



深圳市蜂蜗科技有限公司

Shenzhen Besnel Technology Ltd

承 认 书

APPROVAL SHEET

Address: A2201, Jinpingguo Innovation Park, No. 9 Ganli 2nd Road, Gankeng Community, Jihua Street, Longgang District, Shenzhen, China

产品描述 Part Description	深圳市信维通信股份有限公司 生产厂家: SHENZHEN SUNWAY COMMUNICATION CO., LTD 规格型号/版本:A0 Manufacturer: Description: 供货商 深圳市信维通信股份有限公司 Supplier: SHENZHEN SUNWAY COMMUNICATION CO., LTD 所承认项目: B838 (WTH13) Product Name: 三合一天线 Project: Product No. 物料代码:144-00058 BWG Part No.							
附件: Attachments	☒ 规格书 Spec ☐ CPK 报告 Cpk Report ☐ 材质证明书 Material Verification Sheet ☒ 工程图面 Drawing ☒ FAI全尺寸报告 FAI Report ☒ 包装方式 Packing Content ☒ 样品 Sample ☒ 可靠性测试报告 Reliability Report ☐ 产线详细数据 Product detail data							
品质控制项目 Item of quality control								
承认条件: Approval condition	☐ 承认 Approved ☐ 拒绝承认 Reject ☐ 条件承认 Condition Approved 需满足条件: _____ ☐ 临时承认 Temporary Approved 限量_____Pcs 采购							
确认: Approval by	项目经理		结构部		硬件部		中试部	
	DQA		项目总监		品质经理			
分发部门: Distribute	☐ 供应商 ☐ 公司 ☐ 工厂 ☐ 售后							

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深圳市信维通信股份有限公司

SHENZHEN SUNWAY COMMUNICATION CO.,LTD

B838 BWG Antenna Approval Sheet

Antenna name	B838 BWG antenna	Frequency band	1555MHZ-1595MHZ 2400MHZ-2500MHZ 5150MHZ-5850MHZ
Batch No.	144-00058	Version	A0
Color	Black	Date	2025-7-11
Structure confirmation	夏赞波	RF confirmation	陈章福
QC confirmation	陆常周	Approval	
Customer confirmation:			

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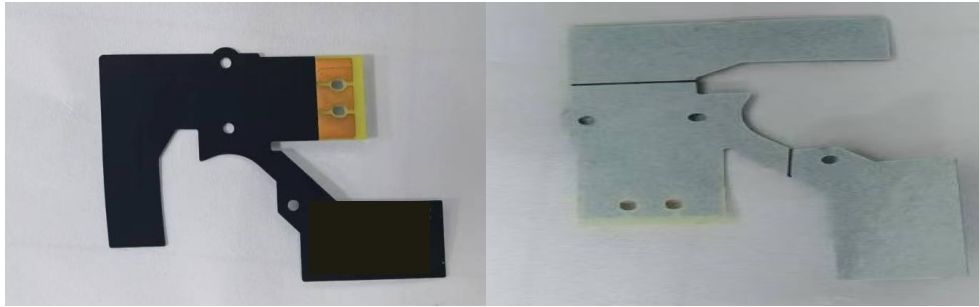
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1. Specifications

This report mainly provides the status of various electrical and structural performance parameters of the B838 antenna.

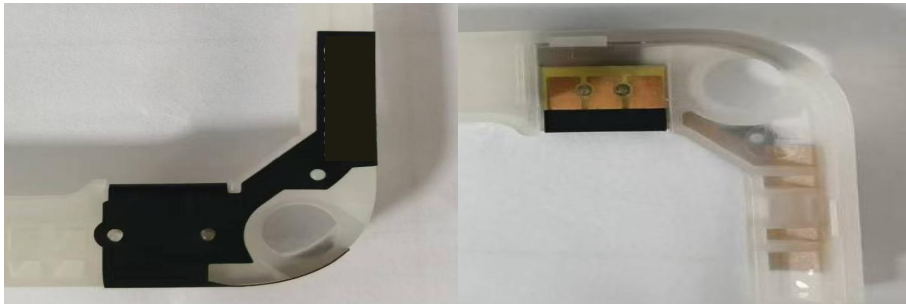
Figure 1 shows the antenna designed by SUNWAY.



3-in-1

Antenna FPC (Figure 1)

1.1 Antenna Description



3-in-1

Note that the above figures show the wire routing and feed point, respectively.

Antenna Matching:

No matching for 3-in-1 antenna. (0Ω)

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2 Antenna Test

2.1 Connection Test

S11 The test setup is connected as follows : AgilentE5071B Vector network analyzer(VNA) →

Connection line → Test fixture

2.1.1 S11

The obtained S11 results from the test is shown in Figure 2.

S-Parameters:

3-IN-1

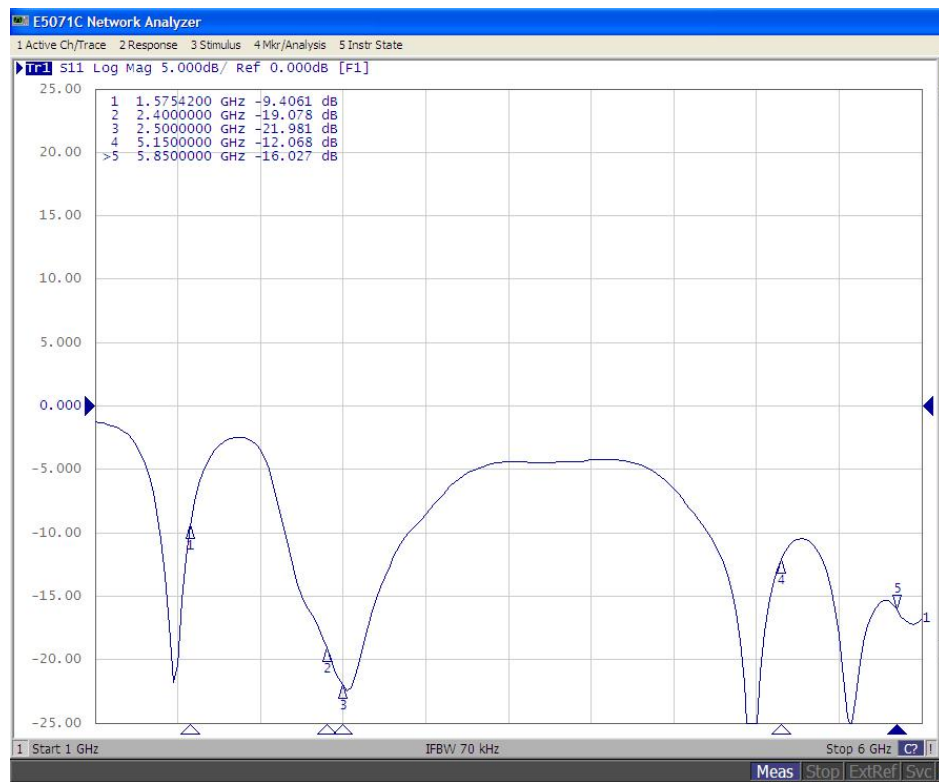


Figure 2

2.2 Gain and Efficiency Test

2.2.1 Test site

SUNWAY Anechoic chamber: The test frequency range is 700Hz-6GHz, the electrostatic zone range is 50cm circumference, and the reflectivity is less than -50 dB.

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2.2.2 Test Equipment

Agilent E5071B Vector network analyzer、standard horn antenna、American ETS AMS8500 antenna test system, etc.

2.2.3 Test Data

GPS&2.4WIFI&5.8WIFI:

Freq(MHz)	1555	1560	1565	1570	1575	1580	1585	1590	1595
Eff(dB)	-5.81	-5.89	-6.03	-6.2	-6.34	-6.48	-6.54	-6.6	-6.77
Gain(dBi)	-2.28	-2.5	-2.7	-2.98	-3.17	-3.25	-3.27	-3.38	-3.43

Freq(MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Eff(dB)	-6.54	-6.36	-6.28	-6.28	-6.16	-6.12	-6.11	-6.08	-6	-6.01	-6.03
Gain(dBi)	-3.11	-2.96	-2.86	-2.93	-2.82	-2.71	-2.67	-2.55	-2.44	-2.45	-2.21

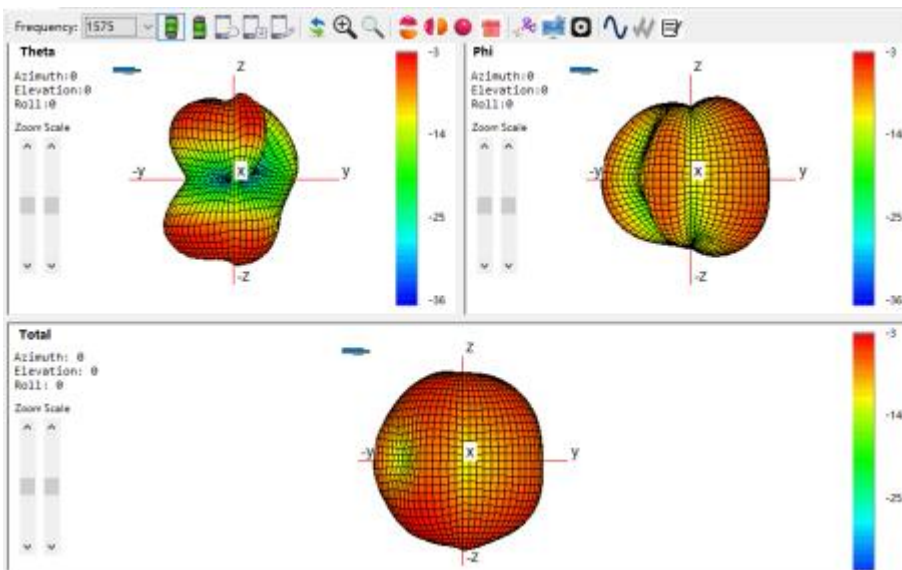
Freq(MHz)	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600
Eff(dB)	-7.77	-7.67	-7.3	-6.76	-6.57	-6.68	-6.25	-6.03	-5.31	-5.18
Gain(dBi)	-1.29	-1.12	-1.14	-1	-1.15	-1.1	-0.99	-0.83	-0.45	-0.65

Freq(MHz)	5650	5700	5750	5800	5850					
Eff(dB)	-4.9	-4.91	-5.1	-5.83	-5.82					
Gain(dBi)	-0.63	-0.21	-0.01	0.13	0.62					

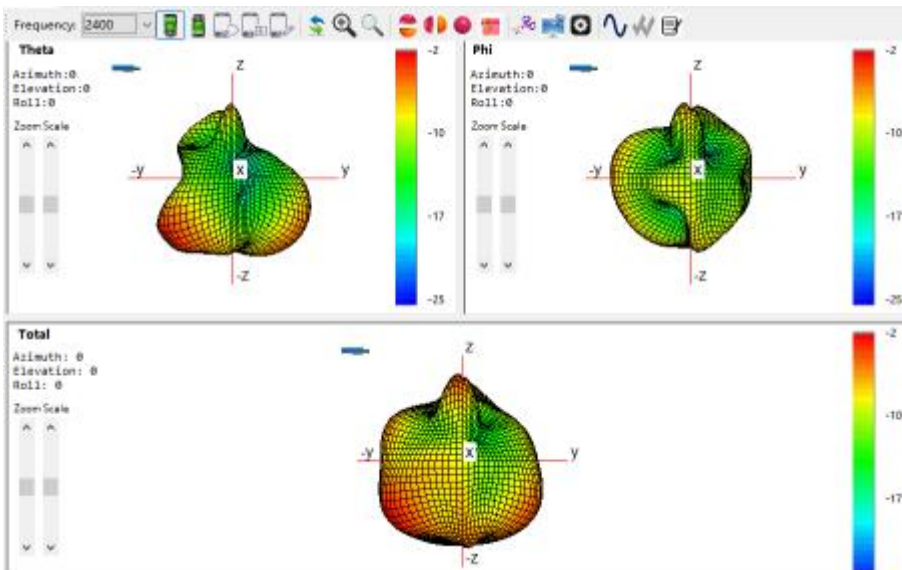
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3D for 1575MHz



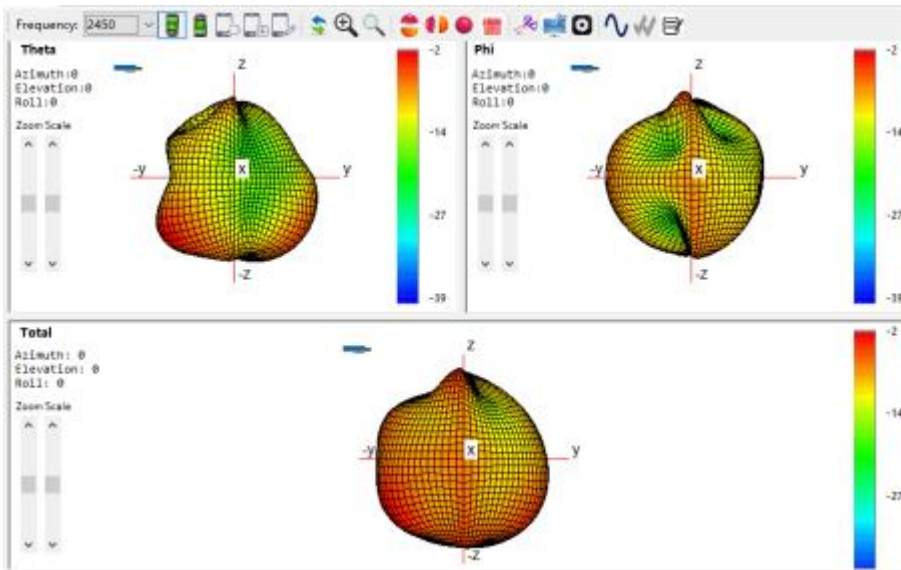
3D for 2400MHz



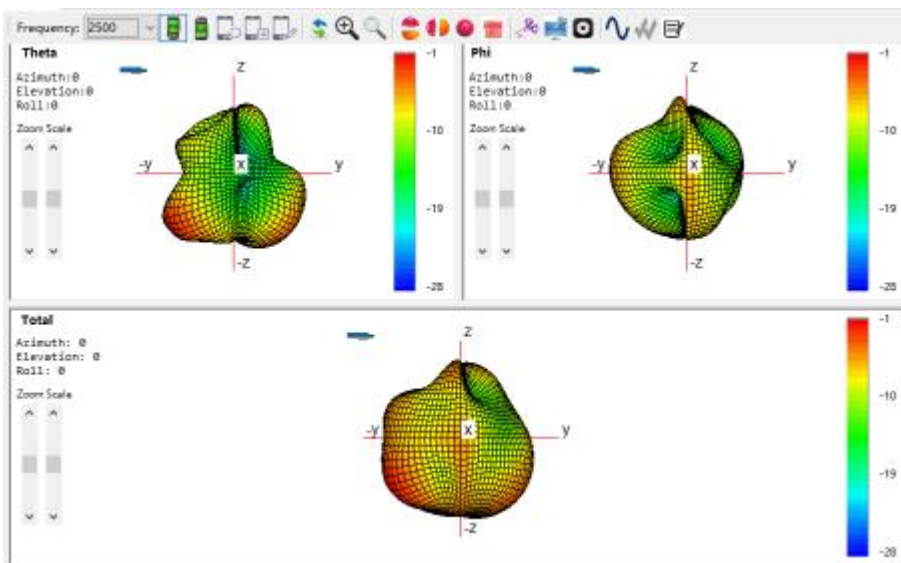
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3D for 2450MHz



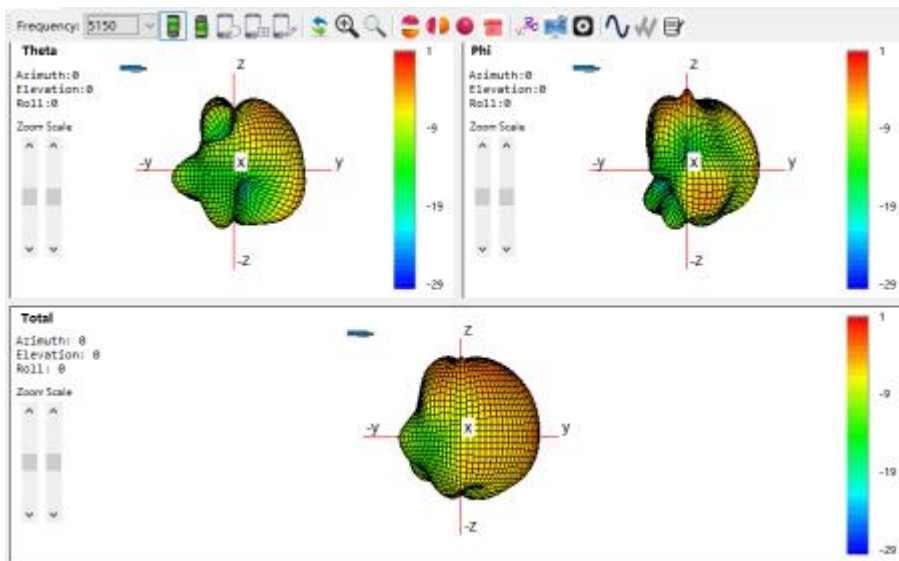
3D for 2500MHz



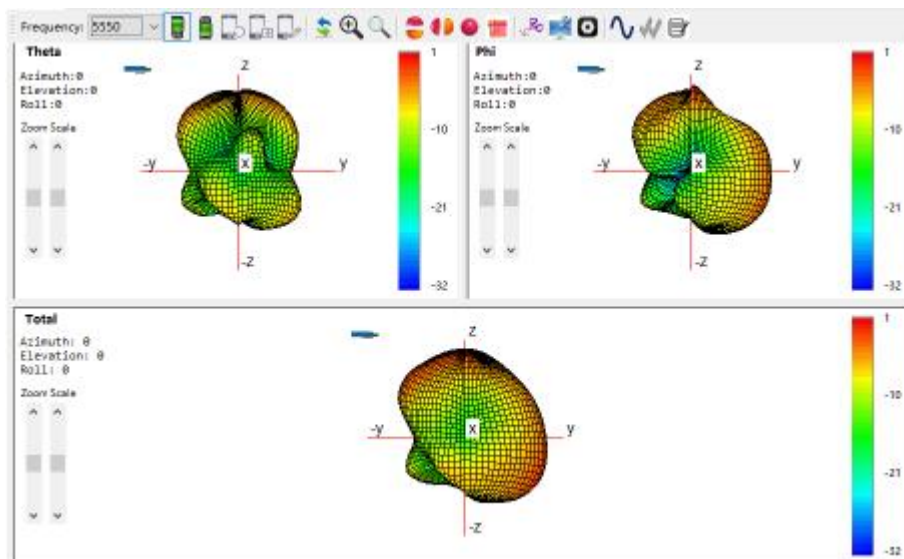
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3D for 5150MHz



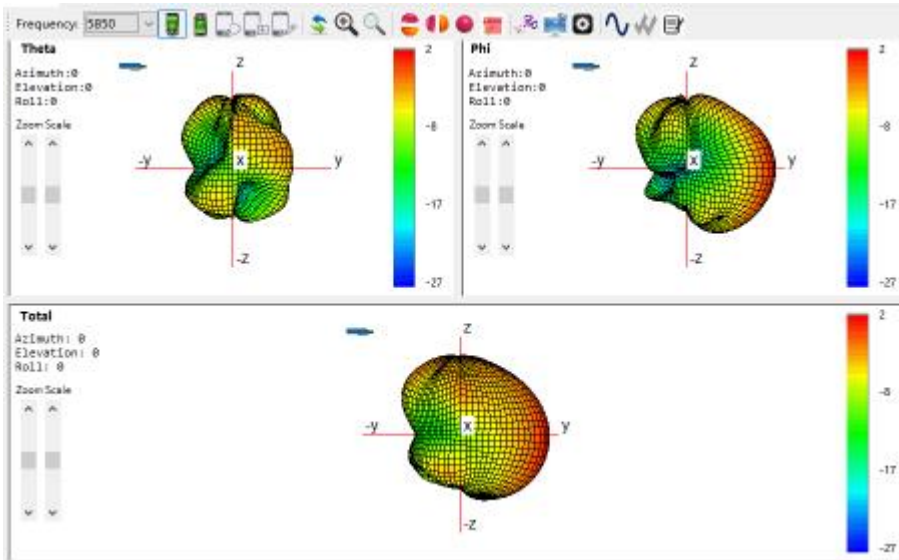
3D for 5550MHz



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3D for 5850MHz



2.3 Power (TRP) 、 Sensitivity (TIS) Test

2.3.1 Test site

SUNWAY Anechoic chamber: The test frequency range is 700Hz-6GHz, the electrostatic zone range is 50cm circumference, and the reflectivity is less than -50 dB.

2.3.2 Test Equipment

Agilent E5071B Vector network analyzer、 standard horn antenna、 American ETS AMS8500 antenna test system, etc.

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2.3.3 Test results

The tested values related to the power and sensitivity in the microwave anechoic chamber are shown in the following table :

WIFI (Free Space)			
Frequency band	Channel	TRP (dBm)	TIS (dBm)
802.11b	1	13.45	-80.7
	6	14.0	-80.86
	11	13.97	-80.45
802.11A	36	13.54	-70.62
	149	14.18	-71.01
	165	14.12	-70.73

GPS	TIS	CNO	UHS
	-154.65	42.95	-150.457

3 Conclusion

This antenna is designed based on the prototype provided by the customer.

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4 Structure Drawing:

[illegible]

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5 Dimension Report

 深圳市信维通信股份有限公司 SHENZHEN SUNWAY COMMUNICATION CO.,LTD 尺寸检测报告 Dimension Inspection Report																						
项目编号 Project NO.		SFW05		零件编号 Part NO.		/		零件名称 Part Name			SFW05-B2-BWG-FPC			零件数量 quantity		3	FAI 尺寸数		CPK 尺寸数	5	NG 尺寸数	0
检测类型 Test type		制样测量		生产班次 Shift		A班		料号 Part NO			1100021960			图纸版本 Drawing rev		A0	测量员 Inspect.		审核 Check.	日期 Date	2024/8/1	
SPC No.	FAI No.	标称值 Nominal	正公差 Usl Tol	负公差 Lsl Tol	上限 Upper	下限 Lower	测量值 Measurement value			判定 Judge	量具 Gauge	最大值 MAX.	最小值 MIN.	平均值 Mean	% Tolerance		标准差 Std Dev	CP	CPK	备注 Remark		
1		21.72	0.18	-0.18	21.9	21.54	21.659	21.664	21.652	OK	OMM	21.664	21.652	21.658	0%	38%	0.006	9.954	6.544			
2		7.36	0.18	-0.18	7.54	7.18	7.366	7.364	7.372	OK	OMM	7.372	7.364	7.367	7%	0%	0.004	14.412	13.824			
3		24.28	0.18	-0.18	24.46	24.1	24.248	24.257	24.255	OK	OMM	24.257	24.248	24.253	0%	18%	0.005	12.696	10.815			
4		31.1	0.18	-0.18	31.28	30.92	31.057	31.047	31.062	OK	OMM	31.062	31.047	31.055	0%	29%	0.008	7.856	5.906			
5		0.12	0.03	-0.03	0.15	0.09	0.117	0.124	0.12	OK	OMM	0.124	0.117	0.120	13%	10%	0.004	2.847	2.816			

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6 Package Specification

Process Capability Studies Required (CPK≥1.33)
Statistical Process Capability Studies Required (SPC≥1)

信维机密，未经许可不得扩散

No. 序号/Verify Serial No. 校验编码 Rev. 版本

132PCS/箱
空架位置补齐
(FPC供应商来料透明PET微粘膜包装)

每25张用美纹胶粘膜捆成一扎。

每扎顶部和底部各用一个隔纸，外面套一个塑袋，装入纸箱。
用包装带十字捆扎成一捆，外面套一个塑袋，装入纸箱。

用包装胶布封箱，顶部贴一个
新时贴纸标签，贴封其它出货标签。

1

2

3

4

深圳信维通信技术有限公司
SHENZHEN SUNWAY COMMUNICATIONS CO., LTD.
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Shenzhen Sunway

SCALE 1: 1
SIZE AA
THICK. 厚度 0.25mm
COLOR 颜色 N/A
PRODUCT SF7005-01
PART NO. 零件号 SF7005-01-010-0-FPC-包装规范

Rev. A1

Part No. 料号

CHANGE HISTORY 变更履历

初版发行

2024-04-1

DATE 日期

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7 Reliability Test Report

B838 BWG						
序号	试验项目	数量	试验条件	试验设备	判定标准	测试结论
1	温度冲击	3PCS	将产品置入冲击试验箱中,要求:冷热冲击-40℃ 30 分钟, 85℃30 分钟, 72 个循环.	冷热冲击试验箱	样品无氧化、变形、开裂现象,无分层异常,性能符合规格要求。	pass
2	高温高湿	3PCS	高温高湿 80℃/80%RH; 恒温恒湿箱中保持 120H; 静置 2H;	恒温恒湿试验箱	样品无氧化、变形、开裂现象,无分层异常,性能符合规格要求。	pass
3	盐雾测试	3PCS	盐雾试验浓度 5%, 35℃,连续喷雾 48H	盐雾测试仪	样品无变形、开裂现象; 样品无分层现象; 金面无氧化、露底铜、明显变色,性能符合规格要求	pass
4	弯折测试	3PCS	1. 测试前先检查产品外观及性能; 2. 放置于弯折测试机弯折 15 次; 3. 弯折角度: ±180 度; 4. 实验完成后取出产品, 检查外观及性能;	弯折治具	1. 弯折区域无 <u>coverlay</u> 或油墨无开裂现象; 2. 线路切片无裂纹; 3. 性能符合规格书要求;	pass
5	耐磨测试	3PCS	1. 测试前先检查产品外观及性能; 2. 用专用的橡皮(橡皮型号: 130686), 施加 175g 的载荷, 以 20 次/分钟~30 次/分钟的速度, 以 20mm 的行程, 在样本表面来回磨擦 5 个循环; 3. 实验完成后取出产品, 检查外观及性能; 4. 测试位置: 条码, FPC 丝印文字	橡皮型号 130686	1. 图层文字不可有明显脱落, 允许字体/油墨有轻微的磨损及退色, 但要求字体/油墨内容仍完整且清晰可认; 2. 性能符合规格书要求;	pass
6	图层、文字附着力测试	3PCS	1. 测试前先检查产品外观及性能; 2. 用 3M600#胶带粘贴被测试区, 并用橡皮擦用 500g 力擦拭胶带, 以加强胶带与被测试区接触面积的力度; 3. 用手抓住胶带的另一端, 以垂直(90 度)瞬间提起胶带, 相同位置重复 2 次测试; 4. 实验完成后取出产品, 检查外观及性能;	3M600#胶带/橡皮擦	1. 镀层/字体/油墨层不可有明显脱落 2. 性能符合规格书要求;	pass

8 Manufacturer and Address

Manufacturer:

SHENZHEN SUNWAY COMMUNICATION CO., LTD

Address:

1013, Xihuan Rd., Shajing Town, Bao'an District, Shenzhen, P.R. China

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