

深圳市全动电子技术有限公司	Doc.No.:	
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SPEC TITLE DOCUMENT CONTROL SPECIFICATION	EFFECTIVE DATE : 2026.5.13	

液晶显示模组规格书

LCD MODULE SPECIFICATION

MODEL NO (模组型号) : QY40099A0-00

Project Name (项目名) : QD3981-1

质量管理体系符合标准 GB/T 19001-2016/ISO 9001:2015
证书号:61124Q0352R0S

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1. 产品特征 Product Features

项目 (Item)	描述(Description)
(1) 显示类型 (Display Type)	3.98 inch TFT Normally white
(2) 分辨率 (Resolution)	320*RGB*480
(3) 显示色彩 (color)	16.7M
(4) 视角 (View Angle)	ALL O'CLOCK
(5) 驱动 IC (Driver IC)	ST7365P-G5
(6) 接口类型 (Interface Types)	SPI/MCU/RGB 兼容
(7) 背光模式 (Backlight)	8 并
(8) 模组亮度 (LCM Brightness)	320 cd/m ² (TYP)

2. 物理规格 Physical Specifications

项目 (Item)	规格 (Specification)	单位 (Units)
(1) 外形尺寸(Outline Dimension)	60.88(W) x94.57(H) x2.5±0.1(D)	mm
(2) 显示区尺寸(Active Area Dimension)	55.68(H)×83.52(V)	mm
(3) 解析度(Resolution Dimension)	320(H)RGBx 480(V) dots	/
(4) 像素点尺寸(Pixel Pitch Dimension)	0.174 (H) × 0.174 (V)	mm
(5) 结构类型(Structure Type)	COG+FPC+BL	/

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3. 产品图纸 Product Drawings

(见下页)

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4. 接口定义 The Interface Definition

编号(PIN NO.)	符号(SYMBOL)	描述(Description)
1	YU	Touch panel Top Film Terminal
2	XL	Touch panel LIFT Glass Terminal
3	YD	Touch panel Bottom Film Terminal
4	XR	Touch panel Right Glass Terminal
5	VDD	Power supply 2.8V
6	IOVCC	Power supply 1.8V/2.8V
7	TE	Tearing effect output
8	CS SPI_CS	Chip select pin
9	DCX A0(4LINE)	Command/data select pin Data or Command Selection
10	WR SPI_SCL	Write signal serial Synchronous Clock
11	RD	Read signal
12	SPI_SDA	SPI interface Data Input
13	SPI_SDO	SPI interface output pin
14	GND	Ground
15~32	DB0~DB17	Data bus
33	GND	Ground
34	DE	Data enable signal
35	PCLK	Dot clock signal for RGB interface operation
36	HS	Horizontal sync
37	VS	Vertical sync
38	RESET	Reset signal
39,40,41	IM2~IM0	The MCU interface mode select(详见 IC 规格书)
42	LEDA	Anode pin of backlight
43~48	LEDK	Cathode pin OF backlight

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5. 极限参数 Absolute Maximum Ratings

参数(Parameter)	符号(Symbol)	最小值(Min)	最大值(Max)	单位(Unit)
逻辑电压(Supply voltage for logic)	V_{CC}	-0.3	3.4	V
输入逻辑电压(Input voltage for logic)	V_{IN}	-0.5	$V_{CC} + 0.3$	V
LED 电流 (Supply current(One LED))	I_{LED}	15	25	mA
工作温度(Operating temperature)	T_{OP}	-10	+60	C
存储温度(Storage temperature)	T_{ST}	-20	+70	C

6. 电气参数 Electrical Characteristics

项目 Item	符号 Symbol	最小值 Min	典型值 Typ	最大值 Max	单位 Unit	应用终端 Applicable
逻辑电压(Supply voltage for logic)	V_{CC}	2.5	2.8	3.3	V	VCI
逻辑电压(Supply voltage for logic)	IOVCC	1.65	1.8	3.3	V	IOVCC
输入电压(Input voltage)	V_{IL}	VSS	-	$0.2 V_{DD}$	V	
	V_{IH}	$0.8 V_{CC}$	-	V_{CC}		
LED 正向电压(LED Forward voltage)	V_f	3.1	3.2	3.3	V	--
输入背光电流(Input backlight current)	I_{LED}		160		mA	

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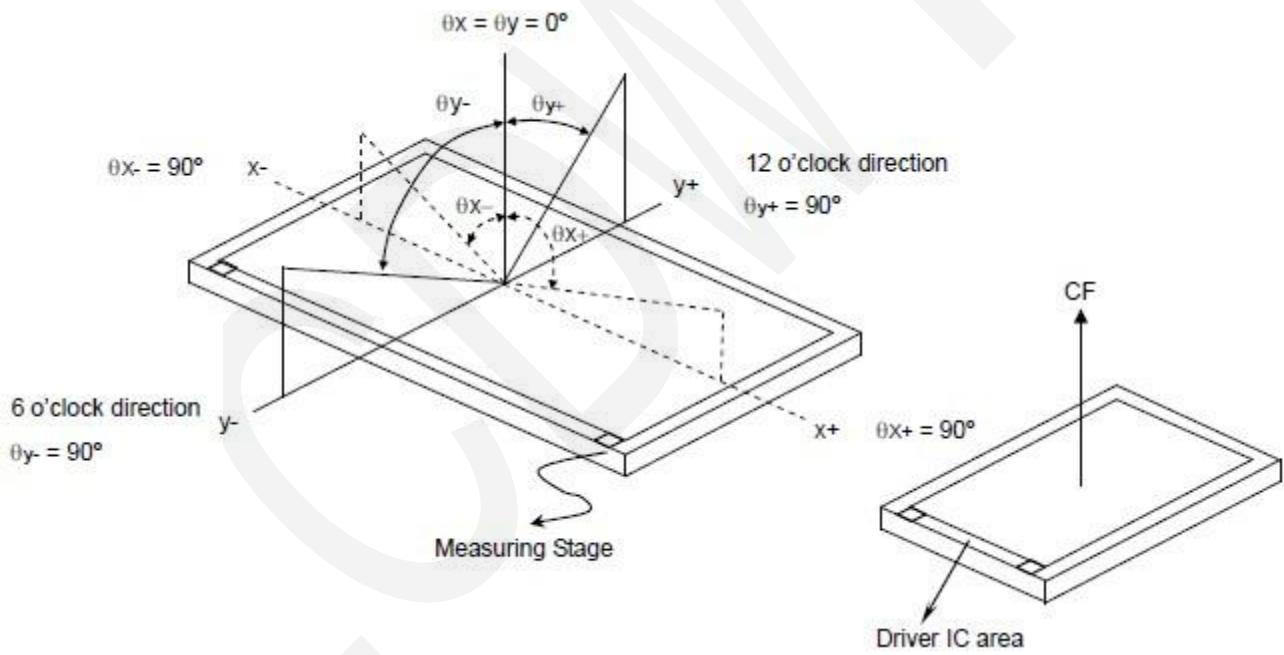
7. 光学参数 Optical Characteristics

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit	Remark
Viewing Angle range	Horizontal	Θ_3	CR > 10	80	89	-	Deg.	Note 1
		Θ_9		80	89	-	Deg.	
	Vertical	Θ_{12}		80	89	-	Deg.	
		Θ_6		80	89	-	Deg.	
Transmittance		Tr	$\Theta = 0^\circ$	4.6%	5.1%	-	%	
Luminance Contrast ratio		CR	$\Theta = 0^\circ$	1000	1200	-		Note 2
Color Gamut	NTSC	CIE1931	$\Theta = 0^\circ$	55	60	-	%	
Reproduction of color	White	Wx	$\Theta = 0^\circ$	Typ -0.03	0.306	Typ +0.03		Note 5 @C Light
		Wy			0.334			
Response Time		Tr+Td	Ta= 25° C $\Theta = 0^\circ$	-	30	35	ms	Note 6
Cross Talk		CT	$\Theta = 0^\circ$	-	-	2.0	%	

Note 1: 可视角度的定义 Definition of Viewing Angle:

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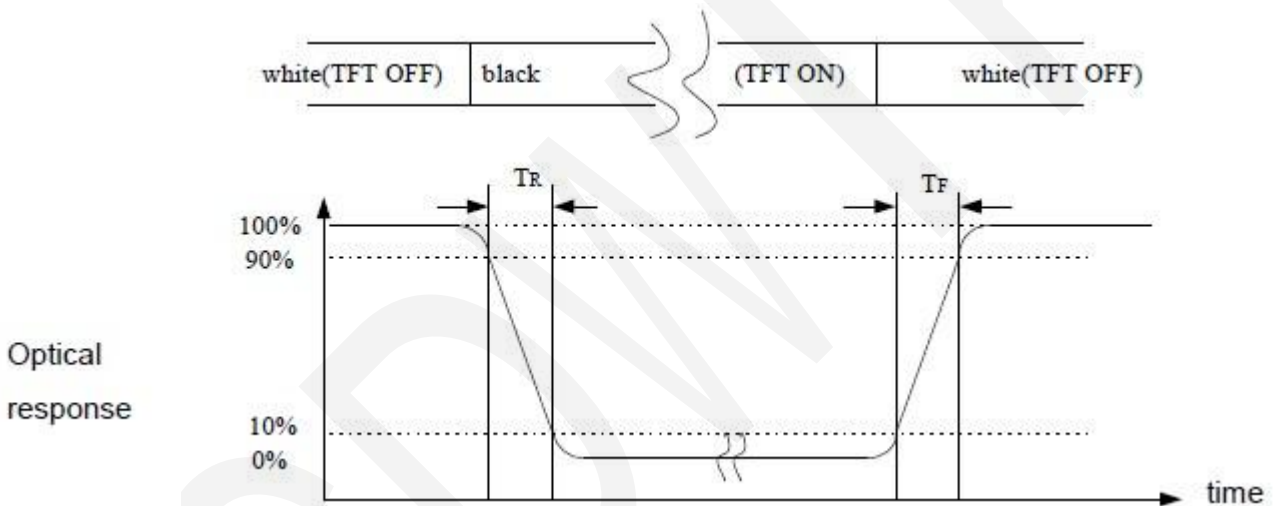


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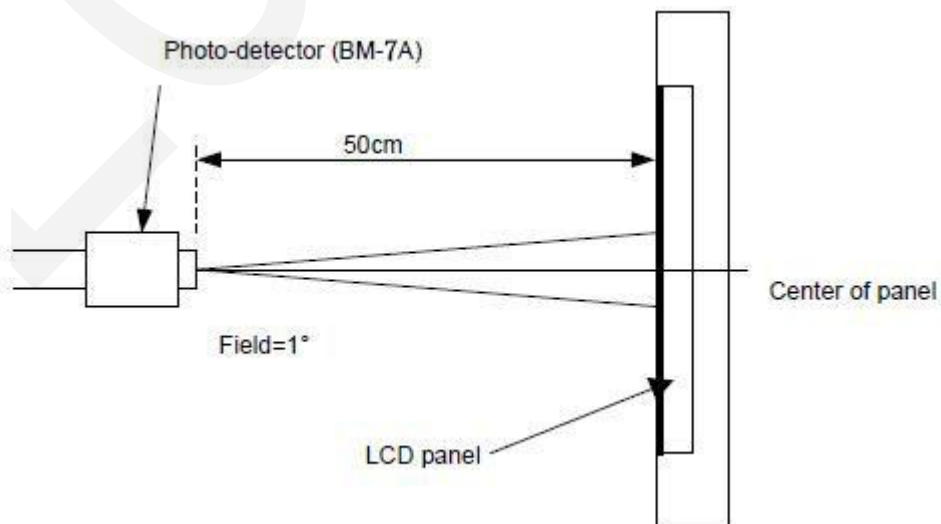
Note 2: 对比度定义 Definition of contrast ratio CR:

$$CR = \frac{\text{Brightness of non-selected dots (white)}}{\text{Brightness of selected dots (black)}}$$

Note 3: 响应时间的定义 Definition of response time (T_R , T_F)



Note 4: 光学测量装置的定义 Definition of optical measurement setup

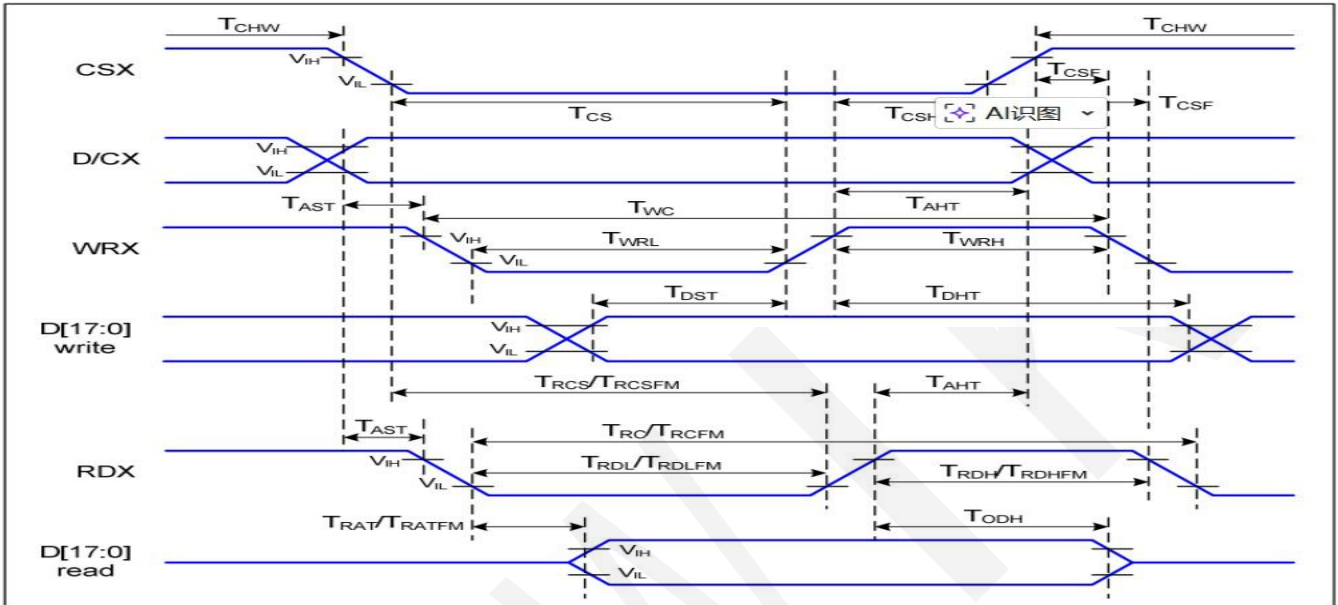


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8. 时序特性 Timing Characteristics

8.1 MCU TIMING



Signal	Symbol	Parameter	Min	Max	Unit	Description
D/CX	T_{AST}	Address setup time	0		ns	-
	T_{AHT}	Address hold time (Write/Read)	10		ns	-
CSX	T_{CHW}	Chip select "H" pulse width	0		ns	-
	T_{CS}	Chip select setup time (Write)	15		ns	-
	T_{RCS}	Chip select setup time (Read ID)	45		ns	-
	T_{RCSFM}	Chip select setup time (Read FM)	355		ns	-
	T_{CSF}	Chip select wait time (Write/Read)	10		ns	-
	T_{CSH}	Chip select hold time	10		ns	-
WRX	T_{WC}	Write cycle	66		ns	-
	T_{WRH}	Control pulse "H" duration	15		ns	-

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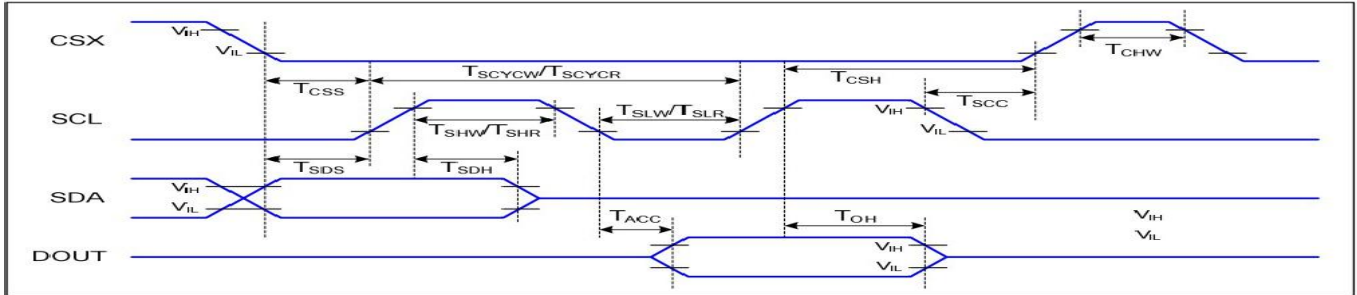
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	T_{WRL}	Control pulse "L" duration	15		ns	
RDX (ID)	T_{RC}	Read cycle (ID)	160		ns	When read ID data
	T_{RDH}	Control pulse "H" duration (ID)	90		ns	
	T_{RDL}	Control pulse "L" duration (ID)	45		ns	
RDX (FM)	T_{RCFM}	Read cycle (FM)	450		ns	When read from frame memory
	T_{RDHFM}	Control pulse "H" duration (FM)	90		ns	
	T_{RDLFM}	Control pulse "L" duration (FM)	355		ns	
D[17:0]	T_{DST}	Data setup time	10		ns	For CL=30pF
	T_{DHT}	Data hold time	10		ns	
	T_{RAT}	Read access time (ID)	-	40	ns	
	T_{RATFM}	Read access time (FM)	-	340	ns	
	T_{ODH}	Output disable time	20	80	ns	

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8.2 SPI TIMING



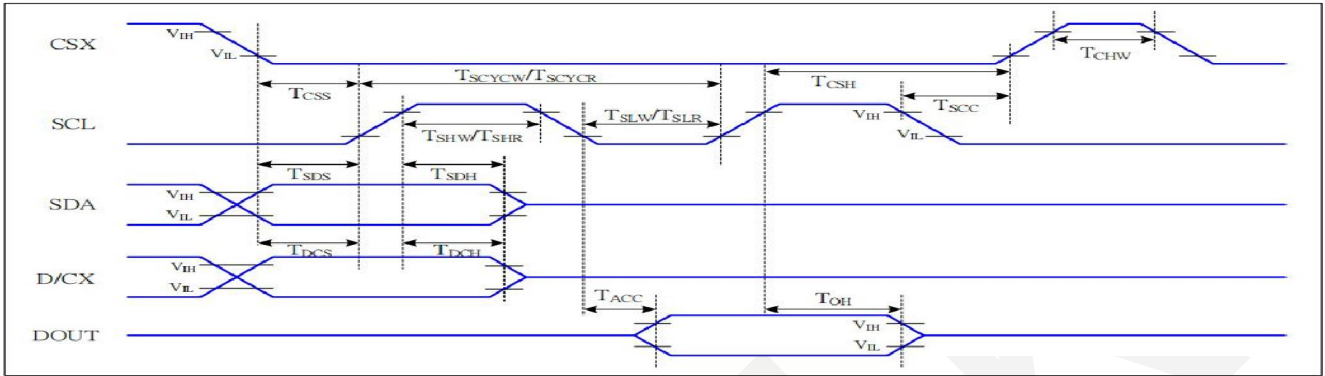
3-SPI Interface Timing Characteristics

Signal	Symbol	Parameter	Min	Max	Unit	Description
CSX	T _{CSS}	Chip select setup time (write)	15		ns	
	T _{CSH}	Chip select hold time (write)	15		ns	
	T _{CSS}	Chip select setup time (read)	60		ns	
	T _{SCC}	Chip select hold time (read)	65		ns	
	T _{CHW}	Chip select "H" pulse width	40		ns	
SCL	T _{SCYW}	Serial clock cycle (Write)	66		ns	
	T _{SHW}	SCL "H" pulse width (Write)	15		ns	
	T _{SLW}	SCL "L" pulse width (Write)	15		ns	
	T _{SCYR}	Serial clock cycle (Read)	150		ns	
	T _{SHR}	SCL "H" pulse width (Read)	60		ns	
SDA (DIN)	T _{SLR}	SCL "L" pulse width (Read)	60		ns	
	T _{SDS}	Data setup time	10		ns	
DOUT	T _{SDH}	Data hold time	10		ns	
	T _{ACC}	Access time	10	50	ns	For maximum CL=30pF
	T _{OH}	Output disable time	15	50	ns	For minimum CL=8pF

3-SPI Interface Characteristics

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4-SPI Interface Timing Characteristics

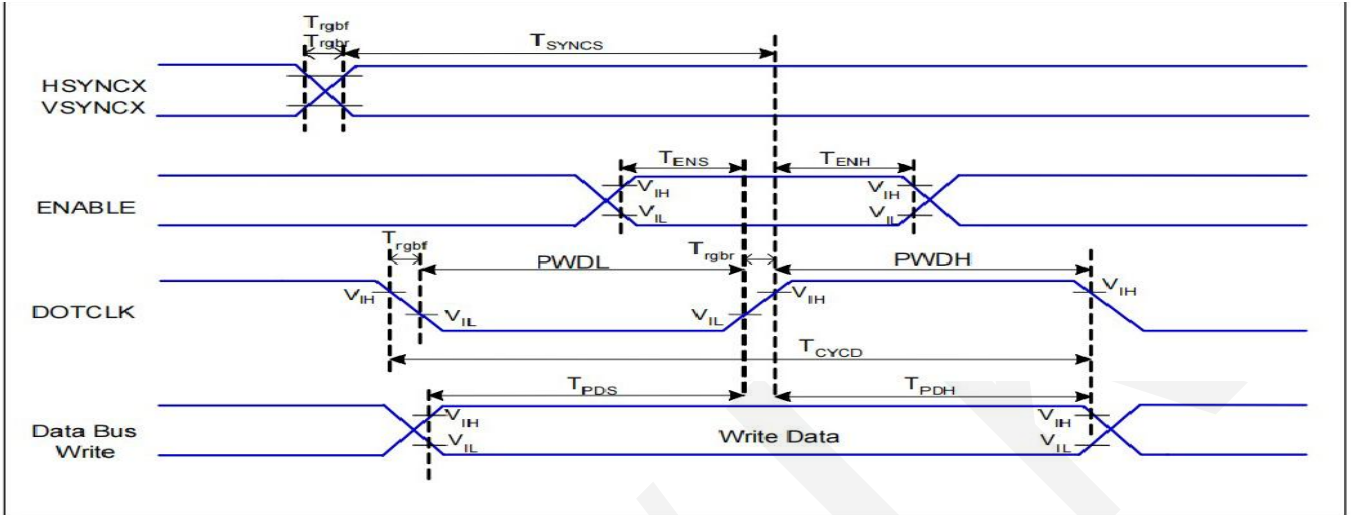
Signal	Symbol	Parameter	MIN	MAX	Unit	Description
CSX	T_{CSS}	Chip select setup time (write)	15		ns	
	T_{CSH}	Chip select hold time (write)	15		ns	
	T_{CSS}	Chip select setup time (read)	60		ns	
	T_{SCC}	Chip select hold time (read)	65		ns	
	T_{CHW}	Chip select "H" pulse width	40		ns	
SCL	T_{SCYCW}	Serial clock cycle (Write)	66		ns	-write command & data ram
	T_{SHW}	SCL "H" pulse width (Write)	15		ns	
	T_{SLW}	SCL "L" pulse width (Write)	15		ns	
	T_{SCYCR}	Serial clock cycle (Read)	150		ns	
	T_{SHR}	SCL "H" pulse width (Read)	60		ns	
T_{SLR}	SCL "L" pulse width (Read)	60		ns		
D/CX	T_{DCS}	D/CX setup time	10		ns	
	T_{DCH}	D/CX hold time	10		ns	
SDA (DIN)	T_{SDS}	Data setup time	10		ns	
	T_{SDH}	Data hold time	10		ns	
DOUT	T_{ACC}	Access time	10	50	ns	For maximum CL=30pF
	T_{OH}	Output disable time	15	50	ns	For minimum CL=8pF

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8.3 RGB TIMING



Signal	Symbol	Parameter	MIN	MAX	Unit	Description
HSYNC, VSYNC	T_{SYNCS}	VSYNC, HSYNC Setup Time	15	-	ns	
ENABLE	T_{ENS}	Enable Setup Time	15	-	ns	
	T_{ENH}	Enable Hold Time	15	-	ns	
DOTCLK	PWDH	DOTCLK High-level Pulse Width	30	-	ns	
	PWDL	DOTCLK Low-level Pulse Width	30	-	ns	
	T_{CYCD}	DOTCLK Cycle Time	66	-	ns	
	Trghr, Trghf	DOTCLK Rise/Fall time	-	15	ns	
DB	T_{PDS}	PD Data Setup Time	15	-	ns	
	T_{PDH}	PD Data Hold Time	15	-	ns	

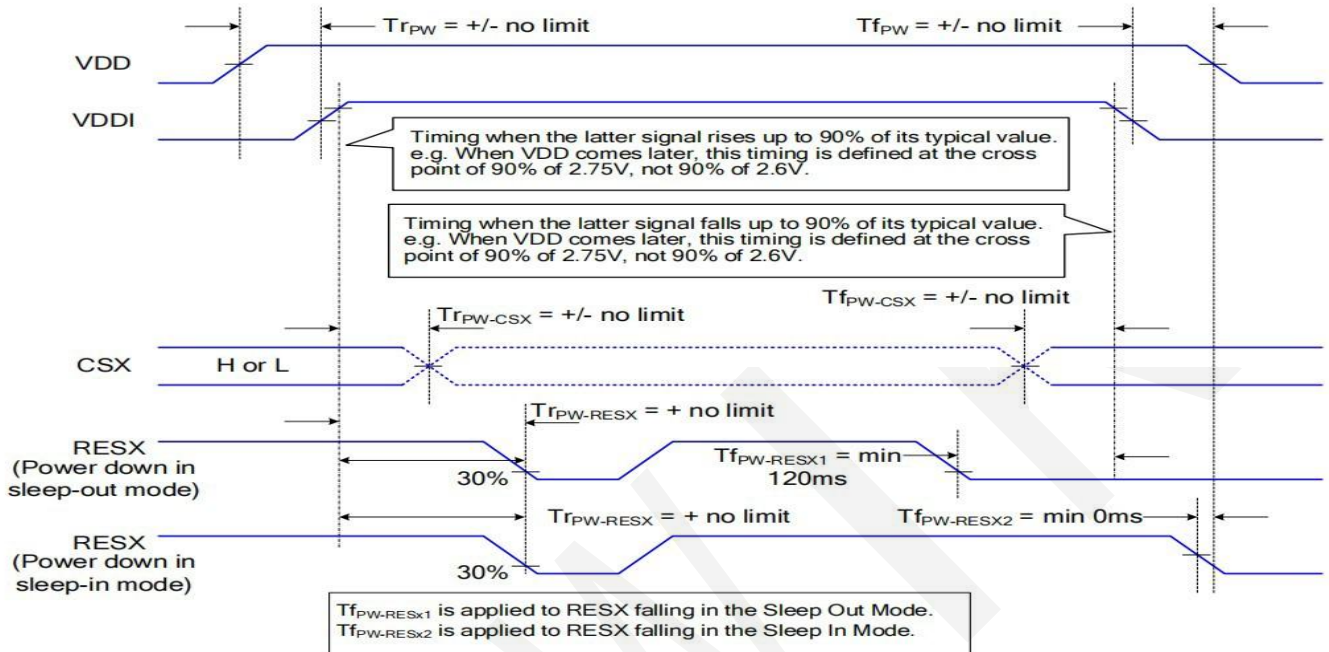
RGB Interface Timing Characteristics

8.4 Power ON/OFF Sequence :

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The power on/off sequence is illustrated below



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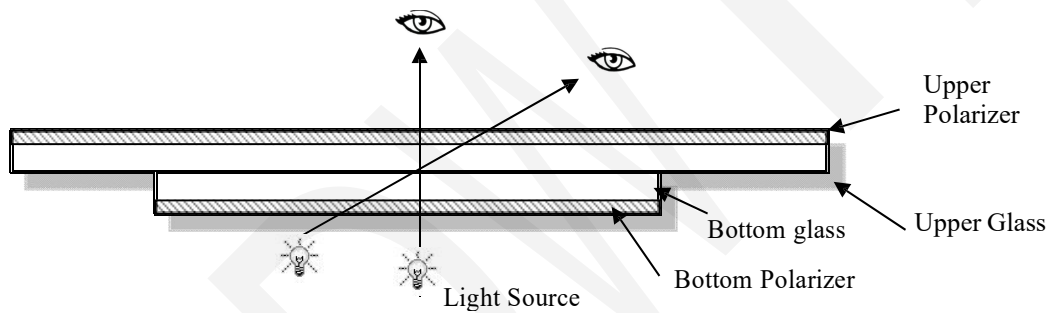
11.品质检验标准 LCM Quality Criteria

11.1 外观及功能的检验标准 Visual & Function Inspection Standard

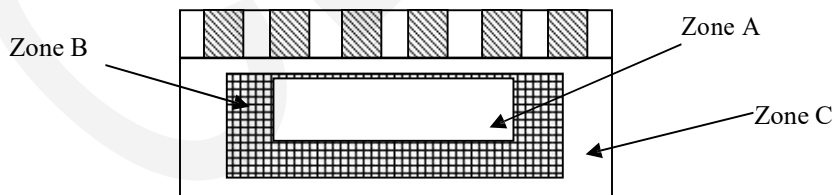
11.1.1 检验条件 Inspection conditions

建议在下列条件下进行检验 Inspection performed under the following conditions is recommended.

温度 Temperature : $25\pm 5^{\circ}\text{C}$
 湿度 Humidity : $65\pm 10\% \text{RH}$
 视角 Viewing Angle : 正常的视角 Normal viewing Angle.
 照明 Illumination: 单颗荧光灯 Single fluorescent lamp (300 to 700Lux)
 观察距离 Viewing distance: 30-50 cm



11.1.2 定义 Definition



Zone A : 有效显示区域 (显示图像的区域) Effective Viewing Area(Character or Digit can be seen)

Zone B : 观察区 Zone A 除外 Viewing Area except Zone A

Zone C : 外形边框 Outside (Zone A+Zone B) which can not be seen after assembly by customer .)

Note:

一般情况下, 在不影响客户产品装配后的功能或外观, Zone C 的缺损可忽略不计;

As a general rule ,visual defects in Zone C can be ignored when it doesn't effect product function or appearance after assembly by customer.

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11.1.3 抽样计划 Sampling Plan

根据 GB / T 2828-2003 II 类标准正常检验;

According to GB/T 2828-2003 ; , normal inspection, Class II 可接受的质量标准 AQL:

主要缺陷 Major defect	次要缺陷 Minor defect
0.65	1.5

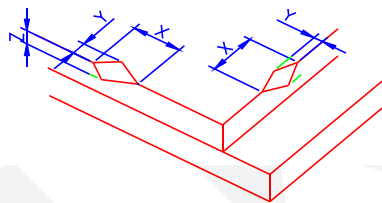
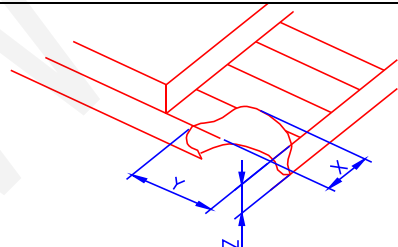
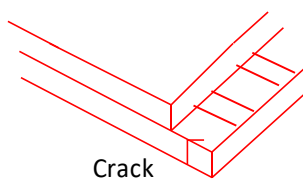
LCD: Liquid Crystal Display , TP: Touch Panel , LCM: Liquid Crystal Module

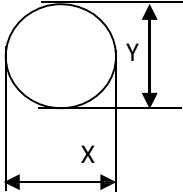
编号 No	需要检查的项目 Items to be inspected	标准 Criteria	缺陷分类 Classification of defects
1	功能缺陷 Functional defects	1. 无显 No display 2. 显示异常 Display abnormally 3. 缺画 Missing vertical, horizontal segment 4. 短路 Short circuit 5. 背光不亮、闪烁或者异常 Back-light no lighting,lickering and abnormal lighting 6. 信号交叉串扰 Cross-Talk 7. 噪声 Noise 8. 色彩对比度不一致 Color contrast	主要缺陷 Major
2	缺少 Missing	缺少的组件 Missing component	
3	外形尺寸 Outline dimension	整体外形尺寸超出图纸是不允许的范围; Overall outline dimension beyond the drawing is not allowed	
4	色调 Color tone	指与样品的色调有差异; Color unevenness, refer to limited sample	次要缺陷 Minor
5	焊接外观 Soldering appearance	良好的焊接, 不允许虚焊; Good soldering, Peeling off is not allowed.	
6	玻璃/偏光片 LCD/Polarizer	黑白点/线, 划痕, 裂纹等。 Black/White spot/line, scratch, crack, etc.	

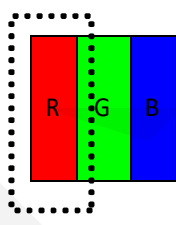
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11.1.4 目测检验标准 Criteria (Visual)

编号 Number	项目 Items	标准 Criteria(mm)						
1.0 LCD Crack/Broken 裂痕/破裂 NOTE: X: Length Y: Width Z: Height L: Length of ITO, T: Height of LCD	(1) 玻璃边缘破裂 The edge of LCD broken	 <table border="1" data-bbox="837 896 1380 1052"> <thead> <tr> <th>X</th> <th>Y</th> <th>Z</th> </tr> </thead> <tbody> <tr> <td>≤1.5mm</td> <td><Inner border line of the seal</td> <td>≤T</td> </tr> </tbody> </table>	X	Y	Z	≤1.5mm	<Inner border line of the seal	≤T
	X	Y	Z					
	≤1.5mm	<Inner border line of the seal	≤T					
(2) 玻璃蹦角 LCD corner broken	 <table border="1" data-bbox="901 1400 1324 1478"> <thead> <tr> <th>X</th> <th>Y</th> <th>Z</th> </tr> </thead> <tbody> <tr> <td>≤1.5mm</td> <td>≤1.0mm</td> <td>≤T</td> </tr> </tbody> </table>	X	Y	Z	≤1.5mm	≤1.0mm	≤T	
X	Y	Z						
≤1.5mm	≤1.0mm	≤T						
(3) 玻璃裂纹 LCD crack	 <p>Crack 不允许; Not allowed</p>							

编号 Number	项目 Items	标准 Criteria (mm)																																														
2.0	点缺陷 Spot defect  $\Phi=(X+Y)/2$	① 光点 (LCD/TP/偏光片黑/白点, 轻点, 针孔, 凹陷, 彩点) light dot (LCD/TP/Polarizer black/white spot, light dot, pinhole, dent, stain) <table border="1" data-bbox="459 371 1246 736"> <thead> <tr> <th rowspan="2">Zone Size (mm)</th> <th colspan="3">允许数量 Acceptable Qty</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>$\Phi \leq 0.10$</td> <td colspan="3">忽略 Ignore</td> </tr> <tr> <td>$0.10 < \Phi \leq 0.15$</td> <td colspan="3">2</td> </tr> <tr> <td>$0.15 < \Phi \leq 0.2$</td> <td colspan="3">0</td> </tr> <tr> <td>$0.2 < \Phi$</td> <td colspan="3">0</td> </tr> </tbody> </table> ② 暗点 (LCD/TP/偏光片漏光昏暗的点、黑点) Dim spot (LCD/TP/Polarizer dim dot, light leakage, dark spot) <table border="1" data-bbox="459 846 1246 1211"> <thead> <tr> <th rowspan="2">Zone Size (mm)</th> <th colspan="3">允许数量 Acceptable Qty</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>$\Phi \leq 0.1$</td> <td colspan="3">忽略 Ignore</td> </tr> <tr> <td>$0.1 < \Phi \leq 0.15$</td> <td colspan="3">2</td> </tr> <tr> <td>$0.15 < \Phi \leq 0.3$</td> <td colspan="3">0</td> </tr> <tr> <td>$\Phi > 0.3$</td> <td colspan="3">0</td> </tr> </tbody> </table>	Zone Size (mm)	允许数量 Acceptable Qty			A	B	C	$\Phi \leq 0.10$	忽略 Ignore			$0.10 < \Phi \leq 0.15$	2			$0.15 < \Phi \leq 0.2$	0			$0.2 < \Phi$	0			Zone Size (mm)	允许数量 Acceptable Qty			A	B	C	$\Phi \leq 0.1$	忽略 Ignore			$0.1 < \Phi \leq 0.15$	2			$0.15 < \Phi \leq 0.3$	0			$\Phi > 0.3$	0		
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	偏光片气泡 Polarizer Bubble	<table border="1"> <tr> <th>Zone Size (mm)</th> <th>允许数量 Acceptable Qty</th> </tr> <tr> <td>$\Phi \leq 0.1$</td> <td>忽略 Ignore</td> </tr> <tr> <td>$0.1 < \Phi \leq 0.2$</td> <td>2</td> </tr> <tr> <td>$0.2 < \Phi \leq 0.3$</td> <td>1</td> </tr> <tr> <td>$0.3 < \Phi$</td> <td>0</td> </tr> </table>	Zone Size (mm)	允许数量 Acceptable Qty	$\Phi \leq 0.1$	忽略 Ignore	$0.1 < \Phi \leq 0.2$	2	$0.2 < \Phi \leq 0.3$	1	$0.3 < \Phi$	0			
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4.0	贴片电子元器件 SMT	根据<电子组件接受 IPC-A-610C 2 级标准>。组件丢失或功能缺陷是主要的缺陷，其他是次要缺陷。According to the <Acceptability of electronic assemblies> IPC-A-610C class 2 standard. Component missing or function defect are Major defect, the others are Minor defect.													
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11.1.5 功能性标准 Criteria (functional items)

项目 Items	标准 Criteria
无显 No display	不允许; Not allowed
显示异常 Display abnormally	不允许; Not allowed
缺画 Missing vertical, horizontal	不允许; Not allowed
组件分离 Segment	不允许; Not allowed
短路 Short circuit	不允许; Not allowed
背光不亮 Back-light no lighting,	不允许; Not allowed
背光闪烁或异常 Flickering and abnormal lighting	不允许; Not allowed
信号交叉串扰 Cross-Talk	不允许; Not allowed
噪声 Noise	不允许; Not allowed
色彩对比度不一致 Color contrast	不允许; Not allowed
玻璃表面污垢 The LCD surface dirt	如果客户不能自行擦除干净, 也是不可接受的; If you cannot use smudgy surface air clean and clear, coco is not acceptable
缺少元器件 Components off	不允许; Not allowed
FPC&PCB 不良 FPC&PCB undesirable	不允许; Not allowed
铁框支架变形 Iron frame deformation	不允许; Not allowed

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11.2 可靠性实验 Reliability Test

项目 ITEM	条件 Condition	样品数量 Sample size	标准 Criterion
高温储存 High Temp. Storage	+70°C ± 2°C, 48 小时 hrs	5pcs	检查后 2~4 小时存储在室温下， 该样品应无缺陷： 1. 液晶显示器无气泡； 2. 液晶无漏液； 3. 显示正常； 4. 不缺少部件； 5. 表面应无损伤； 6. 线性度测试仪检测对比度必须 不超过 10%。 7. 线性度测试仪检测电源不超过 10%。 Inspection after 2~4hours storage at
低温储存 Low Temp. Storage	-20°C ± 2°C, 48 小时 hrs	5pcs	
高温运行 High Temp. Operation	+20°C ± 2°C, 48 小时 hrs	5pcs	
低温运行 Low Temp. Operation	-10°C ± 2°C, 48 小时 hrs	5pcs	

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11.3 安全说明 Safety instructions

- 11.3.1 如果液晶面板断裂，小心不要让任何液晶物质进入到口中；
If the LCD panel breaks, be careful not to get any liquid crystal substance in your mouth.
- 11.3.2 如果液晶物质触及你的皮肤或衣物，请立即用肥皂和水清洗干净；
If the liquid crystal substance touches your skin or clothes, please wash it off immediately by using soap and water.

11.4 模组使用注意事项 Handling Precautions

- 11.4.1 客户在做结构设计时，请保证机壳开窗尺寸比触摸屏 V.A 单边少 0.3mm，泡棉开窗尺寸比触摸屏 V.A 单边大 0.2mm；
Customers do structural design, please ensure the cabinet window size smaller than the touch screen VA unilateral 0.3mm. Foam window size larger than 0.2mm unilateral touchscreen V.A
- 11.4.2 防止静电损坏集成电路
Avoid static electricity damaging the LSI.
- 11.4.3 不要从模块中拆下玻璃面板或铁框支架
Do not remove the panel or frame from the module .
- 11.4.4 显示屏的偏光片是很脆弱的。所以请注意要非常小心，避免损坏；
The polarizing plate of the display is very fragile . So, please handle it very carefully.
- 11.4.5 不要用干布擦拭偏光片，因为很容易刮伤到它的表面；
Do not wipe the polarizing plate with a dry cloth, as it may easily scratch the surface of the plate.
- 11.4.6 显示颜色和背景色调有可能随着储存温度范围的变化而发生改变；
The color tone of display and background of LCM has the possibility to be changed in the storage temperature range.
- 11.4.7 注意工作使用环境，产品可能会被静电所损坏；
Pay attention to the working environment, as the element may be destroyed by static electricity.
--确保使用作业人员身体可靠的接地；
Be sure to ground human body and electric appliance during work.
--避免在干燥的环境中作业，减少静电的损害；
Avoid working in a dry environment to minimize the generations of static electricity.
--在作业过程中，快速剥离保护膜时可能会引起静电；
Static electricity may be generated when the protective film is fast peeled off.
- 11.4.8 当焊接 LCM 端子时，确保使用交流电源的烙铁不漏电；
When soldering the terminal of LCM, make certain the AC power source of soldering iron does not leak.
- 11.4.9 潮湿的环境可能引起玻璃 ITO 的腐蚀，在使用中，请确保湿度在 50%以下。
Humid environment may cause a bad ITO glass corrosion, in use, make sure the humidity is below 50%.
- 11.4.10 如果液晶显示模组的表面被污染，可以使用柔软的无尘布在表面上轻轻的擦拭。如果是严重的污染，可以用无尘布蘸上酒精轻轻擦拭。特别是不可使用可能损坏偏光片的溶剂（例如：水/酮）
If the display surface becomes contaminated ,breathe on the surface and gently wipe it with a soft-dry- clean cloth .If it is heavily contaminated ,moisten cloth with the following solvent(ex:Ethyl alcohol).Solvents other than those above-mentioned may damage the polarizer(Especially ,do not use them .ex: Warter / Ketone)

11.5 使用说明 Operation instructions

- 11.5.1 推荐使用 在规定的电压范围内驱动液晶显示面板，尝试调整工作电压为达到最佳的对比度，在不同的温度液晶显示面板的颜色和对比度会有所不同；
It is recommended to drive the LCD within the specified voltage limits, try to adjust the operating voltage for

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the optimal contrast, the color and contrast of LCD panel will varies at different temperature.

11.5.2 在较低的工作温度范围液晶的响应时间会大大延迟。但这并不意味着液晶会失灵，使它返回到指定的温度范围他将会恢复到正常的状态；

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Response time is greatly delayed at low operating temperature range. However, this does not mean the LCD will be out of the order, It will recover when it returns to the specified temperature range.

11.5.3 液晶显示模块在工作时如果显示区遭到硬物压力，液晶显示模块将会变得显示异常；
If the display area is pushed hard during operation, the display will become abnormal.

11.5.4 不在特定条件下的环境中使用 LCD，可能会导致液晶的损伤和寿命的缩短；

Do not operate the LCD at the environments over the specified conditions, this may cause damage on the LCD and shorten the lifetime.

11.6 存储方法 Storage instructions:

10.6.1 将液晶显示模组存储在密封的聚乙烯袋中；

Store LCDs in a sealed polyethylene bag.

10.6.2 将液晶显示模组放置在黑暗的地方，不要暴露在阳光或者日光灯下，保持 10°C 到 35°C 之间的温度；湿度保持在 35%RH~70%RH；有效期 6 个月，使用前需进行全检测试。

Store LCDs in a dark place, Do not expose to sunlight or fluorescent light. Keep the temperature between 10°C and 35°C. The humidity is kept at 35%RH~70%RH; It is valid for 6 months, and a full inspection test is required before use.

10.6.3 避免接触任何其他震动的物体，建议将他们存储在固定的容器中，便于搬运；

Avoid the polarizer touch any other object, (It is recommended to store them in the container in which they were shipped.)

11.7 保修期限 Limited Warranty

11.7.1 按照检查验收标准(或商定好的要求)，发现产品有缺陷的，从产品喷墨打印的生产日期起，我司提供 12 个月的产品维修保障服务；

will replace or repair any of its LCD modules, which are found to be defective, when inspected in accordance with LCM acceptance standards (copies available upon request) for a period of 12 months from ink- print date on product

11.7.2 任何有缺陷的产品必须从收到货后 60 天内退回，以送货单据做为计算日期的依据；品质责任区分依据(9.1,9.2)；

Any defects must be returned to within 60 days since ship-out. Confirmation of such date shall be based on freight documents. The warranty liability of was am limited to repair and/or replacement on defects above (7.1,7.2)

11.7.3 如果是因为保护预防措施不当，造成下述的问题，将不提供保修；

No warranty can be granted if the precautions stated above have been disregarded. The typical samples are as below:

--液晶显示屏破裂/裂纹 LCD glass crack/break

-- PCB 插座损坏或修改 PCB outlet is damaged or modified.

--损坏的 PCB 导体 PCB conductors damaged.

--电路经过人为的研磨、雕刻或绘画漆修饰 Circuit modified with by grinding, engraving or painting varnish.

-- FPC 有断裂纹 FPC crack

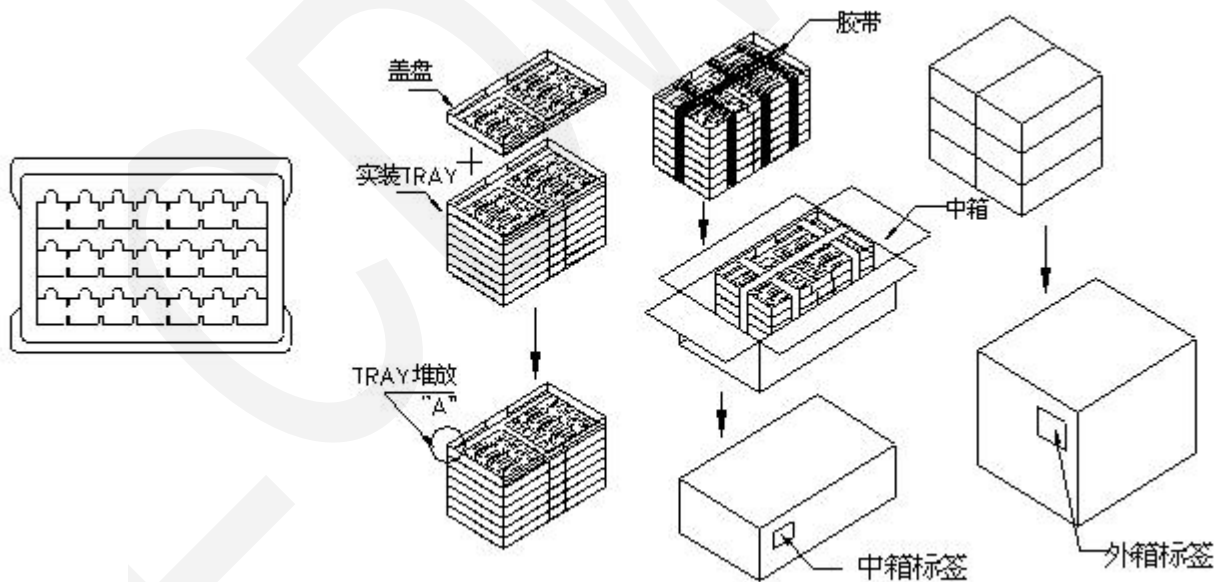
11.7.4 必须将有缺陷的模块标识清楚问题现象，必须将安装的任何连接物体彻底分离清除，而不损坏 PCB 插座、电路和端子，液晶显示屏必须用专用的包装盒包装运输；

Modules must be returned with sufficient description of the failures of defects. Any connectors or cable installed by the customer must be removed completely without damaging the PCB outlet, conductors and terminals. Modules must be packed with the container in which they wereshipped.



12. 包装方法 Packingmethod

包装示意图 Package picture:



详细信息请咨询我们的技术部门

Please consult our technical department for detail information.