

# 亦轩 <东莞> 电子科技有限公司

## YIXUAN DongGuan DianZI KeJi YouXianGongSi

### 1: Summary

- This approval sheet supports for MID project. FPC antennas include in this project. This report is for the performance of WLAN+GPS+BT antenna.
- Antenna shape size: Meet the requirement of MID
- Antenna band: 2400MHz~2500MHz,1575MHz
- Antenna material: Antenna material meet the requirement of MID
- Adhesive performance: Adhesive performance meet the requirement of MID
- Antenna performance meet the spec below:

Description	2.4GHz~2.5GHz 1.575GHz	Units
VSWR	$\leq 2.0$	
Peak Antenna Gain	1.02max	dBi
Antenna Efficiency	$\geq 40$	%
Feed Impedance	50 ohms	
Operating Temperature	-40 to +85 deg C	
Polarization / Azimuth	Linear / Omni-directional	

#### ● Mechanical Information

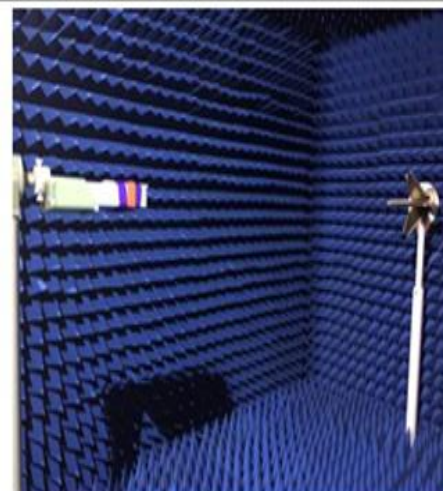
Mechanical Dimension	
Cable Length	030mm/Black
Model	X5
Material	FPC
Coaxial Cable	50Ohm/O.D.0.81mm
Environmental	
Operation Temperature	-40 to +85 deg C
Storage Temperature	-40 to +85 deg C

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## 2. Test environment

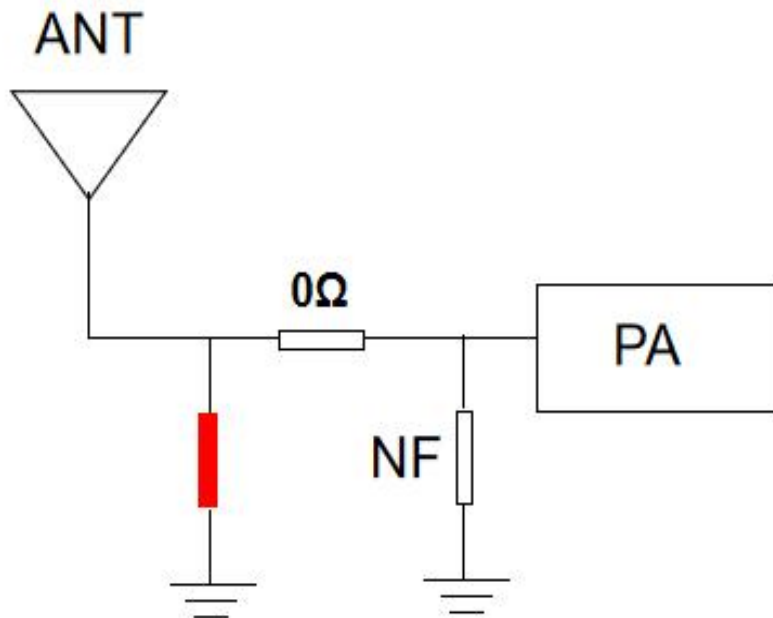
	测试项目	设备
1. S参数 (S-parameter)	1. 回波损耗 (Return Loss) 2. 电压驻波比 (VSWR)	网络分析仪: Agilent E5071B HP 8753D
2. 有源测试 (Active)	1. 发射功率 (TRP) 2. 接收灵敏度 (TIS) 3. 频率误差 4. 屏灭、屏亮	1. 暗室: ETS 7x4x3 m (3D) Chamber ETS 5x3x3 m (3D) Chamber 2. 综合测试仪: Agilent 8960 E5515B × 2 StarPoint SP6011
3. 无源测试 (Passive)	1. 天线增益 (Gain) 2. 天线效率 (Efficiency)	1. 暗室: ETS 7x4x3 m (3D) Chamber ETS 5x3x3 m (3D) Chamber 2. 网络分析仪: Agilent E5071B HP 8753D



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### 3. Description matching circuit-WIFI antenna



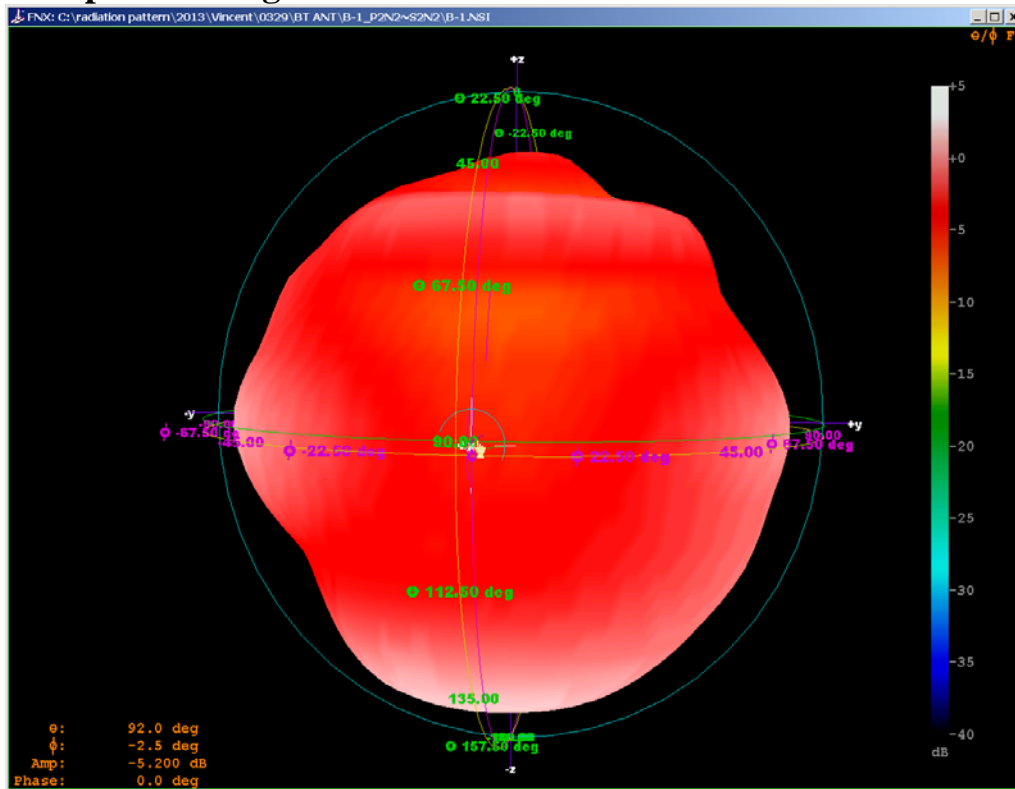
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## 5. WIFI Antenna passive efficiency test data

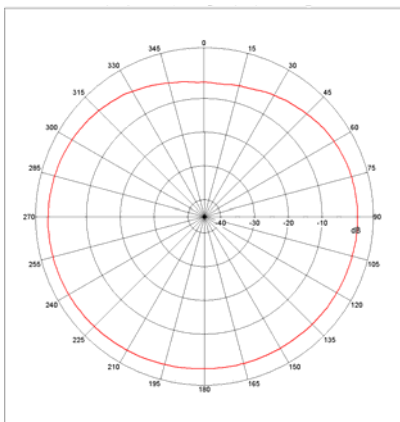
Passive Test For 2.4GWIFI										
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	Attenut Hor	Attenut Ver
2400	39.47	-4.04	0.72	-1.43	20.563	18.906	0.72	-12.21	48.51	48.38
2410	41.94	-3.77	0.91	-1.24	21.99	19.954	0.91	-12.68	48.83	48.65
2420	43.17	-3.65	1.02	-1.13	22.806	20.36	1.02	-13.04	49.05	49
2430	42.49	-3.72	0.96	-1.19	22.616	19.873	0.96	-13.51	49.05	48.89
2440	40.87	-3.89	0.72	-1.43	22.057	18.812	0.72	-14.03	49.08	48.97
2450	40.76	-3.9	0.64	-1.51	22.297	18.463	0.64	-14.84	49.01	48.85
2460	37.59	-4.25	0.13	-2.02	20.791	16.8	0.13	-15.92	48.86	48.7
2470	36.67	-4.36	-0.03	-2.18	20.463	16.207	-0.03	-16.36	48.86	48.78
2480	36.42	-4.39	-0.22	-2.37	20.427	15.994	-0.22	-16.46	49.29	49.19
2490	40.55	-3.92	0.11	-2.04	22.766	17.781	0.11	-15.85	49.92	49.75
2500	39.6	-4.02	-0.16	-2.31	22.221	17.384	-0.16	-15.81	49.95	49.77

# 3D radiation pattern diagram



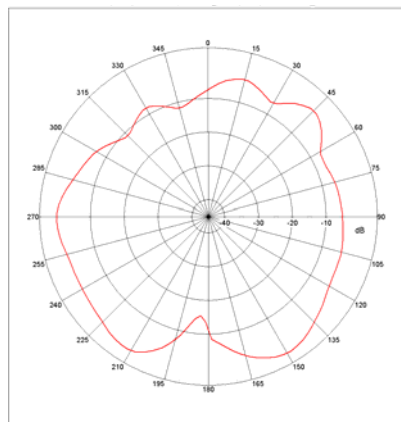
## XY-plane

Far-field Power Distribution(H+V) on X-Y Plane



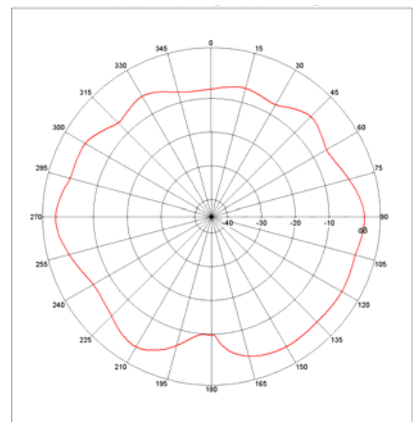
## XZ-plane

Far-field Power Distribution(H+V) on X-Z Plane



## YZ-plane

Far-field Power Distribution(H+V) on Y-Z Plane



广东省东莞市长安镇涌头新围南路五巷二号8楼  
电话：13058053185

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### 6. Structural drawings

