

FPC Antenna Specification

Customer	Shenzhen Ankbit Electronics Co., Ltd.		
Project Name	RT5006A1		Date 2021-12-23
Project NO.	SN0862	Notes	FPC Antenna
Customer Part Number			
Frequency Range	BT （2400MHz-2500MHz）		
Designed By	RF Engineer	Structural Engineer	
Checked By	Engineering Manager		
Client’ s Approval			

Designer: SINAWELL Electronics(Shenzhen) Co., Ltd.

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1. Specification Overview

The specification describes RT5006A1 built-in FPC antenna frequency band BT.

2. FPC antenna Appearance



3. Electrical performance

3.1. Antenna frequency band

	BT
Transmission frequency band (MHz)	2400MHz-2500MHz

3.2. Passive efficiency

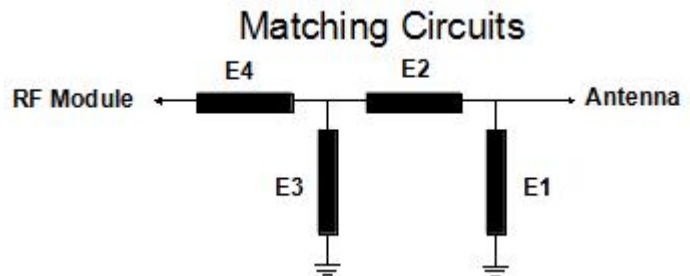
Passive Test For D4										
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	Attenuation Hor	Attenuation Ver
2400	16.25	-7.89	-3.56	-5.71	8.236	8.017	-3.56	-16.3	49.29	49.21
2410	17.21	-7.64	-3.33	-5.48	8.699	8.508	-3.33	-15.11	49.3	49.21
2420	18.59	-7.31	-3.09	-5.24	9.445	9.141	-3.09	-14.27	49.23	49.21
2430	20.29	-6.93	-2.55	-4.7	10.256	10.037	-2.55	-13.89	49.55	49.48
2440	22.05	-6.57	-2.1	-4.25	11.083	10.966	-2.1	-13.62	49.37	49.28
2450	23.95	-6.21	-1.6	-3.75	11.854	12.098	-1.6	-12.87	49.72	49.61
2460	22.64	-6.45	-1.87	-4.02	11.138	11.498	-1.87	-13.2	49.77	49.58
2470	23.11	-6.36	-1.99	-4.14	11.323	11.788	-1.99	-13	49.69	49.55
2480	20.39	-6.9	-2.47	-4.62	10.049	10.346	-2.47	-13.64	49.94	49.73
2490	21.06	-6.77	-2.26	-4.41	10.428	10.633	-2.26	-14.08	50	49.76
2500	22.87	-6.41	-1.88	-4.03	11.382	11.487	-1.88	-14.06	50.26	50.01

3.3. Matching circuit

Test point after the antenna connector (RF test port), see the diagram below

1. BT antenna matching.

Element	Value
E1(0402)	2NH
E2(0402)	1.5NH
E3(0402)	NC
E4(0402)	0 ohms



3.4. Return loss

BT VSWR+ Return

	Resonance point Range (MHz)	Frequency Point(MHz)/Maximum return loss (dB)		
	2400-2500		2400	2500
		VSWR	1.67	1.83
		Return loss	-16.78	-17.15

4. Appearance Structure

4.1. FPC Antenna Material FPC

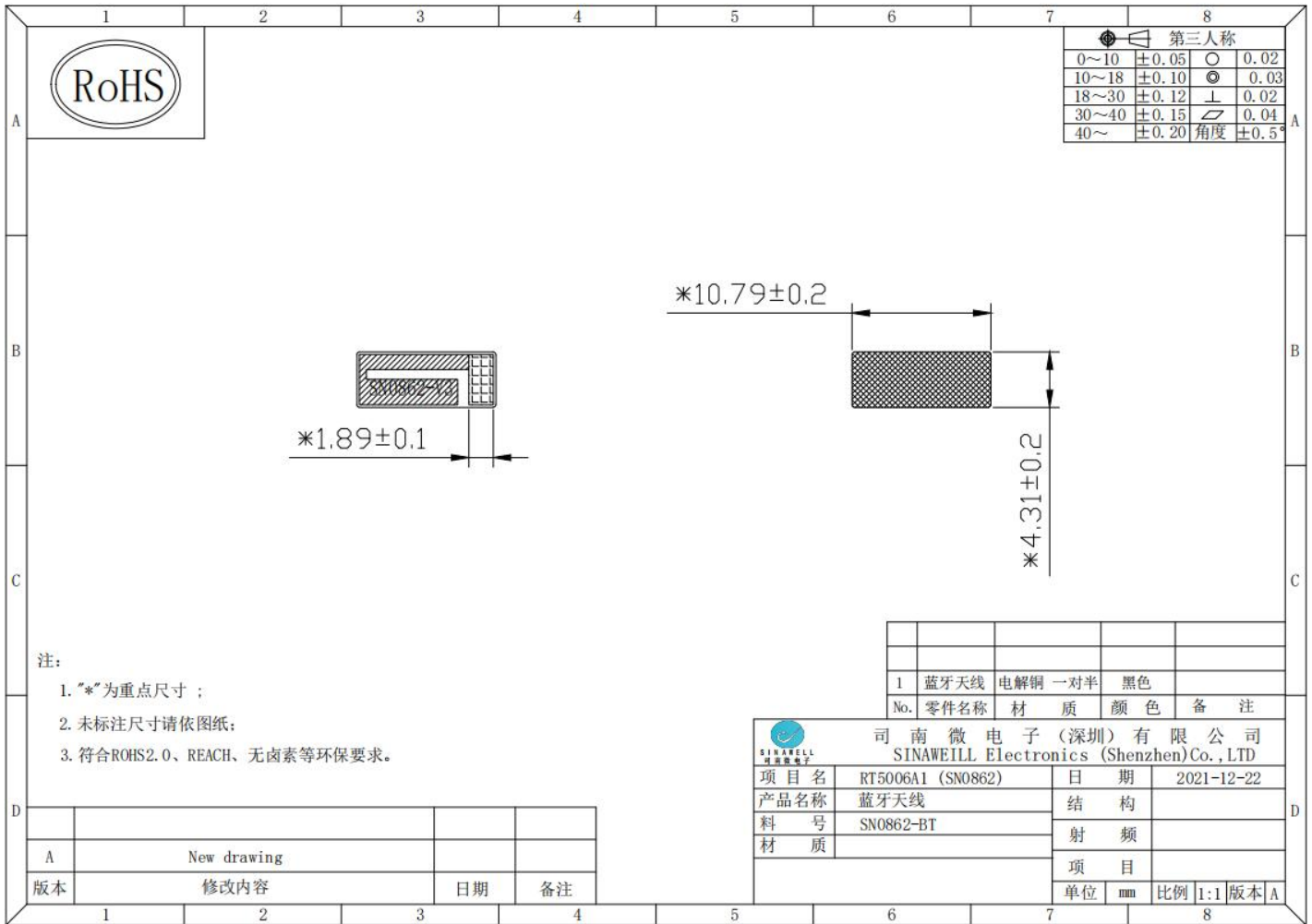
5. Remarks

(Electrical Performance Test Report)

In the electrical performance test report, for the data provided by the manufacturer for the 3D darkroom, as shown in the table below

Appendix 1: Structural Drawing

FPC schematic diagram



Size report

	Customer	Aikebei	Project Name	RT5006A1		Measurement Date	2021-12-23	
	Supplier	Sinan Micro	Measuring Tool	Second Dimension		Measurement Unit	mm	
NO	Size	Tolerance	Actual Measurement 1	Actual Measurement 2	Actual Measurement 3	Actual Test 4	Actual Test 5	Judgment
1	10.79	±0.2	10.82	10.81	10.81	10.81	10.83	OK
2	4.31	±0.2	4.35	4.33	4.33	4.32	4.33	OK
3	1.89	±0.2	1.86	1.87	1.89	1.88	1.86	OK
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Tabulation: Yang Shimei

Review: Chen De

Salt Mist Report

Customer Name	Ankbit	Project Name	RT5006A1	Tester	Yang Shimei
Test Quantity	5PCS	Test Item	Salt Spray	Test Date	2021-12-23
Test conditions	1. Temperature: 35℃				
	Humidity: 98%, pH value: 6.5-7.2				
	3. Inside box temperature: 37℃				
	Test duration:48hours				
	5. Solution concentration: 5% NaCl				
Test steps	1. Place the product into the salt spray chamber				
	2. Place the product at the correct angle				
	3. Set the relevant parameters and start spraying				
	4. Remove the experimental product, rinse the product with clean water before inspection, and leave it at room temperature for two hours				
Test	Item	Before testing	Post-test	Test results	Remarks
	Coating	Good	Good	Qualified	
	Conductivity	Good	Good	Qualified	
	Resistor	Good	Good	Qualified	
	Bond strength	Good	Good	Qualified	

Table: Yang Shimei

Review: Chen De

FPC Storage Period Description

1. Storage conditions: Temperature $21^{\circ}\text{C} \pm 4^{\circ}\text{C}$; Humidity $60\% \text{H} \pm 10\%$
2. Factory Guarantee
 - a. Appearance Guarantee: Under original factory packaging storage conditions 12 No oxidation phenomenon occurs for months
 - b. Function guarantee
 - (a) : One year Ensure good welding continuity.
 - (b): Ensure excellent electrical continuity within 2 years.
3. FPC Welding Precautions
 - a. FPC itself is hygroscopic, it is recommended to preheat at 100°C for 30 minutes before use, for three-layer boards (including) or more, preheat at 100°C for 120 minutes to avoid board bursting caused by rapid oxidation due to moisture absorption during operation
 - b. HOT BAR operation
 - (a): FPC used for hot pressing, CVI should cross on the glass to avoid hanging, which causes copper material to bend and break
 - (b): Avoid using dead corners in FPC to prevent breakage.
 - c: SMT operation: The plated zinc part needs to be masked to prevent misting during wave soldering.
 - d: Hand soldering operation: The soldering iron temperature should not exceed 350°C , and the soldering iron should not stay on the board surface for more than 3 seconds.

Quality Assurance Certificate

Customer: Shenzhen Ankbit Electronics Limited Company

Our company promises RT5006A1 Product, produced and inspected in accordance with your company's technical quality indicators or supply quality agreement, all indicators are qualified, and it is approved for shipment.

Inspection Item	Salt Spray	Coating	Conductivity	Resistance	Adhesion	Size	Appearance	Performance
Inspection Results	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

Table prepared by: Yang Shimei

Reviewed by: Chen De