



Customer Name	tuoyuqi Technology Co. , Ltd.		
Customer Project Name		Tuoyuqi Project Name	
Customer P/N		Tuoyuqi P/N	TYQ-NZ-3330717
Band	2400-2500MHz 5150-5850mhz		
Version number	AO		
Designer Information			
RF Engineer	Huang xu pen	R&D Director	Lintao
ME Engineer	Zhan wen		


Change Log				
Version	Change Description	Person in Charge	Approval By	Date

地址：深圳市龙岗区龙城街道新丰路6号台中工业区A17栋1楼10-1-103.

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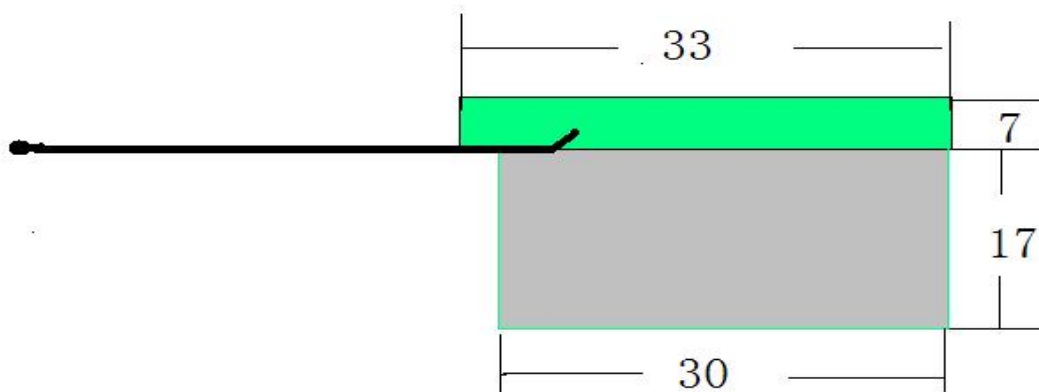
# Catalogue

No.	Item	Page No.
1	Drawing or Product Image	3
2	Dimensions Test Report	4
3	RF Performance Test Report	5-8
4	Reliability Test Report1	9
5	RoHS Control list for Sample	11
6	Install Wizard or Other	11

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Drawing or Product



Image

### Sample Dimensions Test Report

Customer Name		Customer P/N		Tuoyuqi P/N	TYQ-NZ-3330717
Test Date		Sample Qty.	3	Inspector	
Dimension No.	Standard	Sample 1	Sample 2	Sample 3	Pass/NG
①PCB length	$33 \pm 0.6\text{mm}$	33.1	33.4	33.5	Pass
②PCB Width	$7 \pm 0.2\text{mm}$	7	7.2	7.1	Pass
③PCB Thickness	$0.6 \pm 0.05\text{mm}$	0.61	0.6	0.62	Pass
④aluminum length	$30 \pm 1\text{mm}$	30.1	30	30.2	Pass
⑤aluminum Width	$17 \pm 1\text{mm}$	17.1mm	17mm	17.2mm	Pass

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**Shenzhen Tuoyuqi Technology CO.;LTD**

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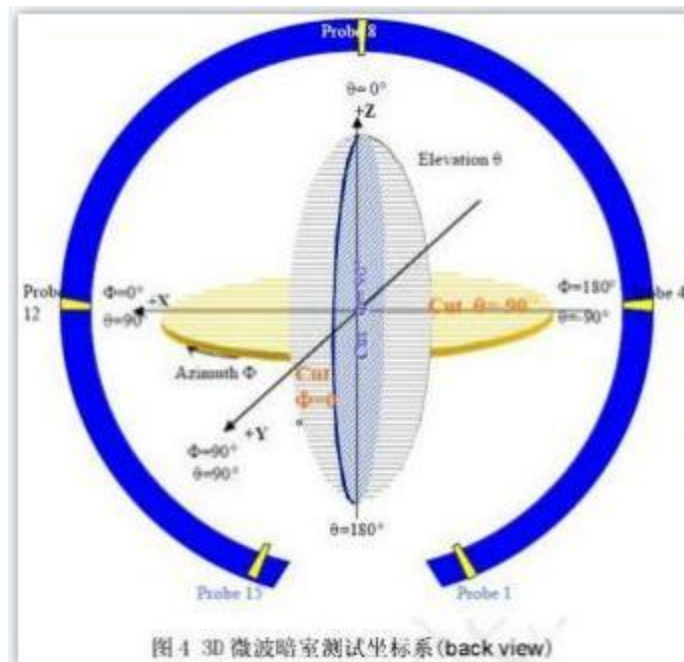
Conclusion					PASS
Inspector & Date	2023-6-1		Approval & Date		

## RF Performance Test Report

Customer Name		Project Name		Tuoyuqi P/N	TYQ-NZ-3330717
Band	2400-2500MHz 5150-5850MHz	Test Date		Inspector	

### Antenna Test Equipment Introduction

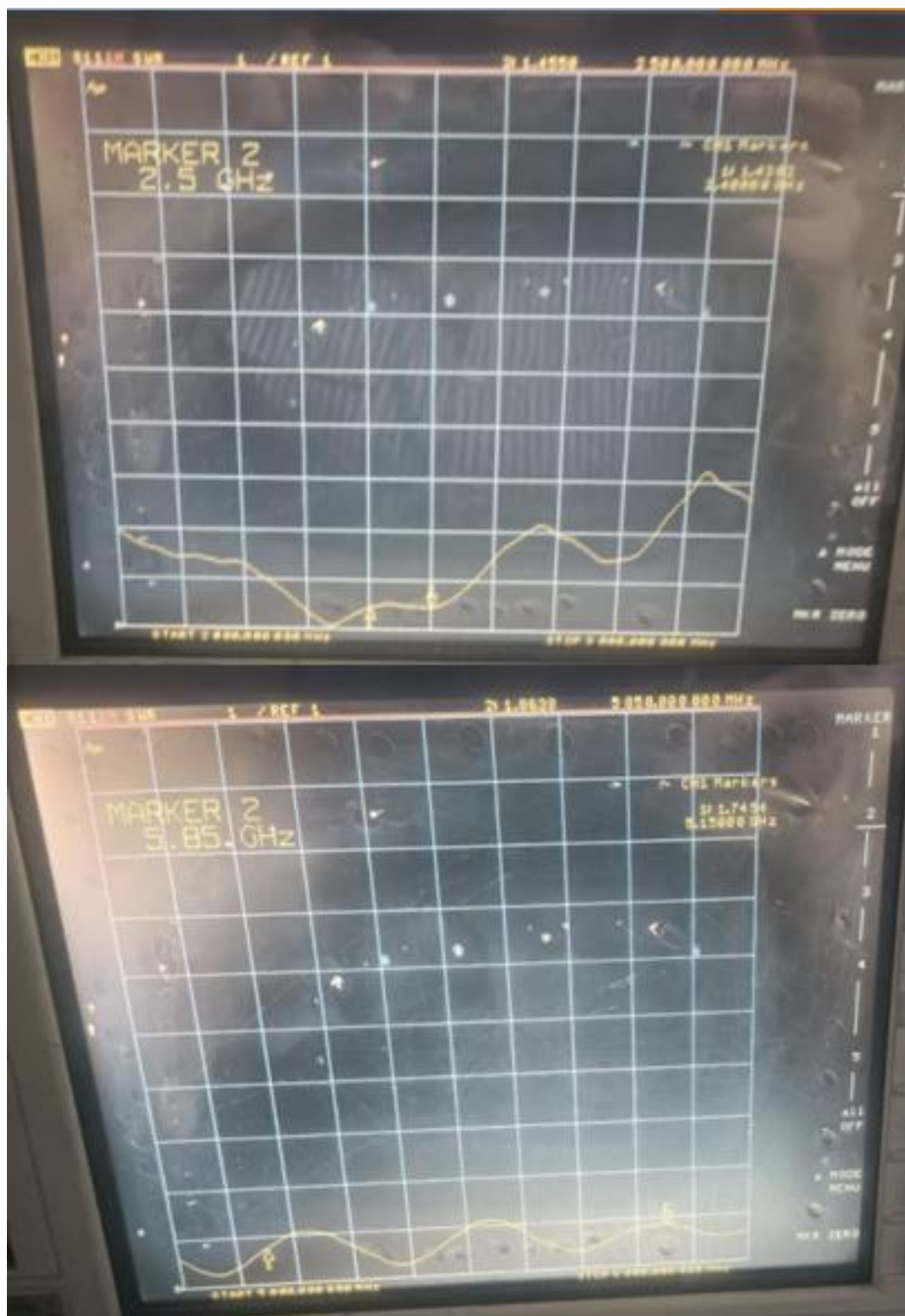
Test of antenna input characteristics using **Agilent E5071C and Agilent 5062A** vector network analyzer; The radiation pattern of the antenna are tested using the Satimo starlab 3D near field Anechoic Chamber, and the instrument is used to agilent8960 E5515 and Agilent E4438C. The test coordinates of the darkroom are as follows:



### 1.S11 Parameter-VSWR

Measuring Method is a 50Ω coaxial cable is connected to the antenna. Then this cable is connected to a network analyzer to measure the S11 parameter, Keeping this fixture away from metal at least 30cm.

## S11 Parameter-VSWR-WIFI





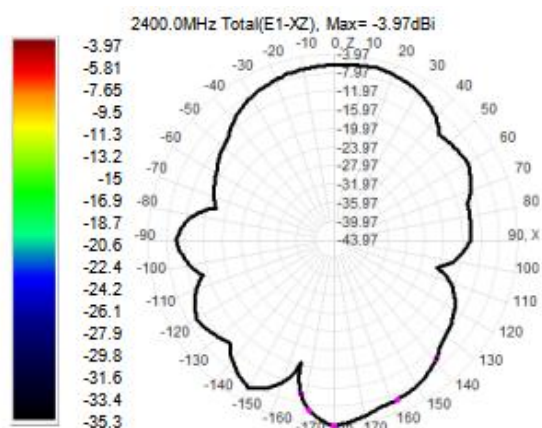
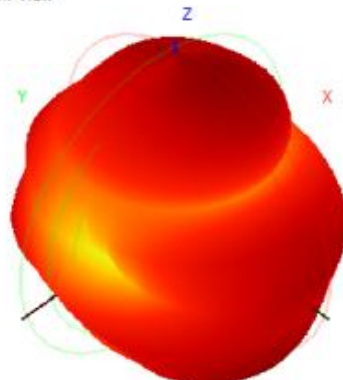
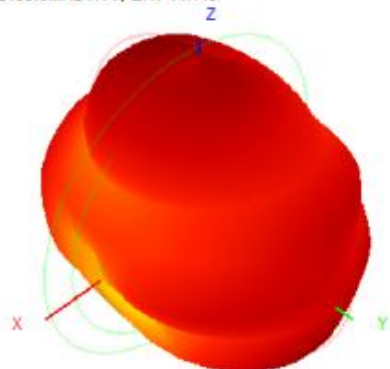
Frequency ID	1	11	17	18	21	22	28	35	36
Frequency (MHz)	2400.0	2450.0	2480.0	2485.0	2500.0	5150.0	5450.0	5800.0	5850.0
Efficiency (dBi)	-8.34	-7.79	-7.39	-7.31	-6.97	-4.36	-3.64	-3.32	-3.07
Gain (dBi)	-3.97	-2.31	-1.43	-1.28	-0.66	0.76	0.94	3.48	3.72
Efficiency (%)	14.66	16.64	18.22	18.56	20.07	36.62	43.27	46.60	49.35
Directivity (dB)	4.37	5.48	5.96	6.03	6.31	5.13	4.57	6.79	6.79
Peak Gain Position (Theta)	180.00	180.00	180.00	180.00	180.00	75.00	45.00	150.00	150.00
Peak Gain Position (Phi)	0.00	0.00	0.00	0.00	165.00	285.00	255.00	330.00	330.00
Efficiency ThetaPol (%)	4.72	5.69	6.49	6.67	7.51	13.22	15.81	21.82	22.99
Efficiency PhiPol (%)	9.94	10.95	11.73	11.88	12.57	23.40	27.47	24.78	26.37
Upper Hem. Efficiency (%)	7.50	8.63	9.63	9.80	10.44	20.63	23.20	23.74	25.13
Lower Hem. Efficiency (%)	7.16	8.01	8.59	8.75	9.63	15.99	20.07	22.86	24.22



## 3D Pattern

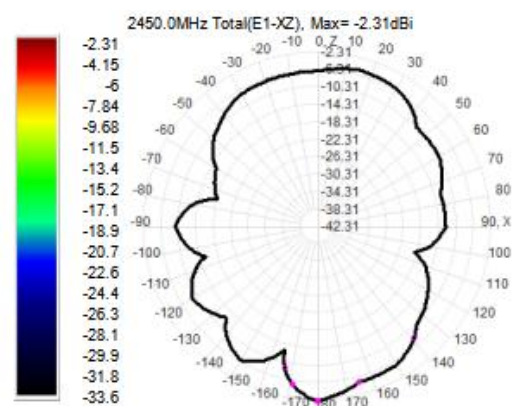
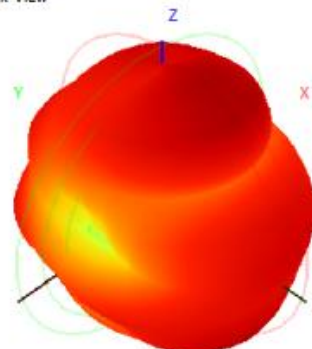
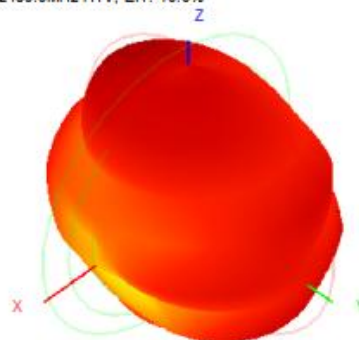
2400.0MHz H+V, Eff: 14.7%

Back View



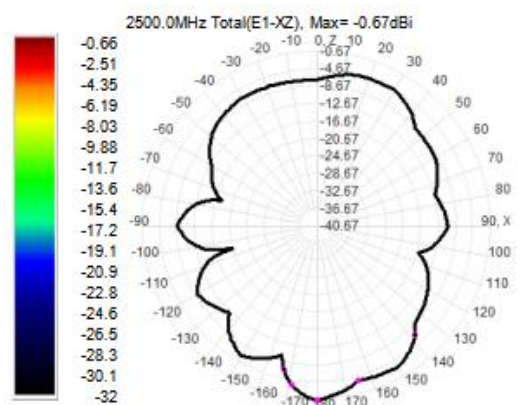
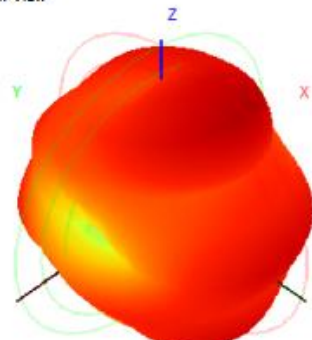
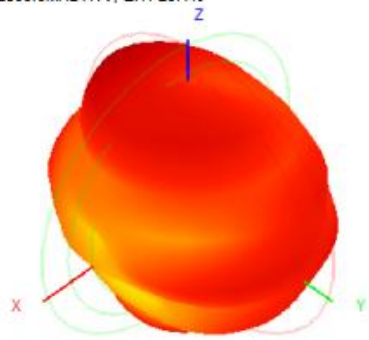
2450.0MHz H+V, Eff: 16.6%

Back View



2500.0MHz H+V, Eff: 20.1%

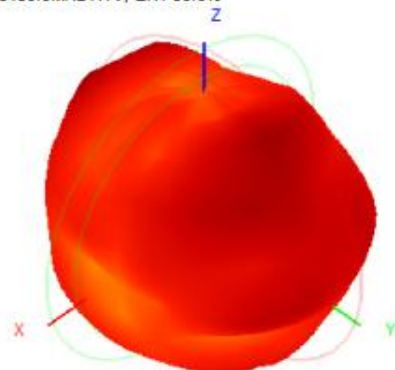
Back View



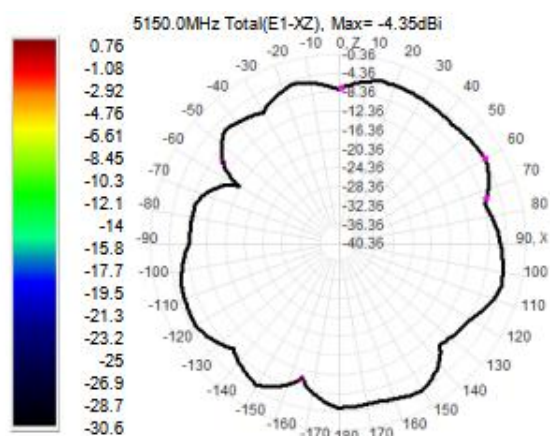
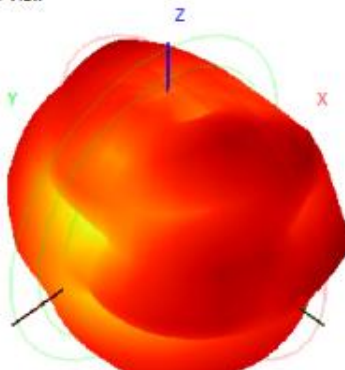


## 3D Pattern

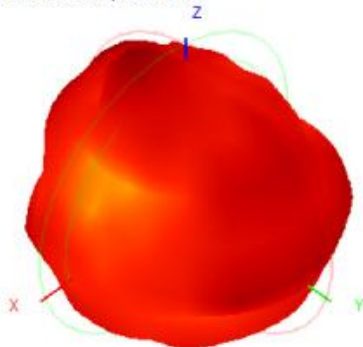
5150.0MHz H+V, Eff: 36.6%



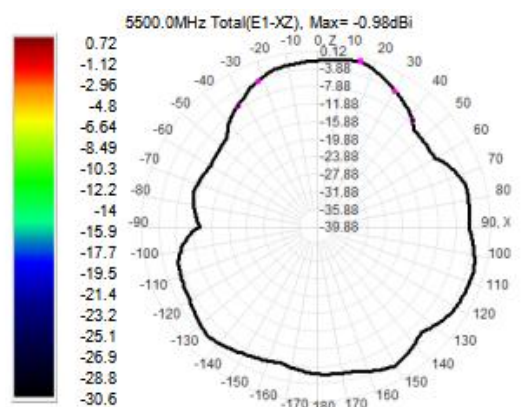
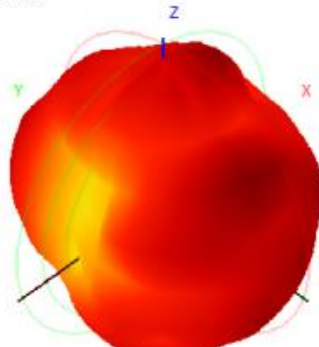
Back View



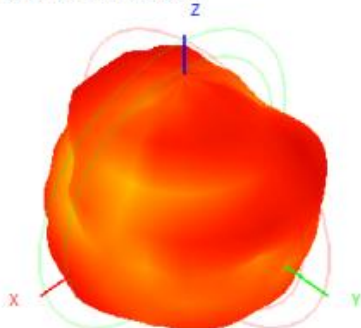
5500.0MHz H+V, Eff: 42.0%



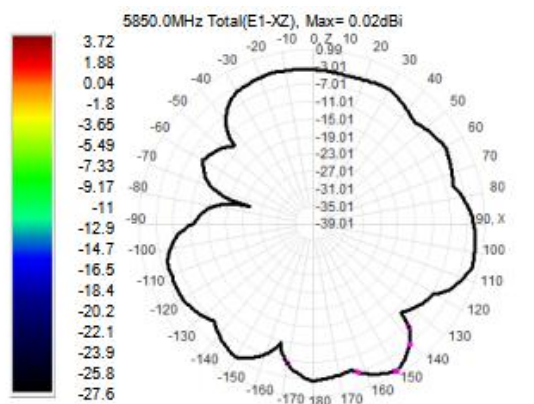
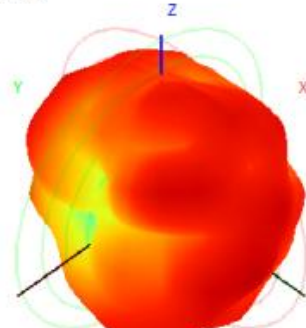
Back View



5850.0MHz H+V, Eff: 49.4%



Back View



## Reliability Test Report

Customer Name		Customer P/N		Tuoyuqi P/N	TYQ-NZ-3330717	
Test Date	2023/6/1	Sample Qty.	3	Inspector	Liu tao	
Test Item	Requirement	testing equipment	Sample 1	Sample 2	Sample 3	PASS/NG
High temperature storage	After 24H exposure at70℃, the electrical performance was normal after 2H recovery	Constant temperature and humidity box	OK	OK	OK	Pass
Cryogenic storage	Exposed to -30℃ for hours, the electrical properties were normal after 2 hours of recovery	Constant temperature and humidity box	OK	OK	OK	Pass
Work in high temperature	The electrical performance is normal after 24 hours of electrification at 60℃	Constant temperature and humidity box	OK	OK	OK	Pass
Low temperature operation	Under the condition of -20℃, the electrical performance is normal after 24 hours	Constant temperature and humidity box	OK	OK	OK	Pass
Salt spray tester	(5 + 0.5)% nacl, pH 6.5-7.2, temperature of the test chamber (35 ± 2) ° C <input checked="" type="checkbox"/> 24H <input type="checkbox"/> 48H	Salt spray tester	OK	OK	OK	Pass
Riveting and drawing force of connector	0.81 Diameter≥8N 1.13 Diameter≥10N RG174 Diameter≥60N RG178 Diameter≥40N	Push-pull meter	≥10N	≥10N	≥10N	Pass
Conclusion						Pass
Inspector & Date:Liu tao	2023/6/1		Approval &D ate			

## Product ROHS ingredient declaration table

Product name	Uniform material		Levels of hazardous substances (PPM)										HS test report no	HS test report date
			Pb	Cd	Hg	Cr6+	PBBs	PBDEs	DEHP	BBP	DBP	DIBP		
Wi-fi antenna	PCB	PCB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	CANEC2214801701	22/7/14
		PCB												
	WIRE	Coaxial cable	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	A223007912210102ER1	22/11/07
		Coaxial cable	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	A2220491327101001E	22/8/10
		Coaxial cable	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	A2230079122101002E	23/3/9
		Coaxial cable	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	A2230079122101003E	23/3/7
		Coaxial cable	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	A2230079122101004E	23/3/7
		Coaxial cable	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	A2230079122101006E	23/3/9

Install Wizard or Other

The installation process:

Take the 1PCS product, tear off the release paper on the back of the PCB by hand, then align the position of the FPC locating hole with the position of the housing locating hole (locating rib position or locating line) , and attach it to the housing smoothly, as shown in the following figure :

Points to note during installation:

- ☒ Put It on the antenna to ensure that the PCB is completely attached to the shell;
- ☒ The positioning hole is aligned with the position of the housing positioning column;
- ☒ The PCB edge is aligned with the shell edge;
- ☒ Please align the terminal first and then fasten it vertically when the terminal is fastened to the PCBA end of the motherboard;
- ☒ When dismantling the antenna terminal, tools (such as special crowbar) should be used to vertically tilt the terminal, not directly pull the wire to dismantle.

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