



深圳星源创科技有限公司

Shen Zhen Xing Yuan Chuang Technology Co., Ltd

规格承认书 Approval Sheet

客户名称 Customer	拓海	日期 Data	2025/03/19
产品名称 Product	GWB天线	客户机型 Models	C4
料号 P/N	T680B-13RB-070	客户料号 Customer P/N	
规格描述 Specifications	黑色FPC; RF0.81三代端子黑色同轴线, 长度L=70mm		

供应商承认签印 Vender Approved By	客户承认签印 Customer Approved By
	
Checked By:	Checked By:
Audit By:	Audit By:
Approval By:	Approval By:

文件修订履历表

版本 Version	修订内容 Revise The Content	修订人 Revused	核准 Approval	修订日期 Date	备注 Note

地址: 深圳市宝安区福永镇福海街道塘尾股份商务大厦1506

Address: 1506, Tangwei Business Building, Fuhai Street, Fuyong Town, Baoan District, Shenzhen

Tel: 0755-82103639 QQ: 487580356 Email: Stephdeng_Vis@126.com



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Specification	
1.1 Electrical Properties	
Characteristics	Specifications
Working Band	GPS; 2.4G WiFi/BT; 5G WiFi
Antenna From	PIFA
Impedance	50 Ω
Polarization	Linear
Peak Effi	49%@GPS; 56%@2.4G; 58%@5G
Peak Gain	0.3dBi@GPS; 3.1dBi@2.4G; 5.8dBi@5G
1.2 Physical Properties	
Characteristics	Specifications
Operating Temp	-10°C ~+60°C
Storage Temp	-10°C ~+70°C
Humidity	10~95%RH

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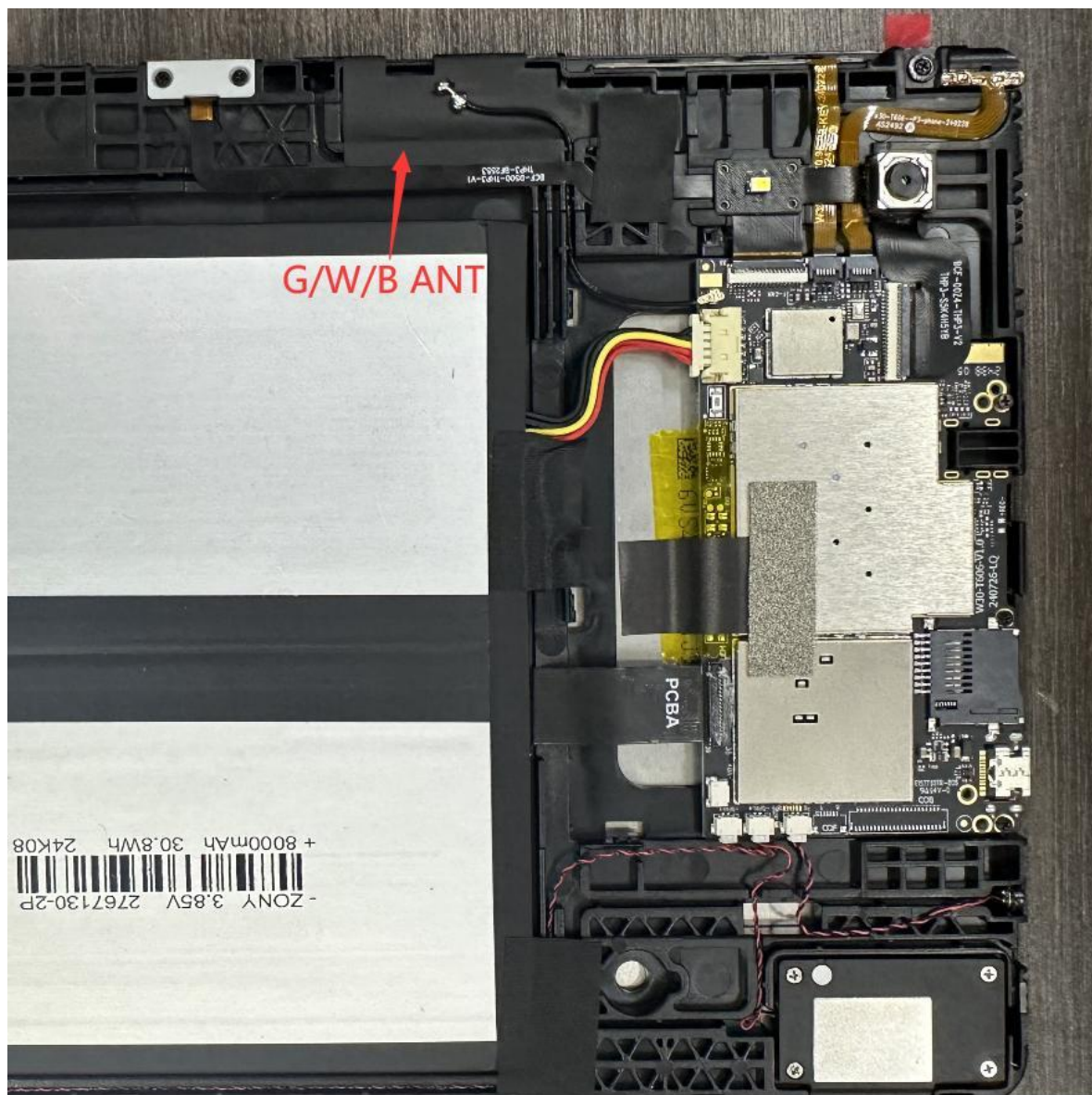
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Antenna Placement



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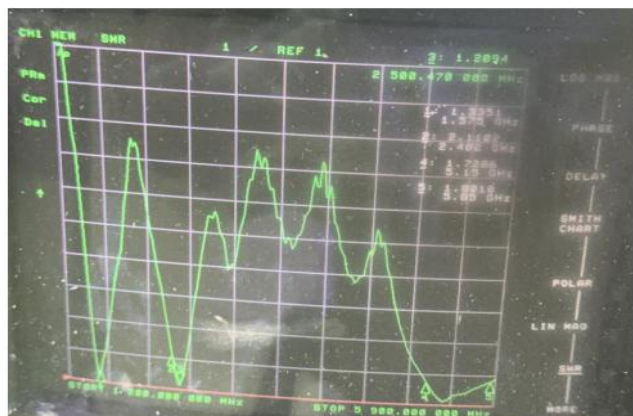
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Test Data

S11 Parameter-VSWR



Frequency (MHZ)	1575	2400	2500	5150	5850
VSWR	1.33	2.11	1.2	1.2	1.8
Return Loss (DB)	-16.89	-9.01	-11.47	-21.47	-10.86

Efficiency Table (GPS)

Passive Test For GPS								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)
1560	49.87	-3.02	0.17	-1.98	21.944	27.929	0.17	-11.08
1565	48.26	-3.16	0.01	-2.14	21.345	26.914	0.01	-12.12
1570	47.14	-3.27	-0.05	-2.2	20.803	26.338	-0.05	-13.75
1575	47.81	-3.21	0.01	-2.14	21.092	26.715	0.01	-15.57
1580	48.87	-3.11	0.1	-2.05	21.612	27.261	0.1	-17.58
1585	49.57	-3.05	0.33	-1.82	21.863	27.702	0.33	-19.35

Efficiency Table (2.4G)

Passive Test For WIFI2.4								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)
2400	44.99	-3.47	1.97	-0.18	31.831	13.155	1.97	-18.99
2410	42.91	-3.67	1.74	-0.41	30.416	12.489	1.74	-18.14
2420	46.91	-3.29	2.09	-0.06	33.009	13.897	2.09	-16.18
2430	50.1	-3	2.41	0.26	34.98	15.119	2.41	-18.03
2440	53.6	-2.71	2.63	0.48	37.305	16.291	2.63	-16.61
2450	53.08	-2.75	2.54	0.39	36.813	16.263	2.54	-16.63
2460	52.85	-2.77	2.5	0.35	36.576	16.274	2.5	-16.1
2470	54.99	-2.6	2.76	0.61	37.914	17.075	2.76	-15.82
2480	56.1	-2.51	2.95	0.8	38.616	17.488	2.95	-16.24
2490	56.34	-2.49	3.18	1.03	38.773	17.564	3.18	-16.32
2500	50.33	-2.98	2.86	0.71	34.622	15.705	2.86	-16.57

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Efficiency Table (5G)

Passive Test For WIFI5G								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)
5150	35.44	-4.5	2.88	0.73	24.739	10.705	2.88	-14.75
5170	35.71	-4.47	3.04	0.89	24.44	11.268	3.04	-14.31
5190	37.96	-4.21	3.24	1.09	25.719	12.244	3.24	-15.44
5210	44.13	-3.55	3.85	1.7	29.709	14.42	3.85	-16.22
5230	39.97	-3.98	3.36	1.21	26.751	13.224	3.36	-16.91
5250	49.13	-3.09	4.02	1.87	32.172	16.963	4.02	-15.42
5270	44.13	-3.55	3.34	1.19	28.305	15.821	3.34	-14.53
5290	51.73	-2.86	3.66	1.51	32.973	18.76	3.66	-12.04
5310	42.64	-3.7	2.63	0.48	26.94	15.7	2.63	-14.6
5330	45.94	-3.38	2.64	0.49	28.201	17.742	2.64	-14.27
5350	44.11	-3.55	2.03	-0.12	26.315	17.799	2.03	-13.83
5370	43.52	-3.61	1.71	-0.44	25.64	17.882	1.71	-14.55
5390	39.53	-4.03	1.2	-0.95	23.284	16.246	1.2	-15.37
5410	47.97	-3.19	1.96	-0.19	28.058	19.908	1.96	-15.58
5430	44.06	-3.56	1.77	-0.38	25.569	18.493	1.77	-17.69
5450	48.79	-3.12	2.49	0.34	28.268	20.521	2.49	-17.69
5470	48.82	-3.11	2.41	0.26	28.421	20.399	2.41	-16.25
5490	50.41	-2.97	2.52	0.37	29.17	21.242	2.52	-15.8
5510	54.35	-2.65	3.18	1.03	31.163	23.184	3.18	-14.35
5530	54.34	-2.65	3.46	1.31	30.976	23.367	3.46	-14.89
5550	58.42	-2.33	4.08	1.93	33.226	25.192	4.08	-15.19
5570	55.14	-2.58	3.99	1.84	31.448	23.697	3.99	-15.15
5590	54.67	-2.62	4.28	2.13	31.366	23.305	4.28	-19.14
5610	53.74	-2.7	4.71	2.56	31.187	22.555	4.71	-22.35
5630	50.87	-2.94	4.76	2.61	29.579	21.292	4.76	-22.25
5650	58.01	-2.36	5.61	3.46	33.867	24.144	5.61	-18.83
5670	50.79	-2.94	5.09	2.94	29.768	21.018	5.09	-19.4
5690	58.24	-2.35	5.82	3.67	34.278	23.958	5.82	-17.72
5710	49.21	-3.08	5.14	2.99	28.901	20.305	5.14	-18.01
5730	58.5	-2.33	5.79	3.64	34.154	24.35	5.79	-17.4
5750	49.83	-3.03	4.96	2.81	29.268	20.558	4.96	-19.23
5770	54.33	-2.65	5.16	3.01	32.064	22.27	5.16	-19.76
5790	49.16	-3.08	4.52	2.37	29.02	20.14	4.52	-21.1
5810	52.49	-2.8	4.56	2.41	31.146	21.348	4.56	-19.68
5830	51.35	-2.89	4.32	2.17	30.862	20.489	4.32	-15.93
5850	55.06	-2.59	4.35	2.2	33.3	21.765	4.35	-16.39

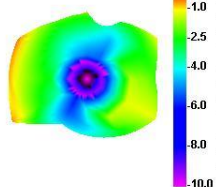
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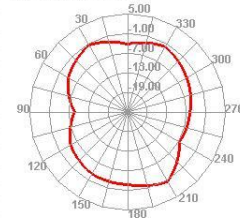
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Radiation Pattern (GPS)

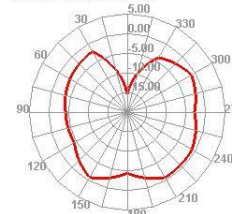
1575.000MHz



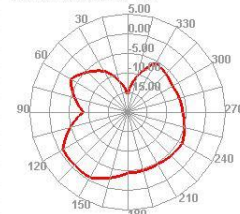
1575.000MHz H



1575.000MHz E1

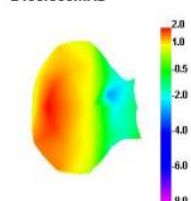


1575.000MHz E2

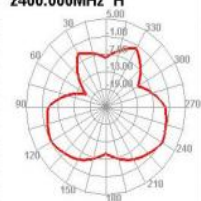


Radiation Pattern (2.4G)

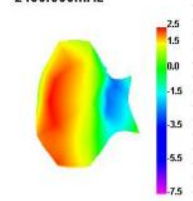
2400.000MHz



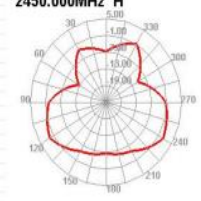
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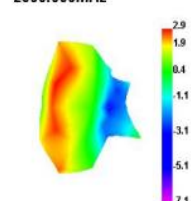
2450.000MHz



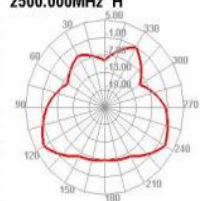
2450.000MHz H



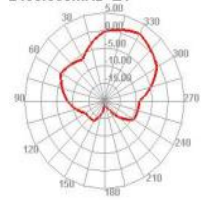
2500.000MHz



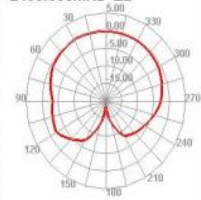
2500.000MHz H



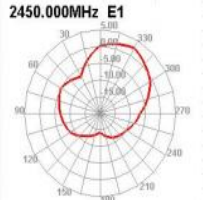
2400.000MHz E1



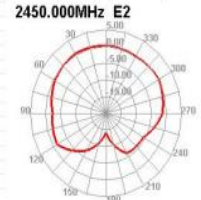
2400.000MHz E2



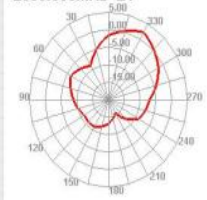
2450.000MHz E1



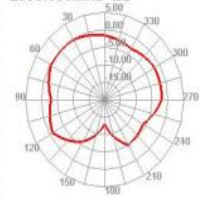
2450.000MHz E2



2500.000MHz E1

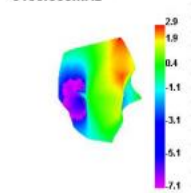


2500.000MHz E2

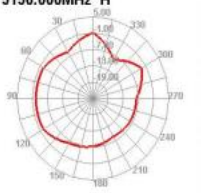


Radiation Pattern (5G)

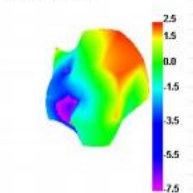
5150.000MHz



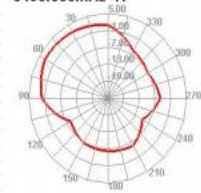
5150.000MHz H



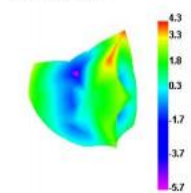
5490.000MHz



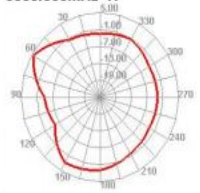
5490.000MHz H



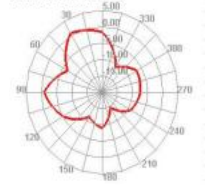
5850.000MHz



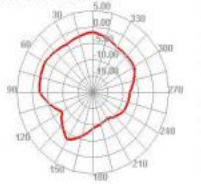
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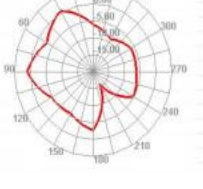
5150.000MHz E1



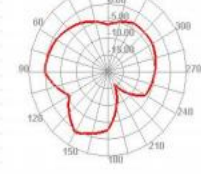
5150.000MHz E2



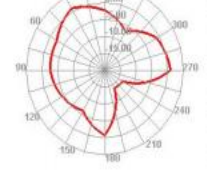
5490.000MHz E1



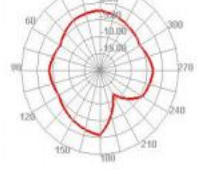
5490.000MHz E2



5850.000MHz E1



5850.000MHz E2



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WIFI Active test data

802.11b	Frequency	TRP		TIS	
	2412	CH1 11Mbps	16.29	CH1 11Mbps	-85.62
	2437	CH6 11Mbps	17.96	CH6 11Mbps	-86.9
	2467	CH11 11Mbps	16.65	CH11 11Mbps	-86.18
802.11a		TRP		TIS	
	5180	CH36 6Mbps	11.89	CH36 54Mbps	-74.39
	5300	CH60 6Mbps	12.2	CH60 54Mbps	-73.87
	5805	CH161 6Mbps	11.48	CH161 54Mbps	-74.03

WIFI/BT Measured

WIFI

测试环境：开放空间

测试工具：Wifi Analytical Assistant

测试距离：10m

信号强度：2.4G :-37dBm 5G:-54dBm

测试结果如右图

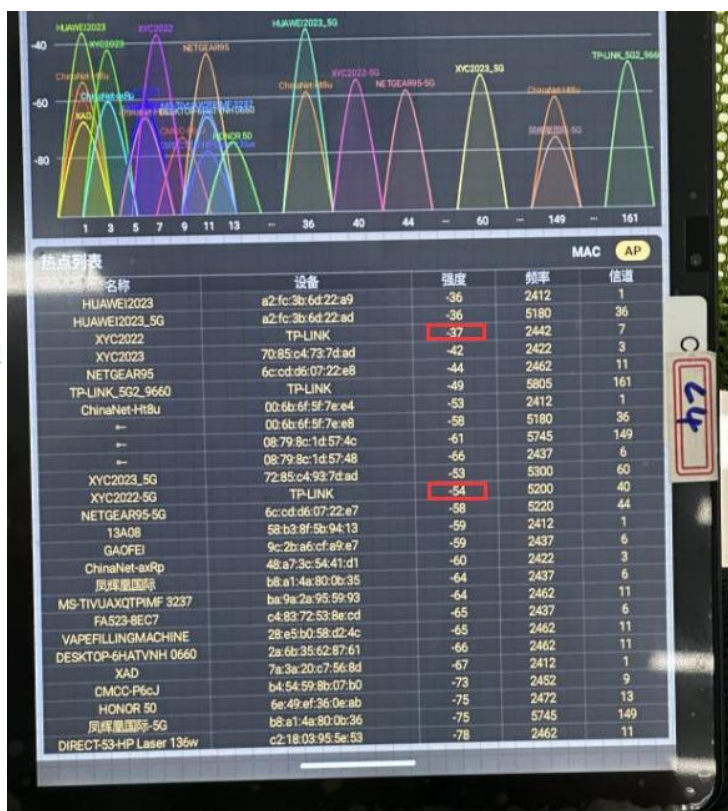
BT

测试环境：开放空间(通道)

测试工具：蓝牙音响

测试距离：10m

结果：播放音乐流畅，无杂音。



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GPS Measured



GPS冷启动实测效果以下：
CN值40以上4颗
CN值35以上5+颗
实际定位8颗

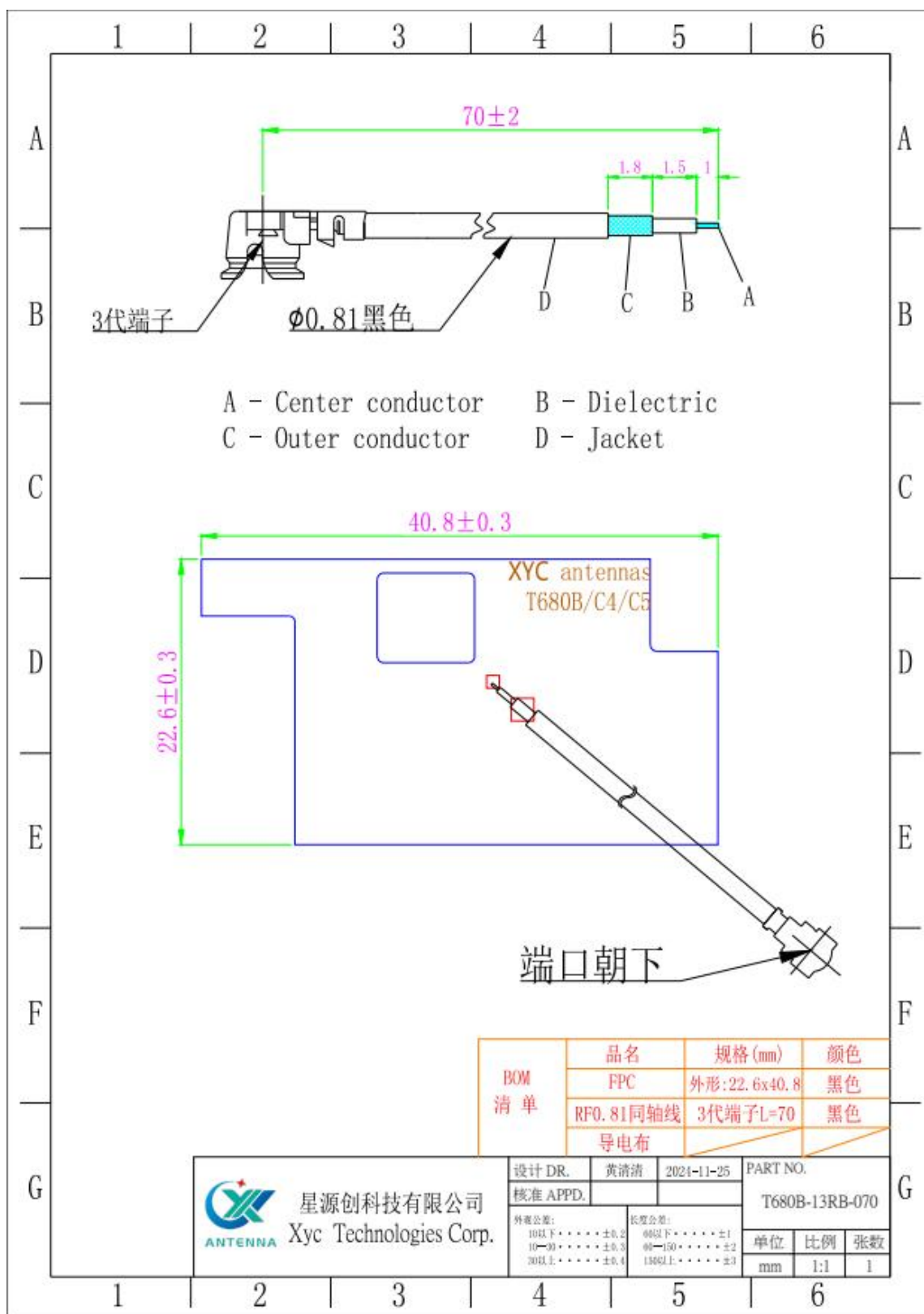
备注：
GPS搜星测试。会因时间段
及地域而存在差异。以上数
据为我司测试（空旷地带）
最佳数据



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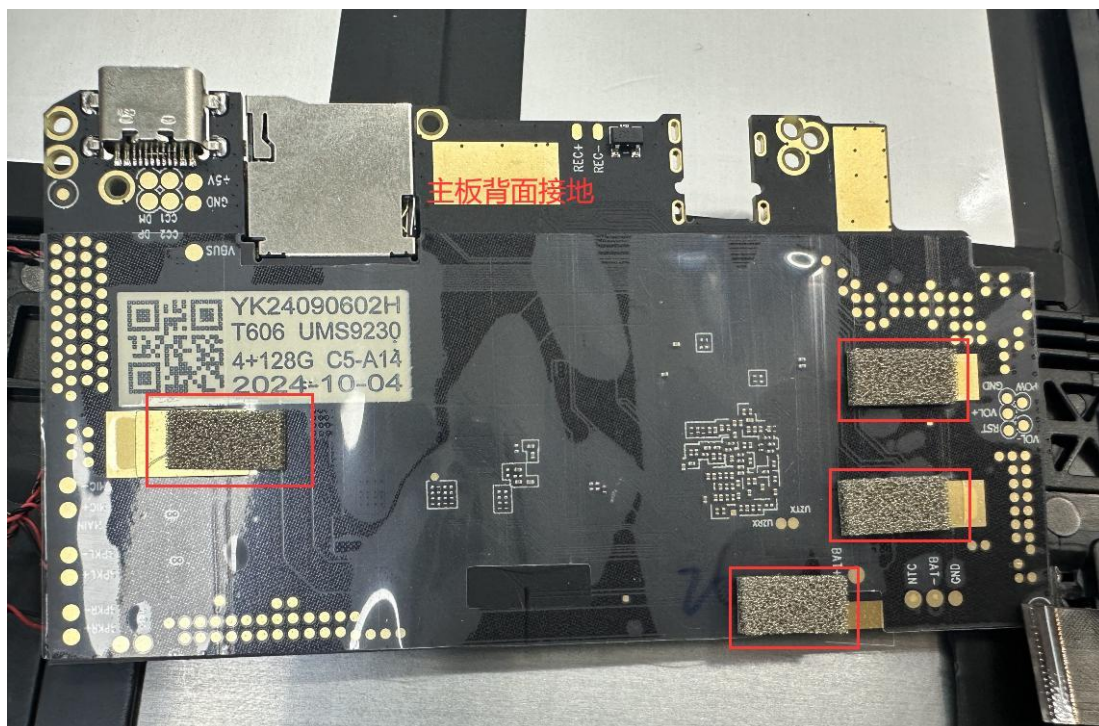
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