

承 认 书

SPECIFICATION FOR APPROVAL

Name: BT 2.4GHz Antenna

ItemNo: PCB Antenna

Customer name: SHEN ZHEN SHI JIA YAN TECHNOLOGY CO.,LTD

Company Address : 3Floor,B Bu li ding, DaHong Indu str ial
Park, GuangMin Distr ict, Shen zhen City, Ch ina

drawing			Customer approve
MADE	CHECKED	APPROVED	
QIU			
DATE: 2026. 3. 22			DATE

1 Specifications

This report mainly provides tests for various electrical performance parameters of the BT200-Pro-V1.0 antenna. Antenna:
BT 2.4 GHz On-board Antenna (as shown in Figure 1 below)

Figure 1 Appearance of PCB On-board Antenna

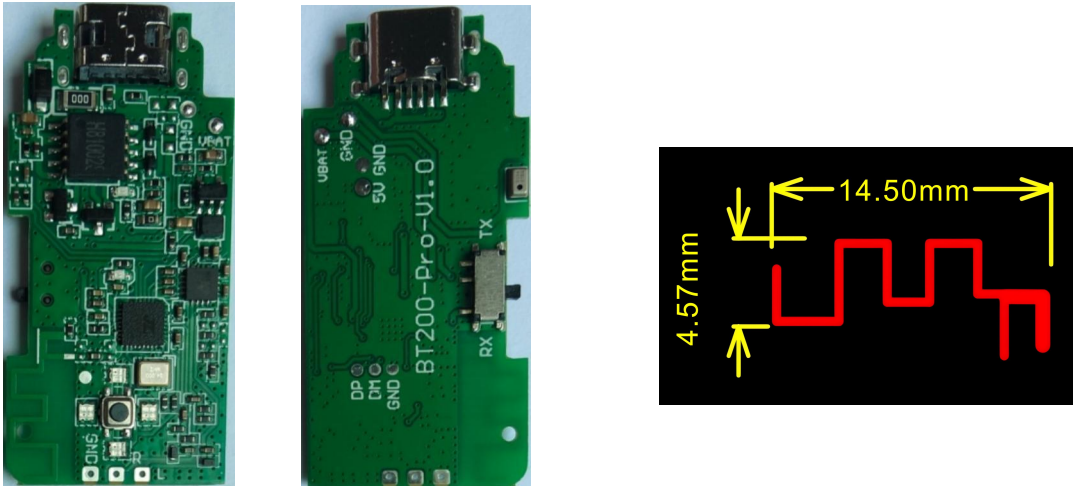


Figure 2 BT VSWR / Smith Chart

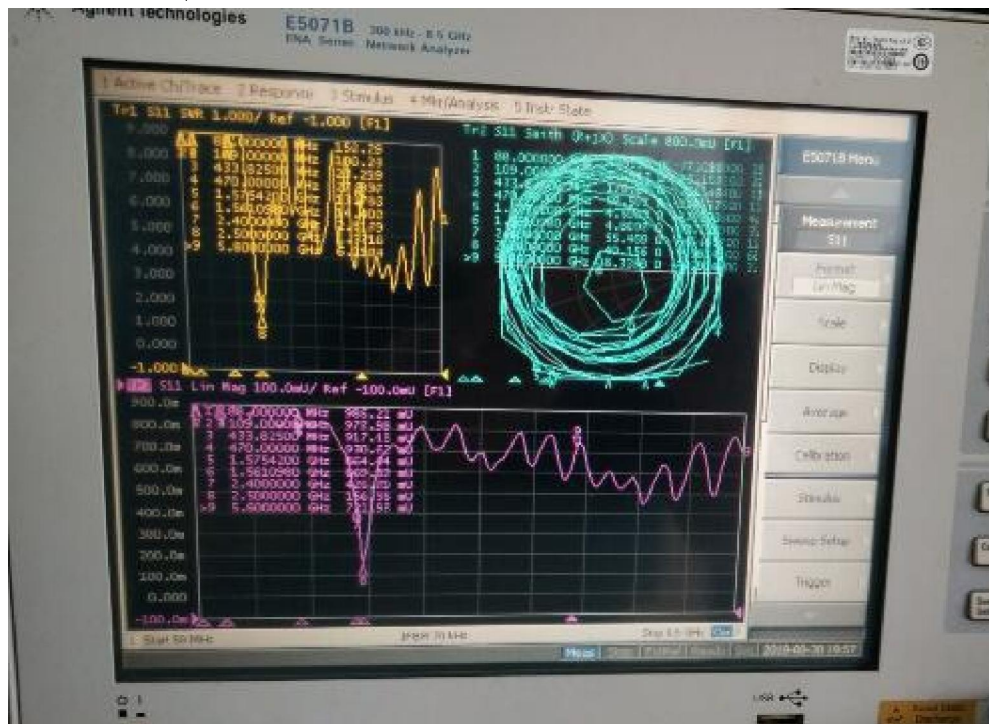


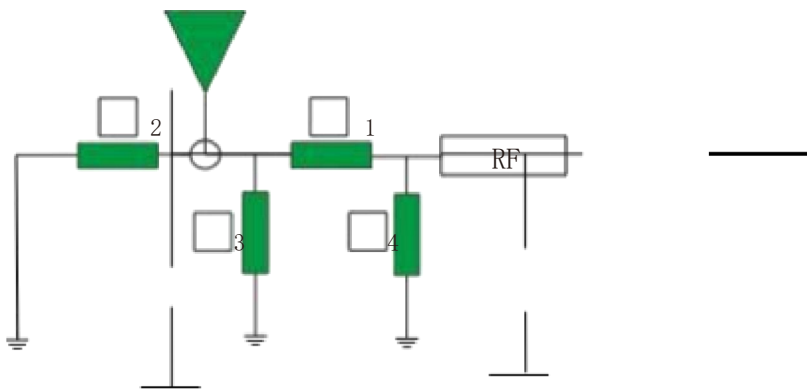
Figure 6 BT VSWR

Frequency (MHz)	2400	2500			
V SWR	1.1	1.7			

2 Electrical Performance

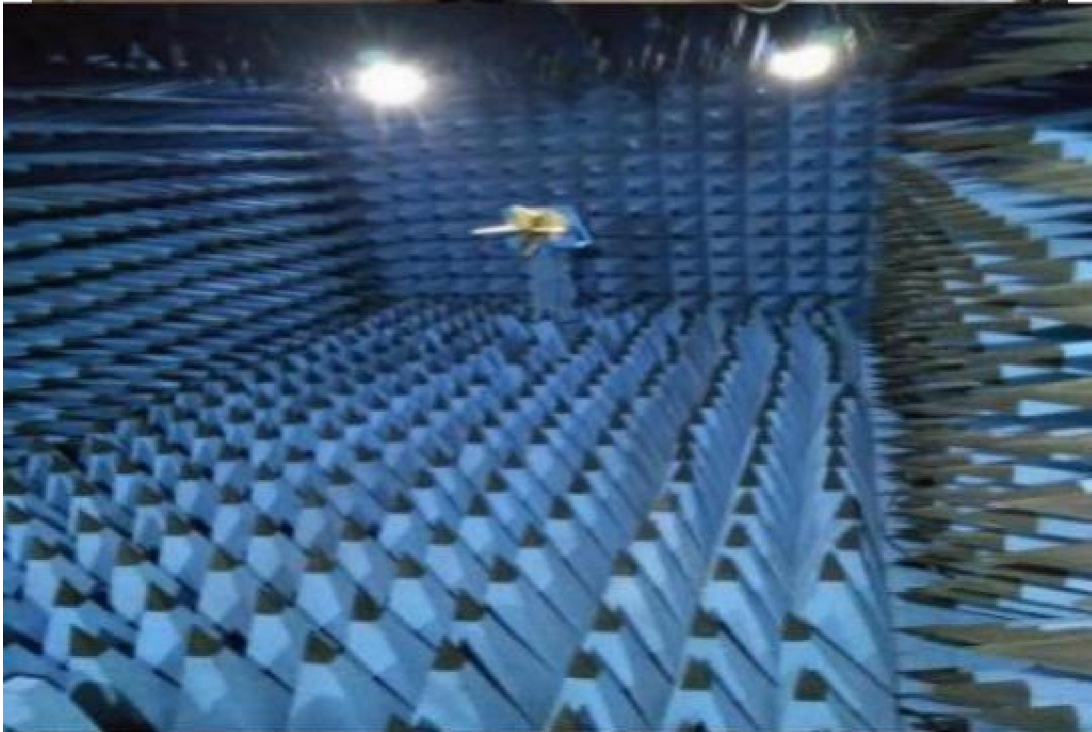
2. 1 Matching Circuit of BT Antenna

The matching circuit for this project is provided by the customer.



BOM	1	2	3	4	
Optimal for BT	2,7PF	0 R	NC	NC	
Trace Impedance	50 Ω				

Figure 3 OTA Anechoic Chamber



2.3 Measurement of Voltage Standing Wave Ratio (VSWR)

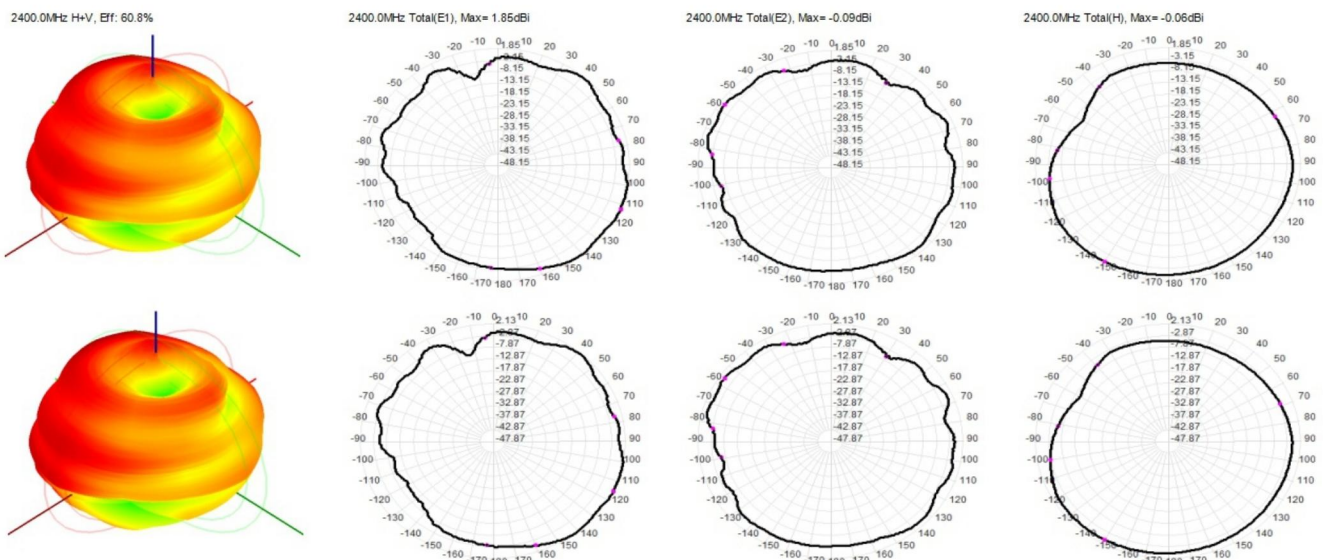
2.3.1 Test Setup

The VSWR test equipment is connected in sequence as follows: Agilent E5071B Network Analyzer → 50Ω Coaxial Cable → 120 mm Copper Tube → Test Fixture

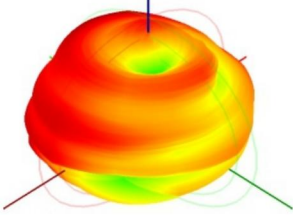
Processing of Test Fixture: A rigid cable is led out from the 50-ohm test point of the antenna on the flat PCB with an SMA-J connector. It connects to the copper tube fitted with a choke coil, followed by connection to other equipment in sequence.

Figure 4 3D Gain Radiation Pattern

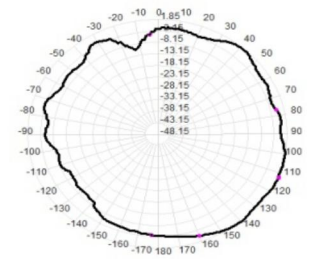
FEITUKEJI											
Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Efficiency (dBi)	-2.16	-2.00	-1.91	-1.63	-1.73	-1.69	-1.55	-1.27	-1.54	-1.72	-1.83
Gain (dBi)	1.92	2.20	2.38	3.11	2.97	3.13	3.23	3.29	2.56	2.22	2.38
Efficiency (%)	60.79	63.03	64.48	68.74	67.12	67.72	70.06	74.67	70.12	67.23	65.55
Directivity (dB)	4.08	4.20	4.29	4.74	4.70	4.82	4.78	4.56	4.10	3.95	4.21
Peak Gain Position (Theta)	79.00	79.00	40.00	44.00	44.00	139.00	137.00	83.00	140.00	140.00	140.00
Peak Gain Position (Phi)	330.00	330.00	30.00	30.00	30.00	30.00	30.00	330.00	360.00	360.00	360.00
Efficiency ThetaPol (%)	46.42	47.51	48.72	51.70	50.50	51.25	52.44	55.54	52.09	49.87	48.68
Efficiency PhiPol (%)	14.37	15.52	15.76	17.04	16.62	16.48	17.62	19.13	18.03	17.36	16.87
Upper Hem. Efficiency (%)	31.95	32.81	33.10	34.94	34.05	34.58	36.33	39.45	37.43	35.90	34.75
Lower Hem. Efficiency (%)	28.83	30.22	31.38	33.80	33.07	33.14	33.73	35.22	32.69	31.33	30.80



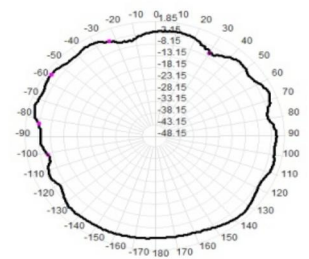
2402.0MHz H+V, Eff: 60.8%



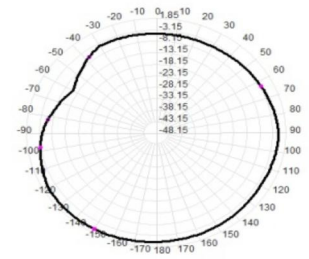
2402.0MHz Total(E1), Max= 1.85dBi



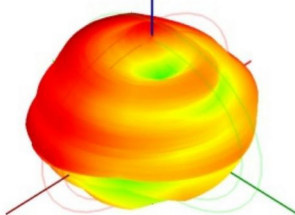
2402.0MHz Total(E2), Max=-0.09dBi



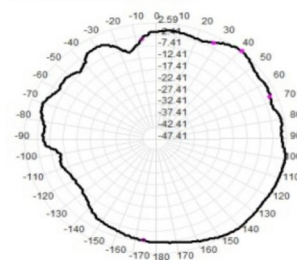
2402.0MHz Total(H), Max=-0.06dBi



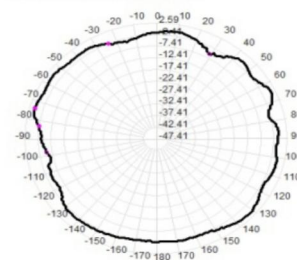
2441.0MHz H+V, Eff: 60.8%



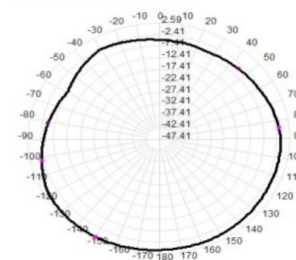
2441.0MHz Total(E1), Max= 1.85dBi



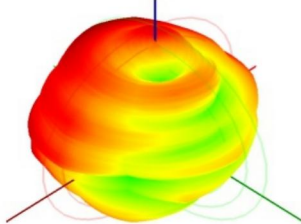
2441.0MHz Total(E2), Max=-0.09dBi



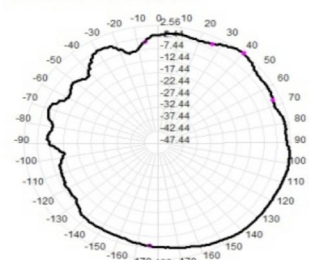
2441.0MHz Total(H), Max=-0.06dBi



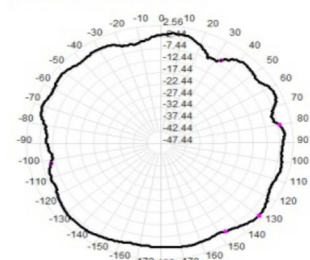
2470.0MHz H+V, Eff: 74.7%



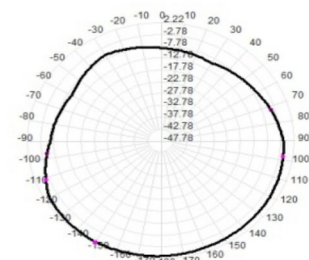
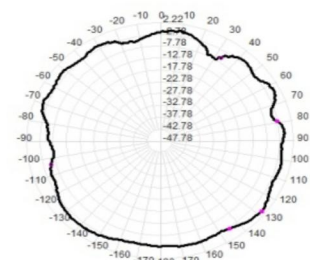
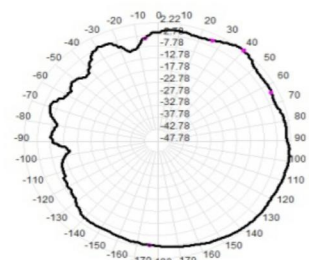
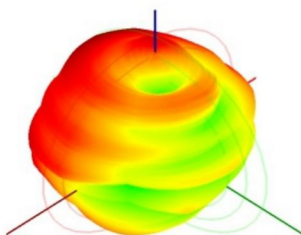
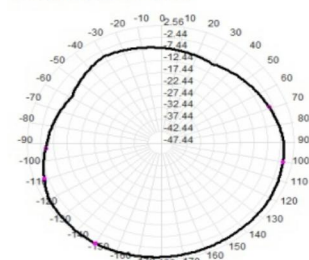
2470.0MHz Total(E1), Max= 3.07dBi



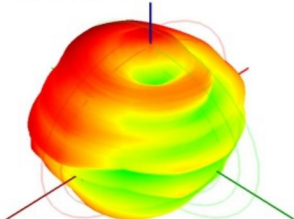
2470.0MHz Total(E2), Max= 1.15dBi



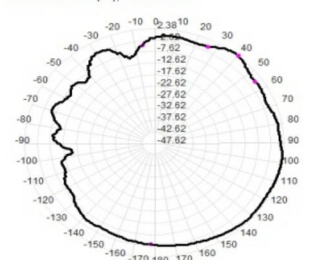
2470.0MHz Total(H), Max= 2.41dBi



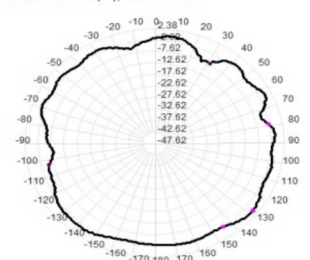
2480.0MHz H+V, Eff: 74.7%



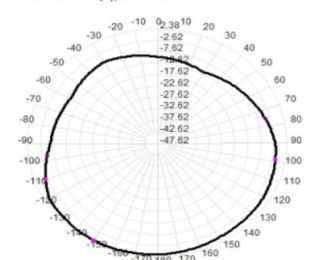
2480.0MHz Total(E1), Max= 3.07dBi



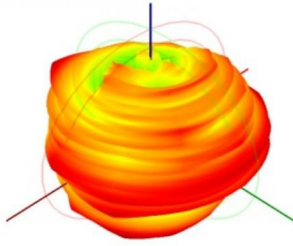
2480.0MHz Total(E2), Max= 1.15dBi



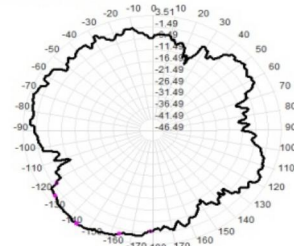
2480.0MHz Total(H), Max= 2.41dBi



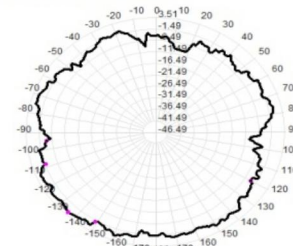
5740.0MHz H+V, Eff: 65.4%



5740.0MHz Total(E1), Max= 3.55dBi



5740.0MHz Total(E2), Max= 1.34dBi



5740.0MHz Total(H), Max= -0.21dBi

