

承 认 书

Approval Sheet

客户 (Customer): /

客户料号 (Cus .P/N): /

华联威料号 (HLW P/N): MD21-0711-G68

品名规格 (PronameSpec): 上 MINI DIN 双色+下双层 USB2.0

送样日期 (Delivery Date): 2021/12/01

承认日期 (Acknowledge Date): 2021/12/07

Approved No:		客 户 Customer	
采 购 部 Purchasing Dept	品 质 部 QC Dept	工 程 部 Engineering Dept	确 认 Approved By
深 圳 市 华 联 威 电 子 科 技 有 限 公 司 SHEN ZHEN SHI HUA LIAN WEI ELECTRONICS TECHNOLOGY CO; LTD.			
业 务 部 Sales Dept	品 管 部 QC Dept	工 程 部 Engineering Dept	核 准 Checked By
将成英	欠必锋	魏红	唐竹君

地址: 深圳市龙华区观澜街道桂香社区观澜桂花路 307 号

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hua@hlwconn.com

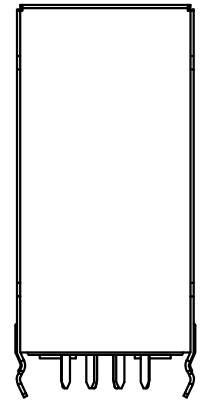
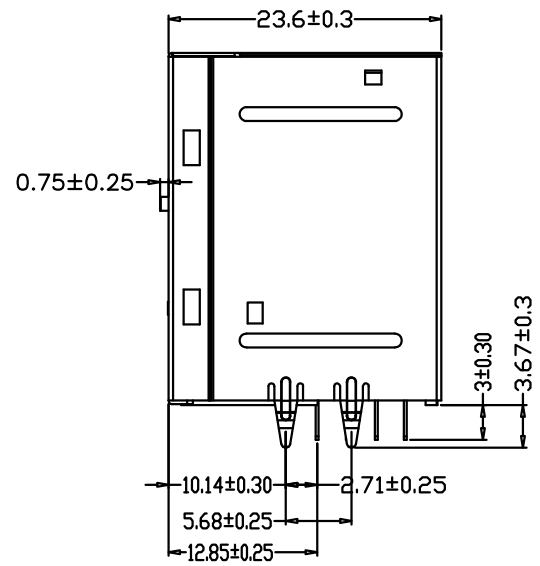
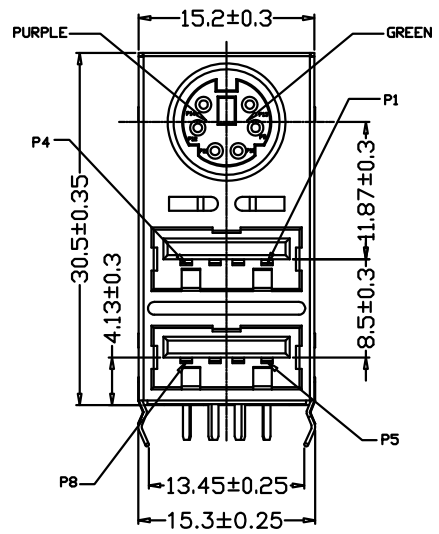
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REV.	ECN.NO.	APPD.
A	/	pcy

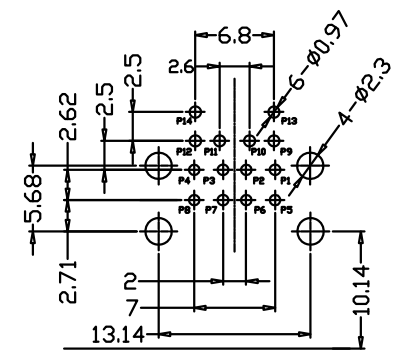
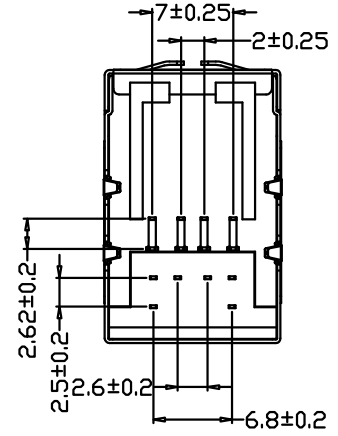


FINISH:

- 1. USB Contact: Gold Flash Plated On Contact Area
Sn Plated On Solderails
Nickel Under Plated Over All**
- 2. Mini Din Contact: Gold Flash Plated On Contact
Area Sn Plated On Solderails
Nickel Under Plated Over All**
- 3. Back Shell: Sn Plated**

MD21-0711-XX8

G:C5191半金G/Fu亮锡
6:LCP 8:黑色



RECOMMENDED PCB LAYOUT

TOLERANCE UNLESS OTHERWISE SPECIFIED		FLW 深圳市华联威电子科技有限公司			
.XXX ±0.10 .XX ±0.20 .X ±0.30		.X' ±3" .XX' ±2"		HUA LIAN WEI TECHNOLOGY ELECTRONICS CO;LTD.	
APPROVED		PART NAME:	上MINI DIN 双色下双层UAB2.0		
CHECKED		PART No:	MD21-0711-X68	C	
DRAWN	Shen	PROJECTION:	UNIT:	SCALE	SHEET
DATE	2021.09.01		mm	1.5:1	10F1
					REV. A

TEST ITEM		REQUIREMENT	PROCEDURE
1	Examination of Product	Meets requirements of product drawing. No physical damage.	Visual inspection.
2	Operating Temperature	0°C ~+50°C	
3	Storage Temperature	-40°C ~+85°C	
ELECTRICAL REQUIREMENT			
4	Rating Voltage	125V AC max	
5	Rating Current	1.5Amperes max	
6	Contact Resistance	[30] m Ohm Max(Initial) [50] m Ohm Max(Final)	Subject mated contacts assembled in housing to 20mV Max open circuit at 100mA Max. EIA-364-6B. Refer to Fig.3
7	Dielectric withstanding Voltage	No creeping discharge or flashover shall occur. Current leakage: 2.0mA MAX	[500]VAC for 1minute Test between adjacent circuits of unmated connector. EIA-364-20B
8	Insulation Resistance	[500] M Ohm Min.	Impressed voltage 500 VDC. Test between adjacent circuits of unmated connector. EIA-364-21C.
9	Temperature Rising	30°C Max. Under loaded rating current	Contact series-wired, apply test current of loaded rating current to the circuit, and measure the temperature rising by probing on soldered areas of contacts, after the temperature becomes stabilized deduct ambient temperature from the measured value.
Mechanical Requirement			
10	Connector Mating Force	4.5 kgf Max.	Operation Speed : [7.5±3] mm/min. Measure the force required to mate connector. EIA-364-13B

11	Connector Unmating Force	0.9 kgf Min.	Operation Speed : [7.5±3] mm/min. Measure the force required to unmate connector. EIA-364-13B
12	Durability	See Note	Operation Speed : [250] cycle/hour. Durability Cycles : 500 Cycles EIA-364-9C
13	Vibration	No electrical discontinuity greater than 0.1 or 1 μ sec shall occur. See Note.	Subject mated connectors to 10-55-10 Hz traversed in 1minutes at 1.52mm amplitude 2 Hours each of 3 mutually perpendicular planes. 100mA Max. Applied. EIA-364-28D
14	Mechanical Shock	No electrical discontinuity greater than 0.1 or 1 μ sec shall occur. See Note.	Accelerate Velocity : 490m/s2 (50G) Waveform : Half-sine shock plus Duration : 11msec No. of Drops : 3 drops each to normal and reversed directions of X,Y and Z axes, totally 18 drops, passing DC 1mA current during the test. EIA-364-27B
15	Solder ability	The inspected area of each lead must have 95% solder coverage minimum.	Steam Aging Preconditioning : 93+3/-5°C · 100%HR · 8hrs.<JESD22-B102D, Condition C>Solder pot temperature: 245±5°C , 5sec

Environmental Requirements

16	Resistance to Solder Heat	No physical damage shall occur. (Lead-Free)	Solder Temp. : 245±5°C , 10±1sec. Tyco spec. 109-202, Condition B
17	Thermal Shock	See Note	Mated Connector -55+/-3°C (30 minutes), +85+/-2°C (30 minutes)Perform this a cycle, repeat 5 cycles EIA-364-32C
18	Humidity-Temperature Cycle	See Note	Mated Connector 25~65°C , 90~95% RH, 10 Cycles.EIA-364-31B.
19	Temperature Life (Heat Aging)	See Note	Mated Connector 85°C , 250 hours, EIA-364-17B.
20	Salt Spray	No detrimental corrosion allowed in contact area and base metal exposed.	Subject mated connectors to 35+/-2 °C and 5+/-1% salt condition for 12hours. After test, rinse the sample with water and recondition the room temperature for 1 hour. EIA-364-26B.

Product Qualification and Requalification test

Test Group

Test or Examination	A	B	C	D	E	F	G	H	I	J
	Test Sequence (a)									
Examination of Product	1, 7	1, 9	1, 6	1, 5	1, 5	1, 5	1, 5	1, 3	1, 3	1, 3
Contact Resistance		2, 8	2, 5	2, 4	2, 4	2, 4	2, 4			
Dielectric withstanding	3, 6									
Insulation Resistance	2, 5									
Temperature Rising								2		
Mating Force		3, 7								
Unmating Force		4, 6								
Durability		5								
Vibration			3							
Mechanical Shock			4							
Solderability										2
Resistance to Soldering									2	
Thermal Shock				3						
Humidity Temperature	4				3					
Temperature Life						3				
Salt Spray							3			
備注	無客戶指定增加測試項目外，依照此標準進行產品可靠性評估。									

核准：唐竹君

制作人：覃裕华

測試報告

TEST REPORT

產品名稱 Part Name	上MINI DIN 双色+下 双层USB2.0	測試日期 Date of Testing	2021.12.01- 2021.12.07	報告編號 Report NO.	MD20211209-03
產品型號 Part Name	MD21-0711-G68	樣品數量 Quantity	5PCS	測試環境 Measuring Environment	濕度 Temp:18~21°C 相對濕度RH:49%~57%

一.電性測試 ELECTRICAL TEST

序號 NO.	測試項目 Testing Item	測試條件 Testing Conditions	測試設備 Testing Equipment	規格 SPEC	測試記錄Testing Result					判定Judge	
					1	2	3	4	5	Pass	Fail
1	Contact resistance	Test current:100mA max	DIGITAL MICRO-OHMMETER	30 mΩ Max	23.17 mΩ	24.55 mΩ	25.47 mΩ	26.32 mΩ	27.83 mΩ	P	
2	Insulation resistance	Test voltage:500VDC Operation stated:1min	ULTRA HIGH RESISTANCE METER	100 MΩ Min	247 MΩ	285 MΩ	317 MΩ	355 MΩ	412 MΩ	P	
3	Dielectric withstand voltage	Test voltage:500VAC Cut-off current:0.5mA Operation stated:1 min	BREAKDOWN TESTER	No discharge or flashover occur	Pass	Pass	Pass	Pass	Pass	P	

二.機械特性測試 MECHANICAL TEST

序號 NO.	測試項目 Testing Item	測試條件 Testing Conditions	測試設備 Testing Equipment	規格 SPEC	測試記錄Testing Result					判定Judge	
					1	2	3	4	5	Pass	Fail
1	Durability test	Rate:100cycles/hour Total: 10000cycles	LIFE TESTER FOR CONNECTOR	No physical damage	Pass	Pass	Pass	Pass	Pass	P	
2	Mating Force	44.1 Newtons maximum at a maximum rare of 12.5mm(0.39") per minute	Insertion force testing machine	No physical damage	Pass	Pass	Pass	Pass	Pass	P	
3	Un-Mating Force	9.8 Newtons minimum at a maximum rare of 12.5mm(0.492") per minute	Insertion force testing machine	No physical damage	Pass	Pass	Pass	Pass	Pass	P	

三.環境特性測試 ENVIRONMENTAL TEST

序號 NO.	測試項目 Testing Item	測試條件 Testing Conditions	測試設備 Testing Equipment	規格 SPEC	測試記錄Testing Result					判定Judge	
					1	2	3	4	5	Pass	Fail
1	Humidity-Temperature cycle	Temperature: 40±2°C Humidity: 90~95 Duration:168H	PROGRAM CONTROLLED TEMP. & HUMIDITY CHAMBER	No physical damage	Pass	Pass	Pass	Pass	Pass	P	
2	Heat test	Temperature: 70±2°C Duration:168H	OVEN	No physical damage	Pass	Pass	Pass	Pass	Pass	P	

3	Cold test	Temperature: $-25 \pm 3^{\circ}\text{C}$ Duration:168H	PROGRAM CONTROLLED TEMP. & HUMIDTY CHAMBER	No physical damage	Pass	Pass	Pass	Pass	Pass	P	
4	Temperature cycling test	Temperature: $70 \sim 25^{\circ}\text{C}$ Duration:5 cycle	PROGRAM CONTROLLED TEMP. & HUMIDTY CHAMBER	No physical damage	Pass	Pass	Pass	Pass	Pass	P	

四.物理測試 PHYSICAL TEST

序號 NO.	測試項目 Testing Item	測試條件 Testing Conditions	測試設備 Testing Equipment	規格 SPEC	測試記錄 Testing Result					判定 Judge	
					1	2	3	4	5	Pass	Fail
1	Salt spray test	Temperature: $35 \pm 2^{\circ}\text{C}$ Concentration: $5 \pm 1\%$ Duration:12H	SALT SPRAY TESTER	No Oxidation	Pass	Pass	Pass	Pass	Pass	P	
2	Resistance to soldering heat test	Temperature: $245 \pm 5^{\circ}\text{C}$ Duration: 10 ± 1 sec	OVEN	No physical damage	Pass	Pass	Pass	Pass	Pass	P	
3	Solder ability test	Temperature: $245 \pm 5^{\circ}\text{C}$ Duration: 5 ± 0.5 sec	CONTROLLED CONSTANT-TEMP SOLDER POT	Soldering area $\geq 95\%$	Pass	Pass	Pass	Pass	Pass	P	
判定 Result		<input checked="" type="checkbox"/> 合格 (ACCEPT) <input type="checkbox"/> 不合格 (REJECT)									

核准(Approver): 欠必鋒

測試(Tester): 但芬



深圳市华联威电子科技有限公司

檢驗報告

首件檢驗
 入庫檢驗
 出貨檢驗
 客退檢驗
 退料檢驗
 其他
 2021年12月07日 版次:A1

料號	MD21-0711-G68	制令單號	/	送檢單位	工程部	首件製作者	裝配	
品名	上MINI DIN 双色+ 下双层USB2.0	客戶代號	/	批 量	/	送檢時間	/	
				數 量	5PCS	確認時間	/	
抽樣標準		<input checked="" type="checkbox"/> 單次 <input type="checkbox"/> 雙次		抽樣數	AQL	CRI:0	MAJ:0.4	MIN:0.65
MIL-STD-105E(II)		<input checked="" type="checkbox"/> 正常 <input type="checkbox"/> 加嚴 <input type="checkbox"/> 減量		(5PCS)	ACC/REJ	0	/	/

不良數: CRI (/) MAJ (/) MIN (/) 不良率(%) /

NO.	檢驗項目 單位:MM/G	檢測 儀器	檢 驗 記 錄					品管判定		CRI	MAJ	MIN	備注
			1	2	3	4	5	AC	RE				
尺 寸 測 量	15.2±0.30	D	15.25	15.25	15.25	15.25	15.25	√					
	30.5±0.35	D	30.58	30.58	30.58	30.58	30.58	√					
	23.44±0.20	D	23.45	23.45	23.45	23.45	23.45	√					
	11.87±0.30	D	11.89	11.89	11.89	11.89	11.89	√					
	8.5±0.30	D	8.52	8.52	8.52	8.52	8.52	√					
	4.13±0.30	D	4.15	4.15	4.15	4.15	4.15	√					
	13.45±0.25	D	13.40	13.40	13.40	13.40	13.40	√					
	15.3±0.25	D	15.23	15.23	15.23	15.23	15.23	√					
	23.6±0.30	D	23.32	23.32	23.32	23.32	23.32	√					
	0.75±0.25	D	0.80	0.80	0.80	0.80	0.80	√					
	3.0±0.30	D	3.12	3.12	3.12	3.12	3.12	√					
	3.67±0.30	D	3.68	3.68	3.68	3.68	3.68	√					
	6.23±0.20	D	6.25	6.25	6.25	6.25	6.25	√					
	2.71±0.25	D	2.73	2.73	2.73	2.73	2.73	√					
	12.85±0.25	D	12.90	12.90	12.90	12.90	12.90	√					
	5.68±0.25	D	5.70	5.70	5.70	5.70	5.70	√					
	10.14±0.30	D	10.22	10.22	10.22	10.22	10.22	√					
	7±0.25	D	7.12	7.12	7.12	7.12	7.12	√					
	2±0.25	D	2.10	2.10	2.10	2.10	2.10	√					
	2.62±0.20	D	2.70	2.70	2.70	2.70	2.70	√					
2.5±0.20	D	2.58	2.58	2.58	2.58	2.58	√						
2.6±0.20	D	2.53	2.53	2.53	2.53	2.53	√						
6.80±0.20	D	6.95	6.95	6.95	6.95	6.95	√						

檢驗依據: 《工程圖紙》 《檢驗規範》 《承認書》 樣品 其它

檢測儀器:A游標卡尺 B千分尺 C厚薄儀 D投影鏡 E放大鏡 F顯微鏡 G錫爐 H插拔力器 I間位尺 J其它

品保判定: 合格Accept 退貨Reject 特采Waive 挑選Sort

核准: 欠必鋒

審核: 刘联英

檢驗員: 但芬

电镀报告表

品名:上MINI DIN 双色+下双层USB2.0 (外壳)		版次:A.0			
电镀规格:Cu:40u"Ni:50u"MIN	日期:2021/12/01	页次:1/1			
厂商:金和源					
测试设备:CMI X-射线膜厚测试仪					
1、底层电镀测试(Cu)					
数据	测试标准	实测值	判定	测试日期	测试时间
1	40u"min	45.3u"	OK	2021/12/1	19:55:05
2	40u"min	48.5u"	OK	2021/12/1	19:55:57
3	40u"min	44.2u"	OK	2021/12/1	19:56:48
4	40u"min	45.6u"	OK	2021/12/1	19:57:31
2、表层电镀测试(Ni)					
数据	测试标准	实测值	判定	测试日期	测试时间
1	50u"min	57.3u"	OK	2021/12/1	19:58:12
2	50u"min	55.6u"	OK	2021/12/1	19:59:04
3	50u"min	56.2u"	OK	2021/12/1	20:01:44
4	50u"min	58.3u"	OK	2021/12/1	20:02:36

核准: 欠必锋

审核: 刘联英

检验员: 但芬

电镀报告表

品名:上MINI DIN 双色+下双层USB2.0(端子)		日期:2021/12/01	页次:1/1		
电镀规格:Ni40u", Sn40u"MIN, Au G/Fu"					
厂商:同华					
测试设备:CMI X-射线膜厚测试仪					
1、底层电镀测试 (Ni)					
数据	测试标准	实测值	判定	测试日期	测试时间
1	40u"MIN	58.2u"	OK	2021/12/1	13:50:12
2	40u"MIN	60.7u"	OK	2021/12/1	13:50:14
3	40u"MIN	55.4u"	OK	2021/12/1	13:50:16
4	40u"MIN	61.5u"	OK	2021/12/1	13:50:18
2、表层电镀测试 (Sn)					
数据	测试标准	实测值	判定	测试日期	测试时间
1	40u"MIN	43.3u"	OK	2021/12/1	14:10:36
2	40u"MIN	42.4u"	OK	2021/12/1	14:10:38
3	40u"MIN	46.7u"	OK	2021/12/1	14:10:40
4	40u"MIN	43.1u"	OK	2021/12/1	14:10:42
3、表层电镀测试 (Au)					
数据	测试标准	实测值	判定	测试日期	测试时间
1	0.5u"MIN	0.56u"	OK	2021/12/1	14:18:20
2	0.5u"MIN	0.58u"	OK	2021/12/1	14:18:22
3	0.5u"MIN	0.59u"	OK	2021/12/1	14:18:24
4	0.5u"MIN	0.57u"	OK	2021/12/1	14:18:26

核准: 欠必锋

审核: 刘联英

检验员: 但芬

盐水喷雾实验报告

试验方法	盐水喷雾腐蚀试验法	参考资料	MIL-STD-1216
METHOD	NEUTRL SALT SPRAY CORROSION TEST	REF	
客户	/	试验起始日期	2021年12月06日 08:00 时起
		DATE	2021年12月07日 20:00 时止
样品名称	上MINI DIN 双色+下双层USB2.0	试验数量	5PCS
P/N	MD21-0711-G68		

试验条件 (TEST CONDITON)

- 1、盐水溶解 (SALT SOLUTION: 浓度 $50 \pm 10\text{g/L}$, PH值6.5-7.2).
- 2、试验室温度 (TEMP. IT THE SPRAY DHAMBR): $35 \pm 1^\circ\text{C}$.
- 3、盐水桶温度 (TEMP. OF SALE SOL' N TANK): $35 \pm 1^\circ\text{C}$.
- 4、压力桶温度 (TEMP. OF SAR SUPPLIERY): $47 \pm 1^\circ\text{C}$.
- 5、试验室相对湿度 (R. H IN THE CHAMBER) 85%.
- 6、压缩空气压力 (COMPRESSED AIR PRESSURE): $1.00 \pm 0.01\text{Kg/cm}^2$.
- 7、样品放置位置 (SPECIMEN SUPPORTED ANGLE): 尼龙绳吊挂 $70^\circ - 90^\circ$.
- 8、喷雾收集量 (COLLECT RATE OF SALT SOL' N) $1-2\text{mL}/(8 \text{ cm}^2\text{hr})$.
- 9、盐雾测试时间: 12小时 (H)

判定方法 (ADFUSGD METHOD)

试验后以20倍放大镜观察、无蓝、绿色腐蚀物之现象 (不包含折弯处), 即判定合格. (Inspext the ecimen at 20 xmagnification no blue or green corrosion products are acceptable)

样品序号	试验后现象	判定
	PHENOMENON AFTER TEST	COMMENT
1	无蓝、绿色腐蚀物之现象	OK
2	无蓝、绿色腐蚀物之现象	OK
3	无蓝、绿色腐蚀物之现象	OK
4	无蓝、绿色腐蚀物之现象	OK
5	无蓝、绿色腐蚀物之现象	OK

核准: 欠必锋

审核: 刘联英

试验员: 但芬

鉅鼎銅材廠檢驗報告單

公司名稱 Customer	鉅鼎銅材廠檢驗報告單				重量 Weight(kg)	1078	出貨日期 Date	2021/11/23		
品名 Article	標準 Standard No				尺寸 Dimension		狀態 Tenper	銅卷編號 Coil No		
C2680	JISH3100:2017				0.18*400		EH	1021-C-08		
化學成分Chemical Compositions(%)										
元素 Element	Cu %	Zn%	Pb%	Fe%	\	\	\	\	化學成分	雜質
規範 Spec	64.0-68.0	餘量	<0.05	<0.05	\	\	\	\	合格	合格
實測 Actual	64.32	餘量	0.0036	0.0136	\	\	\	\	合格	合格
機械性質子Mechanical Properties										
項目 Item	結晶粒度 Grain Size Mm	硬度 Hardness Hv	抗拉強度 TensionStrength Mpa	伸長度 Elongation %	導電率 Electrical Conduc %IACS	彎曲試驗 Bending Test 180	表面粗度 Surface Roughness Ra(u m)	彎曲度 Camber mm/n		
規範MAX Spec	\	170-190	490-610	\	\	\	\	\		
實測 Actual	\	178	574	5	\	\	\	\		

品質部



Materials Information

PRODUCT NAME: LCP M-401 BK

COMPOSITION/INFORMATION OF LCP M-401 BK

SUBSTANCE/MIXTURE: Mixture

SYNONYM(S): Aromatic Liquid Crystal Polymer(LCP)

品名	比例	用途
德众泰 LCP 树脂	0.565	构成材料主要成分
抗氧化剂	0.002	抗氧化
科莱恩热稳定剂	0.003	增加高温稳定性
黑色母	0.01	着色
滑石粉	0.2	增强剂, 增加流动性
玻纤	0.22	增强

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