
SPECIFICATION FOR APPROVAL

Supplier:ShenZhen YaXin communication Technology Co.,Ltd

Tel: 18665934465

E-mail:445711691@qq.com

Product Model: HT-TW230-R-V3

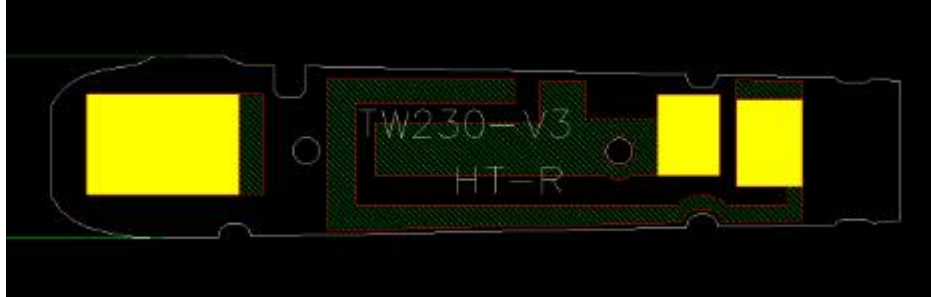
Supplier Address: 1007, Building C6, Shenyue U Center, Hangcheng Street, Bao'an District, Shenzhen

Approved by customer

Tested by	Checked by	Approved by	date

1. Antenna picture

The report mainly provides the test status of the electrical properties parameters of **HT-TW230-R-V3**. The **HT-TW230-R-V3** antenna is a **BT** Band. The antenna Picture and assembly are shown below.



FPC Antenna picture & assembly picture

2. Antenna Test Equipment Introduction

Test of antenna input characteristics using **Agilent E5071C** and **Agilent 5062A** vector network analyzer; The radiation pattern of the antenna are tested using the Satimo starlab 3D near field Anechoic Chamber, and the instrument is used to agilent8960 E5515 and Agilent E4438C. The test coordinates of the darkroom are as follows:

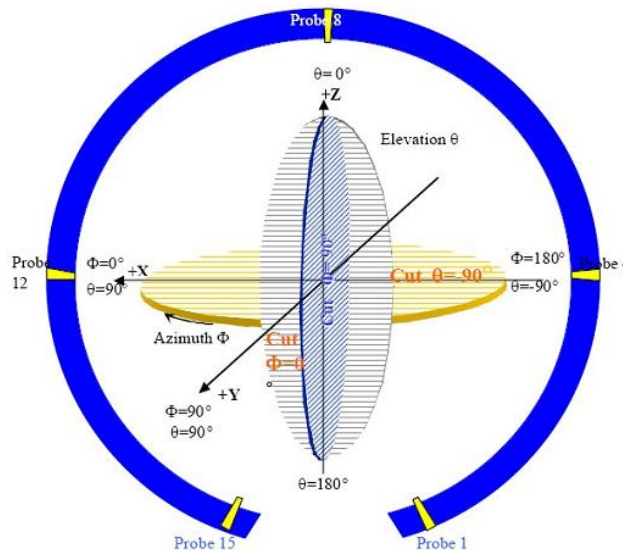


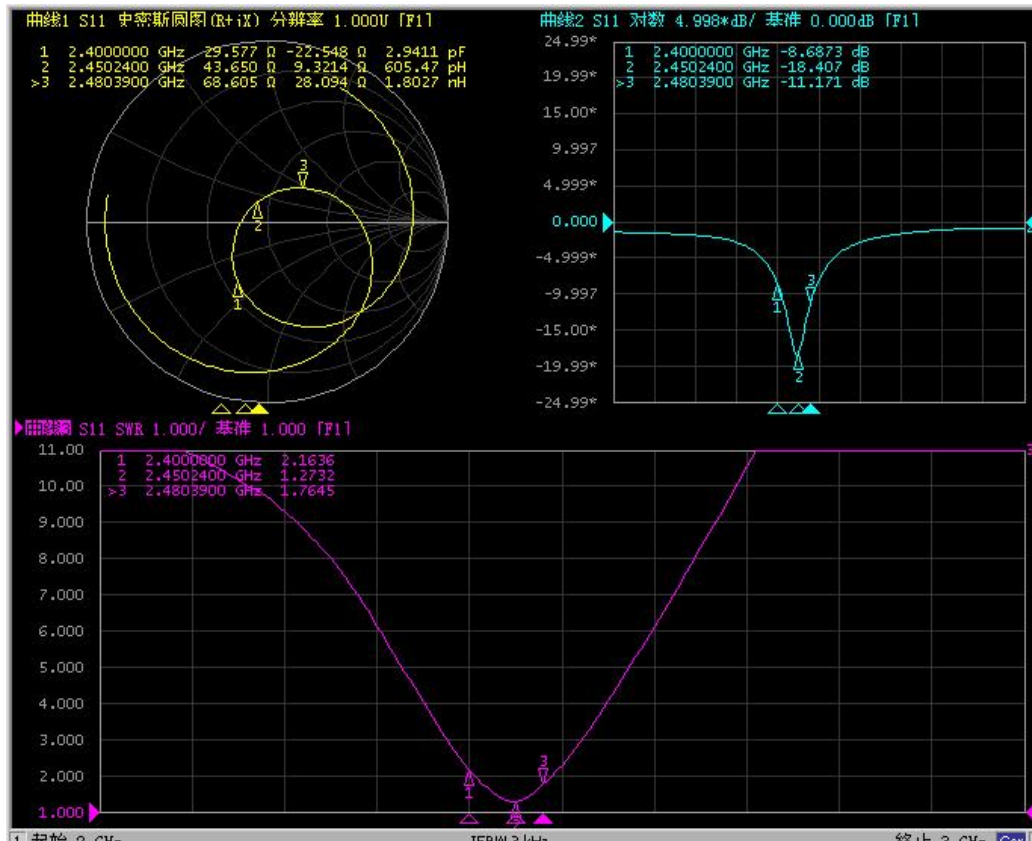
图4 3D微波暗室测试坐标系 (back view)

3. Electrical Specification

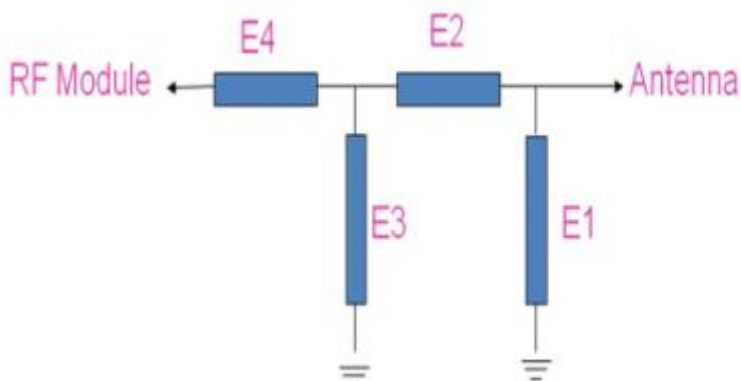
3-2 Passive S11 parameter

Measuring Method is a 50 Ω coaxial cable is connected to the antenna. Then this cable is connected to a network analyzer to measure the S11 parameter, Keeping this fixture away from metal at least 20cm.

VSWR



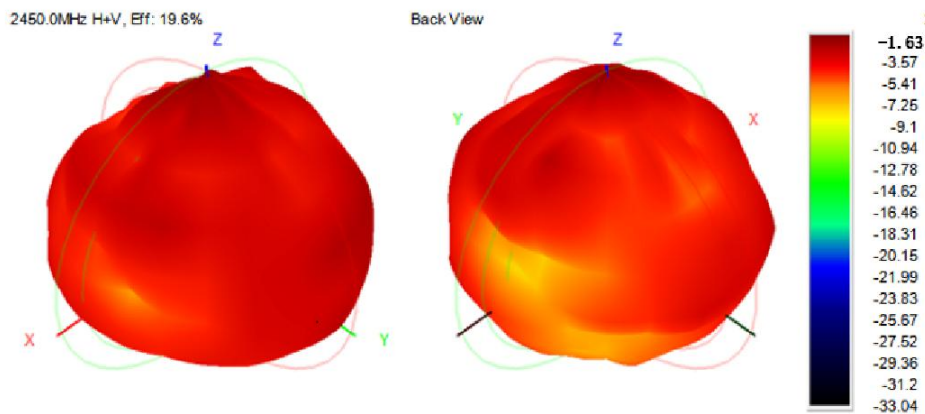
3-3 Antenna Matching Network



Element	R
E1	NA
E2	0 Ω
E3	NA
E4	0 Ω

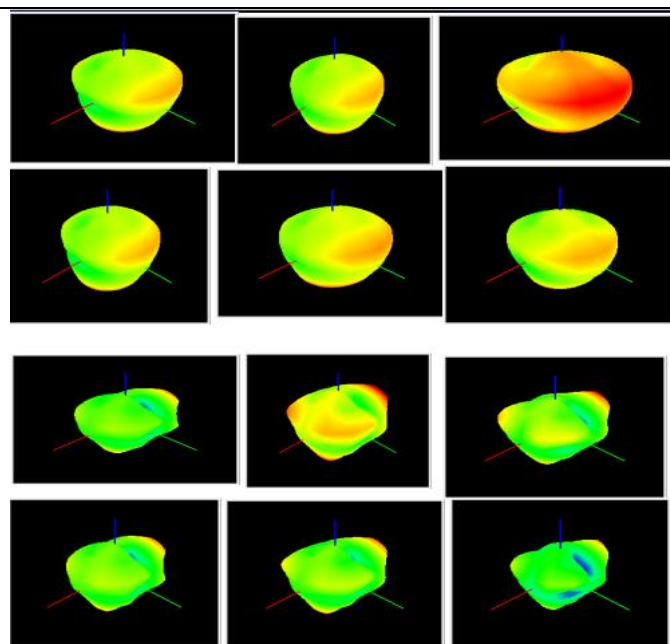
3-4 Efficiency and Antenna Gain

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)	-9.37	-9.00	-8.34	-7.59	-7.23	-7.08	-6.96	-7.21	-7.46	-7.79	-7.97
Gain (dBi)	-4.15	-4.42	-3.23	-2.14	-2.52	-1.73	-1.63	-1.86	-1.84	-2.47	-2.93
Efficiency (%)	11.57	12.59	14.65	17.42	18.94	19.59	20.12	18.99	17.93	16.65	15.95
Directivity (dB)	5.22	4.58	5.11	5.45	4.70	5.35	5.33	5.36	5.63	5.31	5.04
Peak Gain Position (Theta)	30.00	90.00	75.00	90.00	0.00	0.00	0.00	0.00	15.00	15.00	75.00
Peak Gain Position (Phi)	120.00	105.00	120.00	105.00	165.00	15.00	120.00	135.00	120.00	120.00	135.00
Efficiency ThetaPol (%)	4.34	4.60	5.39	6.53	7.70	8.73	9.32	8.31	7.87	7.06	6.23
Efficiency PhiPol (%)	7.23	7.99	9.26	10.89	11.23	10.86	10.81	10.68	10.06	9.58	9.72
Upper Hem. Efficiency (%)	7.05	7.66	9.08	11.09	12.14	12.55	12.90	11.85	11.18	10.19	9.65
Lower Hem. Efficiency (%)	4.52	4.94	5.56	6.33	6.80	7.05	7.22	7.15	6.74	6.46	6.30



3-5 OTA Test

FS		
BT Test		R
CH	TRP	TIS
0	5.82	-92.91
39	5.49	-91.2
78	5.18	-91.28
BH		
BT Test		R
CH	TRP	TIS
0	0.92	-89.47
39	1.35	-87.47
78	2.34	-88.62



4. Mechanical Specification:

Mechanical Configuration (Unit: mm)

The appearance of the antenna is according to drawing Figure 10

