

RK80 Project antenna specification

Customer name: BenNiaoWuLian

Customer name: RK90

Product name: FPC antenna

Size of product: BT

Material code: _____

Change Content CV:

order number	edition	state	Start and end date	person liable	page number	remarks
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The Supplier acknowledges the signature of the following documents:

Responsible person / date		IQC/ date	Review / Date	Approval / Date
MD				
RF				

The Demander acknowledges the signature (please send it back after the confirmation):

The demander's judgment result: ☐ qualified ☐ unqualified			
Development & Design Engineer / Date	SQE Engineer / Date	Purchasing Leader / Date	Development Manager approval / date

Catalogue

1. OVERVIEW	3
1.1 SCOPE OF APPLICATION	3
1.2 PROJECT BASIC INFORMATION	3
2. TECHNICAL INDEX REQUIREMENTS	3
2.2.1 INTRODUCTION OF TEST ITEMS AND EQUIPMENT	3
2.2.2 TEST INSTRUCTIONS	3
2.2.3 PASSIVE ANTENNA PARAMETER	4
2.2.4 BT APPLE CHART/DIRECTION CHART-ARM	5
2.2.5 ANTENNA LOADING COIL-BT	5
2.2.6 TEST IMAGE	6
3. ENGINEERING DRAWING	7
3.1 FPC ANTENNA	7
4. BILL OF MATERIALS	8
5. PACKAGE DRAWING	9

1. Overview

1.1 Scope of application

This requirement specifies the antenna technical requirements and material requirements specifications for RK90 products.

This requirement applies to the selection, testing and acceptance of RK90 antennas.

1.2 Project basic information

Antenna name:	<u>RK90</u>
Antenna frequency:	BT
Antenna material:	FPC

2. Technical index requirements

2.2.1 Introduction of test items and equipment

inventory	test item	equipment
Active test	TRP,TIS	Integrated tester, microwave darkroom

2.2.2 Test instructions

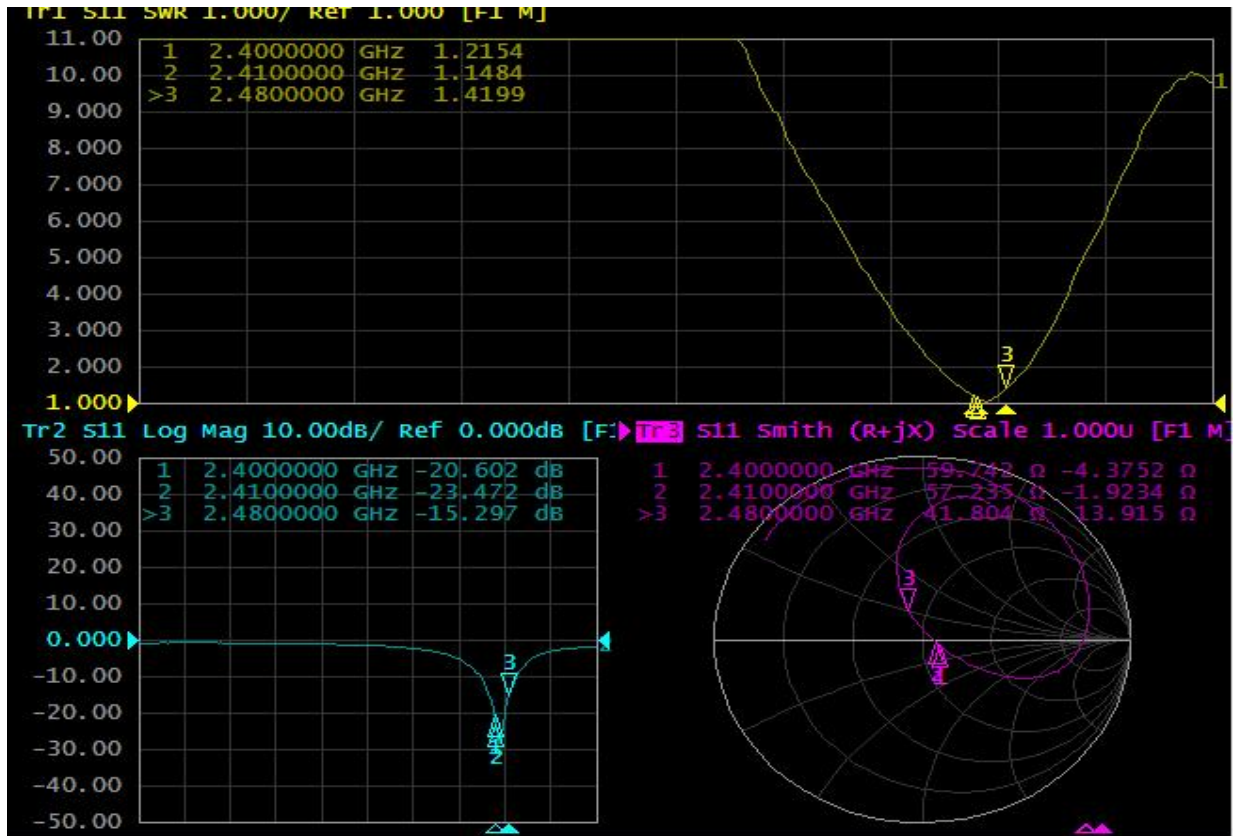
Test tools: Agilent8960 instrument, R & SCMW500, full wave far field ETS dark room, high precision positioning system and its controller and computer with automatic test program

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

Test method: DUT is fixed in the center of the turntable on the same horizontal line as the center of the horn antenna.

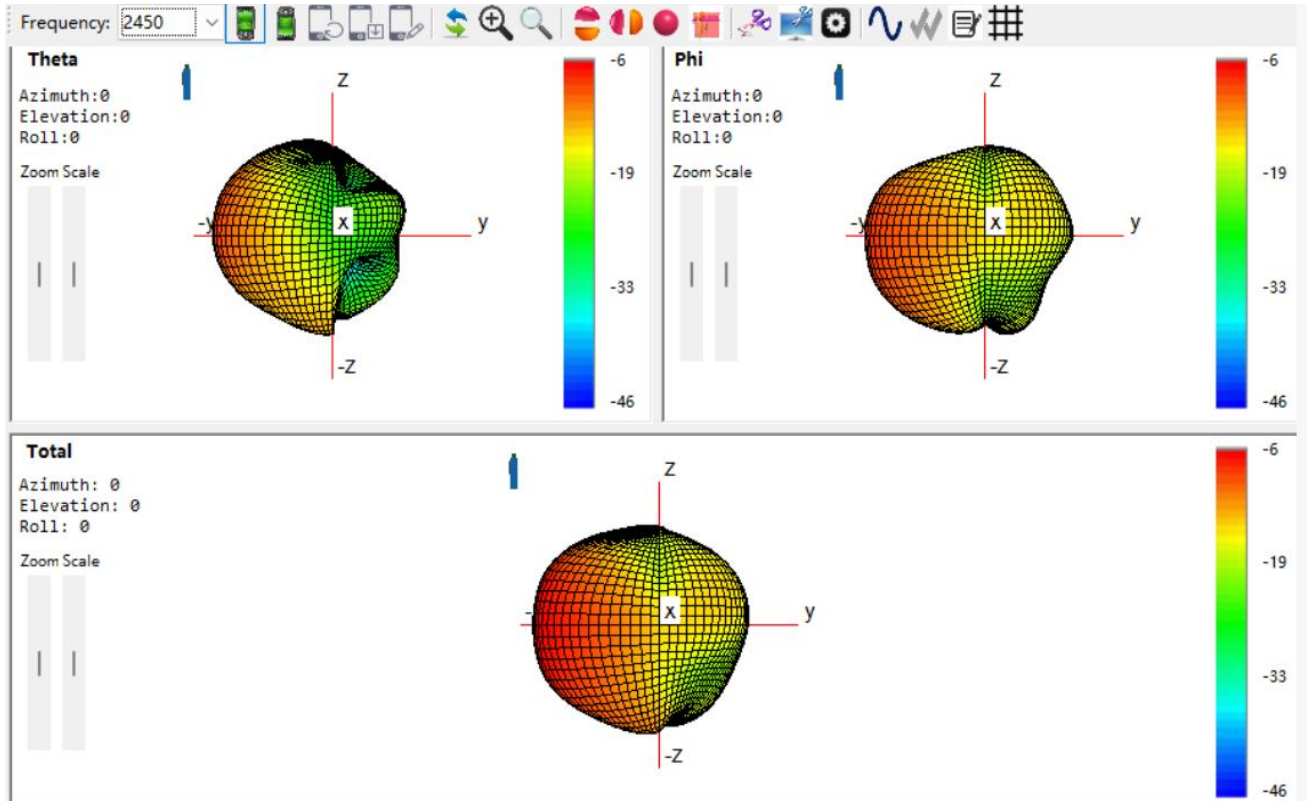
The positioning system enables the DUT to rotate in the whole sphere to satisfy the high-precision 3 D positioning. Each RF instrument and turntable controller communicate with the PC with automatic test software through the GPIB interface.

2.2.3 Passive antenna parameter

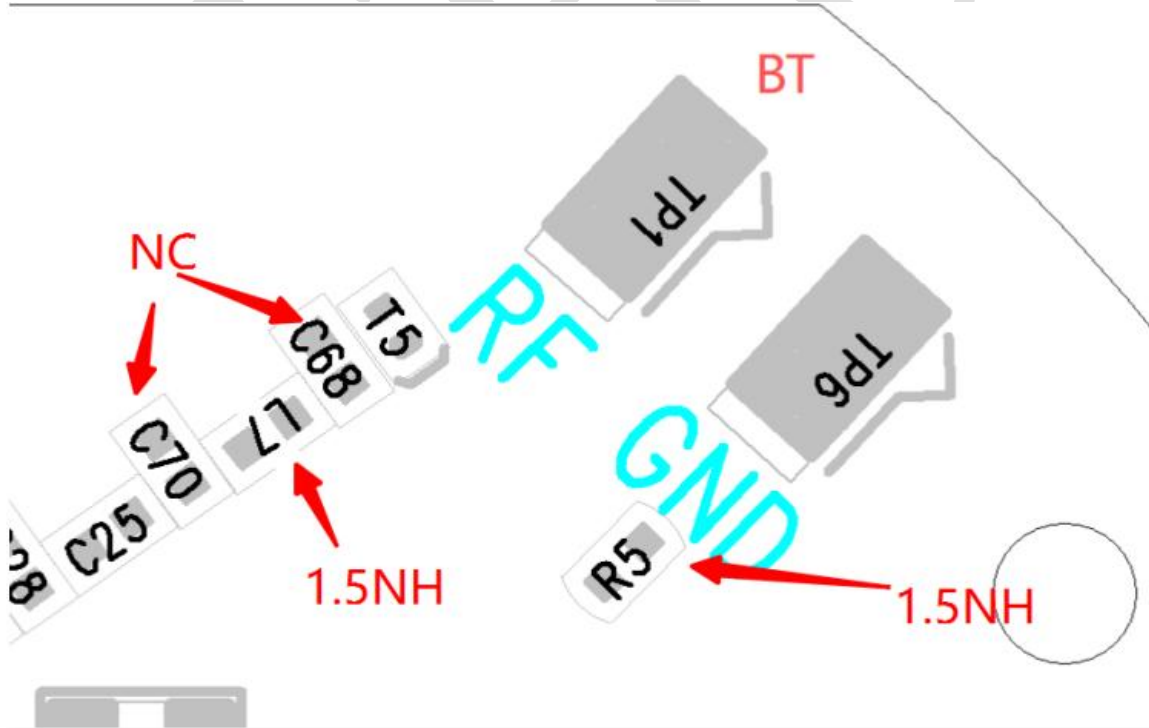


Freq (MHz)	Effi (%)	Gain (dBi)
2400	4.3	-14.4
2410	4.9	-14.2
2420	5.3	-13.8
2430	5.9	-13.3
2440	6.5	-12.7
2450	7.1	-12.3
2460	6.6	-12.8
2470	6.2	-13.1
2480	5.4	-13.6

2.2.4 BT Apple Chart/Direction Chart-Arm

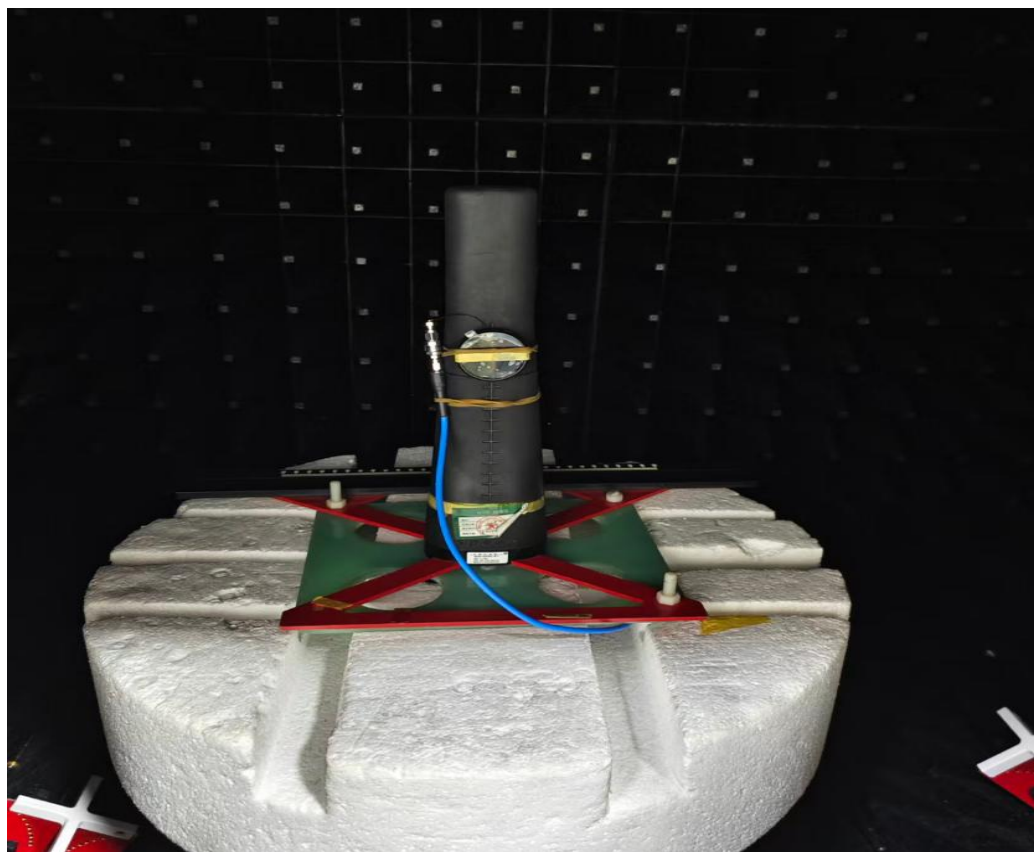


2.2.5 Antenna loading coil-BT



1、主路并位NC，串1.5NH，回地1.5NH

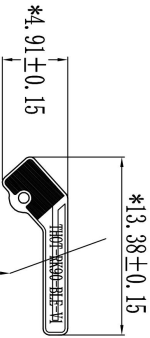
2.2.6 Test image



3.Engineering drawing

3.1 FPC antenna

1				2				3				4				5				6				7				8																			
A																																															
B																																															
skills requirements:																																															
1.FPC substrate specifications:												PI substrate: 0.5mm																																			
2.Electroplating specifications:												Electrolytic copper: 0.5oz(10) Double-sided tape: 3m 9471 Nickel plated: 3µm All: 0.025mm																																			
3.surface ink requirements:												Surface ink color: Matte Black Ink Printing font color: White Printing font height: According to drawings																																			
C																																															
4.Reliability requirements:												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:												1. Shape tolerance ±0.15; 2. Copper foil circuit tolerance ±0.05; shape is ±0.15; 3. The position of the copper foil to the hole or shape position tolerance ±0.15; 4. Hole-or-hole position tolerance ±0.10; hole-or-shape position tolerance ±0.15; 5. The size tolerance of gold finger is ±0.20; 6. For other unmarked dimensions, refer to 2D drawings.																																			
The dimensions marked with numbers are regarded as important dimensions, and the others refer to 2D drawings																																															
6.Key control size:																																															
7.Environmental requirements:																																															
8.Packaging requirements:																																															
Single PCS shipment																																															
D																																															
DATE												Modify the content												Version				Revise																			
1												2												3				4				5				6				7				8			
Shenzhen Yu Sheng Communication Equipment Co., Ltd.																																															
Model												RK90												DATE				2025.10.23																			
Name												BLE antenna												Design				BYZ																			
Part NO												647006-1A-R4												Review				MD				BYZ															
Material quality												Rolled copper foil												RF				CKH																			
Weld surface treatment:																								confirm																							
Appearance treatment:																								UNT																							
位置																								mm				proportion				FTT				Revise				R.A							
5												6												7				8																			



Gold plated Area

4. Bill of Materials

647006 (RK90) BOM

edition: R:A

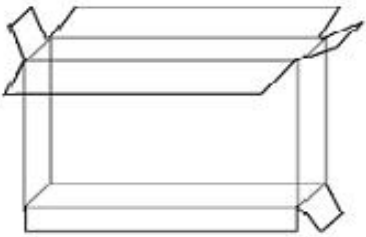
client: 647

Type of aircraft: 647006

Set a date: 2025/10/24

Item numb	* Material code	* Material name	Material class	*Machine type	Specification and model	colour	*unit.	dosage	remark
1	647006-IA-RA	BLE-FPC		RK90	Black BLE-FPC (Electrolytic Copper, 1-to-1 Ratio, Gold-Plated) 13.384.910.12mm	BLACK	PCS	1	
1.1	647006-IA-01-RA	BLE-FPC		RK90	Black BLE-FPC (Electrolytic Copper, 1-to-1 Ratio, Gold-Plated) 13.384.910.12mm	BLACK	PCS	1	
verify: examine: manufacture: BYZ									

5.Package drawing

Packaging method diagram		
product name	FPC antenna	
P / N	647006	
Project model	RK90	
File details	Carton Size 1: 270*260*200MM Carton Size 2: 260*200*200MM Carton Size 3: Depending on the order quantity / volume	
	Boating method	Packaging by order quantity
	Total number of binning	Packaging by order quantity
labeling requirement	Tag Size 1: Universal use 100 * 100mm Tag Size 2: According to customer requirements	
matters need attention		
1. Due to the limitation of order quantity, the packing method of each material is the size of the box according to the total quantity of the order or the physical volume		
2. Storage temperature: room temperature		
3. Preservation conditions: store them in a cool and dry place		