LCD MODULE

SPECIFICATION

Customer Name(客户名称)	
Customer Model（客户型号）	
Project Name（项目名称）	ZX7D00C1060M002A
Date（日期）	2023-11-23
Version（版本）	V0

■Preliminary Specification

□Final Specification

Designed by （制作）	Checked by （审核）	Approved by （批准）

Final Approval by Customer 客户审批

Approved by（批准）	Comment（评论）

※ The specification of “QM Smart Panlee” should refer to the measured value of sample . If there is difference between the design specification and measured value, we naturally shall negotiate and agree to solution with customer.

Record of Revision 修改记录

Version 版本	Date 日期	Content 修订内容	Revised by 修订人	Remark 备注
01	2023-11-23	Initial Released.		

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1.General Specifications 基本规格

NO	Item 项目	Specification 规格	Unit	Remark
1	LCD Size 玻璃尺寸	7.0	inch	-
2	Panel Type 玻璃类型	IPS	-	-
4	Resolution 分辨率	1024 x(RGB) x600	pixel	-
5	Display Mode 显示模式	Normally Black	-	-
6	Number of Colors 颜色	16.7M	-	-
7	Viewing Direction 视角	all o’ clock	-	-
8	NTSC 色饱和度	50%	-	TYP
9	Contrast Ratio 对比度	800	-	TYP
10	Luminance 亮度	400	nit	TYP
11	Module Size 外形尺寸	164.2 (W) x99.3 (L) x3.0(H) 107.14 (W) x174.14 (L) x5.2(H)	mm	Note6
12	Panel Active Area 可视区	154.21 (W) x 85.92 (L)	mm	Note6
13	Pixel Pitch 像素尺寸	0.102(H) x0.102(V)	mm	-
14	Weight 重量	/	g	-
15	Driver IC 芯片	EK79007AD+EK73217	-	-
16	Driver IC RAM Size	/	bit	-
17	Light Source 背光源	30 white LED in 3S10P	-	-
18	Interface 接口	MIPI	-	-
19	Structure type 结构类型	G+G		CTP
20	Driver IC 芯片	GT911		CTP
21	Interface 接口	I2C		CTP
22	Surface Hardness 硬度	6H		CTP
23	Operating Temperature	-20~+70	℃	-
24	Storage Temperature	-30~+80	℃	-

Note : Please refer to the mechanical drawing； 注：请参照模组图；

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2.Pin Assignments 接口定义

2.1 LCM Pin Assignments 显示接口定义

NO.	Symbol 符号	Function 功能描述
1~2	LEDA	Backlight LED Anode
3	VGH	Positive power output of the VGH step up circuit
4	VGL	Negative power output of the VGL step up circuit
5	UPDN	Gate up or down scan control
6	SHLR	Source right or left sequence control
7~8	LEDK	Backlight LED Cathod
9	AVDD	Voltage regulator output for logic circuit(+9.6V)
10	GND	Ground
11	MIPI-D3+	DSI Data differential signal input pins. (Data lane3)
12	MIPI-D3-	DSI Data differential signal input pins. (Data lane3)
13	GND	Ground
14	MIPI-D2+	DSI Data differential signal input pins. (Data lane2)
15	MIPI-D2-	DSI Data differential signal input pins. (Data lane2)
16	GND	Ground
17	MIPI-CLK+	DSI CLOCK differential signal input pi
18	MIPI-CLK-	DSI CLOCK differential signal input pi
19	GND	Ground
20	MIPI-D1+	DSI Data differential signal input pins. (Data lane1)
21	MIPI-D1-	DSI Data differential signal input pins. (Data lane1)
22	GND	Ground
23	MIPI-D0+	DSI Data differential signal input pins. (Data lane0)
24	MIPI-D0-	DSI Data differential signal input pins. (Data lane0)
25	GND	Ground
26	STBYB	Standby mode, normally pull high
27	LRSTB	Reset Signal pin (“Low” is enabl)
28	VDD	Power supply(1.8V)
29	VDD	Power supply(1.8V)
30	VCOM	Common voltage

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2.2 CTP Pin Assignments 电容屏接口定义

NO.	Symbol 符号	Function 功能描述
1	RST	Touch function Reset signal (Low: Active).
2	VCC	Touch function Analog supply voltage.
3	GND	Touch function Ground.
4	INT	Touch function Interrupt input signal.
5	SDA	Touch function Serial data input signal.
6	SCL	Touch function Serial clock input signal.

3.Electrical Specifications 电气特性

3.2 Typical Operation Conditions 典型工况

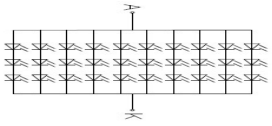
3.2.1 DC Characteristics 直流特性

Item 项目	Symbol 符号	Min 最小值	Typ. 典型值	Max 最大值	Unit
Power Supply Voltage 供电电压	VDD	1.71	1.8	1.89	V
Power Supply Voltage 模拟供电电压	AVDD	9.4	9.6	9.8	V
Gate On Voltage 栅极导通电压	VGH	17	18	19	V
Gate Off Voltage 栅极截止电压	VGL	-6.2	-6	-5.6	V
Common Driving Voltage 公共驱动电压	VCOM	3.1	3.2	3.3	V
Input High Voltage 输入高电平	VIH	0.7*VDDI	-	VDDI	V
Input Low Voltage 输入低电平	VIL	0	-	0.3*VDDI	V
Output High Voltage 输出高电平	VOH	VDD-0.4	-	-	V
Output Low Voltage 输出低电平	VOL	-	-	GND+0.4	V

3.2.2 BACK-LIGHT UNIT CHARACTERISTICS 背光单元特性

Item 项目	Symbol 符号	Min 最小值	Typ 典型值	Max 最大值	Unit 单位	Remark 备注
LED Current LED 电流	I_L	-	200	-	mA	
Forward Voltage 正向电压	Vf	-	9.0	9.9	V	-
Power Consumption 功耗	Pd	-	1260	-	mW	-
LED life time LED 寿命	-	15000	20000	--	Hr	Note1

Note（注）: The “LED life time” is defined as the module brightness decrease to 50% of original brightness“LED寿命”定义为模块亮度降至原始亮度的50%
at I_L=200mA. The LED life time could be decreased if operating I_L is larger than 140mA.
在IL = 200mA时。如果工作电流大于200mA，LED的使用寿命可能会缩短。
Backlight circuit diagram shown in below:
背光电路图如下所示



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4.Optical Specifications 光学规格

1、The following items are measured under stable conditions. The optical characteristics should be measured in a dark room.
以下项目是在稳定条件下测量的。光学特性应为在黑暗的房间里测量。
2、Measuring equipment: BM-5AS, BM-7, CA-410H， EZ-Contrast.
测量设备：BM-5AS、BM-7、CA-410H、EZ Contrast。

Item 项目		Symbol 符号	Condition 条件	Min 最小值	Typ 典型值	Max 最大值	Unit 单位	Remark 备注
Viewing Angle Range 视角	Left	θL	CR≧10	-	85	-	Deg.	Note2
	Right	θR		-	85	-		
	Top	θT		-	85	-		
	Bottom	θB		-	85	-		
Response Time 响应时间		Ton +Toff	θ=Φ=0°	-	30	40	ms	Note3
Contrast Ratio (Center point) 对比度（中心点）		CR	θ=Φ=0°	-	800	-	%	Note4
Luminance 亮度		Lw	θ=Φ=0°	350	400	-	cd/m2	Note1
Color Chromaticity (CIE 1931) 色坐标	White	Wx	Normal θ=Φ=0°	0.270	0.300	0.303	-	Note5
		Wy		0.310	0.340	0.370		
	Red	Rx		0.585	0.615	0.645		
		Ry		0.350	0.320	0.290		
	Green	Gx		0.266	0.296	0.326		
		Gy		0.539	0.569	0.599		
	Blue	Bx		0.112	0.142	0.172		
		By		0.144	0.174	0.204		
Luminance Uniformity 亮度均匀度		Uw	θ=Φ=0°	75	80	-	%	Note6

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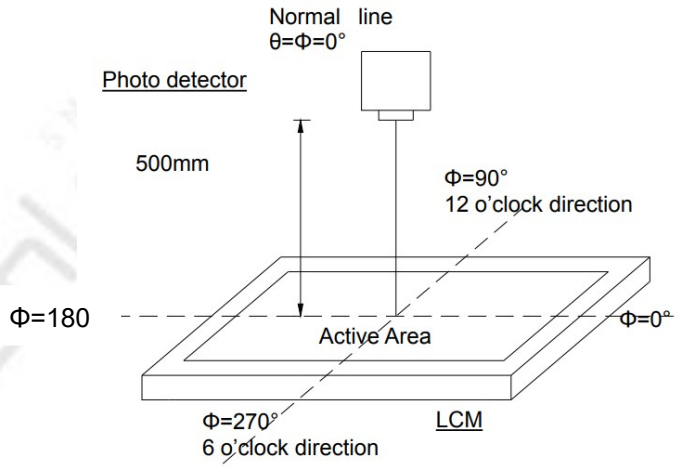
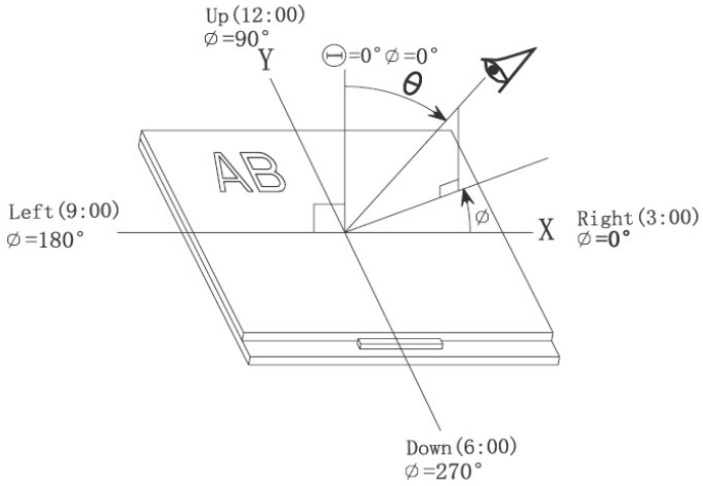
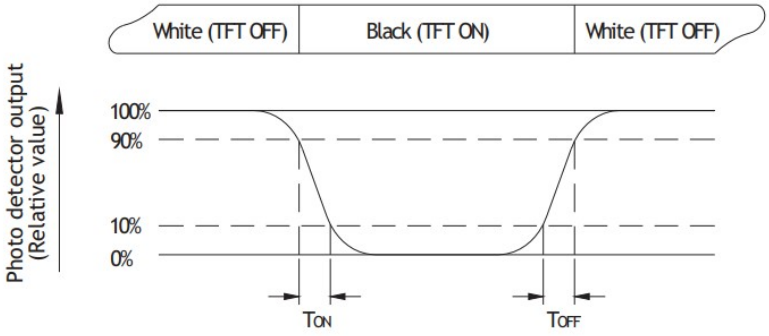
Note1: Definition of optical measurement system (BM-7)
备注 1:光学测量系统的定义（BM-7）



Note2: Definition of viewing angle range and measurement system Viewing angle is measured at the center point of the LCD by Conoscope
备注 2: 视角范围和测量系统的定义，通过锥光镜在 LCD 的中心点测量视角



Note 3: Definition of Response time. (Test LCD using DMS501): The output signals of photo detector are measured when the input signals are changed from “black” to “white”(falling time) and from “white” to “black”(rising time), respectively. The response time is defined as the time interval between the 10% and 90% of amplitudes.Refer to figure as below
注 3：响应时间的定义。（使用 DMS501 测试 LCD）：
当输入信号发生变化时，测量光电探测器的输出信号,分别从“黑色”到“白色”（下降时间）和从“白色”到“黑色”（上升时间），响应时间定义为振幅的 10%和 90%之间。参见下图



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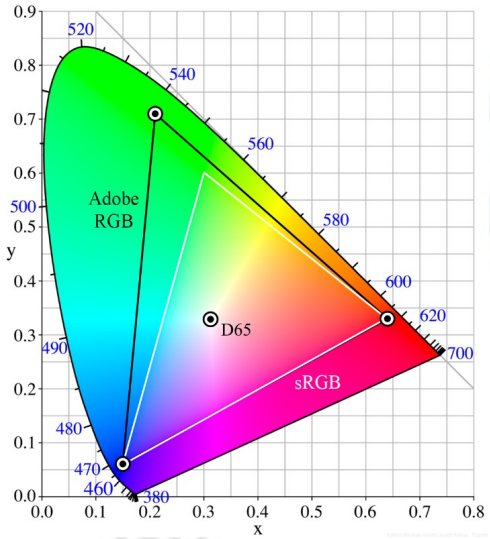
Note4: Definition of contrast ratio
备注 4：对比度的定义

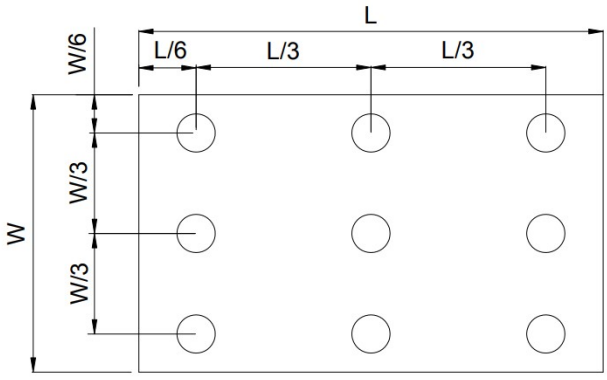
$$\text{Contrast ratio(CR)} = \frac{\text{Luminance measured when LCD on the “White”stage}}{\text{Luminance measured when LCD on the “Black”stage}}$$

“White state “: The state is that the LCD should drive by Vwhite.
“白色状态”：该状态是 LCD 应该由白色驱动
“Black state”: The state is that the LCD should drive by Vblack.
“黑色状态”：该状态是 LCD 应该由黑色驱动。

Note5: Definition of color chromaticity (CIE1931)
Color coordinates measured at center point of LCD.
注 5：色度的定义（CIE1931）在 LCD 中心点测量的颜色坐标。



Note6: Definition of Luminance Uniformity
Active area is divided into 9 measuring areas.Every measuring point is placed at the center of each measuring area.
注 6：亮度均匀性的定义活动区域分为 9 个测量区域，每个测量点位于每个测量区域的中心。
亮度均匀性（U）=最小值/最大值
Luminance Uniformity (U) = Lmin/ Lmax
亮度均匀性（U）=最小值/最大值
L=Active area length, W=Active area width
L=有效区域长度，W=有效区域宽度



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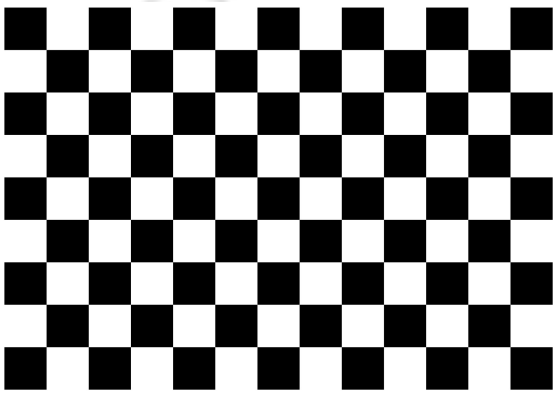
5.Reliability Test Items 可靠性项目测试

5.1 Temperature and Humidity 温度与湿度

Test Item 测试项目	Test Condition 条件	Remark 备注
High Temperature Storage 高温存储	+80°C±3°C,96hrs	
Low Temperature Storage 低温存储	-30°C±3°C,96hrs	
High Temperature Operation 高温操作	+70°C±3°C,96hrs	
Low Temperature Operation 低温操作	-20°C±3°C,96hrs	
High Temperature and High Humidity Operation 高温高湿	+60°C±3°C, 90%±3%RH,96hrs	
Thermal Shock 冷热冲击	-20°C/0.5h ~ +60°C/0.5h for a total 50 cycles	
Image Sticking 残影	25°C,4hrs	Note1

Note1: Operation with test pattern sustained for 4hrs,then change to gray pattern immediately. After 5minutes, the mura must be disappeared completely.
注 1：测试模式持续 4 小时，然后立即变为灰色模式。5 分钟后，残影必须完全消失。



（a）Test Pattern (chess board pattern)

（b）Test Pattern (Gray pattern)

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5.2 Vibration Shock 振动冲击

Test Item 测试项目	Test Condition 条件	Remark 备注
Package Drop Test (Non-operation) 包装跌落测试	Height : 72cm(Weight≦10kg); 60cm(Weight>10kg), 1 corner,3 edges, 2 6 surfaces	
Package Vibration Test (Non-operation) 包装震动测试	Frequency range:10~50Hz; Stoke:1.0mm; Sweep:10Hz~50Hz~10Hz 2 hours for each direction of X. Y. Z.	

5.3 ESD 静电

Test Item 测试项目	Test Condition 测试条件
Electro Static Discharge Test 静电放电试验 (Non-operation)	± 4KV, Human Body Mode（接触)）100pF/1500Ω; ± 8KV, Air Mode（空气）, 150pF/1500Ω;

Remarks:
说明

(1) The test samples should be applied to only one test item.
测试样本应仅应用于一个测试项目。

(2) Sample size for each test item is 5~10pcs.
每个测试项目的样本量为5~10个。

(3) For High Temperature/Humidity storage test, pure water (resistance>10MΩ) should be used.
用于高温/湿度储存试验，纯水（电阻>10MΩ）应该使用。

(4) In case of malfunction defect caused by ESD damage, if it would be recovered to normal state after resetting, it would be judge as a good part.
如果ESD损坏导致故障缺陷，是否可以恢复到正常状态

(5) Failure judgment criterion: basic specification, electrical characteristic, mechanical characteristic, optical characteristic.
故障判断标准：基本规格、电气特性、机械特性、光学特性。

6. Mechanical Drawing 模组图

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产品特征（Features）:

一.产品规格:
(Product specifications):

显示类型(Display mode):	TFT/TRANSMISSIVE, Normally Black
驱动芯片(Driver IC):	EK79007AD3+EK73217
人眼观察视角(Viewing Direction):	All O'clock VIEWING
接口类型(Interface Types):	MIPI
背光类型(Backlight Types):	LED灯:30pcs/3S10P 电流:200mA/电压:9.0V
模组亮度(LCM Brightness):	350 cd/m2 MIN/400 cd/m2 TYP
模组色坐标(LCM Color Coordinate):	(X: 0.304±0.03;Y:0.332±0.03)
模组均匀度(LCM Uniformity):	80% MIN
操作温度(Operating Temperature):	-20°C~70°C
储存温度(Storage Temperature):	-30°C~80°C
平面翘曲度(Plane Warping Degree):	<=0.3MM
连接器(FPC CONNTOR):	

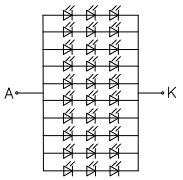
2.一般公差：±0.2mm.(GENERAL TOLERANCE:±0.2)
3.尺寸中带有“*”为重点管控尺寸.
("*"Dimensions of the key control and Control Dimensions.)
4.图纸中带有“*”特别说明及重点确认位置.
(Special Note And Key Confirmation Position)
5.产品所有物料符合 ROHS 规定要求.
(All The Products Comply With The ROHS Requirements).
6.可视区开窗设计要求:建议外壳可视区域比模块VA单边小0.3mm以上.
(Visual Area Windows Design Requirements: The Proposed Shell Visual Area Than The Module VA Unilateral Small 0.3mm Above.).

二.CTP产品规格:
(Product specifications):

结构类型(Type):	G+G
驱动芯片(Driver IC):	GT911
操作温度(Operating Temperature):	-20°C~-70°C、≤90%RH
储存温度(Storage Temperature):	-30°C~-80°C、≤90%RH
接口(Connect Material):	FPC （IIC）
反应时间(Response Time):	≤25ms
透过率(Light Transparency):	≥83±2%
硬度(Surface Hardness):	6H

技术要求:
1、玻璃材质：旭硝子，表面硬度>6H
2、64G钢球，30CM，跌落中心点三次无破碎； 表面应力CS≥350Mpa；强化深度DOL ≥8um ；翘曲度小于0.25mm.

LED CIRCUIT DIAGRAM:

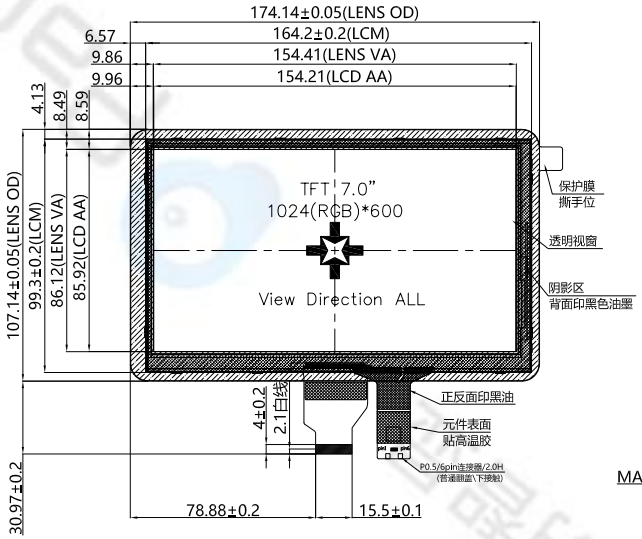


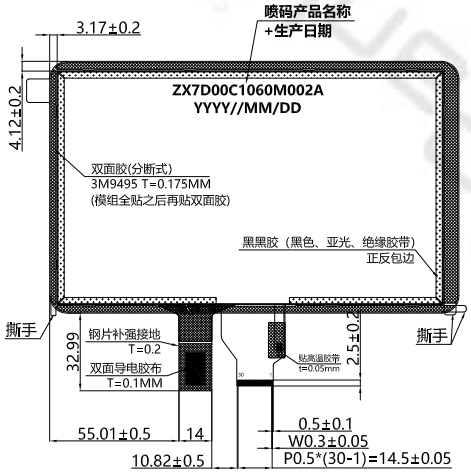
IF=200mA VF=9.0 V

正视图

侧视图

背视图
FPC展开出货





FPC INTERFACE

1	LEDA
2	LEDA
3	VGH
4	VGL
5	UPDN
6	SHLR
7	LEDK
8	LEDK
9	AVDD
10	GND
11	MIPI-D3+
12	MIPI-D3-
13	GND
14	MIPI-D2+
15	MIPI-D2-
16	GND
17	MIPI-CLK+
18	MIPI-CLK-
19	GND
20	MIPI-D1+
21	MIPI-D1-
22	GND
23	MIPI-D0+
24	MIPI-D0-
25	GND
26	STBYB
27	LRSTB
28	VDD/1.8V
29	VDD/1.8V
30	VCOM

CTP INTERFACE

1	RST
2	VCC
3	GND
4	INT
5	SDA
6	SCL

说明:
1、IIC通迅电压3.3V.
2、主板IIC有上拉电阻.
3、不需要手势唤醒功能.

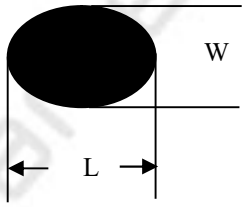
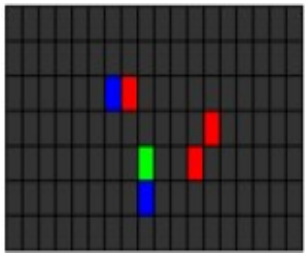
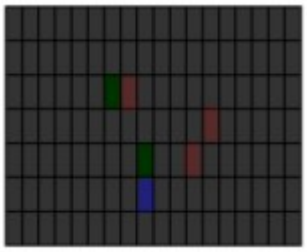
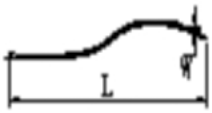
版 本(Version)	符 号(SYMBOL)	变更记录(Change History)	日期(Date)
V4			
V3			
V2			
V1			
V0	0	初版(The first edition)	2023-11-20

PART DESCRIPTION
TCM

深圳市启明智显科技有限公司
Shenzhen QM Smart Panlee Technology Co.,Ltd.

视 角 (View)		产品型号 (Product Type)	物料编号 (Material No)	设计 (DESIGN)	审核 (AUDITING)	批准 (APPROVED)
单 位 (Unit)	MM					
页 面 (Page)	1 页	ZX7D00C1060M002A	25170010013	Daniel		
比 例(Proportion)	1:1					

7.Outgoing Inspection Standards 出货检验标准

Defect 缺陷定义	Inspection Standard 检验标准			Type 类别
点状缺陷 point defect		尺寸 measurement	允许个数 Number allowed	Minor 轻缺
		D≤0.10	忽略不计 Neglecting	
		0.10<D≤0.15	2	
		0.15<D≤0.25	1	
		D>0.25	0	
亮点 brightened dot		单一点 Single point	2	Minor 轻缺
		2 连续亮点 Continuous highlights	1	
暗点 dark spot		单一点 Single point	3	
		2 连续暗点 Continuous dark spot	1	
木纳 Mura	斑点、不均 Spots, unevenness	参照限度样本（ND:6%） Reference limit sample		Minor 轻缺
电测 线缺陷 Test Line defect	 L：长度 W：宽度 线不良间距需≥10.0mm L: Length W: Width The spacing between defective lines should be ≥ 10.0mm	尺寸 measurement	允许个数 Number allowed	Minor 轻缺
		W≤0.03	忽略不计 Neglecting	
		L≤5.0，0.03<W≤0.05	1	
		W>0.05	依点状缺陷判定 Judging by point defects	

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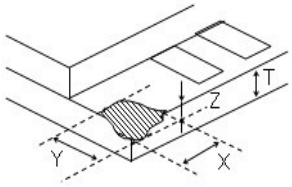
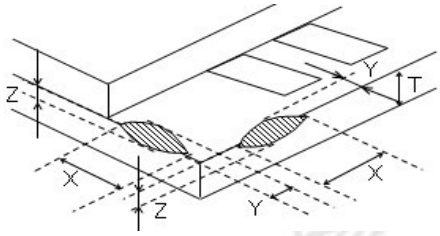
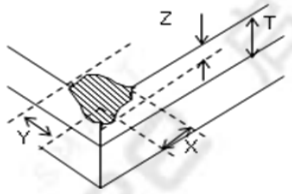
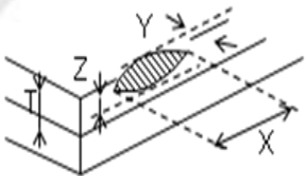
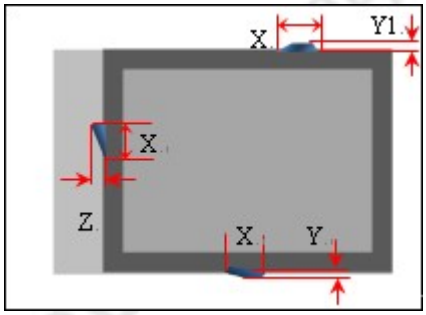
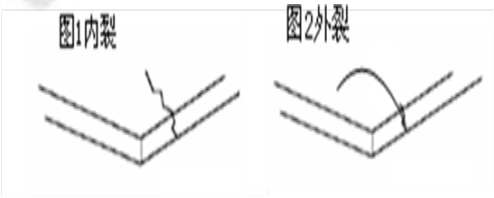
		W≤0.03		忽略不计 Neglecting		
		L≤10.0，0.03<W≤0.05		2 个		
		W>0.05		依点状缺陷判定 Judging by point defects		
LCD 角破损 (端子位) Damaged LCD corner (Terminal position)		长度 X Length X	宽度 Y Width Y	高度 Z Height Z	允许数 Allowable number	Minor 轻缺
		X≤2.0	Y≤2.0	Z≤T	2	
		2.0<X≤3.0	2.0<Y≤3.0	Z≤T	1	
		X>3	Y>3	Z≤T	0	
LCD 边破损 (端子位) Damaged LCD edge (Terminal position)		1.长度 X≤5.0 宽度 Y≤1.0 Length X ≤ 5.0 Width Y ≤ 1.0 2.崩裂位置不可伤及 ITO 线路、不可影响 bonding. The location of the crack should not damage the ITO line or affect the bonding				Minor 轻缺
LCD 角破损 （非端子部） Damaged LCD corner (Nonterminal part)	 崩裂位置不可伤及线路	长度 X Length X	宽度 Y Width Y	高度 Z Height Z	允许数 Allowable number	Minor 轻缺
		X≤2.0	Y≤2.0	不计	2	
		2.0<X≤3.0	2.0<Y≤3.0	不计	1	
		X>3	Y>3		0	
LCD 边破损 （非端子部） Damaged LCD edge (Nonterminal part)	 崩裂位置不可伤及线路	长度 X Length X	宽度 Y Width Y	高度 Z Height Z	允许数 Allowable number	Minor 轻缺
		X≤7.0	Y≤0.5	Z≤T/2	2	
		X≤7.0	0.5<Y≤0.8	Z≤T	1	
		X>7.0	Y>0.8		0	

玻璃突出 Glass protrusion		1.Y、Y1、Z 均≤0.2 且 Y+Y1≤0.2 时 X 长度不计 2.Y、Y1、Z＞0.2 或 Y+Y1＞0.2 时， 不允许	Minor 轻缺
LCD 裂纹 LCD cracks		1:内裂发生不可。 Internal cracks cannot occur. 2:外裂修正以玻璃破损规格判定,但不能有可清除的玻璃屑付着。 The correction of external cracks is based on the specifications of glass damage, but there should be no removable glass chips attached.	Major 重缺
外观检查 Visual inspection	CF 偏光片保护膜上划线不可有、气泡不可有、盖章不可有 （依客户特殊要求） The CF polarizer protective film must not have markings, bubbles, or stamps (according to customer specific requirements)		Minor 轻缺

缺陷定义 Defect type	定义 Definition
重缺陷(MA)	**显示或者功能缺陷，严重偏离规格，客户无法正常使用** Show or functional defects，serious deviation from the specifications，customers can not work properly.
	严重外观缺陷，严重偏离规格，客户无法正常使用 Severe skin defects，serious deviation from the specifications，the client does not work properly
重缺陷(MA)	**轻微偏离规格，不影响产品功能，但对产品外观有影响** Slightly deviate from the specifications,does does not affect the product function,but the appearance of an impact on product

注：1、以下标准如无特别注明，单位均以 mm 计.
Note：The following standards unless otherwise specified units are mm
2、以下标准使用于 TFT 小尺寸：7 寸（不包含 7 寸）的 TFT 产品。
The following criteria for use in TFT small size：7 inches or less (does not contain a 7 inch)TFT products

Note: Batch production is subject to signing a quality agreement. 注：批量以签品质协议为准。

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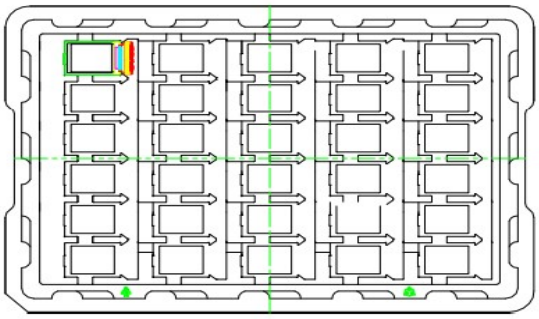
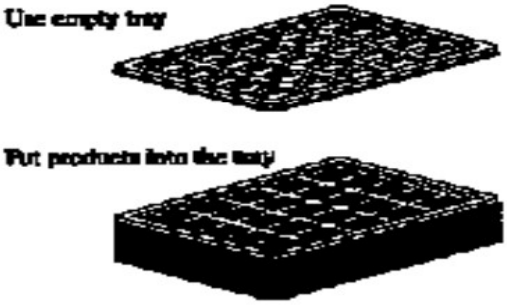
9.Packing Specification 包装规格

The LCD modules should be no falling and violent shocking
液晶显示模块在运输过程中应避免跌落和剧烈震动。
during transportation, and also should avoid excessive press,
water,damp and sunshine.
在运输过程中，应避免过度挤压、水、潮湿和阳光。
水、潮湿和阳光照射。

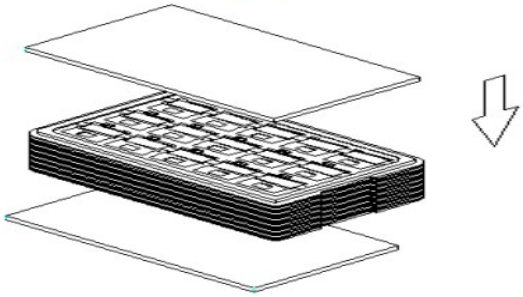
(1)



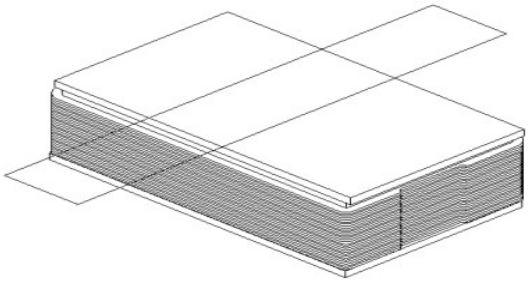
(2)



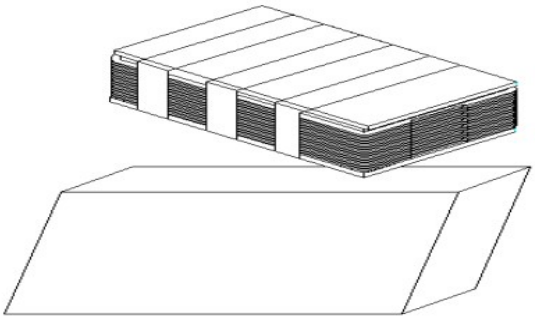
(3)



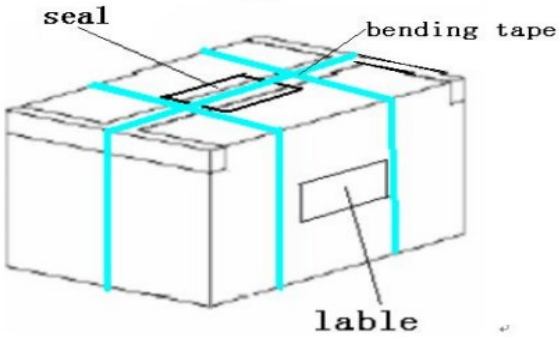
(4)



(5)



(6)



Packaging process 包装流程

1、 Put LCM module into tray cavity.把 LCM 模组放进吸塑盘.
2、 Tray stacking. 吸塑盘叠装.
3、 Put 1 foam under the tray stack and 1 foam abobe.把吸塑盘上下放卡板.
4、 Fix the cardboard to the tray stack with adhesive tape. 缠胶带.
5、 Put the tray stack into carton.把缠好胶带的吸塑盘放进纸箱.
6、 Carton sealing with adhesive tape.封纸箱.

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8.General Precaution 注意事项

6.1 Safety(安全)

1. Do not swallow any liquid crystal, even if there is no proof that liquid crystal is poisonous.
不要吞咽任何液晶，即使没有证据表明液晶有害物质。
2. If the LCD panel breaks, be careful not to get liquid crystal to touch your skin.
如果液晶面板破裂，请注意不要让液晶接触到你的皮肤。
3. If skin is exposed to liquid crystal, wash the area thoroughly with alcohol or soap
如果皮肤接触到液晶，请用酒精或肥皂彻底清洗该区域。

6.2 Storage Conditions（储存条件）

1. Store the panel or module in a dark place where the temperature is 23±5°C and the humidity is below 50±20%RH.
将面板或模块存放在黑暗的地方，温度为 23±5°C，湿度为 50±20%。
湿度低于 50±20%RH。
2. Store in anti-static electricity container.
储存在防静电的容器中。
3. Store in clean environment, free from dust, active gas, and solvent.
储存在清洁的环境中，没有灰尘、活性气体和溶剂。
4. Do not place the module near organics solvents or corrosive gases.
不要把模块放在有机溶剂或腐蚀性气体附近。
5. Do not crush, shake, or jolt the module.
不要挤压、摇晃或颠簸模块。

6.3 Handling Precautions（搬运注意事项）

1. Avoid static electricity which can damage the CMOS LSI.
避免静电，因为静电会损坏 CMOS LSI。
2. The polarizing plate of the display is very fragile. So, please handle it verycarefully.
显示器的极化板非常脆弱，所以，请非常小心地处理它。
3. Do not give external shock.
不要给予外部冲击。
4. Do not apply excessive force on the surface.
不要在表面上施加过多的压力。
5. Do not wipe the polarizing plate with a dry cloth, as it may easily scratch the Surface of plate.
不要用干布擦拭偏光片，因为它可能很容易划伤偏光片的表面。
6. Do not use tectonics solvent & Aromatic solvent, use with a soft cloth soaked with a cleaning naphtha solvent.
不要使用结构性溶剂和芳香族溶剂，用软无尘布蘸上的清洁溶剂。
7. Do not operate it above the absolute maximum rating.
不要在超过绝对最大额定值的情况下操作。
8. Do not remove the panel or frame from the module.
不要从模块上拆下面板或框架。
9. When the module is assembled, it should be attached to the system firmly,Be careful not to twist and bend the module.
当模块组装好后，应将其牢固地连接到系统上，注意不要扭曲和弯曲模块。

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10. Wipe off water droplets or oil immediately. If you leave the droplets for a long time, staining and discoloration may occur.
立即擦掉水滴或油，如果长时间留有水滴，可能会发生染色和变色。
11. If the liquid crystal material leaks from the panel,it should be kept away from the eyes or mouth.In case of contact with hands,legs or clothes, it must be washed away thoroughly with soap.
如果液晶材料从面板上漏出，应远离眼睛或嘴巴。如果接触到手、腿或衣服，必须用肥皂彻底洗掉。

6.4 Warranty（保修）

1. The period is within twelve months since the date of shipping out under normal using and storage conditions.
保修期为自发货之日起 12 个月内，在正常使用和储存条件下。
2. Do not repaired or modified the LCM . It may cause function to lose efficacy ,Starry does not warrant the LCM.
请不要修理或修改 LCM 模组，可能会导致功能失效，操作不当不对 LCM 模组进行保修。
3. All process and material comply ROHS.
所有工艺和材料均符合 ROHS。

9. Contact information (联系信息)

网址：http://www.panel-tag.cn/

联系邮箱：panlee@smartpanle.com

样品购买地址：https://shop212317088.taobao.com/

微信公众号：启明智显

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