

DONGGUAN CITY SLEING INTELLIGENCE TECHNOLOGY CO.,LTD

SPECIFICATION FOR APPROVAL

CUSTOMER: _____

CUSTOMER NO: T8911C 琛玛壳

SUPPLIER NO: SLB-209300145-C01

送样日期Date: 2017.03.24

版本Revision: X2

客户确认 CUSTOMER APPROVED BY		
APPROVAL	CHIEF	SUPERVISOR

供方确认 SUPPLIER SIGNATURE		
APPROVAL	CHECK	DESIGN
		 

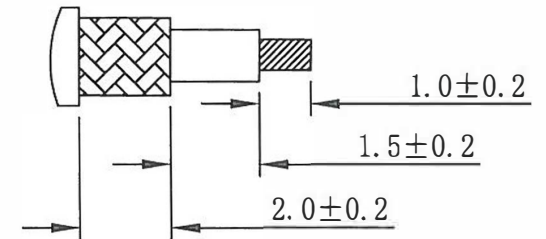
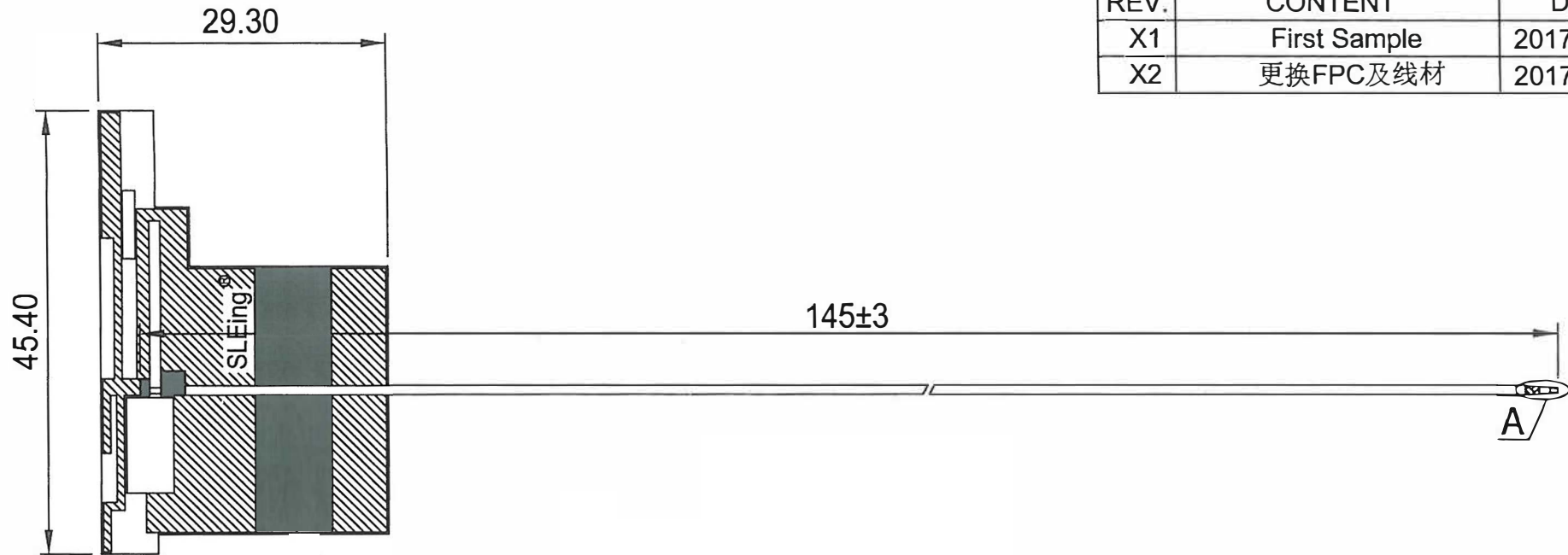
DONGGUAN CITY SLEING INTELLIGENCE TECHNOLOGY CO.,LTD

电话：0769-89208968 传真：0769-89208969

承认书项目表

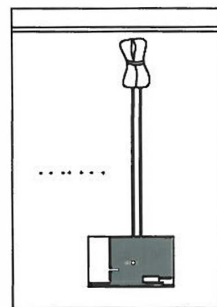
NO.	内容（Contents）	页数 （Number of Page）	页码 （Page Code）
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REV.	CONTENT	DATE
X1	First Sample	2017.03.15
X2	更换FPC及线材	2017.03.24

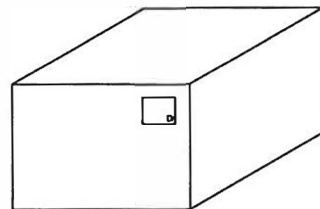


SECTION A
SCALE 5:1

Specification:
Frequency Rang:2.4-2.5/5.15-5.85GHz(带机测试)
Return Loss:-10 dB Max
VSWR:<= 1.92



25pcs/Bundle
Packing:50pcs/bag



外箱须贴GP标签与物料标签各1PCS

SLEing® 森岭 东莞市森岭智能科技有限公司 DONGGUAN SLEing INTEL-TECH CO.,LTD			CUSTOMER	
			PART NO	
			TITLE	
			WIFI+BT+GPS ANTENNA	
 TOLERANCE UNLESS OTHERWISE SPECIFIED ANGLES ±0.5° X. ±2.0 X.XX ±0.2 XX. ±5.0 X.X ±0.5 XXX. ±10.0			S.L P/NO	
			SLB-209300145-C01	
			SIZE	DRAWN
			A4	3/1/2017
			CHECKED	APPROVED

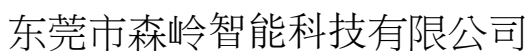
Q'TY	REMARK	DESCRIPTION	PART NAME
1	300MP Adhesive	L45.4*W29.3*T0.1mm Black	FPCB
1		Φ0.81mm Coaxial Cable Black,50Ω	Cable

Electrical Properties

Frequency	1.57542GHz/2.4~2.5/5.15~5.8G Hz(带机测试)
Impedance	50 Ohm Nominal
V.S.W.R	≤1.92
Return Loss	-10 dB Max
Radiation	Omni-directional
Gain (Peak)	2±0.5 dBi
Polarization	Linear, Vertical
Admitted Power	2 W
Connector	Tin

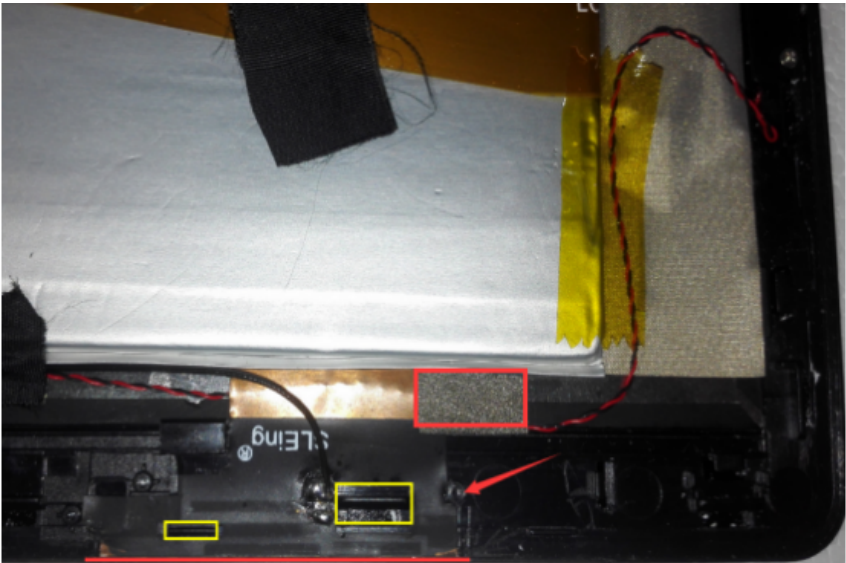
Physical Properties

Antenna Material	FPCB
Cable Type	Φ1.13mm Gray
Operating Temp.	-40~+85 °C
Storage Temp.	-40~+85 °C



天线组装图

Antenna Profile

<i>Devie</i>	
<i>Antenna</i>	

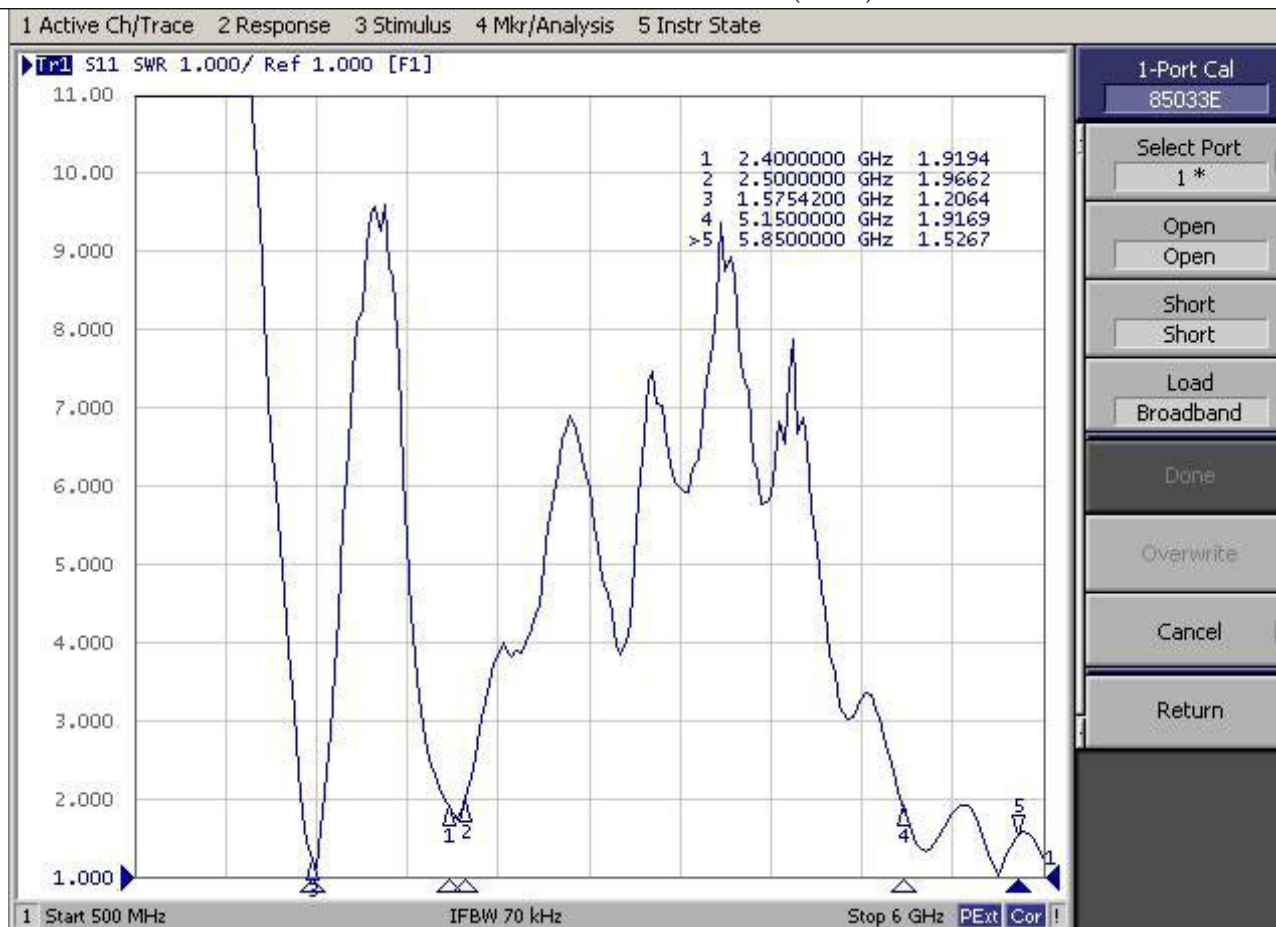
S 参数测试

S ParameterTest

Agilent E5071C Network Analyzer



WiFi+BT+GPS Antenna (NO.1)



1-Port Cal
85033E

Select Port

1 *

Open

Open

Short

Short

Load

Broadband

Done

Overwrite

Cancel

Return

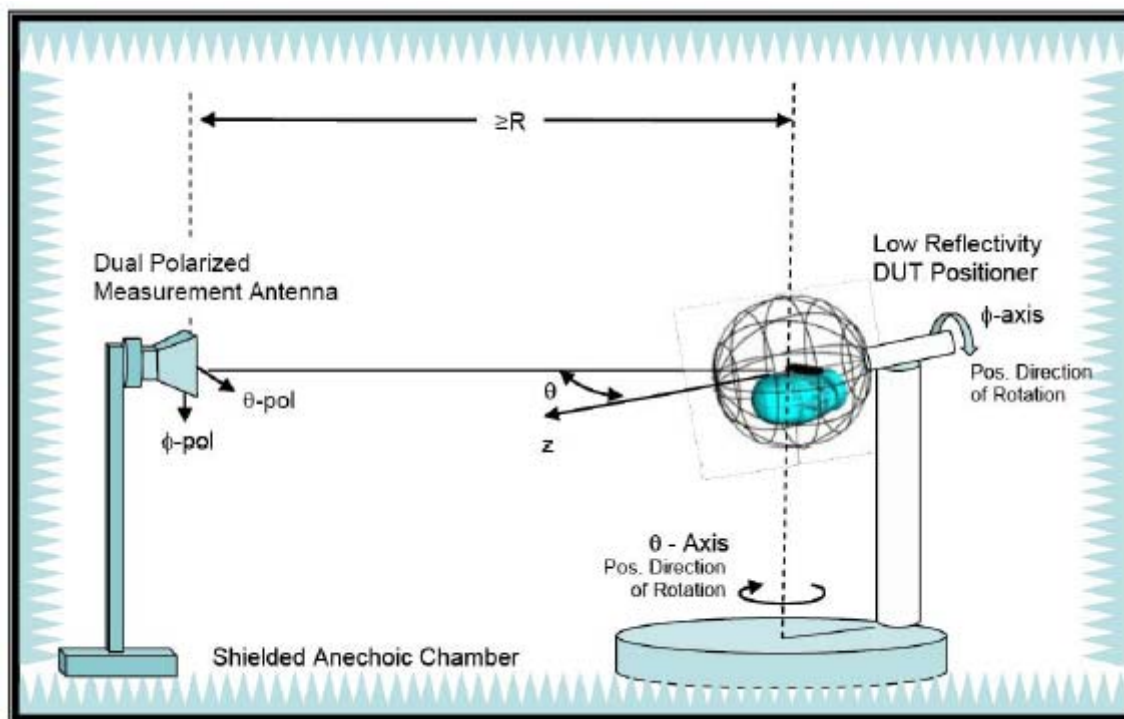
◆ 硬體品項及控制接線以藍色標示者為附加套件所提供之組件

◆ 射頻組件及射頻連結線路以紅色標示者(不含虛線部分)為附加套件所提供之射頻附屬配件

The diagram illustrates the hardware configuration for the CTIA TRP/TIS Test. Key components include:

- PC1:** Connected via COM1 and GPIB Card.
- (BSST) Base Station Simulator for CTIA TRP/TIS Test:** Features AD1, AD2, W06, and W09 ports.
- Standard Beam Controller SBC1:** Includes Trig In, Trig Out, RS-485, and SCU1 ports.
- Antenna Range Controller:** Features J1, J2, J3, and G ports.
- Antennas:** Includes a 20' Source Antenna, a 20' Sink Antenna, and a New Step Motor for Roll Stage.
- Motors:** Existing Az Motor as Theta Stage and New Step Motor for Roll Stage.

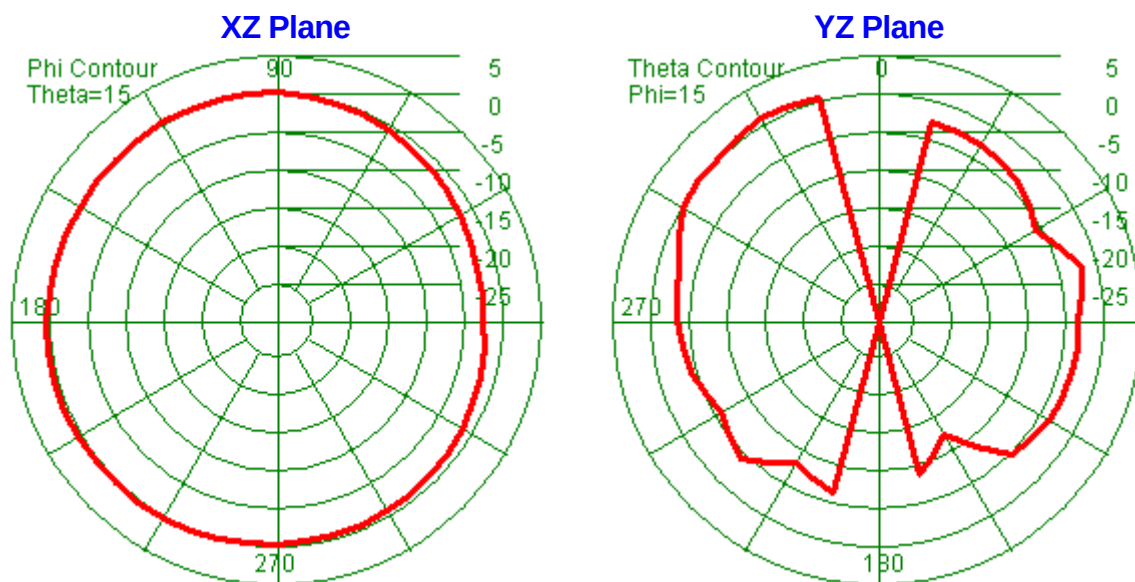
Connections are color-coded: Blue lines represent hardware items and control wiring provided by the kit. Red lines represent RF components and RF connection paths provided by the kit, excluding dashed lines.



Configuration of 3D Chamber

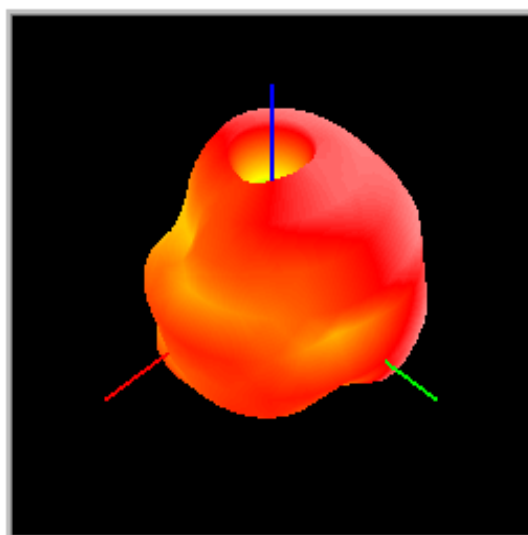
方向图（2.4G） Patten

1.3 2D Radiation patterns test results (Passive Antenna)



1.5 3D Radiation patterns test results (Passive Antenna)

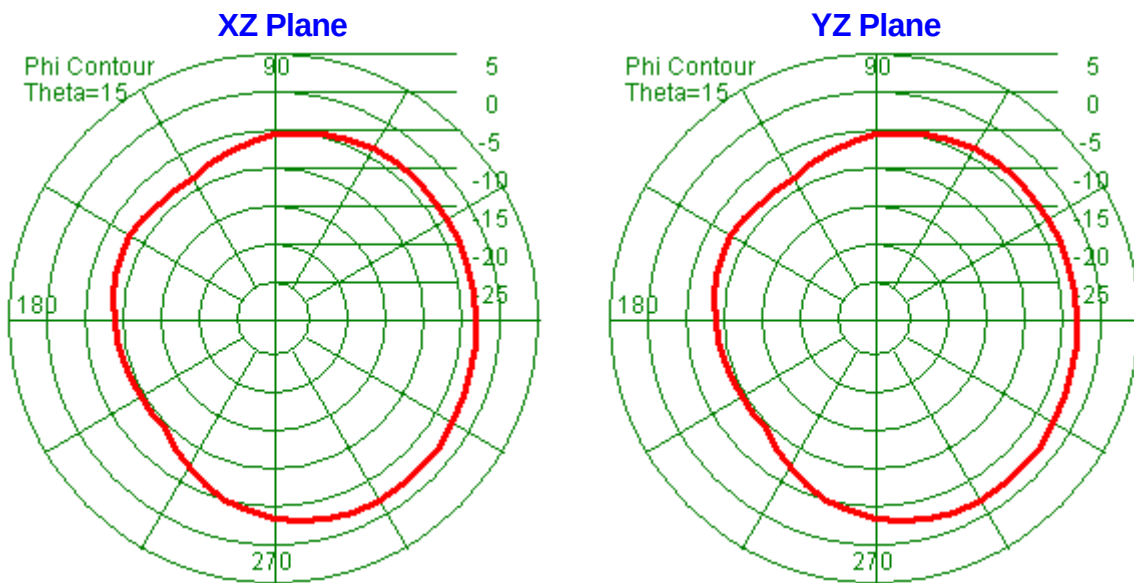
3D



方向图 (5.8G)

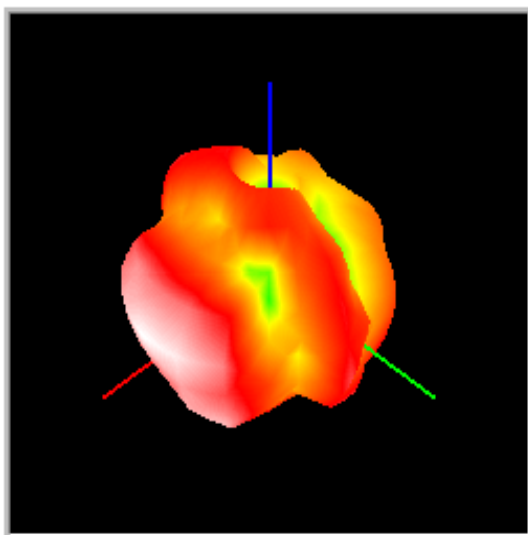
Patten

1.3 2D Radiation patterns test results (Passive Antenna)



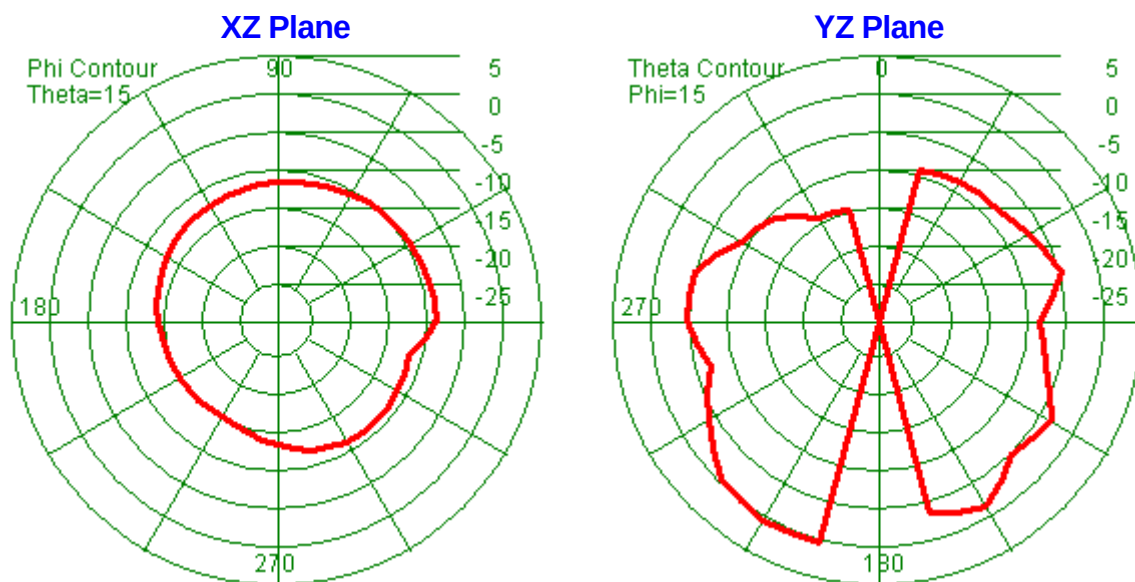
1.5 3D Radiation patterns test results (Passive Antenna)

3D



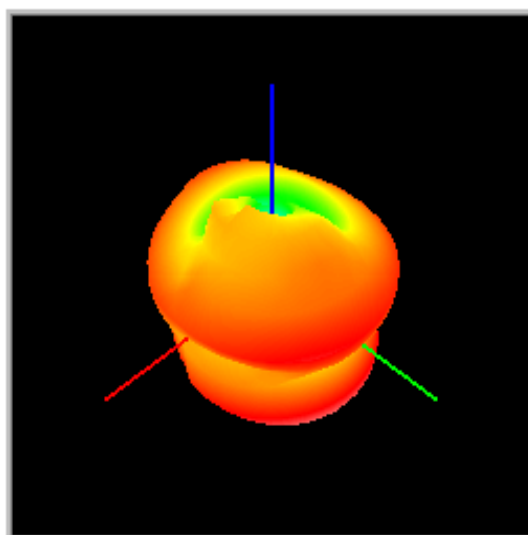
方向图（GPS） Patten

1.3 2D Radiation patterns test results (Passive Antenna)



1.5 3D Radiation patterns test results (Passive Antenna)

3D



测试效率

Test Efficiency

2.4G

Test Point ID	Freq. (MHz)	TRP (dBm)	Gain (dBi)	Directivity (dBi)	Efficiency (%)	Efficiency (dB)	Max (dBm)	Theta of Max	Phi of Max	Min (dBm)	Theta of Min	Phi of Min	AVG (dBm)	Max/Min (dB)	Max/AVG (dB)	Min/AVG (dB)
1	2412.0	2412.00	1.47	3.43	53.6%	-1.97	1.47	90	210	-24.44	0	120	-3.11	25.90	4.57	-21.33
2	2417.0	2417.00	1.39	3.35	53.7%	-1.96	1.39	90	210	-21.20	0	150	-2.99	22.59	4.38	-18.21
3	2422.0	2422.00	1.47	3.81	58.4%	-2.33	1.47	90	150	-22.83	0	120	-3.36	24.30	4.84	-19.46
4	2427.0	2427.00	1.33	3.73	57.7%	-2.39	1.33	90	150	-20.51	0	90	-3.51	21.84	4.85	-16.99
5	2432.0	2432.00	1.71	3.96	59.5%	-2.25	1.71	90	150	-19.78	0	60	-3.42	21.49	5.13	-16.36
6	2437.0	2437.00	1.31	3.70	57.7%	-2.39	1.31	90	150	-22.81	0	90	-3.48	24.12	4.79	-19.33
7	2442.0	2442.00	1.06	3.55	56.4%	-2.49	1.06	90	150	-18.25	0	30	-3.60	19.32	4.66	-14.66
8	2447.0	2447.00	1.02	3.43	57.5%	-2.41	1.02	90	150	-16.70	0	120	-3.65	17.72	4.67	-13.05
9	2452.0	2452.00	0.95	3.42	56.6%	-2.47	0.95	90	210	-18.81	150	0	-3.74	19.76	4.68	-15.07
10	2457.0	2457.00	1.57	3.88	58.8%	-2.31	1.57	90	150	-20.05	0	30	-3.43	21.61	5.00	-16.62
11	2462.0	2462.00	1.82	4.17	60.7%	-2.17	1.82	90	150	-18.55	0	60	-3.23	20.56	5.23	-15.32
12	2467.0	2467.00	1.16	3.47	58.7%	-2.31	1.16	90	150	-17.56	0	90	-3.54	18.72	4.70	-14.02
13	2472.0	2472.00	1.10	3.51	57.3%	-2.42	1.10	90	330	-19.15	0	0	-3.76	20.25	4.86	-15.39
14	2484.0	2484.00	0.94	3.24	58.8%	-2.30	0.94	90	30	-18.52	0	120	-3.54	19.46	4.48	-14.98

5.8G

Test Point ID	Freq. (MHz)	TRP (dBm)	Gain (dBi)	Directivity (dBi)	Efficiency (%)	Efficiency (dB)	Max (dBm)	Theta of Max	Phi of Max	Min (dBm)	Theta of Min	Phi of Min	AVG (dBm)	Max/Min (dB)	Max/AVG (dB)	Min/AVG (dB)
1	5150.0	5150.00	1.38	6.00	44.5%	-4.62	1.38	75	0	-95.99	0	0	-5.77	97.37	7.15	-90.22
2	5220.0	5220.00	1.18	5.53	46.8%	-4.35	1.18	75	0	-95.99	0	0	-5.45	97.17	6.63	-90.54
3	5290.0	5290.00	1.06	4.73	43.2%	-4.78	1.06	75	0	-95.99	0	0	-6.09	95.93	6.03	-89.90
4	5360.0	5360.00	1.07	4.07	40.6%	-5.14	1.07	75	345	-95.99	0	0	-6.64	94.92	5.57	-89.35
5	5430.0	5430.00	1.07	3.82	42.5%	-4.89	1.07	150	135	-95.99	0	0	-6.53	94.92	5.47	-89.46
6	5500.0	5500.00	1.52	3.95	45.7%	-4.47	1.52	75	345	-95.99	0	0	-5.73	95.47	5.21	-90.26
7	5570.0	5570.00	1.01	4.01	49.6%	-4.02	1.01	150	135	-95.99	0	0	-5.11	95.98	5.10	-90.88
8	5640.0	5640.00	1.81	3.73	45.1%	-4.54	1.81	150	135	-95.99	0	0	-6.10	95.18	5.29	-89.89
9	5710.0	5710.00	1.10	4.33	46.1%	-4.43	1.10	150	135	-95.99	0	0	-5.89	95.89	5.79	-90.10
10	5780.0	5780.00	1.32	4.79	40.8%	-5.11	1.32	150	300	-95.99	0	0	-6.35	95.67	6.03	-89.64
11	5850.0	5850.00	1.20	5.07	42.6%	-4.87	1.20	150	150	-95.99	0	0	-6.16	96.19	6.36	-89.83
12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GPS

Test Point ID	Freq. (MHz)	TRP (dBm)	Gain (dBi)	Directivity (dBi)	Efficiency (%)	Efficiency (dB)	Max (dBm)	Theta of Max	Phi of Max	Min (dBm)	Theta of Min	Phi of Min	AVG (dBm)	Max/Min (dB)	Max/AVG (dB)	Min/AVG (dB)
1	1570.0	1570.00	1.62	4.16	44.2%	-3.54	1.62	150	210	-95.99	0	0	-5.09	96.61	5.71	-90.90
2	1571.0	1571.00	1.54	4.19	43.1%	-3.65	1.54	150	225	-95.99	0	0	-5.19	96.53	5.72	-90.80
3	1572.0	1572.00	1.43	4.20	42.0%	-3.77	1.43	150	210	-95.99	0	0	-5.29	96.42	5.73	-90.70
4	1573.0	1573.00	1.34	4.22	40.9%	-3.88	1.34	150	225	-95.99	0	0	-5.40	96.33	5.74	-90.59
5	1574.0	1574.00	1.25	4.24	39.9%	-3.99	1.25	150	210	-95.99	0	0	-5.49	96.24	5.75	-90.49
6	1575.0	1575.00	1.17	4.27	38.9%	-4.10	1.17	150	225	-95.99	0	0	-5.59	96.16	5.76	-90.39
7	1576.0	1576.00	1.20	4.28	39.1%	-4.08	1.20	150	210	-95.99	0	0	-5.56	96.19	5.77	-90.43
8	1577.0	1577.00	1.26	4.30	39.4%	-4.04	1.26	150	210	-95.99	0	0	-5.52	96.25	5.78	-90.47
9	1578.0	1578.00	1.30	4.31	39.7%	-4.01	1.30	150	210	-95.99	0	0	-5.48	96.29	5.78	-90.50
10	1579.0	1579.00	1.36	4.34	40.0%	-3.98	1.36	150	210	-95.99	0	0	-5.44	96.35	5.80	-90.55
11	1580.0	1580.00	1.42	4.36	40.4%	-3.94	1.42	150	210	-95.99	0	0	-5.40	96.41	5.82	-90.59
12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--