

样品承认书

P/N		
样品适应机型		86QF68
样品描述		GWB天线/带四代端子线长165mm/86QF68
开发部	电子	
	结构	
开发承认		
品质部		
采购部		
备注		

表格编号：QESP-023-F06C



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	阳华数码	日期 Data	2024/05/28
产品名称 Product	GWB天线	客户机型 Models	86QF68
料号 P/N	T698-14RB-165	客户料号 Customer P/N	
规格描述 Specifications	黑色FPC; RF0.81四代端子黑色同轴线; L=165mm		

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; 2.4GWiFi; 5GWiFi
Antenna From	PIFA
Impedance	50 Ω
Polarization	Linear
Peak Effi	46%@GPS; 50%@2.4G; 53%@5G
Peak Gain	1.6dBi@GPS; 3.5dBi@2.4G; 3.2dBi@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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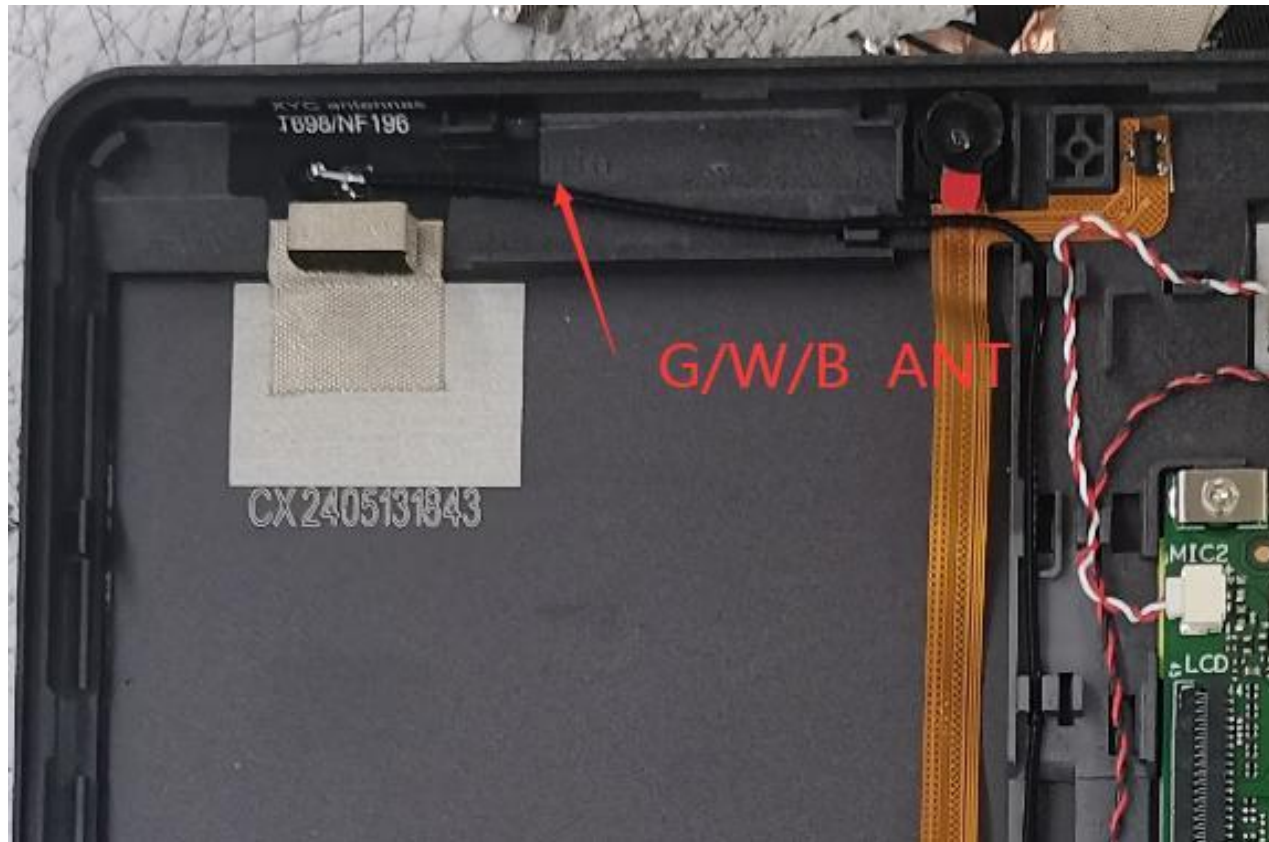
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Antenna Placement



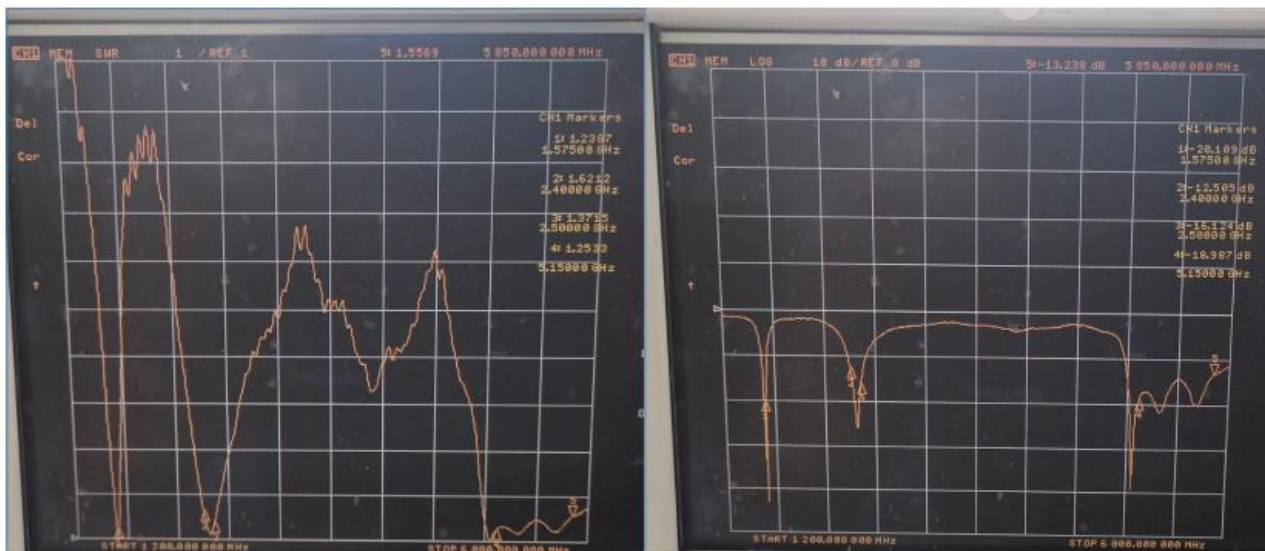
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Test Data

S11 Parameter-VSWR



Frequency (MHZ)	1575	2400	2483	5150	5850
VSWR	1.23	1.62	1.37	1.25	1.55
Return Loss (DB)	-20.10	-12.55	-16.12	-18.99	-13.23

WiFi Active Test Data

	Frequency	TRP		TIS	
		Channel	Value	Channel	Value
802.11b	2412	CH1 11Mbps	13.85	CH1 11Mbps	-83.24
	2437	CH6 11Mbps	14.04	CH6 11Mbps	-83.96
	2467	CH11 11Mbps	14.11	CH11 11Mbps	-83.70
802.11a			TRP		TIS
	5180	CH36 6Mbps	11.79	CH36 54Mbps	-72.16
	5300	CH60 6Mbps	11.61	CH60 54Mbps	-72.35
	5805	CH161 6Mbps	11.11	CH161 54Mbps	-71.79

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Efficiency Table (GPS)

Passive Test For GPS												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)	irectivity (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
1560	36.85	-4.34	0.65	-1.5	11.333	25.512	0.65	-10.63	4.99	60	41.34	40.88
1565	39.33	-4.05	0.97	-1.18	11.913	27.42	0.97	-10.97	5.02	60	41.42	40.95
1570	42.67	-3.7	1.26	-0.89	12.823	29.845	1.26	-10.87	4.96	120	41.5	41.03
1575	44.66	-3.5	1.47	-0.68	13.238	31.427	1.47	-11.32	4.97	120	41.68	41.23
1580	45.38	-3.43	1.56	-0.59	13.248	32.129	1.56	-11.96	5	30	41.78	41.35
1585	46.12	-3.36	1.62	-0.53	13.387	32.735	1.62	-12.22	4.98	30	41.85	41.4
1590	46.82	-3.3	1.65	-0.5	13.634	33.183	1.65	-12.02	4.95	30	41.99	41.53
1595	46.58	-3.32	1.69	-0.46	13.535	33.041	1.69	-11.49	5.01	30	42.09	41.67
1600	44.11	-3.56	1.52	-0.63	12.88	31.225	1.52	-10.96	5.08	30	42.04	41.62

Efficiency Table (2.4G)

Passive Test For WIFI2.4												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)	irectivity (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
2400	41.25	-3.85	2.64	0.49	13.322	27.927	2.64	-12.73	6.49	0	45.78	46.01
2410	38.9	-4.1	2.6	0.45	12.746	26.149	2.6	-12.78	6.7	0	46.01	46.29
2420	42.76	-3.69	3.2	1.05	13.952	28.812	3.2	-12.8	6.89	0	45.73	46
2430	44.72	-3.49	3.42	1.27	14.811	29.909	3.42	-11.72	6.91	90	46.01	46.36
2440	46.18	-3.36	3.5	1.35	15.651	30.527	3.5	-11.14	6.85	90	46.12	46.48
2450	46.1	-3.36	3.39	1.24	15.927	30.17	3.39	-11.25	6.76	90	46.12	46.54
2460	48	-3.19	3.48	1.33	16.589	31.409	3.48	-11.06	6.67	90	46.14	46.52
2470	48.26	-3.16	3.18	1.03	17.109	31.149	3.18	-10.78	6.34	90	46.4	46.8
2480	48.11	-3.18	2.98	0.83	17.399	30.713	2.98	-10.49	6.16	90	46.26	46.64
2490	50.5	-2.97	3.31	1.16	17.984	32.518	3.31	-10.4	6.27	90	46.51	46.91
2500	49.84	-3.02	3.36	1.21	17.415	32.422	3.36	-10.71	6.39	90	46.47	46.86

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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)	Directivity (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
5150	36.41	-4.39	-0.76	-2.91	22.103	14.308	-0.76	-29.34	3.62	90	49.82	49.4
5170	39	-4.09	-0.65	-2.8	23.975	15.025	-0.65	-26.78	3.44	60	50.13	49.77
5190	38.48	-4.15	-0.38	-2.53	23.758	14.723	-0.38	-20.48	3.77	60	50.42	49.95
5210	44.03	-3.56	0.2	-1.95	27.3	16.732	0.2	-18.19	3.76	60	50.88	50.49
5230	40.5	-3.93	0.12	-2.03	25.519	14.983	0.12	-18.89	4.04	90	50.42	50.08
5250	46.91	-3.29	1.14	-1.01	30.249	16.657	1.14	-18.32	4.43	90	51.02	50.72
5270	46.07	-3.37	1.26	-0.89	30.094	15.972	1.26	-14.84	4.62	90	50.85	50.6
5290	51.49	-2.88	1.73	-0.42	33.892	17.602	1.73	-15.09	4.61	60	51.34	51.12
5310	46.34	-3.34	1.35	-0.8	30.83	15.508	1.35	-12.8	4.69	60	50.44	50.36
5330	49.31	-3.07	1.87	-0.28	33.321	15.993	1.87	-12.64	4.94	60	51.08	51.01
5350	49.82	-3.03	2.03	-0.12	34.114	15.704	2.03	-13.92	5.06	60	51.02	51.01
5370	49.49	-3.06	1.81	-0.34	34.094	15.392	1.81	-15.11	4.87	60	50.91	50.95
5390	43.94	-3.57	1.42	-0.73	30.572	13.373	1.42	-15.88	4.99	60	50.46	50.43
5410	53.32	-2.73	2.45	0.3	37.744	15.572	2.45	-15.33	5.18	60	51.18	51.09
5430	45.75	-3.4	1.67	-0.48	32.85	12.902	1.67	-16.84	5.07	30	50.69	50.7
5450	51.03	-2.92	1.99	-0.16	36.767	14.261	1.99	-16.69	4.91	30	50.71	50.85
5470	45.18	-3.45	1.66	-0.49	32.605	12.578	1.66	-17.29	5.11	30	50.93	50.83
5490	46.52	-3.32	2.08	-0.07	33.701	12.816	2.08	-15.85	5.41	30	50.92	50.79
5510	47.85	-3.2	2.3	0.15	34.823	13.023	2.3	-18.09	5.5	30	51.18	51.16
5530	50.18	-2.99	2.5	0.35	36.654	13.525	2.5	-21.26	5.49	30	51.44	51.3
5550	52.61	-2.79	2.79	0.64	38.218	14.387	2.79	-23.16	5.58	30	51.89	51.76
5570	49.8	-3.03	2.62	0.47	36.056	13.745	2.62	-22.14	5.65	60	51.42	51.33
5590	53.58	-2.71	3	0.85	38.834	14.748	3	-18.72	5.71	60	51.71	51.76
5610	50.04	-3.01	2.93	0.78	36.172	13.863	2.93	-17.01	5.94	60	51.17	51.22
5630	52.31	-2.81	3.19	1.04	37.488	14.826	3.19	-15.54	6	60	51.78	51.77
5650	49.5	-3.05	2.85	0.7	34.998	14.499	2.85	-15.65	5.91	60	51.47	51.55
5670	50.97	-2.93	2.81	0.66	35.929	15.043	2.81	-13.86	5.74	60	52.12	52.28
5690	50.13	-3	2.9	0.75	35.508	14.623	2.9	-13.59	5.9	60	52.12	52.25
5710	48.64	-3.13	2.95	0.8	34.414	14.229	2.95	-14.99	6.08	60	51.95	52.05
5730	52.44	-2.8	3.2	1.05	36.768	15.672	3.2	-17.45	6	60	51.59	51.69
5750	46.66	-3.31	2.65	0.5	32.55	14.106	2.65	-19.23	5.97	60	51.12	51.15
5770	48.54	-3.14	3.19	1.04	34.053	14.485	3.19	-18.71	6.33	60	51.02	51.06
5790	44.12	-3.55	2.93	0.78	30.955	13.169	2.93	-19.1	6.49	60	51.08	51.16
5810	46.83	-3.3	3.28	1.13	32.449	14.377	3.28	-21.14	6.58	60	51.36	51.43
5830	45.61	-3.41	2.94	0.79	31.39	14.219	2.94	-21.42	6.35	60	51.65	51.66
5850	47.53	-3.23	2.92	0.77	32.567	14.958	2.92	-16.45	6.15	60	51.88	52.05

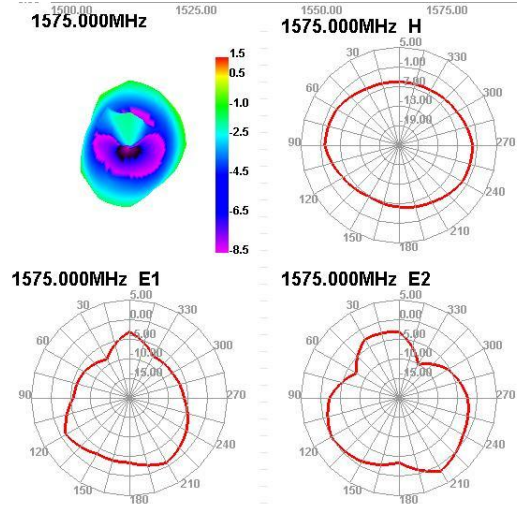
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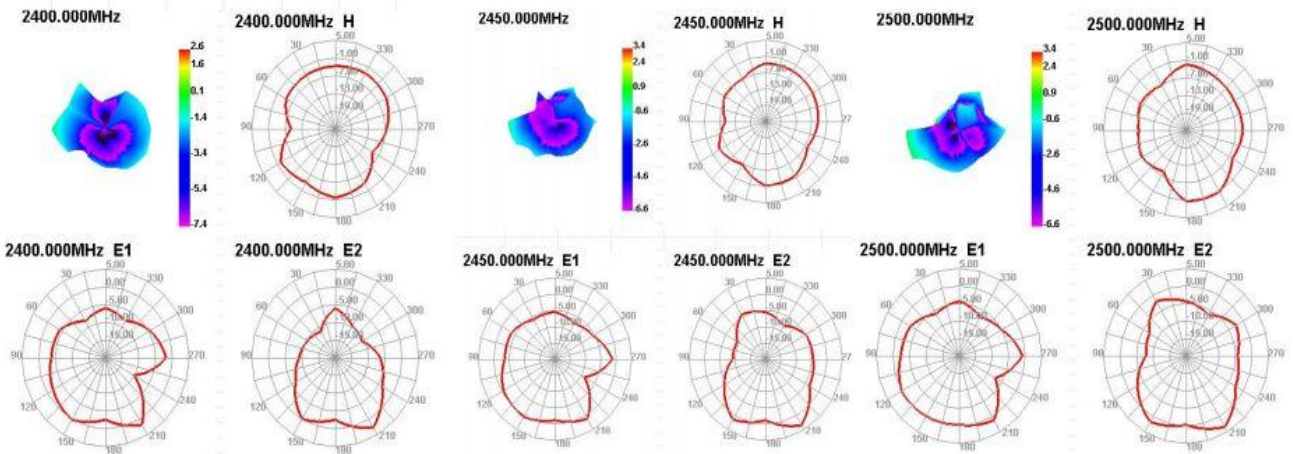
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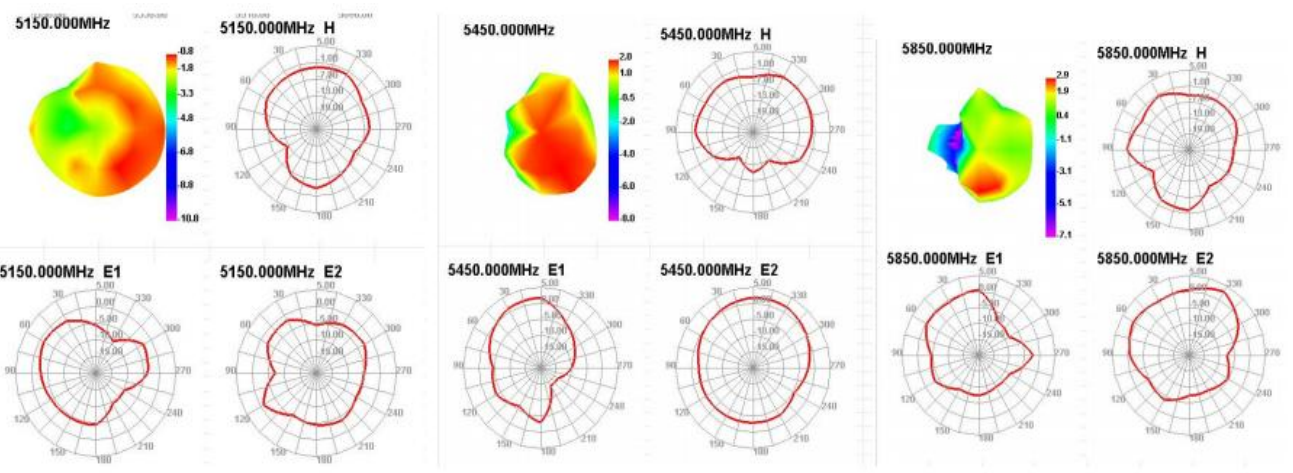
Radiation Pattern(GPS)



Radiation Pattern(2.4G)



Radiation Pattern(5G)



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Throughput test (2.4G)

RVR测试系统(2.4G-AC-20M-1-CH1)

TX		WiFi RvR 测试报表					RX		WiFi RvR 测试报表				
图片	角度\衰减	0dB	10dB	20dB	30dB	40dB	图片	角度\衰减	0dB	10dB	20dB	30dB	40dB
	0.0°	69.2	69.3	69.5	69	48.6		0.0°	73.9	73.9	73.8	73.8	48.9
	90.0°	68.5	68.4	68.4	68.2	49.6		90.0°	73.8	73.8	73.8	73.5	52.2
	180.0°	68.6	68.4	68.6	68.4	68.6		180.0°	73.7	73.4	73.8	73.7	73.8
	270.0°	68.6	68.5	68.4	68.6	55.9		270.0°	73.9	73.7	73.9	71.9	61
	平均	68.70	68.70	68.70	68.50	55.70		平均	73.80	73.70	73.80	73.20	59.00
	方差	0.30	0.40	0.50	0.30	9.20		方差	0.10	0.20	0.00	0.90	11.10

Throughput test (5G)

RVR测试系统(5G-AC-80M-1-CH40)

TX		WiFi RvR 测试报表					RX		WiFi RvR 测试报表				
图片	角度\衰减	0dB	10dB	20dB	30dB	40dB	图片	角度\衰减	0dB	10dB	20dB	30dB	40dB
	0.0°	372	372	371	316	137		0.0°	362	356	280	155	61.1
	90.0°	372	372	371	272	84.2		90.0°	367	366	286	149	16.6
	180.0°	373	371	364	371	237		180.0°	369	368	353	214	129
	270.0°	372	372	371	271	93.9		270.0°	362	365	295	156	18.4
	平均	372.30	371.80	369.30	307.50	138.00		平均	365.00	363.80	303.50	168.50	56.30
	方差	0.50	0.50	3.50	47.20	69.90		方差	3.60	5.30	33.60	30.50	52.70

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 :-43dBm 5G:-57dBm

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

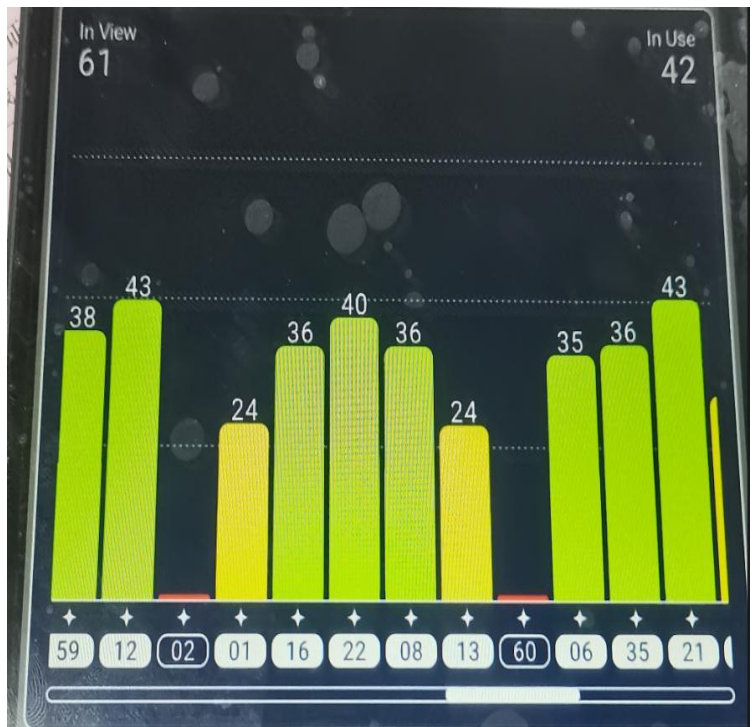
测试距离：10+m

结果：播放音乐流畅，无杂音。

GPS Measured

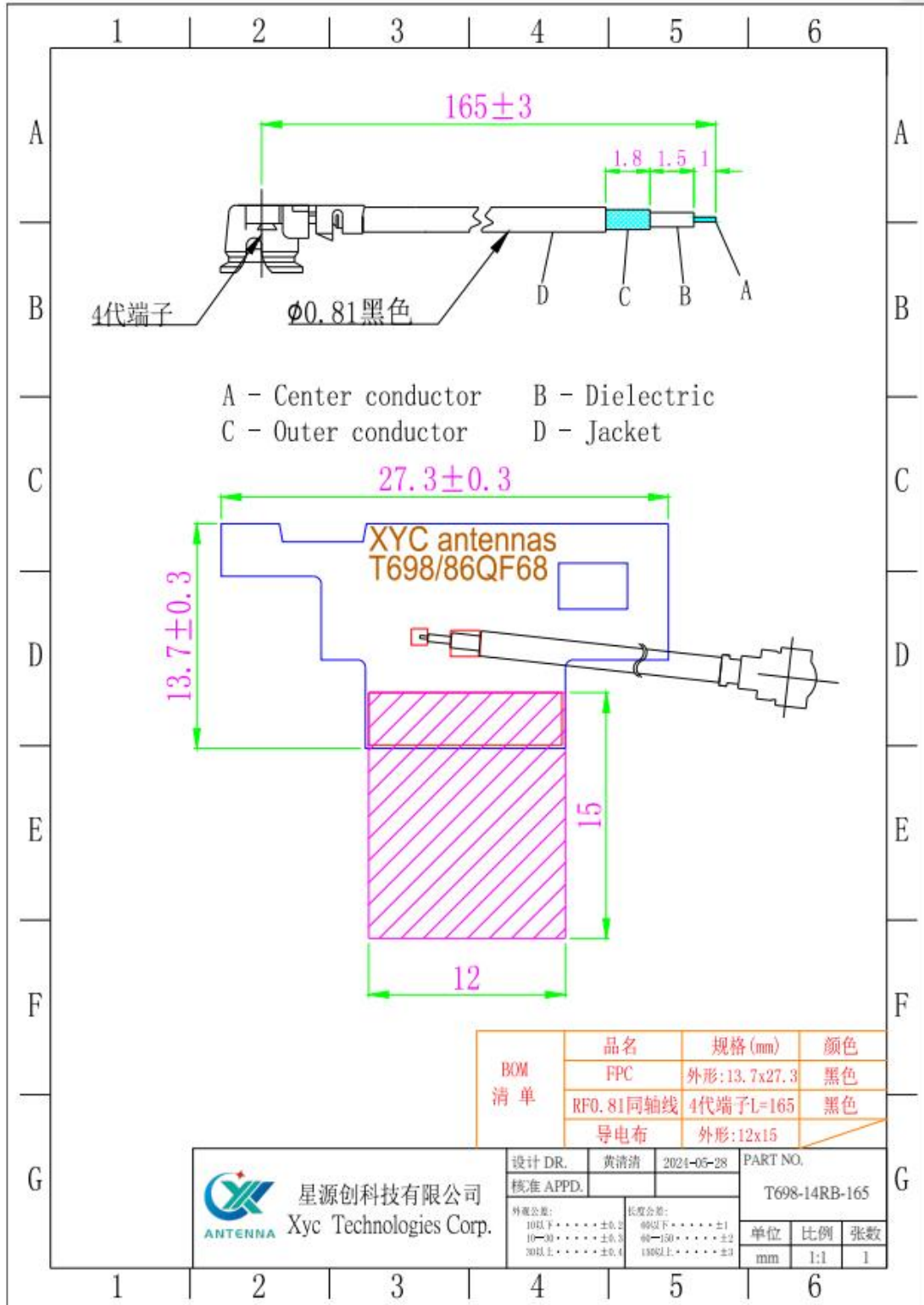
GPS冷启动实测效果以下：
CN值40以上3+颗
CN值35以上5+颗
实际定位8+颗

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





Antenna Assembly

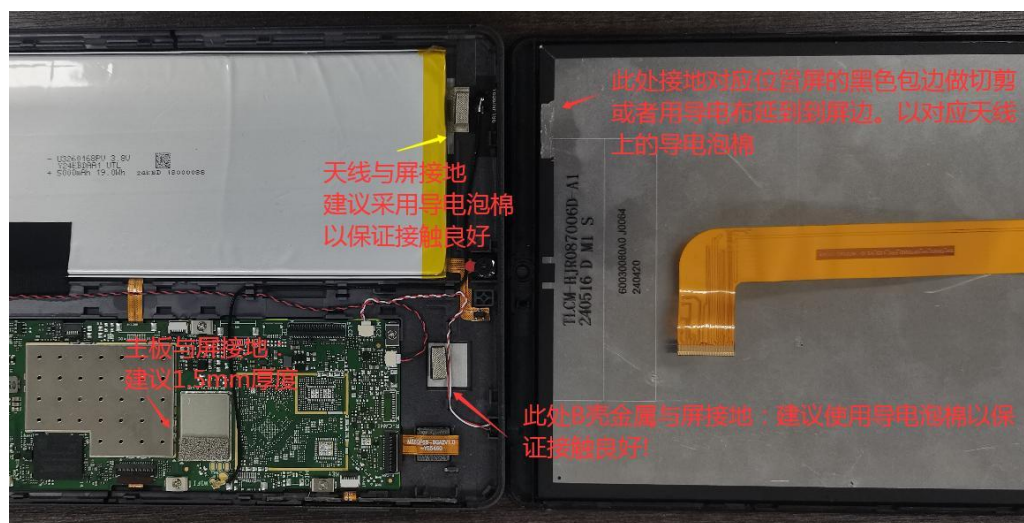


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Notes





Inspection Standard

深圳市星源创科技有限公司	文件编码	XYC-WI-PZ-02	页号
	文件版本	A0	1 of 1
文件名称	抽样计划		

抽样水平对照表

特殊检查水平				一般检查水平			批量范围	样本字码	抽样数	0.65		1.0		1.5		2.5		4.0		6.0	
S-1	S-2	S-3	S-4	I	II	III				AC	RE	AC	RE	AC	RE	AC	RE	AC	RE	AC	RE
A	A	A	A	A	A	B	2---8	A	2	0	1	0	1	0	1	0	1	0	1	0	1
A	A	A	A	A	B	C	9---15	B	3	0	1	0	1	0	1	0	1	0	1	0	1
A	A	B	B	B	C	D	16---25	C	5	0	1	0	1	0	1	0	1	0	1	1	2
A	B	B	C	C	D	E	26---50	D	8	0	1	0	1	0	1	0	1	1	2	1	2
B	B	C	C	C	E	F	51---90	E	13	0	1	0	1	0	1	1	2	1	2	2	3
B	B	C	D	D	F	G	91---150	F	20	0	1	0	1	1	2	1	2	2	3	3	4
B	C	D	E	E	G	H	151---280	G	32	0	1	1	2	1	2	2	3	3	4	5	6
B	C	D	E	F	H	J	281---500	H	50	1	2	1	2	2	3	3	4	5	6	7	8
C	C	E	F	G	J	K	501---1200	J	80	1	2	2	3	3	4	5	6	7	8	10	11
C	D	E	G	H	K	L	1201---3200	K	125	2	3	3	4	5	6	7	8	10	11	14	15
C	D	F	G	J	L	M	3201---10000	L	200	3	4	5	6	7	8	10	11	14	15	21	22
C	D	F	H	K	M	N	10001---35000	M	315	5	6	7	8	10	11	14	15	21	22	21	22
D	E	G	J	L	N	P	35001---150000	N	500	7	8	10	11	14	15	21	22	21	22	21	22
D	E	G	J	M	P	Q	150001---500000	P	800	10	11	14	15	21	22	21	22	21	22	21	22
D	E	H	K	N	Q	R	500001and over	Q	1250	14	15	21	22	21	22	21	22	21	22	21	22
									R	2000	21	22	21	22	21	22	21	22	21	22	

AC为合格项 RE为不合格项

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深圳星源创科技有限公司



ANTENNA Shen Zhen Xing Yuan Chuang Technology Co., Ltd

List Of Raw Materials

环保零件检测报告统计清单

本公司兹保证本《环保零件检测报告》内所记载及附之所有资料皆属实，如有任何不实（包括但不限于料号与原始检测报告对照错误），致深圳英众世纪智能科技有限公司受有任何损害，愿对深圳英众世纪智能科技有限公司负完全之损害赔偿赔偿责任。

物料名称: GWB天线 供应商料号: T698-14RB-165
英众料号: 出具厂商:
拟制: 法人代表:

NO	材料名称 Name	材料供应商 Material supplier	均质材料 Mfr Part Number	均质材料有害物质含量Hazardous Substances Concentration in Homogeneous Material(PPM)										卤素 HF		测试机构 Test Lab, organization	报告编号 Test Report Number	测试日期 Test Date (YY-MM-DD)	第三方检测报告插入 Insert a third party test report		
				Cd	Pb	Hg	Cr6+	PBBs	PBDEs	DBP	BBP	DEHP	DIBP	氯 Cl	溴 Br						
				<100	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<900	<900						
1	GWB天线	星源创 (XYC)	FPC 基材	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	通标准技术服务有限公司广州分公司	CANEC222 7194601	2022-12-22	 CAN22-271946-01_EC_F.PDF		
			背胶9471	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND					CANEC222 7194602	 CAN22-271946-02_EC_F.PDF
			文字油墨	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND						
			防焊油墨	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND						
			线材	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND						

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



深圳星源创科技有限公司

Shen Zhen Xing Yuan Chuang Technology Co., Ltd

Sample Inspection Report

深圳市星源创科技有限公司
样品检验报告

客户	阳华	品名规格	WIFI主天线	出货数量	5	抽样数量	2	
机型	86QF68		料号	T698-14RB-165		出货日期	2024/05/28	
检验标准	<input checked="" type="checkbox"/> 正常检验 <input type="checkbox"/> 加严检验 <input type="checkbox"/> 减量检验							
抽样方式	MIL-STD-105D (II) 单次抽样 接受限 AQL:CR: 0 Maj: 0.4 Min: 1.5							
质量允收水平			CR Acc	0	Maj ACC	0	Min ACC	0
			CR REJ	1	Maj REJ	1	Min REJ	1
项目	检验内容	检验要求	检验方法	检验结果				判定
				1	2	3	4	
尺寸检验	线总长	165±3	直尺	165	165			合格
	FPC外形	13.7±0.3	卡尺	13.7	13.6			合格
	FPC外形	27.3±0.3	卡尺	27.4	27.3			合格
项目	检验内容	检验要求	检验方法	缺陷描述	CR	Maj	Min	判定
外观检验	线外皮	外被有无刮伤现象	目视	无异常	0	0	0	合格
	焊盘加锡	无氧化、锡尖等现象	目视	无异常	0	0	0	合格
	IPEX	无缺料, 烈痕, 色差, 缩水, 烫伤, 无氧化、变色、变形脱线等不良现象	目视	无异常	0	0	0	合格
电气特性								
其它								
最终判定	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NG							

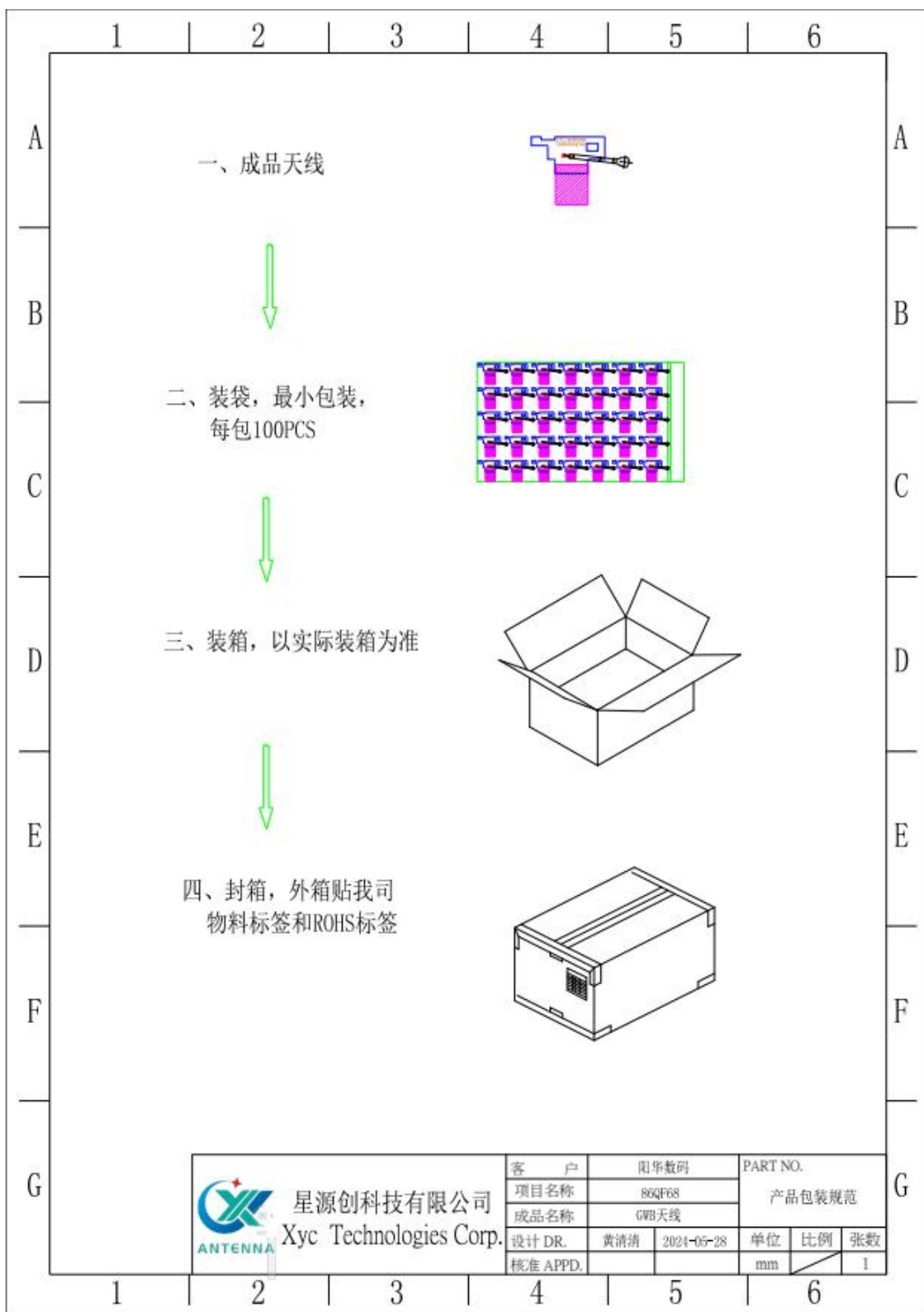
表格编号: XYC-WF-PZ-001

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Packing Specification



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