



MULTECH PCB TECHNOLOGIES CO., LIMITED

艾尔特线路科技(HK)有限公司

Homepage: www.multech-pcb.com

E-mail: marketing@multech-pcb.com, UL: E320829

CERTIFICATION OF COMPLIANCE

Dear Customer:

This is to certify that the enclosed material have been manufactured and inspected in accordance with customer drawing and specification. All units have found to meet, or exceed the required specifications which include the construction, dimension and raw material. And the following parameter(s) of testing is performed on 100% basis in compliance with customer specification.

ITEM/项目	DESCRIPTION/说明	ACTUAL/结果
1	Customer name/客户名称	A300
2	Customer P/N/客户型号	handheld-resistive-probev-0p6
3	Internal P/N/厂家生产编号	
4	Customer P/O/客户订单号	202001020001
5	Shipment quantity/交货数量	50PCS
6	Inspection standard/检查标准	. IPC 6012 & IPC 600 CLASS 2
7	UL plame class/UL 耐燃级别	94V-0
8	Our UL designation/UL 标示(“兄”字)	
10	Laminate type/板材类型	FR-4 ROGERS R04350B, ITEQ IT180A
11	Date code /生产周期	0420
12	Ship date / 出货日期	2020. 02. 05
13	Where is the product made in /产品出产地	China
14	Where compliant ROHS request/是否满足客户 ROHS要求	YES
15	Customer DWG/客户资料	

Thanks for your attention !!

Certified by : ZHONG XING

Date : 2020.02.05

Quality Assurance Manager

WILLAM
Signature



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Microsection Test Report

PROD P/N : _____ DATE CODE: 0420
 CUSTOMER P/N : handheld-resistive-probev-0p6 LOT NO. : /
 CUSTOMER : A300 JOB CODE : /
 REF.NO : _____ QUANTITY : 1PCS

1.0 Thickness of copper/孔铜厚测试(unit:um)

Speciment location/采样位置

Thickness copper/铜厚 unit/单位 : um					
Test point/ 测试点	request/要求	Actual/实际	surface copper thickness /表铜		
			Point/测试点	Request /要求	Actual/实际
A	≥20 Avg /	22	A	>=35	36
B	≥20 Avg /	20	B	>=35	38
C	≥20 Avg /	21	C	>=35	36
D	≥20 Avg /	21	D	>=35	38
E	≥20 Avg /	20			
F	≥20 Avg /	24			
Max		24			38
Min		20			36
Aver		21			37

2.0 Roughness/孔壁粗糙度 unit/单位 : um

Request/要求	Actual/实测	ACC	Rej
≤25.4	16	ACC	

3.0 阻焊厚度(单位: um) Soldermask thickness (Unit:um)

采样位置 Speciment Location				
测试点	要求 Request	实测 Actual	ACC	Rej
A	≥10UM	36.3	ACC	
B	≥10UM	17.2	ACC	
C	≥10UM	22.4	ACC	

4.0 Tin/lead thickness/锡铅厚度 unit/单位: um

Request/要求	Actual/实测	ACC	Rej
/	/	/	



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Microsection Test Report

5.0 CU & Medium Layer thickness/铜厚及介质层厚度测量 unit/单位: um

铜厚 CU Thickness			介质层厚度 Medium Layer thickness			ACC	Rej
层数 Layer	要求 Request	实际 Actual	层数 Layer	要求 Request	实际 Actual		
L1	1oz	36	L1~L2	508+64/-64	504	ACC	
L2	0.5oz	15	L2~L3	408+50/-50	409	ACC	
L3	0.5oz	13	L3~L4	510+64/-64	532	ACC	
L4	1oz	36				ACC	

6.0 Ni-Au thickness/镍金厚 unit/单位: um

Request/要求	Actual/实测	ACC	Rej
Ag THK:0.12-4	0.152	ACC	

7.0. Defects Inspection/缺陷检测

Item/项目	Request要求	Actual/实际	Acc	Rej
镀层裂纹 plating crack	Not found	Not found	Acc	
树脂内缩 resin recession	Not found	Not found	Acc	
镀层空洞 plating void	Not found	Not found	Acc	
分层 delamination	Not found	Not found	Acc	
钻污 smear	Not found	Not found	Acc	
铜裂缝 copper crack	Not found	Not found	Acc	
起泡 blistering	Not found	Not found	Acc	
连接面分离 interconnection separation	Not found	Not found	Acc	
基材空洞 laminate void	Not found	Not found	Acc	
灯芯 wicking	<0.1mm	<0.02mm	Acc	
钉头 nail heading	Not found	Not found	Acc	

Final result : ☒ Acc ☐ Rej

Prepared by: ZHONG XING Approved by: WILLAM



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ROHS COMPLIANCE CERTIFICATE

Dear Customer,

This is to certify that the Printed Circuit Boards we manufactured are complied with ROHS compliance.

PROD P/N : / DATE CODE: 0420
CUSTOMER P/N handheld-resistive-probev-0p6 LOT NO. : /
CUSTOMER : A300 JOB CODE : /
REF.NO : / QUANTITY : 50PCS

NO.	Test Item	% Limit	Result
1	Lead (pb)	0.1(1000 Ppm)	Not detected
2	Cadmium(Cd)	0.01(100 Ppm)	Not detected
3	Mercury(Hg).	0.1(1000 Ppm)	Not detected
4	Chromium VI(Cr+6 or CrVI)	0.1(1000 Ppm)	Not detected
5	PBBs	0.1(1000 Ppm)	Not detected
6	PBDEs	0.1(1000 Ppm)	Not detected
7	DIBP	0.1(1000 Ppm)	Not detected
8	DEHP	0.1(1000 Ppm)	Not detected
9	BBP	0.1(1000 Ppm)	Not detected
10	DBP	0.1(1000 Ppm)	Not detected

Date : 2020.02.05

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ELECTRIC TEST REPORT

PROD P/N : _____ DATE CODE: 0420
CUSTOMER P/N : handheld-resistive-probev-0p6 LOT NO. : /
CUSTOMER : A300 JOB CODE : /
REF.NO : _____ QUANTITY : 50PCS

Quantity/数量	Test time/时间		Test Condition /测试条件	Test type/测试类型
☐ Electric	2min/1PCS		正常条件 (温度23℃, 湿度52.5%)	Electric
☒ Fly probe				
Test condition 测试条件	voltage 测试电压	250V	Conductive resistance 导通电阻	30Ω
	electricity 测试电流	10 mA	Insistance resistance 绝缘电阻	25MΩ
Test Result 测试结果	Total 总数	50PCS	Pass 合格	50PCS
	Open 开路	0	Short 短路	0
	Thru no 导通不良	0	Insulation no 绝缘不良	0

Checked by: ZHONG XING

Approved By: WILLAM

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Products final audit report

生产报告

PROD P/N : _____ DATE CODE: 0420
CUSTOMER P/N : handheld-resistive-probev-0p6 LOT NO. : /
CUSTOMER : A300 JOB CODE : /
REF.NO : _____ QUANTITY : 50PCS

1.0 Material/物料

Item 项目	Inspection Method 测试方法	Requirement 要求	Actual 实际	Acc	Rej
Laminate type 板材	Visual 目检	☒ ROGERS RO4350B,ITEQ IT180A	☒ ROGERS RO4350B,ITEQ IT180A	Acc	
		☐ PTEE	☐ PTEE		
		☒ 高-Tg≥170	☒ 高-Tg≥170	Acc	
		☐ 其它	☐ 其它		
Soldermask type 绿油类型	Visual 目检	☒ H-81008BL	☒ H-81008BL	Acc	
		☐ PSR-2000 DXS3D	☐ PSR-2000 DXS3D		
		☐ TaiYang PSR-4000	☐ TaiYang PSR-4000		
		☐ 其它	☐ 其它		
Soldermask color 绿油颜色	Visual 目检	☒ Blue 蓝色	☒ Blue 蓝色	Acc	
		☐ red 红色	☐ red 红色		
		☐ black 黑色	☐ black 黑色		
		☐ dark green 亚色绿油	☐ dark green 亚色绿油		
		☐ 其它	☐ 其它		
C/M Type 字符	Visual 目检	☒ SR-500_HCW1/CA-66_HA	☒ SR-500_HCW1/CA-66_HA	Acc	
		☐ ASR-150	☐ ASR-150		
		☐ S-380W	☐ S-380W		
C/M Color 字符颜色	Visual 目检	☐ Yellow 黄色	☐ Yellow 黄色		
		☒ white 白色	☒ white 白色	Acc	
		☐ 其它	☐ 其它		
Peelable soldermask 可剥离兰胶	Visual 目检	/	/	/	

2.0 Board thickness Measurement/板厚测量 unit/单位: mm

Item 项目	Inspection Method 测试方法	Requirement 要求	Actual 实际	Acc	Rej
Thickness 板厚	Micrometer 千分尺	1.6+/-0.16	1.723	Acc	
Size 尺寸	three-D 三次元	8*75+/-0.13MM	7.98*75.02	Acc	



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3.0 Marking 标记

Item 项目	Inspection Method 测试方法	Requirement 要求	Actual 实际	Acc	Rej
logo 标记	Visual 目检	☐ By S/M 阻焊	☐ By S/M 阻焊		
		☒ By C/M 字符	☒ By C/M 字符	Acc	
		☐ By Etch 蚀刻	☐ By Etch 蚀刻		
		☐ By Comp side 元件面	☐ By Comp side 元件面		
		☒ By Solder side 焊接面	☒ By Solder side 焊接面	Acc	
Date code 周期标记	Visual 目检	☒ WWYY 周年	☒ WWYY 周年	Acc	
		☐ YYWW 年周	☐ YYWW 年周		
		☐ By S/M 阻焊	☐ By S/M 阻焊		
		☒ By C/M 字符	☒ By C/M 字符	Acc	
		☐ By Etch 蚀刻	☐ By Etch 蚀刻		
		☐ By Comp side 元件面	☐ By Comp side 元件面		
		☒ By Solder side 焊接面	☒ By Solder side 焊接面	Acc	
Customer P/N 客户型号	Visual 目检	☐ P/N 型号	☐ P/N 型号		
		☐ By S/M 阻焊	☐ By S/M 阻焊		
		☐ By C/M 字符	☐ By C/M 字符		
		☐ By Etch 蚀刻	☐ By Etch 蚀刻		
		☐ By Comp side 元件面	☐ By Comp side 元件面		
		☐ By Solder side 焊接面	☐ By Solder side 焊接面		

4.0 Line wide/space measurement (线宽线隙测试) unit/单位: mm

Item 项目	Inspection Method 测试方法	Requirement 要求		Actual 实际	Acc	Rej
		Comp side 元件面:	0.5+/-20%	0.493	Acc	
		Solder side 焊接面:	+/-%	/	/	
Line space 线隙 (external layer)	100倍放大镜 100times magnifier 100倍放大镜 100times magnifier	Comp side 元件面:	0.1+/-20%	0.105	Acc	
		L3	0.318±20%	0.322	Acc	
		Solder side 焊接面:	0.338+/-20%	0.333	Acc	
SMT&BGA side	100倍放大镜 100times magnifier	BGA: /		/	/	
Annularring 焊环	100倍放大镜 100times magnifier	≥0.05mm		0.17mm	Acc	



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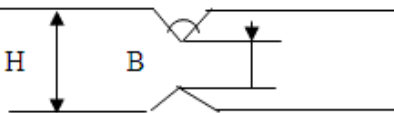
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Products final audit report

生产报告

5.0 Warpage Measurement (板曲度测量)				
Inspection Method 测试方法	Requirement 要求	Actual 实际	Acc	Rej
IPC II	$\leq 0.75\%$	0.19%	Acc	

6.0 V-CUT Measurement (V-CUT测量)

Inspection Method 测试方法	Requirement 要求:	Actual 实际	Acc	Rej
	H: / B: /	H: / B: /	/	

7.0 Gold finger Measurement (金手指角度测试)

Inspection Method 测试方法	Requirement 要求	Actual 实际	Acc	Rej
Measurement by angle magnifier 角度镜测试		N/A		

7.0 Visual inspection (外观检查)

Inspection Method 测试方法	Requirement 要求:	Actual 实际	Acc	Rej
IPC-A-600 /Customer request	NO visual defects 无外观不良	☒ No defects 无缺陷	Acc	
		☐ have defects 有缺陷		

8.0 Hole size method (孔径检查)

Inspection Method 测试方法	By pin Gauge (用针规) unit/单位: mm				
Hole size 孔径	Requirement 要求		Actual 实际	PTH & NPTH	Result
0.300	+ 0.1	- 0.1	0.26	PTH	ACC

Final result : ☒ Acc ☐ Rej

Prepared by: ZHONG XNG

Approved by: WILLAM



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Characteristic Impedance Test Report

PROD P/N : _____ DATE CODE: 0420
CUSTOMER P/N : handheld-resistive-probev-0p6 LOT NO. : /
CUSTOMER : A300 JOB CODE : /
REF.NO : _____ QUANTITY : 50PCS

Material							
Board Thickness		1.6+/-0.16					
Dielectric Constant							
Stack up		Lyr	层制率_铜重		Image	Info.	客户要求
		glt	CU(%):77.7	0.5oz		RO4350B 0.508mm 0.5/0.5(不含铜)	508+64/-64um[101]
		I2s	CU(%):81.68	0.5oz		IT180ABS 7628H RC51	
						IT180ABS 7628H RC51	408+50/-50um
						IT180A 0.51mm 0.5/0.5(不含铜)	510+64/-64um[102]
		I3s	CU(%):18	0.5oz			
	gbl	CU(%):18	0.5oz				
Item	Design	Actual			Adjustment	Layer	
		Max	Min	Average			
Unitline Impedance (ohm)	50+/-5	52.22	46.56	53.62		L1	
Differential Impedance							
Inspection Method	Cits500 by TDR						
Conclusion	☒ Pass ☐ Fail ☐ Others						

Check by: ZHONG XING

Approved by : WILLAM



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SOLDERABILITY TEST REPORT

PROD P/N : _____ DATE CODE: _____ 0420
CUSTOMER P/N : handheld-resistive-probev-0p6 LOT NO. : _____ /
CUSTOMER : A300 JOB CODE : _____ /
REF. NO : _____ QUANTITY : _____ 1PCS

TEST METHOD : IN ACCORDANCE WITH IPC-TM-650
APPARATUS : SOLDER POT , THERMOMETER . FLUX: _____ ETC HF-268
TEST CONDITION : BANKING TEMP: 0°C , TIME: 0 HOURS 0 HOURS
SOLDERING TEMP: 255°C 3s*1T
TEST METHOD : ☐ Wave solder ☐ Dip solder ☒ Float solder

After tested specimen and defect:

1. Discolor : _____ NO _____ 2. Wrinkles : _____ NO _____
3. Delamination: _____ NO _____ 4. Lifted Lands : _____ NO _____
5. Measling : _____ NO _____ 6. Blow-hole : _____ NO _____
7. Solder mask peel off: _____ NO _____
8. Solder filled into holes-wall not completely : _____ NO _____

Remarks: _____

Dispositon : ACC ☒ TIME: _____ HOURS REJ ☐

TEST BY : _____ ZHONG XING _____ Date: _____ 2020.02.05 _____

Approved by : _____ WILLAM _____ Date: _____ 2020.02.05 _____