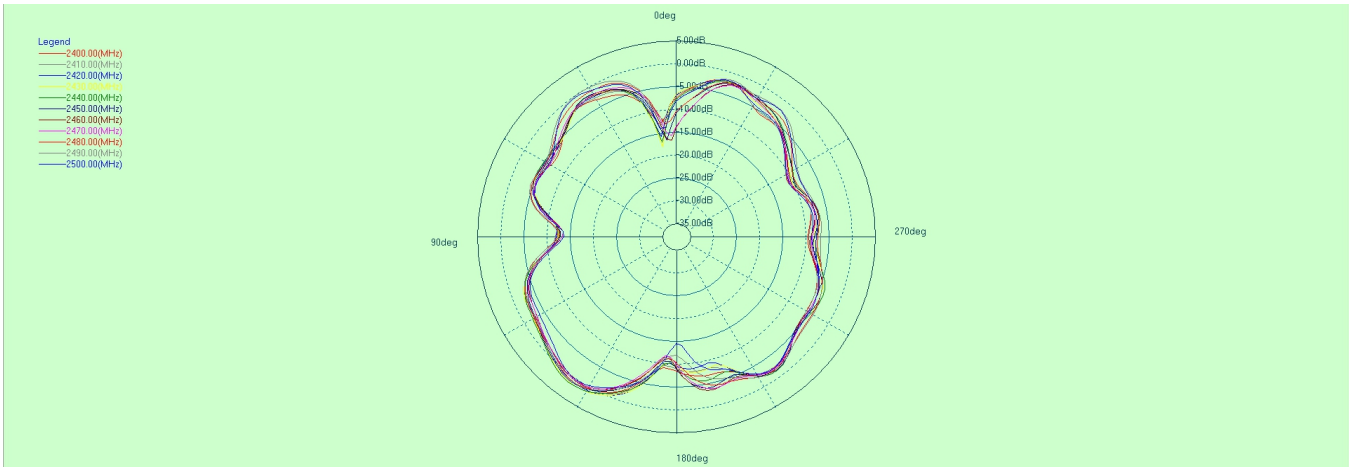

Figure 5: Phi=90°

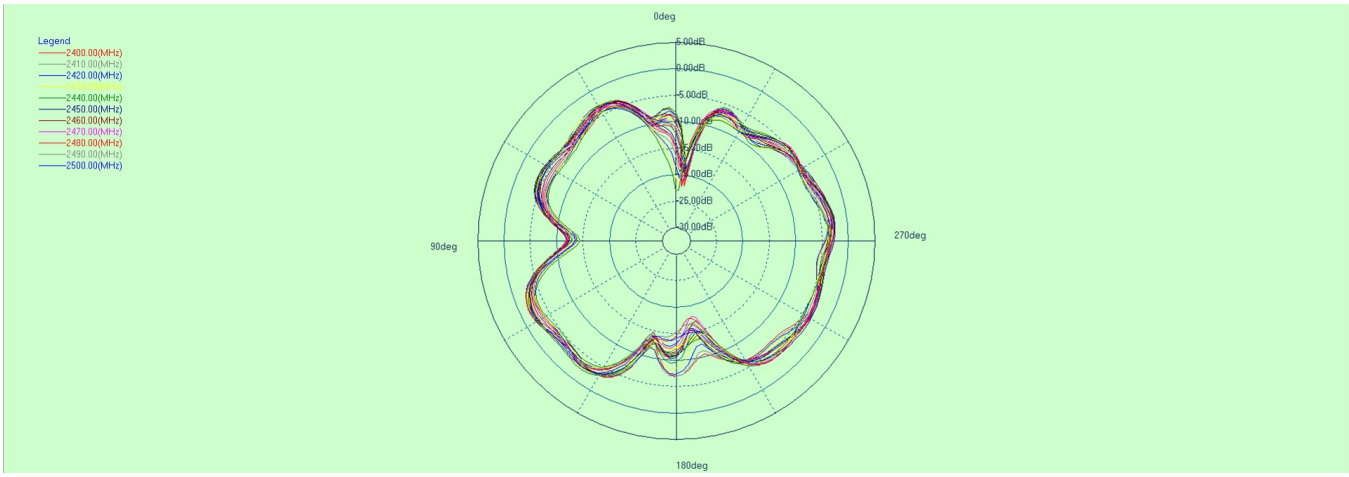

Figure 6: Phi=0°

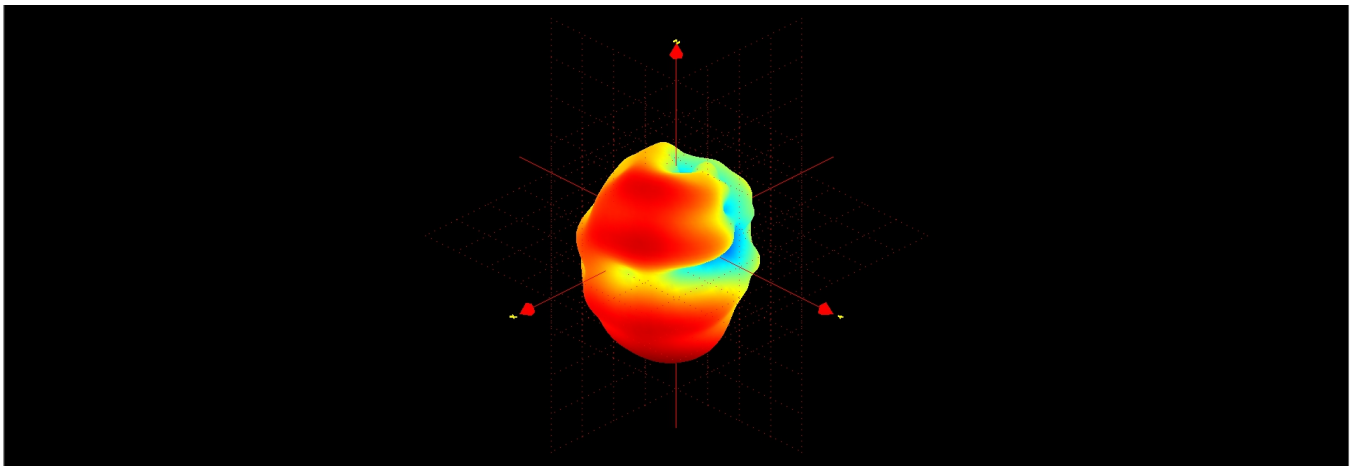

Figure 7: 3d model

3. Suggestions and Conclusion

This report summarizes the electrical performance structure drawings confirmed by the customers of RING project. Speed is looking forward to getting your approval. Thanks for your cooperation.