

BN972 Project Antenna Material Requirements Specification

Customer Name: Jialianxin

Customer Product Name: BN972

Product Name: BT Antenna Assembly

Product Specifications: For details, please refer to the BOM

Material Code: 58AA.0004T.403 00

Change History:

order number	edition	state	Start and End Dates	person liable	page number	remarks
1	editio princeps	editio princeps	2026-7-8	Li Jieyi	16	
2						

Supplier's Acknowledgment of Signature:

Responsible Person/Date		IQC/ date	Reviewed / Date	Approved/Date
MD				
RF				

The Buyer hereby acknowledges and signs (please return this document after signing):

Buyer's determination result: ☐ Pass ☐ Fail			
Development & Design Engineer / Date	SQE Engineer / Date	Procurement Officer / Date	Development Department Manager Approval / Date

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1. Overview

1.1 Scope of Application

These requirements specify the antenna selection, testing, and acceptance procedures for the BN972 product.

1.2 Project Basic Information

Antenna Name:	BN972
Antenna frequency band:	BT
Antenna Material:	FPC

2. Technical Specification Requirements

2.1 Test Items and Equipment Overview

List	test item	equipment
S11 Parameters	Standing wave ratio, echo loss	network analyzer
Active Testing	TRP,TIS	Comprehensive test instrument, microwave shielded room
Passive Test	Gain, Efficiency	network analyzer

2.2.1 Test Instructions

Test equipment: Agilent 8960 comprehensive test instrument, R&S CMW500, fully electromagnetic far-field ETS shielded chamber, high-precision positioning system with its controller, and a computer equipped with an automated test program.

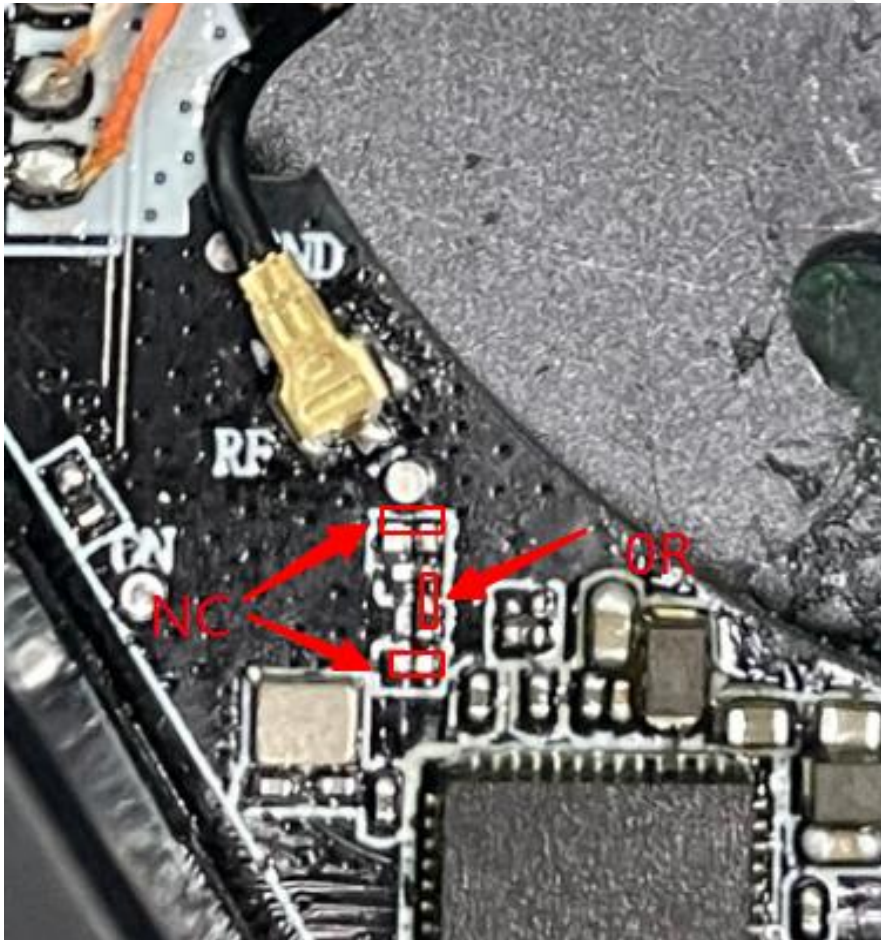
Test environment: Temperature $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$, humidity $50\% \pm 15\%$;

Test method: The DUT is placed on its H-face at the center position of the turntable and is aligned with the center position of the horn antenna on the same horizontal plane. The positioning system enables the DUT to rotate across the entire spherical surface, thereby achieving high-precision 3D positioning. Each RF instrument, the turntable controller, and the PC equipped with automatic test software communicate via the GPIB interface.

2.2.2 Conductive test data (line loss: 1 dBm)

Channel	power	sensitivity
0	10.9	-94.0
39	10.9	-94.0
78	10.9	-94.0

2.2.3 Antenna Matching Circuit



2.2.4 Overall Product Photos



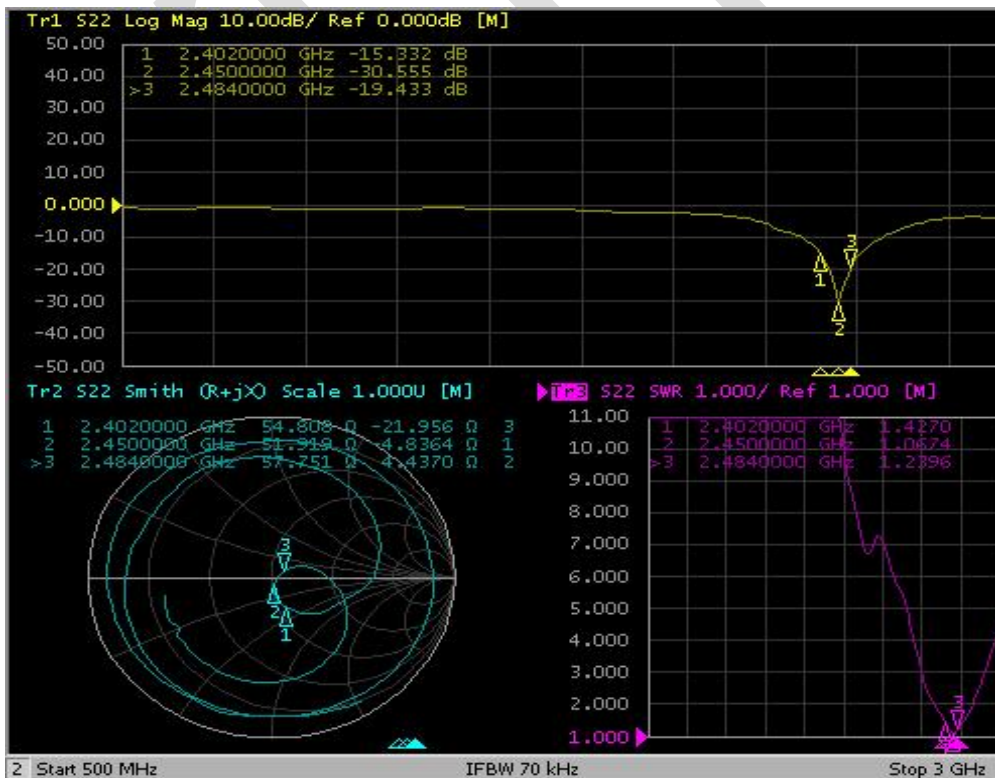
2.2.5 Active Test Parameters (Antenna OTA)

freedom	Channel	power	sensitivity
L	0	5.4	-93.7
	39	5.2	-93.5
	78	5.4	-93.5

headform	Channel	power	sensitivity
R	0	4.4	-92.3
	39	4.5	-92.3
	78	4.2	-92.2

2.2.6 Antenna efficiency (S11)

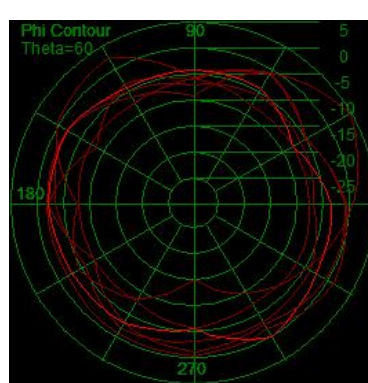
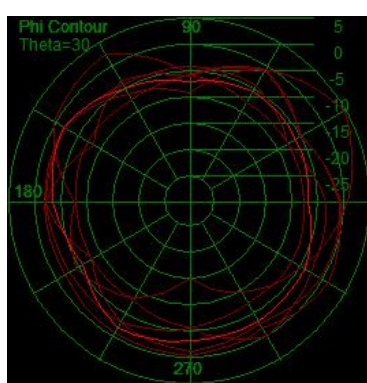
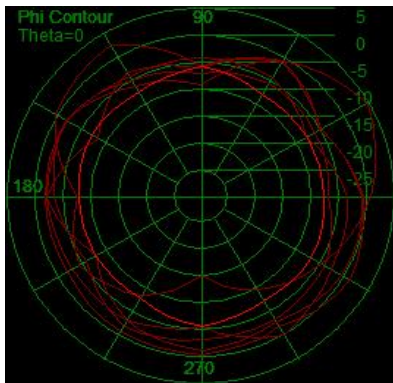
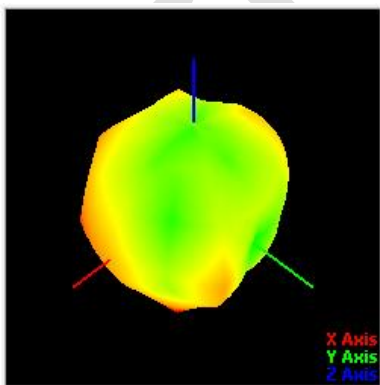
Freq	Effi	Gain
(MHz)	(%)	(dBi)
2410	43.5	0.23
2420	45.2	0.42
2430	47.6	0.36
2440	48.1	0.25
2450	49.5	0.36
2460	47.5	0.50
2470	46.1	0.41
2480	45.9	0.32
2490	43.2	0.25
2500	42.3	0.17



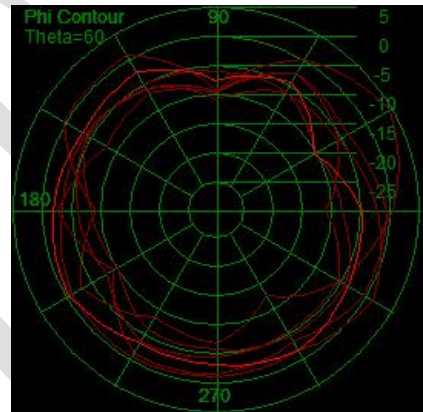
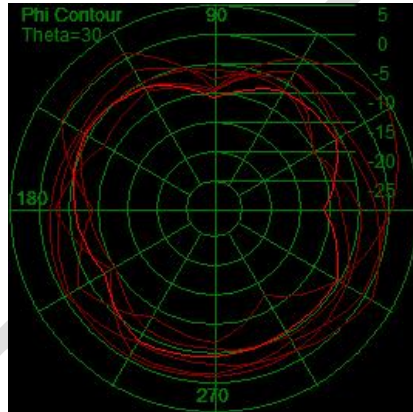
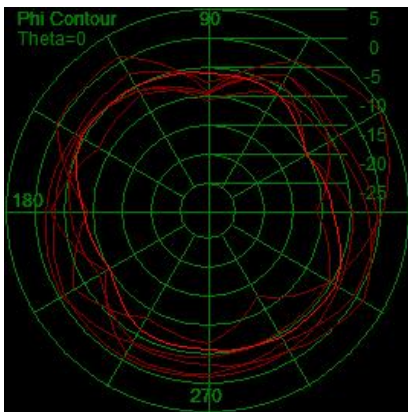
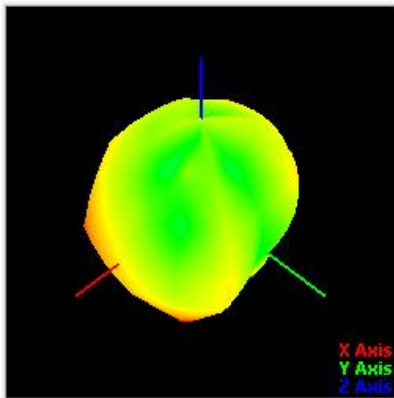
2.2.7 Antenna Assembly Location and Precautions



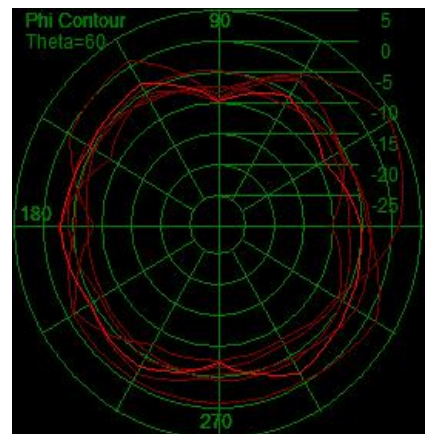
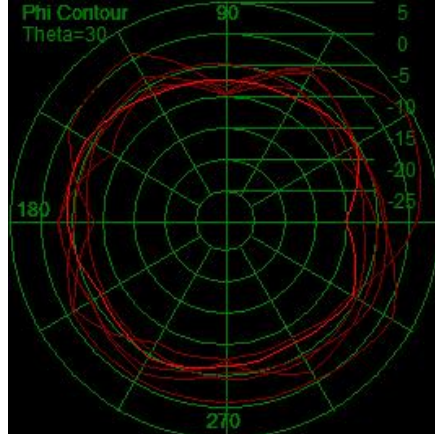
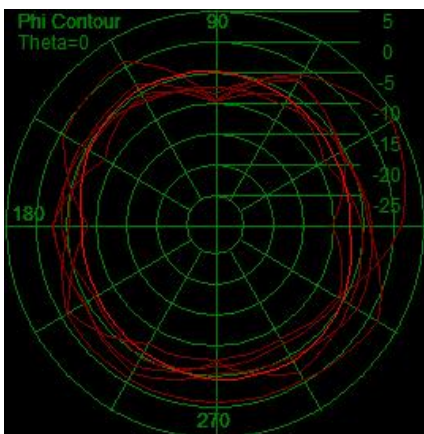
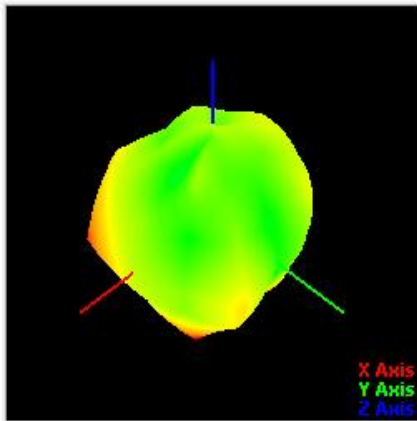
2.2.8 2D/3D Beam Pattern – Head Model – TRP – CH0



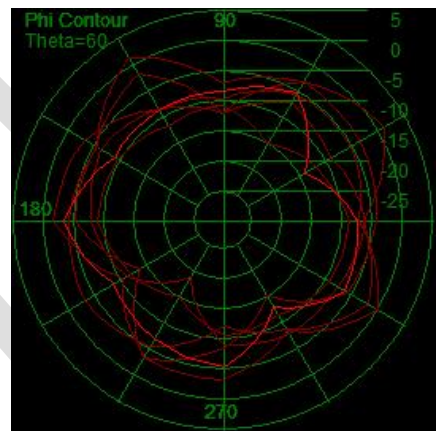
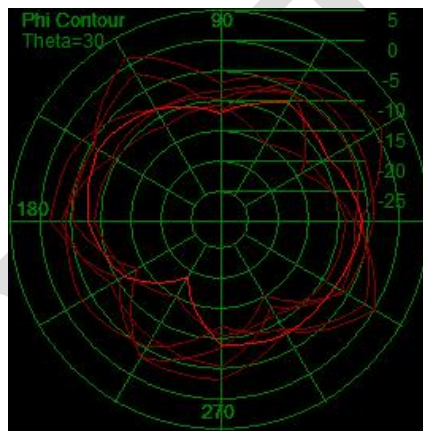
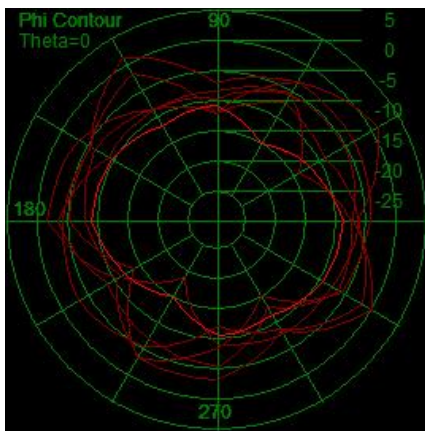
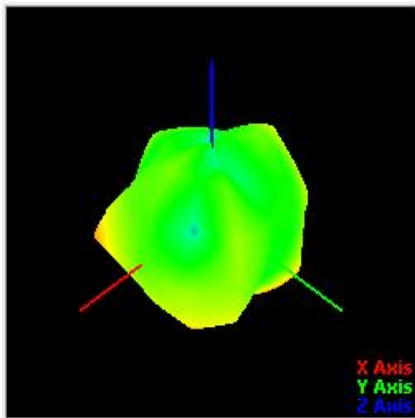
2.2.9 2D/3D Beam Pattern – Head Model – TRP – CH39



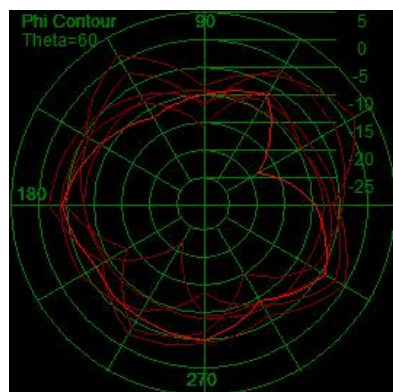
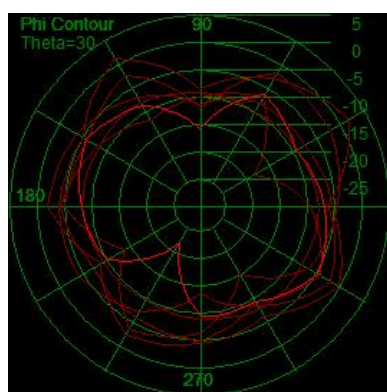
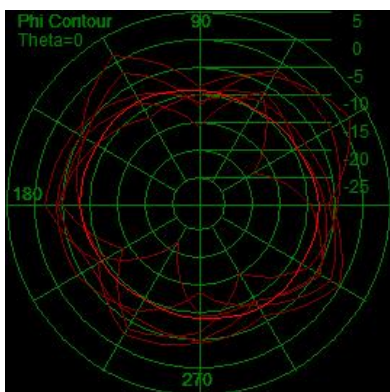
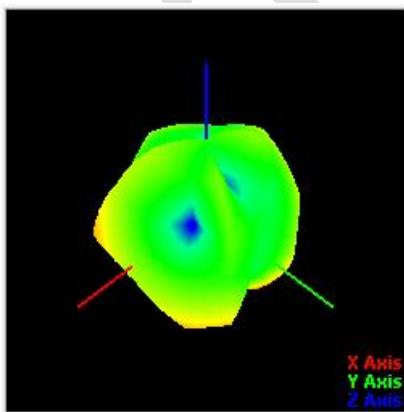
2.2.10 2D/3D Beam Pattern – Head Model – TRP – CH78



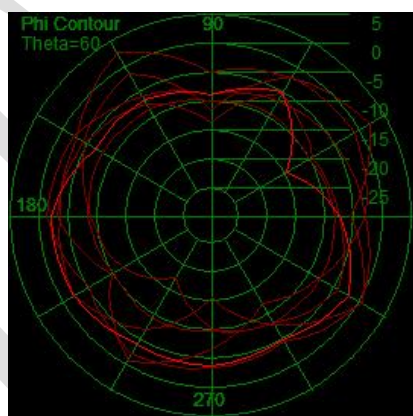
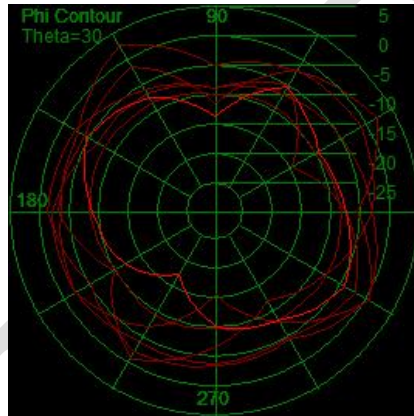
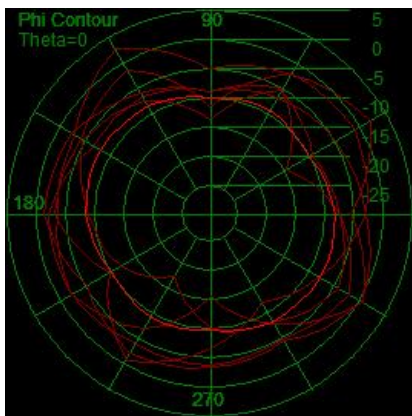
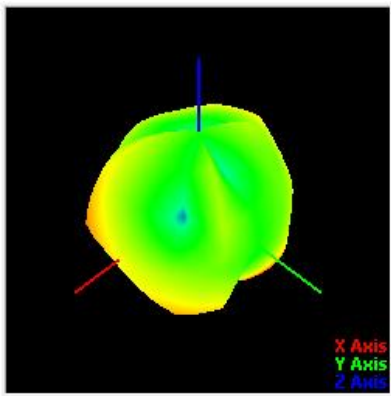
2.2.11 2D/3D Beam Pattern – Head Model – TIS – CH0



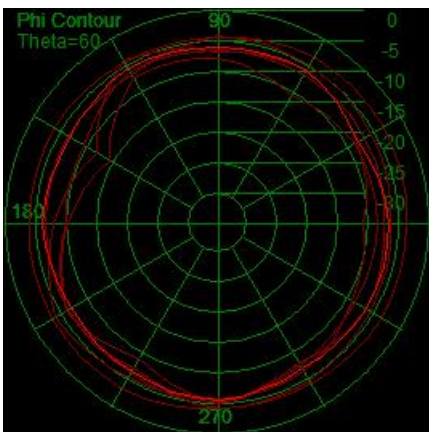
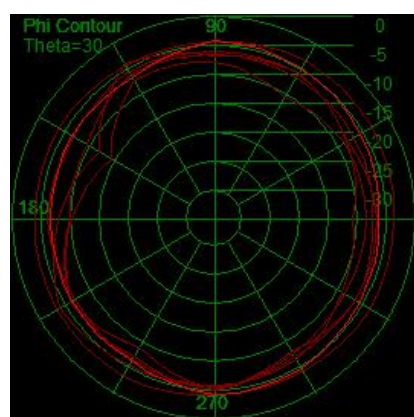
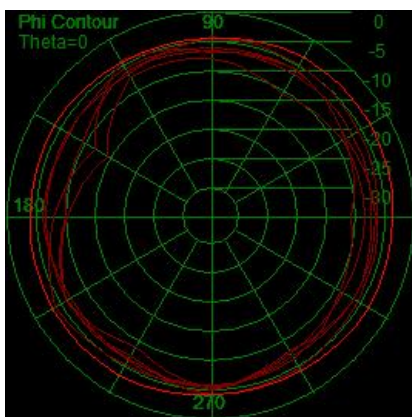
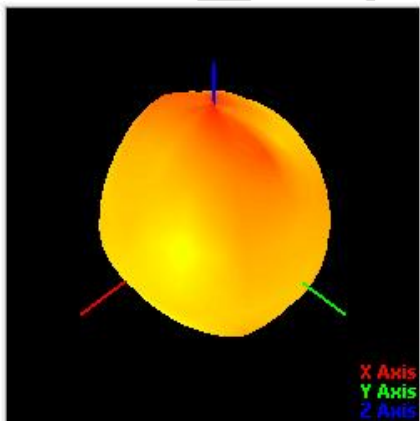
2.2.12 2D/3D Beam Pattern – Head Model – TIS – CH39



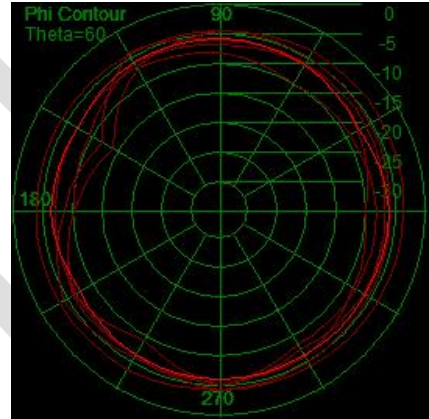
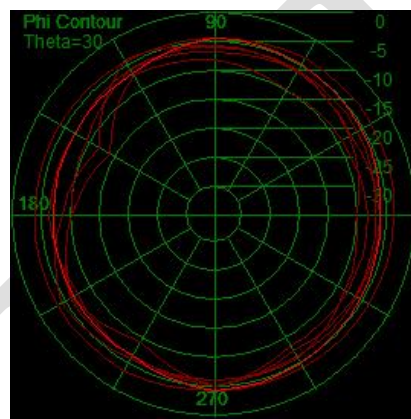
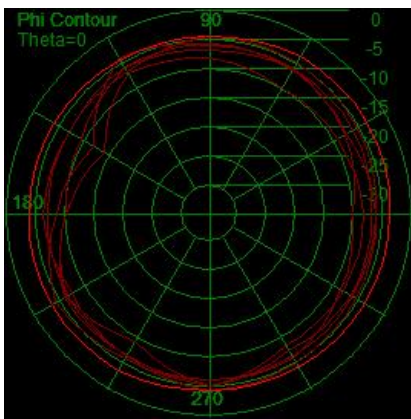
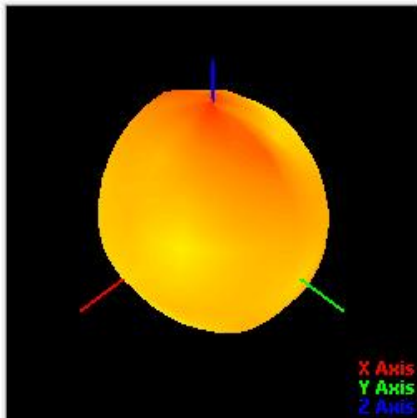
2.2.13 2D/3D Beam Pattern – Head Model – TIS – CH78



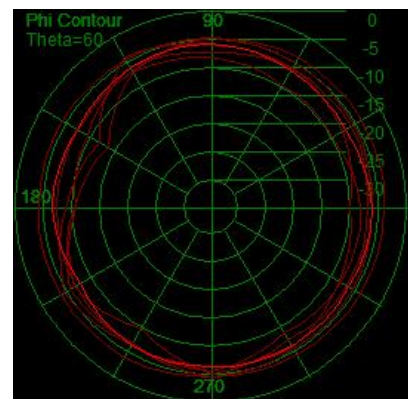
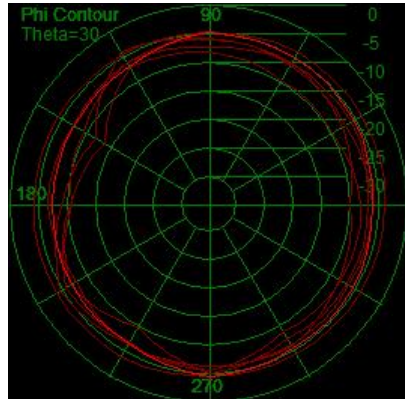
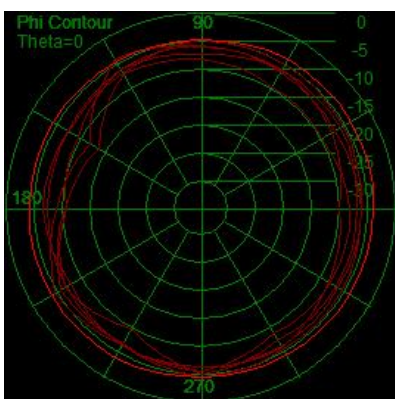
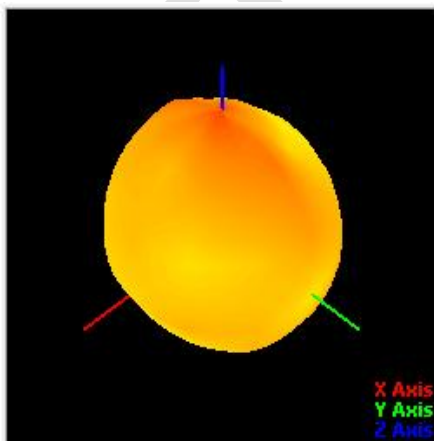
2.2.14 2D/3D Beam Pattern – Free – TRP – CH0



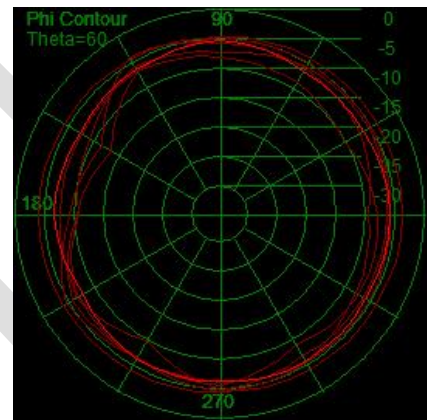
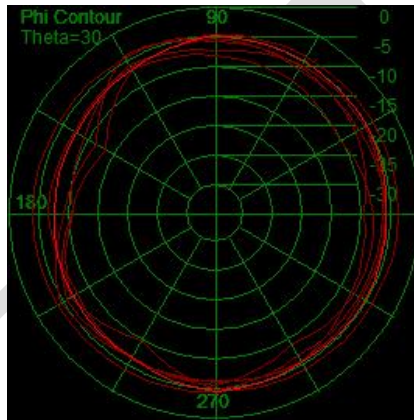
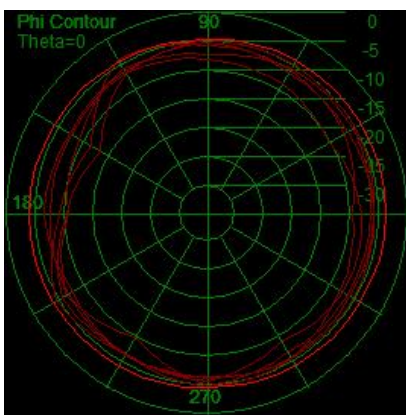
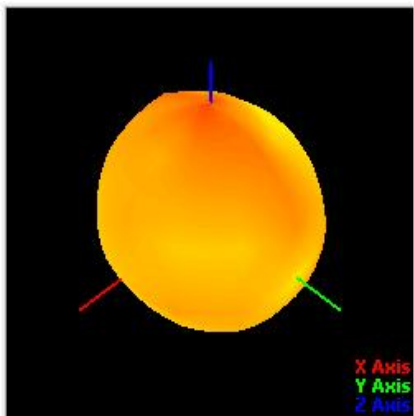
2.2.15 2D/3D Beam Pattern – Free – TRP – CH39



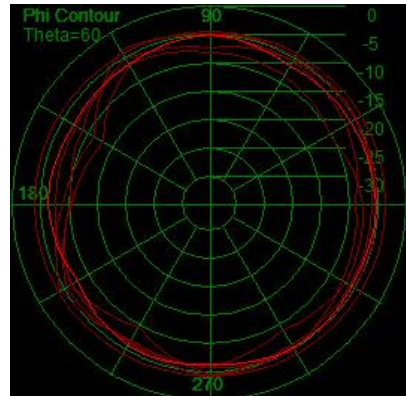
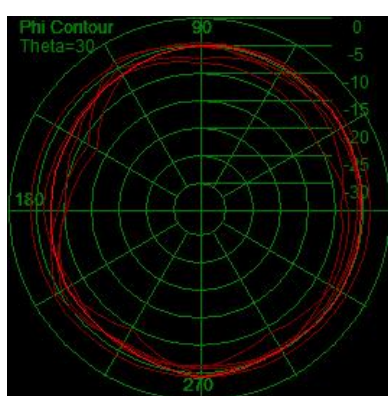
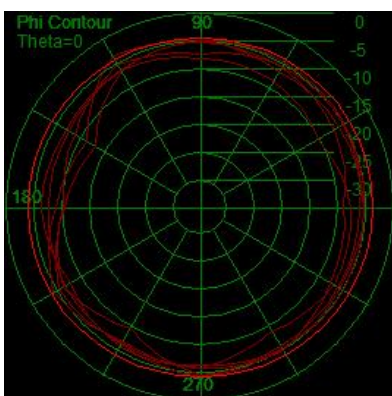
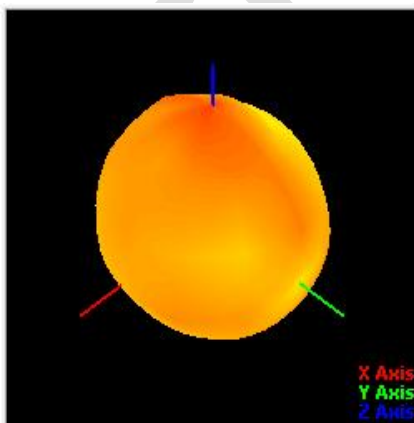
2.2.16 2D/3D Beam Pattern – Free – TRP – CH78



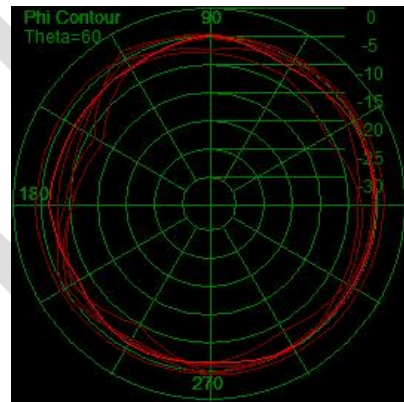
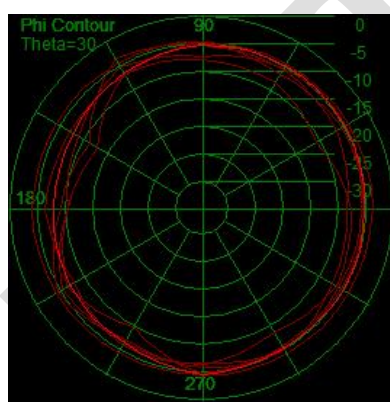
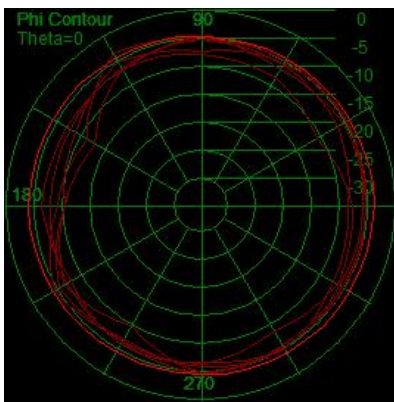
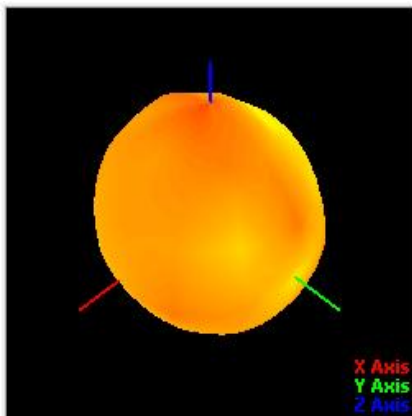
2.2.17 2D/3D Beam Pattern – Free – TIS – CH0



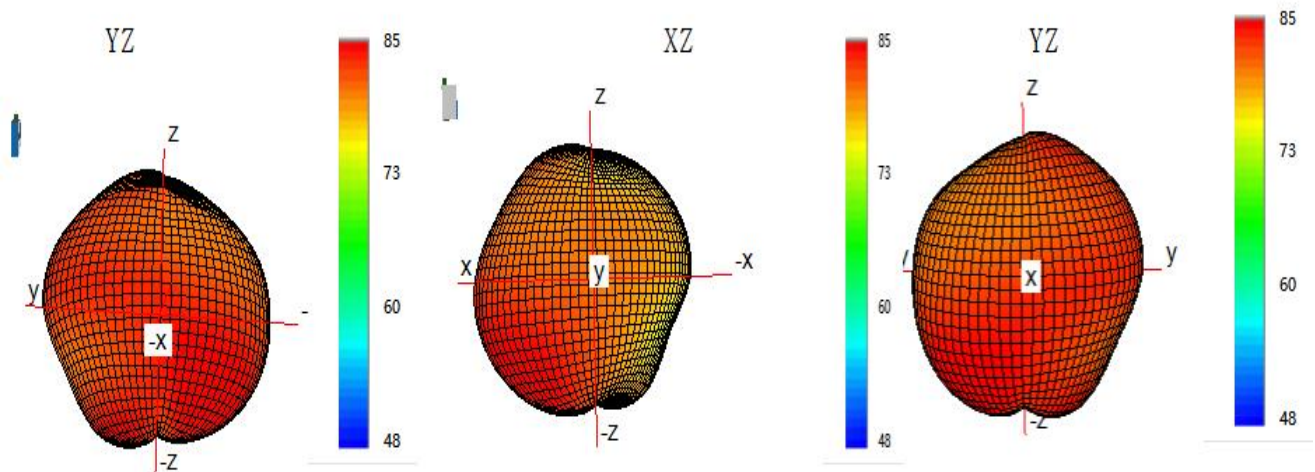
2.2.18 2D/3D Beam Pattern – Free – TIS – CH39



2.2.19 2D/3D Beam Pattern – Free – TIS – CH78



2.2.20 Radiation Pattern



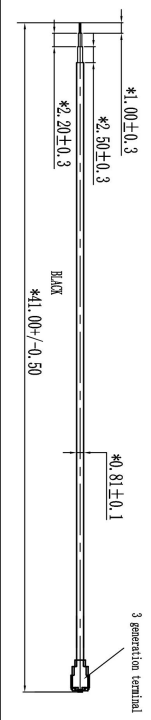
2.2.21 Sawing Test

	tester	BMI	time	On the outer ear	phone model	place	distance	Conclusion
1#	kevin	32	14:30-15:30	auto	iqoo -u3	THOT garden	16m	ok

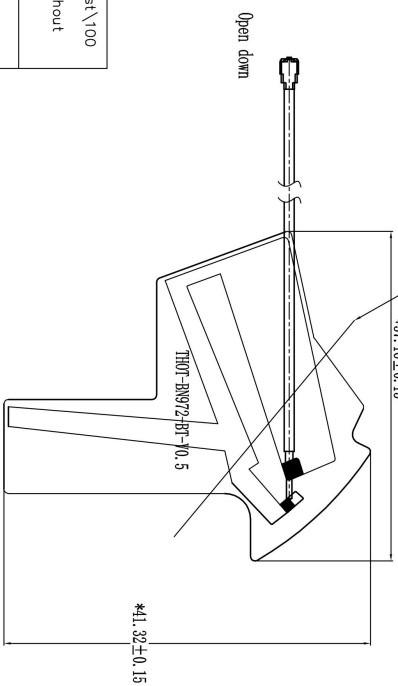
3. engineering drawing

BT antenna

由 Autodesk 教育版产品制作		skills requirements:		1. PFC substrate specifications:		Electrolytic copper (half to half)		0.5oz (ED)		3M-9471LSE	
		2. Electroplating specifications:		OSP		Surface ink color:		Mat black		Printing font color:	
3. Surface ink requirements:		Printing font height:		According to drawings		1. Reliability test: salt spray test\rubber friction test\alcohol resistance test\100 grid test.		2. The front ink, the surface of the ink is required to be folded in half without cracking, scratching, etc.		5. Tolerance requirements:	
4. Reliability requirements:		1. Shape tolerance ± 0.10;		2. Copper foil circuit tolerance ± 0.05;		3. The position of the copper foil to the shape is ± 0.15;		4. Hole-to-hole position tolerance ± 0.10; hole-to-shape position tolerance ± 0.15;		5. The size tolerance of gold finger is ± 0.20;	
5. Tolerance requirements:		6. For other unmarked dimensions, refer to 2D drawings.		6. Key control size:		The dimensions marked with numbers are regarded as important dimensions, and the others refer to 2D drawings		7. Environmental requirements:		Parts meet RoHS2.0/REACH/GR environmental protection requirements	
8. Packaging requirements:		Packed in PE bags, the quantity of each bag is 100PCS, there is a mark on the outside of the bag		DATE		Modify the content		Version		Revise	
1		2		3		4		5		6	
1		2		3		4		5		6	



3 generation terminal



Centrifugal paper separation line

Open down

Shenzhen Yu Sheng Communication Equipment Co., Ltd.	
Model	BN972
Name	BT antenna
Part NO	652002-1A-RA
Material quality	Electrolytic copper (half to half)
Mold surface treatment	confirm
UNIT	mm
proportion	1:1
PLT	Revise
R.A	

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由

4. Bill of Materials



深圳市昱晟通讯设备有限公司
Shenzhen Yusheng Communication Equipment Co.,LTD

652002 (BN972) BOM

edition: R/A

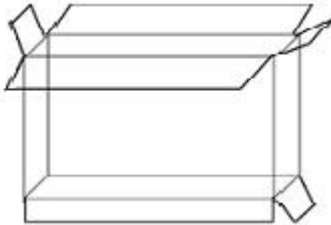
client: 652

Type of aircraft: 652002

Set a date: 20260814

Item	*Material code	*Material name	name	*Machine type	Specification and model	colour	*UNIT	dosage	remark
1	652002-IA-01-RA	BT module		BN972	BLACK BT-FPC weldCoaxial line		PCS	1	
1.1	652002-IA-01-RA	BT-FPC		BN972	BLACK BT-FPC Electrolytic copper 41.32*37.16*0.12MM	black	PCS	1	
1.2	652002-IA-02-RA	Coaxial line		BN972	BLACK 3- 0.81*41.00MM	black	PCS	1	
1.3	652002-IA-04-RA	test		BN972	test				
verify:			examine:			manufacture: FJW			

5. Packaging Illustration

Packaging Method Diagram		
product name	Antenna Assembly	
P / N	652002	
Project Model	BN972	
Packaging Details	Carton dimensions 1: 270*260*200MM Carton Size 2: 260*200*200MM Carton Size 3: Depends on the order quantity/volume	
	Packaging method	The minimum packaging unit is 100 pieces per pack; these are sequentially packed into waterproof bags, with each waterproof bag capable of holding up to 1,000 items.
	Total number of packages	Packaged according to order quantity
labeling requirement	Label Size 1: Standard 100×100 mm Label Size 2: Based on customer requirements	Address: Units 407–411, 4th Floor, Building 2, Nantai Yunchuanggu Park, Southeast side of the intersection of Guangming Avenue and Dongchang Road, Guangming District, Shenzhen
matters need attention		
1. Due to order quantity limitations, the packaging method for each material will determine the box size based on either the total order quantity or the actual physical volume.		
2. Storage temperature: Room temperature		
3. Storage conditions: Store in a cool, dry place.		