

SPECIFICATIONS

CUSTOMER : _____

SAMPLE CODE : SH480272T005-IHC06

MASS PRODUCTION CODE : PH480272T005-IHC06

SAMPLE VERSION : 01

SPECIFICATIONS EDITION : 004

DRAWING NO. (Ver.) : LMD-PH480272T005-IHC06 (Ver.003)

PACKAGING NO. (Ver.) : PKG-PH480272T005-IHC06 (Ver.002)

Customer Approved

Date: _____

Approved	Checked	Designer
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- Preliminary specification for design input
- Specification for sample approval

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LCM Packaging Specifications

Note:

For detailed information please refer to IC data sheet
LCD Controller: ST7257-G4

1. SPECIFICATIONS

1.1 Features

Item	Standard Value
Touch Panel	Projective Capacitive Touch Panel
Screen Size(inch)	4.3 (Diagonal)
Viewing Direction	6 O'clock
Resolution	480* (R · G · B) * 272 Dots
LCD Type	Transmissive, a-Si TFT
Weight	92.9 g
Interface	Raspberry Pi DPI /GPIO / 18 Bit RGB (DPI_OUTPUT_FORMAT_18BIT_666_CFG1)
Other Driver	ST7257-G4
ROHS	THIS PRODUCT CONFORMS THE ROHS OF PTC Detail information please refer website : http://www.powertip.com.tw/news_detail.php?Key=1&clD=1

1.2 Mechanical Specifications

Item	Standard Value	Unit
Outline Dimension	113.2(W) * 73.2 (L) * 21.83 (H)	mm

LCD panel

Item	Standard Value	Unit
Active Area	95.04 (W) * 53.86 (L)	mm

Note : For detailed information please refer to LCM drawing.

1.3 Absolute Maximum Ratings

Item	Symbol	Condition	Min.	Max.	Unit
Power Supply Voltage	VCC	-	-0.3	+3.96	V
	VDD	-	-0.3	+20	V
Logic Voltage	BL_PWM	-	-0.3	+20	V
Operating Temperature	T _{OP} (Ts)	Note 1	-20	+70	°C
Storage Temperature	T _{ST} (Ta)	Note 2	-30	+80	°C
Storage Humidity	H _D	Ta < 60 °C	-	90	%RH

Note 1 : Ts is the temperature of panel's surface

Note 2 : Ta is the ambient temperature of samples

1.4 DC Electrical Characteristics

Item	Symbol	Status	Condition	Min.	Typ.	Max.	Unit
Power Supply Voltage	VCC	I	VCC-GND	3.0	3.3	3.6	V
	VDD	I	VDD-GND	4.5	5.0	5.5	V
Power Supply Current	ICC	I	VCC=3.3v	-	50	60	mA
	IDD	I	VDD=5.0v	-	185	220	mA
Input Logic High Voltage	V _{IH}	-	-	0.7*VCC	-	VCC	V
Input Logic Low Voltage	V _{IL}	-	-	GND	-	0.3*VCC	V
Logic Voltage	BL_PWM	-	-	-	3.3	-	V
PWM Frequency	F _{PWM}	-	-	5	-	100	KHz

Note: Maximum current from RGB full-display

1.5 Optical Characteristics

TFT LCD Panel

Ta=25°C

Item	Symbol	Condition	Min.	Typ.	Max.	Unit	-	
Response Time	Tr + Tf	-	-	26	39	ms	Note2	
Viewing Angle	Top	ΘY+	CR ≥ 10	-	60	-	Deg.	Note4
	Bottom	ΘY-		-	60	-		
	Left	ΘX-		-	60	-		
	Right	ΘX+		-	60	-		
Contrast Ratio	CR	-	500	600	-	-	Note3	
Color of CIE Coordinate (With B/L)	White	X	-	0.24	0.29	0.34	-	Note1
		Y		0.27	0.32	0.37		
	Red	X		0.55	0.60	0.65		
		Y		0.31	0.36	0.41		
	Green	X		0.29	0.34	0.39		
		Y		0.54	0.59	0.64		
	Blue	X		0.10	0.15	0.20		
		Y		0.04	0.09	0.14		
Average Brightness Pattern=White Display	IV	IF=40 mA	680	850	-	cd/m2	Note1	
Luminance Uniformity	YU	IF=40 mA	70	-	-	%	Note1	

Note1:

1 : $\Delta B = B(\min) / B(\max) \times 100\%$

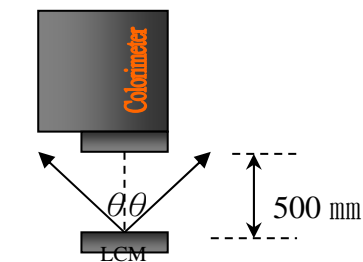
2 : Measurement Condition for Optical Characteristics:

a : Environment: 25°C ± 5°C / 60 ± 20% R.H , no wind , dark room below 10 Lux at typical lamp current and typical operating frequency.

b : Measurement Distance: 500 ± 50 mm , (θ = 0°)

c : Equipment: TOPCON BM-7 fast , (field 1°) , after 10 minutes operation.

d : The uncertainty of the C.I.E coordinate measurement ± 0.01 , Average Brightness ± 4%

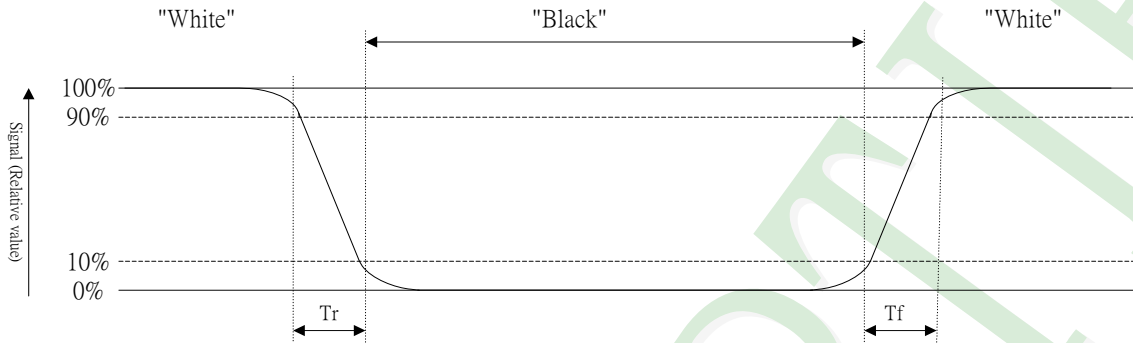


Colorimeter=BM-7 fast

Note2: Definition of response time:

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:



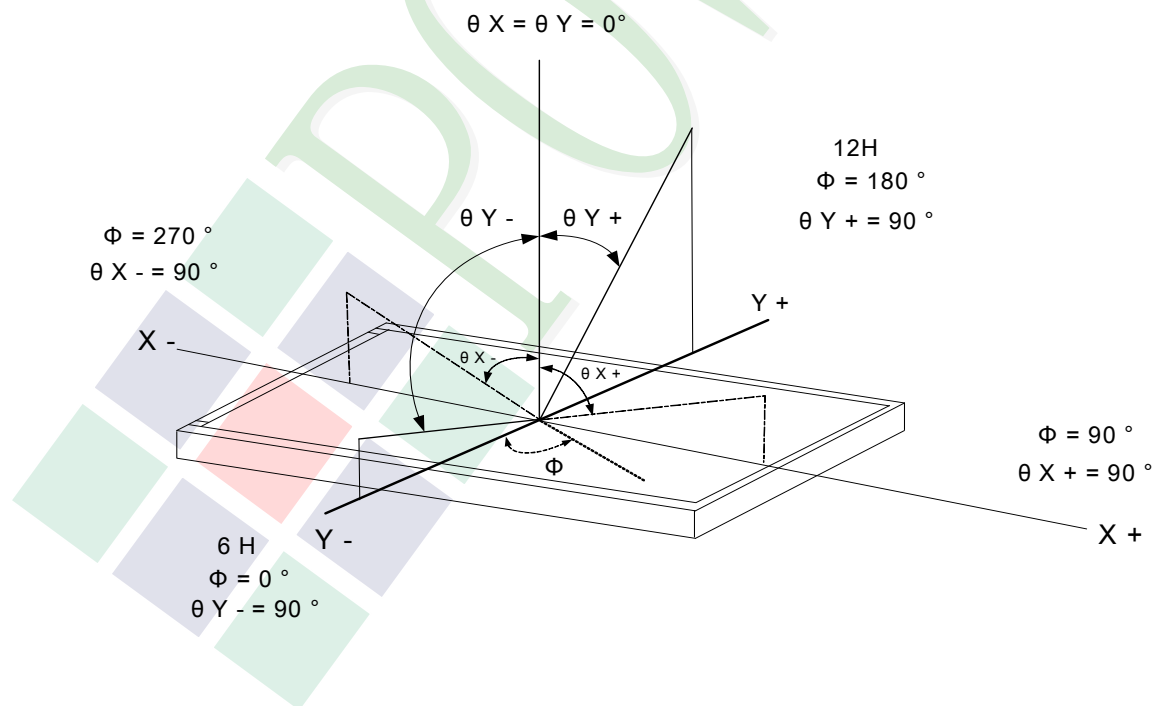
Note3: Definition of contrast ratio:

Contrast ratio is calculated with the following formula

$$\text{Contrast ratio (CR)} = \frac{\text{Photo detector output when LCD is at "White" state}}{\text{Photo detector output when LCD is at "Black" state}}$$

Note4: Definition of viewing angle:

Refer to figure as below:



1.6 Backlight Characteristics

1.6.1 DC Characteristics

Maximum Ratings

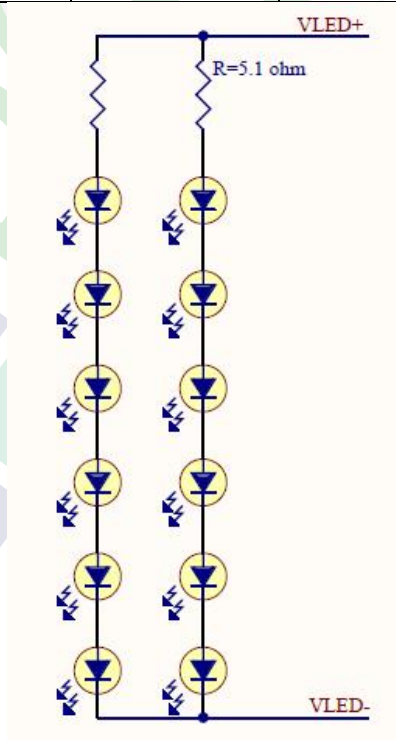
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Power Dissipation	Pd	-	-	100	-	mW
LED Forward Current	IF	1 LED	-	-	30	mA
LED Reverse Voltage	VR	1 LED	-	-	5	V

Electrical / Optical Characteristics

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Voltage for LED Backlight	VF	If=40mA	17.6	19.2	20.4	V
Current for LED Backlight	IF		-	40	-	mA
Color	White					

Other Description

Item	Conditions	Description
Life Time	Ta =25°C If= 40 mA	50000 hrs



1.7 Touch Panel Characteristics

Features

Item	Standard Value
Touch Panel Size	4.3"
Touch Type	Projective Capacitive Touch Panel
Input Method	Finger / 5 Points Touch
Output Interface	I ² C
IC	ICNT8826

Mechanical Specifications

Item	Standard Value	Unit
Viewing Area	97.1 (W) * 55.9 (L)	mm

Absolute Maximum Ratings

Item	Symbol	Condition	Min.	Max.	Unit
Supply Voltage	TP_VDD	-	-0.3	+6.0	V
Operating Temperature	T _{OP}	-	-20	+70	°C
Storage Temperature	T _{ST}	-	-30	+80	°C

DC Electrical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply Voltage	TP_VDD	-	-	3.3	-	V

Touch Panel IC Read/Write Description & Register Mapping

Reference: Chipone Touch Driver Porting Reference Guide.

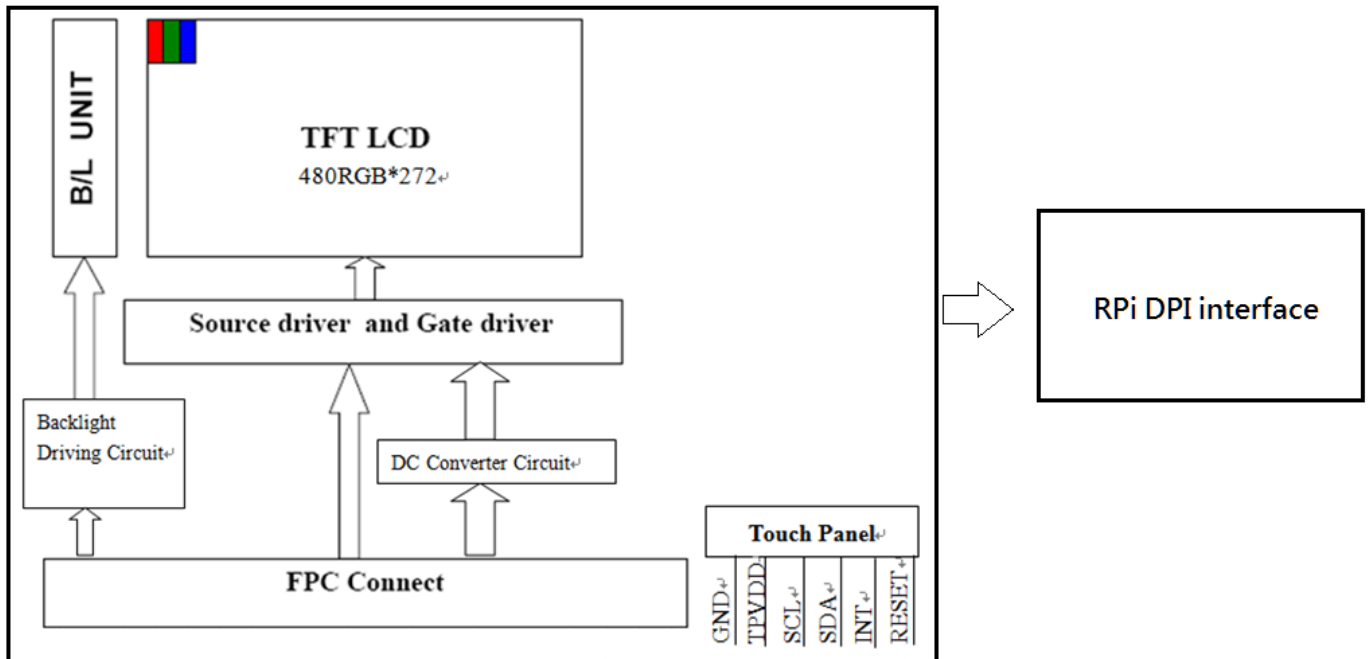
2. MODULE STRUCTURE

2.1 Counter Drawing

2.1.1 LCM Mechanical Diagram

* See Appendix

2.1.2 Block Diagram



2.2 Interface Pin Description

2.2.1 (J1: DPI Interface)

Pin#	Name	Description
1	VCC	Power input for 3.3v
2	VDD	Power input for 5v
3	VS	Vertical Synchronization Signal
4	VDD	Power input for 5v
5	HS	Horizontal Synchronization Signal
6	GND	Power Ground.
7	B2	Blue Data
8	G0/G6	Green Data
9	GND	Power Ground.
10	G1/G7	Green Data
11	R3	Red Data
12	R4	Red Data
13	GPIO_A/PWM	RPi GPIO 27/ Backlight PWM
14	GND	Power Ground.
15	GPIO_B/CTP_INT	RPi GPIO 22 / PCTP Interrupt
16	GPIO_C/CTP_SCL	RPi GPIO 23 / I ² C Serial Clock Line
17	VCC	Power input for 3.3v
18	GPIO_D/CTP_SDA	RPi GPIO 24 / I ² C Serial Data Line
19	G2	Green Data
20	GND	Power Ground.

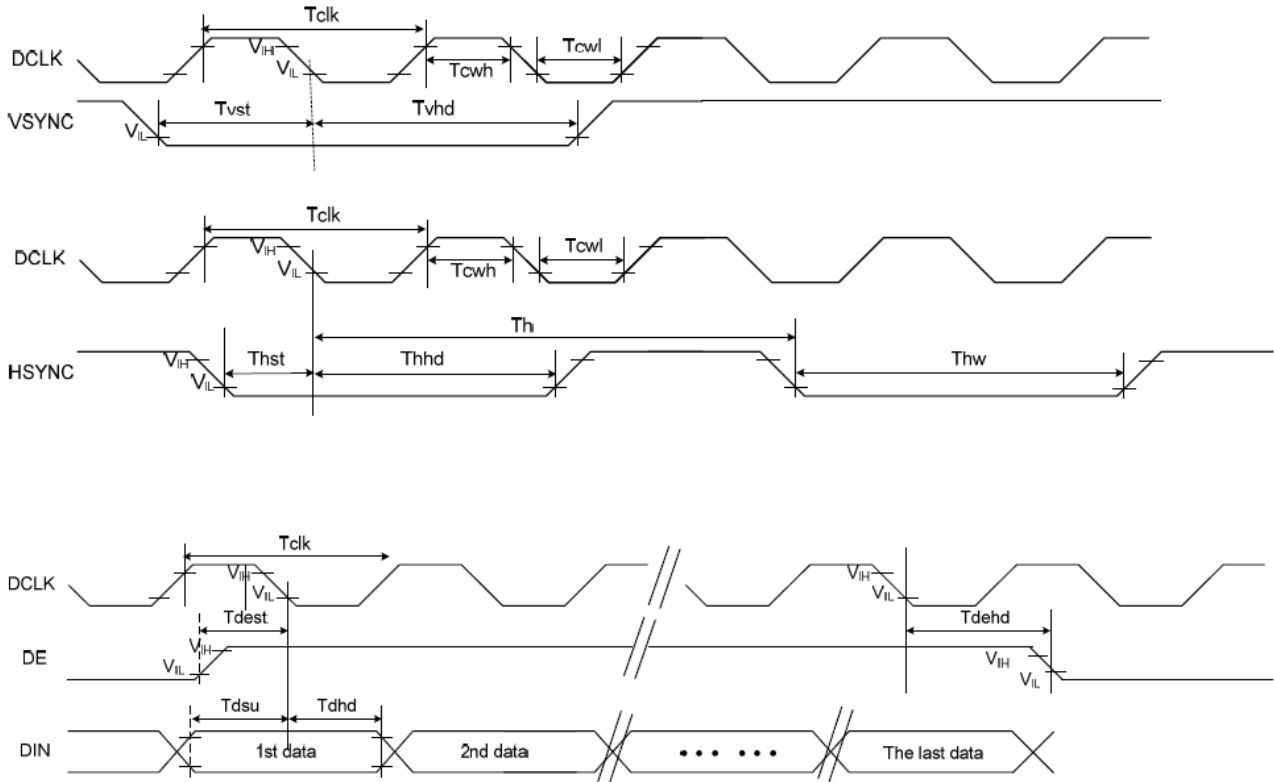
Pin#	Name	Description
21	B1/B7	Blue Data
22	GPIO_E	RPi GPIO 25
23	G3	Green Data
24	B0/B6	Blue Data
25	GND	Power Ground.
26	B5	Blue Data
27	PCLK	Peripheral Clock
28	DE	Data Enable
29	B3	Blue Data
30	GND	Power Ground.
31	B4	Blue Data
32	G4	Green Data
33	G5	Green Data
34	GND	Power Ground.
35	R5	Red Data
36	R2	Red Data
37	GPIO_F	RPi GPIO 26
38	R0/R6	Red Data
39	GND	Power Ground.
40	R1/R7	Red Data

2.2.2 (J2: GPIO Interface)

Pin#	Name	Description
1	VDD	Power output for 5v
2	GPIO_A/PWM	RPi GPIO 27/ Backlight PWM
3	VDD	Power output for 5v
4	GPIO_B/CTP_INT	RPi GPIO 22 / PCTP Interrupt
5	VCC	Power output for 3.3v
6	GPIO_C/CTP_SCL	RPi GPIO 23 / I ² C Serial Clock Line
7	VCC	Power output for 3.3v
8	GPIO_D/CTP_SDA	RPi GPIO 24 / I ² C Serial Data Line
9	GND	Power Ground
10	GPIO_E	RPi GPIO 25
11	GND	Power Ground
12	GPIO_F	RPi GPIO 26

2.3 Timing Characteristics

2.3.1 AC Characteristics

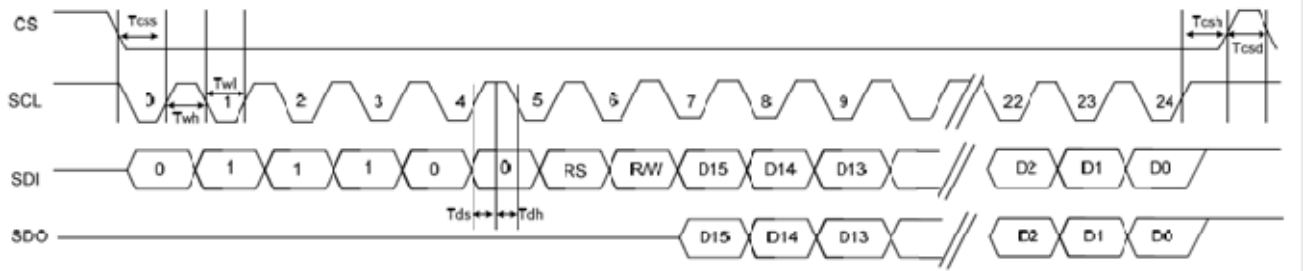


Item	Symbol	Min.	Typ.	Max.	Unit	Conditions
System operation timing						
VDD power source slew time	TPOR	-	-	20	ms	From 0V to 99% VDD
GRB pulse width	tRSTW	10	50	-	us	R=10Kohm, C=1uF
Input/ Output timing						
CLK pulse duty	Tcw	40	50	60	%	
HSYNC period	Th	55	60	65	us	
VSYNC setup time	Tvst	12	-	-	ns	
VSYNC hold time	Tvhd	12	-	-	ns	
HSYNC setup time	Thst	12	-	-	ns	
HSYNC hold time	Thhd	12	-	-	ns	
Data setup time	Tdsu	12	-	-	ns	
Data hold time	Tdhd	12	-	-	ns	
DE setup time	Tdest	12			ns	
DE hold time	Tdehd	12			ns	
SD output stable time	Tst	-	-	12	us	Output settled within +20mV Loading = 6.8k+28.2pF.
GD output rise and fall time	Tgst	-	-	6	us	Output settled (5%~95%), Loading = 4.7k+29.8pF

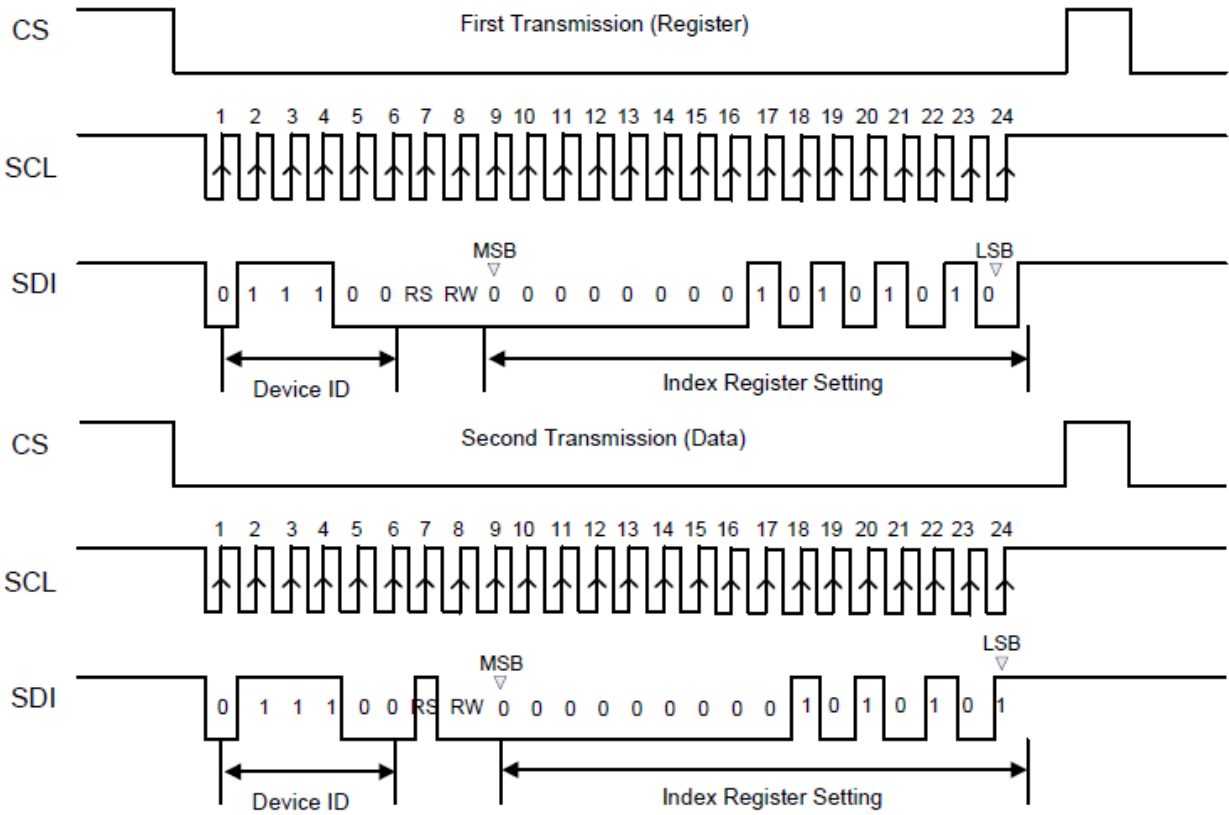
480RGB X 272 Resolution Timing Table

Item	Symbol	Min.	Typ.	Max.	Unit	Remark	
DCLK Frequency	Fclk	8	9	12	MHz		
DCLK Period	Tclk	83	111	125	ns		
HSYNC	Period Time	Th	485	531	598	DCLK	
	Display Period	Thdisp		480		DCLK	
	Back Porch	Thbp	3	43	43	DCLK	By H_Blanking setting
	Front Porch	Thfp	2	8	75	DCLK	
	Pulse Width	Thw	2	4	75	DCLK	
VSYNC	Period Time	Tv	276	292	321	H	
	Display Period	Tvdisp		272		H	
	Back Porch	Tvbp	2	12	12	H	By V_Blanking setting
	Front Porch	Tvfp	2	8	37	H	
	Pulse Width	Tvw	2	4	37	H	

2.3.2 3-Wire communication timing diagram

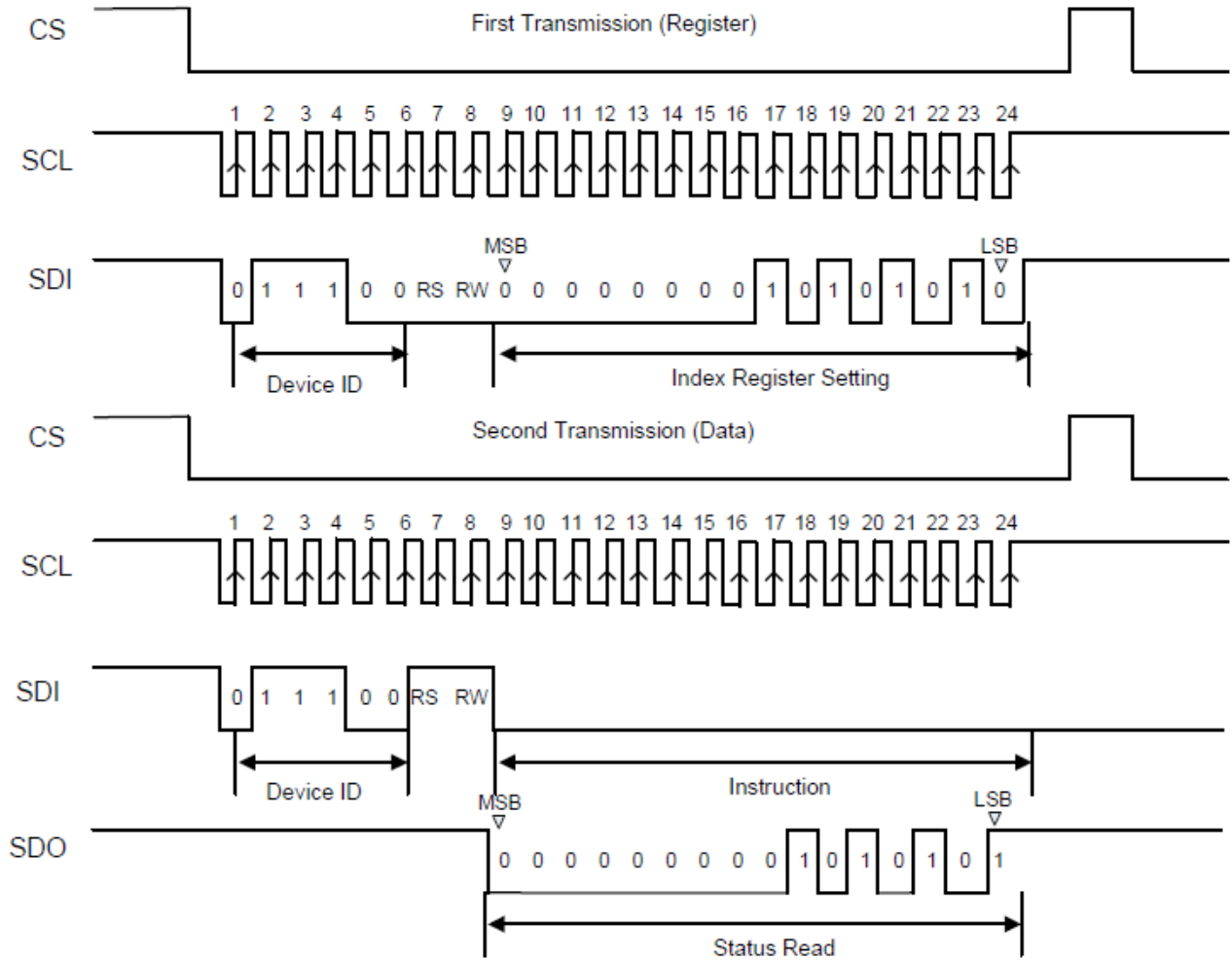


3-wire serial communication						
Delay between CSB and VSYNC	Tcv	1			us	
CS input setup time	Ts0	50			ns	
Serial data input setup time	Ts1	50			ns	
CS input hold time	Th0	50			ns	
Serial data input hold time	Th1	50			ns	
SCL pulse high width	Twh1	50			ns	
SCL pulse low width	Twl1	50			ns	
CS pulse high width	Tw2	400			ns	

Write Mode


Note: The example writes "0x0055h" to register 0x00AAh

Read Mode

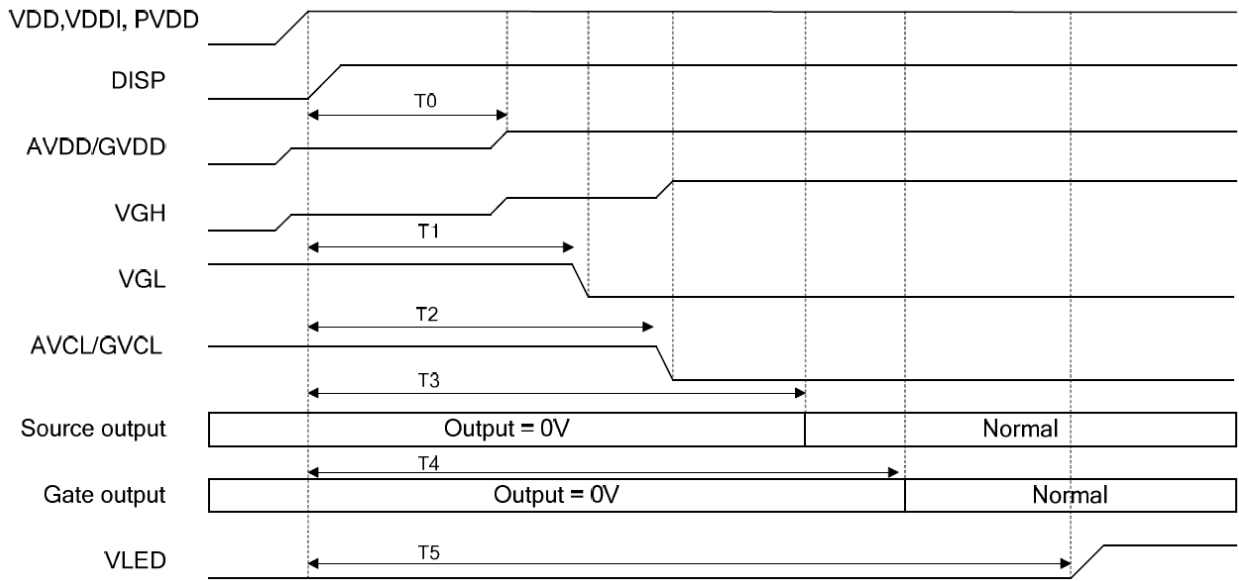


Note: The example reads "0x0055h" from register 0x00AAh



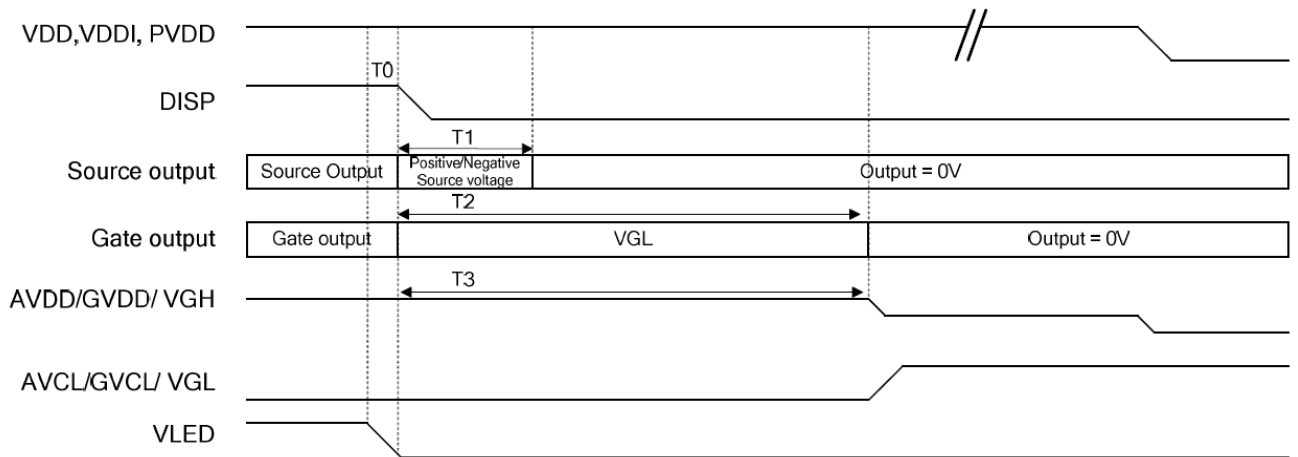
2.4 Power Sequence

2.4.1 Power up sequence



Symbol	Description	Min. Time	Unit
T0	DISP="High" to AVDD/GVDD voltage stability	40	ms
T1	DISP="High" to VGL voltage stability	50	ms
T2	DISP="High" to AVCL/GVCL stability	70	ms
T3	DISP="High" to Source output	100	ms
T4	DISP="High" to Gate output	110	ms
T5	Black Turn on	130	ms

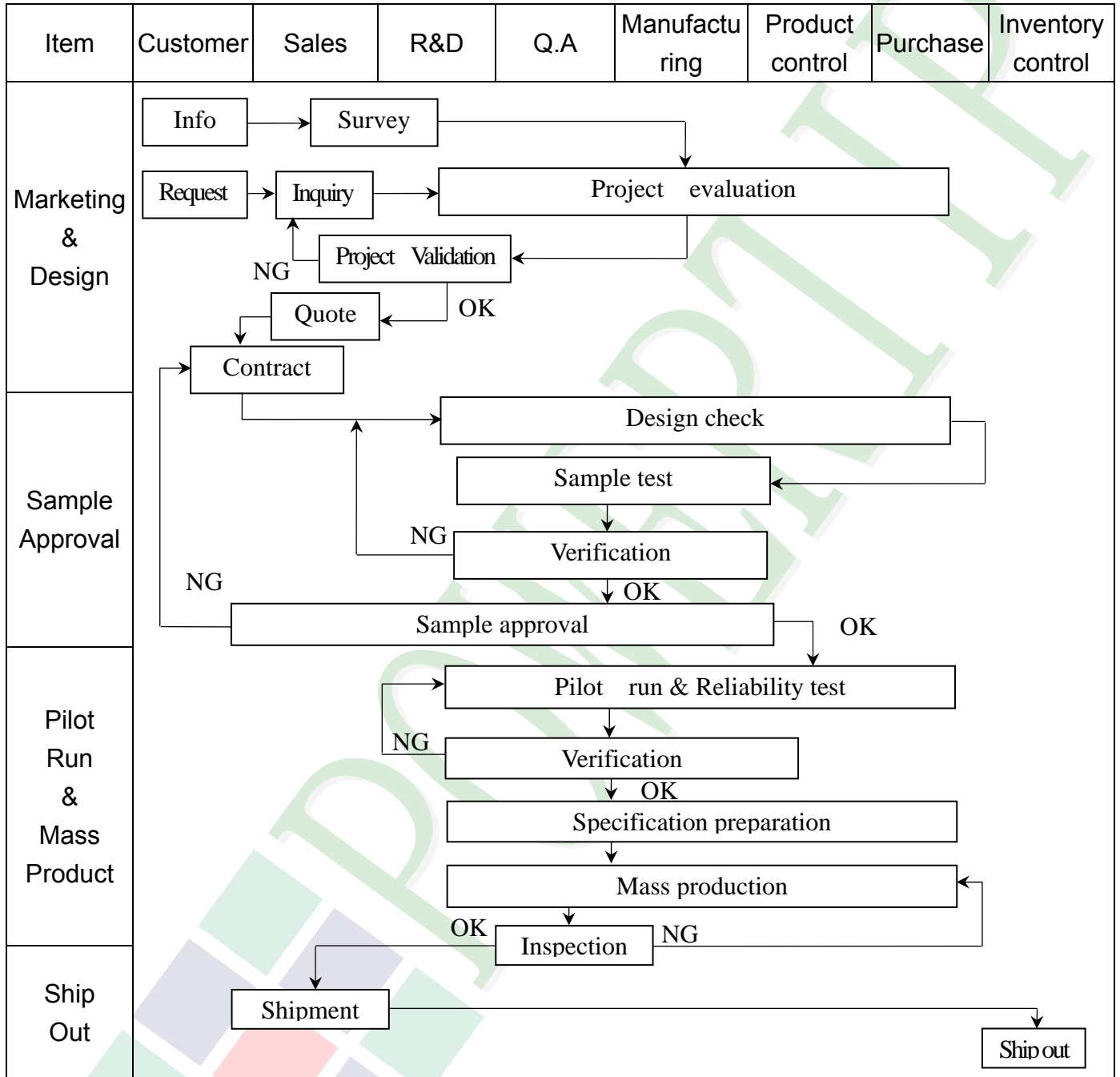
2.4.2 Power down sequence

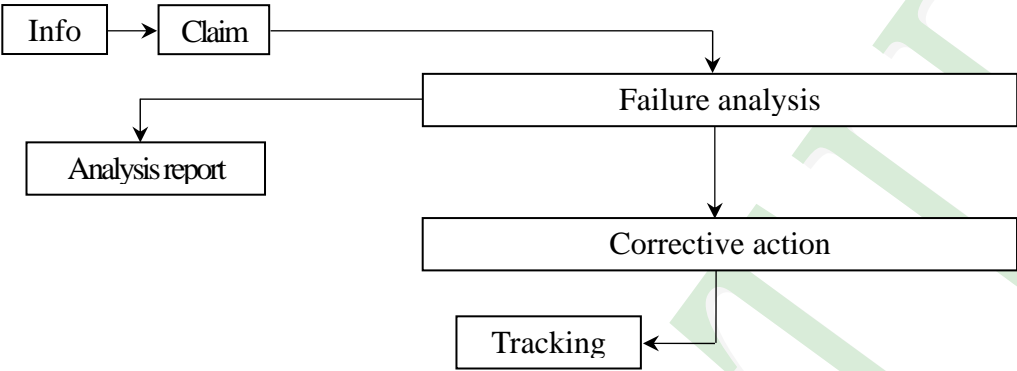


Symbol	Description	Min. Time	Unit
T0	Backlight turn off to DISP="Low"	5	ms
T1	DISP="Low" to Source output disable	20	ms
T2	DISP="Low" to Gate output disable	50	ms
T3	DISP="Low" to Gate output disable	50	ms

3. QUALITY ASSURANCE SYSTEM

3.1 Quality Assurance Flow Chart



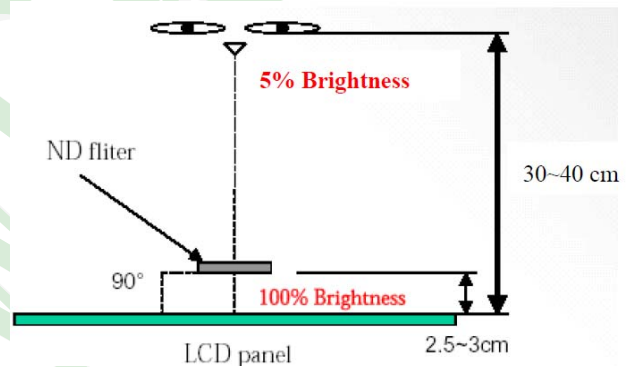
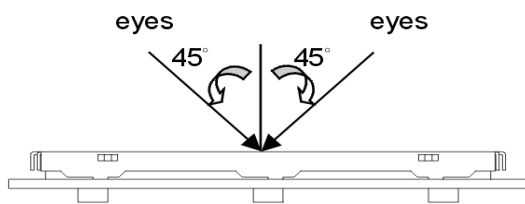
Item	Customer	Sales	R&D	Q.A	Manufacturing	Product control	Purchase	Inventory control
Sales Service	 <pre> graph TD Info[Info] --> Claim[Claim] Claim --> Failure[Failure analysis] Failure --> Report[Analysis report] Failure --> Action[Corrective action] Action --> Tracking[Tracking] </pre>							
Q.A Activity	1. ISO 9001 Maintenance Activities 3. Equipment calibration 5. Standardization Management				2. Process improvement proposal 4. Education And Training Activities			

3.2. Inspection Specification

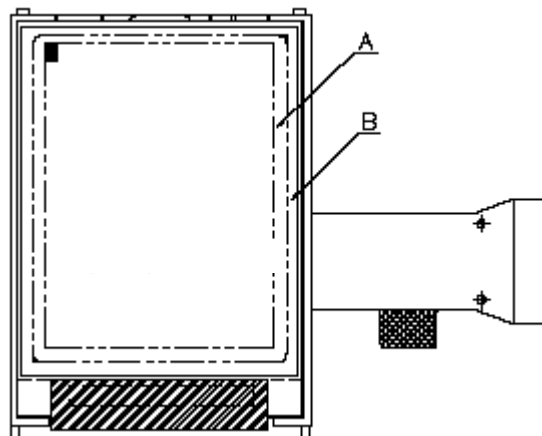
- ◆Scope: The document shall be applied to TFT-LCD Module for 3.5" -15" (Ver.B01).
- ◆Inspection Standard: MIL-STD-105E Table Normal Inspection Single Sampling Level II.
- ◆Equipment: Gauge, MIL-STD, Powertip Tester, Sample
- ◆Defect Level: Major Defect AQL: 0.4; Minor Defect AQL: 1.5
- ◆OUT Going Defect Level: Sampling.
- ◆Standard of the product appearance test:

a. Manner of appearance test:

- (1). The test best be under 20W×2 fluorescent light(about 300lux ~500lux)
 , and distance of view must be at 30~40 cm.
- (2). The test direction is base on about around 45° of vertical line.



(3). Definition of area.



A area: viewing area

B area: Outside of viewing area

(4). Standard of inspection : (Unit : mm)

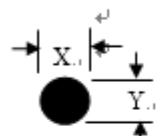
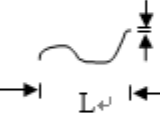
◆ Specification For TFT-LCD Module 3.5" ~15" :

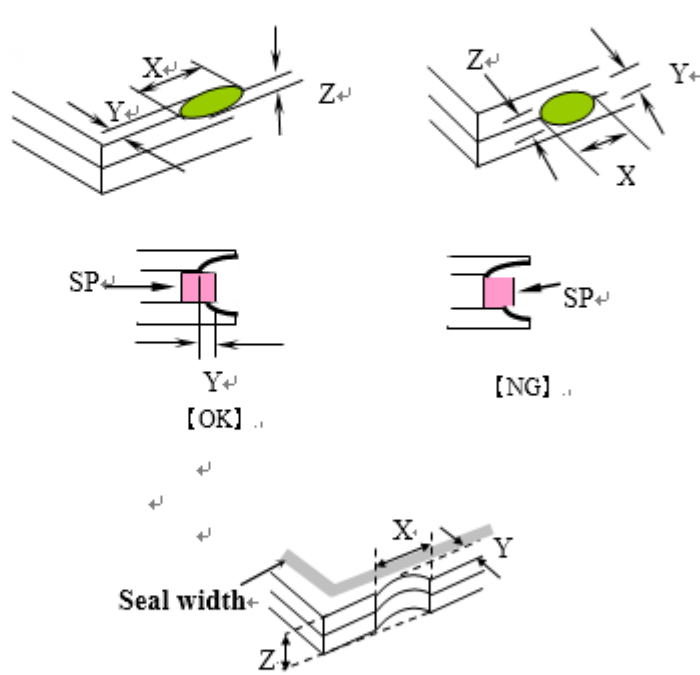
(Ver.B01)

NO	Item	Criterion	Level												
01	Product condition	1. 1 The part number is inconsistent with work order of production.	Major												
		1. 2 Mixed product types.	Major												
		1. 3 Assembled in inverse direction.	Major												
02	Quantity	2. 1 The quantity is inconsistent with work order of production.	Major												
03	Outline dimension	3. 1 Product dimension and structure must conform to structure diagram.	Major												
04	Electrical Testing	4. 1 Missing line character and icon.	Major												
		4. 2 No function or no display.	Major												
		4. 3 Display malfunction.	Major												
		4. 4 LCD viewing angle defect.	Major												
		4. 5 Current consumption exceeds product specifications.	Major												
		4. 6 Mura cannot be seen through 5% ND filter at 50% Gray, should be judged by the viewing angle of 90 degree.	Minor												
05	Dot defect (Bright dot, Dark dot) On -display	<table border="1"> <thead> <tr> <th></th> <th>Item</th> <th>Acceptance (Q'ty)</th> </tr> </thead> <tbody> <tr> <td rowspan="4">Dot Defect</td> <td>Bright Dot</td> <td>≦ 4</td> </tr> <tr> <td>Dark Dot</td> <td>≦ 5</td> </tr> <tr> <td>Joint Dot</td> <td>≦ 3</td> </tr> <tr> <td>Total</td> <td>≦ 7</td> </tr> </tbody> </table>		Item	Acceptance (Q'ty)	Dot Defect	Bright Dot	≦ 4	Dark Dot	≦ 5	Joint Dot	≦ 3	Total	≦ 7	Minor
			Item	Acceptance (Q'ty)											
		Dot Defect	Bright Dot	≦ 4											
			Dark Dot	≦ 5											
			Joint Dot	≦ 3											
Total	≦ 7														
5. 1 Inspection pattern: full white, full black, Red, Green and blue screens.															
5. 2 It is defined as dot defect if defect area > 1/2 dot.															
5. 3 The distance between two dot defect ≧ 5 mm.															
5. 4 Bright dot that can not be seen through 5% ND filter.															

◆ Specification For TFT-LCD Module 3.5" ~15" :

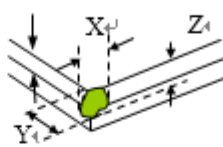
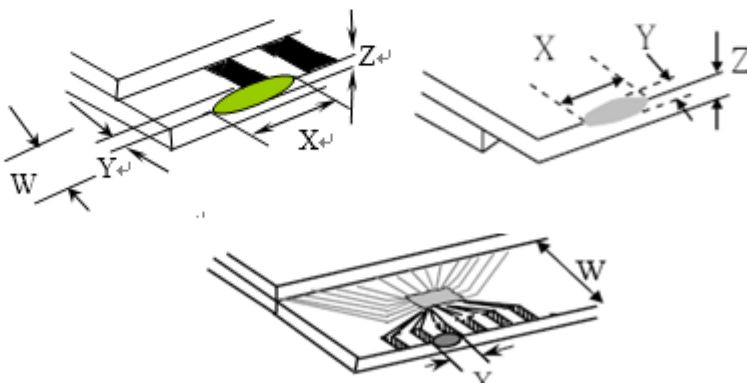
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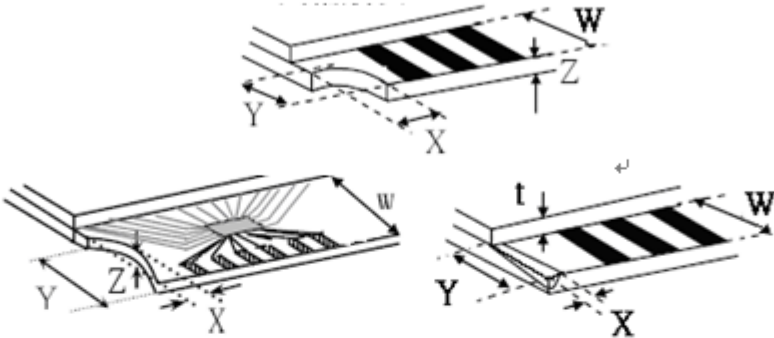
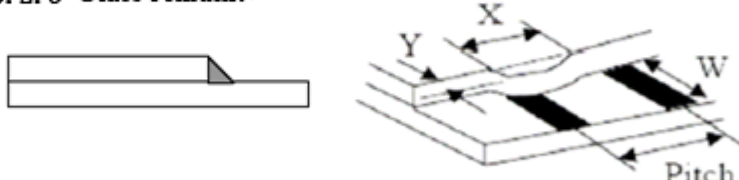

NO	Item	Criterion	Level																																																							
06	<p>Black or white Dot, scratch, contamination</p> <p>Round type</p>  <p>$\Phi = (x + y) / 2$</p> <p>Line type</p> 	<p>6.1 Round type (Non-display or display):</p> <table border="1"> <thead> <tr> <th rowspan="2">Dimension (diameter : Φ)</th> <th colspan="2">Acceptance (Q'ty)</th> </tr> <tr> <th>A area</th> <th>B area</th> </tr> </thead> <tbody> <tr> <td>$\Phi \leq 0.25$</td> <td>Ignore</td> <td rowspan="4">Ignore</td> </tr> <tr> <td>$0.25 < \Phi \leq 0.50$</td> <td>5</td> </tr> <tr> <td>$\Phi > 0.50$</td> <td>0</td> </tr> <tr> <td>Total</td> <td>5</td> </tr> </tbody> </table> <p>6.2 Line type(Non-display or display):</p> <table border="1"> <thead> <tr> <th rowspan="2">module size</th> <th rowspan="2">Length (L)</th> <th rowspan="2">Width (W)</th> <th colspan="2">Acceptance (Q'ty)</th> </tr> <tr> <th>A area</th> <th>B area</th> </tr> </thead> <tbody> <tr> <td rowspan="4">3.5" to less 9"</td> <td>---</td> <td>$W \leq 0.03$</td> <td>Ignore</td> <td rowspan="4">Ignore</td> </tr> <tr> <td>$L \leq 10.0$</td> <td>$0.03 < W \leq 0.05$</td> <td>4</td> </tr> <tr> <td>$L \leq 5.0$</td> <td>$0.05 < W \leq 0.10$</td> <td>2</td> </tr> <tr> <td>---</td> <td>$W > 0.10$</td> <td>As round type</td> </tr> <tr> <td colspan="3">Total</td> <td>5</td> <td></td> </tr> <tr> <td rowspan="4">9" to 15"</td> <td>---</td> <td>$W \leq 0.05$</td> <td>Ignore</td> <td rowspan="4">Ignore</td> </tr> <tr> <td>$L \leq 10.0$</td> <td>$0.05 < W \leq 0.10$</td> <td>5</td> </tr> <tr> <td>---</td> <td>$W > 0.10$</td> <td>As round type</td> </tr> <tr> <td colspan="3">Total</td> <td>5</td> </tr> </tbody> </table>	Dimension (diameter : Φ)	Acceptance (Q'ty)		A area	B area	$\Phi \leq 0.25$	Ignore	Ignore	$0.25 < \Phi \leq 0.50$	5	$\Phi > 0.50$	0	Total	5	module size	Length (L)	Width (W)	Acceptance (Q'ty)		A area	B area	3.5" to less 9"	---	$W \leq 0.03$	Ignore	Ignore	$L \leq 10.0$	$0.03 < W \leq 0.05$	4	$L \leq 5.0$	$0.05 < W \leq 0.10$	2	---	$W > 0.10$	As round type	Total			5		9" to 15"	---	$W \leq 0.05$	Ignore	Ignore	$L \leq 10.0$	$0.05 < W \leq 0.10$	5	---	$W > 0.10$	As round type	Total			5	Minor
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08	The crack of glass	<p>Symbols :</p> <p>X: The length of crack Z: The thickness of crack t: The thickness of glass</p> <p>Y: The width of crack. W: terminal length a: LCD side length</p> <hr/> <p>8.1 General glass chip:</p> <p>8.1.1 Chip on panel surface and crack between panels:</p>  <table border="1" data-bbox="566 1444 1292 1702"> <thead> <tr> <th>X,</th> <th>Y,</th> <th>Z,</th> </tr> </thead> <tbody> <tr> <td>$\leq a$</td> <td>Crack can't enter viewing area</td> <td>$\leq 1/2 t$</td> </tr> <tr> <td>$\leq a$</td> <td>Crack can't exceed the half of SP width.</td> <td>$1/2 t < Z \leq t$</td> </tr> </tbody> </table>	X,	Y,	Z,	$\leq a$	Crack can't enter viewing area	$\leq 1/2 t$	$\leq a$	Crack can't exceed the half of SP width.	$1/2 t < Z \leq t$	Minor
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◆ Specification For TFT-LCD Module 3.5" ~15" :

(Ver.B01)

NO	Item	Criterion	Level												
08	The crack of glass	<p>Symbols :</p> <p>X: The length of crack Y: The width of crack</p> <p>Z: The thickness of crack W: terminal length</p> <p>t: The thickness of glass a: LCD side length</p> <hr/> <p>8.1.2 Corner crack:</p>  <table border="1" data-bbox="555 721 1284 981"> <thead> <tr> <th>X</th> <th>Y</th> <th>Z</th> </tr> </thead> <tbody> <tr> <td>$\leq 1/5 a$</td> <td>Crack can't enter viewing area</td> <td>$Z \leq 1/2 t$</td> </tr> <tr> <td>$\leq 1/5 a$</td> <td>Crack can't exceed the half of SP width.</td> <td>$1/2 t < Z \leq 2 t$</td> </tr> </tbody> </table>	X	Y	Z	$\leq 1/5 a$	Crack can't enter viewing area	$Z \leq 1/2 t$	$\leq 1/5 a$	Crack can't exceed the half of SP width.	$1/2 t < Z \leq 2 t$				
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		<p>8.2 Protrusion over terminal:</p> <p>8.2.1 Chip on electrode pad:</p>  <table border="1" data-bbox="587 1556 1292 1713"> <thead> <tr> <th></th> <th>X</th> <th>Y</th> <th>Z</th> </tr> </thead> <tbody> <tr> <td>Front</td> <td>$\leq a$</td> <td>$\leq 1/2 W$</td> <td>$\leq t$</td> </tr> <tr> <td>Back</td> <td>$\leq a$</td> <td>$\leq W$</td> <td>$\leq 1/2 t$</td> </tr> </tbody> </table>		X	Y	Z	Front	$\leq a$	$\leq 1/2 W$	$\leq t$	Back	$\leq a$	$\leq W$	$\leq 1/2 t$	Minor
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X	Y	Z													
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◆Specification For TFT-LCD Module 3.5" ~15" :

(Ver.B01)

NO	Item	Criterion	Level
09	Backlight elements	9. 1 Backlight can't work normally.	Major
		9. 2 Backlight doesn't light or color is wrong.	Major
		9. 3 Illumination source flickers when lit.	Major
10	General appearance	10. 1 Pin type 、 quantity 、 dimension must match type in structure diagram.	Major
		10. 2 No short circuits in components on PCB or FPC.	Major
		10. 3 Parts on PCB or FPC must be: no wrong parts, missing parts or excess parts.	Major
		10. 4 Product packaging must the same as specified on packaging specification sheet.	Minor
		10. 5 The folding and peeled off in polarizer are not acceptable.	Minor
		10. 6 The PCB or FPC between B/L assembled distance(PCB or FPC) is ≤ 1.5 mm.	Minor

5. PRECAUTION RELATING PRODUCT HANDLING

5.1 SAFETY

- 5.1.1 If the LCD panel breaks , be careful not to get the liquid crystal to touch your skin.
- 5.1.2 If the liquid crystal touches your skin or clothes , please wash it off immediately by using soap and water.

5.2 HANDLING

- 5.2.1 Avoid any strong mechanical shock which can break the glass.
- 5.2.2 Avoid static electricity which can damage the CMOS LSI—When working with the module , be sure to ground your body and any electrical equipment you may be using.
- 5.2.3 Do not remove the panel or frame from the module.
- 5.2.4 The polarizing plate of the display is very fragile. So , please handle it very carefully ,do not touch , push or rub the exposed polarizing with anything harder than an HB pencil lead (glass , tweezers , etc.)
- 5.2.5 Do not wipe the polarizing plate with a dry cloth , as it may easily scratch the surface of plate.
- 5.2.6 Do not touch the display area with bare hands , this will stain the display area.
- 5.2.7 Do not use ketonics solvent & aromatic solvent. Use with a soft cloth soaked with a cleaning naphtha solvent.
- 5.2.8 To control temperature and time of soldering is $320\pm 10^{\circ}\text{C}$ and 3-5 sec.
- 5.2.9 To avoid liquid (include organic solvent) stained on LCM .

5.3 STORAGE

- 5.3.1 Store the panel or module in a dark place where the temperature is $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$ and the humidity is below 65% RH.
- 5.3.2 Do not place the module near organics solvents or corrosive gases.
- 5.3.3 Do not crush , shake , or jolt the module.

5.4 TERMS OF WARRANTY

- 5.4.1 Applicable warrant period
The period is within thirteen months since the date of shipping out under normal using and storage conditions.
- 5.4.2 Unaccepted responsibility
This product has been manufactured to your company's specification as a part for use in your company's general electronic products. It is guaranteed to perform according to delivery specifications. For any other use apart from general electronic equipment , we cannot take responsibility if the product is used in nuclear power control equipment , aerospace equipment , fire and security systems or any other applications in which there is a direct risk to human life and where extremely high levels of reliability are required.

Ver.002

Documents NO. PKG-PH480272T005-IHC06

LCM包裝規格書

LCM Packaging Specifications

Approve	Check	Contact
Oliver	Stone	Kevin

1. 包裝材料規格表 (Packaging Material) : (per carton)

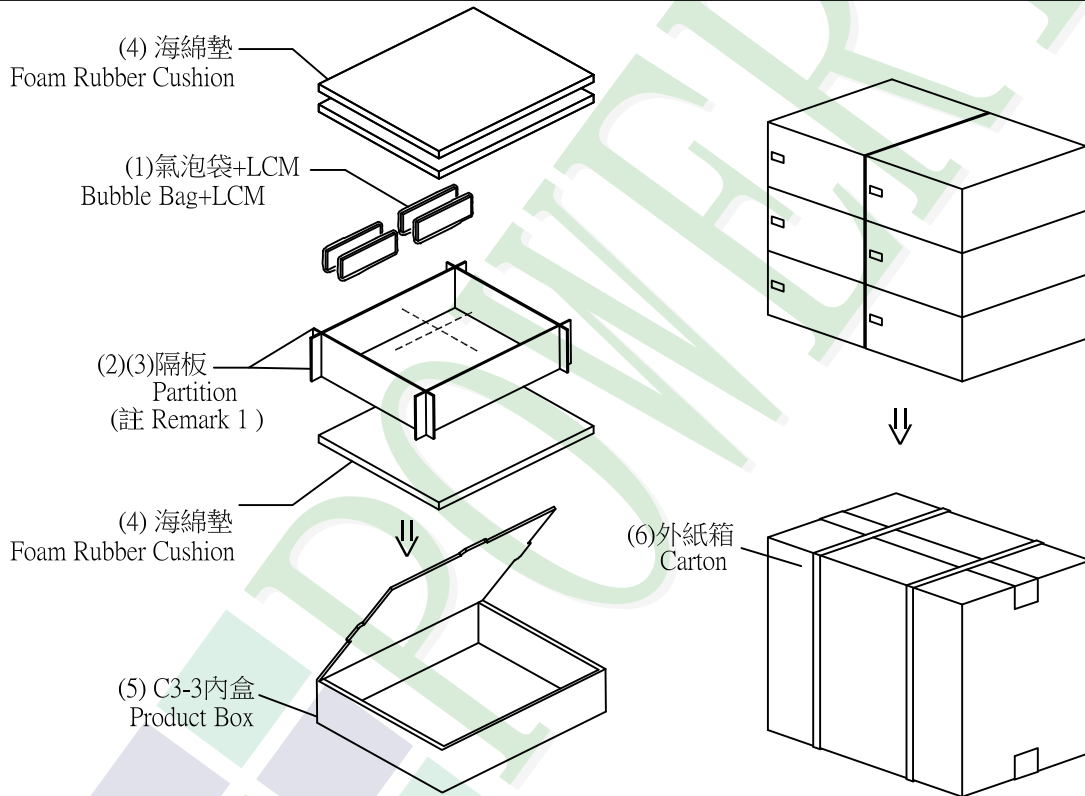
No.	Item	Model	Dimensions (mm)	1Pcs Weight	Quantity	Total Weight
1	成品 (LCM)	PH480272T005-IHC06	113.2 X 73.2	0.0929	72	6.6888
2	氣泡袋(1)Bubble Bag	BAG0000000005	150 X 120	0.002	72	0.144
3	A2-1隔板(2)A2-1 Partition	BX29500072BZBA	295 X 72 X 3.0	0.0109	42	0.4578
4	B2-1隔板(4)B2-1 Partition	BX24500072BZBA	245 X 72 X 3.0	0.0094	18	0.1692
5	海綿墊(4)Foam Rubber Cushion	OTFOAM00006ABA	290 X 240 X 10	0.02	18	0.36
6	C3-3內盒(5)Product Box	BX31025511AABA	310 X 255 X 116	0.17	6	1.02
7	外紙箱(6)Carton	BX52732536CCBA	527 X 325 X 360	0.83	1	0.83
8						
9						

2. 一整箱總重量 (Total LCD Weight in carton) : 9.66 Kg±10%

3. 單箱數量規格表 (Packaging Specifications and Quantity) :

(1)Quantity Of Spacer : A2-1隔板 X 7 , B2-1隔板 X 3

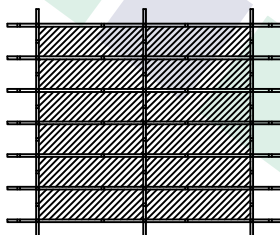
(2)Total LCM quantity in carton : quantity per box 12 x no of boxes 6 = 72



特記事項 (REMARK)

1. LCM排放示意圖(前後間隔不放置):

1. LCM placed as figure showing:
(First and last slot should be empty)



▨ 模組(LCM) X 1pcs.

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[IDK-1121WR-30FHA1E](#) [IDK-104R-32SVI1](#) [WF70GTIAGDNT0#](#) [G1619W02BBW01](#) [MIKROMEDIA 4 FOR STM32F4 CAPACITIVE FPI](#)
[MIKROMEDIA 3 FOR STM32F4 CAPACITIVE FPI](#) [PH320240T023-IHC09](#) [1148693](#) [1148689](#) [PIM537](#) [TN0216ANVNANN-GN00](#)
[TN0104ANVAANN-GN00](#) [TN0181ANVNANN-GN00](#) [12121000](#) [MIKROMEDIA FOR DSPIC33](#) [MIKROMEDIA FOR PIC24](#)
[MIKROMEDIA FOR PIC32](#) [MIKROMEDIA FOR STELLARIS M3](#) [MIKROMEDIA FOR XMEGA](#) [MIKROMEDIA HMI 3.5 RES](#)
[MIKROMEDIA HMI 5](#) [MIKROMEDIA PLUS FOR FT90X](#) [MIKROMEDIA PLUS FOR PIC32MX7 SHIELD](#) [MIKROMEDIA PROTO](#)
[SHIELD](#) [MIKROMEDIA 5 FOR TIVA](#) [MIKROMEDIA 5 FOR TIVA SHIELD](#) [MIKROMEDIA 7 FOR STM32F4](#) [MIKROMEDIA](#)
[CONNECT SHIELD](#) [MIKROMEDIA FOR ARM](#) [MIKROMEDIA FOR DSPIC33EP](#) [MIKROMEDIA FOR PSOC5LP](#) [MIKROMEDIA](#)
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[RVT28AEFNWN00](#) [RVT28UEFNWC01](#) [RVT28UEFNWC03](#) [RVT28UEFNWC05](#)