

BT Antenna Specification

Client:	Tonly
Product Type:	Speaker
Antenna Frequency:	2400 ~ 2500MHz
Antenna Type:	FPC+coaxial cable+wire sponge
馈电形式 Feed form :	焊接 welding
馈脚数量 Number of Feeder Feet:	2pcs
HW Version:	3

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This report mainly provides the test status of various electrical and structural performance parameters of the AS 4 project antenna. The picture below is the antenna picture designed by Daxian.



1.1 Electrical Specifications

1.1.1 Electrical performance index

The working frequency band of the antenna is 2400 ~ 2500 MHz. The following table is the index of electrical performance of Daxian designed and mass-produced antenna.

Frequency Range	Frequency (MHz)	VSWR
BT antenna	2400 ~ 2500	≤ 3

1.1.2 Antenna position picture



1.2 Structural specifications and standards

1.2.1 Antenna Composition

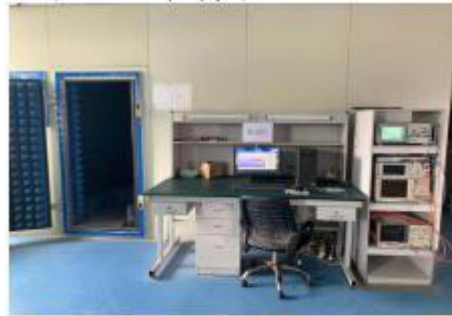
The antenna is mainly composed of FPC + coaxial + wire sponge.

2. The Equipment of Active Test

Satimo 3D Chamber $6 \times 4 \times 4$ (m)

Agilent 8960 E5515c

Network analyzer-R&S ZVL



3 tests

3.1 Standing wave (VSWR) test

3.1.1 Test connection: The VSWR test device is connected sequentially as follows: R&S ZVL network analyzer → test line → test harness

Measured (with photos)

3.2 Gain and efficiency, power (TRP), sensitivity (TIS) test

3.2.1 Test site:

Daxian microwave anechoic chamber. The test frequency range is 400MHz—6GHz, the quiet zone range is 50cm around the circle, and the reflectivity is less than -50 dB.

3.2.2 Instruments tested:

R&S ZVL network analyzer, Agilent8960 E5515C, standard horn antenna, French SATIMO-SG24SYSTEM series systems, printers, etc.

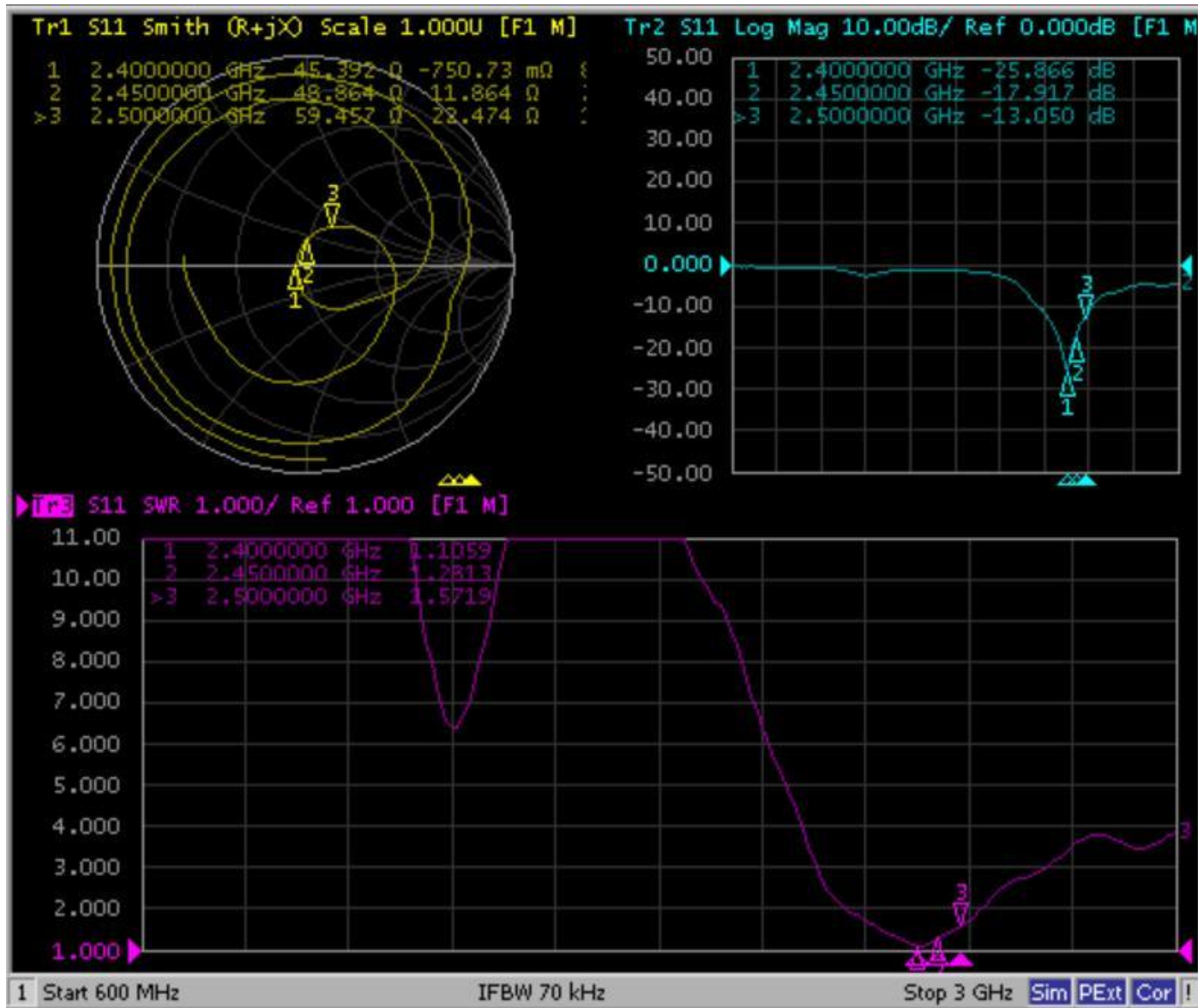
3.2.3 Test data: In the microwave anechoic chamber, the values related to the test power and sensitivity are as follows

OTA Passive Efficiency & Gain Test:

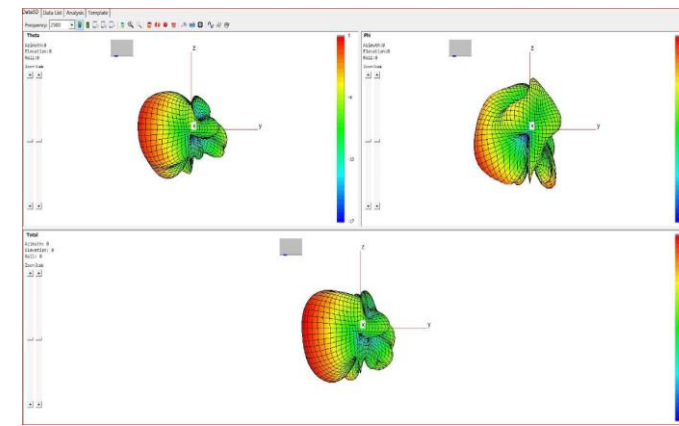
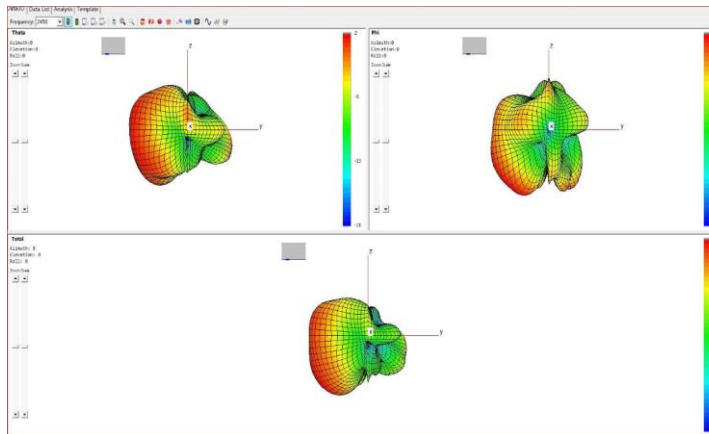
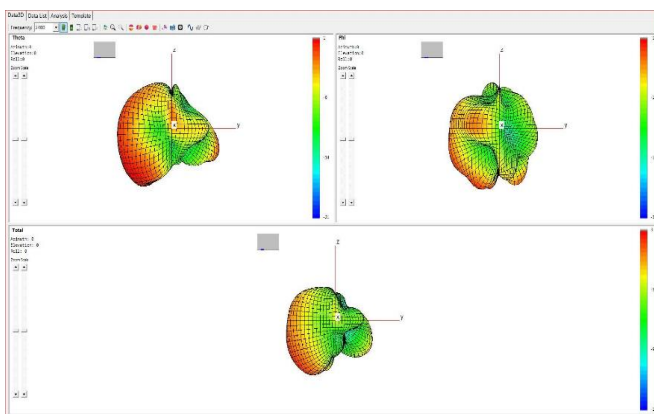
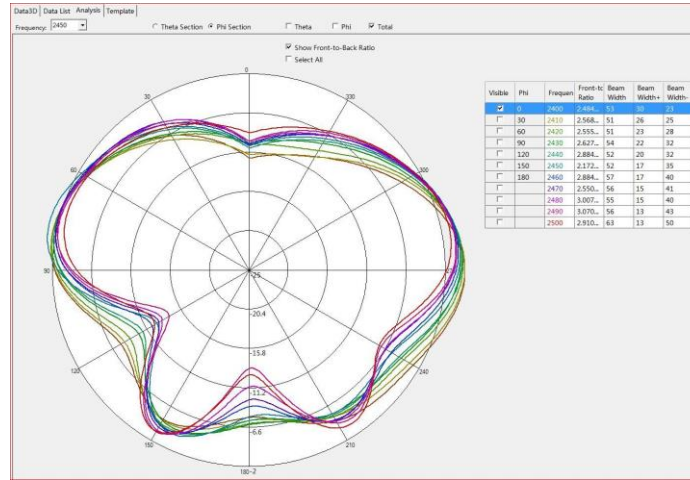
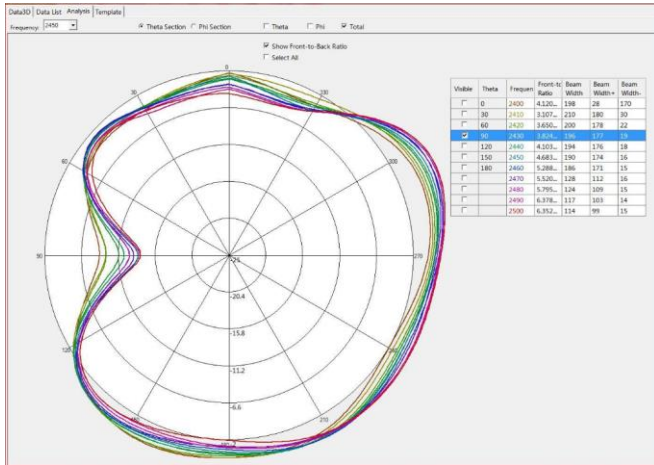
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Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	53.89	-2.71	2.55
2410	52.42	-2.81	2.19
2420	53.26	-2.74	2.46
2430	53.41	-2.72	2.52
2440	55.26	-2.58	2.9
2450	56.27	-2.5	2.96
2460	57.24	-2.42	3.25
2470	56.88	-2.45	3.3
2480	57.99	-2.37	3.3
2490	57.19	-2.43	3.07
2500	56.33	-2.49	2.82

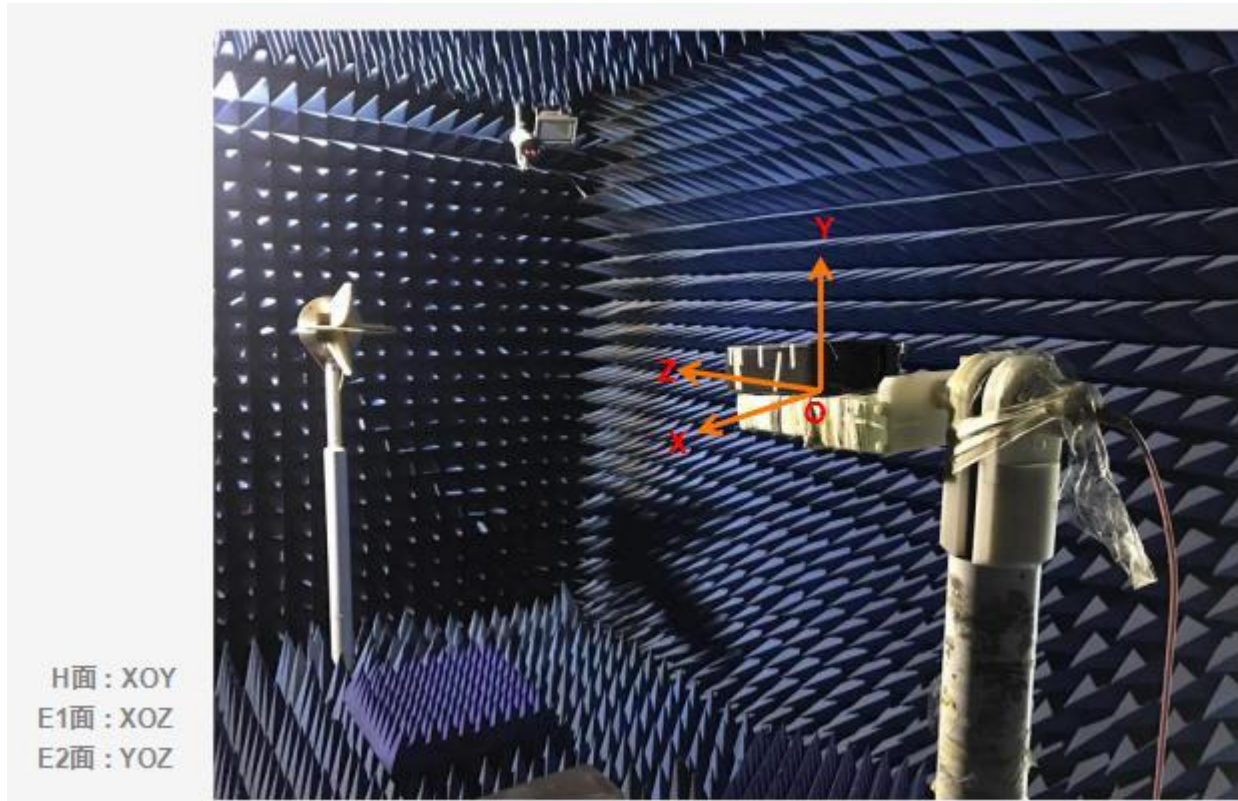
4. VSWR parameter diagram



5. 3D&2D field diagram-2.4G



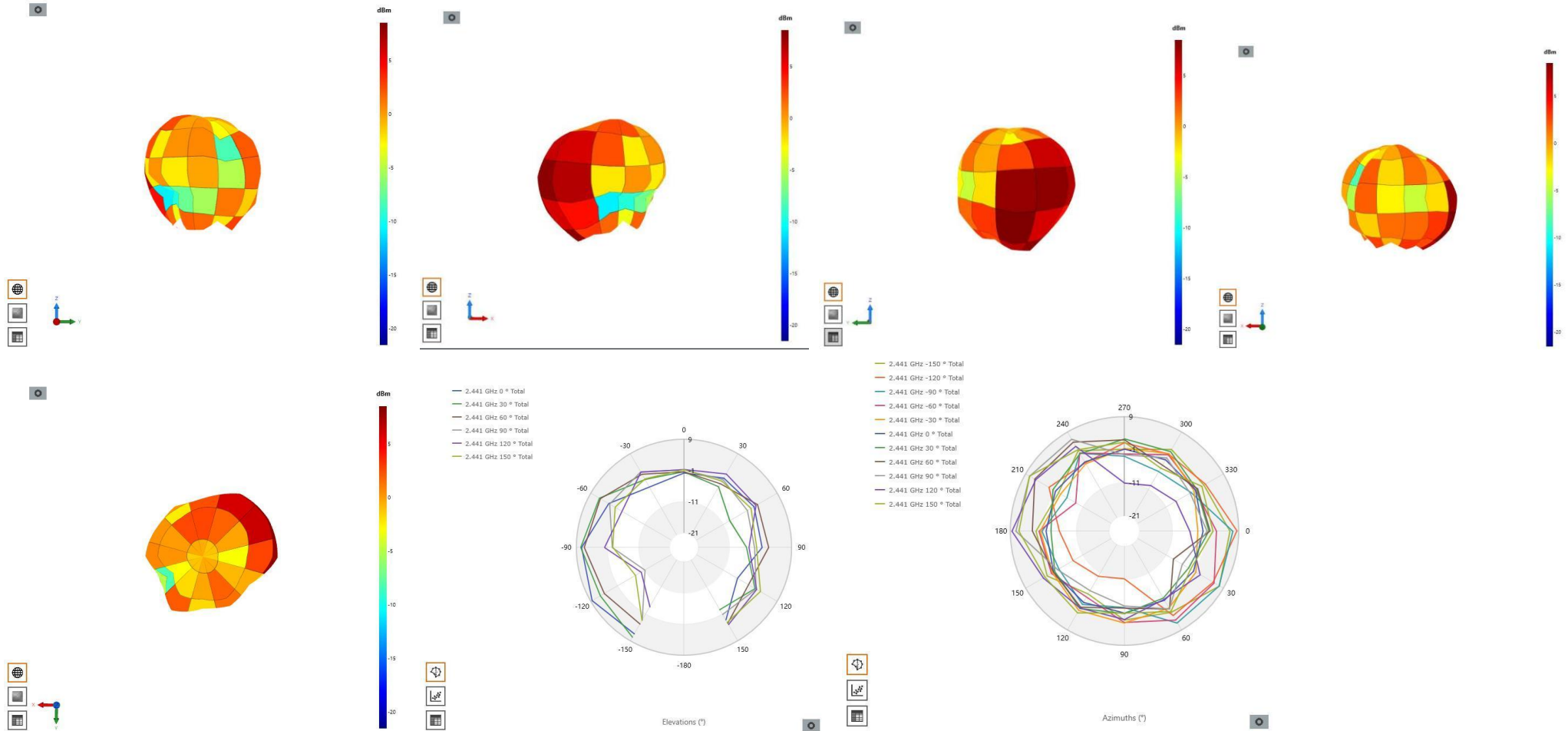
6. The placement of the machine in the darkroom



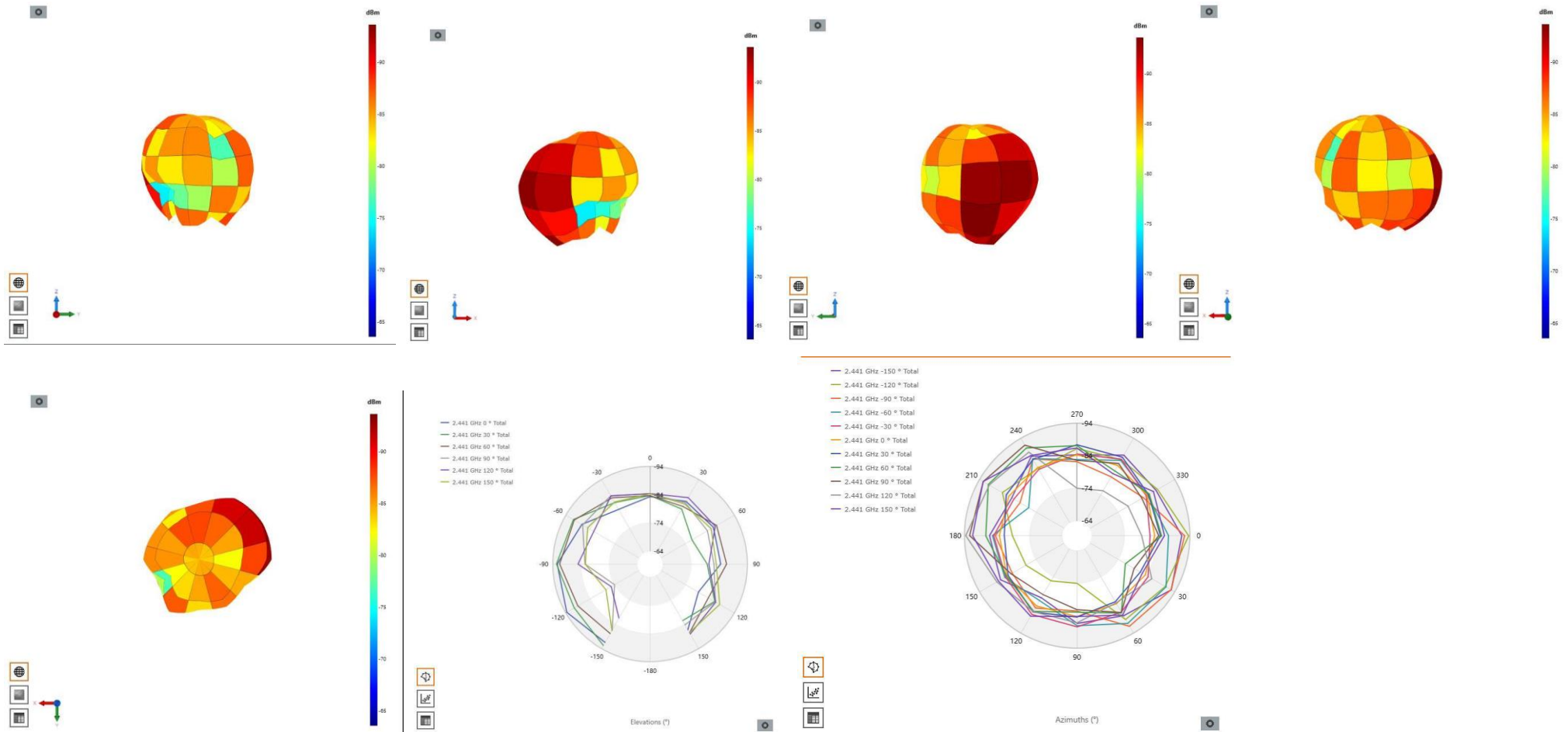
7. Antenna active data

BAND	CH	TRP (dBm)	TIS (dBm)
BT	0	-0.48	-86.29
	39	-0.62	-87.01
	78	-0.61	-86.13

8. Antenna active pattern diagram: TRP



9. Antenna active field diagram: TIS



10. Pull distance test



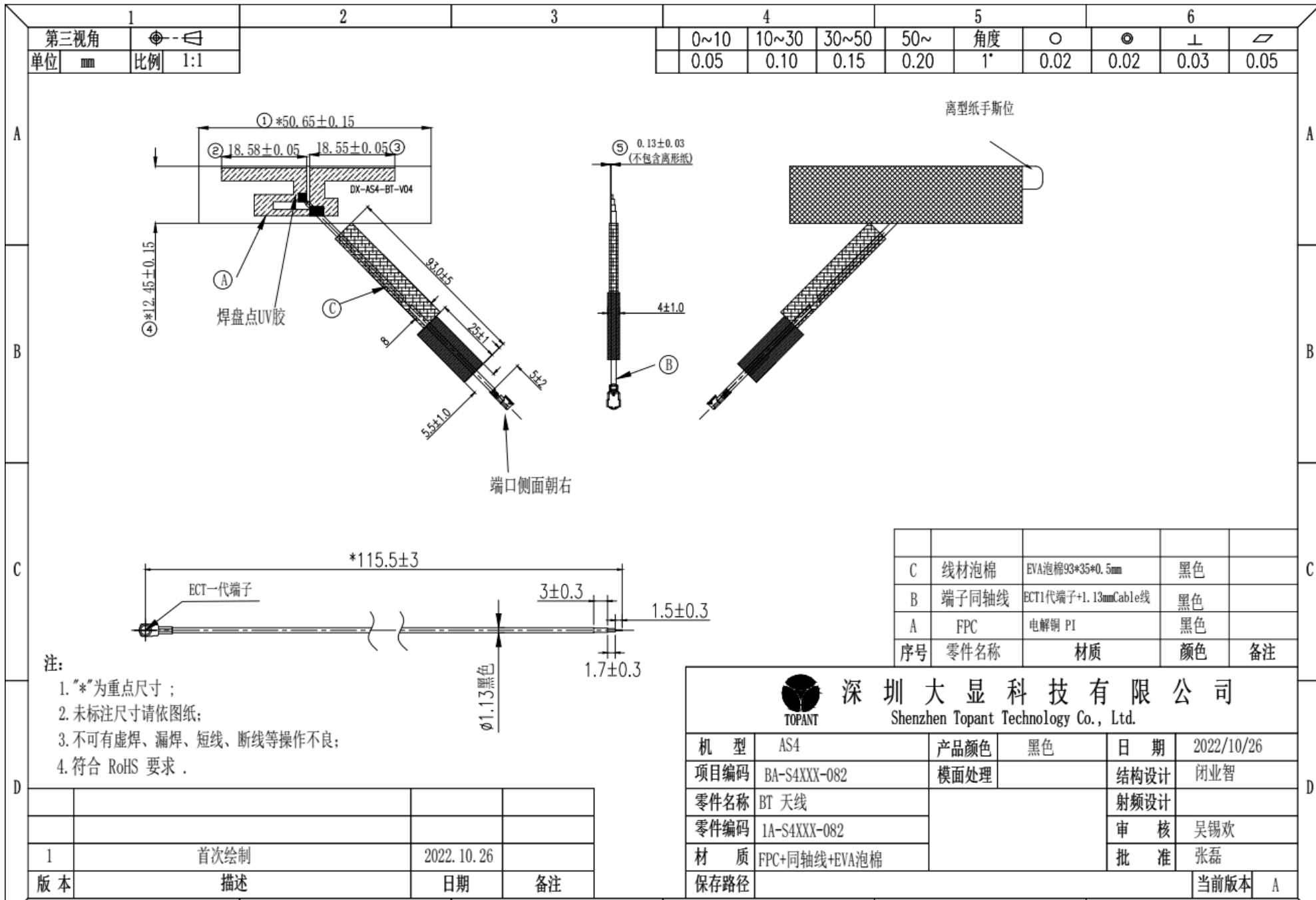
测试场地	机器摆放方向	BT(苹果13)	BT(三星note9)
鹤洲	前	90米	55米
	后	80米	50米
	左	90米	55米
	右	90米	55米

test site	Sample placement direction	BT (Iphone 13)	BT(Samsung Note 9)
Hezhou	Front	90 meters	55 meters
	back	80 meters	50 meters

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	left	90 meters	55 meters
	right	90 meters	55 meters

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第三视角	
单位 mm	比例 1:1

0~10	10~30	30~50	50~	角度	○	◎	⊥	▱
0.05	0.10	0.15	0.20	1°	0.02	0.02	0.03	0.05

- 注:
1. "*"为重点尺寸；
 2. 未标注尺寸请依图纸；
 3. 不可有虚焊、漏焊、短线、断线等操作不良；
 4. 符合 RoHS 要求。

C	线材泡棉	EVA泡棉93*35*0.5mm	黑色	
B	端子同轴线	ECT1代端子+1.13mmCable线	黑色	
A	FPC	电解铜 PI	黑色	
序号	零件名称	材质	颜色	备注

深圳大显科技有限公司 Shenzhen Topant Technology Co., Ltd.					
机 型	AS4	产品颜色	黑色	日 期	2022/10/26
项目编码	BA-S4XXX-082	模面处理		结构设计	闭业智
零件名称	BT 天线			射频设计	
零件编码	1A-S4XXX-082			审 核	吴锡欢
材 质	FPC+同轴线+EVA泡棉			批 准	张磊
保存路径				当前版本	A

1	首次绘制	2022. 10. 26	
版本	描述	日期	备注