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DONGGUAN HUANGJIE COMMUNICATION TECHNOLOGY CO., LTD.

SPECFICATION FOR APPROVAL

CUSTOMER	
CUS. CODE	
CUS. MODEL	
HJ-Tech CODE	3N0201BK-006
PRO. NAME	RF ANTENNA COMPONENT
SPECIFICATION DESCRIPTION	Built in antenna OD1.13 Cable, P1 Steel sheet antenna P2 MHF-1-PLUG, product length L=818mm
DATE	2026/8/18

SUPPLIER		
PREPARER	CHECKER	APPROVER
S.He	XIU HE	LFY

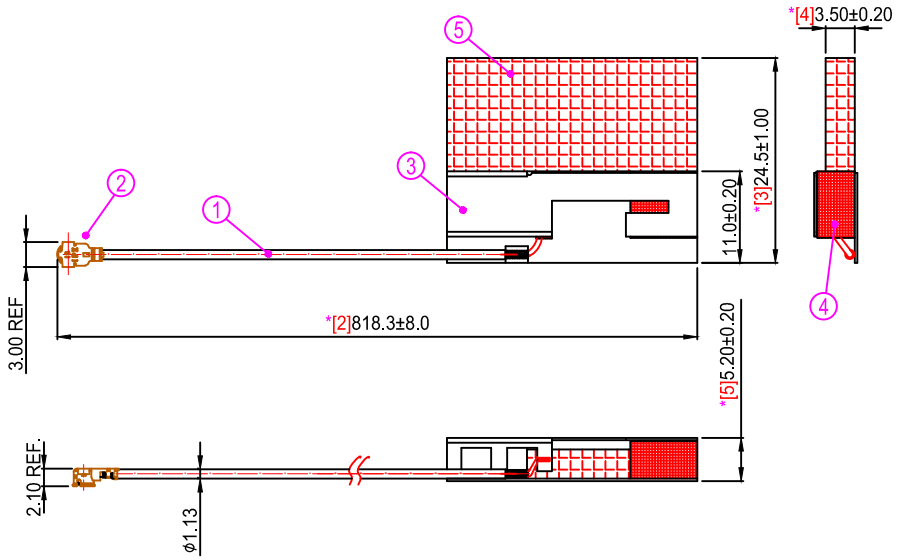
CUSTOMER		
TRANSCTOR	CHECKER	APPROVER

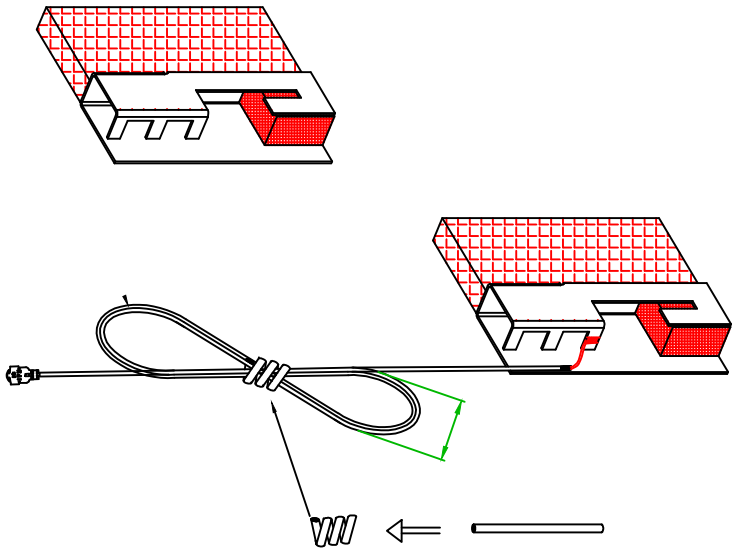
DONGGUAN HUANGJIE COMMUNICATION TECHNOLOGY CO.,LTD.
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CONTENTS

S/N	SYNOPSIS	PAGE
1	COVER	1
2	CONTENTS	2
3	PRODUCT DRAWING	3
4	PRODUCT SPECIFICATION	4~5
5	PACKAGE DRAWING	6
6	ANTENNA ELECTRICAL CHARACTERISTIC TEST REPORT	7~11

REV.	RELEASE AND CHANGE SUMMARY	DATE
A	First Release	2024.05.29





No.	PART NUMBER	PART NAME & DESCRIPTION	Q'TY	REMARKS
5	2MH039	1. L30.0×W13.6×T3.5 mm, EVA with doublesided adhesive tape	1	---
4	2MH046	Support foam, L7.5×W7.5×4.5 mm	1	---
3	2YC010	SUS304 nickel plated, L30.0×W11.0×H5.2×T0.30 mm, long radiator	1	---
2	2LM10P113210	MHF-1-PLUG FOR OD1.13 CABLE	1	---
1	2C5M11312BK1	Micro coaxial cable, OD1.13, double silver tinned, Black	1	Cut per cable cut drawing.

1. Electrical Characteristics：100% test by vector network analyzer.
   Characteristic impedance: 50Ω; Applicable frequency range: 2.4GHz-2.5GHz; VSWR: Max. 2.00.
2. Dimension Inspection：[*]-Items for FAI (First Article Inspection);
   Key inspection items; -Items under CPK control.
3. Visual Inspection：100% visual inspection.
   Product appearance shall be clean and neat surface shall be free of scratch,
   damage and contamination; plating shall be：bright and uniform without oxidation.
4. Packaging Specification：//
5. Environmental Requirement：
   The product and all its applied materials shall comply with RoHS requirements.

GENERAL TOLERANCE:
UNLESS OTHERWISE SPECIFIED
LINEAR:
0.5 < L ≤ 6 ± 0.05
6 < L ≤ 30 ± 0.10
30 < L ≤ 120 ± 0.20
ANGULAR:
0 < L ≤ 10 ± 1°30'
10 < L ≤ 50 ± 1°00'
50 < L ≤ 120 ± 0°30'

FILE TYPE: Product Drawing
DRA./DATE: S.He 24.05.29
CHE./DATE:
APP./DATE:
FILE FORM: HJ-QR-E-03 22.09.01

Dongguan HUANGJIE Communication Technology Co., Ltd.
东莞市皇捷通讯科技有限公司

TITLE: RF Antenna Assembly
Built in antenna,1.13 black double silver tinned cable,P1 end soldered with steel sheet antenna,P2 end crimped with MHF1 PLUG,cable cut off length L=800 mm

CODE: 3N0201BK-006

SIZE:	UNIT:	PRO.:	SCALE:	PAGE:
A4	mm	3rd	1:0.6	1/1

THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO HUANGJIE AND SHOULDN'T BE USED WITHOUT WRITTEN PERMISSION.

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WIFI 2.4G&5.8G FLEX CABLE BUILT-IN ANTENNA

1 SCOPE

1.1 CONTENTS

This Product Specification covers the mechanical, electrical and environmental performances specification for wifi 2.4g&5.8g flex cable built-in antenna.

1.2 QUALIFICATION

When tests are performed the specification shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

2 APPLICABLE DOCUMENTS AND FORMS

The associated product documents and forms constitute a part of this specification to the extent specified herein. Unless otherwise indicated, the latest edition of the document applies. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of the specification and the reference documents, this specification shall take precedence.

3 TEST AND ACCEPTANCE REQUIREMENTS

3.1 GENERAL

3.1.1 Dimensional Characteristics

Part construction shall conform to the dimensions, shape, and detail attributes specified on the latest revision of the applicable part drawing(s).

3.1.2 Material Characteristics

All material used in each test sample shall conform to the material specifications shown on the latest revision of the applicable part drawing(s).

3.2 RATING

Frequency Range	Nominal Impedance	Return Loss	Peak Gain	Operating Temperature
2.4~2.5G,5.15~5.85G	50Ω	< -10 dB	3dBi	-40℃ ~ +85℃

3.3 TEST CONDITION

Unless otherwise specified, all tests and measurements shall be performed under the following conditions.

Temperature	Atmospheric Pressure	Relative Humidity
+15℃ ~ +35℃	866hPa ~ 1066hPa	45% ~ 75%

3.4 Electrical Performance

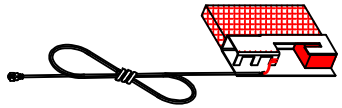
No.	Items	Test Condition	Specifications
		GENERAL	
1	Contact Resistance	Solder the receptacle connector to the test board and mate the plug connector together, then measure the contact resistance as shown in figure 1 by the four terminal method. Open circuit voltage: 20mV MAX Circuit current: 10mA MAX	Inner contact: Initial: 20mΩ MAX After: 25mΩ MAX Ground contact: Initial: 20mΩ MAX After: 25mΩ MAX
2	Insulation Resistance	Mate the plug and receptacle connector Together,and then, apply DC 200 V Voltage between the inner contact and the ground contact in accordance with EIA 364-21F	Initial: 500 MΩ MIN After: 100 MΩ MIN
3	Dielectric Withstanding Voltage	Mate the plug and receptacle connector together, and then apply AC 200 V between the inner contact and the ground contact in accordance with EIA 364-20F	No flashover, No sparkover, No excess leakage, No breakdown
4	V.S.W.R	Measure V.S.W.R with a network analyzer from 0 to 6GHz(Install in plastic housing and test)	1.8MAX.
		MECHANICAL	
5	Un-mating Force	Solder the receptacle to the test board and mate the plug into it. Test the withdrawal force with an insertion-extraction force tester at a rate of 25 ± 3 mm/min	1.Initial:4N MIN 2.After 30 Cycle:2N MIN

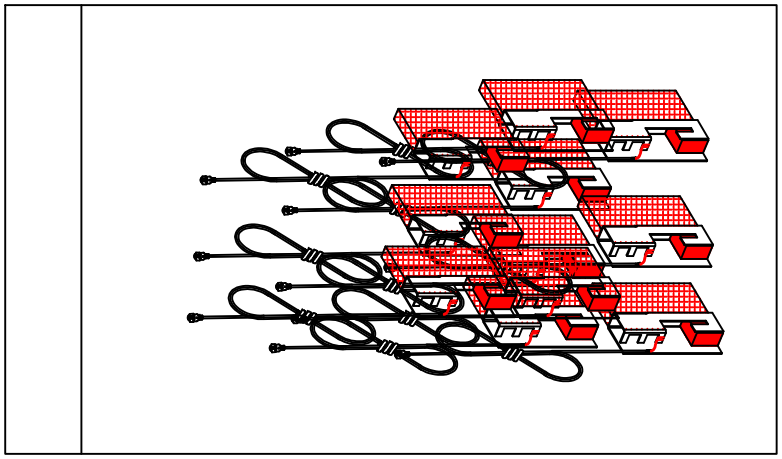
6	Durability	Solder the receptacle onto the test board, interlock the male and female connectors using a mating tester for 30 cycles, and then test the parameters.	Appearance: No AbnormalityContact Resistance: Shall meet 3.4.1/2/3/4
7	Cable retention	1 It is considered qualified if a 1.30 kg weight is lifted vertically from the table along the central axis of the cable at a speed of approximately 25 ± 3 mm/min.	No detachment or looseness at the crimp joint between the wire and the connector. Shall meet 3.4.1/2/3/4
ENVIRONMENTAL			
8	Humidity	Apply the following environment to themating connector in accordance with EIA364-31 Method III Test Condition B Temperature:25~65℃ Humidity : 90~95% R.H Duration: 96 hours	Appearance: No damage Contact Resistance: Shall meet 3.4.1 Insulation Resistance: Shall meet 3.4.2 Dielectric Withstanding Voltage: Shall meet 3.4.3
9	High Tempera-ture Test	Apply the following environment to themating connector Temperature : 90±2℃ Duration : 96 hours	Appearance: No damage Contact Resistance: Shall meet 3.4.1 Insulation Resistance: Shall meet 3.4.2 Dielectric Withstanding Voltage: Shall meet 3.4.3
10	Thermal Shock	Perform the following test conditions on mated connectors in accordance with Test Method III, Condition B of EIA-364-32: Temperature: -55°C to 85°C Transfer time: 5 min max. Number of cycles: 5	Appearance: No damage Contact Resistance: Shall meet 3.4.1 Insulation Resistance: Shall meet 3.4.2 Dielectric Withstanding Voltage: Shall meet 3.4.3
11	Salt Spray	EIA 364-26 Test Condition A Apply the following environment to the mating connector Temperature : 35±2℃ Relative Humidity : 90~98%R.H Salt water density: 5±1% Duration : 24 hours	Appearance: No damage Contact Resistance: Shall meet 3.4.1

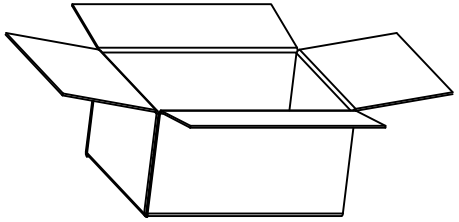
3.5 CHANGE LOG

Revision	Release and Change Summary	Date	Tabulator	Checker	Approver
A		2026.08.11	S.He	XIU HE	LFY

REV.	RELEASE AND CHANGE SUMMARY	DATE
A	//	2025.02.19







Packaging specifications:

1. 1 piece per bundle, 20 bundles per bag, 20 bags per boxls.
2. Paper spacer: 2 pieces per carton. Place one paper spacer at the bottom of the carton before packing, and another before sealing.
3. 400 pieces per carton, carton dimensions: 360*360*145, carton size can be adjusted according to material dimensions and quantity.
4. The sealing method adopts an "I"-shaped design, with identical configurations on both the top and bottom.
5. The material is insufficient to fill the carton, requiring the use of filler material.
6. Material card labels and month labels shall comply with the customer-specified standards.

GENERAL TOLERANCE:
UNLESS OTHERWISE SPECIFIED

LINEAR:

0.5 < L ≤ 6	± 0.05
6 < L ≤ 30	± 0.10
30 < L ≤ 120	± 0.20

ANGULAR:

0 < L ≤ 10	± 1°30'
10 < L ≤ 50	± 1°00'
50 < L ≤ 120	± 0°30'

FILE TYPE: 包装图
DRA./DATE: S.He 25.02.19
CHE./DATE:
APP./DATE:
FILE FORM: HJ-QR-E-03 22.09.01

Dongguan HUANGJIE Communication Technology Co., Ltd.
东莞市皇捷通讯科技有限公司

TITLE: Packaging Specification

CODE: 3N0201BK-006

SIZE:	UNIT:	PRO.:	SCALE:	PAGE:
A4	mm	3rd	1:1	2/2

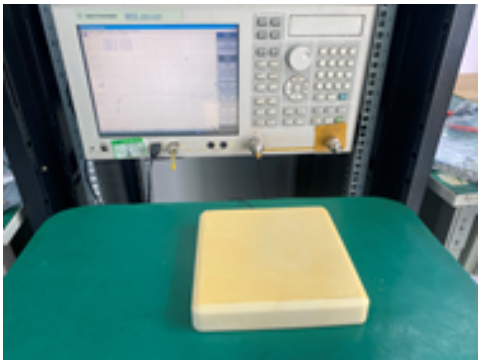
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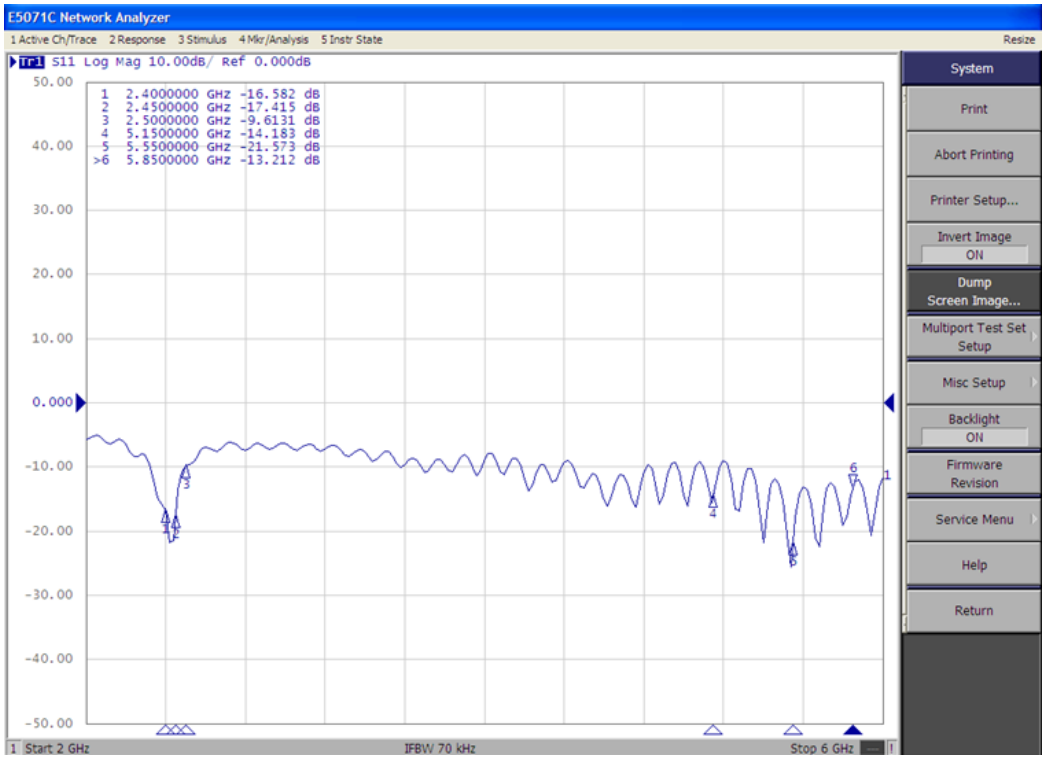
Antenna Electrical Characteristic Test Report

DOC NO.:HJ-QR-Q-22 Rev:A0

Part Number:	3N0201BK-006	Item	Spec	Judge
Part Name:	Built in antenna OD1.13 Cable, P1 Steel sheet antenna, P2 MHF-1-PLUG, product length L=818mm	VSWR	≤2.0	pass
Test Equipment	Agilent E5071C/OTA Chamber	Characteristic impedance	50Ω	pass
Quantity	5pcs			
Test Date	2026/8/11			



1 RETURN LOSS



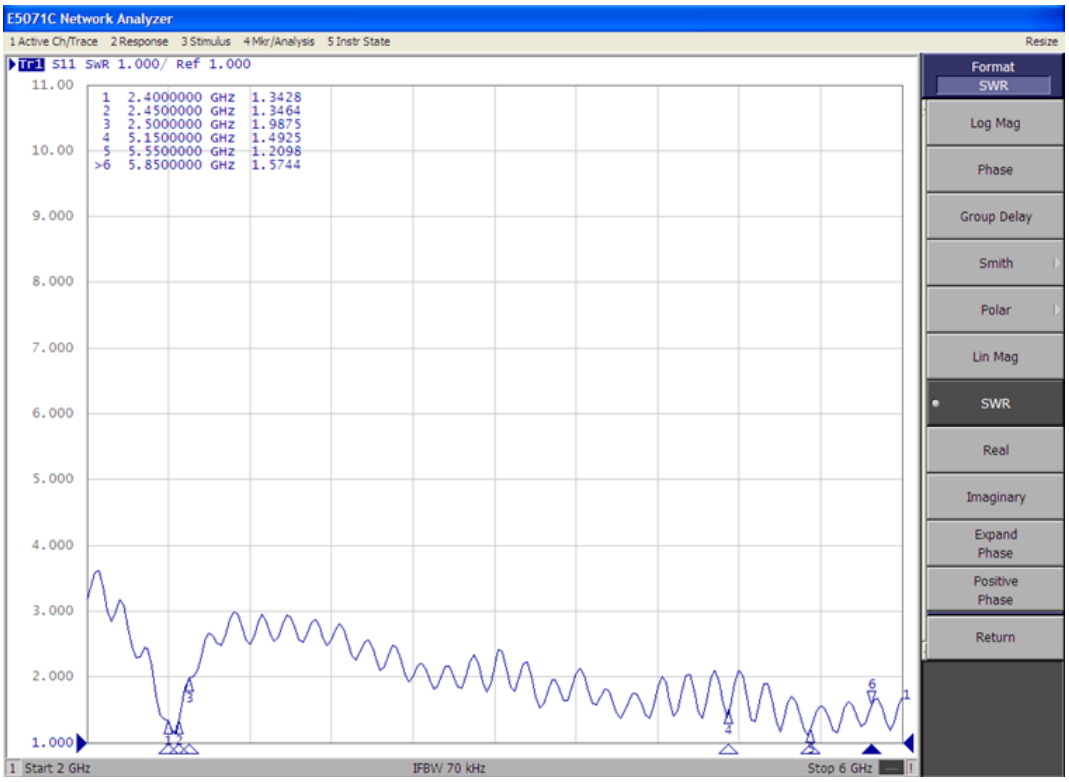
Checker: XIU HE **Tester: S.He**

Antenna Electrical Characteristic Test Report

DOC NO.:HJ-QR-Q-22 Rev:A0

Part Number:	3N0201BK-006	Item	Spec	Judge
Part Name:	Built in antenna OD1.13 Cable, P1 Steel sheet antenna, P2 MHF-1-PLUG, product length L=818mm	VSWR	≤2.0	pass
Test Equipment	Agilent E5071C/OTA Chamber	Characteristic impedance	50Ω	pass
Quantity	5pcs			
Test Date	2026/8/11			

2 VSWR



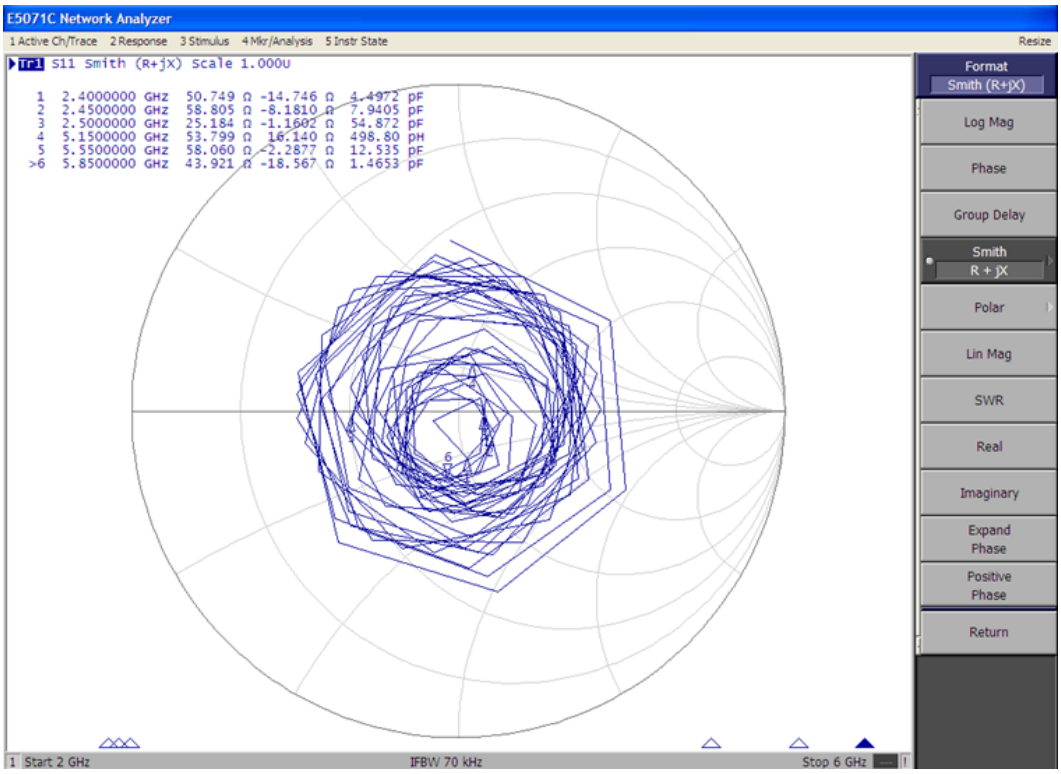
Checker: XIU HE **Tester: S.He**

Antenna Electrical Characteristic Test Report

DOC NO.:HJ-QR-Q-22 Rev:A0

Part Number:	3N0201BK-006	Item	Spec	Judge
Part Name:	Built in antenna OD1.13 Cable, P1 Steel sheet antenna, P2 MHF-1-PLUG, product length L=818mm	VSWR	≤1.8	pass
Test Equipment	Agilent E5071C/OTA Chamber	Characteristic impedance	50Ω	pass
Quantity	5pcs			
Test Date	2026/8/11			

3 SMITH(R+JX)



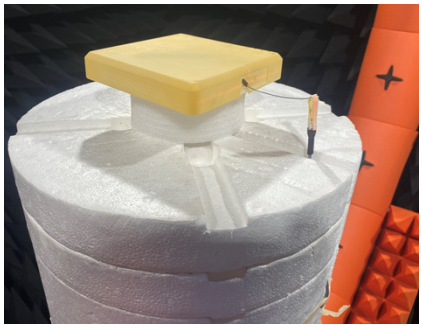
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Antenna Electrical Characteristic Test Report

DOC NO.:HJ-QR-Q-22 Rev:A0

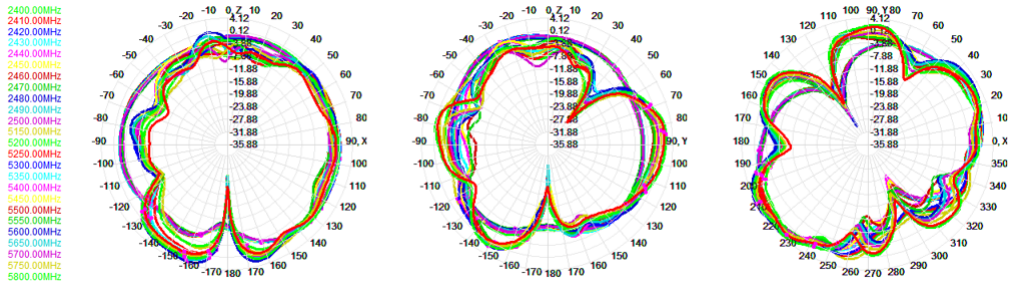
Part Number:	3N0201BK-006	Item	Spec	Judge
Part Name:	Built in antenna OD1.13 Cable, P1 Steel sheet antenna, P2 MHF-1-PLUG, product length L=818mm	Gain	3DBI	pass
Test Equipment	Agilent E5071C/OTA Chamber	Characteristic impedance	50Ω	pass
Quantity	5pcs			
Test Date	2026/8/11			



4 2D/3D RADIATION PATTERN

序号	1	2	3	4	5	6	7	8	9	10	11
频率(MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
效率 (dBi)	-1.84	-1.95	-2.08	-2.02	-2.12	-2.20	-2.17	-2.38	-2.25	-2.08	-2.11
增益 (dBi)	2.48	2.28	2.03	1.75	1.36	1.54	1.45	1.21	1.64	1.81	1.54
效率 (%)	65.41	63.89	61.90	62.84	61.33	60.30	60.70	57.86	59.61	61.96	61.47
方向性(dB)	4.32	4.22	4.11	3.76	3.49	3.74	3.61	3.59	3.88	3.89	3.66

12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
5150.0	5200.0	5250.0	5300.0	5350.0	5400.0	5450.0	5500.0	5550.0	5600.0	5650.0	5700.0	5750.0	5800.0	5850.0	
-3.11	-3.85	-3.16	-2.70	-3.22	-2.85	-2.23	-2.98	-3.14	-1.91	-2.34	-3.10	-2.56	-1.89	-2.44	
2.40	2.01	2.75	3.48	3.00	3.16	3.72	2.65	3.27	4.96	4.52	3.75	3.29	4.32	3.12	
48.85	41.18	48.26	53.75	47.66	51.85	59.87	50.33	48.53	64.42	58.30	48.94	55.40	64.65	57.02	
5.52	5.86	5.91	6.18	6.22	6.02	5.95	5.63	6.41	6.87	6.86	6.86	5.86	6.22	5.56	



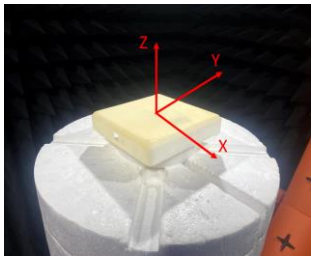
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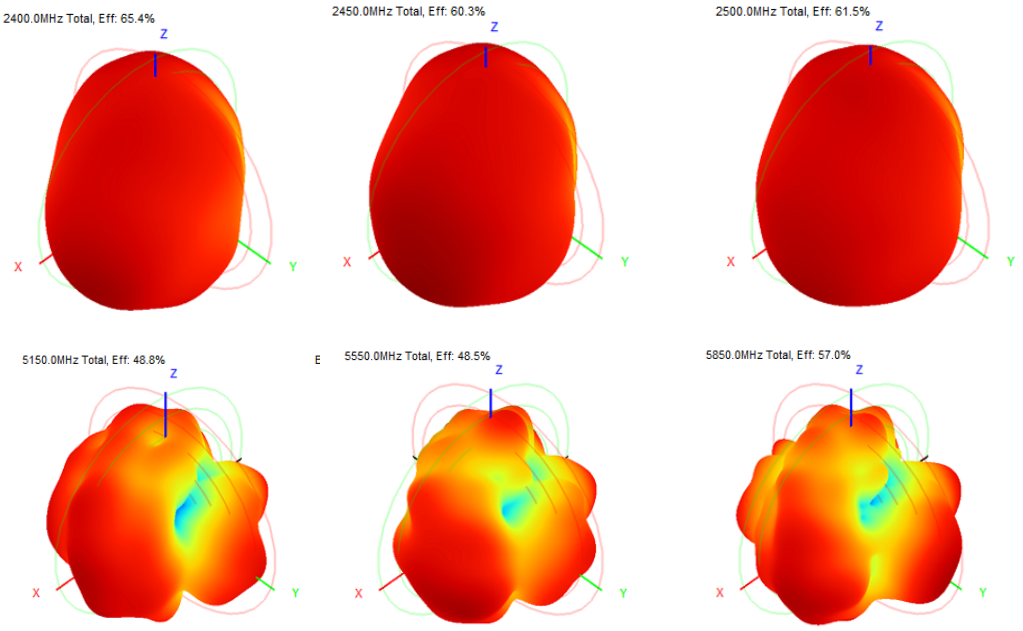
Antenna Electrical Characteristic Test Report

DOC NO.:HJ-QR-Q-22 Rev:A0

Part Number:	3N0201BK-006	Item	Spec	Judge
Part Name:	Built in antenna OD1.13 Cable, P1 Steel sheet antenna, P2 MHF-1-PLUG, product length L=730mm	Gain	3dbi	pass
Test Equipment	Agilent E5071C/OTA Chamber	Characteristic impedance	50Ω	pass
Quantity	5pcs			
Test Date	2026/8/11			



4 2D/3D RADIATION PATTERN



Checker: XIU HE **Tester: S.He**