

Savard Antenna Debugging Report

Customer Name: EPUD0

Project Name: ES328-BND-N60-C-T615

Platform

Date: 2026. 02. 05

Project Contact Information

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Email address:

Soward structure:

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Project Introduction

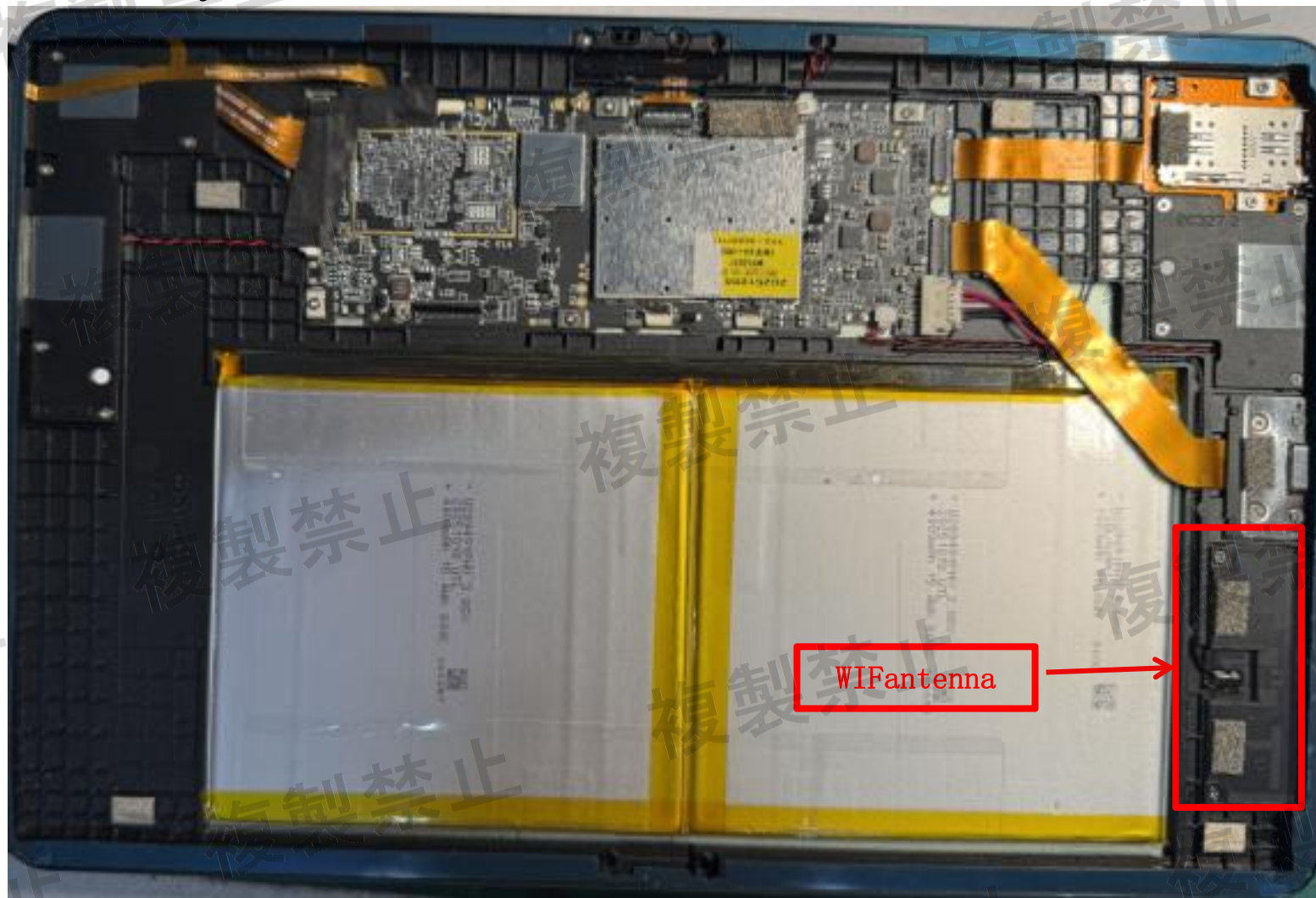
1. Project Brief

Number of project antennas	Machine type
1	tablet
Whole machine shell material: 10.95 inch all metal shell	

2. Antenna Overview

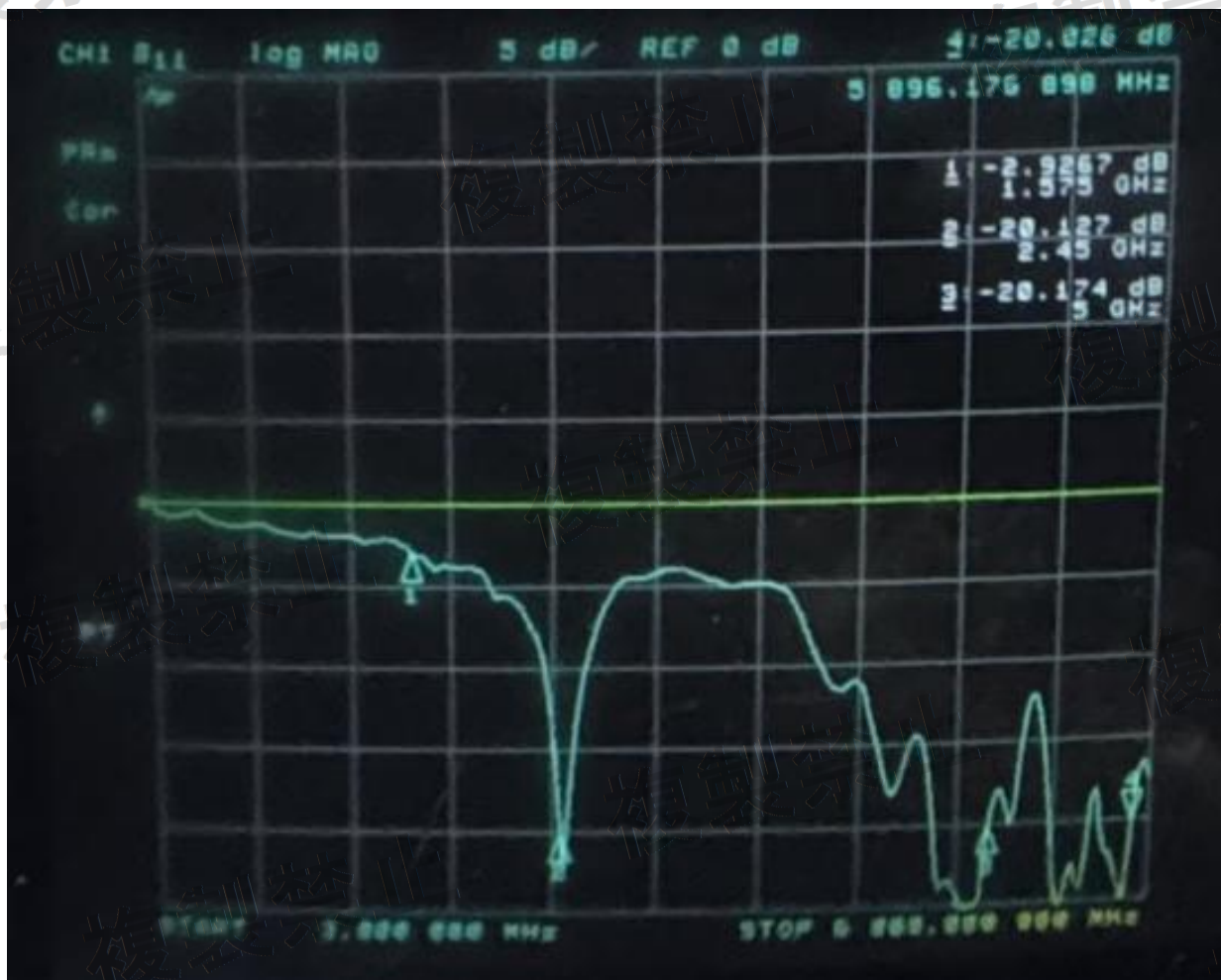
Antenna number	name	Working frequency band/MHz	Material/Structure
1	WIFI&BT&5Gwifi	2400MHz/2500MHz&5.8GHz	FPC

Antenna layout



WIFAntenna

WIFI&BTantennaS11



WIFI antenna throughput test

lperf throughput test						
model		module		software version		
Model number	channel	distance	test angle	Test data (TX) 1-minute mean	Test data (RX) 1-minute mean	Remarks (number of packet drops)
2.4GWIFI		15 meters	0°	40.3M/S	92.6M/S	0
			90°	42.5M/S	91.8M/S	
			180°	41.6M/S	93.4M/S	
			270°	45.0M/S	94.2M/S	
5GWIFI		15 meters	0°	212M/S	302M/S	0
			90°	225M/S	314M/S	
			180°	217M/S	324M/S	
			270°	219M/S	318M/S	

BT antenna measured distance

Actual test effect	
Model number	1
test environment	Soward R&D Center
test equipment	Huawei AM08
test distance	10 meters $\geq$

WIFI antenna active data

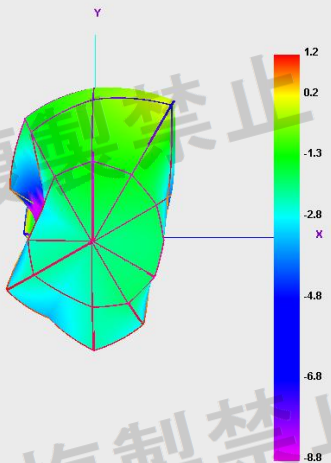
Active data			Motherboard conduction		
802.11b : 11MBps 20M			802.11b : 11MBps 20M		
1	7	13	1	7	13
2412	2442	2472	2412	2442	2472
12.12	12.14	12.09	17.4	17.3	16.9
-77.52	-79.39	-78.39			
802.11n : MCS7 20M			802.11n : MCS7 20M		
1	7	13	1	7	13
2412	2442	2472	2412	2442	2472
12.05	12.2	12.07	17.5	17.4	16.8
-61.15	-62.63	-61.22			
802.11n : MCS7 20M			802.11n : MCS7 20M		
36	64	165	36	64	165
5180	5320	5825	5180	5320	5825
8.3	9.11	8.11	14.2	14.3	13.8
-67.72	-67.29	-67.24			
802.11a : 54MBps 20M			802.11a : 54MBps 20M		
36	64	165	36	64	165
5180	5320	5825	5180	5320	5825
9.78	9.24	8.15	14.6	14.3	13.7
-70.75	-70.31	-70.15			

WIFI&BT antenna efficiency

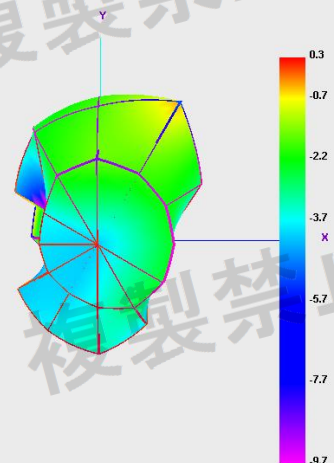
Passive Test For 2.4G

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	31.7	-4.99	1.24
2410	29.3	-5.33	0.76
2420	32.46	-4.89	1.21
2430	33.49	-4.75	1.37
2440	34.73	-4.59	1.67
2450	24.45	-6.12	0.29
2460	21.32	-6.71	-0.18
2470	15.57	-8.08	-1.42
2480	16.12	-7.93	-1.11
2490	16.41	-7.85	-0.89
2500	21.64	-6.65	0.38

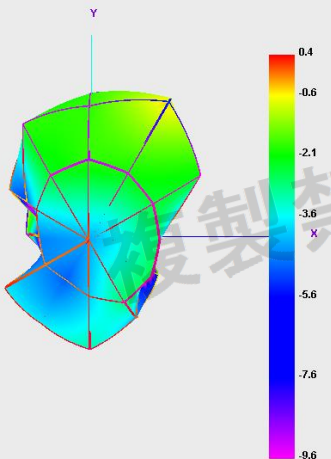
2400.000MHz



2450.000MHz



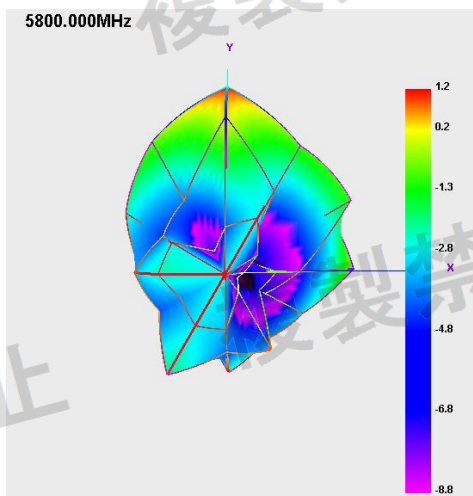
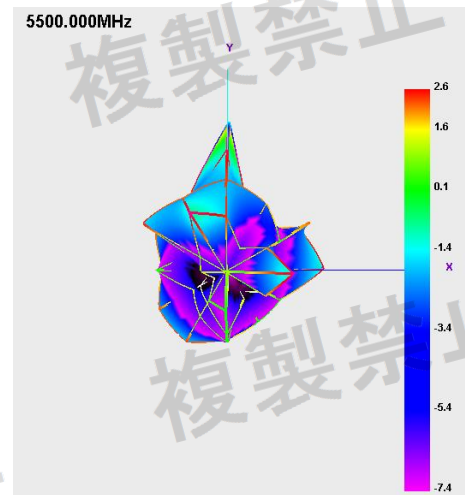
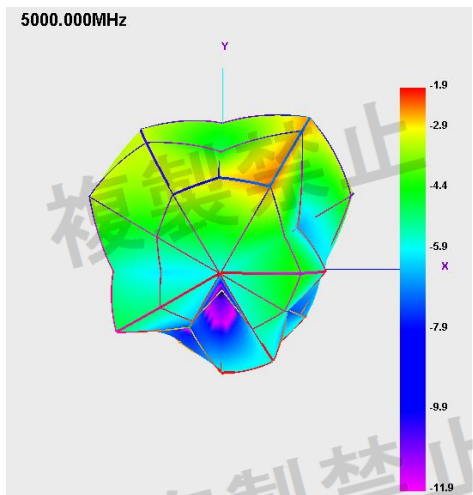
2500.000MHz



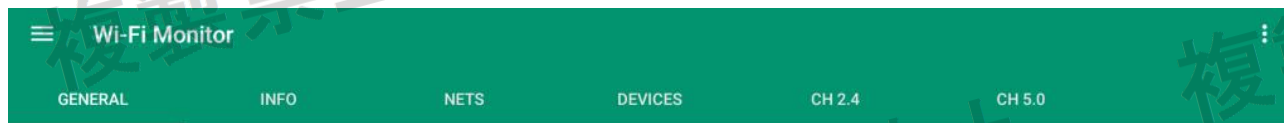
5G WIFI antenna efficiency

Passive Test For 5G-WIFI

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
5000	20.28	-6.93	-1.88
5100	16.09	-7.94	-2.27
5200	16.65	-7.79	-1.21
5300	25.51	-5.93	3.06
5400	26.21	-5.82	3.37
5500	23.97	-6.2	2.63
5600	27.2	-5.65	1.72
5700	23.46	-6.3	-0.07
5800	26.37	-5.79	1.25
5900	20.01	-6.99	0.19
6000	14.17	-8.49	0.06



WIFI antenna signal strength measurement picture (data)



Address

IPv4
IPv6
MAC192.168.1.103
fe80::c449:78ff:fea3:ed82
02:00:00:00:00:00

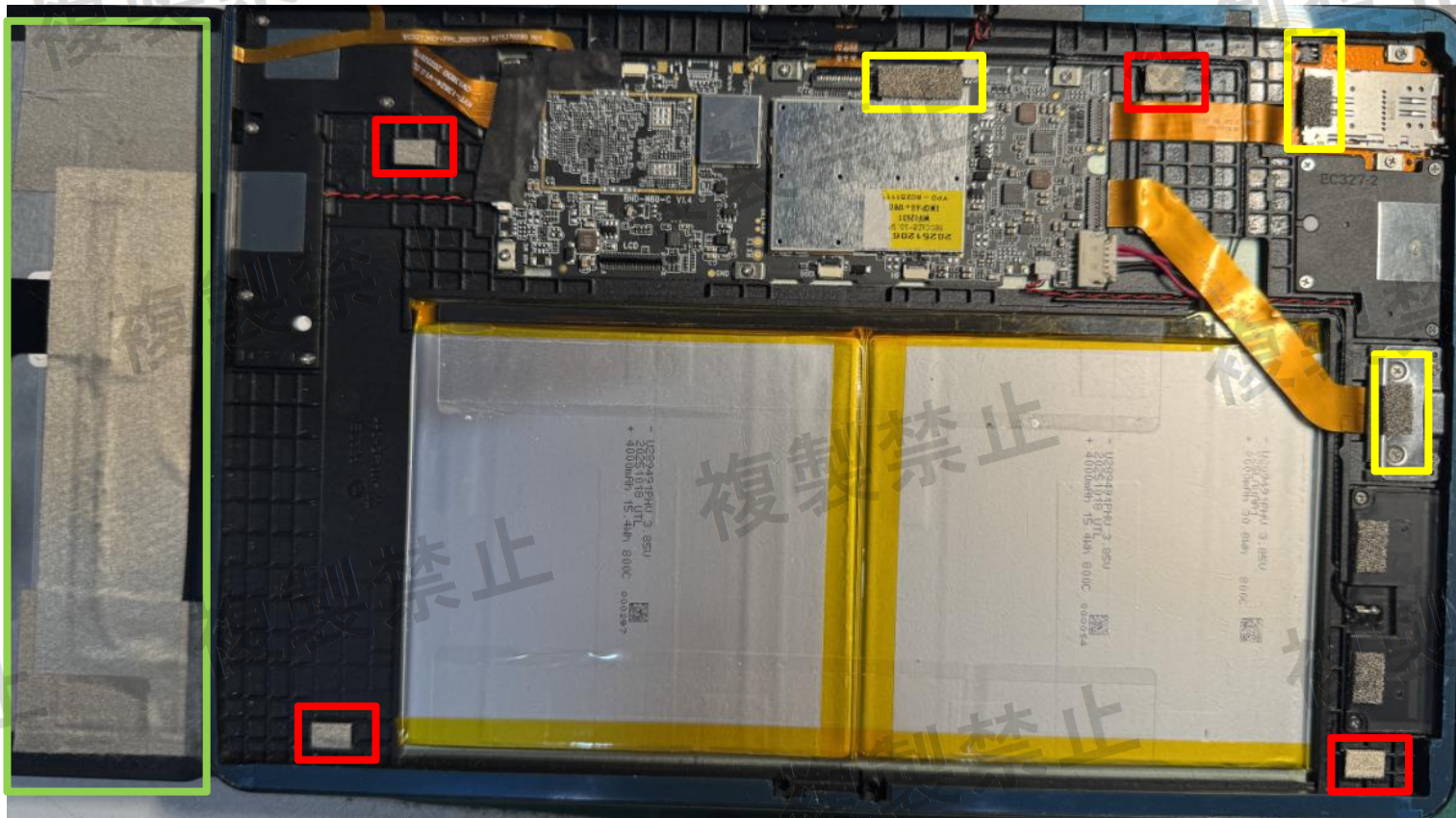
Address

IPv4
IPv6
MAC

Test location: Our R&D office
Test time: 14:00-14:30
Test distance: 10-15 meters
Signal strength: -48dBm to -40dBm

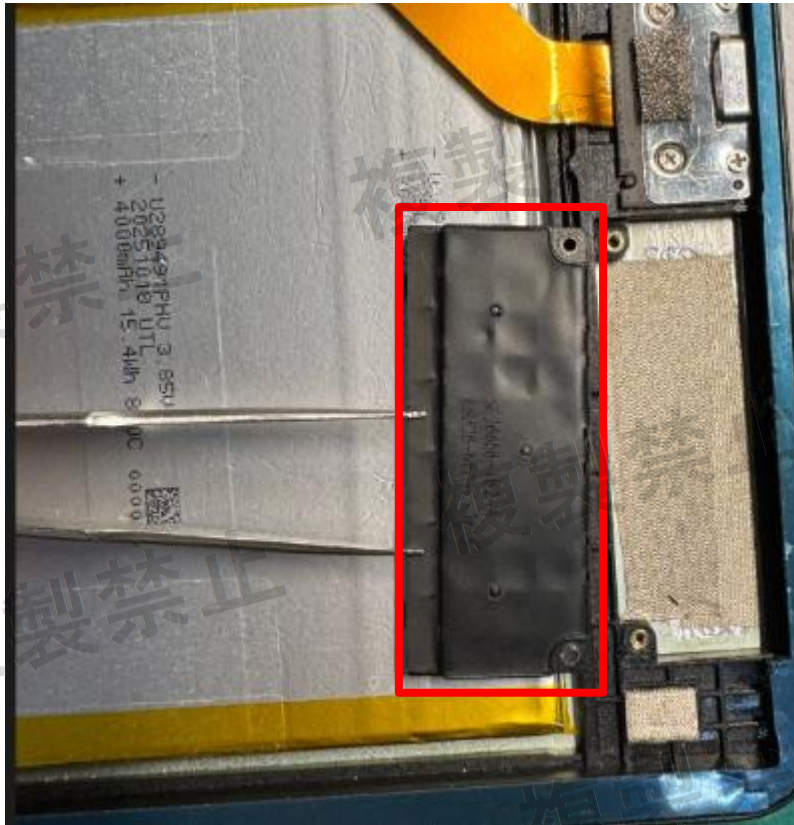
Building B, Hexi Hangcheng Industrial Zone, No. 135 Qianjin No. 2 Road, Baoan District, Shenzhen

Environmental treatment and assembly instructions



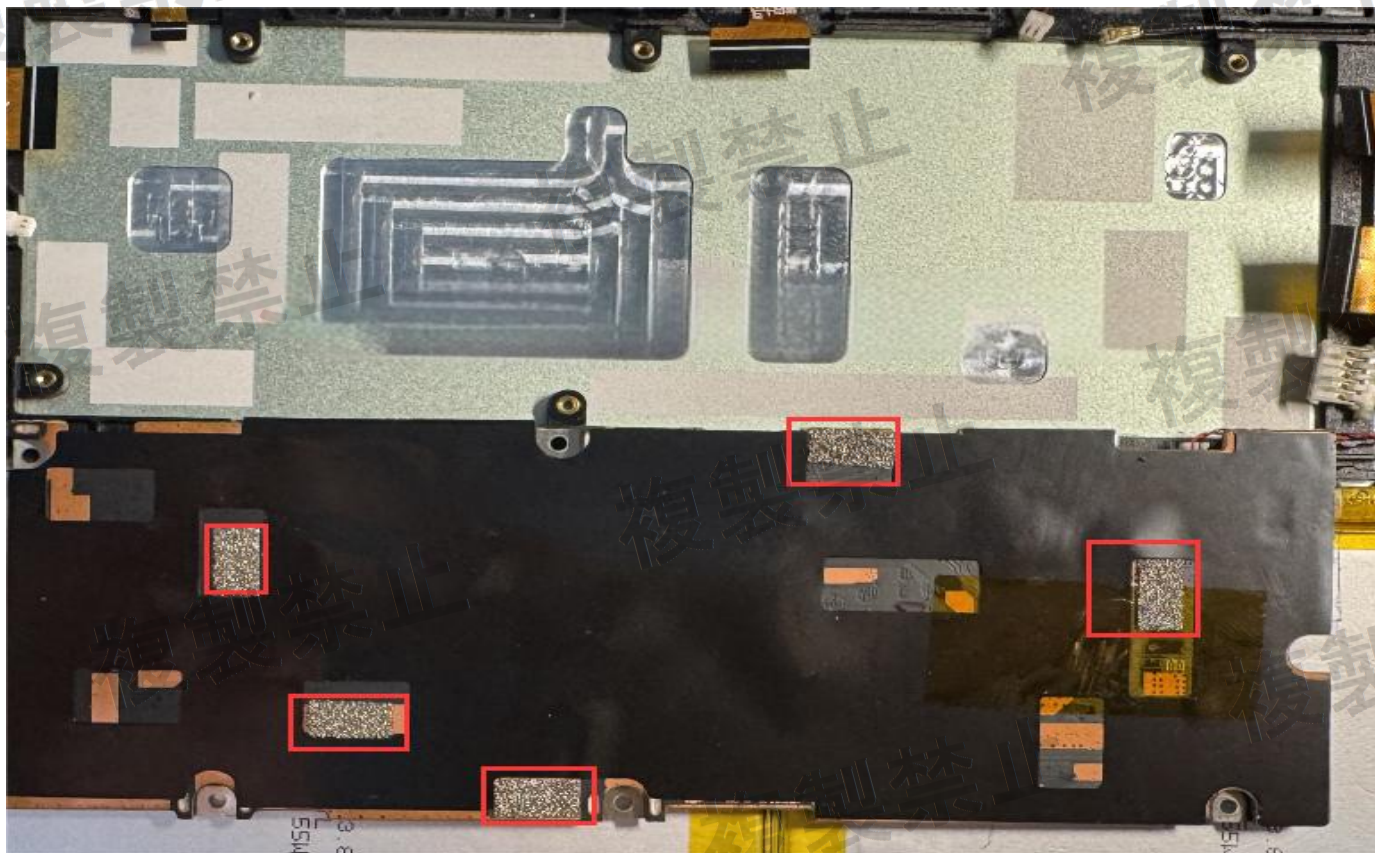
1. Use conductive foam to ground the back shell and screen at the red box mark
2. Use conductive sponge for the motherboard shielding cover, SIM card slot, USB tail plug, and screen grounding treatment at the yellow box mark
3. Use conductive cloth to shield the screen cable holder at the green box mark

Environmental treatment and assembly instructions



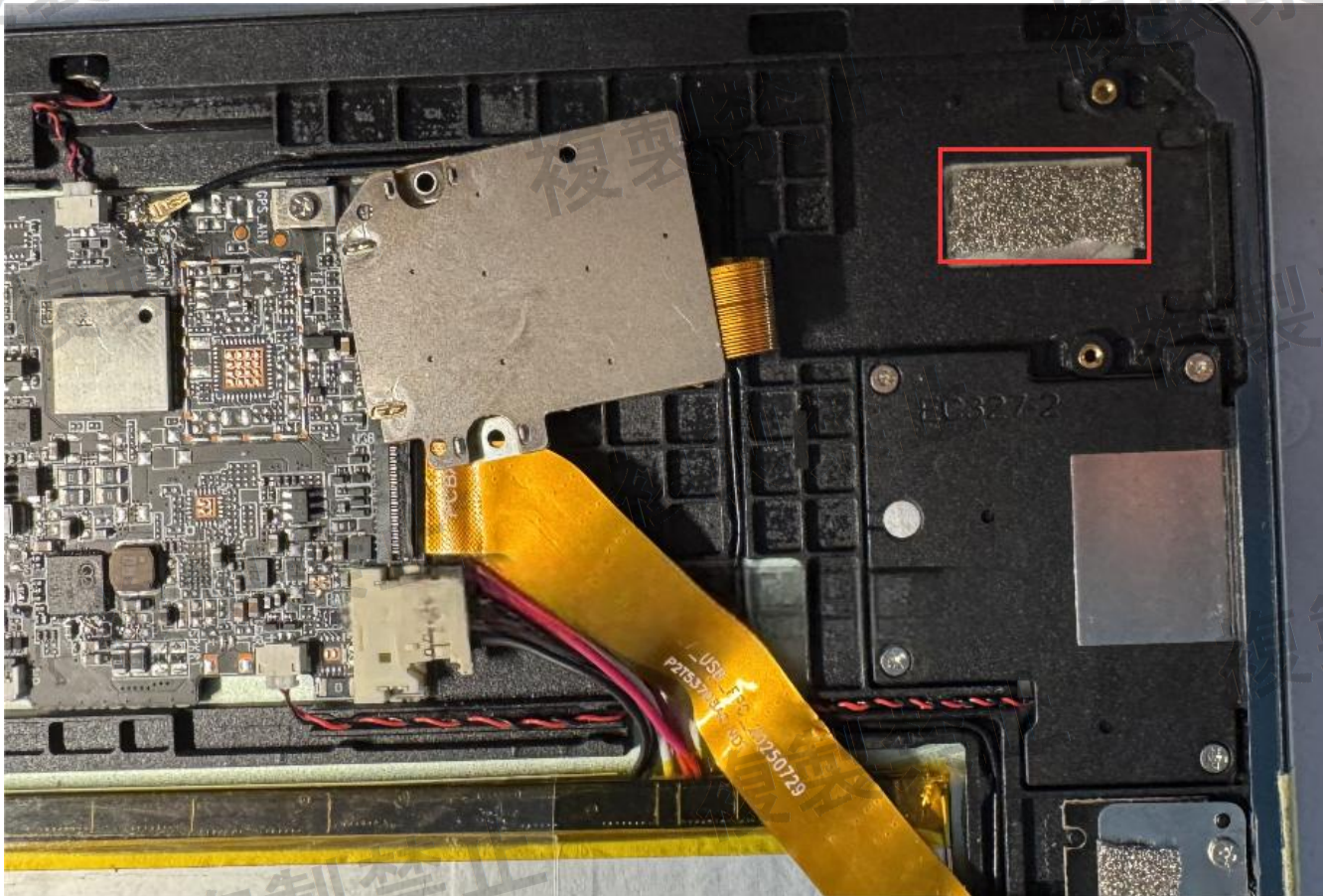
1. The antenna is not grounded below. The back shell does not require laser engraving

Environmental treatment and assembly instructions

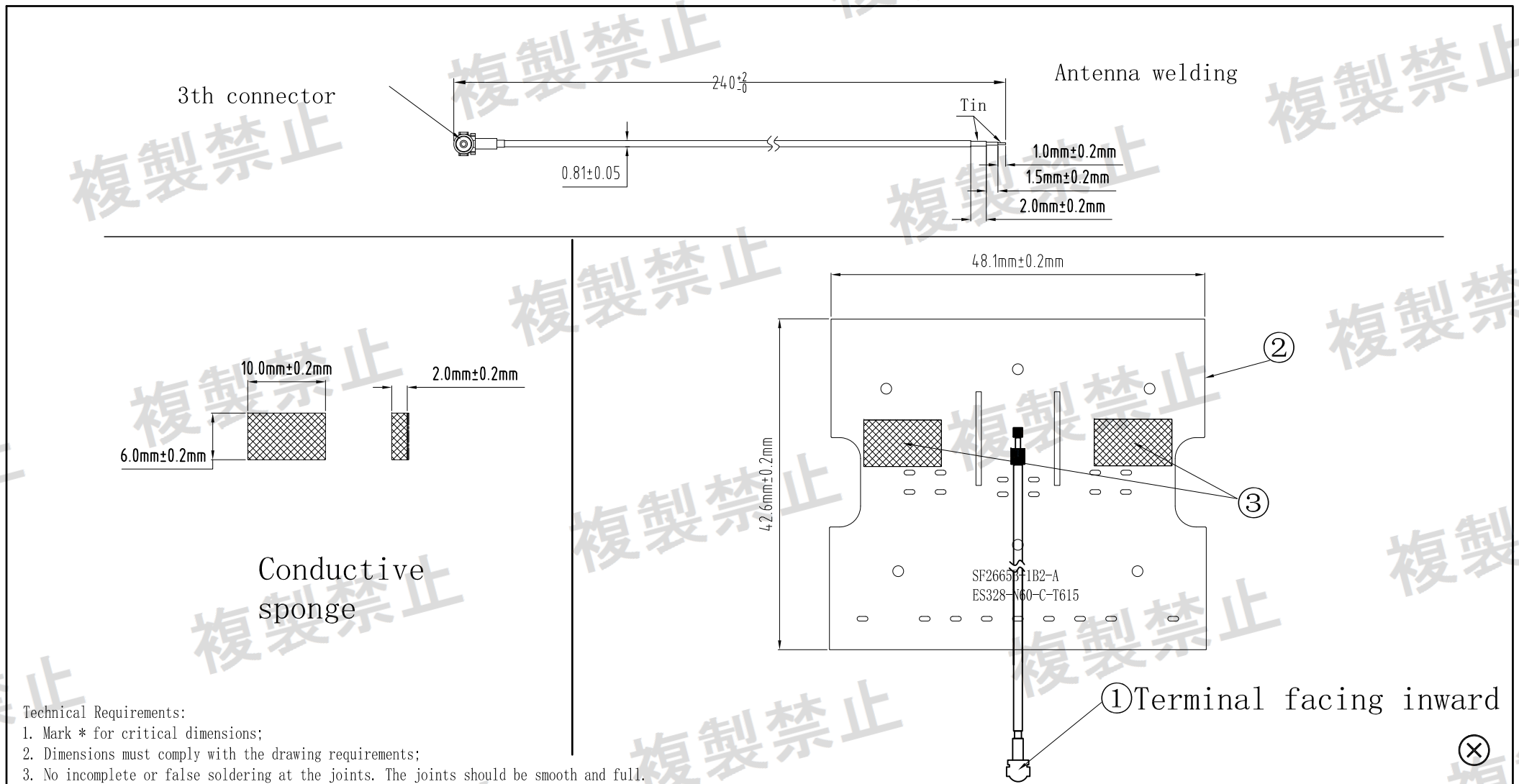


1. Use conductive sponge underneath the motherboard for grounding treatment between the motherboard and the rear shell

Environmental treatment and assembly instructions



1. Use conductive sponge for grounding treatment under the SIM card slot



Technical Requirements:

- 1. Mark * for critical dimensions;
- 2. Dimensions must comply with the drawing requirements;
- 3. No incomplete or false soldering at the joints. The joints should be smooth and full.
- 4. The network test is passed (with the specified waveform).
- 5. The dimensional tolerances not specified are at level 6 of SJ/T 10628 1995, and the tolerance values are calculated by averaging the upper and lower deviations.

5											
4											
3	Conductive sponge		grey	2	10*6*2mm		Signature	Date		Signature	Date
2	FPC		Black	1	SF2665B-1B2-A	RD	JYX	2026.3.2	QC		
1	coaxial cable	3th connector	Black	1	φ=0.81mm	RF					
Serial	NAME	Materials	Colour	Count	Description	Process			Approval		

SWARD

ShenZhen SWARD
Communication Technology Co.Ltd

SF2665B-1D23B-240-A

ROHS

Stage marker

Organization

Ratio

A

mm

N/A

Total: 1

Number

pages:1

Page