



NCAB Outgoing Report

The details in this report only for NEW Date Code included in this shipment. The information of OLD date codes is already provided in previous outgoing reports of OLD Date Codes at the first time shipped.

End Customer(if available)/终端客户(如果有):

End Customer PO(if available)/终端客户PO(如果有):

End Customer Article(if available)/终端客户品名(如果有): /

Delivery Qty/Date code/交货数量/周期: 102pcs/[26pcs3219old/76pcs0420new]

External ECN No./外部工程更改号: /

NCAB article/NCAB 编号: MEH96_v11

NCAB PO/NCAB订单号: 2001103006

Production Number/制造商编号: 100242536H0299A

This certificate is to serve as proof that all requirements of customer's specification are maintained in fabrication of this lot. This report contains below items which are remarked with "√":
谨以此证明书作为保证, 此批产品之制造过程均合乎客户所有规格要求. 本报告包含以下有"√"标识的项目:

- 1. CERTIFICATE OF COMPLIANCE
- 2. RoHS Declaration
- 3. REACH Declaration
- 4. Qualification and Performance
- 4.1 Finish boards meet all requirements of UL 796 and flammability rating 94V-0
- 5. Stack-up Measurement
- 6. Hole Size Measurement
- 7. Dimensional Measurement
- 8. Drawing Attachment
- 9. Ionic Contamination Report
- 10. CoC of Raw Materials (Provided only when customer specified)
- 11. Others

Signature by :

核准:

(QA Manager/品质部经理)

Factory name
and plant site

Suntak Dalian plant
No.11,Guangming West Street,Economic Developing District,
Dalian, China

工厂名称和厂址:

DATE	2011-6-23	DATE CHANGED	2019-7-18	REG.NO	7.4.1.33	REVISION	7
ACCEPTEDBY	Wendy Liu	MADE BY	Cathy Wang	COMPANY	NCAB Group		



NCAB CERTIFICATE OF COMPLIANCE

CERTIFICATION OF COMPLIANCE

This certificate is to serve as proof that all requirements of customer's specification are maintained in fabrication of this lot including the followings:

谨以此证明书作为保证，此批产品之制造过程均合乎客户所有规格要求，包括以下项目

- 1 All PCBs shipped should comply with the customer supplied data / procurements specifications / drawings / specified standards / any changes applied through the EQ process.
所有交货板必需与客户提供的资料/采购标准/图纸/指定标准/确认的EQ保持一致.
- 2 Laminate and prepreg used in fabrication are in compliance with the related standards IPC-4101/4202/4203/4204 etc.
覆铜板及半固化片符合 IPC-4101/4202/4203/4204等相关标准.
- 3 All final boards have been 100% electrically tested and passed.
所有成品板 100%电子测试合格.

All information listed on this document is hereby certified in writing to be true.
所有此证书之资料均书面证明属实.

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Test and inspection acc. to Specification: IPC-A-600 / IPC-6012 etc related standards latest revision & customer spec if required.

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NCAB PO/NCAB 订单号: 2001103006

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Confirmed here with that production is according to:

- Flammability UL94V-0;

- UL796;

- IPC6012D latest revision, Class: _____ 2

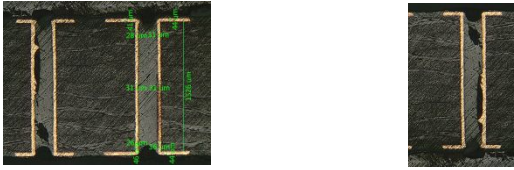
- Customer specification requirement: __NCAB____;

- ROHS Yes No

Microsection (IPC-A-600 / IPC-6012 etc related standards latest revision)

Tested items: Built-up, internal layer connection, isolation spacing internal layer, Hole wall roughness, Plating thickness **unit is mm if unless otherwise specified**

No#	Insp item	Description	Specification/标准值	Actual/实际值	Unit/单位	Reference	Acc/Rej	
1.	Laminate 板料	Material Batch Number 基材批次号		W9722B03ID 500			ACC	
		Material(brand/type) 基材品名/型号	FR-4 ITEQ IT158TC	FR-4 ITEQ IT158TC		Procurement Documentation	ACC	
		Tg value	TG> 150	TG> 150			ACC	
2.	Finish board thickness and finished Cu thickness of each layer 完成板厚和各层完成铜厚	Layer Number 层数	2	2		IPC 6012 Class 3 and Procurement Documentation	ACC	
		Specification 标准值	Please see Stack-up&Impedance sheet 测量结果请见排版结构和阻抗页.				ACC	
3.	Base copper foil 铜箔	Outer layer/外层	0.5/0.5	0.5/0.5	oz	Procurement Documentation	ACC	
		Inner layer/内层	/	/	oz		NA	
4.	Logo&UL content 标记和UL内容	Company Logo/公司标记	S	S		Procurement Documentation	ACC	
		UL File Number & UL Content/UL文件编号和UL内容	S STD-3 兄 94V-0 E207844	S STD-3 兄 94V-0 E207844			ACC	
		Factory ID of UL content/UL内容里的工厂ID	3	3			ACC	
		Marking Location/标记位置	S/S	S/S			ACC	
5.	Solder mask 阻焊油墨	Solder mask Batch Number 油墨材料批次号		59183035A		Procurement Documentation	ACC	
		Brand/Type 品牌/型号	NANYA LP-4G/G-05A	NANYA LP-4G/G-05A			ACC	
		Color/颜色	Green	Green			ACC	
		Thickness 厚度	A:>8	46	um	IPC-6012 3.7.3 or Procurement Documentation	ACC	
			B:10-30	28	um		ACC	
		C:>5	20	um	ACC			
6.	Silkscreen 丝印字符	Silkscreen Batch Number 字符材料批次号		2MSNLB01DB		Procurement Documentation	ACC	
		Brand/Type 品牌/型号	SUNCHEMICAL_CESN5054	SUNCHEMICAL_CESN5054			ACC	
		Color/颜色	White	White			ACC	
		Which side 哪面	C/S & S/S	C/S & S/S			ACC	
7.	Others 其它	Peelable mask/蓝胶	Brand(Type) 品牌(型号)	NA	NA	Procurement Documentation or IPC Standard	NA	
			Which side 哪面	NA	NA		NA	
			Thickness 厚度	NA	NA		mm	NA
		Kapton tape/高温胶带	Brand(Type) 品牌(型号)	NA	NA		NA	
			Which side 哪面	NA	NA		NA	
		Via plugging/塞孔油墨	Brand(Type) 品牌(型号)	PHP-900 IR-6P	PHP-900 IR-6P		ACC	
			Brand(Type) 品牌(型号)	NA	NA		NA	
		Carbon ink/碳油	Which side 哪面	NA	NA		NA	
			Thickness 厚度	NA	NA		mm	NA
			Impedance value/阻值	NA	NA		ohms	NA

8.	Surface Treatment and thickness 表面处理及其厚度	Surface Treatment Type / 表面处理类型	Thickness Specification / 厚度要求	Requirement测量要求: Measure 5 points for each treatment / 对板内包含的每类表面处理的厚度各测量5组数据(Unit/单位: um) (≥ 2 shipping panels must be measured unless the order QTY is <2 shipping panel / 至少取2块出货板测量除非订单数少于2块)				Reference	Acc/Rej
		Type/类型: HASL/有铅喷锡, LF HASL/无铅喷锡, Immersion Tin/沉锡, Immersion Silver/沉银, OSP/防氧化, Others /其它.....							
		Sn THK(HAL(Tin lead)(SURFACE))	Sn :1-40	①Thk: 4.524 ④Thk: 4.317	②Thk: 4.518 ⑤Thk: 4.549	③Thk: 4.623 /	μm μm	Procurement Documentation /IPC Standard	ACC
		Type/类型: ENIG/沉金, Plated Ni/Au/电金, Gold finger/镀金指, Others/其它.....							
		①Thk: ②Thk: ③Thk: ④Thk: ⑤Thk:	Au: Au: Au: Au: Au:	Ni: Ni: Ni: Ni: Ni:	μm μm μm μm μm	Procurement Documentation /IPC Standard	NA		
9.	Microsection on 切片	a. Picture: Put the actual picture of micro-section about hole herein:						Reference	Acc/Rej
								IPC 6012 Class 3 3.2.6 or Procurement Documentation	ACC
		Remarks: Microsection should be made from at least three of the smallest via hole location. Relevant information of all layers must be presented in here, in case of one section cannot cover all information, then 2 or more sections must be done. Besides, microsection should be done after 3 cycles thermal stress(288+/-5C, 10 seconds) 备注: 微切片必须包含最小的3个孔。所有层的相关信息都必须在此呈现, 倘若一个切片不能呈现所有信息, 那么两个甚至更多的切片是必须做的。 另外, 切片需经过3次热应力(288+/-5度, 10秒).							
		b. COPPER THICKNESS(孔铜厚度)						Reference	Acc/Rej
		Type/类别	Specification /标准值	Actual/实际值			Unit/单位	IPC 6012 Class 3 3.2.6 or Procurement Documentation	ACC
		Through hole/通孔	Min20/Avg25	A:31 D:26 Avg:32.67	B:31 E:31	C:36 F:28	um um um		
		Blind via/盲孔	NA	NA NA Avg: NA	NA NA	NA NA	um um um	NA	
		Buried via/埋孔	NA	NA NA Avg: NA	NA NA	NA NA	um um um		
		Copper wrap thickness 铜包覆厚度					um		
		Copper cap plating thickness 铜盖覆电镀厚度					um		
c. DEFECTS INSPECTION:						Reference	Acc/Rej		
hole wall roughness/孔粗	≤25	20			um	IPC-A-600	ACC		
Interconnection Separation 孔壁铜和基材分离		NO					ACC		
Plating Crack/电镀裂纹		NO					ACC		
Resin Recession/树脂收缩		NO					ACC		
Plating Void/电镀针孔		NO					ACC		
Delamination/分层		NO					ACC		
Smear/胶迹		NO					ACC		
Copper Crack/铜裂纹		NO					ACC		
Blistering/起泡		NO					ACC		
Laminate Void/板材空洞		NO					ACC		
Wicking/电镀灯芯		NO					ACC		
Nail Heading/电镀结瘤		NO					ACC		

10.	Stack-up structure 排版结构	Measurement	please see Stack-up&Impedance sheet 测量结果请见排版结构和阻抗页.				Procurement Documentation & IPC-6012	ACC	
11.	Impedance control 阻抗控制	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>					Customer design	NA	
		Measurement	please see Stack-up&Impedance sheet 测量结果请见排版结构和阻抗页.						
12.	Key Items Measurement 重点测量项目	Type/类别	Specification/Tolerance 标准值/公差		Actual/实际值		Unit/单位	Reference	Acc/Rej
		Min. track width 最小线宽	i/I(内层):	NA	i/I:	NA	mm	IPC-6012 3.5.1 3.5.2 3.5.4.2 3.5.4.2.2	NA
			o/I(外层):	0.201+/-20%	o/I:	0.206	mm		ACC
		Min. track space 最小线间	i/I(内层):	NA	i/I:	NA	mm		NA
			o/I(外层):	0.19+/-20%	o/I:	0.185	mm		ACC
		Min. BGA pad size 最小的BGA pad尺寸	NA		NA		mm		NA
		Min. SMT width 最小的SMT PAD宽尺寸	0.25*1.55		0.256*1.554		mm		ACC
Fiducial Mark/光学点	NA		NA		mm	NA			
13.	Annular ring 焊环	Internal/内层	Via: NA		NA		mm	IPC-6012 3.6.2.9 3.4.2	NA
			NA		NA		mm		NA
		External/外层	Via: NA		NA		mm		NA
			0.05mm		0.086mm		mm		ACC
14.	Board Size 板尺寸	Unit Size /单元尺寸	99.799*160.2		99.77*160.18		mm	Procurement Documentation	ACC
		Shipping Panel size /出货套板尺寸	167.2*199.6		167.22*199.63		mm		ACC
15.	Hole diameter size (Unit:mm)	nominal(标准值) /tolerance(公差)	Please see Hole Size Measurement sheet 测量结果请见孔尺寸测量页.				Pin Gauge	ACC	
16.	Dimensional Results (Unit:mm) Remarks: The series No. of each dimension should be same as marked in the fabricating drawing. 尺寸测量结果(单位:mm)尺寸的 序列号必须跟图上标注的尺寸顺 序一致	nominal(标准值)/ tolerance(公差)	Please see Dimensional Measurement sheet 测量结果请见尺寸测量页. Remarks: The series No. of each dimension should be same as marked in the fabricating drawing. 备注: 尺寸的序列号必须跟图上标注的尺寸顺序一致.				Procurement Documentation X-Y table or X-Y-Z table	ACC	
17.	V-cut	Remaining Thk and Tolerance (余厚和公差)	0.45+/-0.1		Actual 实际值	0.46	mm	V-cut measurer	ACC
		Angle and Tolerance(角度和 公差)	30+/-5			32	°		
18.	Beveling 斜边	Specification(标准值) /Tolerance(公差)	NA		Actual 实际值	NA	mm	Measurer	NA
19.	Bow & Twist 板曲/板翘	Requirement 客户要求	0.75%		Measurement/实际值 (Must measure the maximum Value/必须 测量最大值)	0.21%		Procurement Documentation or IPC-A-600 2.11 if no requirement in procurement documentation	ACC
20.	Ionic contamination test 离子污染测试	Requirement 客户要求 (Unit/单位: µg/cm2)	Test Requirement: The test mode must be adopted the manual mode and test time must be more than 15 minutes. Test result: please see Ionic Contamination Report sheet. 测试要求: 需选择手动测试模式且测试时间须至少15分钟以上. 测试结果: 请见离子污染测试报告页.				IPC-TM-650 2.3.25/NCAB spec/Procurement Documentation	ACC	
21.	Electrical tested 电子测试	All boards must be 100% electrically tested for open and short circuits in accordance with IPC-9252. 所有PCB板必须按IPC-9252要求100%通过开短路电子测试.					IPC-9252	ACC	
22.	Solderability test 可焊性测试	Test method: Depending on surface treatment and IPC standards and NCAB requirement 测试方法: 取决于表面处理, IPC标准和NCAB要求 Preconditioning before doing solderability test: 1. Go through 2 times reflow OR 2. Boards must be baked 4 hours at 155 C 可焊性测试前的预处理: 1). 进行两次R测试; 或 2). 155度下烘烤4小时, Remarks: The condition 1 takes the highest priority, the condition 2 adopted only when the reflow oven unavailable in the factory. 注意: 第一方案优先, 第二个方案在工厂没有R设备的时候才可用					IPC-J-STD-003	ACC	
23.	Thermal stress 热应力测试	Test condition 测试条件	Temperature(温度): 288 C +/- 5 C Time(时间): 10 sec +1/-0 sec, 3times			IPC-TM-650 2.6.8	ACC		
24.	Hardness test of solder mask 绿油硬度测试	Acceptable standard 接受标准	≥ 5H			IPC-TM-650 2.4.27.2	ACC		
25.	Tape test 胶带测试	Solder mask绿油(Test should be perferred done at the solder mask dam area/须首选在绿油桥位置做测试). Test method: IPC-TM-650 2.4.28.1D					IPC-A-600	ACC	
		Surface Treatment表面处理 Test method: IPC-TM-650 2.4.1E						ACC	

Remark: All Inspected and Test items should be done once per new date code of each article.
备注: 每个型号的每个新周期都应该做一次所有项目的检验和测试.

Made by: BYCHI Date: 2020.02.06 Approved by: Jackie Date: 2020.02.06

Test inspector: XFJ Quality Manager: DQCAI


DATE 2011-6-23 DATE CHANGED 2019-7-18 REG.NO 7.4.1.33 REVISION 7
ACCEPTEDBY Wendy Liu MADE BY Cathy Wang COMPANY NCAB Group



Stack-up&impedance measure

Board No.	Board thk/tolerance (板厚/公差)	Actual Value/实际值 (At least 2 shipping panel boards measured unless the order QTY less than 2shipping panel boards/至少取2块出货板测量除非订单数少于2块)		Acc/Rej
		Result1	Result2	
1	1.6+/-0.16	1.529	1.539	ACC
2		1.582	1.608	ACC
3		1.608	1.624	ACC

Stack-up measurement

Layer 层序	Specification value/tolerance (标准值/公差)	Actual/实际值	Acc/Rej	Customer layer-up structure
L1	>=38.4	46	ACC	Put the actual Customer layer-up structure herein: Lyr 层制率_铜质 Image Info. 客户要求 gtl CU(%):27 0.5oz  IT158TC 1.465mm 0.5/0.5(不含铜) gbl CU(%):49 0.5oz
A	1465+130/-130	1526	ACC	
L2	>=38.4	44	ACC	

Impedance Measurement

Layer 层序	Spec Trace width/spacing 客户线宽/间	Spec Impedance 客户阻抗	Actual trace width/spacing 实际线宽/间	Actual Impedance 实际阻抗	Acc/Rej	Micro-section of stack-up

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DIMENSIONAL MEASUREMENT

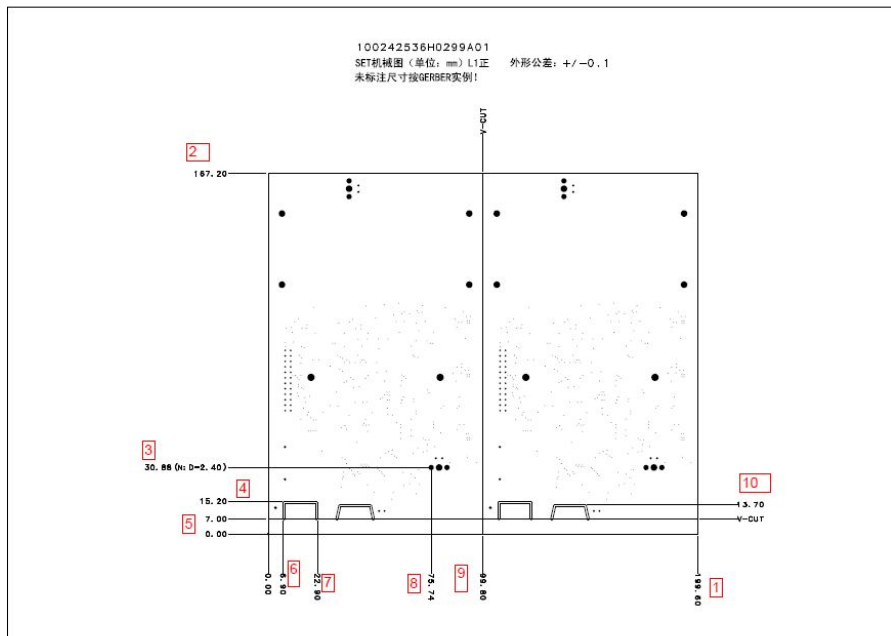
unit is mm if unless otherwise specified

Code (尺寸序列号)	Specification要求		Actual Value/实际值 (At least 2 shipping panel boards measured unless the order QTY less than 2 shipping panel boards/至少取2块出货板测量除非订单数少于2块)		Acc/Rej
	Value标准值	Tolerance公差	Result 1	Result 2	
1	199.6	+/-0.1	199.66	199.64	ACC
2	167.2	+/-0.1	167.25	167.19	ACC
3	30.88	+/-0.1	30.86	30.88	ACC
4	15.2	+/-0.1	15.18	15.28	ACC
5	7	+/-0.1	6.95	7.08	ACC
6	6.9	+/-0.1	6.96	6.93	ACC
7	22.9	+/-0.1	22.96	22.97	ACC
8	75.74	+/-0.1	75.77	75.71	ACC
9	99.8	+/-0.1	99.80	99.87	ACC
10	13.7	+/-0.1	13.69	13.71	ACC

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Put the actual Drawing herein:

(If the drawing is too big and the data will be unclear when attached in here, then factory can insert the drawings by the attachments way in here. But the drawings should be printed and attached in paper file/如果所附图纸太大导致数据不能清楚显示, 那么工厂可以使用插入的方式将 图纸插入在此页中。但是纸档报告中应将此图纸打印出来)



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Ionic Contamination Test

NCAB article/NCAB 编号: MEH96_v11

Test Method 测试方法	IPC-TM-650 2.3.25
Test time 测试时间	≥ 15 min (分钟)
Specification/标准值	≤1ug.Nacl/sq.cm
Actual/实际值	0.178ug.Nacl/sq.cm
Acc/Rej	<input checked="" type="checkbox"/> Acc <input type="checkbox"/> Rej

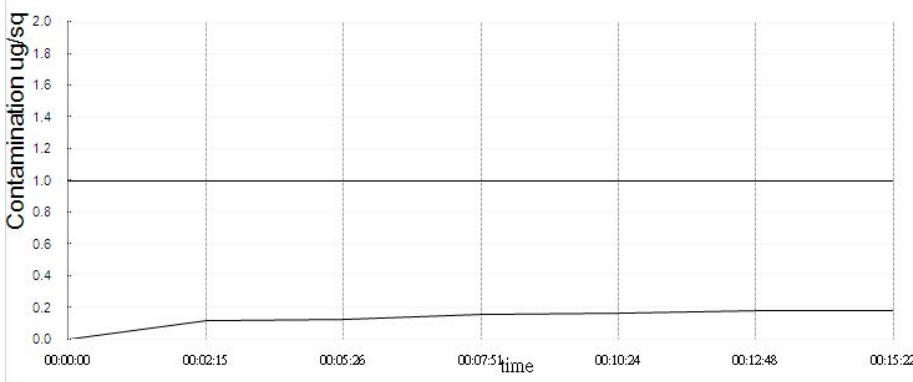
Put the actual curves picture of Contamination Test herein:

Suntak
Address1
Address2
City,State,ZIP
Phone
Fax/Email
Commnt



Test Description:	Test Feb06.20 _015921	Name:	242536
Status:	Passed	Nomenclature:	None
Result:	0.178 ug/Square	Part Number:	None
Start Time:	01:59:21	Comment:	None
Total Run Time :	00:15:22	Length:	19.96 cm
Tset Type:	Dynamic Test	Width:	16.72 cm
Test Date:	02/06/2020	Area:	667.5 sq cm
Baseline Resistivity:	336.90 MΩ-cm	Termination:	Automatic
Final Resistivity:	293.53 MΩ-cm	Duration:	NA
Tempesistivity:	45 Degree C	Sensitivity:	3
Lot / Part No:	None	%IPA:	74.6
Failpoint:	1 ug.Nacl/sq		

Contamination vs Time



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