Shenzhen Hetuo Technology Co., Ltd

Address: Room 1202B, Building C6, Hengfeng Industrial City, Xixiang, Bao'an District, Shenzhen

Sample Approved Sheet

Customer name	Ruihe		
Project name	R18-JL	Product name	BT Antenna
Customer code		Part number	011.0002(L) 011.0003(R)
Specification description	BT-L Antenna:HT-R18-JL-L-V2 BT-R Antenna:HT-R18-JL-R-V2		
R&D review			
formulate	Check	Ratify	Acknowledge the book completion time
Liyaona	Huxuewen	Daitingting	2023.8.26

Customer determination review group

acknowledge	check	ratify	Acknowledge the book completion time
Project Review ☐Three acknowledgements ☐Specifications/drawings ☐examining report ☐Specimen PCS ☐Safety standard ☐HSF			
Appraisal report ☐Accept ☐Conditional acceptance ☐Refuse			

Revision history				
Items	Revised content	Responsible person	Approval	date

Catalogue

1. Antenna picture

The report mainly provides the test status of the electrical properties parameters of R18-JL. The R18-JLantenna is a 2.4-2.5GHz Band . The antenna Picture and assembly are shown below. Antenna picture & assembly picture

2.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:

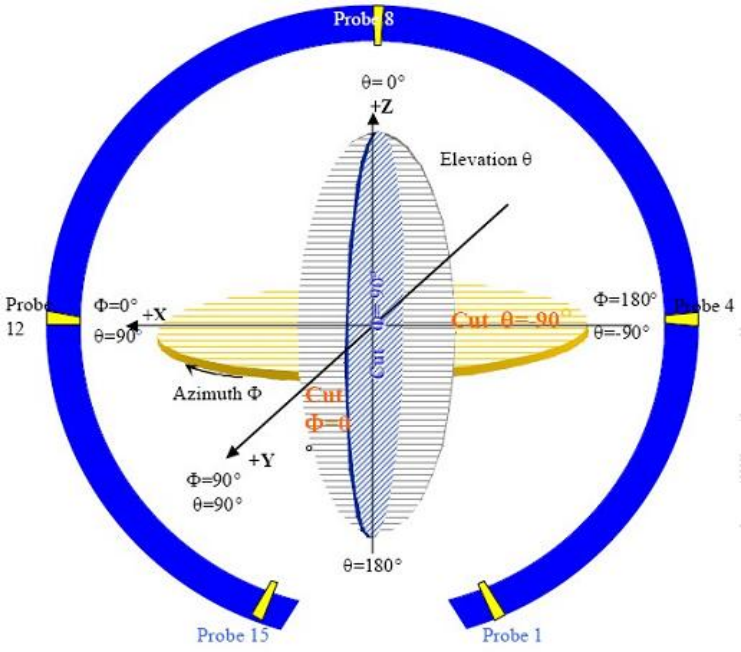


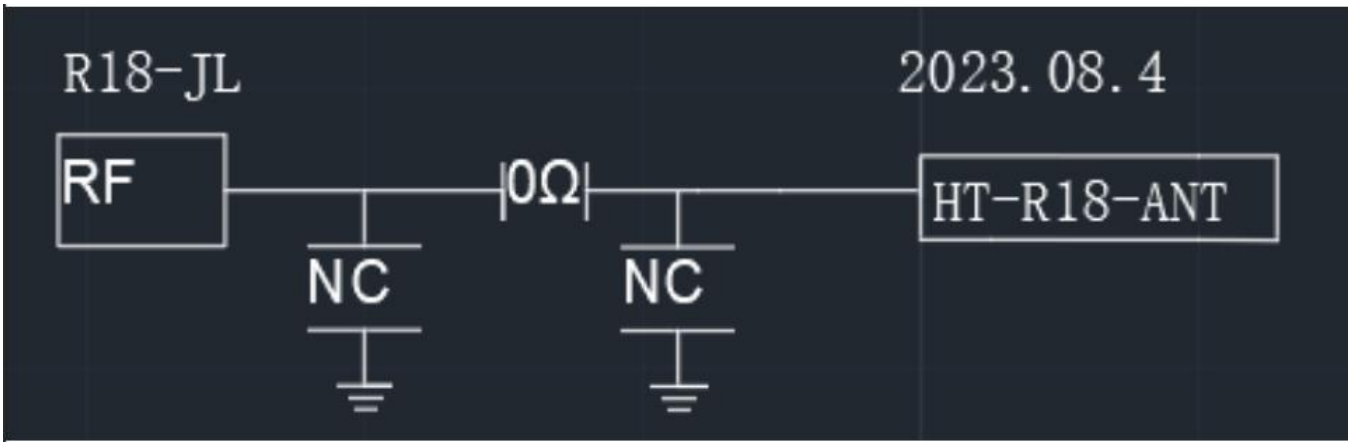
图 4 3D 微波暗室测试坐标系(back view)

3. Electrical Specification

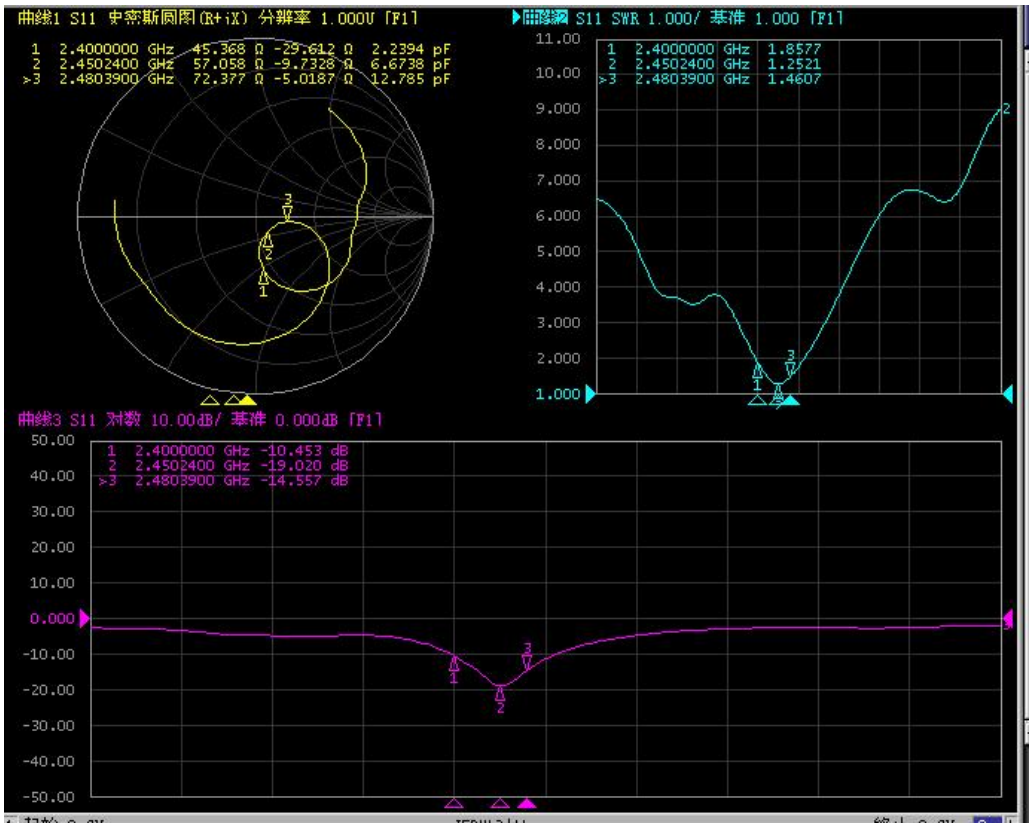
3-2 Passive S11 parameter

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 20cm.

VSWR

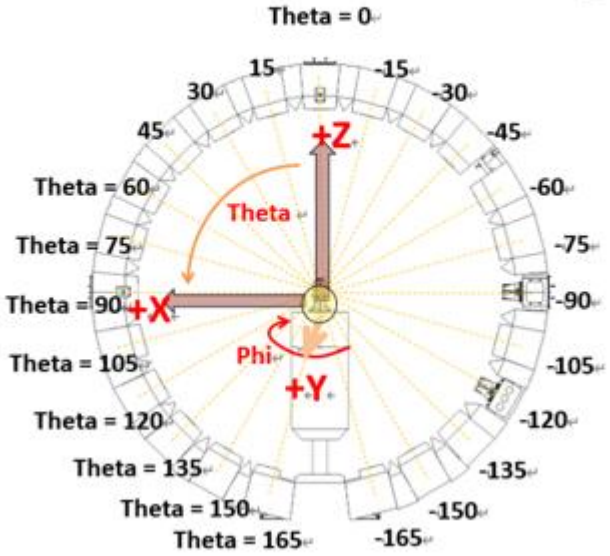


S11—(BT ANT)-L/R



3-3 Antenna Matching Network

Sample status & coordinates

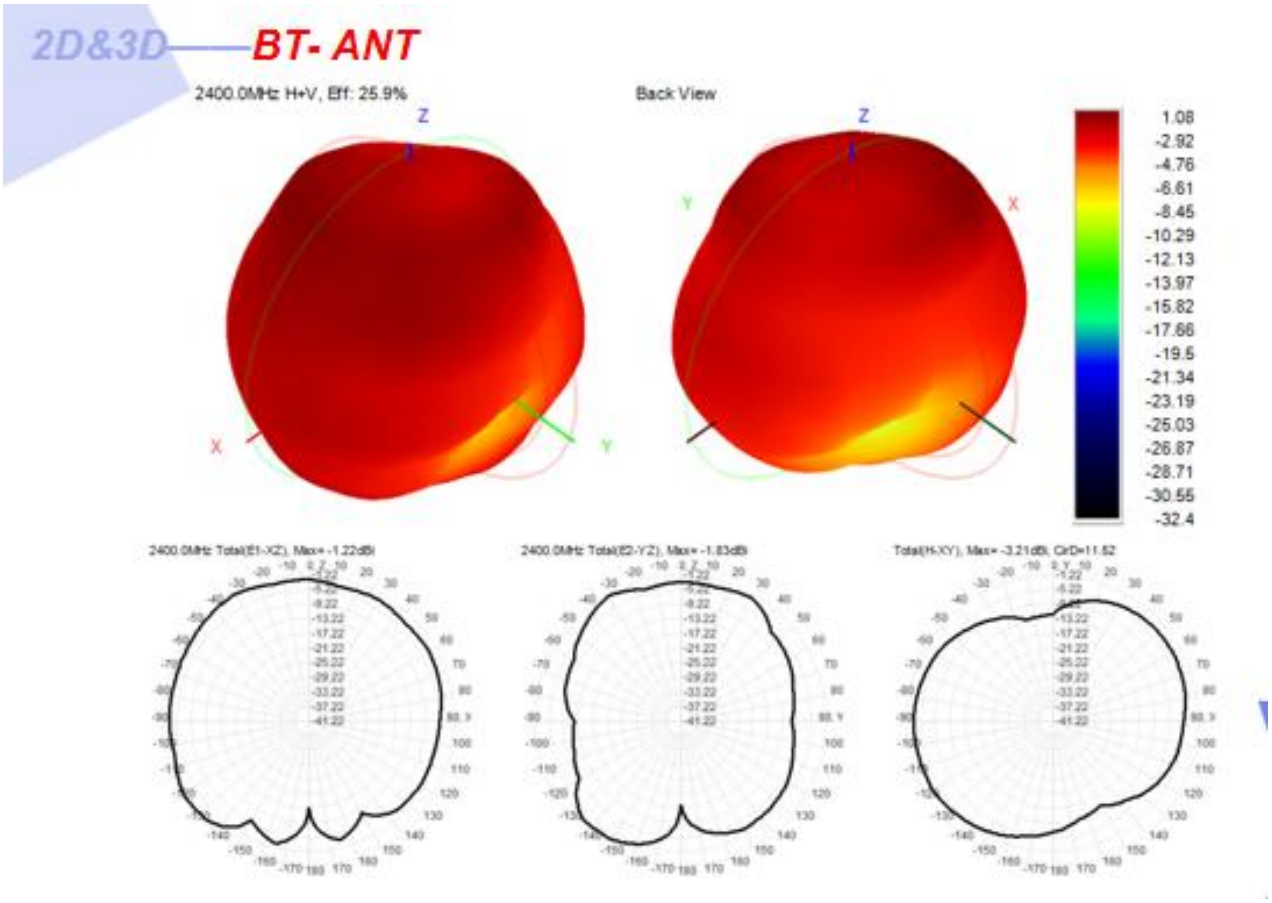


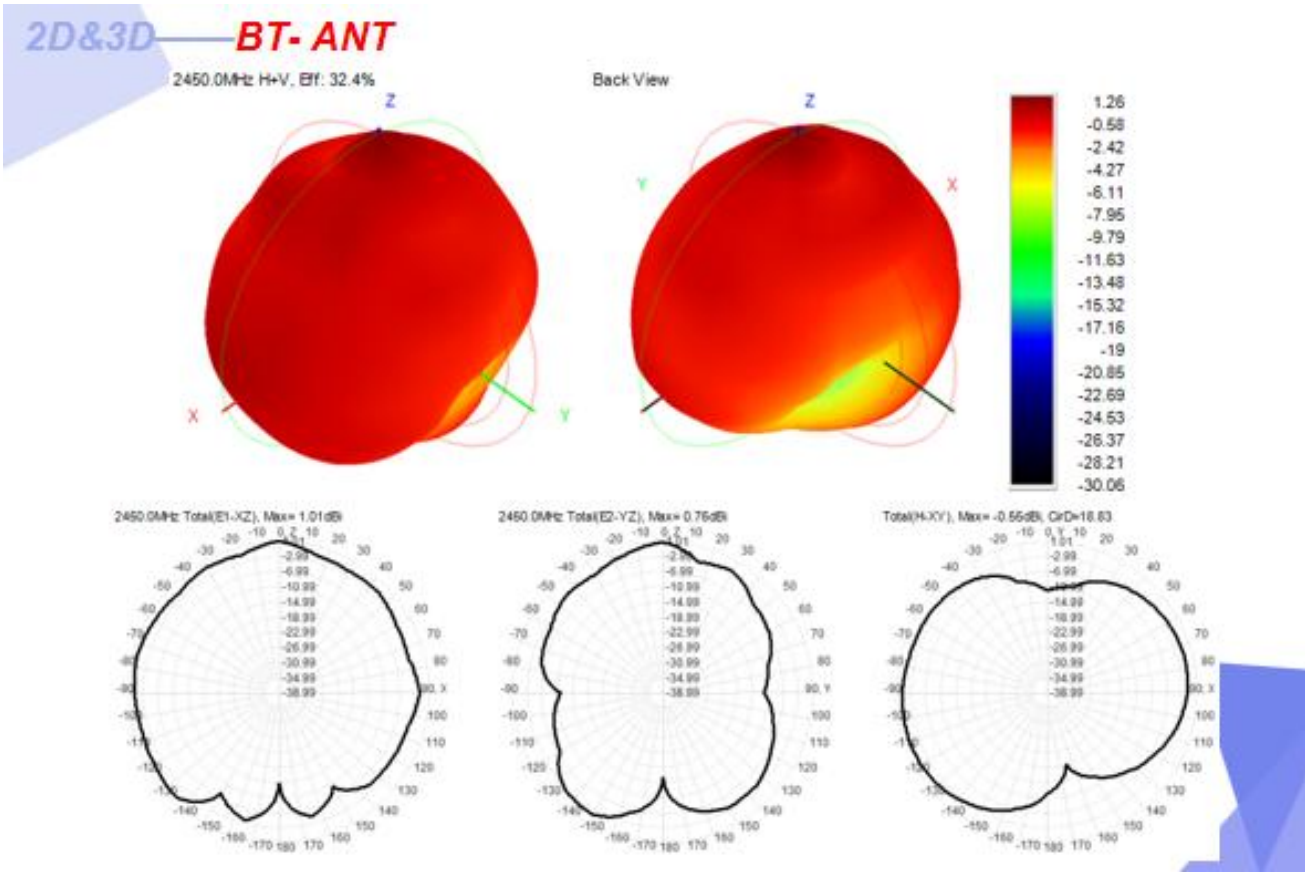
Gain & Efficiency——BT- ANT(L)

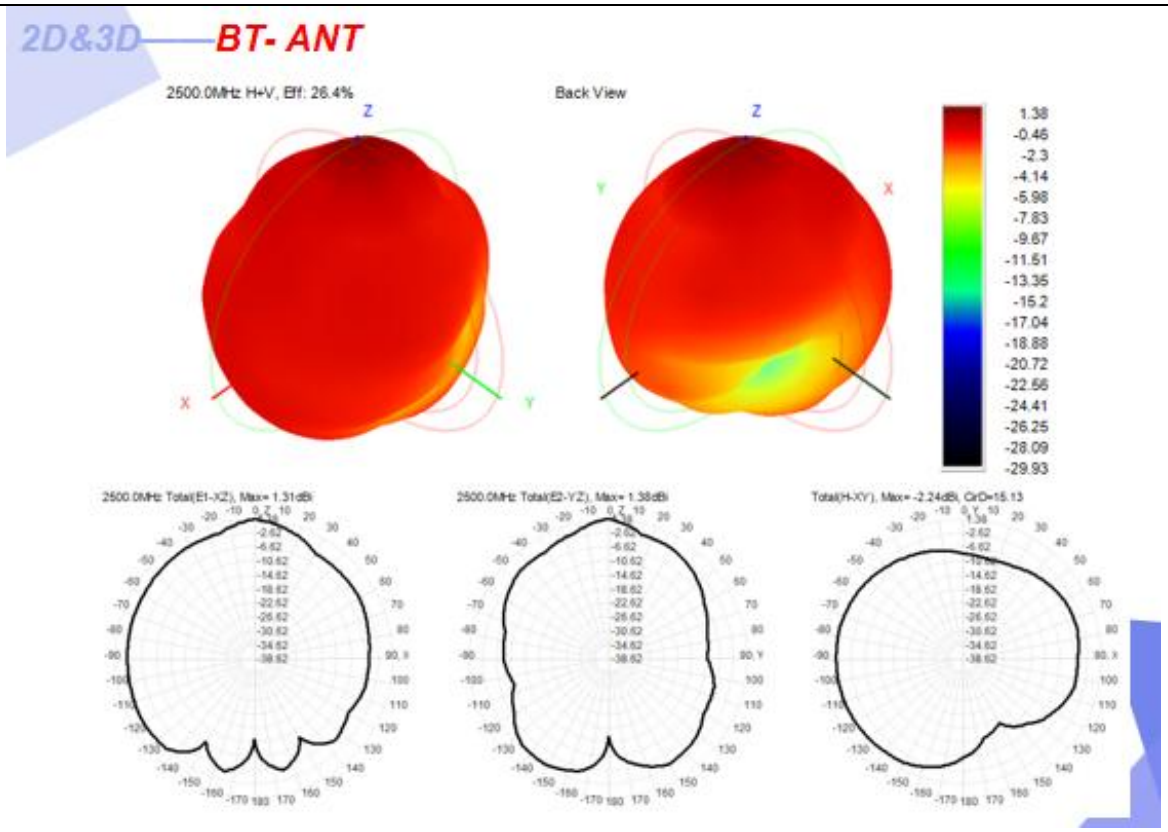
Frequency (MHz)	Efficiency (%)	Peak GAIN (dBi)
2400	25.87	1.08
2410	27.61	0.88
2420	28.32	0.59
2430	29.67	0.38
2440	31.92	0.47
2450	32.40	1.26
2460	30.91	1.42
2470	29.45	1.11
2480	28.49	1.34
2490	27.18	0.78
2500	26.41	1.38

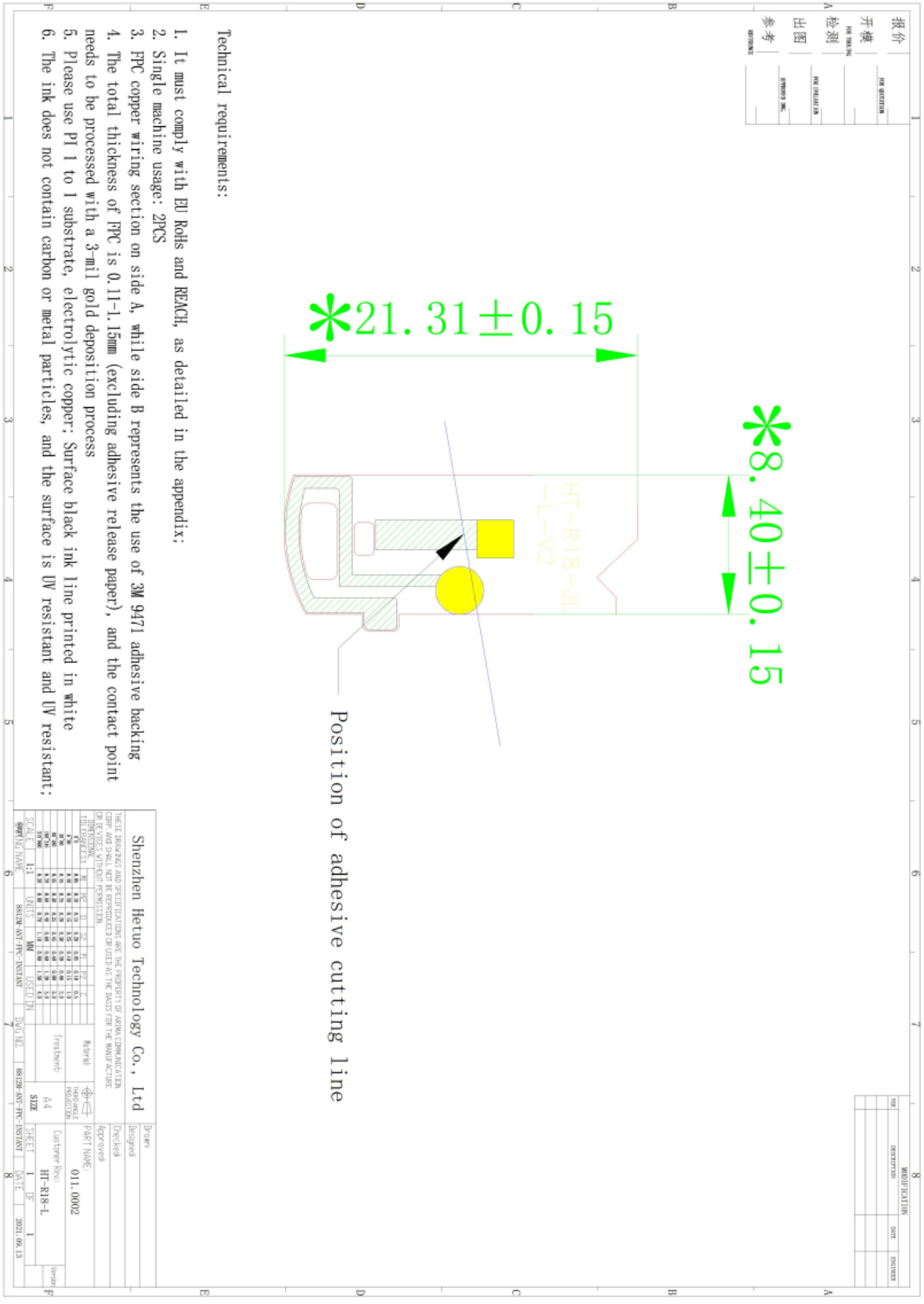
Gain & Efficiency——BT- ANT(R)

Frequency (MHz)	Efficiency (%)	Peak GAIN (dBi)
2400	25.87	1.18
2410	27.32	0.68
2420	28.32	0.59
2430	29.67	0.40
2440	31.92	0.47
2450	32.40	1.36
2460	31.91	1.12
2470	29.45	1.11
2480	30.91	1.42
2490	27.18	0.78
2500	26.67	1.18


2D&3D BT- ANT
2400.0MHz H+V, Eff: 25.9%
Back View
1.08
-2.92
-4.76
-6.61
-8.45
-10.29
-12.13
-13.97
-15.82
-17.66
-19.5
-21.34
-23.19
-25.03
-26.87
-28.71
-30.55
-32.4


2D&3D BT- ANT
2450.0MHz H+V, Eff: 32.4%
Back View
1.26
-0.58
-2.42
-4.27
-6.11
-7.95
-9.79
-11.63
-13.48
-15.32
-17.16
-19
-20.85
-22.69
-24.53
-26.37
-28.21
-30.06


2D&3D——BT- ANT
2500.0MHz H+V, Eff: 26.4%
Back View
1.38
-0.46
-2.3
-4.14
-5.98
-7.83
-9.67
-11.51
-13.35
-15.2
-17.04
-18.88
-20.72
-22.56
-24.41
-26.25
-28.09
-29.93



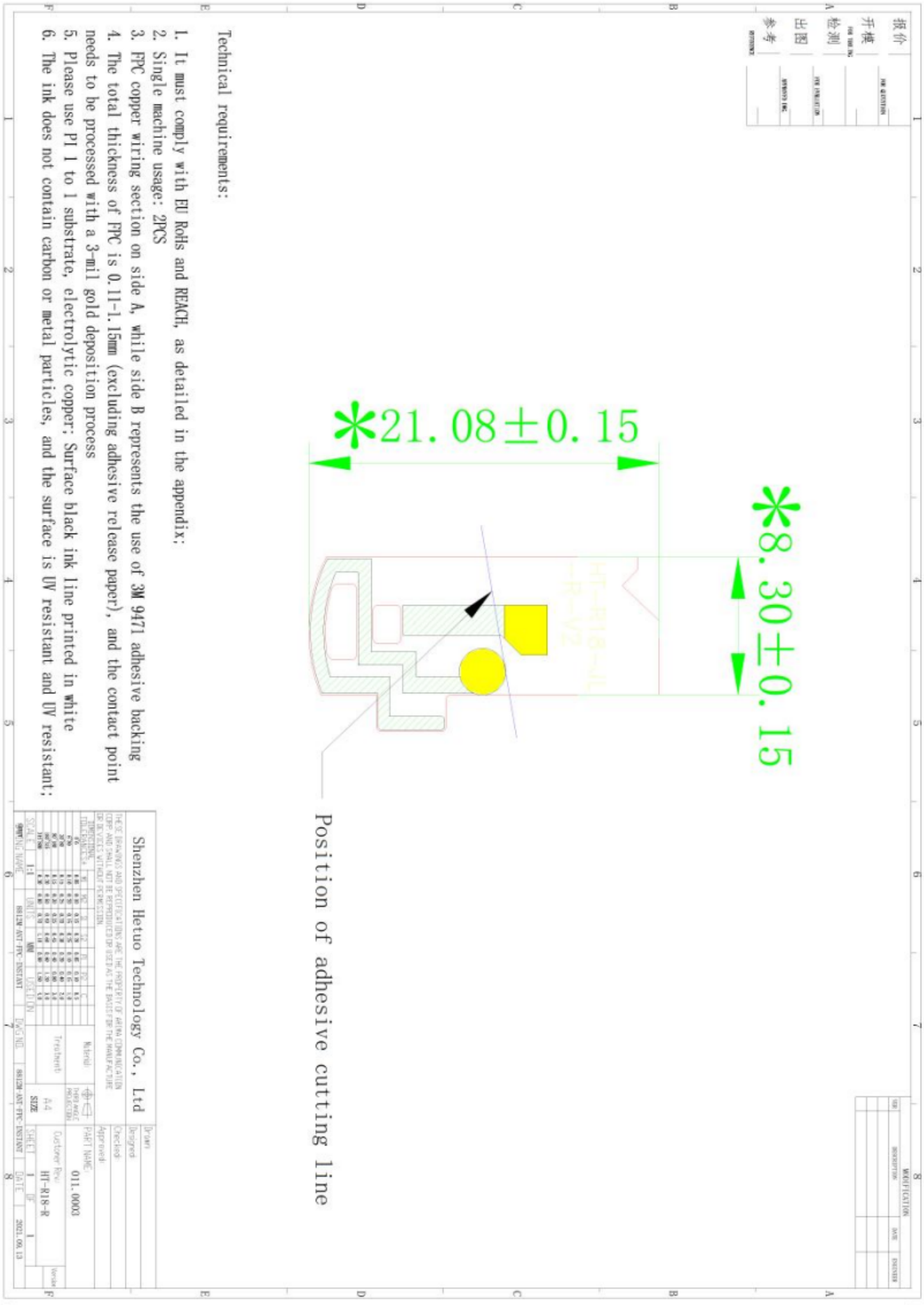
Technical requirements:

1. It must comply with EU RoHs and REACH, as detailed in the appendix;
2. Single machine usage: 2PCS
3. FPC copper wiring section on side A, while side B represents the use of 3M 9471 adhesive backing
4. The total thickness of FPC is 0.11-1.15mm (excluding adhesive release paper), and the contact point needs to be processed with a 3-mil gold deposition process
5. Please use PI 1 to 1 substrate, electrolytic copper; Surface black ink line printed in white
6. The ink does not contain carbon or metal particles, and the surface is UV resistant and UV resistant;

Shenzhen Hetuo Technology Co., Ltd

Sample Dimensions Test Report

Test Date	2023.8.26	Sample Qty.	3	Inspector	Liyaona
Dimension No.	Standard	Sample 1	Sample 2	Sample 3	Pass/NG
①length	9.4±0.2mm	9.4	9.46	9.43	Pass
②width	21.28±0.2mm	21.31	21.28	21.34	Pass
③Thickness	0.1±0.05mm	0.1	0.1	0.1	Pass
④					
⑤					
⑥					
⑦					
Conclusion					PASS
Inspector & Date	Liyaona/2023.8.26		Approval &D ate		


报价
开模
检测
出图
参考
*21.08±0.15
*8.30±0.15
Position of adhesive cutting line
Technical requirements:
1. It must comply with EU RoHs and REACH, as detailed in the appendix;
2. Single machine usage: 2PCS
3. FPC copper wiring section on side A, while side B represents the use of 3M 9471 adhesive backing
4. The total thickness of FPC is 0.11-1.15mm (excluding adhesive release paper), and the contact point needs to be processed with a 3-mil gold deposition process
5. Please use PI 1 to 1 substrate, electrolytic copper; Surface black ink line printed in white
6. The ink does not contain carbon or metal particles, and the surface is UV resistant and UV resistant;
Shenzhen Hetuo Technology Co., Ltd
011.0003
HT-R18-R
2021.06.13

Sample Dimensions Test Report

Test Date	2023.8.26	Sample Qty.	3	Inspector	Liyaona
Dimension No.	Standard	Sample 1	Sample 2	Sample 3	Pass/NG
①length	10.5±0.2mm	10.5	10.5	10.57	Pass
②width	21.07±0.2mm	21.07	21.12	21.09	Pass
③Thickness	0.1±0.05mm	0.1	0.1	0.1	Pass
④					
⑤					
⑥					
⑦					
Conclusion					PASS
Inspector & Date	Liyaona/2023.8.26		Approval &D ate		