



深圳市昱晟通讯设备有限公司

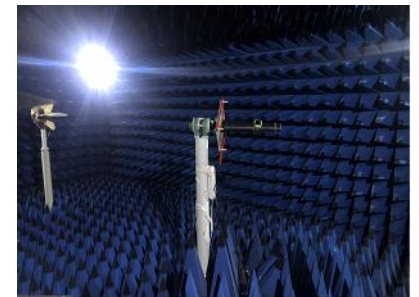
Yusheng Communications-equipment Co.,LTD

Commissioning report of the homogeneous BG1 antenna

Radio frequency: Chen Konghong

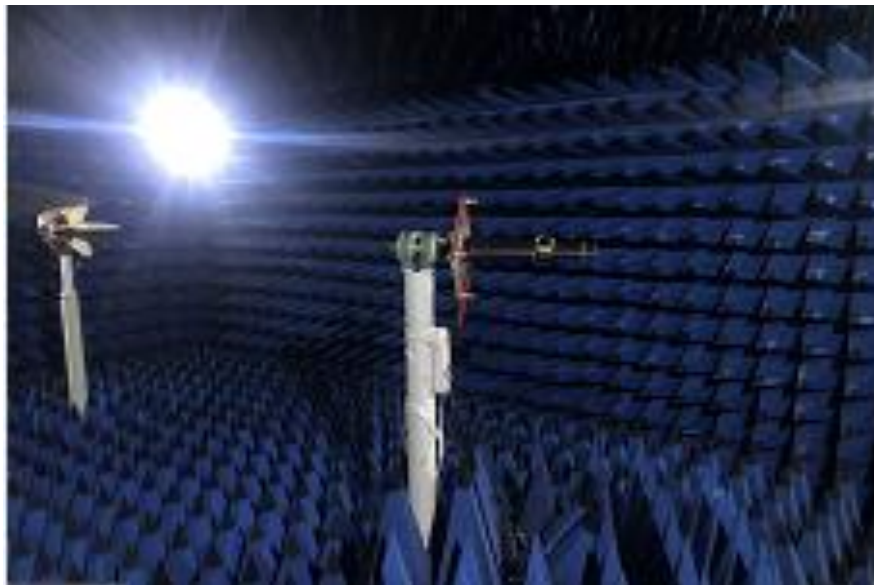
Date: 2024-01-29

Contact information: 19925137130



Project development environment

We are moving from the Internet era to the intelligent era, and the country is building a digital society and a smart city. In the next 5-10 years, there is a huge development potential in both the consumer electronics market and the Internet of Things market. The field of wireless communication is very diversified. In the future, relying on the customer platform advantages of the main antenna industry, Yusheng will strive to provide customers with professional product solutions with market competitiveness.



Yu Sheng communication products cover almost all wireless terminal equipment antenna applications, including car antenna, high precision surveying and mapping antenna, drone ground and satellite data navigation, high precision positioning antenna, medical equipment wireless transmission, consumer antenna (mobile phone antenna, PAD, laptop antenna), base station / indoor distribution antenna, smart wear antenna (smart watches, TWS headphones), security household antenna and a variety of wireless data transmission and wireless control of intelligent equipment antenna, etc.

1

Project commissioning brief

2

Outline of the report version

3

Antenna passive parameter

4

Antenna environment treatment and improvement

5

Match modification

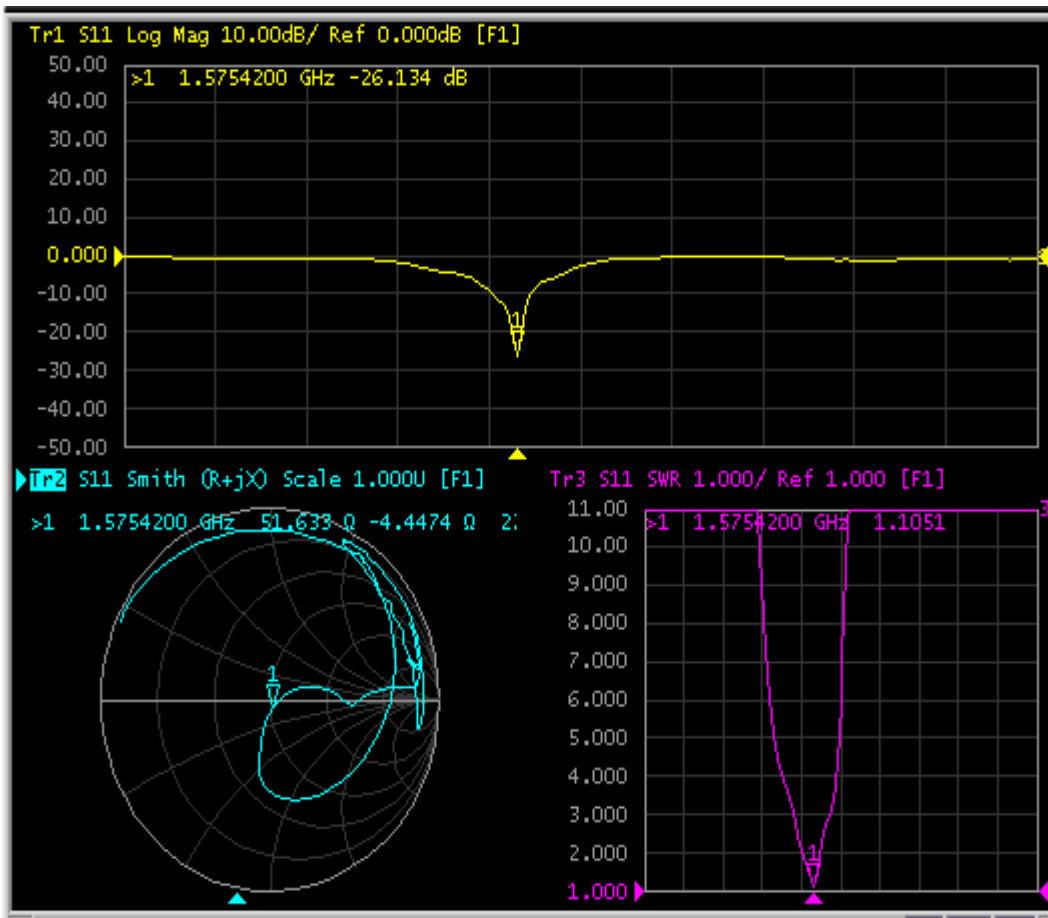
**Project
commissioning brief**

type	cell phone			
template	motherboard			
Frequency band and antenna material	main antenna	frequency range		material quality
		GPS	L1: 1575.42MHz/L5: 1176.45MHz	LDS
	Other antennas	WIFI/BLE	1575.42MHz/2.450G	FPC
performance requirement	According to the customer's requirements			

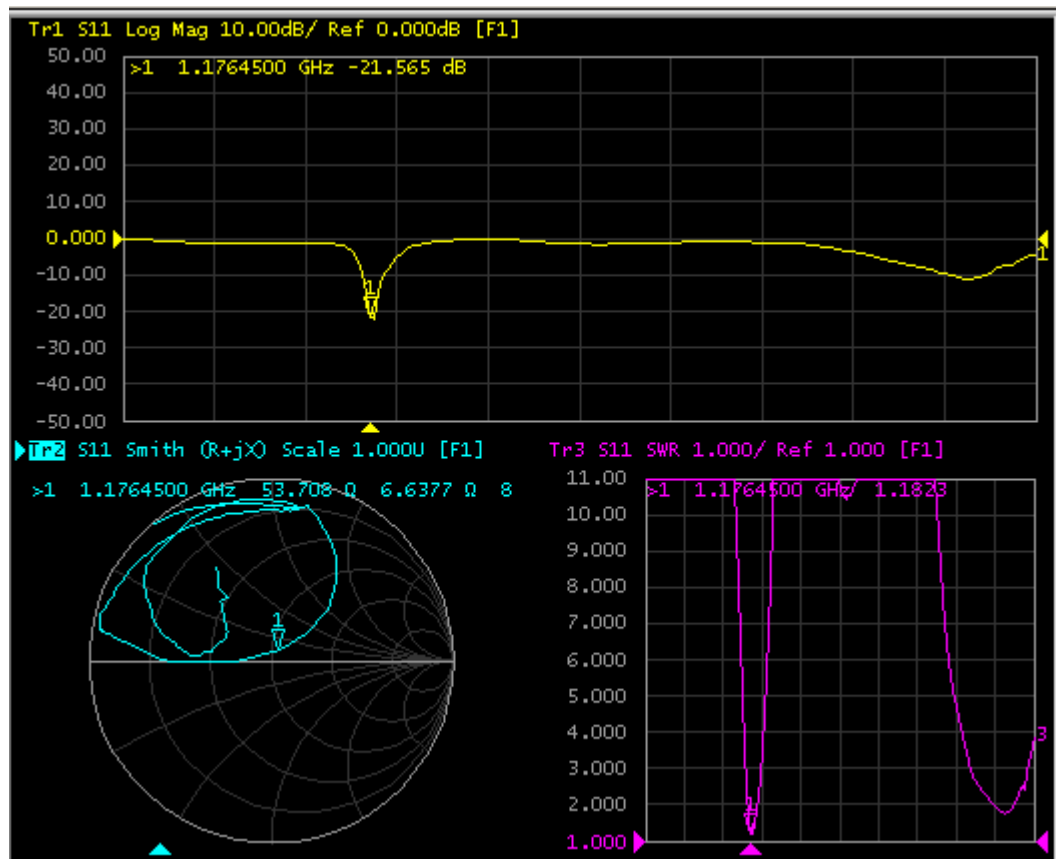
Outline of the
report version

Report version	Report time	The antenna development solved the problem
V0.1	20240129	The whole machine is in the trial production prototype state

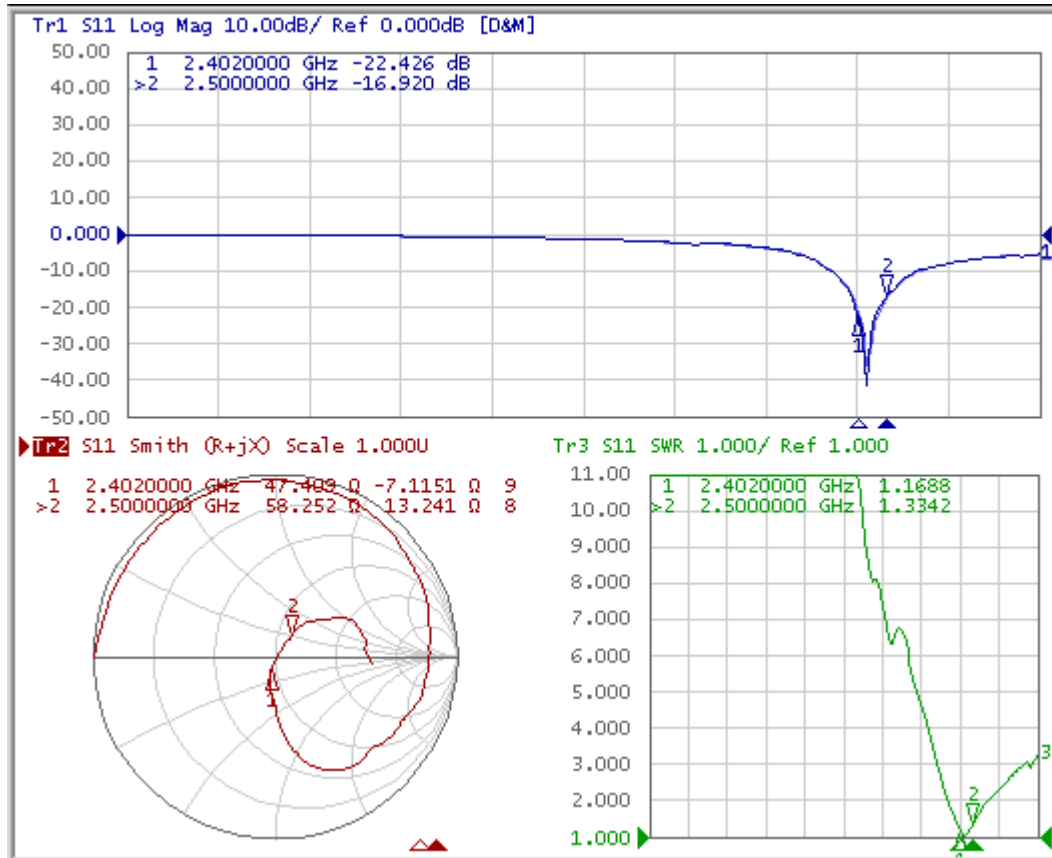
Antenna passive parameters: GPS-L1



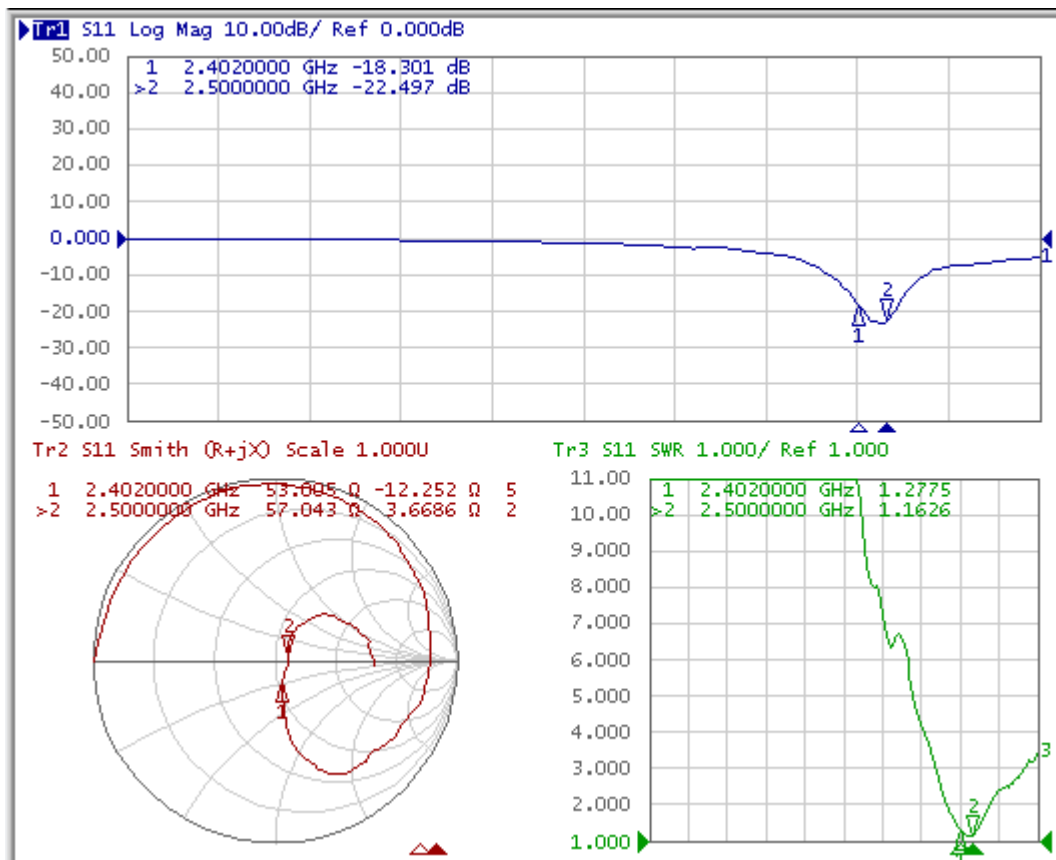
Antenna passive parameters: GPS-L5



Antenna passive parameters: WIFI



Antenna passive parameters: BLE



Antenna passive parameter

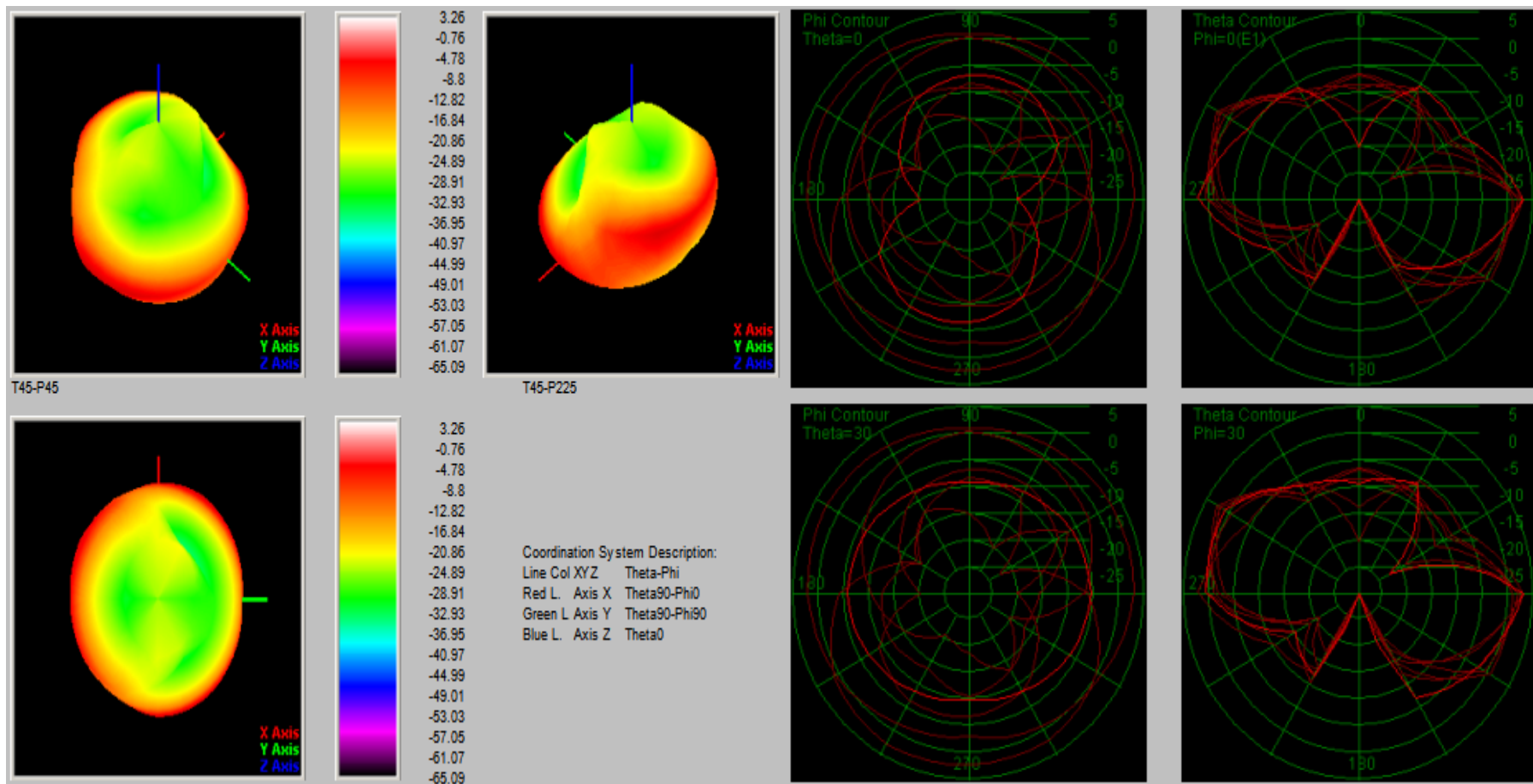
Freq(L1/L5)	Effi (%)	Gain (dbi)
1550MHZ	43	1.3
1560MHZ	44	1.4
1570MHZ	46	1.3
1580MHZ	45	1.4
1590MHZ	43	1.2
1160MHZ	38	1.1
1165MHZ	39	1.2
1170MHZ	42	1.3
1175MHZ	43	1.2
1180MHZ	42	1.2
1185MHZ	40	1.0

Freq(WIFI)	Effi (%)	Gain (dbi)
2400MHZ	35	1.3
2410MHZ	36	1.4
2420MHZ	37	1.5
2430MHZ	40	1.6
2440MHZ	43	1.8
2450MHZ	45	1.7
2460MHZ	46	1.7
2470MHZ	42	1.5
2480MHZ	40	1.5
2490MHZ	38	1.3
2500MHZ	34	1.0

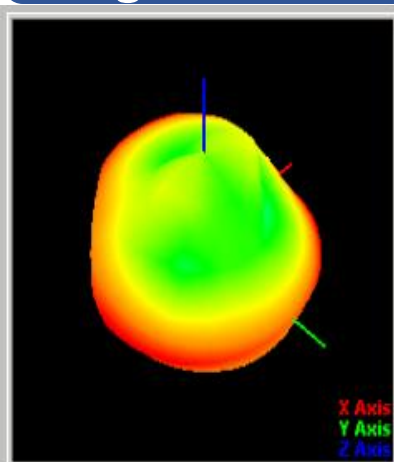
Antenna passive parameter

Freq (BLE	Effi (%)	Gain (dbi)
2400MHZ	34	0.9
2410MHZ	36	1.1
2420MHZ	38	1.3
2430MHZ	42	1.5
2440MHZ	43	1.4
2450MHZ	46	1.5
2460MHZ	45	1.6
2470MHZ	43	1.5
2480MHZ	42	1.4
2490MHZ	39	1.3
2500MHZ	38	1.3
2400MHZ	36	1.0
2410MHZ	35	0.9

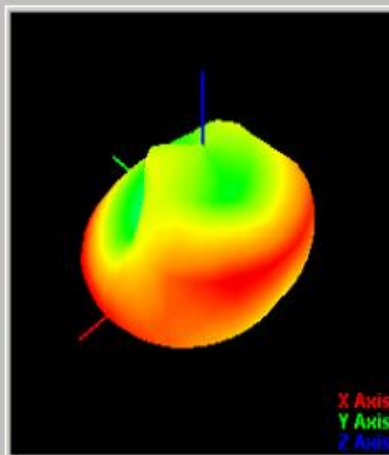
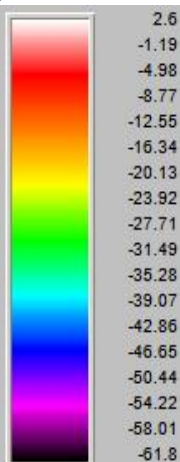
Direction diagram GPS-L1



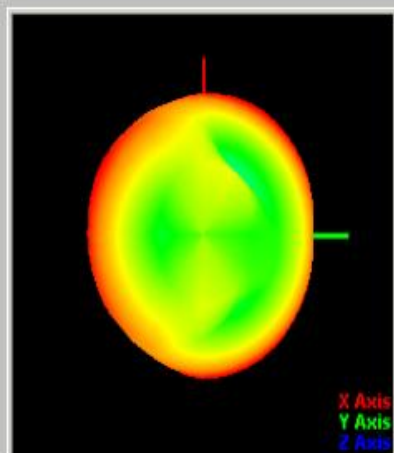
Direction diagram GPS-L5



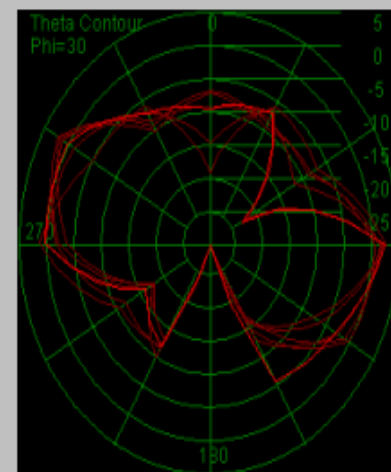
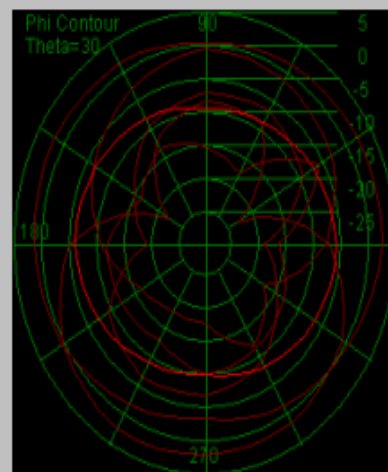
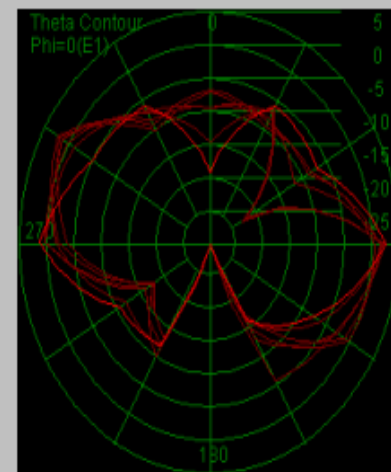
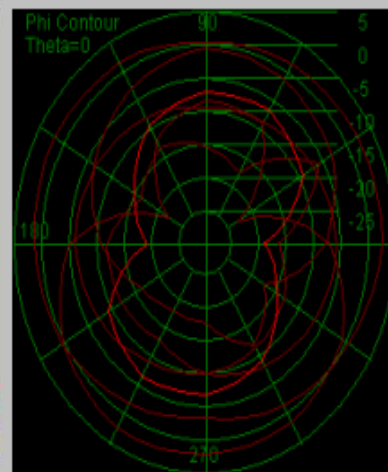
T45-P45



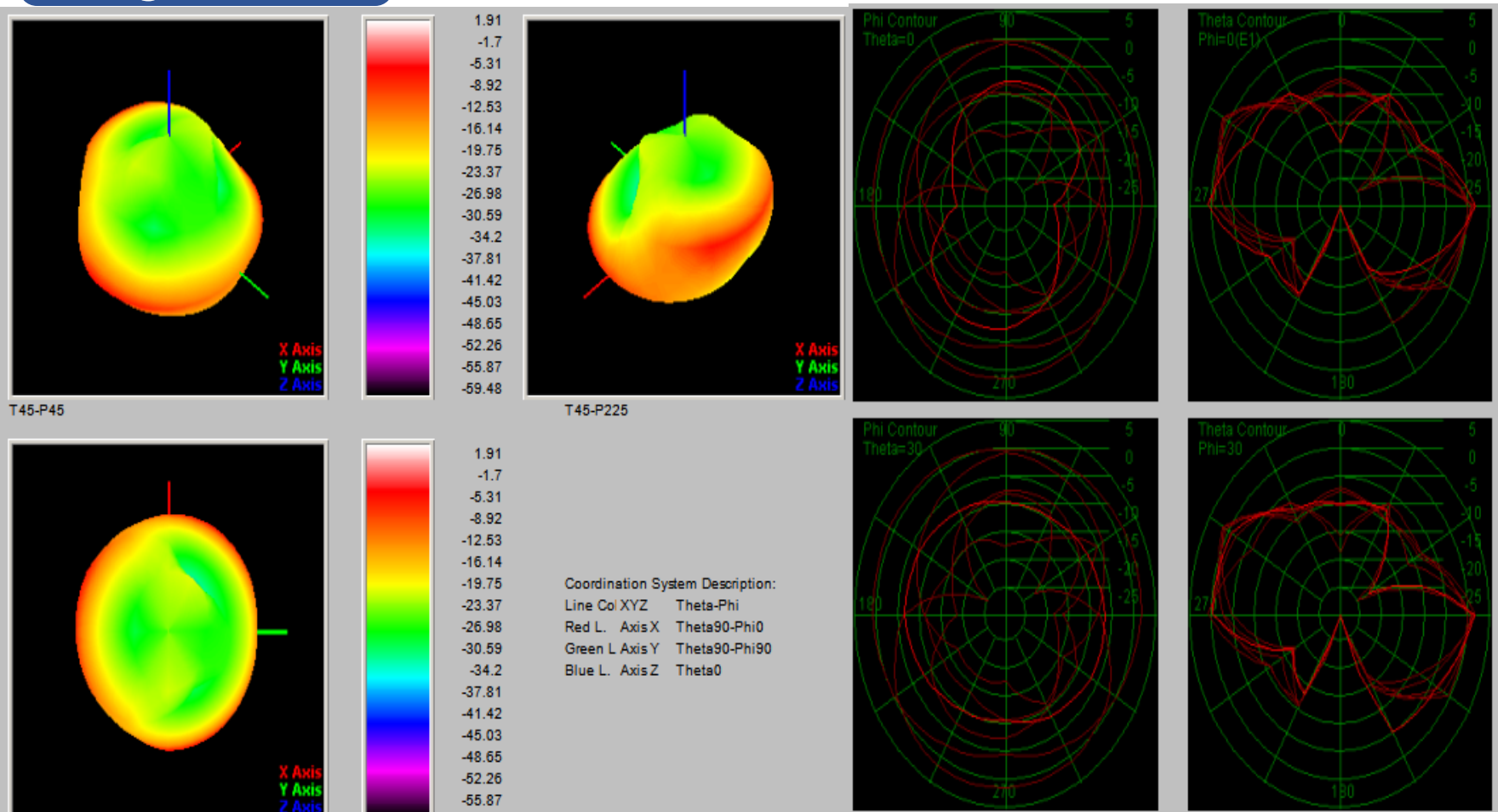
T45-P225



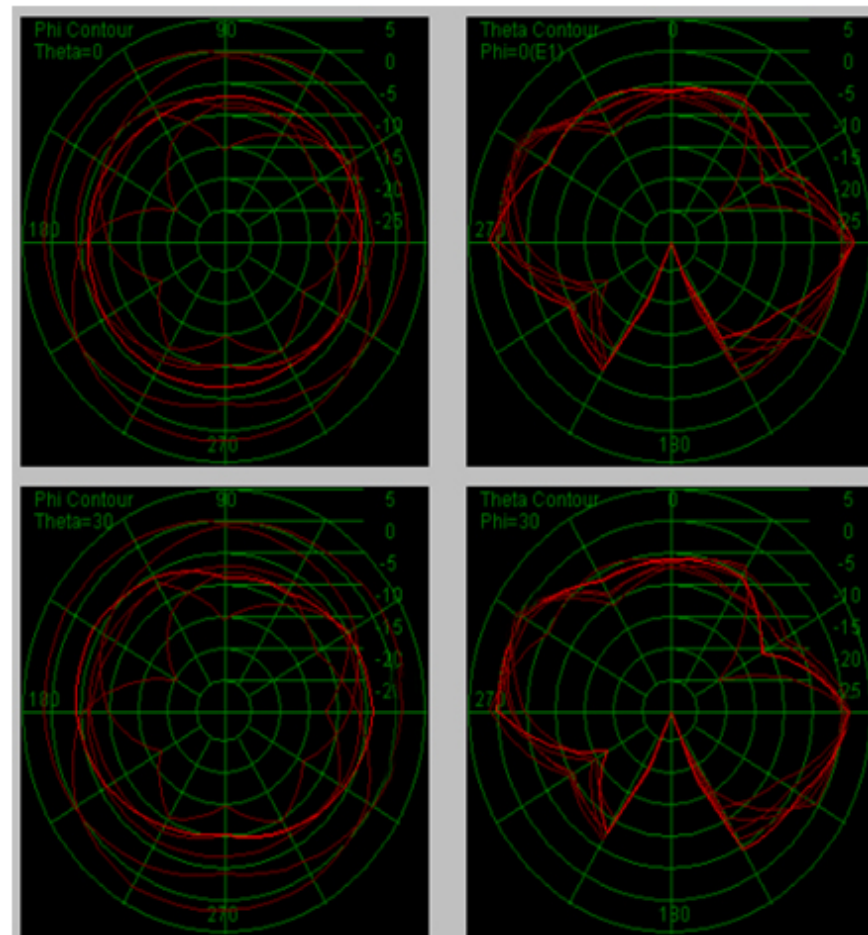
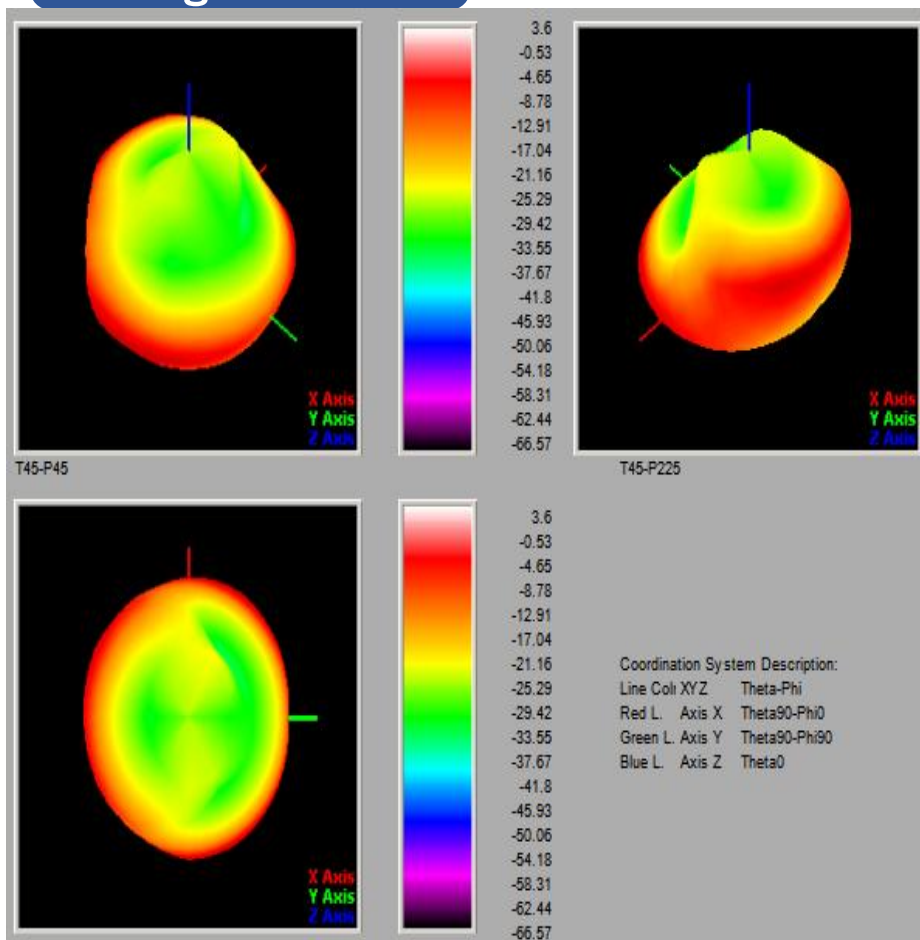
Coordination System Description:
Line Col XYZ Theta-Phi
Red L. Axis X Theta90-Phi0
Green L Axis Y Theta90-Phi90
Blue L. Axis Z Theta0



directional diagram WIFI

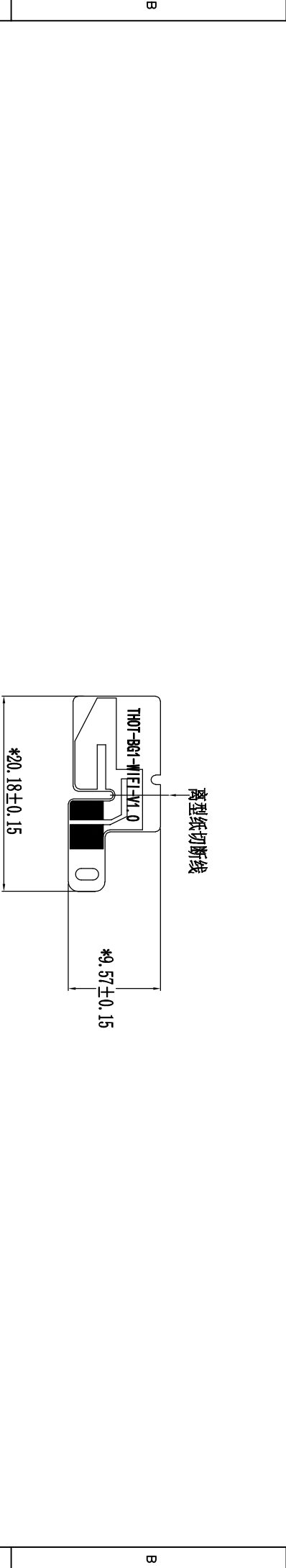


directional diagram BLE



1	2	3	4	5	6
				标记	签 名
				修改内容	日 期

A
WIFI Antenna size



C
技术要求:

P1基材:	电解铜 1对半	
1. PFC基材规格:	电解铜(单面板): 0.5oz (ED)	
双面胶:	TESA 68532	
2. 电镀规格:	电镀: 3~8um	镀金: 0.075UM
表面油墨颜色:	亚光黑色	其它要求
印刷字体颜色:	亮黑	
印刷字体高度:	按图纸要求	

4. 可靠性要求:
- 1. 可靠性测试: 盐雾腐蚀测试\恒温恒湿测试\冷热冲击测试
 - 2. 正面油墨, 油墨表面要求对折不开裂 不可划伤等.

5. 公差要求:
- 1. 外形公差±0.15;
 - 2. 铜箔线路公差±0.05;
 - 3. 铜箔到外形的位置±0.15;
 - 4. 孔到孔位置公差±0.10; 孔到外形位置公差±0.15;
 - 5. 金手指尺寸公差±0.20.
 - 6. 其它未标注尺寸参照2D图纸.

6. 重点管控尺寸:

标有数字的尺寸均为重点尺寸, 其它参照2D图纸

7. RoHS要求:

涉及物料必须符合RoHS要求

8. 包装要求:

用PE袋包装, 每袋数量100PCS, 包装袋外有标识

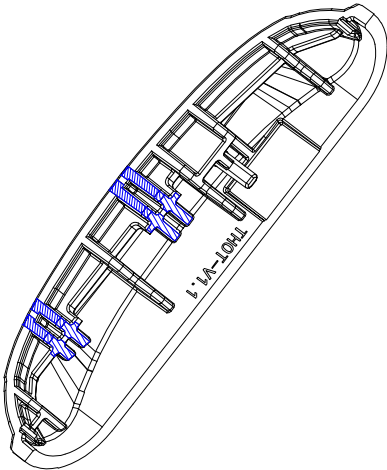
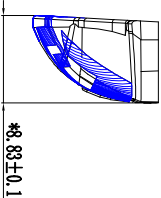
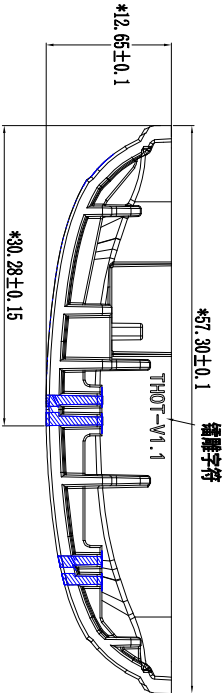
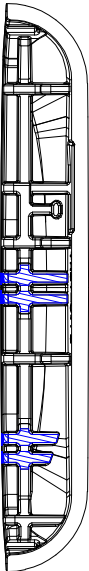
深圳市昱晟通讯设备有限公司

第三视角				项目名称		日期		20240130	
0~3	±0.08	Φ	0.03	BG1		设计		FJW	
3~30	±0.10	○	0.03	产品名称		审核		MD FJW	
30~50	±0.12	◎	∅0.02	产品料号		RF		tq1	
50~80	±0.15	⊥	0.02	641001-1C-7A		批准			
角度	±1°	∠	0.05	材料		单位		mm	
第 1 页, 共 1 页				FPC		比例		FIT	
				5		版本		R:A	

1	2	3	4	5	6
A				BLE Antenna Size	
TH01-BG1-BLE-V1.0 *22.70±0.15 *8.93±0.15 离型纸切断线					
B					
C					
技术要求:					
1. PFC基材规格:					
P1基材:					
电解铜 1对半					
电解铜(单面版): 0.5oz (ED)					
双面胶: TESA 68532					
2. 电镀规格:					
电镀: 3`8um					
镀金: 0.075UM					
表面油墨颜色: 亚光黑色					
其它要求					
印刷字体颜色: 亮黑					
印刷字体高度: 按图纸要求					
3. 表面油墨要求:					
印刷字体高度: 按图纸要求					
4. 可靠性要求:					
1. 可靠性测试: 盐雾腐蚀测试/高湿测试/高低温测试/冷热冲击测试					
2. 正面油墨: 油墨表面要求对折不开裂 不可划伤等.					
5. 公差要求:					
1. 外形公差±0.15;					
2. 铜箔线路公差±0.05;					
3. 铜箔到外形的位置±0.15;					
4. 孔到孔位置公差±0.10; 孔到外形位置公差±0.15;					
5. 金手指尺寸公差±0.20.					
6. 其它未标注尺寸参照2D图纸.					
6. 重点管控尺寸:					
标有数字的尺寸均为要尺寸, 其它参照2D图纸					
7. RoHS要求:					
涉及物料必须符合RoHS要求					
8. 包装要求:					
用PE袋包装, 每袋数量100PCS, 包装袋外有标识					
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标记	签名	修改内容	日期

GPS Antenna Size



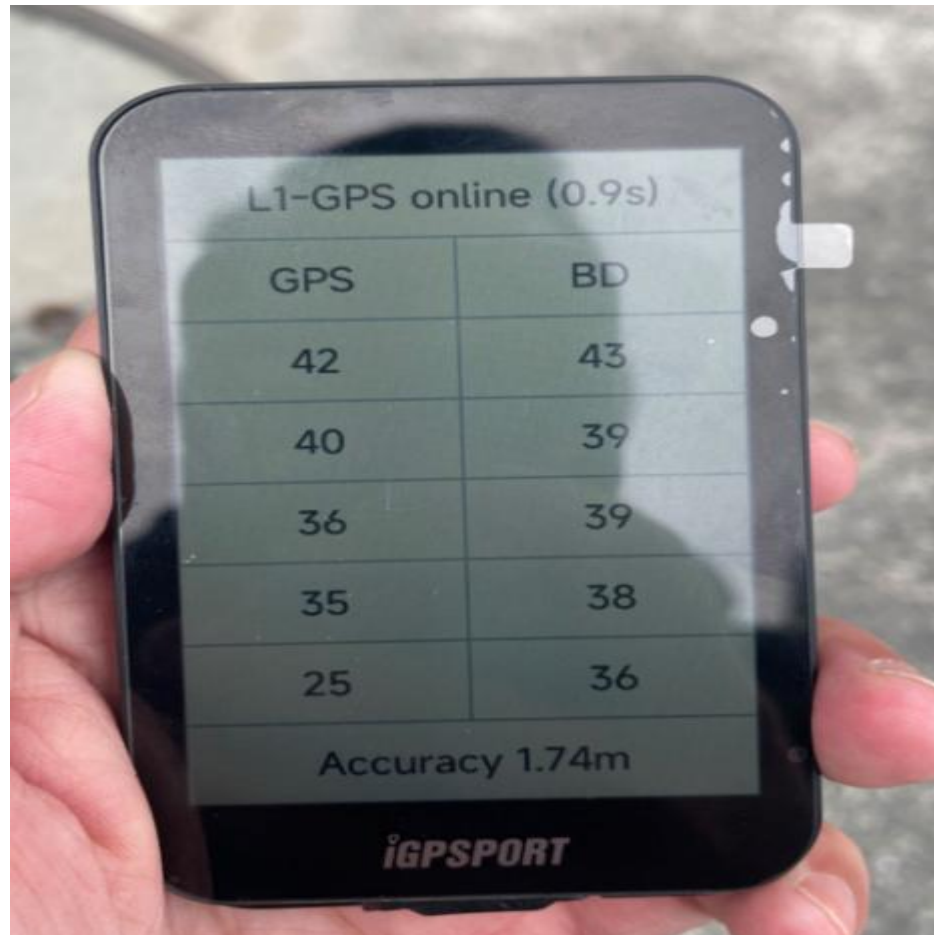
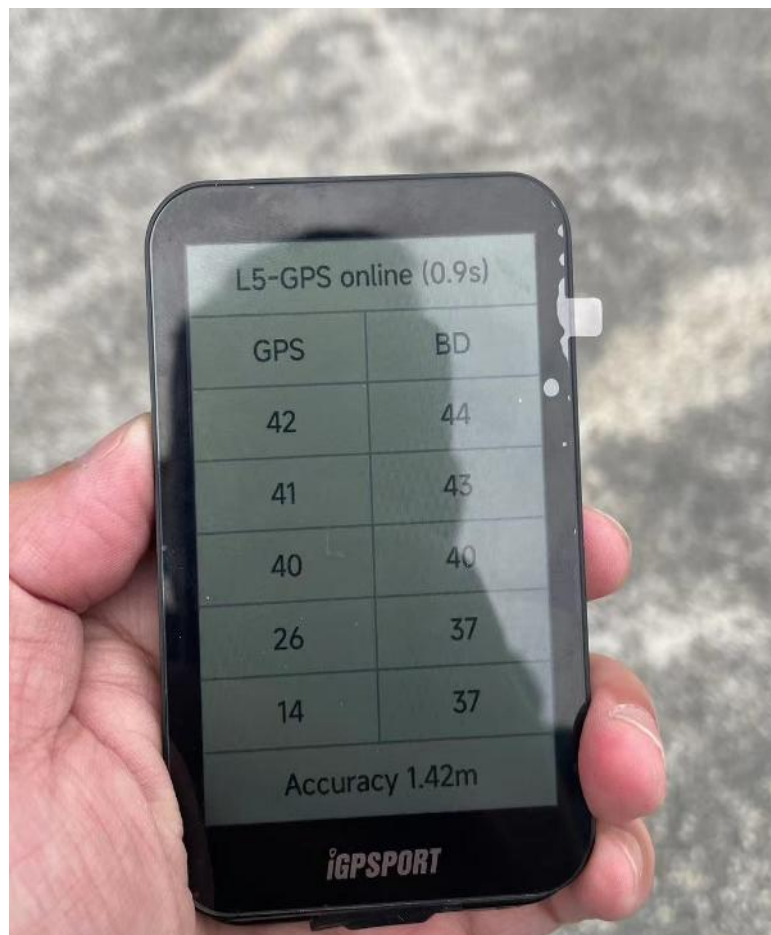
技术要求:

- 带*号尺寸与带公差尺寸为重点管控尺寸，未标注公差参考标题栏侧边图框等级公差表；
- 材料: 黑色: LDS材质 (必须使用100%纯原料)
- 参数要求: CU 8-12 UΜ NI 2-4UΜ
- 成品平面度小于等于0.50;
- 标带*符号的尺寸为重点尺寸，标示CPK需要做CPK,CPK值1.33-1.67之间
- 化镀后天线不可开裂和脱落.明显划伤 溢镀缺镀等不良现象.
- 天线产品需要百分之百电性能测试.
- 符合ROHS2.0/HF/Reach/GP 环保要求

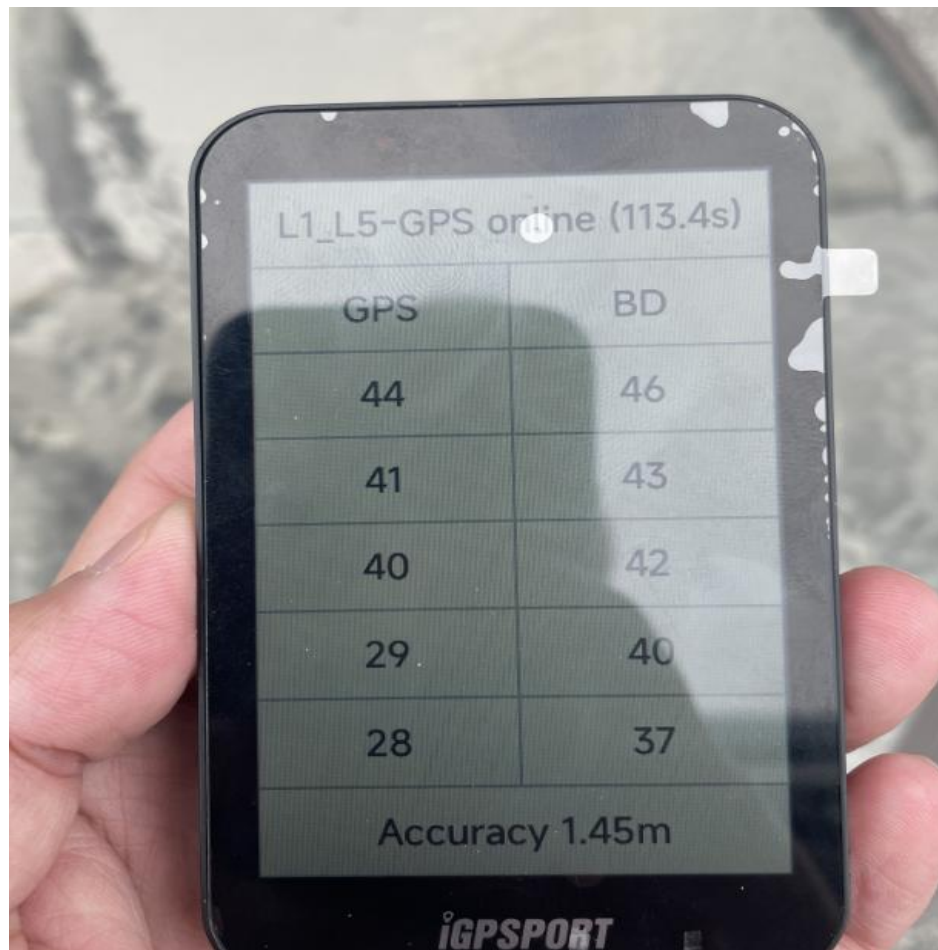
深圳市昱晟通讯设备有限公司

第三视角				项目名称		BG1		日期		2024.3.8	
0~3	±0.08	±0.08	0.03	产品名称	天线LDS组件	审核	MD	设计	BYZ		
3~30	±0.10	±0.10	0.03	产品料号	641001-1A-TA	批准	RF				
30~50	±0.12	±0.12	0.02								
50~80	±0.15	±0.15	0.02								
角度	±1°	±1°	0.05								
第 1 页, 共 1 页				材料		单位	mm	比例	FIT	版本	R:A

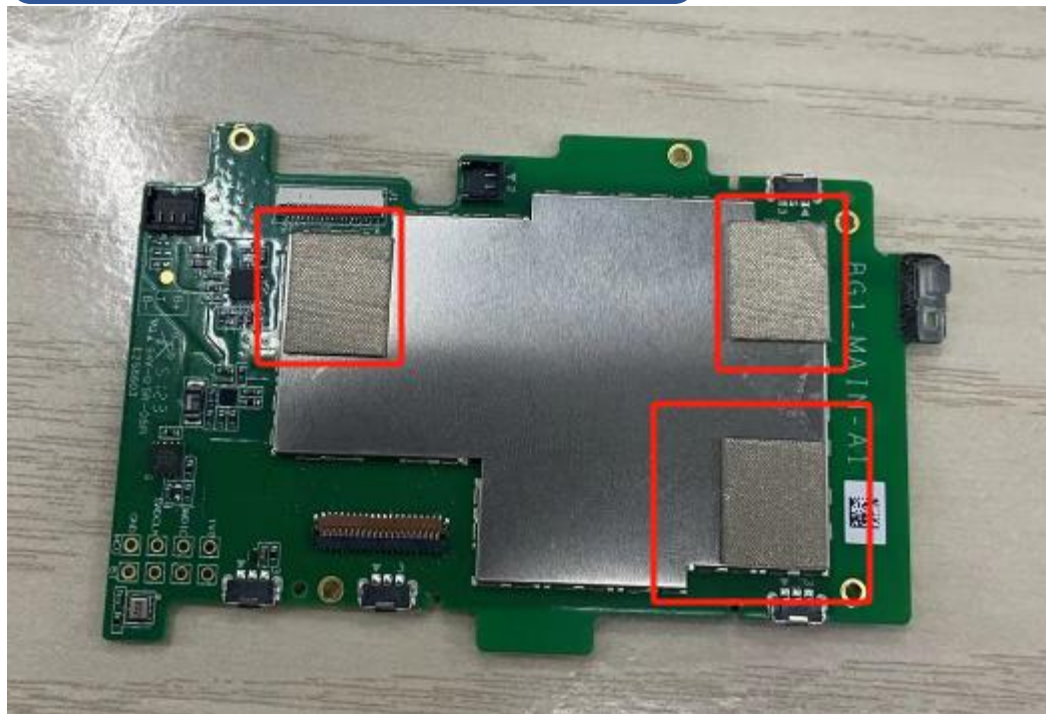
GPS test data



Antenna environment
treatment and improvement



Antenna environment
treatment and improvement



Treatment according to the trial
production environment

Antenna matching: match the trial
production prototype



Thank you!



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