

Peak4 project antenna material requirements specification

Customer name: Guoheng Intelligent Technology (Huizhou) Co., LTD

Customer product name: Peak4-R antenna

Size of product: See BOM for details


Material code: _____

Supplier model: 336056-IB

Change of content history:

order number	edition	state	Start and end dates	person liable	page number	remarks
1	editio princeps	editio princeps	2025-5-15	Li Jieyi	11	

Supplier's acknowledged signature:

Responsible person/date		IQC/ date	Review/date	Approved/Date
MD	Feng Jiwu	Su Guanfeng	Chen Kehong	
RF	Zeng Xianghao			

Signature of the buyer (please send it back after signing):

Result of buyer's judgment: <input type="checkbox"/> Qualified <input type="checkbox"/> Unqualified			
Development design engineer/date	SQE Engineer/date	Procurement officer/date	Approved by the Development Manager / Date

Catalogue

1. OVERVIEW	3
1.1 SCOPE OF APPLICATION	3
1.2 PROJECT BASIC INFORMATION	3
2. TECHNICAL REQUIREMENTS	3
2.1 INTRODUCTION OF TEST ITEMS AND EQUIPMENT	3
2.2 PASSIVE REPORTING	3
2.2.1 PASSIVE TEST DESCRIPTION	3
2.2.2 MAINBOARD CONDUCTION	4
2.2.3 ANTENNA MATCHING CIRCUIT	4
2.2.3 ANTENNA PASSIVE S11	5
2.2.4 PASSIVE ANTENNA DATA	5
2.2.5, ANTENNA PATTERN	6
2.2.6 DARK ROOM TEST ENVIRONMENT	7
2.2.7 ANTENNA OTA TEST DATA	8
3. STRUCTURAL DRAWINGS	9
4. BILL OF MATERIAL	10
5. PACKAGING DIAGRAM	11

1. Overview

1.1 Scope of application

This requirement specifies the antenna technical requirements and material requirements for product Peak4. This requirement applies to the selection, testing and acceptance of Peak4 antennas.

1.2 Project basic information

Antenna name:	<u>Peak4</u>
Antenna frequency:	BT
Antenna material:	FPC

2. Technical requirements

2.1 Introduction of test items and equipment

inventory	test item	equipment
S11 parameters	Standing ratio, return loss	network analyzer
Active testing	TRP,TIS	Comprehensive tester, microwave anechoic chamber
Passive testing	Gain, efficiency	Network analyzer

2.2 Passive reporting

2.2.1 Passive test description

Test equipment: network analyzer

Test method: A 50 ohm CABLE cable is exported from the instrument test port, and the SMA connector of the mobile phone fixture is connected after calibration with a calibration piece, and the echo loss or standing wave ratio corresponding to the relevant frequency points are recorded.

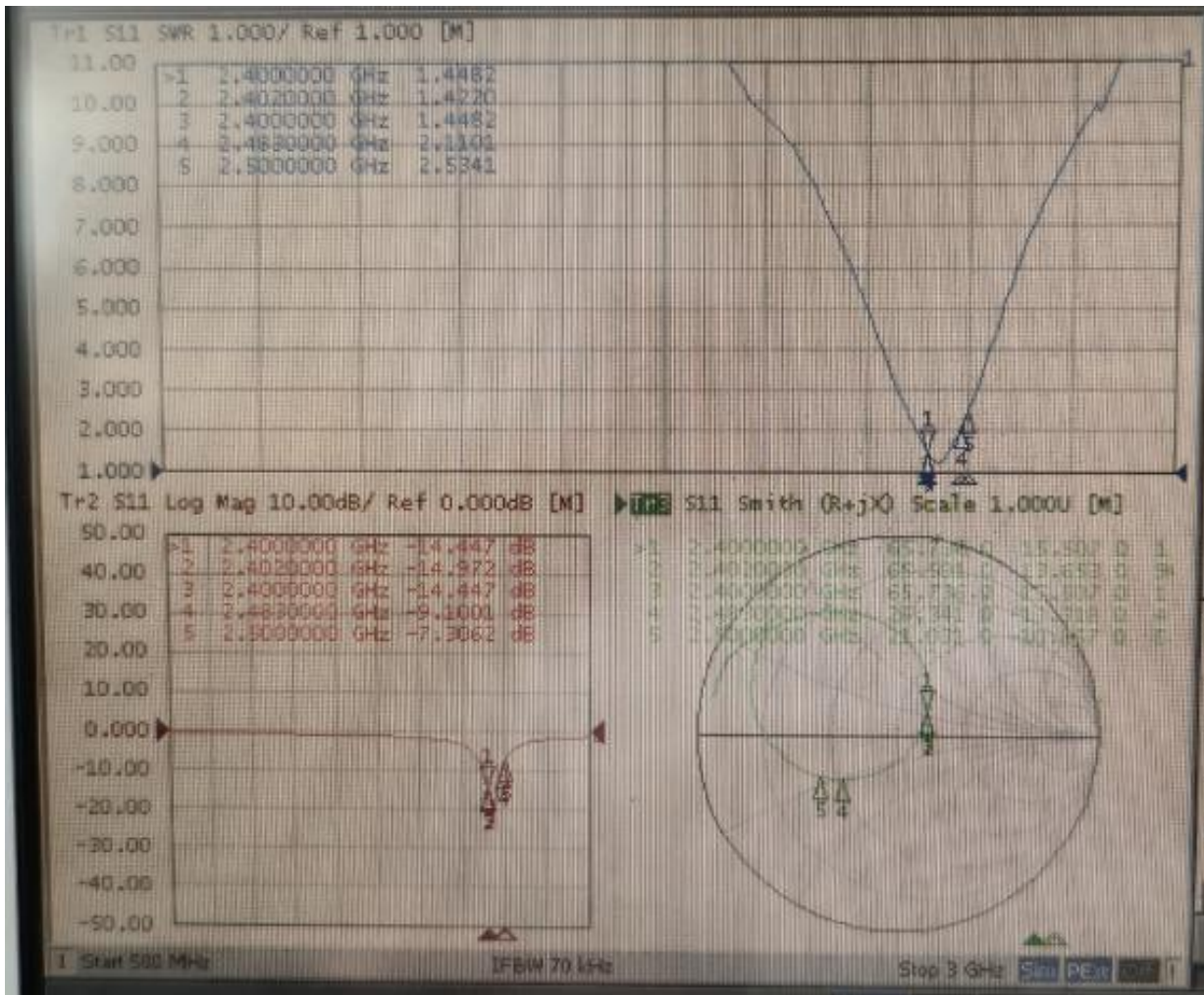
2.2.2 Mainboard conduction

R edge	Channel	power	sensitivity
	0	11.1	-92.0
	39	11.2	-92.0
	78	11.1	-93.0

2.2.3 Antenna matching circuit

The antenna matches the left and right ears with M6 and 2.2nH inductors

2.2.3 Antenna passive S11



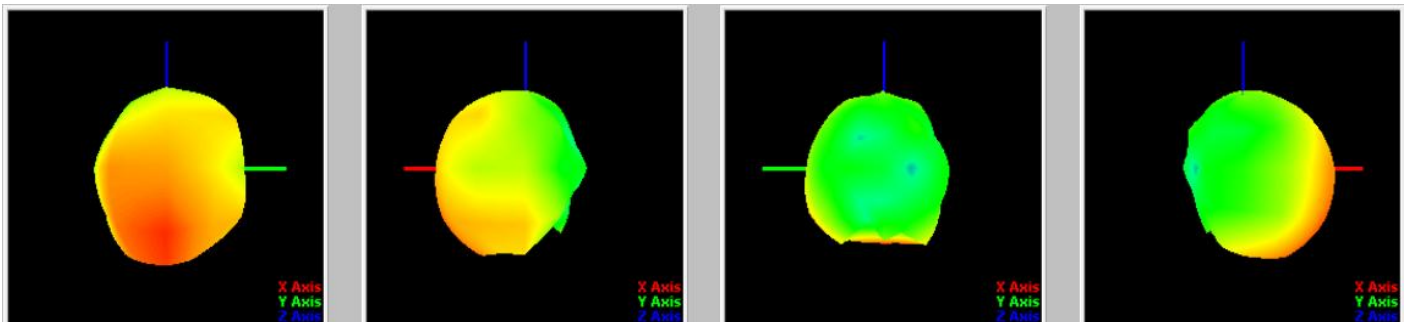
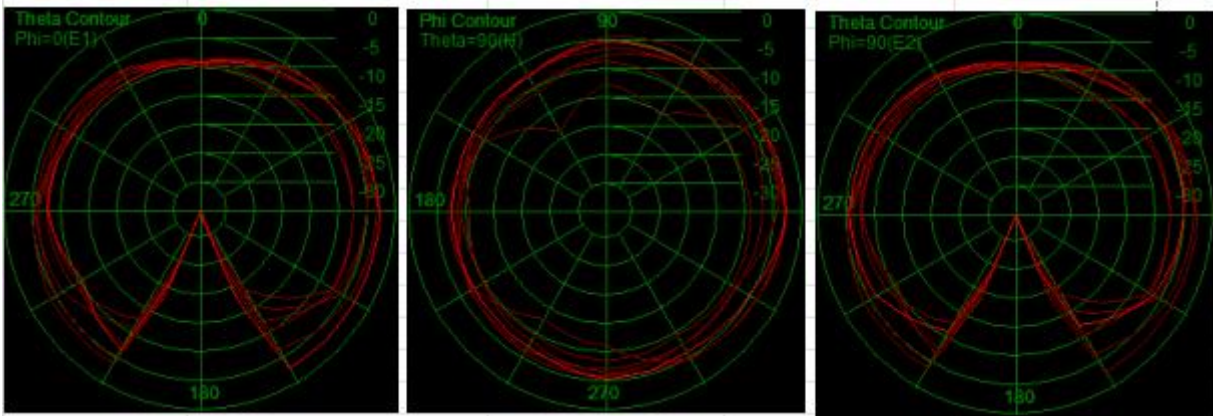
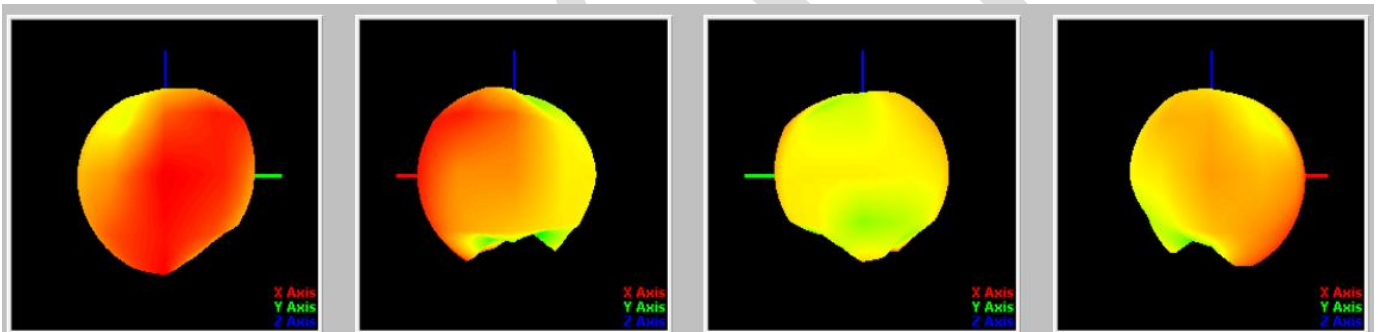
2.2.4 Passive antenna data

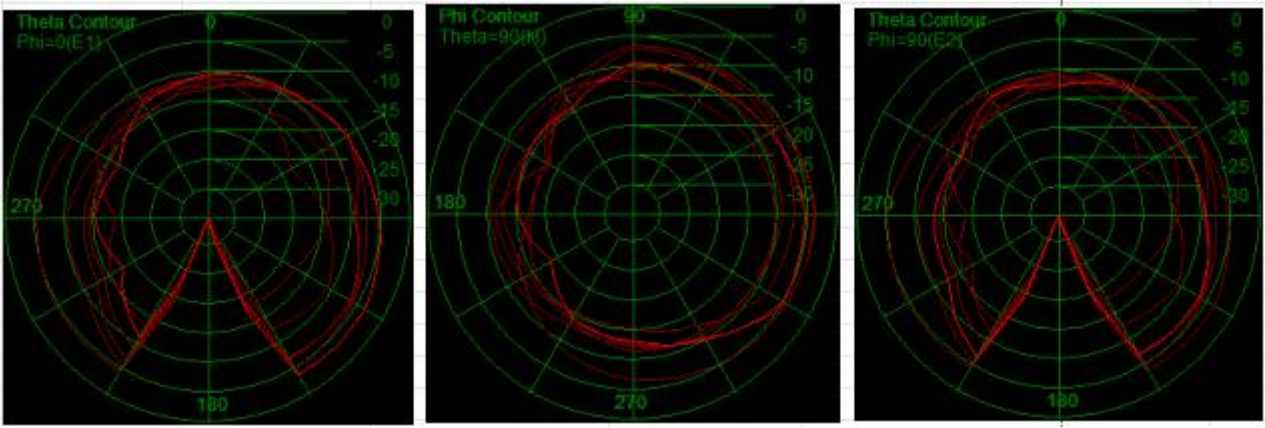
R-side free space test		
Freq (MHz)	Effi (%)	Gain (dBi)
2400	23.9	-1.8
2410	24.4	-1.6
2420	25.2	-1.5
2430	26.1	-1.3
2440	26.4	-1.1
2450	27.1	-0.9
2460	26.4	-1.1
2470	25.4	-1.4
2480	25.1	-1.5
2490	24.2	-1.6
2500	23.4	-1.9

R side head model test

Freq (MHz)	Effi (%)	Gain (dBi)
2400	10.1	-5.7
2410	10.4	-5.2
2420	11.3	-4.9
2430	12.3	-4.7
2440	12.6	-4.6
2450	12.3	-4.8
2460	12.1	-4.9
2470	11.8	-5.1
2480	11.4	-5.3
2490	10.4	-5.4
2500	10.2	-5.5

2.2.5, antenna pattern





2.2.6 Dark room test environment



2.2.7 Antenna OTA test data

2# R side head model test

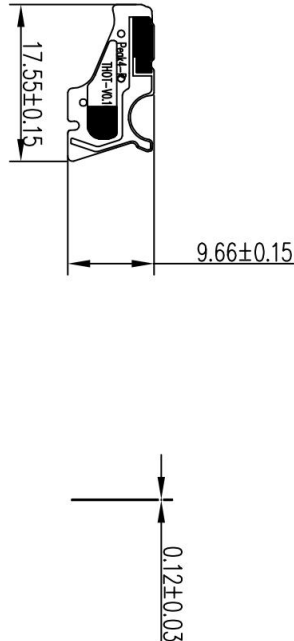
	Channel	TRP (dBm)	TIS(dBm)
R	0	1.8	-82.8
	39	1.9	-83.2
	78	1.7	-82.5

2# R side free space

	Channel	TRP (dBm)	TIS (dBm)
R	0	4.1	-86.8
	39	4.1	-87.1
	78	3.9	-86.1

3. structural drawings

A	1	2	3	4	5	6	7	8	A																								
										D	1	2	3	4	5	6	7	8															
<p style="text-align: center;">由 Autodesk 教育版产品制作</p>																																	
<p>skills requirements:</p> <table border="1"> <tr> <td>PI substrate:</td> <td>0.5mm1</td> </tr> <tr> <td>Electrolytic copper:</td> <td>0.5oz(1D)</td> </tr> <tr> <td>Double-sided tape:</td> <td>3M-9471LSE</td> </tr> <tr> <td>Nickel plated:</td> <td>3*8um</td> </tr> <tr> <td>Gold:</td> <td>0.025um</td> </tr> <tr> <td>Surface ink color:</td> <td>Matt black</td> </tr> <tr> <td>Printing font color:</td> <td>Bright black</td> </tr> <tr> <td>Printing font height:</td> <td>according to drawings</td> </tr> </table>										PI substrate:	0.5mm1	Electrolytic copper:	0.5oz(1D)	Double-sided tape:	3M-9471LSE	Nickel plated:	3*8um	Gold:	0.025um	Surface ink color:	Matt black	Printing font color:	Bright black	Printing font height:	according to drawings								
PI substrate:	0.5mm1																																
Electrolytic copper:	0.5oz(1D)																																
Double-sided tape:	3M-9471LSE																																
Nickel plated:	3*8um																																
Gold:	0.025um																																
Surface ink color:	Matt black																																
Printing font color:	Bright black																																
Printing font height:	according to drawings																																
<p>4. Reliability requirements:</p> <ol style="list-style-type: none"> 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. 																																	
<p>5. Tolerance requirements:</p> <ol style="list-style-type: none"> 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; 6. For other unmarked dimensions, refer to 2D drawings. 																																	
<p>6. Key control size:</p> <p style="text-align: center;">The dimensions marked with numbers are regarded as important dimensions, and the others refer to 2D drawings</p>																																	
<p>7. Environmental requirements:</p> <p>Parts meet ROHS2.0/REACH/CP environmental protection requirements</p>																																	
<p>8. Packaging requirements:</p> <p>Packed in PE bags, the quantity of each bag is 100PCS, there is a mark on the outside of the bag</p>																																	
<table border="1"> <tr> <td>DATE</td> <td>Modify the content</td> <td>Version</td> <td>Revise</td> </tr> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>										DATE	Modify the content	Version	Revise	1	2	3	4																
DATE	Modify the content	Version	Revise																														
1	2	3	4																														
<p style="text-align: center;">Shenzhen Yu Sheng Communication Equipment Co., Ltd.</p> <table border="1"> <tr> <td>Model</td> <td>PK4</td> <td>DATE</td> <td>20250515</td> </tr> <tr> <td>Name</td> <td>BT-R-FPC</td> <td>Design</td> <td>JFB</td> </tr> <tr> <td>Part NO</td> <td>330356-B</td> <td>Review</td> <td>JFB</td> </tr> <tr> <td>Material quality</td> <td>Electrolytic copper (half to half)</td> <td>RF</td> <td>CKH</td> </tr> <tr> <td>Gold surface treatment</td> <td></td> <td>confirm</td> <td></td> </tr> <tr> <td>Appearance treatment</td> <td></td> <td>INIT</td> <td></td> </tr> </table>										Model	PK4	DATE	20250515	Name	BT-R-FPC	Design	JFB	Part NO	330356-B	Review	JFB	Material quality	Electrolytic copper (half to half)	RF	CKH	Gold surface treatment		confirm		Appearance treatment		INIT	
Model	PK4	DATE	20250515																														
Name	BT-R-FPC	Design	JFB																														
Part NO	330356-B	Review	JFB																														
Material quality	Electrolytic copper (half to half)	RF	CKH																														
Gold surface treatment		confirm																															
Appearance treatment		INIT																															
<p style="text-align: center;">由 Autodesk 教育版产品制作</p>																																	



Gold plated Area

4. Bill Of Material

YUSHENG COMMUNICATION TECHNOLOGY CO.,LTD.

336056 (PK4) –BOM

Edition: R:A client:336 Model: 0336056 date: 20250515

Item	Part No	Name	Types of	version	specification	Material quality	colour	unit	Quantity	Craft
2	336056-IB-RA	R-FPC	Z	R:A	17.55*9.60*0.12MM	Electrolytic copper (half to half)	black	Gold plated	PCS	1
2.1	336056-IB-01-RA	R-FPC	Z	R:A	17.55*9.60*0.12MM	Electrolytic copper (half to half)	black	Gold plated	PCS	1

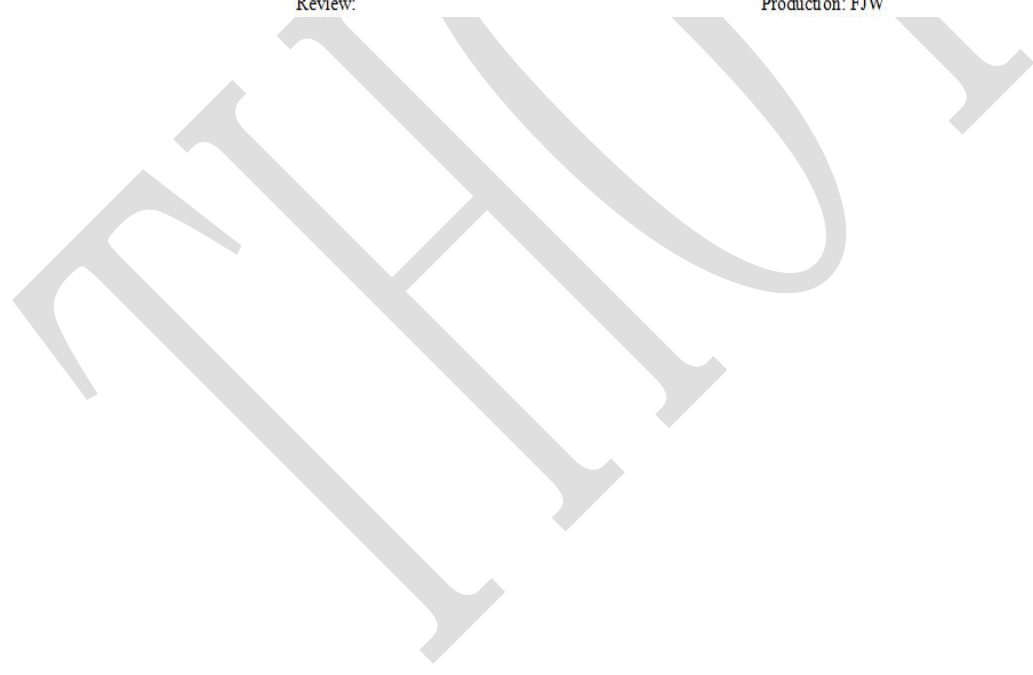
The above parts meet the environmental requirements of ROHS2.0 HF Reach GP

Type: W. Outsourcing B. Semi-finished products Z. Finished products C. Customer supply

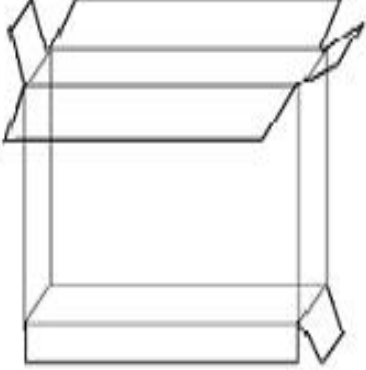
Confirmation:

Review:

Production: FJW



5. Packaging diagram

Packaging method diagram				
P / N	336056			
Project model	<u>Peak4</u>			
Details of packing	Box size 1: 270*260*200MM Carton size 2: 260*200*200MM Box size 3: Depending on the number/volume of orders			
				
	<table border="1"> <tr> <td>Packaging method</td> <td>Pack according to order quantity</td> </tr> <tr> <td>Total number of boxes</td> <td>Pack according to order quantity</td> </tr> </table>	Packaging method	Pack according to order quantity	Total number of boxes
Packaging method	Pack according to order quantity			
Total number of boxes	Pack according to order quantity			
labeling requirement	Label size 1: General 100*100mm Label size 2: According to customer requirements			
matters need attention				
1. Due to the order quantity limit, the packing method of each material is selected according to the total number of orders or the actual volume of the box				
2. Storage temperature: room temperature				
3. Storage conditions: store in a cool and dry place				