

样品承认书

Confirmation of products

客户名称 Customer	深圳市睿联技术有限公司				
项目名称 Project Name	F10	版本 Version	A. 2	日期 Date	2025-11-17
项目料号 Project NO.	03. 23. 03. 003	客户料号 Customer NO.			
频段 Frequency Range	2400~2500MHz 5100~5800MHz	备注 Notes	WIFI，增加线长		
设计 Designed By	田秋奎 陈正伟 王宇				
审核 Approved By	唐春艳				
客户确认 Clients' Approval					

公司名称: 深圳市林荣科技有限公司

Designer: SHENZHEN LINRONG TECHNOLOGY CO., LTD

地址: 深圳市龙华区大浪街道华荣路联建工业园 1 栋 3 楼

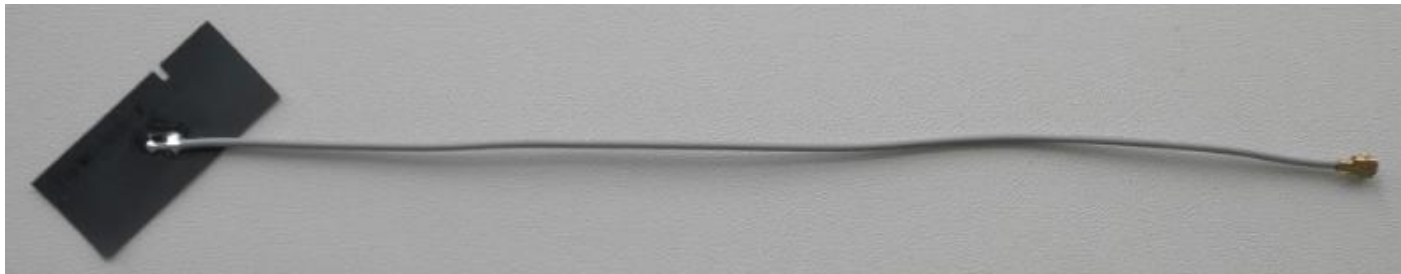
ADD: Floor 3, building 1, LianJian Industrial Park, Huarong Road, Dalang street, Longhua District, Shenzhen

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1、Specification

This report mainly provides the testing conditions of various electric and structural performance parameters for cell phone antenna ----F10 Picture 1 shows the antenna designed by LR.



2、 VSWR Testing

2.1 Testing connection

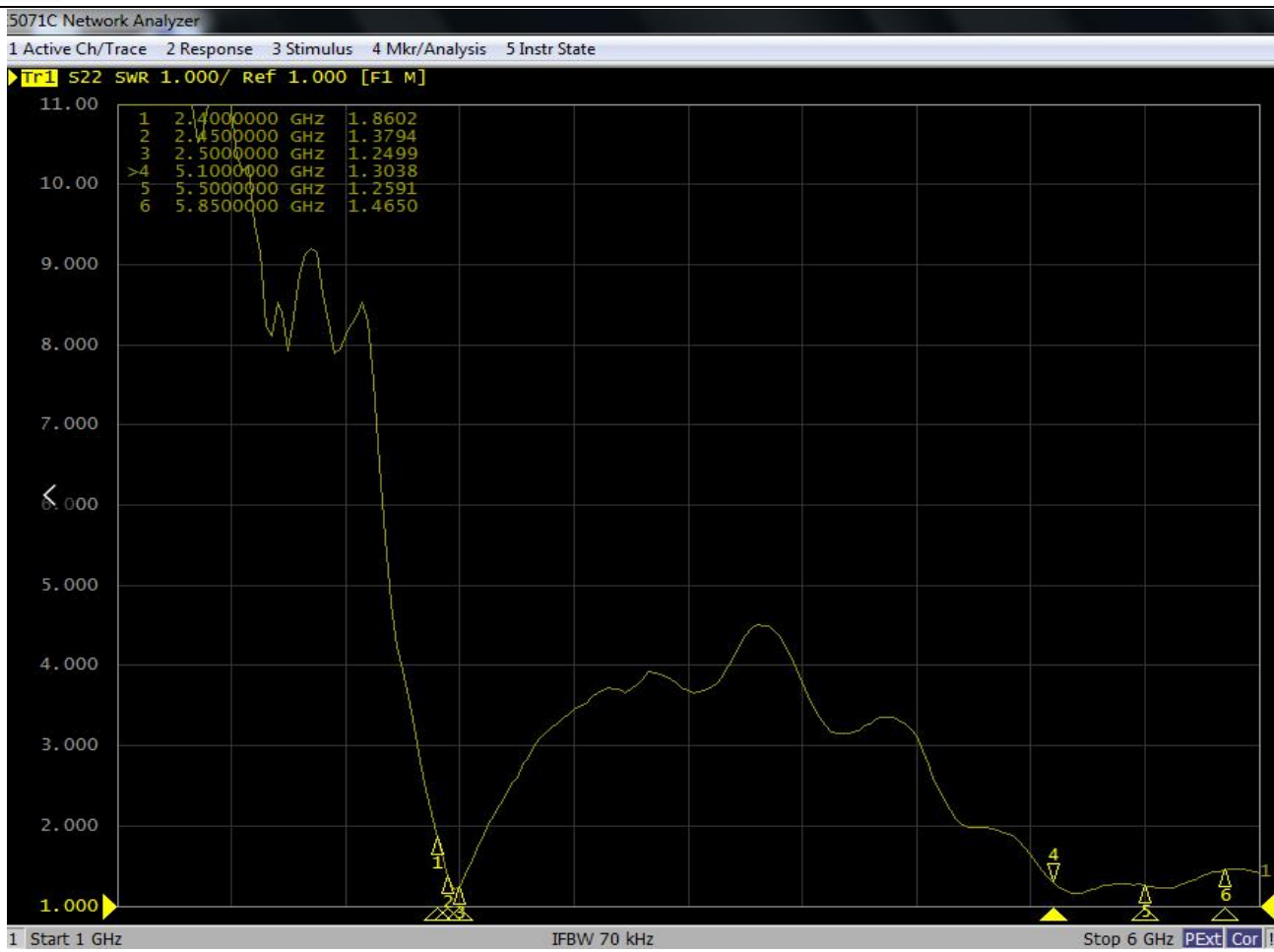
The **Return Loss** testing devices are connected in sequence: Agilent5071C Network Analyzer →Testing Cable → Customer-providing Devices.

2.2 VSWR

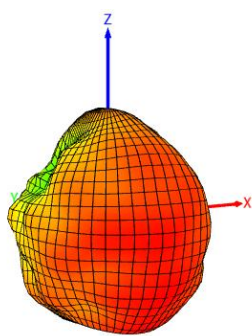
The following table expresses the VSWR value of antenna's two edges of its frequency range. With regard to the relevant diagram of VSWR

F10 WIFI VSWR						
Frequency (MHz)	2400	2450	2500	5100	5500	5850
VSWR	1.86	1.37	1.24	1.30	1.25	1.46

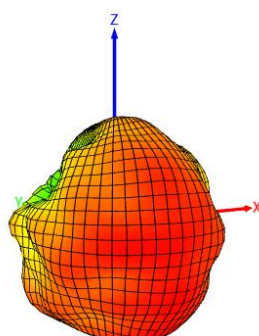
2.3 Testing data



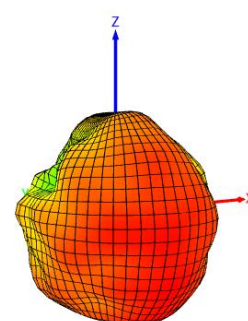
2.4+5.8G WIFI antenna VSWR



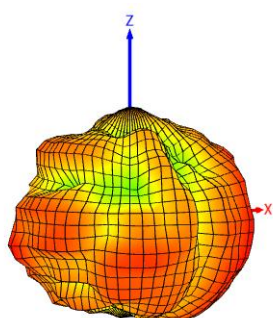
2400MHz



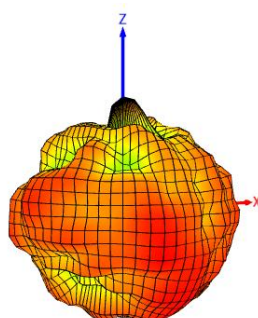
2450MHz



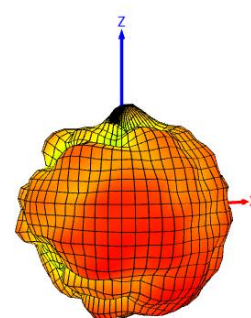
2500MHz



5100MHz

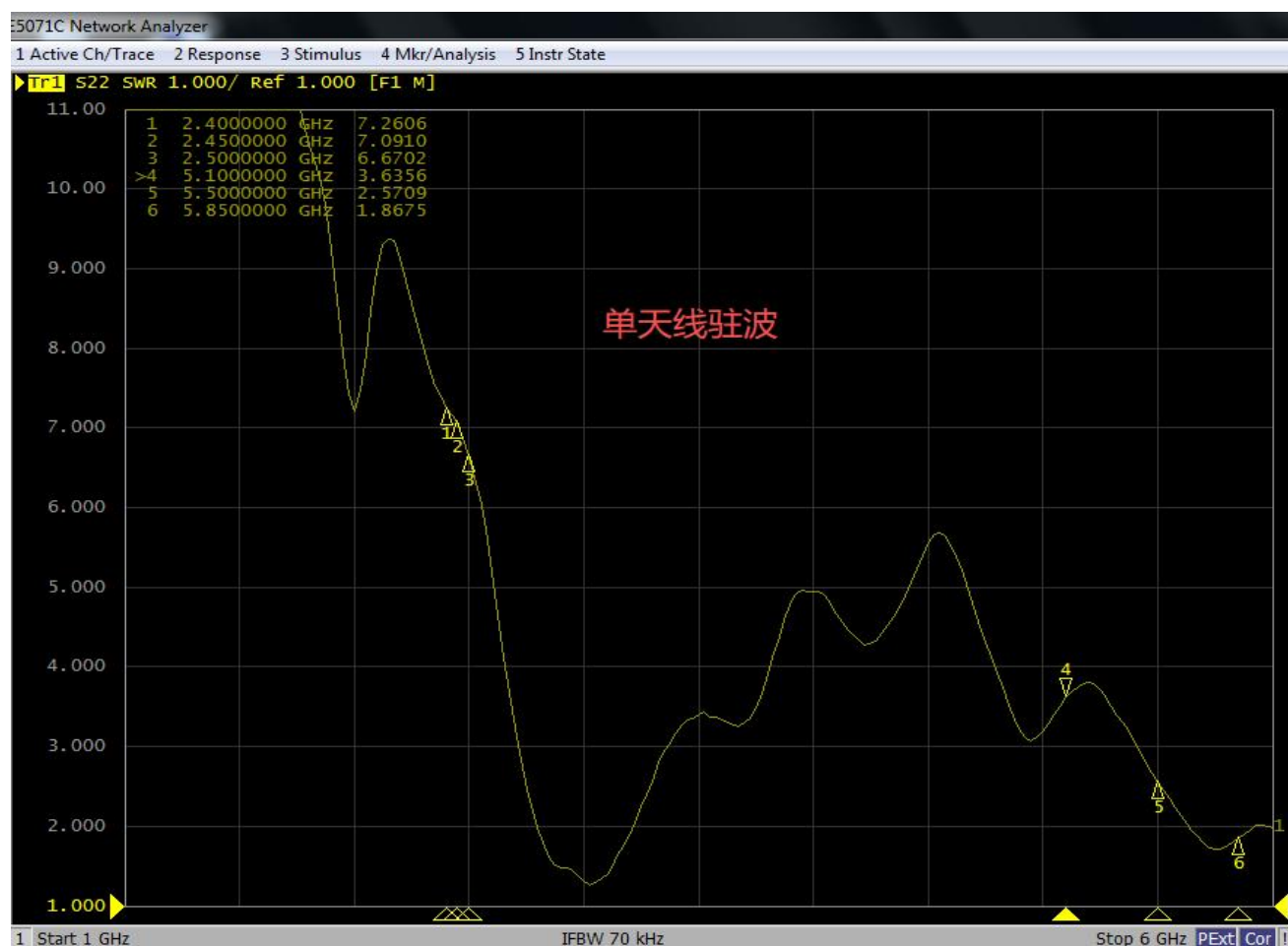


5500MHz



5800MHz

2.4 Single antenna test VSWR



3、 Power、 Sensitivity Testing

3.1 Testing field

LR Microwave Anechoic Chamber : testing frequency ranges from 400MHz to 6GHz and the 40cm diameter spherical quiet zone, the chamber provides less than -90dB reflectivity from 400MHz—6GHz.

3.2 Testing results

The following table indicates the testing results related to Power and Sensitivity in Microwave Anechoic Chamber, concerning the relative diagram.

3.3 Active testing.

F10 Antenna efficiency:

Freq(MHz)	Gain(dBi)	Efficiency(%)	Freq(MHz)	Gain(dBi)	Efficiency(%)
2300	-0.64	29.66	5200	5.78	59.97
2310	-0.45	31.38	5220	5.78	60.02
2320	-0.33	32.71	5240	5.81	61.81
2330	-0.34	33.95	5260	5.76	61.70
2340	-0.37	35.51	5280	5.64	61.66
2350	-0.29	37.24	5300	5.49	61.13
2360	0.13	39.96	5320	5.42	61.67

2370	0.68	43.17	5340	5.61	61.81
2380	1.04	45.59	5360	5.75	62.17
2390	1.43	48.59	5380	5.91	61.77
2400	1.70	51.85	5400	6.04	62.34
2410	1.82	54.18	5420	6.03	62.85
2420	2.06	56.54	5440	5.84	61.54
2430	2.26	58.10	5460	5.73	60.27
2440	2.45	59.36	5480	5.68	60.62
2450	2.68	60.04	5500	5.62	60.71
2460	2.72	60.02	5520	5.46	60.09
2470	2.78	60.23	5540	5.25	60.12
2480	2.82	59.75	5560	5.05	58.76
2490	2.69	58.65	5580	5.14	59.71
2500	2.67	57.95	5600	5.15	60.56
2510	2.58	56.63	5620	5.00	60.54
2520	2.35	54.73	5640	4.83	59.40
2530	2.20	53.25	5660	4.89	59.76
2540	2.02	52.13	5680	5.03	59.24
2550	1.91	51.33	5700	5.24	58.58
2560	1.77	49.74	5720	5.37	57.93
2570	1.64	48.37	5740	5.36	57.01
2580	1.35	46.45	5760	5.44	56.83
2590	0.99	44.32	5780	5.43	55.27
2600	0.79	42.58	5800	5.33	53.42
5100	5.19	58.15	5820	5.24	53.77
5120	5.30	57.93	5840	5.10	54.57
5140	5.44	58.25	5860	4.95	53.72
5160	5.56	59.00	5880	4.96	51.80
5180	5.56	58.63	5900	4.91	51.25

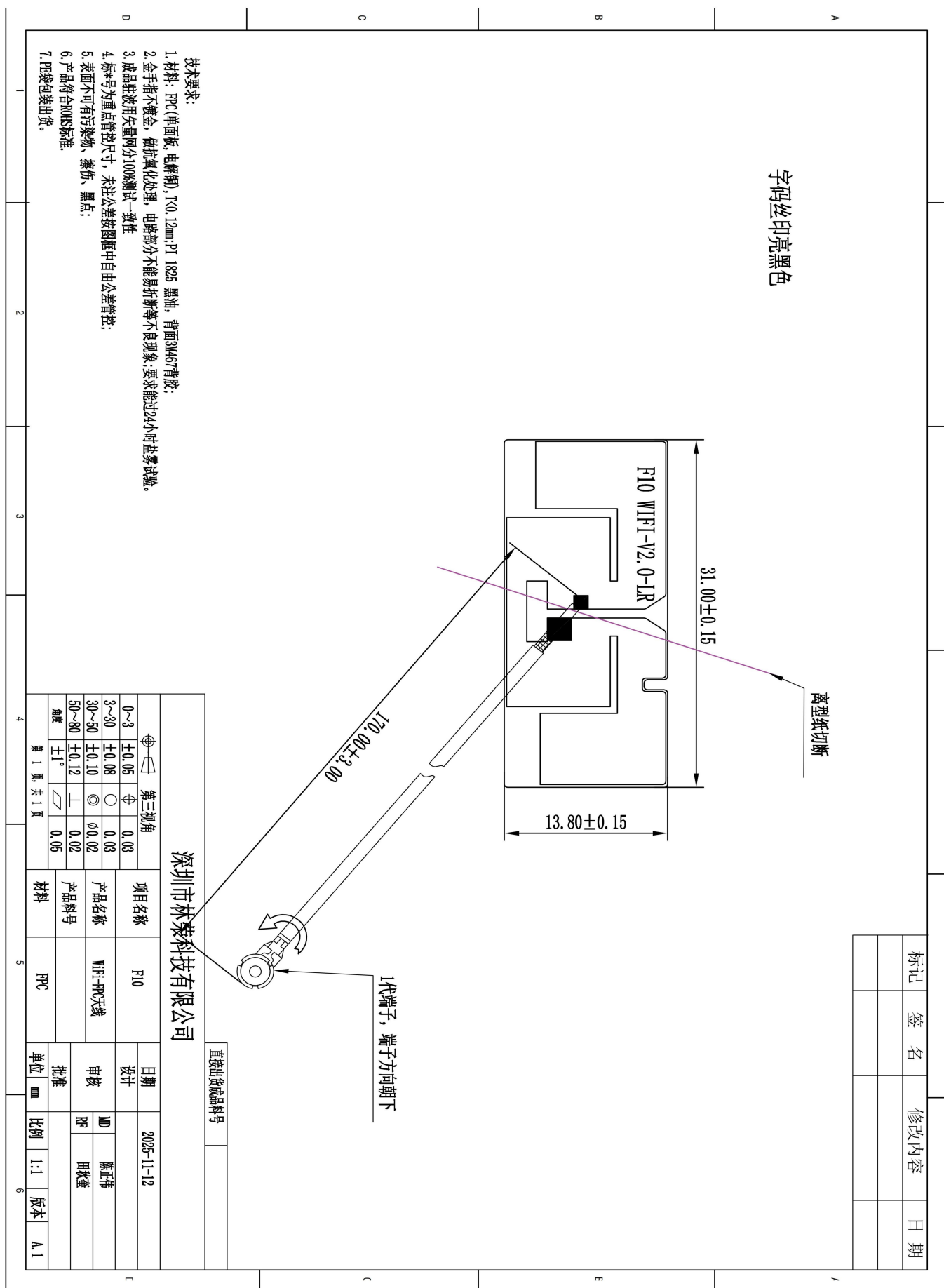
F10 Active data:

灭灯				亮灯			
		TRP	TIS			TRP	TIS
11B	1	12.61	-84.40	11B	1	12.95	-83.73
	6	13.86	-86.44		6		
	11	14.10	-88.37		11	14.25	-86.44
11N	1	11.29	-70.43	11N	1	11.32	-69.78
	6	12.70	-71.50		6		
	11	12.67	-72.01		11	12.13	-71.05
11G	1	10.10	-74.39	11G	1	9.34	-73.99
	6	10.21	-75.21		6		
	11	10.76	-76.35		11	11.35	-75.68
11A	36	18.11	-74.72	11A	36	18.91	-74.49
	64	18.40	-76.47		64		
	165	18.10	-73.83		165	17.72	-73.25

4、Environmental treatment

Original machine environment

5、 Mechanical Dimension Drawing



6. Mechanical Dimension Testing report

全尺寸测量报告

Vendor(供应商)		材质名称		FPC		Part NO(料号)		03.23.03.003		Tool Number (模号)		Cav. Number(穴数)		Unit(单位)		Quality(品质签字)																															
林荣科技		材质 牌号		/		Part Name (零件名称)		WiFi天线		/		/		☒ MILLIMETERS ☐ INCHES		唐春艳																															
日期		2025/1/17		MEASURED DIMENSION(实测尺寸)						% TOLERANCE USED (公差使用百分比)				DISPOSITION				ACCEPTABLE VARIANCE																													
DIM. #		DRAWING ZONE		+ TOL.		- TOL.		NOTE		SAMPLE 1		SAMPLE 2		SAMPLE 3		SAMPLE 4		SAMPLE 5		UPPER		LOWER		0%-25%		25%-50%		50%-75%		75%-100%		100%+		Re-Measure		Accept		Fix Tool		Accept With Variance		DIMENSION		+ TOL.		- TOL.	
1		170.00		3.00		(3.00)				171.00		170.00		169.00		171.00		171.00		33%		-33%		X		X														170.00		171.00		169.00			
2		31.00		0.15		(0.15)				30.94		30.93		30.90		30.89		30.90		0%		-73%		X																31.00		30.94		30.89			
3		13.80		0.15		(0.15)				13.81		13.82		13.85		13.82		13.83		33%		0%		X		X														13.80		13.85		13.81			
4		1.13		0.05		(0.05)				1.13		1.12		1.13		1.12		1.13		0%		-20%		X																1.13		1.13		1.12			
6		以下空白																																													
7																																															
8																																															
9																																															
10																																															
11																																															
12																																															
13																																															

备注: 除了上述标注的填写内容外, 须输入的内容:

1. DIMENSION, +TOL, -TOL, SAMPLE1, SAMPLE2, SAMPLE3

2. 注意1中描述的内容输入时, 请:

a. 在TOLERANCEUSED(公差使用百分比)中无论是UPPER还是LOWER, 100%, 须:

(1) 检查输入数据是否正确; (2) 测量数据是否操作有误或是仪器测量不准确; (3) 测量时间是否不适宜; (4) 排除了(1)(2)(3)外, 仍然>100%, 请设计师对每个尺寸的后面作出选择即从"Re-measure, Accept, Re Tool, Accept Variance"中选一, 若是选Accept with variance, 必须完成后面的Dimension, +TOL, -TOL;

b. DIMENSION栏中的即尺寸前一栏中的DIM. #必须与图面上的一致, 同时注意, 在作Cpk的尺寸的编号与FAL全尺寸测量报告中的尺寸的编号必须是相同的, 且Cpk尺寸必须被用符号标注, 此标注号必须表示的意思是该尺寸为重点管控尺寸, 要做Cpk!

c. 测量工具代号Measure No.: A=callipers(0.00) B=micrometer(0.000) C=Pin Gauge(0.000) D=High Gauge(0.000) E=CMM(0.000) F=Plug Gauge(0.00) G=R Gauge(0.0) I=Deep Gauge(0.000)

The declaration of Homogeneous materials

物料环境物质调查表

序号	供应商	部件名称	材料名称	Report Number of test agency 检测机构报告编号	Test organization 检测机构	The content of the substances controlled by ROHS (PPM, mg/kg) RoHS管控的十项物质含量 (PPM或mg/kg表示)										Test date 检测日期	备注
						Pb	Cd	Hg	Cr ⁶⁺	PBB	PBDE	DEHP	BBP	DBP	DIBP		
						铅	镉	汞	六价铬	多溴联苯	多溴二苯醚	邻苯二甲酸二酯	邻苯二甲酸甲苯基	邻苯二甲酸丁基	邻苯二甲酸二异丁		
1	林荣科技	F10 WIFI天线	电解铜	SHAEC24028809006	SGS	2	2	2	8	N.D.	N.D.	50	50	50	50	2024/12/20	
			油墨	ETR25501383	SGS	2	2	2	8	N.D.	N.D.	50	50	50	50	2025/3/20	
			3M胶	SHAEC25006222101	SGS	2	2	2	8	N.D.	N.D.	50	50	50	50	2025/3/19	
			cable线	A225015001910101E	CTI	2	2	2	8	N.D.	N.D.	25	25	25	25	2025/3/15	
			热缩套管	CANEC24029440717	SGS	2	2	2	8	N.D.	N.D.	50	50	50	50	2025/1/3	
			磷青铜	CANEC24029407215	SGS	2	2	2	10	N.D.	N.D.	50	50	50	50	2025/1/8	
			端子 塑胶件	TNOEC24009805211	SGS	2	2	2	8	N.D.	N.D.	50	50	50	50	2024/12/17	

7. Packaging standard

包装说明：具体包装数量以实物为准，图片只显示包装的方式，并非此项目实物。

Packaging Description: the specific packaging quantity is subject to the physical object. The picture only shows the way of packaging, not the physical object of the project



天线用 PE 袋包装

The top cover board, with PE film packaging



防潮防水 PET 袋封装，放于纸箱或胶筐内

Moistureproof waterproof PET bag packaging,
Put in the cartons



纸箱用胶带封口

Carton sealing with duct tape



包装箱整箱外观 ()

Cases appearance