

Material acknowledgement

F&D Material name	M-81G
F&D Item No	
Supplier name	SINAWELL
brand&Manufacturer model	SN1061





Supplier acknowledges that				F&D admit	
	engineer	to examine	approval	engineer	approval
sign					
date	2024.01.17	2024.01.17	2024.01.17		
Seal:					
remarks:					

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1. Specification description

This specification describes the status of the FD209 internal antenna with a frequency band of BT.

Antenna appearance



2. Electrical performance

2.1. Antenna band

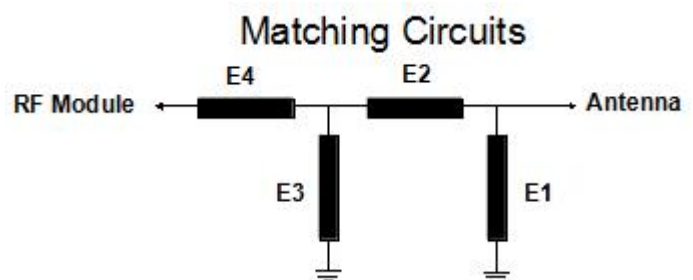
	BT
Transmitting band(MHz)	2400MHz-2500MHz

2.2. Matching circuit

After the test point is at the antenna connector (RF test port), see the figure below.

1. BT Antenna matching.

Element	Value
E1(0402)	1.0PF
E2(0402)	1.8NH
E3(0402)	NC
E4(0402)	0 Ω



2.3. Return loss

BT VSWR+ Return

	Resonant Point Range(MHz)	Frequency point(MHz)/Maximum Echo Loss(dB)		
	2400-2500		2400	2500
		VSWR	1.93	1.83
		Return loss	-9.968	-10.654

3.4 Antenna gain

Channel	0	39	78
Gain	-3.05dBi	-2.95dBi	-2.21dBi
Gain diagram	<p>Horizontal</p>	<p>Horizontal</p>	<p>Horizontal</p>

手模无源效率			
Passive Test For			
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	11.37	-9.44	-3.05
2410	11.99	-9.21	-2.77
2420	12.04	-9.19	-2.76
2430	11.96	-9.22	-2.82
2440	11.77	-9.29	-2.95
2450	12.01	-9.2	-2.82
2460	12.41	-9.06	-2.64
2470	12.21	-9.13	-2.62
2480	12.83	-8.92	-2.21
2490	13.26	-8.77	-1.96
2500	13.21	-8.79	-2

自由场无源效率			
Passive Test For			
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	25.1	-6	-1.92
2410	25.36	-5.96	-1.92
2420	24.21	-6.16	-1.96
2430	23.7	-6.25	-2.08
2440	23.38	-6.31	-2.14
2450	23.6	-6.27	-2.11
2460	22.74	-6.43	-2.1
2470	22.27	-6.52	-2.05
2480	21.8	-6.62	-2.06
2490	21.16	-6.75	-2.07
2500	20.75	-6.83	-2.03

3. Appearance structure

3.1. Antenna Material

FPC

4. Notes

(Electrical Performance Test Report)

In the electrical performance test report, the 3D darkroom data for manufacturers are provided.

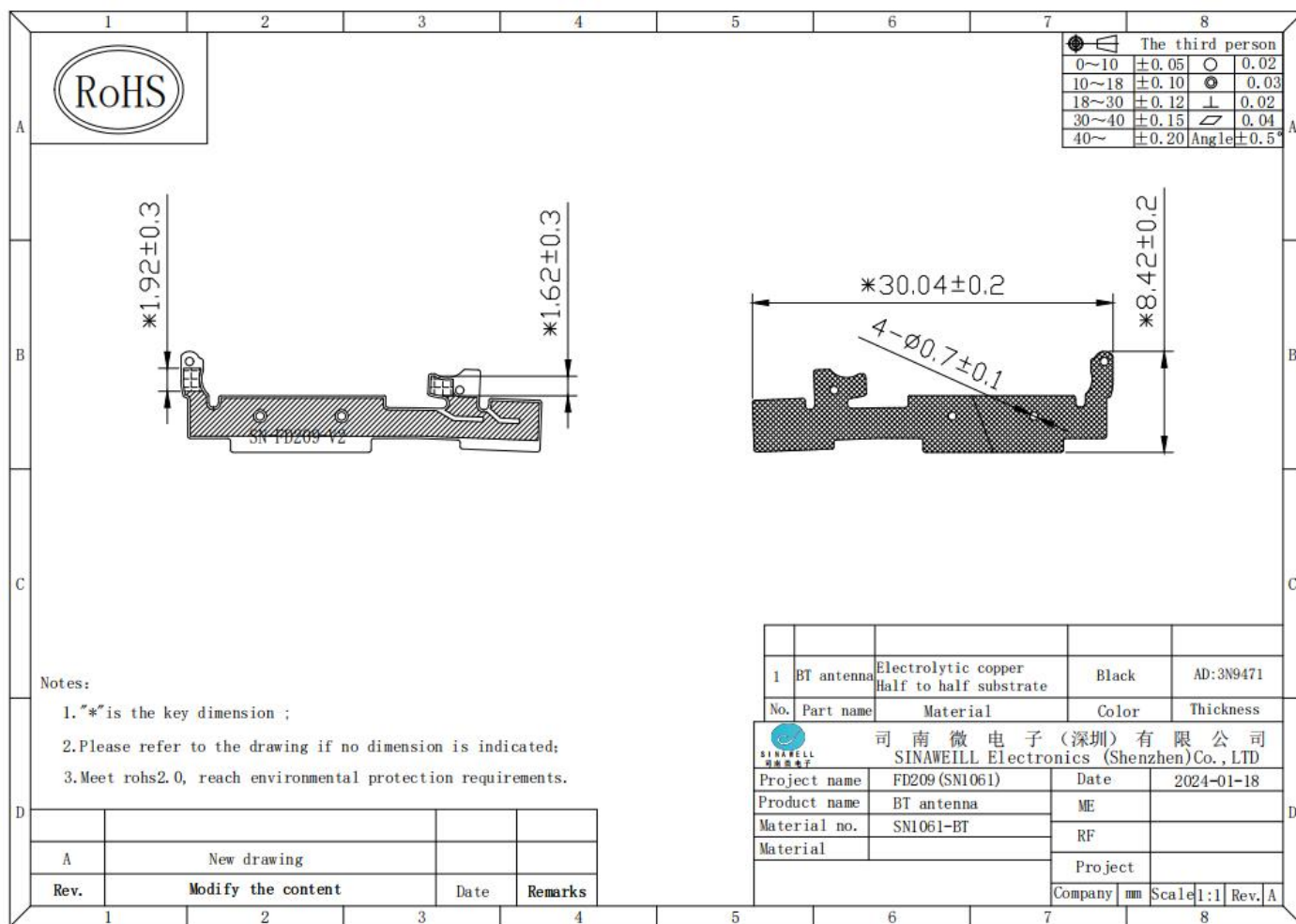
The following table format

Appendix 1: (Mechanical drawing)

Appendix II (Performance report)

FPC Mechanical drawing(Annex I)

FPC Structural drawings




Size Report

	customer	F&D	entry name	FD209		Measurement date	2024-01-17	
	supplier	sinawell	Measuring tools	Quadratic		Unit	mm	
NO	dimension	Tolerance	Measured1	Measured2	Measured3	Measured4	Measured5	determine
1	30.04	±0.2	30.11	30.14	30.12	30.12	30.14	OK
2	8.42	±0.2	8.45	8.44	8.47	8.46	8.44	OK
3	1.92	±0.3	1.97	2.02	1.93	1.98	2.01	OK
4	1.62	±0.3	1.77	1.71	1.74	1.69	1.73	OK
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DRAWN BY: Shimei Yang

APPROVED BY: De Chen

Salt spray Report

Customer Name	F&D	Corax	FD209	Tester	Shimei Yang
Test Quantity	5PCS	Test Item	Salt fog	Test Date	2024-01-17
Test conditions	1.Temperature: 35℃				
	2.Humidity: 98%, PH: 6.5-7.2				
	3.Temperature in the box: 37℃				
	4.Test duration: 24hours				
	5.Drug concentration: 5%NaCl				
Testing procedure	1.Put the product in the salt mist box.				
	2.Place the product at the right angle.				
	3.set the relevant parameters and start the spray.				
	4.Complete the removal of the experimental product. Before inspection, wash the product with clear water and place it at room temperature for two hours.				
TEST	Projects	Before testing	After testing	test result	remarks
	Coating	Well	Well	qualified	
	Conductivity	Well	Well	qualified	
	Resistance	Well	Well	qualified	
	Cohesion	Well	Well	qualified	

DRAWN BY: Shimei Yang

APPROVED BY: De Chen

Explanation of FPC Preservation Period

I .Preservation conditions: temperature 21 +4: humidity 60% H +10%.

II . Exit Guarantee

1.Appearance Guarantee: No oxidation occurs during 12 months of storage in original packaging.

2.Functional Assurance

A:One year to ensure good welding continuity.

B:Ensure good conductivity within two years.

III、 Points for Attention in FPC Welding

1. FC itself has hygroscopicity. It is suggested to preheat the three-layer plate (including) for 30 minutes before use, and bake it for 120 minutes at 100 in order to avoid bursting due to hygroscopicity and rapid oxidation during operation.

2. HOT BAR jobs

A: FPC is used for cooked pressing. CVI should be crossed over glass to avoid suspension, resulting in fracture of copper during bending.

B: FPC avoids the use of dead angle and is liable to cause fracture.

3: SMT operation: The plating part should be shielded to prevent atomization in flow welding.

4: Hand welding operation: the working temperature of soldering iron should not exceed 290 C, and the time of soldering iron staying on the plate surface should not exceed 10 seconds.