

Harmony Project Antenna Material Requirements Specification

Customer Name: Tianjian

Customer Product Name: Harmony

Product Name: Dongle Antenna

Supplier Model: 336071-IB Dongle Antenna

Change History:

order number	edition	state	availability date	person liable	page number	remarks
1	R:A	editio princeps	2026-6-8	Li Jieyi	11	

Supplier's acknowledgment signature:

Responsible Person/Date		IQC/ date -	Review/Date	Approved/Date
MD	Bi Yezhi	Su Guanfeng	Zeng Xianghao	
RF	Chen Kehong			

Buyer's acknowledgment signature (please return after signing):

Buyer's determination result: ☐ Qualified ☐ Unqualified			
Development and Design Engineer / Date	SQE Engineer/Date	Procurement Manager/Date	Development Department Manager's Approval/Date

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1. Overview

1.1 Scope of Application

This specification defines the technical requirements for antennas and material specifications for Harmony products.

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

1.2 Project Basic Information

Antenna Name:	<u>Harmony</u>
Antenna Frequency:	BT: 2.4G
Antenna Material:	FPC antenna

2. Requirements for Technical Specifications

2.1 Test Items and Equipment Overview

List	test item	equipment
Active Testing	TRP,TIS	Comprehensive tester, microwave anechoic chamber

2.2 Active Reporting

2.2.1 Testing Instructions

Testing equipment: Agilent 8960 comprehensive tester, R&SC MW500, fully electromagnetic far-field ETS anechoic chamber, high-precision positioning system with its controller, and a computer equipped with automated testing software.

Test Environment: Temperature $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$, Humidity $50\% \pm 15\%$

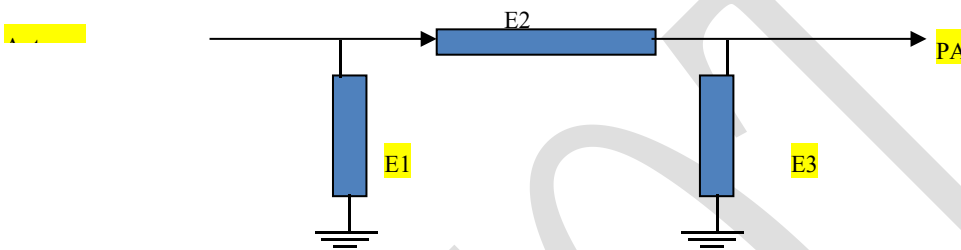
Test Method: The DUT is mounted on the H-plane at the center of the turntable, aligned horizontally with the center of the speaker antenna.

The positioning system enables the DUT to rotate across the entire spherical surface, achieving high-precision three-dimensional positioning. All RF instruments, turntable controllers, and PCs equipped with automatic testing software communicate via GPIB interfaces.

2.2.2 Mainboard Data Transmission

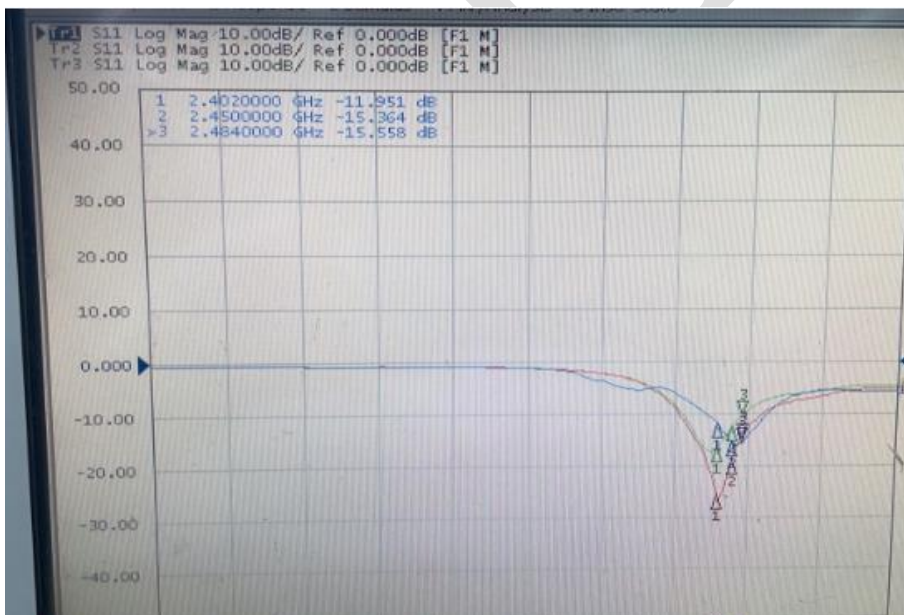
dongle	Channel	power	sensitivity
	0	9.2	-94.0
	39	9.3	-94.0
	78	9.3	-94.5

2.2.3 The matching circuit is shown in the figure below



Element	Value
E1(0201)	N/A
E2(0201)	2.7PF
E3(0201)	2.2NH

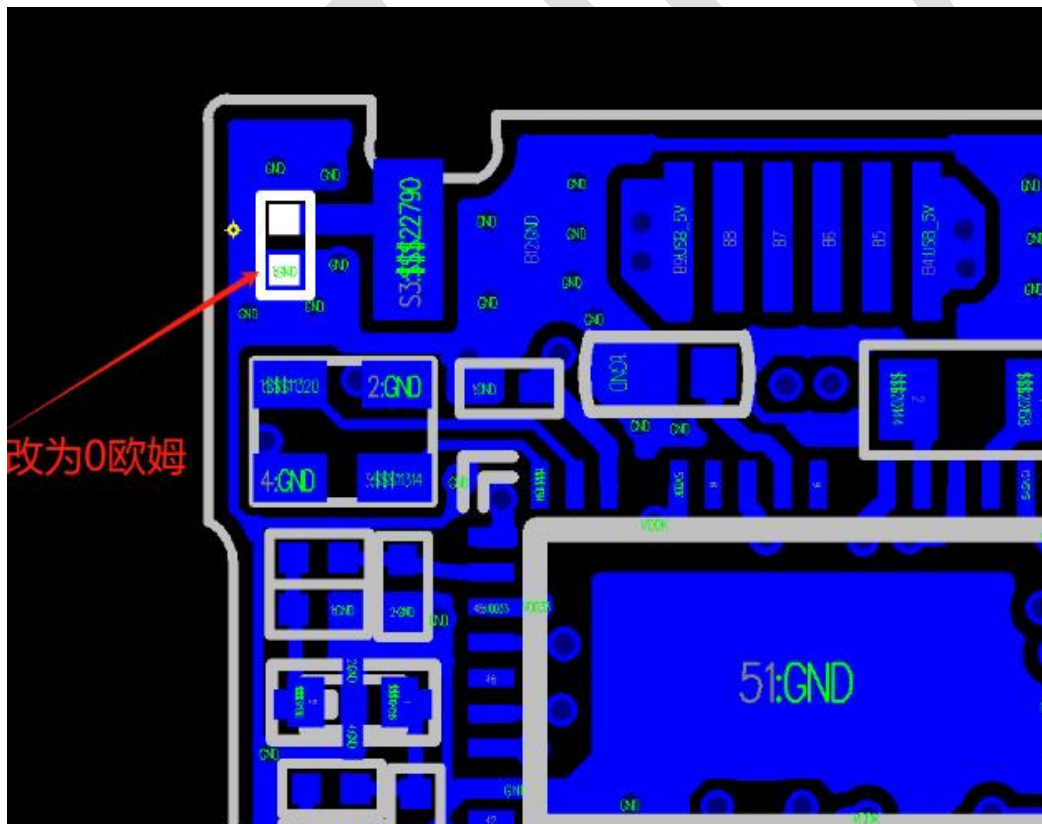
2.2.4 S11

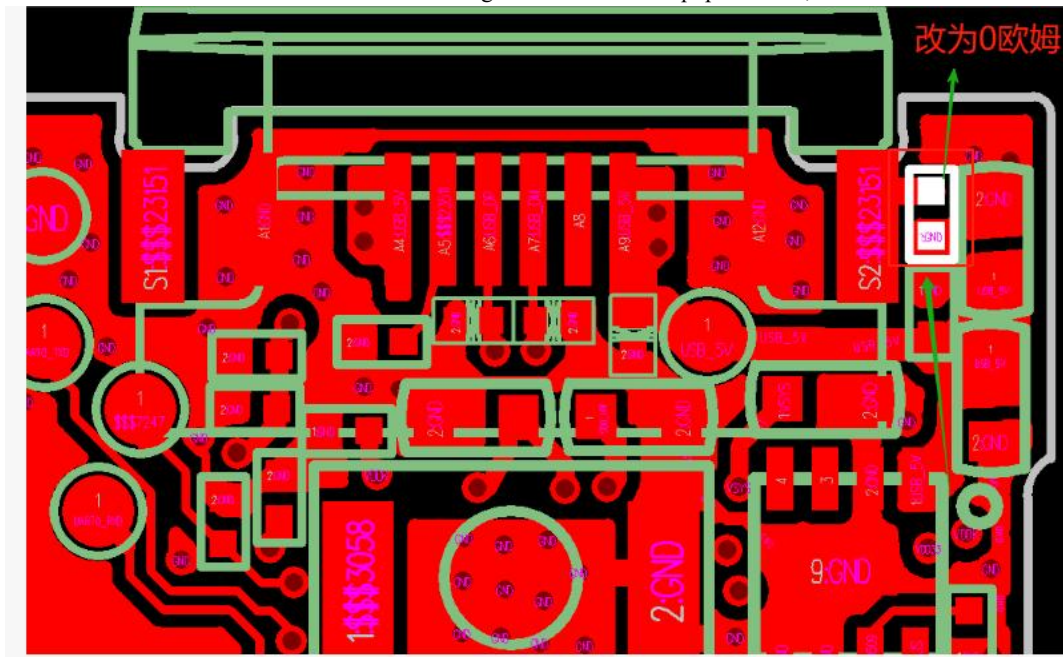


2.2.5 Passive Efficiency

Freq (MHz)	Effi (%)	Gain (dBi)
2400	20	0.5
2410	24	0.6
2420	27	0.7
2430	29	0.9
2440	31	0.9
2450	32	1.1
2460	31	1
2470	30	0.8
2480	28	0.7
2490	27	0.6
2500	25	0.5
2501	23	0.5

2.2.6 Environmental Treatment





2.2.7 Antenna OTA

iqoo-u3	Channel	TRP (dBm)	TIS (dBm)
dongle+Iqoo cellphone	0	2.52	-81.14
	39	3.14	-87.85
	78	3.52	-88.62

huawei mateBook14	Channel	TRP (dBm)	TIS (dBm)
dongle+Metal Notebook	0	5.25	-79.86
	39	5.36	-86.14
	78	5.86	-82.87

Sanxing S9	Channel	TRP (dBm)	TIS (dBm)
dongle+Sanxing S9 cellphone	0	5.65	-88.85
	39	5.77	-88.74
	78	5.89	-88.62

Tongfang – Mechanical Revolution	Channel	TRP (dBm)	TIS (dBm)
	0	5.5	-80.65
	39	5.49	-85.79
	78	5.69	-83.47

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3.1 Dongle Antenna Assembly

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4. Bill Of Material

336071 (Harmony)-BOM

Edition : T:A

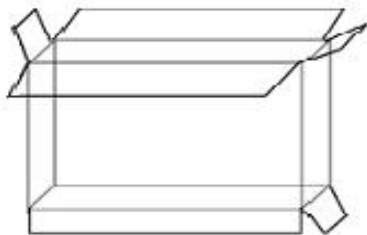
client : 336

Type of aircTCft : 336071

Set a date : 2025/12/18

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5. Packaging Image

Packaging Method Diagram		
product name	Dongle Antenna	
P / N	336071	
Project Model	Harmony	
Packaging Details	Carton Size 1: 270*260*200MM Paper Box Size 2: 260*200*200MM Carton Size 3: Based on order quantity/volume	
	Packaging Method	Pack by order quantity
	Total number of boxes packed	Pack by order quantity
labeling requirement	Label Size 1: General 100*100 mm Label Size 2: According to customer requirements	
matters need attention		
1. Due to order quantity limits, the packaging size for each material is determined based on either the total order quantity or actual volume.		
2. Storage temperature: Room temperature		
3. Storage conditions: Store in a cool, dry place		

(This image is a schematic representation of the packaging; please refer to the actual mass-produced version for details.)

6. Manufacturer Information

6.1 **Manufacturer Name:** Shenzhen Yusheng Communication Equipment Co., Ltd.

6.2 **Manufacturer Address:** 407–411, 4th Floor, Building 2, Nantai Yunchuang Valley Park, located on the southeast side of the intersection of Guangming Avenue and Dongchang Road, Guangming District, Shenzhen

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