

样品承认书

P/N		
样品适应机型		16QF18
样品描述		GWB天线/带三代端子线长42mm/16QF18
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	2024/05/14
产品名称 Product	GWB天线	客户机型 Models	16QF18
料号 P/N	T717-13LB-042	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; L=42mm		

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	36%@GPS; 48%@2.4G; 37%@5G
Peak Gain	-0.9dBi@GPS; 2.0dBi@2.4G; 2.8dBi@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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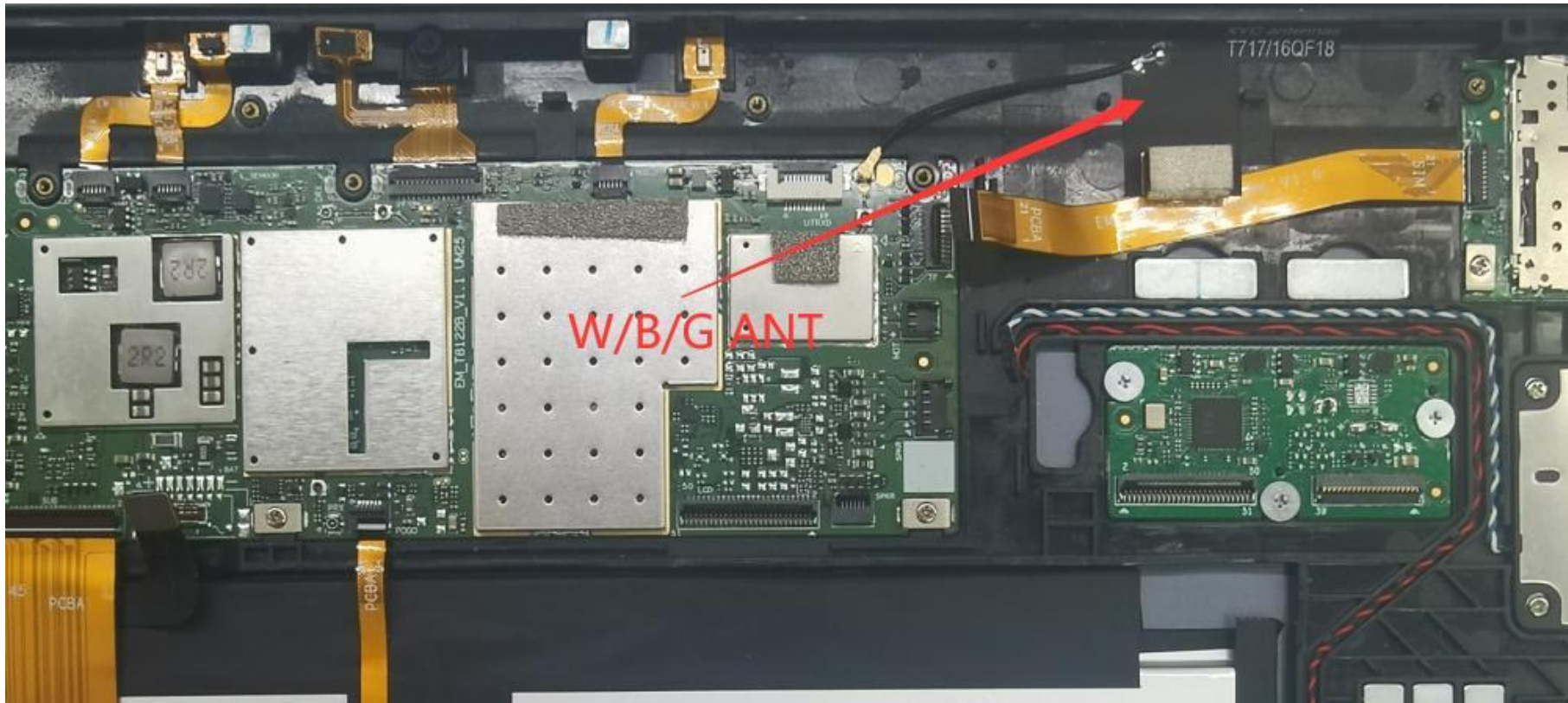
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Antenna Placement



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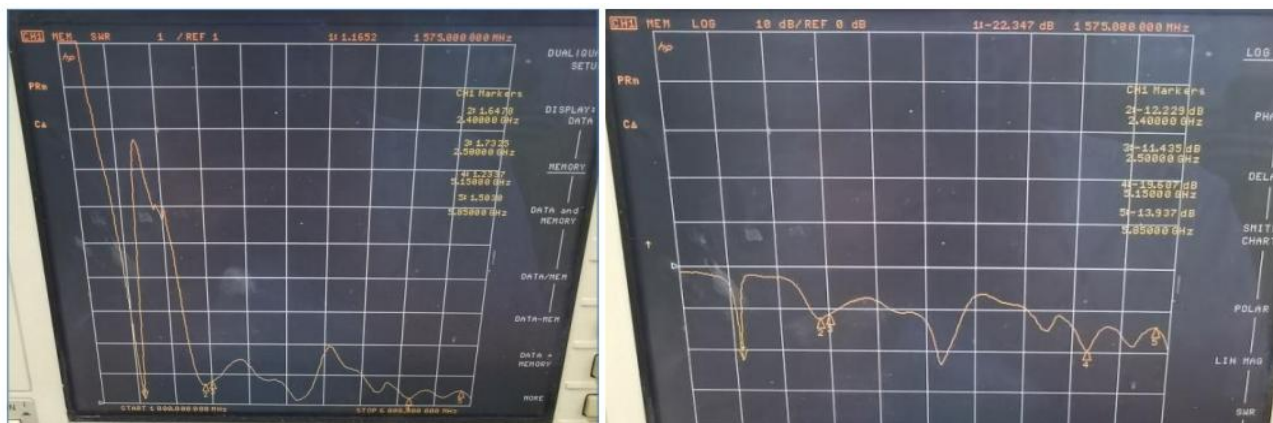
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Test Data

S11 Parameter-VSWR



Frequency (MHZ)	1575	2400	2500	5150	5850
VSWR	1.16	1.64	1.73	1.23	1.50
Return Loss (DB)	-22.34	-12.22	-11.43	-19.60	-13.93

Efficiency Table (GPS)

Passive Test For GPS												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	irectivity (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
1570	33.28	-4.78	-1.23	-3.38	12.679	20.597	-1.23	-14.34	3.55	0	41.5	41.03
1575	35.21	-4.53	-1.07	-3.22	13.526	21.686	-1.07	-13.83	3.47	0	41.68	41.23
1580	36.99	-4.32	-0.93	-3.08	14.408	22.582	-0.93	-13.41	3.39	0	41.78	41.35

Efficiency Table (2.4G)

Passive Test For WIFI2.4												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	irectivity (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
2400	38.29	-4.17	1.49	-0.66	26.422	11.871	1.49	-17.79	5.66	30	45.78	46.01
2410	41.5	-3.82	1.82	-0.33	28.951	12.549	1.82	-16.76	5.64	60	46.01	46.29
2420	41.95	-3.77	1.75	-0.4	29.31	12.64	1.75	-16.3	5.53	60	45.73	46
2430	41.7	-3.8	1.64	-0.51	29.391	12.306	1.64	-15.36	5.44	60	46.01	46.36
2440	43.76	-3.59	1.68	-0.47	30.828	12.931	1.68	-14.85	5.26	60	46.12	46.48
2450	47.56	-3.23	2	-0.15	33.439	14.121	2	-14.85	5.23	60	46.12	46.54
2460	48.6	-3.13	1.97	-0.18	34.221	14.376	1.97	-15.29	5.11	60	46.14	46.52
2470	44.59	-3.51	1.55	-0.6	31.593	12.996	1.55	-16.3	5.05	60	46.4	46.8
2480	45.85	-3.39	1.65	-0.5	32.818	13.028	1.65	-16.09	5.04	60	46.26	46.64
2490	48.05	-3.18	1.82	-0.33	34.537	13.514	1.82	-15.4	5	60	46.51	46.91
2500	43.97	-3.57	1.37	-0.78	31.662	12.311	1.37	-15.53	4.94	60	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	19.84	-7.02	-1.03	-3.18	11.539	8.304	-1.03	-15.23	6	30	49.82	49.4
5170	20.28	-6.93	-1	-3.15	11.426	8.854	-1	-14.43	5.93	60	50.13	49.77
5190	21.16	-6.75	-0.87	-3.02	11.566	9.589	-0.87	-15.4	5.87	60	50.42	49.95
5210	24.09	-6.18	-0.46	-2.61	13.04	11.052	-0.46	-14.06	5.72	60	50.88	50.49
5230	22	-6.58	-1.27	-3.42	11.864	10.134	-1.27	-17.84	5.3	90	50.42	50.08
5250	26.44	-5.78	-0.86	-3.01	14.229	12.211	-0.86	-23.12	4.92	90	51.02	50.72
5270	26.12	-5.83	-0.93	-3.08	14.097	12.027	-0.93	-20.14	4.89	30	50.85	50.6
5290	30.85	-5.11	0	-2.15	16.84	14.006	0	-18.49	5.11	30	51.34	51.12
5310	26.96	-5.69	-0.64	-2.79	14.864	12.092	-0.64	-21.19	5.05	30	50.44	50.36
5330	29.42	-5.31	-0.4	-2.55	16.408	13.014	-0.4	-19.31	4.92	30	51.08	51.01
5350	29.7	-5.27	-0.37	-2.52	16.791	12.911	-0.37	-15.22	4.91	30	51.02	51.01
5370	31.04	-5.08	-0.16	-2.31	17.747	13.291	-0.16	-14.07	4.93	30	50.91	50.95
5390	28.32	-5.48	-0.55	-2.7	16.417	11.9	-0.55	-16.76	4.93	30	50.46	50.43
5410	34.41	-4.63	0.34	-1.81	20.095	14.316	0.34	-18.11	4.97	30	51.18	51.09
5430	31.61	-5	-0.14	-2.29	18.429	13.182	-0.14	-16.49	4.86	30	50.69	50.7
5450	35.35	-4.52	0.35	-1.8	20.695	14.659	0.35	-14.83	4.87	30	50.71	50.85
5470	34.83	-4.58	0.3	-1.85	20.428	14.405	0.3	-15.49	4.88	30	50.93	50.83
5490	34.06	-4.68	0.15	-2	19.828	14.236	0.15	-16.52	4.83	30	50.92	50.79
5510	35.23	-4.53	0.44	-1.71	20.41	14.819	0.44	-15.01	4.97	30	51.18	51.16
5530	34.97	-4.56	0.58	-1.57	20.244	14.729	0.58	-14.22	5.15	30	51.44	51.3
5550	37.66	-4.24	1.23	-0.92	21.783	15.876	1.23	-14.31	5.47	30	51.89	51.76
5570	34.34	-4.64	1.1	-1.05	19.817	14.524	1.1	-15.41	5.75	30	51.42	51.33
5590	34.51	-4.62	1.35	-0.8	20.072	14.435	1.35	-15.67	5.97	30	51.71	51.76
5610	33.6	-4.74	1.52	-0.63	20.038	13.558	1.52	-16.37	6.26	30	51.17	51.22
5630	33.54	-4.74	1.8	-0.35	20.403	13.138	1.8	-18.43	6.54	30	51.78	51.77
5650	35.67	-4.48	2.38	0.23	21.89	13.781	2.38	-16.33	6.86	30	51.47	51.55
5670	33.4	-4.76	2.35	0.2	20.712	12.686	2.35	-14.26	7.11	30	52.12	52.28
5690	35	-4.56	2.78	0.63	21.979	13.018	2.78	-14.36	7.34	30	52.12	52.25
5710	32.44	-4.89	2.56	0.41	20.556	11.884	2.56	-14.04	7.45	30	51.95	52.05
5730	35.26	-4.53	2.89	0.74	22.347	12.914	2.89	-14.53	7.42	0	51.59	51.69
5750	30.72	-5.13	2.28	0.13	19.479	11.241	2.28	-15.8	7.4	0	51.12	51.15
5770	32.01	-4.95	2.4	0.25	20.305	11.702	2.4	-15.63	7.35	0	51.02	51.06
5790	29.66	-5.28	2.08	-0.07	18.879	10.785	2.08	-16.03	7.36	0	51.08	51.16
5810	31.4	-5.03	2.42	0.27	20.06	11.342	2.42	-16.17	7.45	0	51.36	51.43
5830	31.35	-5.04	2.49	0.34	20.152	11.197	2.49	-15.97	7.53	0	51.65	51.66
5850	33.75	-4.72	2.89	0.74	21.853	11.895	2.89	-16.28	7.61	0	51.88	52.05

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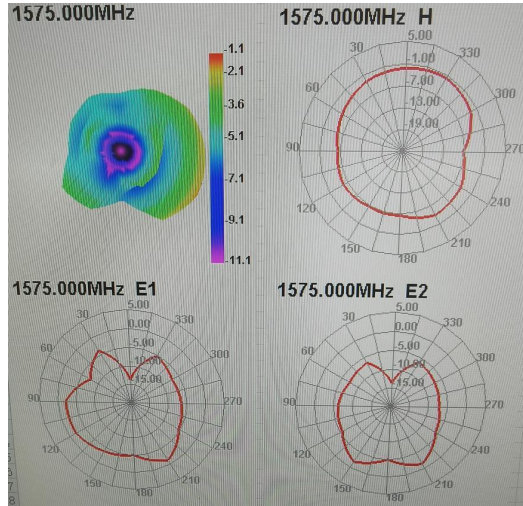
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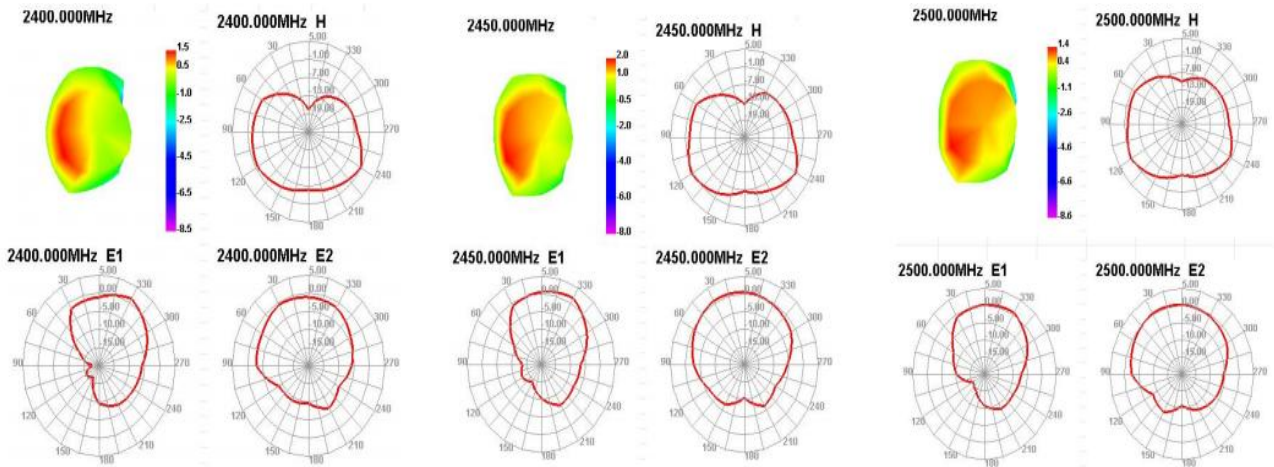
深圳星源创科技有限公司

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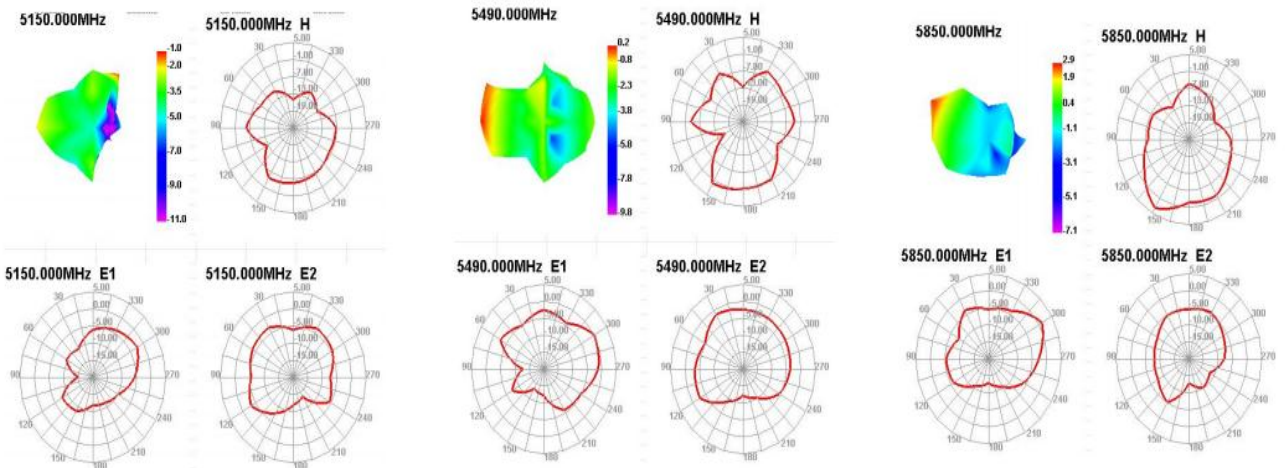
Radiation Pattern(GPS)



Radiation Pattern(2.4G)



Radiation Pattern(5G)



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WIFI RVR Test
CH1 TX

角度\衰减	0dB	10dB	20dB	30dB	40dB
0.0°	53.6	67.7	56.7	63.8	63.1
90.0°	54.7	53.2	53.7	63.7	63.4
180.0°	53.7	53.4	60.9	61.6	61.5
270.0°	55.4	53.6	55.1	68.3	60.4

CH1 RX

角度\衰减	0dB	10dB	20dB	30dB	40dB
0.0°	73.6	73.9	73.7	73.9	59.5
90.0°	73.9	73.7	73.5	73.9	60.2
180.0°	74	73.7	73.7	73.3	51.4
270.0°	73.9	73.7	73.9	73.4	51.4

CH6 TX

角度\衰减	0dB	10dB	20dB	30dB	40dB
0.0°	54.6	53.5	53.5	61.2	62.8
90.0°	54.9	52.7	53.6	66.3	63.2
180.0°	54.8	53.7	67.7	61.9	61.4
270.0°	54.1	53	56.3	65.3	60.9

CH6 RX

角度\衰减	0dB	10dB	20dB	30dB	40dB
0.0°	74	73.9	73.6	73.8	60.6
90.0°	73.7	73.8	73.7	73.8	60.8
180.0°	73.9	73.6	73.7	73.2	52.5
270.0°	73.8	73.5	73.9	73.4	52.7

CH11 TX

角度\衰减	0dB	10dB	20dB	30dB	40dB
0.0°	54.8	54.3	53.6	64.4	63
90.0°	55.8	54.1	54.9	64.5	63.4
180.0°	55.1	68.3	67.3	61.7	61.2
270.0°	54.5	53	60.9	67.9	60.9

CH11 RX

角度\衰减	0dB	10dB	20dB	30dB	40dB
0.0°	73.7	73.8	73.7	74	60.1
90.0°	73.8	74	73.6	73.9	59.4
180.0°	74	73.9	73.6	73.6	51.4
270.0°	73.7	73.7	73.9	73.4	51.1



WIFI RVR Test
CH36 TX

角度\衰减	0dB	10dB	20dB	30dB	40dB
0.0°	366	358	330	202	87.4
90.0°	368	367	366	232	114
180.0°	366	359	328	226	150
270.0°	368	367	362	211	88.5

CH36 RX

角度\衰减	0dB	10dB	20dB	30dB	40dB
0.0°	370	371	372	269	93.7
90.0°	372	371	372	314	141
180.0°	372	372	372	327	156
270.0°	371	372	372	276	98.3

CH60 TX

角度\衰减	0dB	10dB	20dB	30dB	40dB
0.0°	364	357	342	200	88.3
90.0°	367	368	347	232	108
180.0°	367	347	317	226	131
270.0°	368	367	346	212	85.3

CH60 RX

角度\衰减	0dB	10dB	20dB	30dB	40dB
0.0°	371	371	373	267	93.5
90.0°	372	372	372	314	141
180.0°	373	372	372	327	183
270.0°	372	372	372	276	95.8

CH161 TX

角度\衰减	0dB	10dB	20dB	30dB	40dB
0.0°	364	357	333	199	86.5
90.0°	368	368	366	232	116
180.0°	242	241	241	233	135
270.0°	367	367	364	200	87.7

CH161 RX

角度\衰减	0dB	10dB	20dB	30dB	40dB
0.0°	371	372	372	270	94
90.0°	371	371	372	314	141
180.0°	371	372	373	328	177
270.0°	371	372	373	276	95.3



WiFi Active Test Data

802.11b	Frequency	TRP		TIS(LCD ON)	
	2412	CH1 11Mbps	11.21	CH1 11Mbps	-75.24
2437	CH6 11Mbps	12.14	CH6 11Mbps	-75.39	
2467	CH11 11Mbps	12.13	CH11 11Mbps	-77.11	
802.11a		TRP		TIS(LCD ON)	
	5180	CH36 6Mbps	10.42	CH36 54Mbps	-68.16
	5300	CH60 6Mbps	10.59	CH60 54Mbps	-69.24
	5700	CH140 6Mbps	10.55	CH140 54Mbps	-68.31

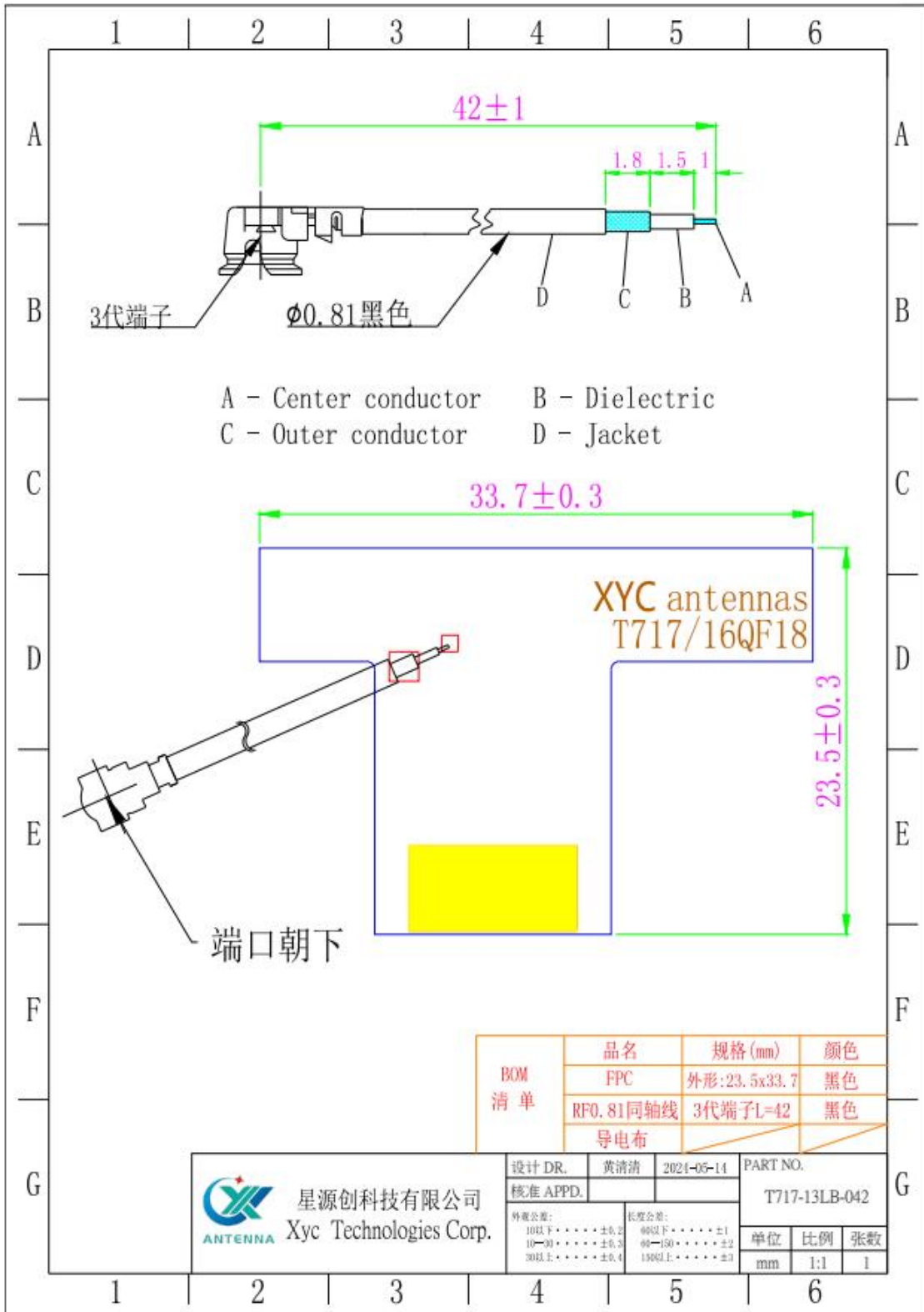
BT Test

测试环境：走廊通道

测试工具：蓝牙音箱

测试距离：10M（播放音乐流畅无卡顿）

Antenna Assembly



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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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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: T717-13LB-042
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				
			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	16QF18		料号	T717-13LB-042		出货日期	2024/05/14	
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	42±1	直尺	42	42			合格
	FPC外形	23.5±0.3	卡尺	23.5	23.5			合格
	FPC外形	33.7±0.3	卡尺	33.6	33.7			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							

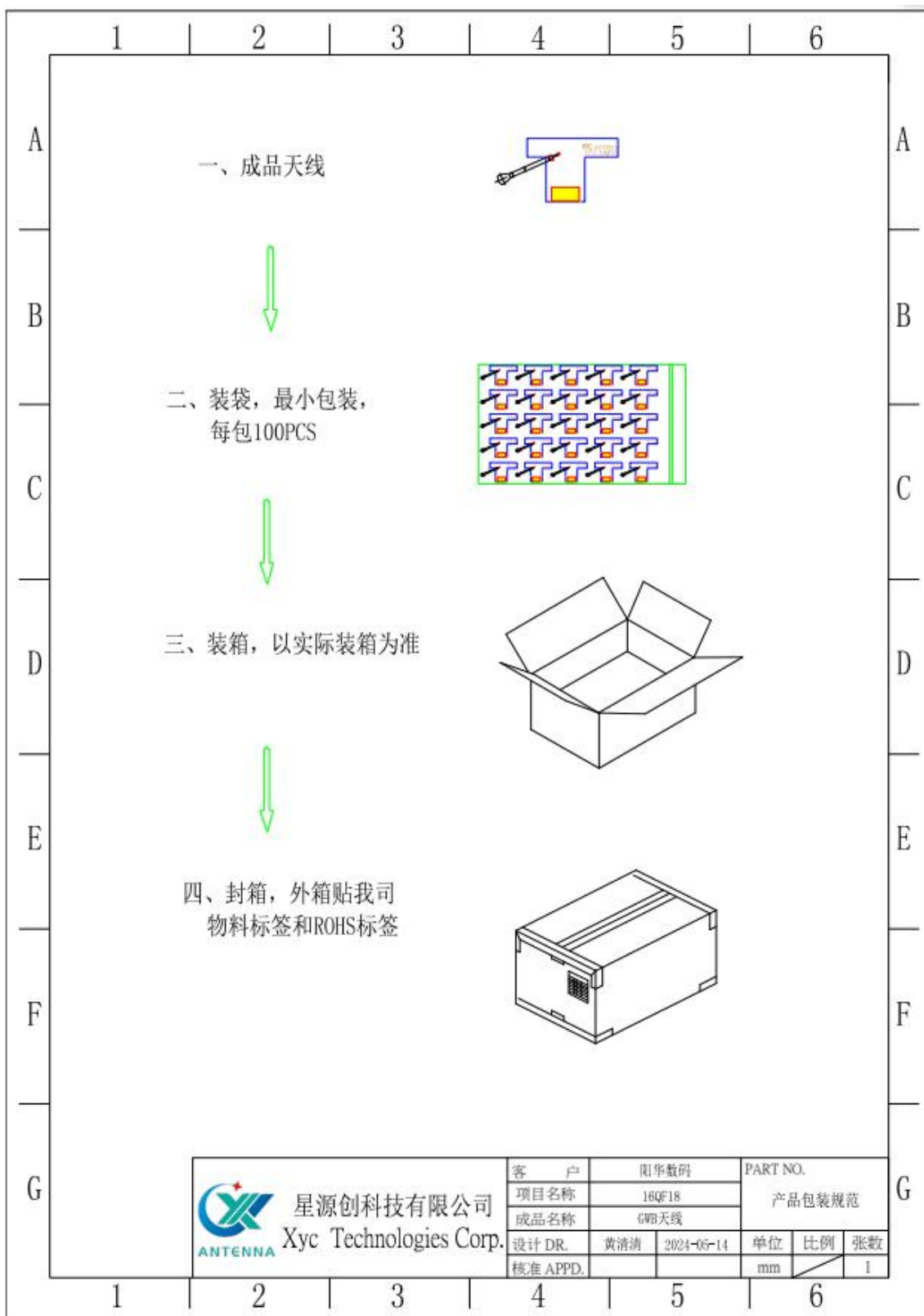
表格编号: XYC-WF-PZ-001

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Packing Specification



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