




Shenzhen Skyworth Technology
Co., Ltd.
SZ SKYWORTH DIGITAL TECHNOLOGY
CO.,LTD ENGINEERING EVALUATION

REPORT (COMPONENTS)

REPORT NO.	EDED2401110	DATE OF APPLICATION	2024-01-18
MODEL	TDY09	APPLICATION NO.	NASP2024010032-1
DESCRIPTIONS	ANTENNA WIFI 50 OHM 196mm/(2.4G/340+5G/320)* 1.13mm * IPEX1 /5dB Wihte-Y FLY Flat S30 RoHS		
SUPPLIER'S PART NO.	3.13.1001003002		
SKYWORTH'S PART NO.	53EM-085525-A018		
MANUFACTURER	Shenzhen Shenzhen Feiyu Xinxin Electric Co., Ltd.		
SAFETY CERTIFICATION REQUIREMENTS	No need		
ENVIRONMENTAL PROTECTION REQUIREMENTS	ROHS2.0		
REMARKS:			
COMMENTS:	IF THERE IS ANY QUALITY PROBLEM,PLEASE FOLLOW THE AGREEMENT OF BOTH		
FICTION:		APPROVAL:	
			

Material Declaration Parameter Table Shenzhen Feiyuxin Electronics Co., Ltd.

SPECIFICATION FOR CUSTOMS

Supplier Name: SUPPLIER:	Shenzhen Feiyuxin Electronics Co., Ltd. Shenzhen Feiyuxin Electronics Co.,Ltd
Manufacturer Name: MANUFACTURER:	Shenzhen Feiyuxin Electronics Co., Ltd. Shenzhen Feiyuxin Electronics Co.,Ltd
Brand of parts: PART LOGO:	 FEIYUXIN —飞宇信—
Product Name: PART NAME:	IPEX-2.4G/5.8 G-5dBi-White Flat Antenna -113 Grey/Black- L340MM/L320MM
Manufacturer model: SPEC. TYPE:	3.13.1001003002
Net weight of monomer (g): MONOMER NET WEIGHT(g):	16.56g
Outer packing method: PACKAGE:	Bagged
Minimum Package Quantity (Pcs): MIN. PACKAGE QTY(Pcs):	100PCS
Production origin: MANUFACTURING ORIGIN:	Shenzhen, China
Date of tabulation: DATE:	2024-01-03

The contractor MANUFACTUR ER		
Ficus DRAFT ER	Audit CHECK	Approved APPROV ER
Jiang Lisong	Zhou Xihua	Li He

Name of the contractor (seal): Shenzhen Feiyuxin Electronics
Co., Ltd. Address: 76 Baotong South Road, Xikeng Industrial
Zone, Henggang Town, Longgang District, Shenzhen
Tel (Tel):0755-89737230 Fax (FAX):0755-89737181
Web: www.fyxdz.com

Design Specification for External Receiving Antenna

Product physical picture



Basic specifications

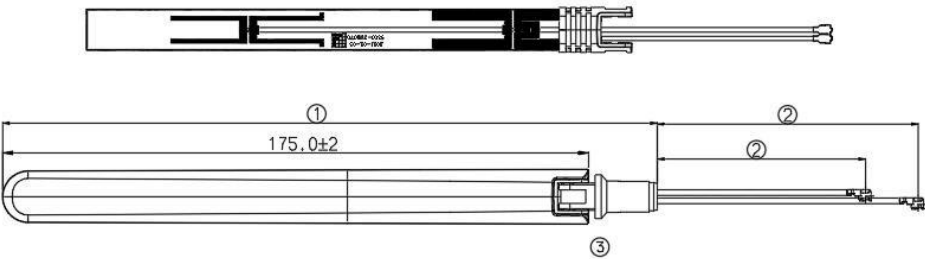
Parameters Property	Parameter Name	Required value	Manufacturer specification value (Manufacturer required)
Basic specifications	glue stick	Mobile white, 175mm	Mobile white, 175mm
	Feeder	Gray 1.13 line, 340mm; Black 1.13 wire, 320mm;	Gray 1.13 line, 340mm; Black 1.13 wire, 320mm;
	feeder end	IPEX (Generation 1)	IPEX (Generation 1)
	Accessories	None	None

Material

Parameters Property	Parameter Name	Required value	Manufacturer specification value (Manufacturer required)
Material	glue stick under the solid	PC New Mobile White	PC New Mobile White
		Do not add back material	Do not add back material
	Feeder	Conductor 7/0.08±0.005mm tinned copper wire Weaving 16*4/0.05±0.005 Tinned copper wire	Conductor 7/0.08±0.005mm tinned copper wire Weaving 16*4/0.05±0.005 Tinned copper wire

Structure size

Structure dimension drawing



Parameters Property	Parameter Name	Required value	Manufacturer specification value (Manufacturer required)	Product mean (Manufacturer required)
Structure size	Length of glue stick	196±3mm	196±3mm	196
	Feedline length	340±3mm;340± 3mm;	340±3mm;340± 3mm;	340;320;
	The lower fixed outer diameter	Φ 13±0.1mm	Φ 13±0.1m	Φ 13

Fitting (clip) size

None				
Parameters Property	Parameter Name	Required value	Manufacturer specification value (Manufacturer required)	Product mean (Manufacturer required)
Structure Dimensions	/	/	/	/

electrical properties

Parameters Property	Parameter Name		Required Value	Manufacturer specification value	Typical value of product	
				(Manufacturer er required)	(Manufactur er required)	
el ec tri	Frequency range		2400-2500MHz/515 0-5850MHz	2400-2500MHz/5 150-5850MHz	Compli ance	
	characteri stic impedanc		50Ω;	50Ω;	Compli ance	

Reliability

Parameters Property	Parameter Name	Required value	Manufacturer specification value (Manufacturer required)	Typical value of product (Manufacturer required)
Reliability	Resistance to welding heat	The temperature of the tin furnace is 265 ± 5 °C, the wire immersion tin head is immersed in the solder tank at a speed of 1 cm/s until the junction of weaving and the outer coat is reached, maintained for 3 s, and taken out vertically at a speed of 1 cm/s. After the test, there is no obvious poor appearance and no obvious deformation of the insulation layer.	The tin furnace temperature is 265 ± 5 °C, and the wire immersion tin head is immersed in the solder tank at a speed of 1 cm/s until the junction of weaving and outer cover is maintained for 3 s, and the wire rod is taken out vertically at a speed of 1 cm/s. After the test, there is no obvious poor appearance and no obvious insulation layer. Deformation.	Compliance
	Up and down fixing torque	The antenna bends 100 cycles, Bend 45 degrees, the end of the hanging 50g weight, can keep still.	Antenna bends 100 cycles Ring, bend 45 degrees, 50g weight hanging at the end, can keep still.	Compliance
	salt spray	≥ 24 hours (35 °C,5%,PH6.5 ~ 7.2) After the test, there is no obvious appearance Good.	≥ 24 hours (35 °C,5%,PH6.5 ~ 7.2), no obvious after the test Poor appearance.	Compliance
	high and low temperature	Test at 80 °C for 12H revolutions After the test at -40 °C for 12 hours and 24 hours, there is no obvious appearance defect after the test; frequency offset $\leq 5\%$.	Test at 80 °C for 12H to -40 °C for 12 H for 24H, and there is no obvious poor appearance after the test. Frequency Partial $\leq 5\%$.	Compliance
	hot and cold shock	-25~85 °C; 1hours * 10cycle = 10 hours s. 2 hours after recovery, there is no obvious external defect. Frequency offset $\leq 5\%$.	-25~85 °C; 1hours * 10cycle = 10h ours, 2 hours after recovery; Frequency offset $\leq 5\%$.	Compliance
	Shelf life	6months	6months	Compliance

Note: The supplier drawing standard is allowed to be higher than the design specification.

Specification Recognition Letter

Specification For Approval

Customer Name: 10071

Customer

IPEX-2.4G/5.8 G-5dBi-White Flat Antenna -113 Grey/Black-L340MM/L320MM

Part name

Feiyu Information Number: 3.13.1001003002

Part No

Customer material number:

Customer Part No

Customer Confirm Customer confirmation		
Confirm Confirmation	Verify Check	Approval Approver

Manufacturers acknowledge Manufacturer recognition			
Sales Representative Sales	Fiction Drafters	Verify Check	Approval Approver
Li Ying	Jiang Lisong	Zhou Xihua	Li He
Thank you for the opportunity to give our company a sample of recognition. If Huimon admits, please sign this form back to our company. Thank you for giving us the chance to approve samples. If you agree to pass it, please kindly send it back to us.			

Shenzhen Feiyuxin Electronics Co., Ltd.

Address: Feiyuxin Industrial Park, 76 Baotong South Road, Xikeng
Industrial Zone, Henggang Town, Longgang District, Shenzhen City,
China Tel: 0755-89737230 Fax: 0755-89737181

<http://www.fyxdz.com>

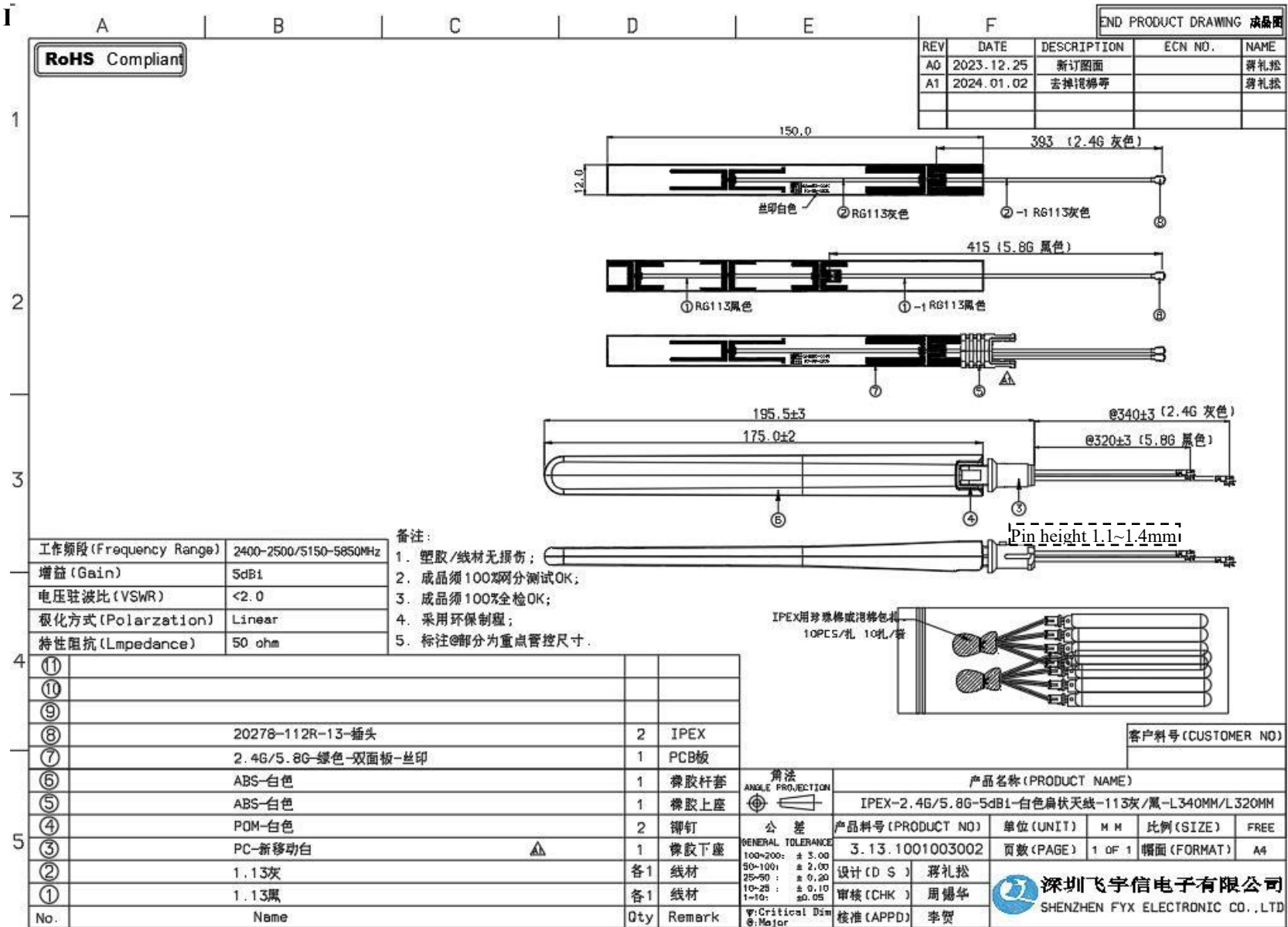
Directory Catalog

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7. Product real shot figure 11

**Modify
records**

Vers ion	Date	Engine er	Modify content
A0	2023-12-25	Jiang Lisong	New Drawing
A1	2024-01-02	Jiang Lisong	Remove foam, etc.

1. Product I



表单编号: FYX/E-QR-14A 版本: 第三版

2. Product Appearance

Exterior dimension	L195.5 * 16mm	Fixed way	screw fixation
Weight	/	Connector type	IPEX
Shell color	White	Cable	1.13 line

3. antenna performance parameters

Project	Characteristics	Unit
Frequency range	2400~2500/5150~5850	MHz
output impedance	50	Ω
standing wave ratio	<2.0	--
Gain	5	dBi
polarization mode	linear polarization	
radiation direction	Omni-directional	
Maximum input power	5	W
Working temperature	-40 to +70	°C
Storage temperature	-45 ~ +75	°C

4. Wire specifications

1.13 Line Structure Diagram



	Materials	Diameter (mm)
1. Inner conductor	silver-plated copper wire	7/0.08±0.02
2. Insulator	Solid Polyethylene (PE)	0.66±0.02
3. Outer conductor	Tinned copper wire	0.88±0.05
4. Sheath	FEP	1.13±0.05

electrical performance parameters

Capacitance (pF/m) 96±3

Impedance (ohm) 50

rate (%) 66

bending radius (mm) ≤ 7

Maximum operating voltage (VMS) 1000

Maximum Operating Frequency (MHz) 6000

Operating

-40 to +80

Attenuation (Typical)

Frequency (MHz)	Attenuation (≧ dB/m)
100	0.42
400	0.58
1000	2.20
2000	3.40
3000	4.20
4000	4.50
5000	5.20
6000	5.60

5. Environmental Experiment
Environmental Test Report
5.1 High and low temperature constant humidity test

Test Items	High temperature, low temperature and constant humidity test			
Testing equipment	Constant temperature and humidity test chamber			
Inspection standard	1. The coating on the metal surface shall be free of such defects as shedding, cracks, wrinkles, etc. Non-metallic parts shall not be discolored, cracked or changed. shape, degumming and other phenomena.			
Test Name	Test Items	Requirements	Test Method	Result Judgment
High temperature test	Temperature (°C)	75 ± 3	Test steps:	Qualified
	Test sample temperature	1	a) Put the tested part into the test chamber, and then	
	Duration of test (h)	2	Adjust the temperature of the high temperature box to 75 °C ± 3 °C, and monitor the time.	
	Time of recovery (h)	1	B) After the test, place it at room temperature for 1 hour. Line regular inspection.	
Low	Temperature (°C)	-40 ± 3	Test steps:	

temperature test			深圳市飞宇信电子有限公司	
	Test sample temperature time (h)	1	a) Put the tested part into the test chamber, and then	Qualified
	Duration of test (h)	2	Adjust the temperature of the low temperature box to $-40\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$, and monitor the time.	
	Time of recovery (h)	1	B) After the test, place it at room temperature for 1 hour. Line regular inspection.	
constant damp heat Test	Temperature ($^{\circ}\text{C}$)	$+40 \pm 3$	a) Put the tested part into the test chamber, and then	Qualified
	Relative humidity (%)	90-95	Adjust the temperature of the test chamber to $+40\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$, wet	
	Test duration (h)	21	90-95%, monitoring time.	

	Recovery time (h)	1	B) After the test, place it at room temperature for 1 hour for regular inspection.	
Approved by: Chen Yan Inspector: Li Xiaoxue				

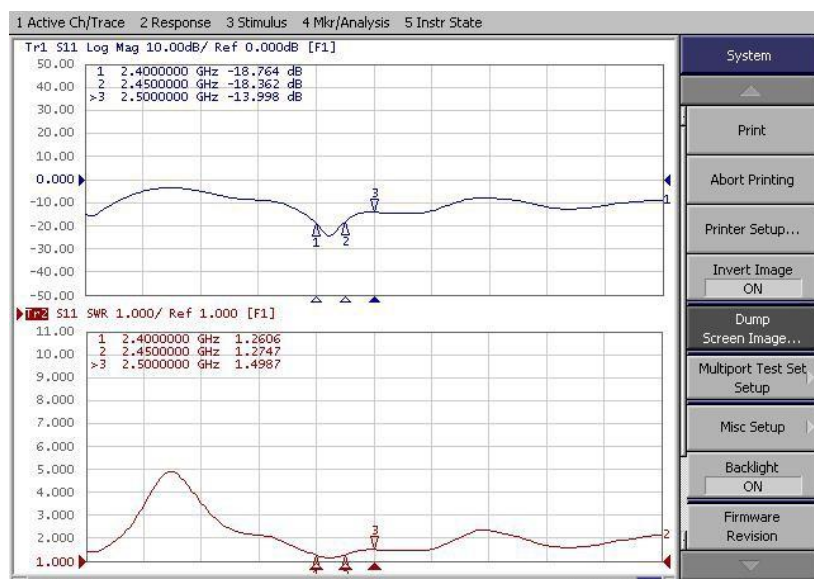
5.2 Free drop test

Test Items	Free drop test			
Testing equipment	1 m high table top			
Inspection standard	1. Falling at a height of 1 meter, the product has no defects such as falling off, cracks, etc., and the appearance has no deformation.			
Test Name	Test Items	Requirements	Test Method	Result Judgment
Free drop test	Drop height 1000mm	The front and back sides fell 2 times	Test steps: a) Drop the tested part at a height of 1000mm, and carry out regular inspection after the test.	Qualified
Approved by: Chen Yan Inspector: Li Xiaoxue				

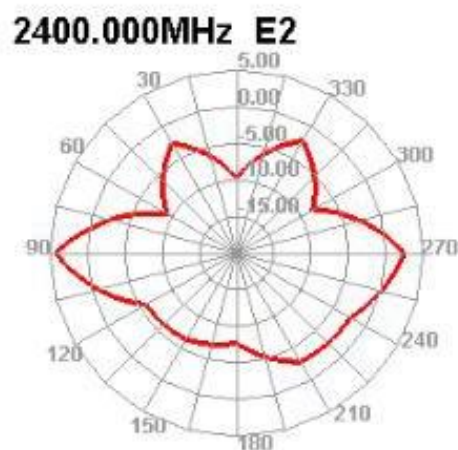
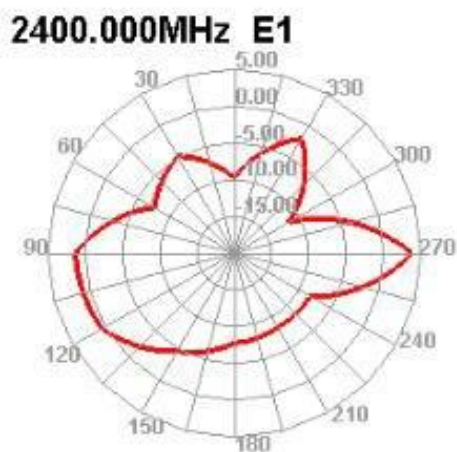
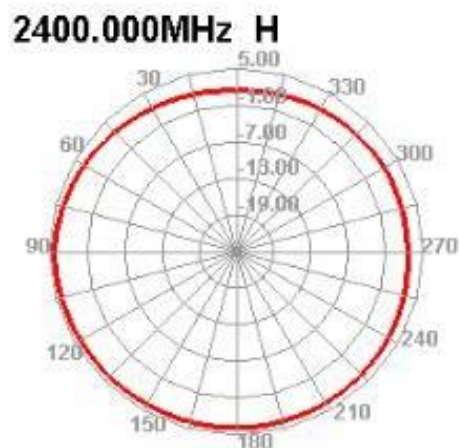
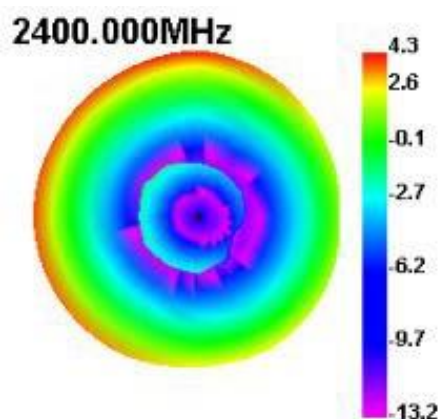
5.3 Salt spray test

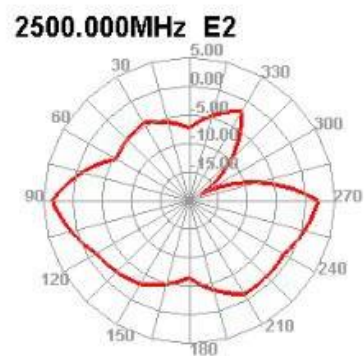
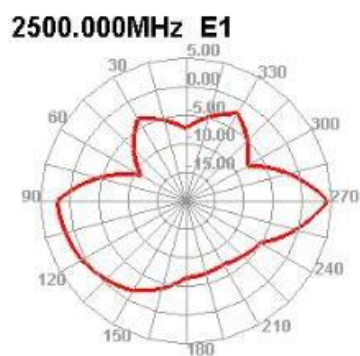
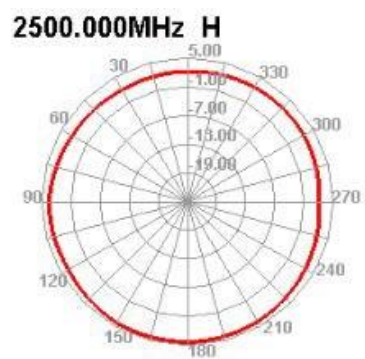
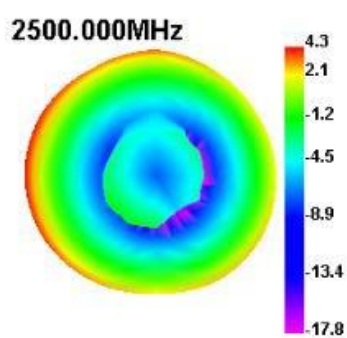
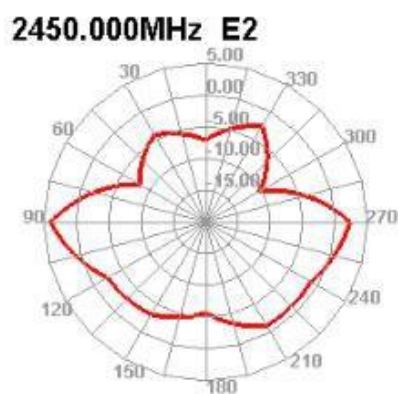
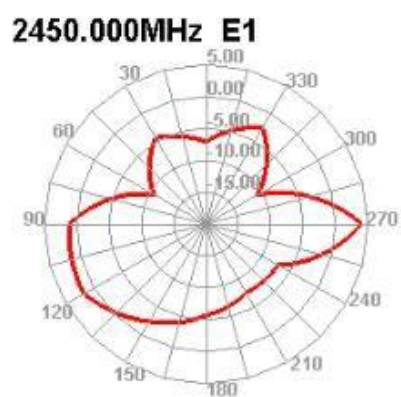
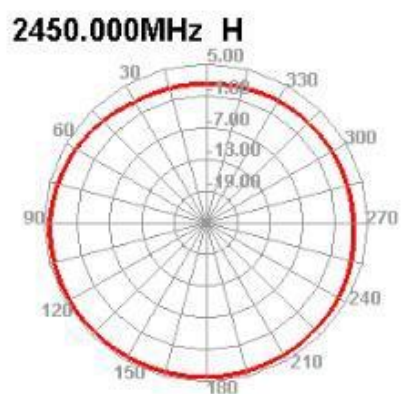
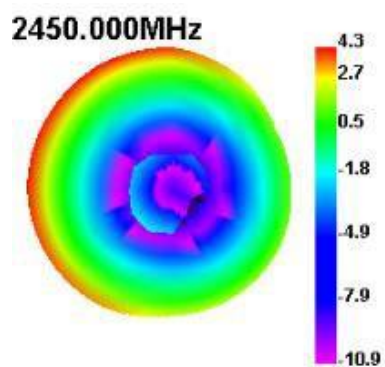
Test Items	Salt spray test			
Testing equipment	Salt spray test machine			
Inspection standard	1. There is no peeling of the coating on the metal surface; the appearance is free of rust, corrosion, oxidation and other undesirable phenomena.			
Test Name	Test Items	Requirements	Test Method	Result Judgment
Salt spray test	1. NaCl concentration: 2. Air pressure: 3. PH: 4. Spray volume: 5. Salt water test temperature setting a. Laboratory temperature: B. Pressure barrel temperature: 6. Test time:	40-60g/1kg $1.0 \pm 0.01 \text{ kgf m}^2$ 6.5-7.2 1.0-2.0ml/80c/h. $35 \pm 1 \text{ } ^\circ\text{C}$ $47 \pm 1 \text{ } ^\circ\text{C}$ 24h	Test steps: a) Modulate the salt spray tester to the relevant test conditions. B) Put the tested part in salt spray Testing machine, placed for 24 hours. Rinse with clean water after the test. Test the appearance of the tested part, and perform regular Inspection.	Qualified
Inspector: Li Xiaoxue			Approved by: Yan Chen	

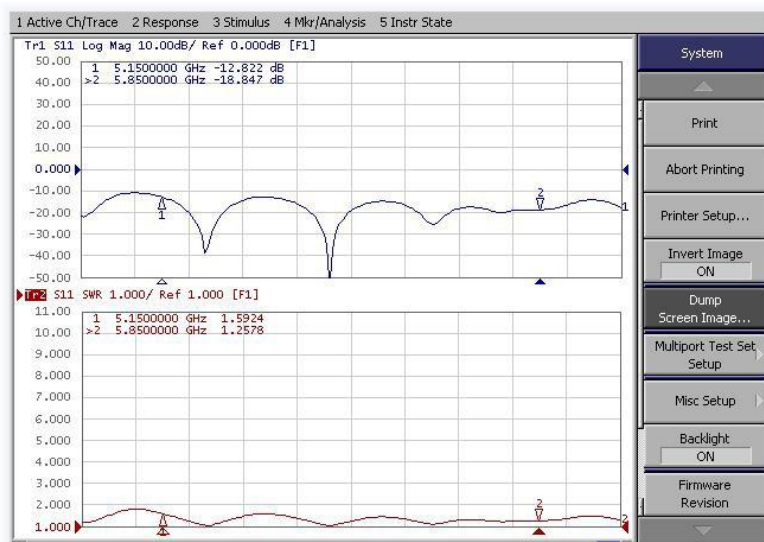
6. Antenna



Passive Test For 2400-2500		
Freq (MHz)	Effi (%)	Gain (dBi)
2400	70.78	4.32
2410	71.96	4.07
2420	73.05	4.34
2430	74.49	4.42
2440	81.8	4.32
2450	81.79	4.26
2460	81.64	4.16
2470	83.78	4.04
2480	80.27	4.32
2490	80.45	4.59
2500	81.83	4.34

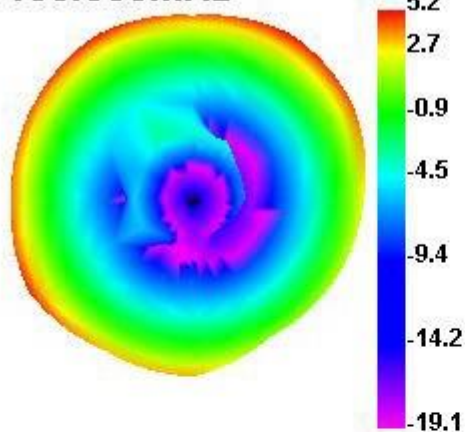




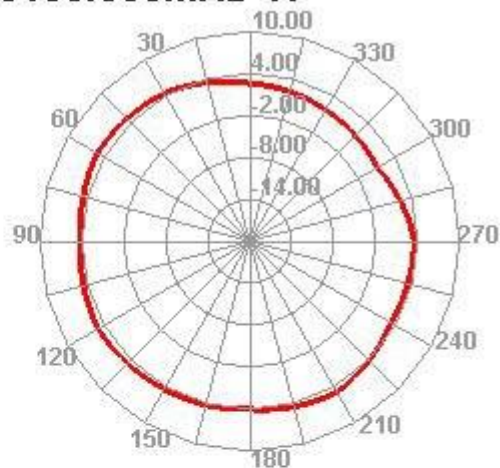


Passive Test For 5.8g		
Freq (MHz)	Effi (%)	Gain (dBi)
5150	74.71	5.17
5220	65.06	4.69
5290	63.08	4.55
5360	68.49	4.66
5430	69.09	5.52
5500	70.3	4.54
5570	75.82	4.59
5640	74.47	4.46
5710	70.92	4.42
5780	73.78	4.51
5850	68.61	4.41

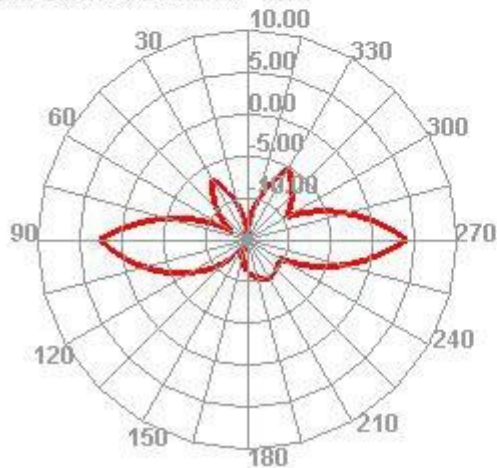
5150.000MHz



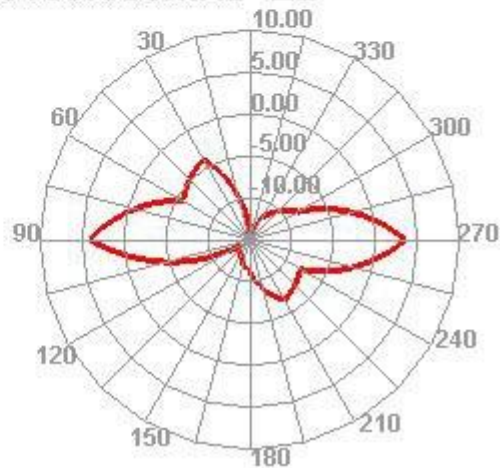
5150.000MHz H



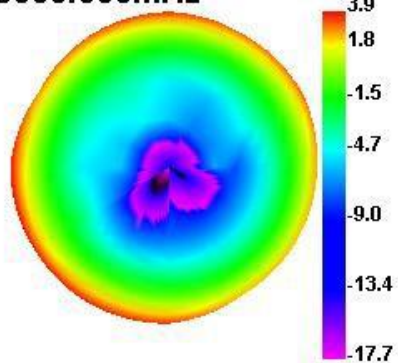
5150.000MHz E1



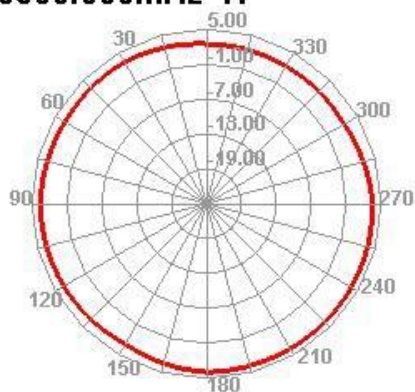
5150.000MHz E2



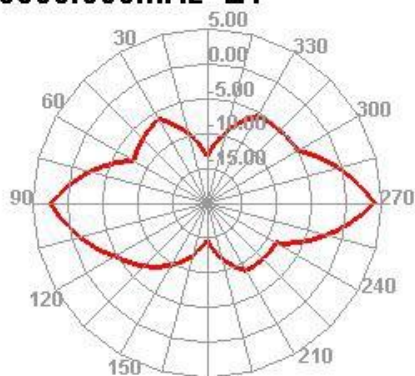
5500.000MHz



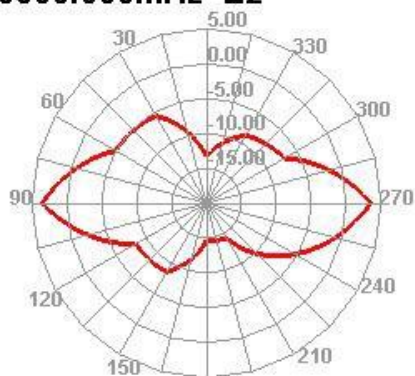
5500.000MHz H



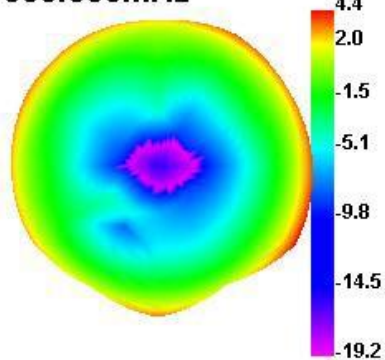
5500.000MHz E1



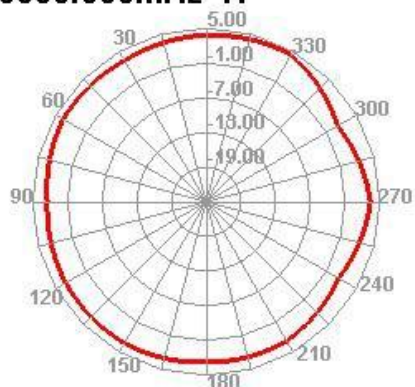
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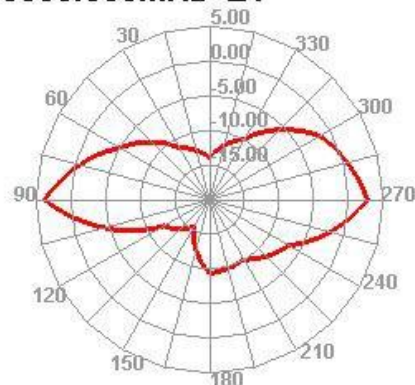
5850.000MHz



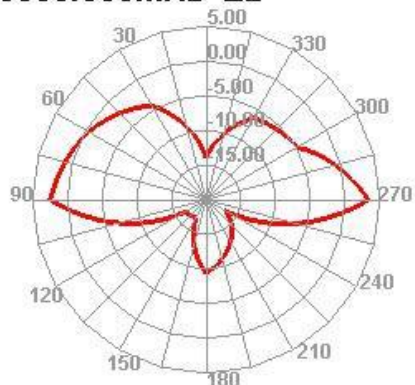
5850.000MHz H



5850.000MHz E1



5850.000MHz E2



7. Real pictures of products



Shenzhen Feiyuxin Electronics Co., Ltd. RoHS2.0 and REACH Conformance Self-Declaration Form

SHENZHEN FYXELECTRONIC CO.,LTD company RoHS2.0 and REACH statement of conformity

Product model: 3.13.1001003002

Material Name Material name		toxic and hazardous substances or elements										Remarks Remarks
		Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	hexavalent chromium (Cr(VI))	Polybrominated Biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)	2 butyl phthalate (DBP)	tolyl butyl phthalate (BBP)	o-phthalate 2 (2-Ethylhexyl) ester (DEHP)	Diisobutyl phthalate (DIBP)	
PCB	FR-4.0	12	ND	N D	N D	N D	ND	N D	N D	N D	N D	
	OSP	ND	ND	N D	N D	N D	ND	N D	N D	N D	N D	
	green ink	ND	ND	N D	N D	N D	ND	N D	N D	N D	N D	
Wire gray/black	FEP gray/black Color	ND	ND	N D	N D	N D	ND	N D	N D	N D	N D	
	Tinned copper	ND	ND	N D	N D	N D	ND	N D	N D	N D	N D	
Rubber rod sleeve	ABS	ND	ND	N D	N D	N D	ND	N D	N D	N D	N D	
Rivets	POM	ND	ND	N D	N D	N D	ND	N D	N D	N D	N D	
Rubber lower seat	PC	ND	ND	N D	N D	N D	ND	N D	N D	N D	N D	
	white toner	ND	ND	N D	N D	N D	ND	N D	N D	N D	N D	
Rubber Upper Seat	PC	ND	ND	N D	N D	N D	ND	N D	N D	N D	N D	
	white toner	ND	ND	N D	N D	N D	ND	N D	N D	N D	N D	
IPEX	C5210	13	ND	N D	N D	N D	ND	N D	N D	N D	N D	
	PBT	10.4	ND	N D	N D	N D	ND	N D	N D	N D	N D	
	gold plating	50	ND	N D	N D	N D	ND	N D	N D	N D	N D	

○ : Indicates that the content of the toxic and hazardous substance in all homogeneous materials of the component is below the limit requirements specified in 2011/65/EU.

○ : It indicates that the content of hazardous substance in all homogeneous materials of the component is below the limit requirement of 2011/65 / EU.

X: Indicates that the content of the toxic and harmful substance in at least one 1 of the homogeneous material of the component exceeds the limit requirements stipulated in 2011/65/EU.

×:It indicates that the hazardous substances are in excess of the limits requirement of 2011/65 / EU in at least one homogeneous material of the part.
(The supplier shall split its raw materials according to the requirements, mark them in detail according to this form, and describe the specific reasons for the parts that cannot meet the standard requirements)

(The supplier shall separate its raw materials according to the requirements and mark it in detail in accordance with this form, and describe the specific reasons for the parts that can not meet the standard requirements)

Integral components Integral part			Compliance with (EC) No 1907/2006 Compliance with (EC) No 1907/2006 standard requirements or not
	Substances of Very High Concern (SVHC)		Yes
	Prohibited and restricted substances "Annex 17" Prohibited and Restricted Substances "Annex 17"		Yes
Raw material parts Raw material components			Compliance with (EC) No 1907/2006 Standard Requirements Compliance with (EC) No 1907/2006 standard requirements or not
	Material Name 1 Part 1	Substances of Very High Concern (SVHC)	Yes
		Prohibited and restricted substances "Annex 17" Prohibited and Restricted Substances "Annex 17"	Yes
	Material Name 2 Part 2	Substances of Very High Concern (SVHC)	Yes
		Prohibited and restricted substances "Annex 17" Prohibited and Restricted Substances "Annex 17"	Yes
	PCB	Yes	Yes
	wire black	Yes	Yes
	Rubber rod sleeve	Yes	Yes
	Rivets	Yes	Yes
	Rubber lower seat	Yes	Yes
	wire ash	Yes	Yes
	IPEX	Yes	Yes
	Rubber Upper Seat	Yes	Yes

Note: 1. Control SVHC (Substances of High Concern) and prohibited and restricted substances according to (EC) No 1907/2006 standard. If yes is within the standard value, otherwise no is filled in.

1. Control SVHC (high concern substances) and prohibited and restricted substances according to (EC) No 1907/2006 standards, fill in Yes if it's in the standard, otherwise fill in No.

2. Please affix the company seal on the page.

2. Please stamp the company seal on the page.

