

## 承 认 书

Approval Sheet

客户 (Customer): /

客户料号 (Cus .P/N): /

华联威料号 (HLW P/N): ST24-0200-G618

品名规格 (PronameSpec): SATA 间距0.5 67P 高度3.20

送样日期 (Delivery Date): 2022/06/11

承认日期 (Acknowledge Date): 2022/06/11

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
吴鑫萍	欠必锋	魏红	唐竹君

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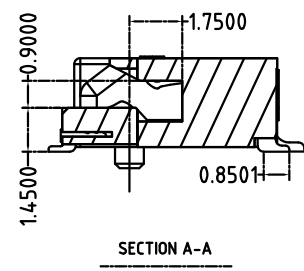
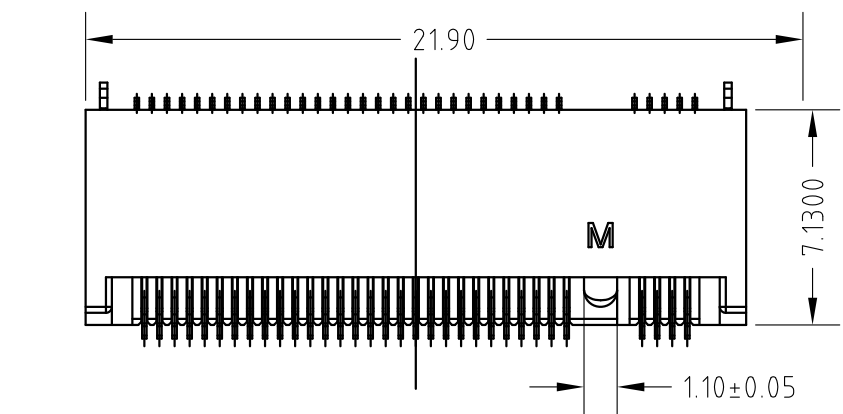
[Http://www.hlwconn.com](http://www.hlwconn.com)

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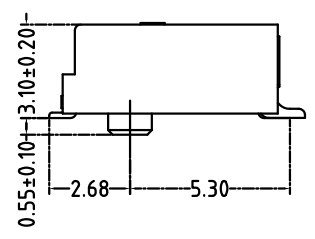
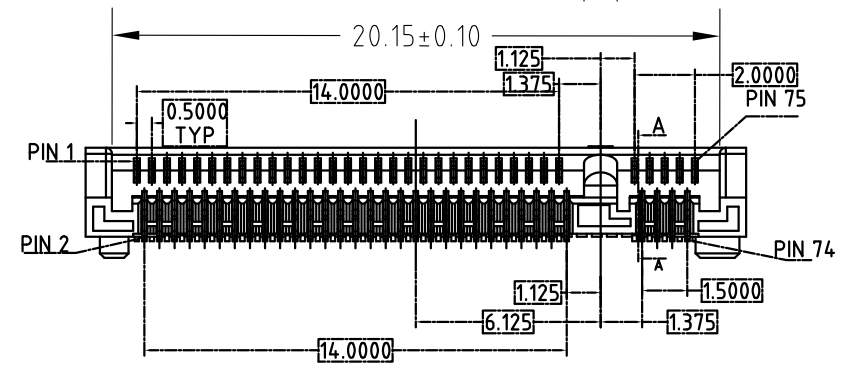
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REV.	ECN.NO.	APPD.
A	/	/



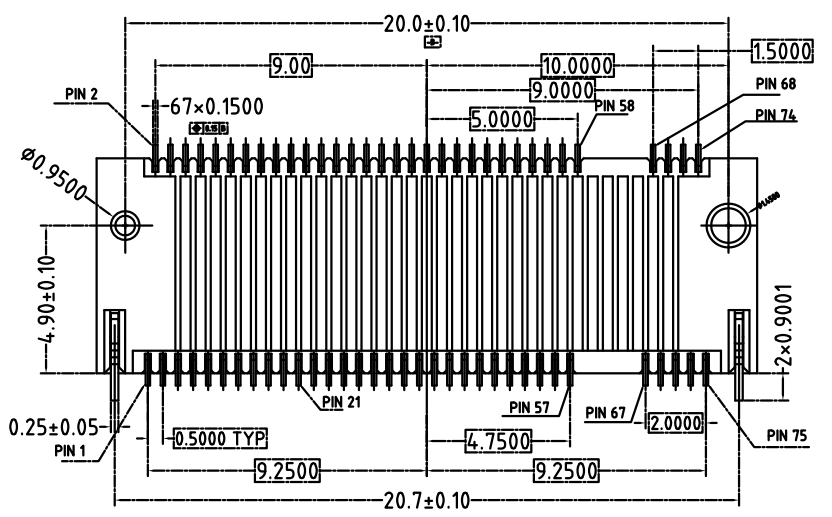
NOTE:

- MATERIAL:  
HOUSING: LCP WITH 30% GF, UL 94V-0, BLACK COLOR.  
CONTACTS: PHOSPHOR BRONZE.  
BOARDLOCKS: BRASS.
- FINISH:  
CONTACTS: GOLD FALSH PLATED ON CONTACT AREA, [100μ"] MIN., BRIGHT-TIN ON SOLDER TAIL, WITH ENTIRE CONTACT UNDERPLATED [50μ"] MIN., NICKEL.  
BOARDLOCKS: [100μ"] MIN. BRIGHT-TIN OVER[50μ"] MIN. NICKEL ON ENTIRE BOARDLOCK.
- PART NUMBER DESCRIPTION :



ST24-0200-G618

G: 镀半金G/Fu" 1: 黑色 6: LCP



TOLERANCE UNLESS OTHERWISE SPECIFIED		<b>FLW</b> 深圳市华联威电子科技有限公司 HUA LIAN WEI TECHNOLOGY ELECTRONICS CO;LTD.					
.XXX ±0.10	.X* ±3°	PART NAME:					SATA 0.5Pitch 67Pin M.2 H=3.2
.XX ±0.20	.XX* ±2°	APPROVED		PART No:		ST24-0200-G618	C
.X ±0.30		CHECKED		DRAWN		DATE	REV.
		weihong		PROJECTION:		UNIT: mm	SCALE: 1:1
		2021.9.23				SHEET: 10F1	A

SATA系列產品SPEC

TEST ITEM		REQUIREMENT	PROCEDURE
1	Examination of Product	Meets requirements of product drawing. No physical damage.	Visual inspection.
2	Operating Temperature	-55°C to +125 °C	
3	Storage Temperature	-25°C to 85 °C	
<b>ELECTRICAL REQUIREMENT</b>			
4	Rating Voltage	30 V RMS max	
5	Contact current rating (Power segment)	1.5A per pin minimum The temperature rise above ambient shall not exceed 30°C at any point in the connector when contact positions are powered. The ambient condition is still air at 25°C.	Mount connector to a test PCB Wire three adjacent pins in parallel for supply (or the minimum number required by the connector type) Wire three adjacent pins in parallel for return (or the minimum number required by the connector type) Apply a DC current rating per contact to the supply pins returning through the return pins Record temperature rise when thermal equilibrium is reached
6	Contact Resistance	30 mΩ (initially) maximum, Δ15mΩ max after stress when measured at 20 mV maximum open circuit at 100 mA. Mated test contacts must be in a connector housing.	EIA 364-23 The object of this test is to detail a standard method to measure the electrical resistance across a pair of mated contacts such that the insulating films, if present, will not be broken or asperity melting will not occur.
7	Dielectric withstanding Voltage	The dielectric shall withstand 500VAC for 1 minute at sea level.	EIA 364-20 Method B Test between adjacent contacts of mated and unmated connector assemblies.

8	Insulation Resistance	1000 M $\Omega$ minimum	EIA 364-21 After 500 VDC for 1 minute measure the insulation resistance between the adjacent contacts of mated and unmated connector assemblies.
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.
<b>Mechanical Requirement</b>			
10	Connector Mating Force	45 N Max	EIA-364-13 Measure the force necessary to mated the connector assemblies at a max.rate of 12.5 mm per minute.
11	Connector Unmating Force	10 N Min.through 50cycles	EIA-364-13 Measure the force necessary to mate the connector assemblies at a max.rate of 12.5 mm per minute.
12	Durability	No physical damage. Meet requirements of additional tests as specified in the test sequence.	EIA-364-09 50 cycles for intemal cabled application; 500cycles for backplane/blindmate application. Test done at a maximum rate of 200 cycles per hour.

13	Vibration	No discontinuities of 1 us longer duration.	EIA364-28 Condition V Test letter A Subject mated connectors to 5.35 g's RMS. 30minutes in each of three mutually perpendicular planes. See NOTE 2.
14	Mechanical Shock	No discontinuities of 1 us or longer duration. No physical damage.	EIA 364-27 Condition H Subject mated connectors to 30 g's half-sine shock pulses of 11 ms duration applied along three mutually perpendicular planes for a total of 18 shocks. See NOTE 2.
15	Solder ability	contact solder tails must pass 95% coverage after one hour steam aging as specified.	1)Temperature of fused solder: 245±5°C. 2)Dipping time:5±0.5s EIA 364-52
<b>Environmental Requirements</b>			
16	Resistance to Solder Heat	Forming resin shall not be distorted, and terminations shall not be separated.	1) Depth of dipping termination: the distance between the mounting surface and solder surface shall be 1 mm to 2mm. 2)Temperature:245±5°C. 3) Dipping time: 10±1s Socket EIA 364-56
17	Thermal Shock	See NOTE .	EIA 364-32 Test Condition 1. Subject mated connectors to 10 cycles between -55°C and +85°C.
18	Humidity	See NOTE .	EIA 364-31 Method II Test Condition A Subject mated connectors to 96 hours at 40°C with 90% to 95% RH.
19	Temperature Life	See NOTE.	EIA 364-17 Test Condition III Method A. Subject mated connectors to temperature life at +85°C for 500 hours.

20	Salt Spray	Visual Inspection-No physical damageLLCR-50 mΩ max per contact	Mated connector expose to 5% salt concentration for 12 hours at temperature 35+2°C.After the test specimens shall be washed with running water and dried
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NOTE:

1. Shall meet EIA 364-18 Visual Examination requirements, show no physical damage, and shall meet requirements of additional tests as specified in the sequence.
- 2.Shock and vibration test fixture is to be determined by each user with connector vendors.

Test or Examination	Test Group									
	A	B	C	D	E	F	G	H	I	J
	Test Sequence (a)									
Examination of Product	1,5	1,9	1,7	1,8	1,5	1, 5	1, 3	1, 3	1, 3	
Contact Resistance	2,4	3,7	2,4,6		3,4	2, 4				
Insulation Resistance				2,6						
Dielectric withstanding				3,7						
Mating Force		2								
Unmating Force		8								
Durability	3	4			2					
Mechanical Shock		6								
Vibration		5								
Humidity Temperature				5						
Temperature Life			3							
Thermal Shock			5	4						
Temperature Rising							2			
Solderability									2	
Resistance to Soldering								2		
Salt Spray						3	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

3	Cold test	Temperature: -25 ±3°C Duration:168H	PROGRAM CONTROLLED TEMP. & HUMIDTY CHAMBER	No physical damage	Pass	Pass	Pass	Pass	Pass	P	
4	Temperature cycling test	Temperature:85 ~-25°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±2°C Concentration:5±1 %Duration:12H	SALT SPRAY TESTER	No Oxidation	Pass	Pass	Pass	Pass	Pass	P	
2	Resistance to soldering heat test	Temperature: 260±5°C Duration:10±1sec	OVEN	No physical damage	Pass	Pass	Pass	Pass	Pass	P	
3	Solder ability test	Temperature: 260±5°C Duration:5±0.5 sec	CONTROLLED CONSTANT-TEMP SOLDER POT	Soldering area ≥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): 欠必峰

測試(Tester): 但芬





3	Cold test	Temperature: -25 ±3°C Duration:168H	PROGRAM CONTROLLED TEMP. & HUMIDTY CHAMBER	No physical damage	Pass	Pass	Pass	Pass	Pass	P	
4	Temperature cycling test	Temperature:85 ~-25°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±2°C Concentration:5±1 %Duration:12H	SALT SPRAY TESTER	No Oxidation	Pass	Pass	Pass	Pass	Pass	P	
2	Resistance to soldering heat test	Temperature: 260±5°C Duration:10±1sec	OVEN	No physical damage	Pass	Pass	Pass	Pass	Pass	P	
3	Solder ability test	Temperature: 260±5°C Duration:5±0.5 sec	CONTROLLED CONSTANT-TEMP SOLDER POT	Soldering area ≥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): 欠必峰

測試(Tester): 但芬

## 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

2022年06月11日 版次:A1

料號	ST24-0200-G618	制令單號	/	送檢單位	工程部	首件製作者	裝配	
品名	SATA 间距0.5 67P 高度 3.2	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 ( 5PCS )	AQL	CRI:0	MAJ:0.40	MIN:0.65
MIL-STD-105E(II)		<input checked="" type="checkbox"/> 正常 <input type="checkbox"/> 加嚴 <input type="checkbox"/> 減量			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				
	21.90±0.20	D	21.93	21.95	21.94	21.93	21.96	√					
	7.13±0.20	D	7.16	7.13	7.15	7.14	7.15	√					
	0.50±0.20	D	0.52	0.53	0.54	0.52	0.53	√					
	14.00±0.20	D	14.05	14.03	14.04	14.02	14.03	√					
	6.125±0.10	D	6.12	6.12	6.13	6.13	6.13	√					
	3.10±0.20	D	3.12	3.13	3.14	3.15	3.13	√					
	0.55±0.10	D	0.53	0.54	0.53	0.53	0.54	√					
	2.68±0.20	D	2.69	2.67	2.68	2.65	2.66	√					
	5.30±0.20	D	5.36	5.34	5.33	5.36	5.34	√					

 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 APP	欠必鋒	審 核 CHK	/	檢驗員 INSPBY	但芬
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保存期限:三年

保存部門:品保部

QR-M-003

品名: SATA 间距0.5 67P 高度3.20			版次:A.0		
电镀规格:Ni30u", Sn100u", Au G/Fu"		日期:2022-03-20		页次:1/1	
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	30u"MIN	50.5u"	OK	2022/3/20	10:20:15
2	30u"MIN	56.3u"	OK	2022/3/20	10:20:17
3	30u"MIN	67.5u"	OK	2022/3/20	10:20:19
4	30u"MIN	62.4u"	OK	2022/3/20	10:20:21
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	100u"MIN	105.3u"	OK	2022/3/20	10:25:10
2	100u"MIN	104.7u"	OK	2022/3/20	10:25:12
3	100u"MIN	105.9u"	OK	2022/3/20	10:25:14
4	100u"MIN	107.4u"	OK	2022/3/20	10:25:16
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	0.52u"	OK	2022/3/20	10:30:32
2	0.5u"MIN	0.55u"	OK	2022/3/20	10:30:34
3	0.5u"MIN	0.53u"	OK	2022/3/20	10:30:36
4	0.5u"MIN	0.54u"	OK	2022/3/20	10:30:38

核准: 欠必锋

审核: 李娟

检验员: 但芬



电镀报告表

品名: SATA 间距0.5 67P高度3.20 版次:A.0

电镀规格:Ni:50u" min 日期:2022/3/16 页次:1/1

厂商:金和源

测试设备:CMI X-射线膜厚测试仪

1、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	56.3u"	OK	2022/3/16	10:42:14
2	50u"min	58.6u"	OK	2022/3/16	10:42:16
3	50u"min	55.4u"	OK	2022/3/16	10:42:18
4	50u"min	54.5u"	OK	2022/3/16	10:42:20

核准: 欠必锋

审核: 李娟

检验员: 但芬



# 深圳市华联威电子科技有限公司

## 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-1345
METHOD	NEUTRL SALT SPRAY CORROSION TEST	REF	
客户		试验起始日期	2022年06月10日 20:00 时起
		DATE	2022年06月11日 08:00 时止
样品名称	SATA 间距0.5 67P高度3.20	试验数量	5PCS
P/N	ST24-0200-G618	QTY	

### 试验条件 (TEST CONDITION)

- 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: 李娟

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

NAME OF COMPANY: DZT Engineering Plastics Tech. Co.,Ltd

ADDRESS: Building 2 Zhichong Industrial Park, Hi-Tech Zone, Jiangmen City,  
Guangdong Province, China

SECTION IN CHARGE: Quality Assurance Department

TEL/FAX: +86-750-3689920/+86-750-3689921

EMERGENCY TEL: +86-750-3689708

