



一鸣

样品承认书

Parts Approval Sheet

生产供应商: Nqi

Supplier

物料名称: BT

Parts Name

适用项目: A508

Type/Spec: (丝印 Nqi-BT-FB-V9)

Nqi 料号: Nqi-A508-BT-FB-V9

Parts No

品 牌: Nqi

Brand

客户料号: 3011110062

Quantity

送样日期: 2023/11/13

Send out Date

文件编号: Nqi-RD-SPEC-20231010

Document No

承认日期: _____

Approve Date

样品版本: V9

Version

Supplier		Customer	
Approved By	Prepared By	Engineering Dept	Quality Dept

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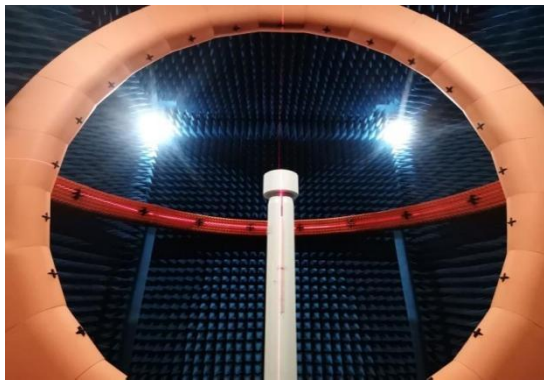
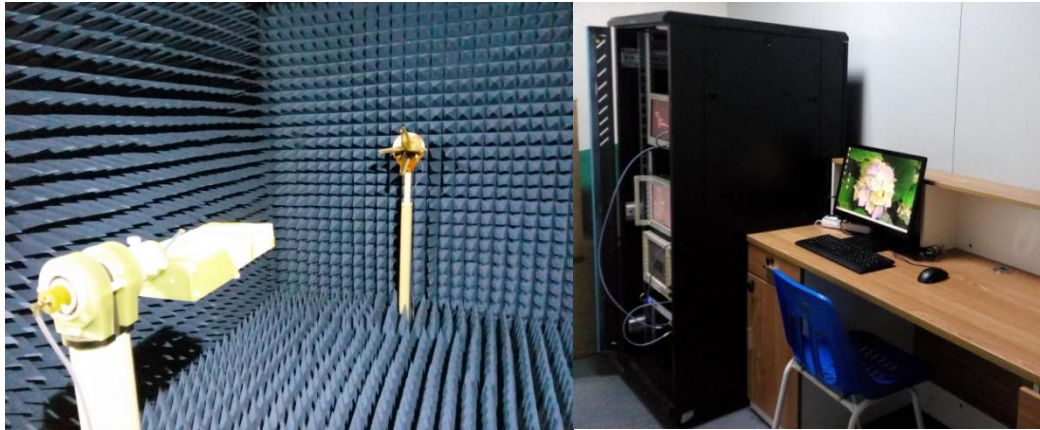
一. Samples and instructions:

(Electrical Specifications)	
frequency range (Frequency range)	2400-2500MHz
characteristic impedance (impedance)	50 ohm
voltage standing-wave ratio (VSWR)	≤2
Peak gain (Gain)	1.44dBi
Polarized form (Polarization)	level
radiation direction (Radiation direction)	Omnidirectional
Connection Mode Description	
connector (connector)	/
Cable specifications (Cable specifications)	/
Working/Storage temperature	
working temperature (Working temperature)	-30℃~65℃
storage temperature (Storage temperature)	-30℃~75℃

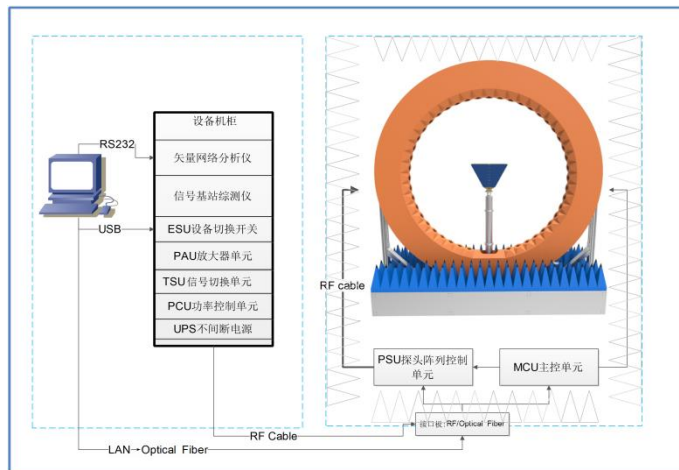


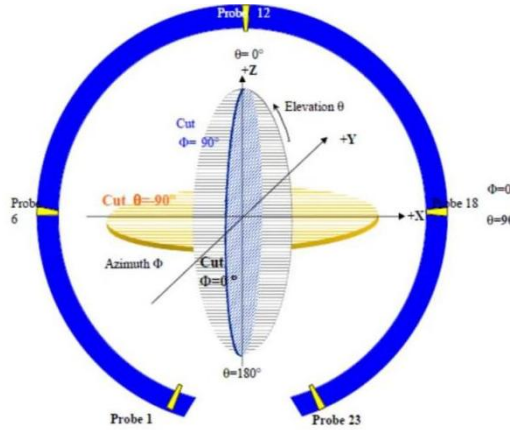
二. Testing equipment and projects:

类别 (Class)	测试项目 (Test item)	设备 (Equipment)
1. S parameter	1. 回波损耗(RL) 2. 驻波比 (VSWR) 3. 史密斯原图 (Smith chart)	网分 (VNA) : Agilent E5071B R&S ZVB8 Protek A333
2. 耦合测试 (Coupling testing)	1. 发射功率 (MAX Power) 2. 接收灵敏度 (MIN Sens)	1. 2G/3G Tester: Agilent 8960 2. The coupling box: TESCO TC-5060A 3. 3D Chamber: ETS 3D Chamber (5x3x3)
3. 3D 无源测试 (Passive Test)	1. 效率 (Effeciency) 2. 增益 (Gain) 3. 辐射方向图 (radiation pattern)	1. 3D Chamber: TEM24 3D Chamber(5x5x5) ETS 3D Chamber (5x3x3) 2. 网分 (VNA) : Agilent E5071B R&S ZVB8
4. 3D 有源测试 (Active Test)	1. 3D 功率 (TRP) 2. 3D 灵敏度 (TIS) 3. 吞吐率 (Throughput rate)	1. 3D Chamber: TEM24 3D Chamber(5x5x5) ETS 3D Chamber (5x3x3) 2. 2G/3G Tester: Agilent 8960 3. 4G Tester: MT8820C/CMW500 4. WIFI/BT/NB-iot Tester: CMW500 5. 5G Tester: SP9500-CTS 6. Head: HEAD-P10 (FACE-P10)

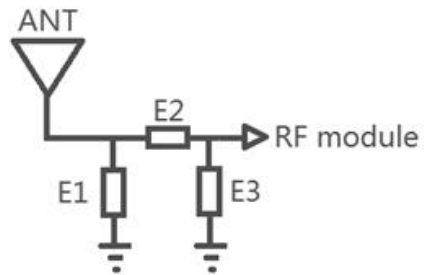


三. Chamber connection and coordinates:





四. Antenna Matching Network:



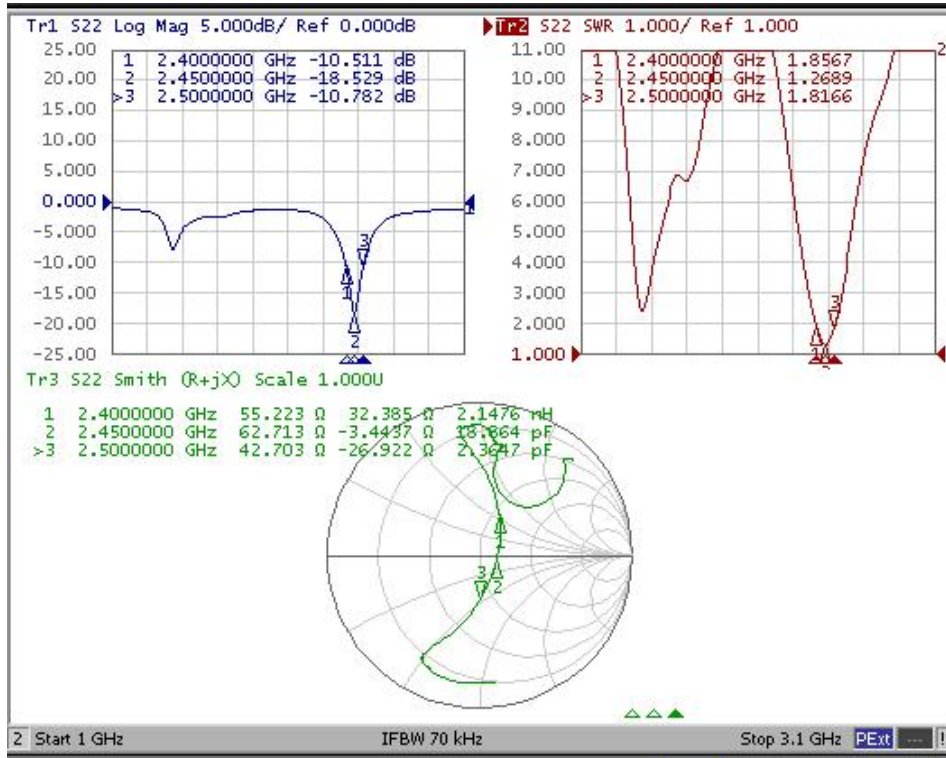
Element	L (Value)	R (Value)
ANT	V9	V9
E1(0201)	1.5P	1.5P
E2(0201)	2NH	2NH
E3(0201)	Original matching	Original matching

五. Antenna assembly method and environmental treatment:

六. Antenna electrical performance test data:

6. 1. Passive antenna parameters

6.1.1. Antenna Return Loss (RL)/Standing Wave Ratio (VSWR)/Smith Chart



6. 1. 2. Antenna efficiency/gain

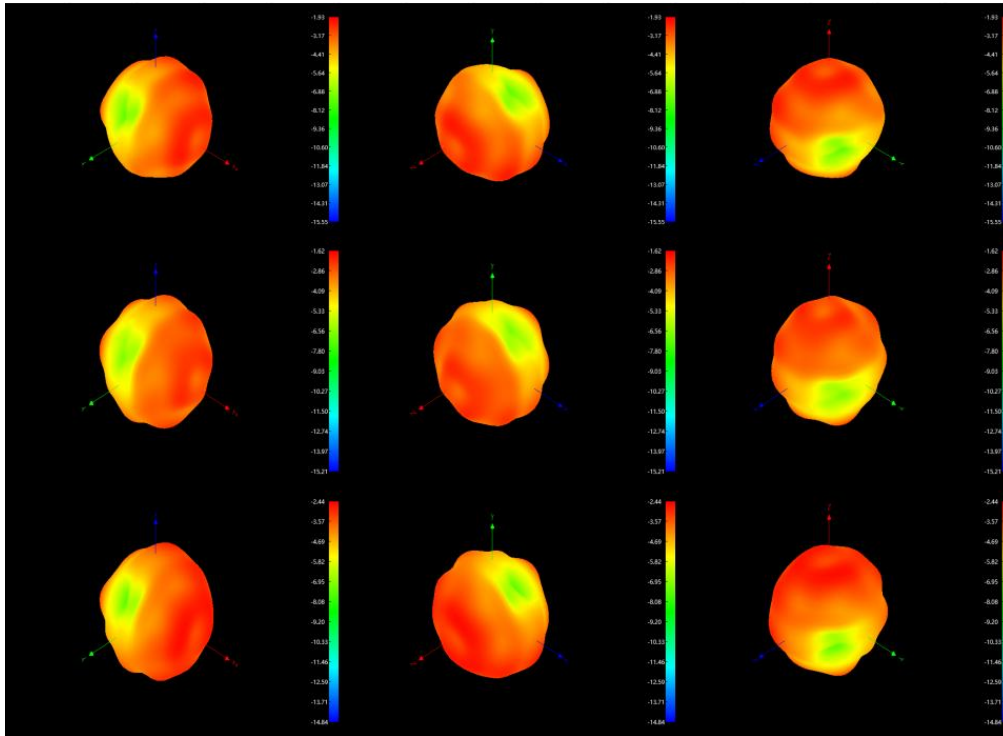
Frequency	Efficiency	Gain
MHz	%	dB
2400	25.77	0.93
2450	29.17	1.2

2500

26.92

1.44

6.1.3 Free space radiation direction map and apple field strength map



6.1.4 Antenna Active parameter

TRP/TIS

NQI ANT TRP&TIS parameter Summary of A508 (ANT=V9)				
Free space	Test	Bluetooth TRP		
	Result	0	39	78
R	TRP (dBm)	2.22	2.79	2.98
	TIS (dBm)	-88.43	-87.44	-87.79
L	TRP (dBm)	2.63	3.13	3.43
	TIS (dBm)	-88.35	-88.86	-87.33
NQI ANT TRP&TIS parameter Summary of A508 (ANT=V9)				
Second generation headear model	Test	Bluetooth TRP		
	Result	0	39	78
R	TRP (dBm)	1.56	1.79	1.84



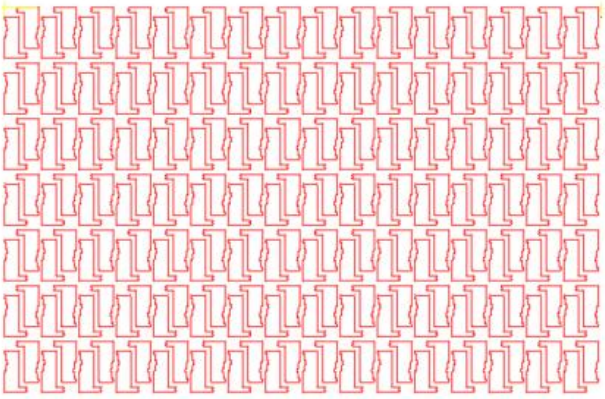
	TIS (dBm)	-86.52	-85.48	-86.15
L	TRP (dBm)	1.56	2.07	2.17
	TIS (dBm)	-86.6	-86.16	-86.25

七. Antenna structure drawing:

Please refer to the operation description.



八. Antenna package drawing:

Stage name: PCS inspection packagi		Product number: A508		Effective time: 2023.10.27		Version: A																																																																			
Product name: BT		No: /		Page number: 1 page total 1 page																																																																					
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<p>Materials:</p> <table border="1"> <thead> <tr> <th>NO</th> <th>PART NUMER</th> <th>PART NAME</th> <th>QTY</th> <th>VENDER</th> <th>NOTE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>224</td> <td>BT</td> <td>/</td> <td>y9</td> <td>/</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>								NO	PART NUMER	PART NAME	QTY	VENDER	NOTE	1	224	BT	/	y9	/																																																						
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1	224	BT	/	y9	/																																																																				
<p>Operation Steps:</p> <p>Finger Gloves</p> <ol style="list-style-type: none"> 1 : Check the appearance of the product is flat, there is no dirt, scratches, copper leakage, poor printing and other undesirable phenomena. 2 : Key dimension inspection (see engineering drawing) 3 : The product is arranged in PE bag according to the rule; if it is found to be defective, remove the defective product; 4 : Mass output goods to be packed, affixed to the outer box label; label location requirements consistent. 																																																																									
<p>Points to note:</p> <ol style="list-style-type: none"> 1 : It is forbidden to have crease, fracture, copper leakage, poor gold plating and serious size problems during 2 : The material number and quantity corresponding to each product shall be indicated; 																																																																									



九.Key dimension inspection report:

Dimensional inspection report

Customer	MINYAM	Entry name						A508 B1		
Material	FPC	<input checked="" type="checkbox"/>	ROHS							
Appearance inspection items	<input type="checkbox"/> Laquer leakage <input type="checkbox"/> Wire breakage <input type="checkbox"/> Short circuit <input type="checkbox"/> Scratches <input type="checkbox"/> Dirty <input type="checkbox"/> Cracking (missed processing) Number of defects: 0									
Functional or dimensional inspection records										
NO	check serial num	dimensional tolerance	Inspection results					Using instrument	Judgment	
	1	9.0 ± 0.2	1	2	3	4	5	DN	OK	
	2	16.9 ± 0.2	16.92	16.93	16.95	16.92	16.95	DN	OK	
	3	1.5 ± 0.2	1.58	1.56	1.52	1.55	1.56	DN	OK	
FPC	4	1.7 ± 0.2	1.76	1.77	1.74	1.72	1.78	DN	OK	
pass	<input checked="" type="checkbox"/>	fail	<input type="checkbox"/>	Not processed through methods					<input type="checkbox"/> do over again	<input type="checkbox"/> Special procurement use
Measurement instrument code de scription: Projector PP plug gauge PG height gauge HG angle gauge AG vernier caliper N digital caliper DN outer diameter microm Three coordinate 3D thread gauge SG special fixture SE visual inspection E										
Remarks:										
Tested by: Zhou Peng										



十、Environment and reliability test:

10.1.Salt spray test report

ShenZhen NQI network communication ltd

Salt spray test report

Product name	BT antenna	Sample Q'ty	2PCS	Test date	2023/10/27
Customer	MINYANG	Part/No.	NQI-A508-BT-FB-V9	Product spec.	FPC
Test time	≤8H ≤12H ≤24H <input checked="" type="checkbox"/> 48H ≤72H				
Test Item	Salt spray test				
Test Requirement					
Condition items	Setting		Reference		
Concentration of salt solution	5±1%		GB/T10125-1997		
PH of salt solution	6.5-7.2				
Test room Temperature	35±2℃				
Salt solution barrel temperature	35±2℃				
Saturated air barrel temperature	47±1℃				
Test room relative humidity	85±2%RH				
Pressure of compressed air	1.00±0.01KG/CM ²				
Sample place angle	15-30°				
Collected volume of salt spray	1.0-2.0ml (80CM ² /H)				
Result of measurement					
1. Test diagram & test method					
Pre-test sample	Sample after test			Result determination	
				√ PASS NO PASS Deviation	

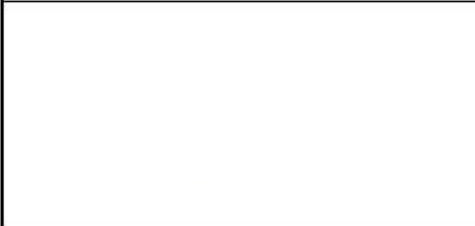

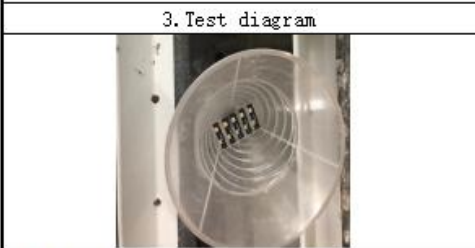
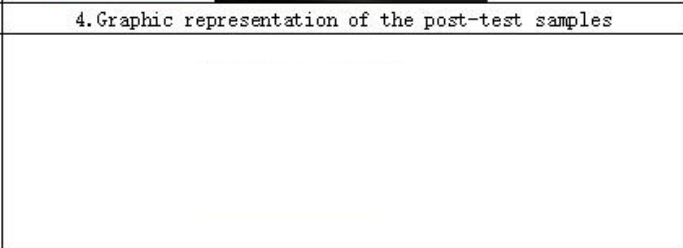
Controlled form: NQI-ST-01

Producer:zhangfangfa Checked:weidaofa

Approval:

niuxinggang

10.2.Cryogenic storage test

ShenZhen NQI network communication ltd				
Cryogenic storage test report				
Report date 202329 June			Report no: 20220115-1	
Product name	A508-BT antenna	No		NQI-A508-BT-FB-V9
PART NAME ATION		CUSTOMER P/N		
Customers	MINYANG	Number of tests		2PCS
CUSTOMER		CHECK QTY		
Test criteria	Enterprise standards	Test time		2023/10/25
TEST STANDARD		THE TEST OF TIME		2023/10/27
一. Test conditions/methods				
The samples were stored at $-40 \pm 3^{\circ} \text{C}$ for 48 hours and at room temperature for 2 hours.				
二. Criteria				
After the test, to meet the following requirements, that is, qualified:				
1.FPC appearance no discoloration, foaming, ink off, deformation, viscosity unchanged;				
2.Voltage standing wave ratio (VSWR) test qualified				
三. Test results				
Description of test results				
1.The overall appearance of the sample is good, FPC appearance no discoloration, blistering, coating off, deformation;				
2.The test waveform is consistent with the seal sample.				
FINAL RESULT	PASS		REJECT	
surveyor INSPECTOR	Lo Wing-sau	check CHECKED BY	Chen Yicai	
The form number: WI-QC-036/B01/A0				
四. Test photos				
1.Pre-test sample		2. Test photos		
				
3.Test diagram		4.Graphic representation of the post-test samples		
				
五. The test involves equipment information				
erial numb	The name of the device	Specifications and models	Calibration date	Time for next calibration
1	Programmable constant temperature and humidity box	LK-150G	2023.1.26	2024.1.25