

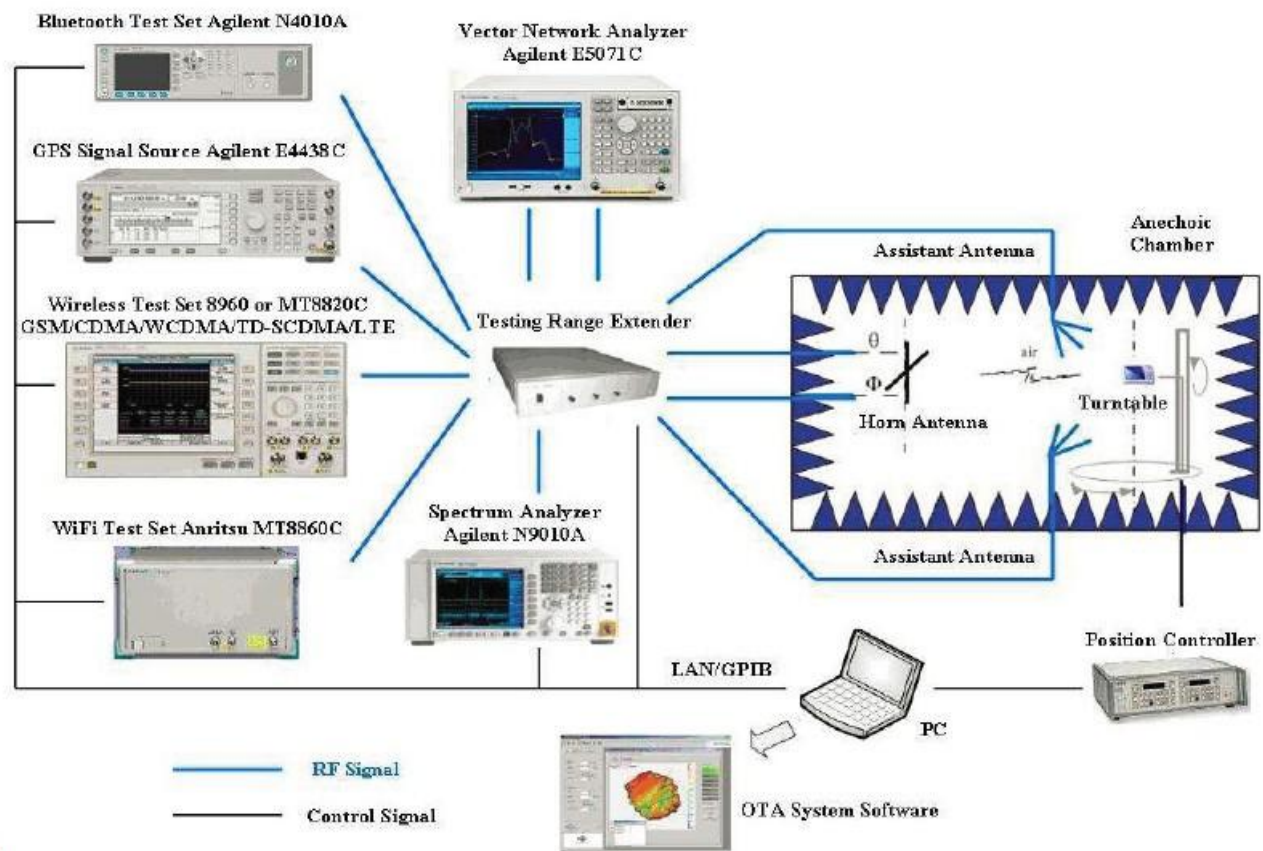
天线规格书
Antenna specification for approval

客户名称 Customer name			
机型 Model	Bluetooth products		
天线频段 Antenna band	2.4GHZ		
天线类型 Antenna type	wire antenna		
天线材质 Antenna material	Pure copper		
颜色 color	Black		
料号 Material number			
厂商承认签章 Baren accepted the signature		客户承认签章 Client acknowledges signature	
结构 structure		采购 Purchase	
品质 QC		结构 structure	
射频 radio frequency		工程 engineering	
审核 To examine		品质 QC	
日期 date 2024. 10. 6	盖章区 Seal area	日期 date 2024. 10. 6	盖章区 Seal area

catalogue

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一:Device support&testable antenna type



天线功能	频率范围	测试仪器	测试方式	测试标准
2G天线 (GSM)	824MHz-960MHz, 1710MHz-1990MHz	5071B、8960、 OTA暗室	有源测试、无源测试	索沃德标准、客户要求
3G天线 (WCDMA/TDSCDMA/CDMA-EVDO/2000)	824MHz-960MHz, 1710MHz-2170MHz	5071B、8960、 OTA暗室	有源测试、无源测试	索沃德标准、客户要求
4G天线 (LTE-FDD/LTE-TDD)		5071B、CMW500、 SP8011、OTA暗室	有源测试、无源测试	索沃德标准、客户要求
WIFI天线	2.4GHz-2.48GHz, 5.15GHz-5.35GHz, 5.725GHz-5.825GHz	5071B、CMW500、 OTA暗室、路由器 、PC	有源测试、无源测试 、APK实测、吞吐量 测试	索沃德标准、客户要求
BT天线	2.4GHz-2.48GHz	5071B、OTA暗室 、蓝牙音箱	无源测试、实测	索沃德标准、客户要求
定位天线 (GPS、GLONASS、北斗、伽利略)	1575.42MHz±10MHz 1602MHz±0.5625MHz 1561MHz±2.046MHz	5071B、OTA暗室 、APK	无源测试、实测	索沃德标准、客户要求
NFC天线	13.56MHz	5071B、专用测试 治具、OTA暗室、 APK	无源测试、实测	索沃德标准、客户要求
遥控天线	433MHz	5071B、OTA暗室	无源测试、实测	索沃德标准、客户要求

二:Overview

(1)Antenna performance

1. This approval sheet supports for MID project. Pure copper wire antennas include in this project.report This is for the performance of BT antenna.
 2. Antenna shape size: Meet the requirement of MID
 3. Antenna band: 2400MHz~2500MHz
- performance meet the spec below:

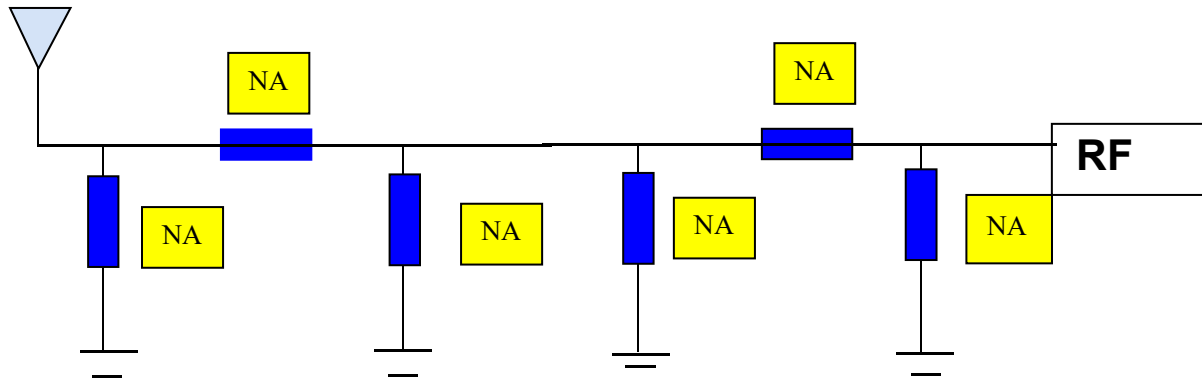
Description	2. 4GHZ~2. 5GHz	Units
VSWR	≤ 2.0	
Average Antenna Gain	-1.3	dBi
Antenna Efficiency	≥ 40	%
Feed Impedance	50 ohms	
Operating Temperature	-40 to +85 deg C	
Polarization / Azimuth	Linear / Omni-directional	

(2)Mechanical Information

Mechanical Dimension	
Cable Length	NA
Description	BT antenna
Material	Pure copper wire
Coaxial Cable	NA
Environmental	
Operation Temperature	-40 to +85 deg C
Storage Temperature	-40 to +85 deg C

三: Match circuit diagrams, machine images, and antenna images

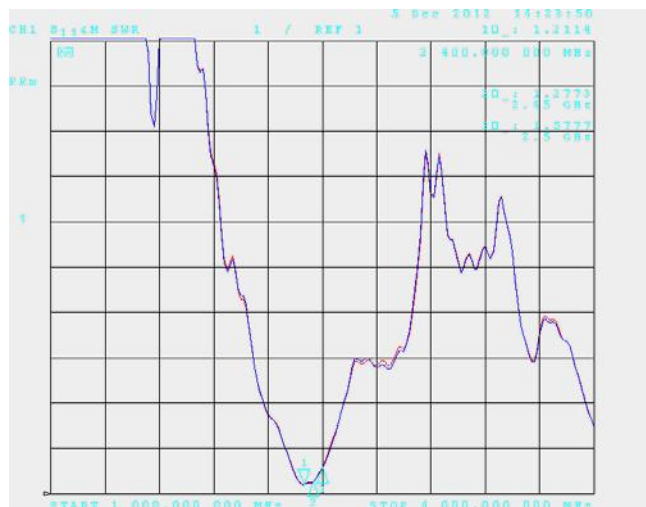
(1) Matching circuit



(2) Machine images&antenna images

1: Gold plating and immersion; 3: Surface black matte ink; 4: Compliant with the latest environmental requirements: RoHS&REACH; 5: Whole board shipment;

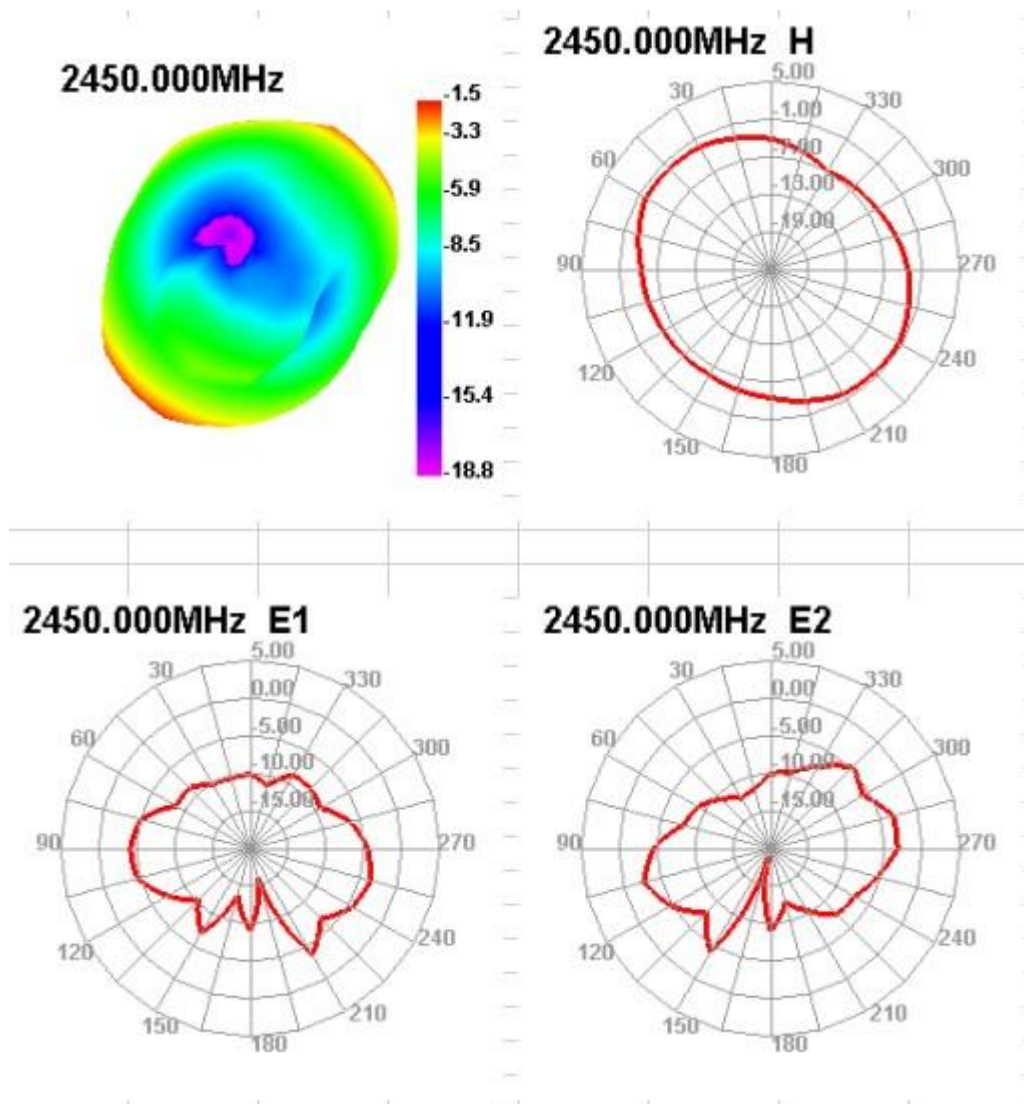
四:Antenna Standing Wave Ratio&Antenna Efficiency (VSWR)



Frequency (MHz)	VSWR
2400	1.25
2450	1.18
2500	1.16

Passive Test For 2.4G										
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	Attenut Hor	Attenut Ver
2400	22.93	-6.4	-1.99	-4.14	9.57	13.363	-1.99	-18.81	48.83	49.05
2410	24.58	-6.09	-1.66	-3.81	10.321	14.257	-1.66	-18.99	49.12	49.31
2420	25.81	-5.88	-1.63	-3.78	10.894	14.918	-1.63	-18.92	49.47	49.54
2430	25.8	-5.88	-1.61	-3.76	10.97	14.826	-1.61	-18.74	49.45	49.53
2440	25.22	-5.98	-1.72	-3.87	10.72	14.5	-1.72	-18.82	49.47	49.59
2450	25.93	-5.86	-1.55	-3.7	11.093	14.836	-1.55	-18.83	49.56	49.63
2460	26.37	-5.79	-1.53	-3.68	11.328	15.047	-1.53	-18.67	49.75	49.92
2470	25.91	-5.87	-1.43	-3.58	11.279	14.63	-1.43	-18.94	49.79	50.03
2480	27.1	-5.67	-1.3	-3.45	11.806	15.295	-1.3	-20.52	49.89	50.07
2490	26.44	-5.78	-1.36	-3.51	11.542	14.894	-1.36	-21.66	49.81	50.01
2500	24.84	-6.05	-1.74	-3.89	10.82	14.018	-1.74	-21.76	49.76	49.92

五:3D pattern



六:Structural drawings



Antenna size: 20mm*0.4mm

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China