POWERTIP TECH. CORP.

SPECIFICATIONS

CUSTOMER	:	CTW1642
SAMPLE CODE	:	SH320480T-005-L02Q
MASS PRODUCTION CODE	:	PH320480T-005-L02Q
SAMPLE VERSION	:	01
SPECIFICATIONS EDITION	:	002
DRAWING NO. (Ver.)	:	LMD-PH320480T-005-L02Q (Ver.003)
PACKAGING NO. (Ver.)	:	PKG-PH320480T-005-L02Q (Ver.001)

Customer Approved

Date:

Approved	Checked	Designer
廖志豪 Rex Liao	廖志豪 Rex Liao	張慶源 Yuan Chang

POWERTIP
2013.10.08
TW RD APR

☐ Preliminary specification for design input

■ Specification for sample approval

POWERTIP TECH. CORP.

Headquarters:

No.8, 6th Road, Taichung Industrial Park,
Taichung, Taiwan
台中市 407 工業區六路 8 號

TEL: 886-4-2355-8168
FAX: 886-4-2355-8166

E-mail: sales@powertip.com.tw
Http://www.powertip.com.tw

History of Version

Date (mm / dd / yyyy)	Ver.	Edi.	Description	Page	Design by
05/22/2013	01	001	New Drawing	-	Yuan
10/07/2013	01	002	First Sample Modify Mechanical Specifications	- 4	Yuan

Total: 23 Page

Contents

1. SPECIFICATIONS

1.1 Features

Main LCD Panel

Item	Standard Value
Display Type	320 * (R、G、B) * 480Dots
LCD Type	a-Si TFT , Normally white , Transmissive
Screen size(inch)	3.5 (Diagonal)
Viewing Direction	12 O'clock
Color configuration	R.G.B. vertical stripe
Backlight	White LED
Interface	RGB Interface
Other(controller / driver IC)	HX8357-C
ROHS	THIS PRODUCT CONFORMS THE ROHS OF PTC Detail information please refer website : http://www.powertip.com.tw/news.php?area_id_view=1085560481/

1.2 Mechanical Specifications

Item	Standard Value	Unit
Outline Dimension	55.26 (W) * 84.69 (L) * 3.6(H) max	mm

LCD Panel

Item	Standard Value	Unit
Active Area	48.96 (W) * 73.44(L)	mm

Touch panel

Item	Standard Value	Unit
Viewing Area	50.76(W) * 75.24 (H)	mm
Active Area	49.76(W) * 74.24 (L)	mm

Note : For detailed information please refer to LCM drawing

1.3 Absolute Maximum Ratings

Module

Item	Symbol	Condition	Min.	Max.	Unit
System Power Supply Voltage	VDDI	-	-0.3	+4.6	V
	VDD	-	-0.3	+4.6	V
	VGH-VSS	-	-0.3	18.5	V
	VSS-VGL	-	-16.5	0	V
Input Voltage	VIN	-	-0.3	VDDI +0.5	V
Operating Temperature*1	T_{OP}	-	-20	+70	°C
Storage Temperature*1	T_{ST}	-	-30	+80	°C
Storage Humidity	H_D	Ta ≦ 60 °C	20	90	%RH

Note1:This value is not suitable for touch panel.

1.4 DC Electrical Characteristics

Module

GND = 0V, Ta = 25°C

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply Voltage2	VDD	-	2.5	2.8	3.3	V
Input High Voltage	V_{IH}	-	0.7* VDDI	-	VDDI	V
Input Low Voltage	V_{IL}	-	GND	-	0.3* VDDI	V
Output High Voltage	V_{OH}	IOH=-0.1mA	0.8* VDDI	-	VDDI	V
Output Low Voltage	V_{OL}	IOL=0.1mA	GND	-	0.2* VDDI	V
Supply Current	IDD	VCC= 2.8V, Pattern=black *2	-	10	15	mA

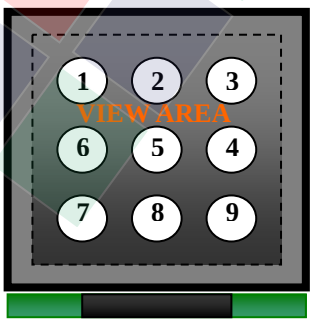
Note2 : Maximum current display

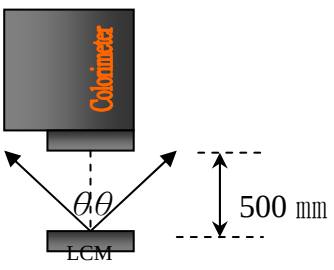
1.5 Optical Characteristics

TFT LCD Panel IOVCC = 2.8V, Ta=25°C

Item		Symbol	Condition	Min.	Typ.	Max.	unit	
Response time		Tr + Tf	Ta = 25°C θX, θY = 0°	-	35	50	ms	Note2
Viewing angle	Top	θY+	CR ≥ 10	-	60	-	Deg.	Note4
	Bottom	θY-		-	60	-		
	Left	θX-		-	60	-		
	Right	θX+		-	60	-		
Contrast ratio		CR	Ta = 25°C θX , θY = 0°	500	600	-	-	Note3
Color of CIE Coordinate (With B/L)	White	X		0.26	0.31	0.36	-	Note1
		Y		0.29	0.34	0.39		
	Red	X		0.60	0.65	0.70		
		Y		0.29	0.34	0.39		
	Green	X		0.30	0.35	0.40		
		Y		0.56	0.61	0.66		
	Blue	X		0.09	0.14	0.19		
		Y		0.04	0.09	0.14		
Average Brightness Pattern=white display (With B/L)		IV	IF=20mA	300	320	-	cd/m^2	Note1
Uniformity (With B/L)		ΔB	IF=20mA	70	-	-	%	Note1

Note1:
1：△B=B(min) / B(max) × 100%
2：Measurement Condition for Optical Characteristics:
a：Environment: 25℃±5℃ / 60±20%R.H，no wind，dark room below 10 Lux at typical lamp current and typical operating frequency.
b：Measurement Distance: 500 ± 50 ㎜ ，(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%



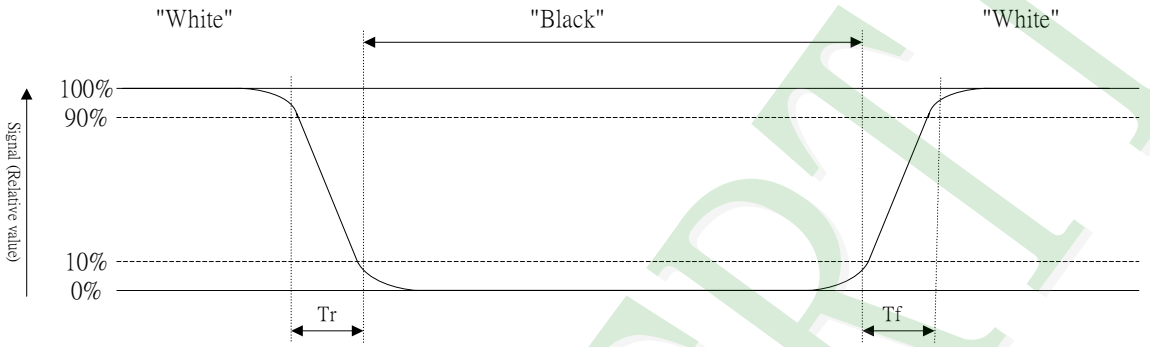


Colorimeter=BM-7 fast

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:



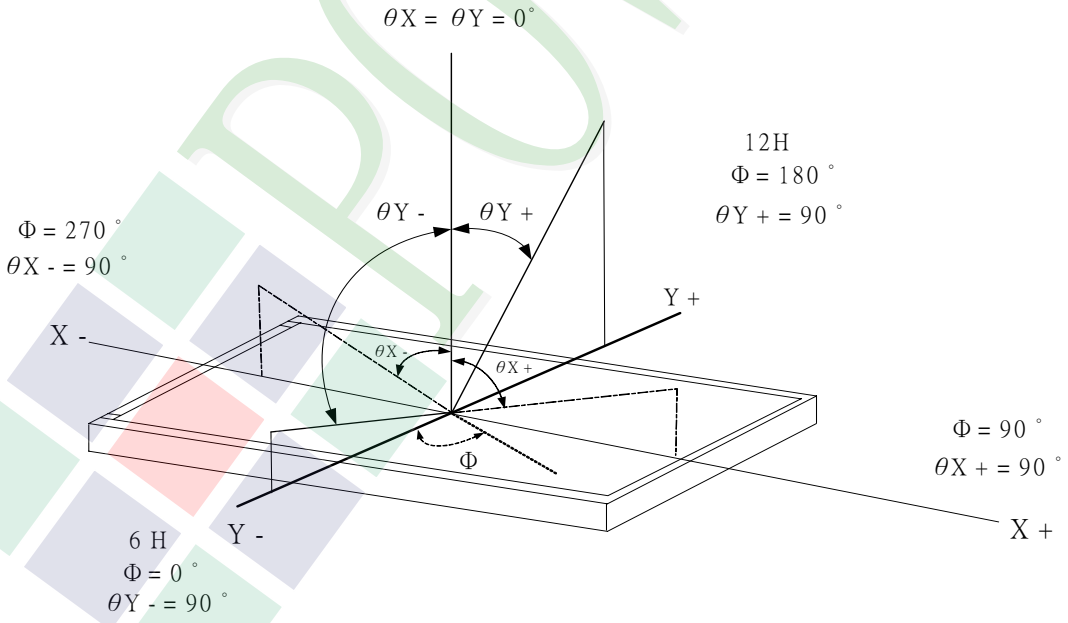
Note3: Definition of contrast ratio:

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

Maximum Ratings

Item	Symbol	Conditions	Min.	Max.	Unit
Forward current	IFM	Ta =25℃	-	25	mA
Reverse Voltage	VR	Ta =25℃	-	25	V
Power description	Pd	Ta =25℃	-	510	mW

Electrical / Optical Characteristics

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Voltage	VF	IF=20mA	17.4	19.2	20.4	V
Average Brightness (without LCD)	IV	IF=20mA	5800	6300	-	cd/m^2
Color of CIE Coordinate (without LCD)	X		0.27	0.29	0.31	-
	Y		0.27	0.29	0.31	
Color	White					

Circuit Diagram

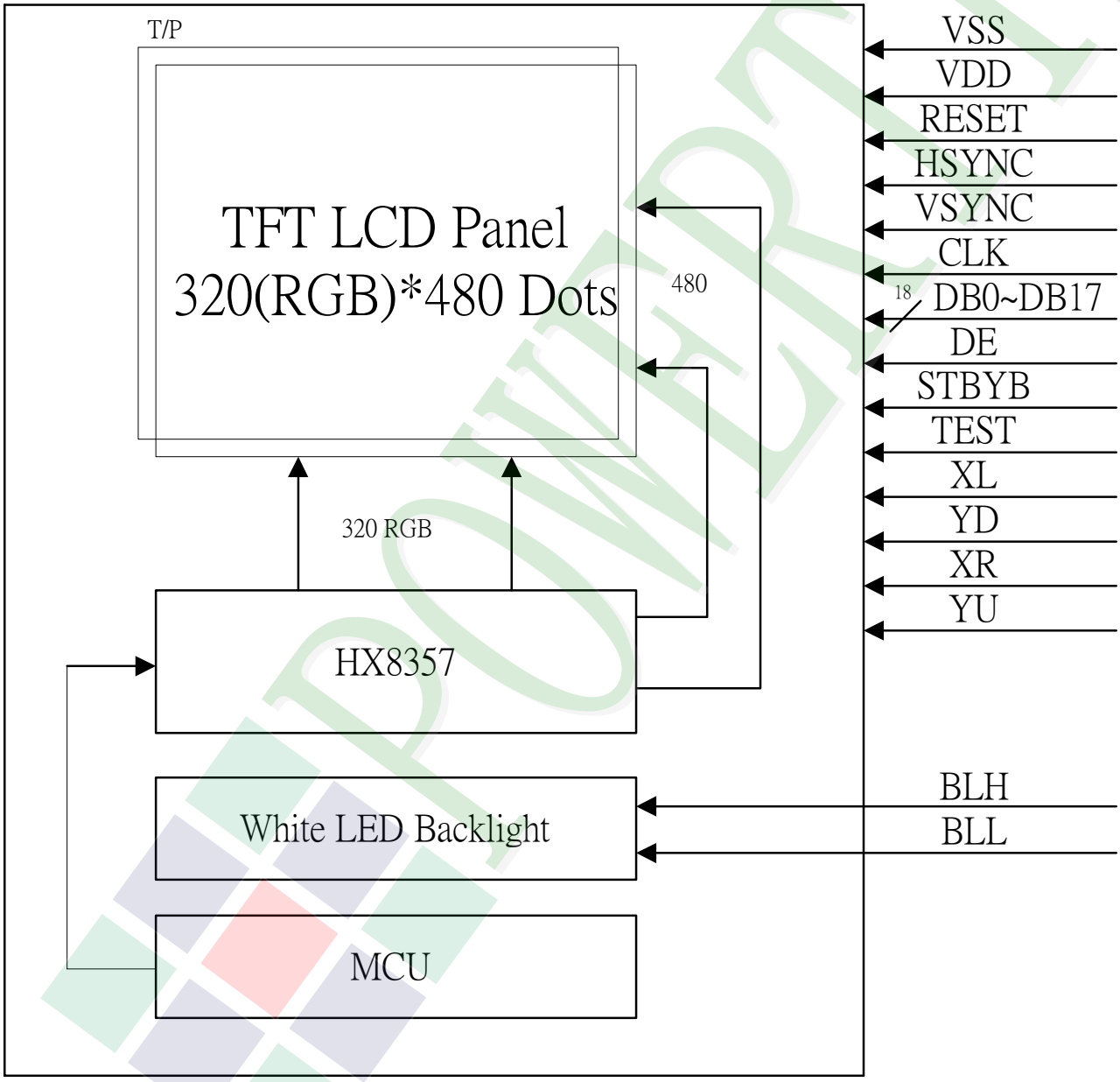
2. MODULE STRUCTURE

2.1 Counter Drawing

2.1.1 LCM Mechanical Diagram

* See Appendix

2.1.2 Block Diagram



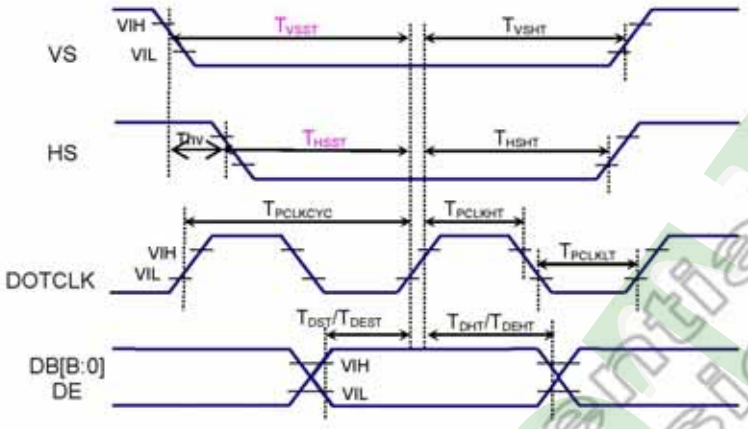
2.2 Interface Pin Description

Pin No.	Symbol	Function
1	VSS	GND
2	VSS	GND
3	VDD	Power supply
4	VDD	Power supply
5	NC	Not connection , Must be open
6	RESETB	Reset signal
7	HSYNC	Horizontal sync signal input (Low signal)
8	VSYNC	Vertical sync signal input (Low signal)
9	CLK	Clock signal for data latching and internal counter of the timing controller
10	VSS	GND
11	DB0	Blue data bit 0
12	DB1	Blue data bit 1
13	DB2	Blue data bit 2
14	DB3	Blue data bit 3
15	DB4	Blue data bit 4
16	DB5	Blue data bit 5
17	DB6	Green data bit 0
18	DB7	Green data bit 1
19	DB8	Green data bit 2
20	DB9	Green data bit 3
21	DB10	Green data bit 4
22	DB11	Green data bit 5
23	DB12	Red data bit 0
24	DB13	Red data bit 1
25	DB14	Red data bit 2
26	DB15	Red data bit 3
27	DB16	Red data bit 4

28	DB17	Red data bit 5
29	VSS	GND
30	DE	Input data effective signal
31	STBYB	Standby mode (Hi : Normal operation , Lo : Standby mode)
32	TEST	Short to Vss
33	XL	X-axis left terminal
34	YD	Y-axis downside
35	XR	X-axis right terminal
36	YU	Y-axis upside
37	NC	Not connection , Must be open
38	BLH	Backlight driver (anode side)
39	BLL	Backlight driver (cathode side)

2.3 Timing Characteristics

2.3.1 RGB Interface Characteristics



(VSSA=0V, IOVCC=1.65V to 3.3V, VCI=2.3V to 3.3V, T_A = -30 to 70℃)

Item	Symbol	Condition	Spec.			Unit
			Min.	Typ.	Max.	
Pixel low pulse width	T_{CLKLT}		15	-	-	ns
Pixel high pulse width	T_{CLKHT}		15	-	-	ns
Vertical Sync. set-up time	T_{VSST}		15	-	-	ns
Vertical Sync. hold time	T_{VSSHT}		15	-	-	ns
Horizontal Sync. set-up time	T_{HSST}		15	-	-	ns
Horizontal Sync. hold time	T_{VSSHT}		15	-	-	ns
Data Enable set-up time	T_{DEST}		15	-	-	ns
Data Enable hold time	T_{DEHT}		15	-	-	ns
Data set-up time	T_{DST}		15	-	-	ns
Data hold time	T_{DHT}		15	-	-	ns
Phase difference of sync signal falling edge	Thv		0	-	320	Dotclk

Note: The input signal rise time and fall time (tr, tf) is specified at 15 ns or less.

2.3.2 Reset Timing Characteristic

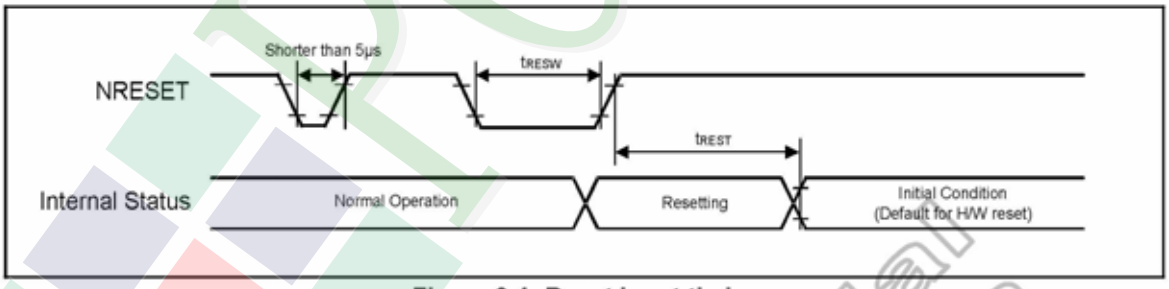


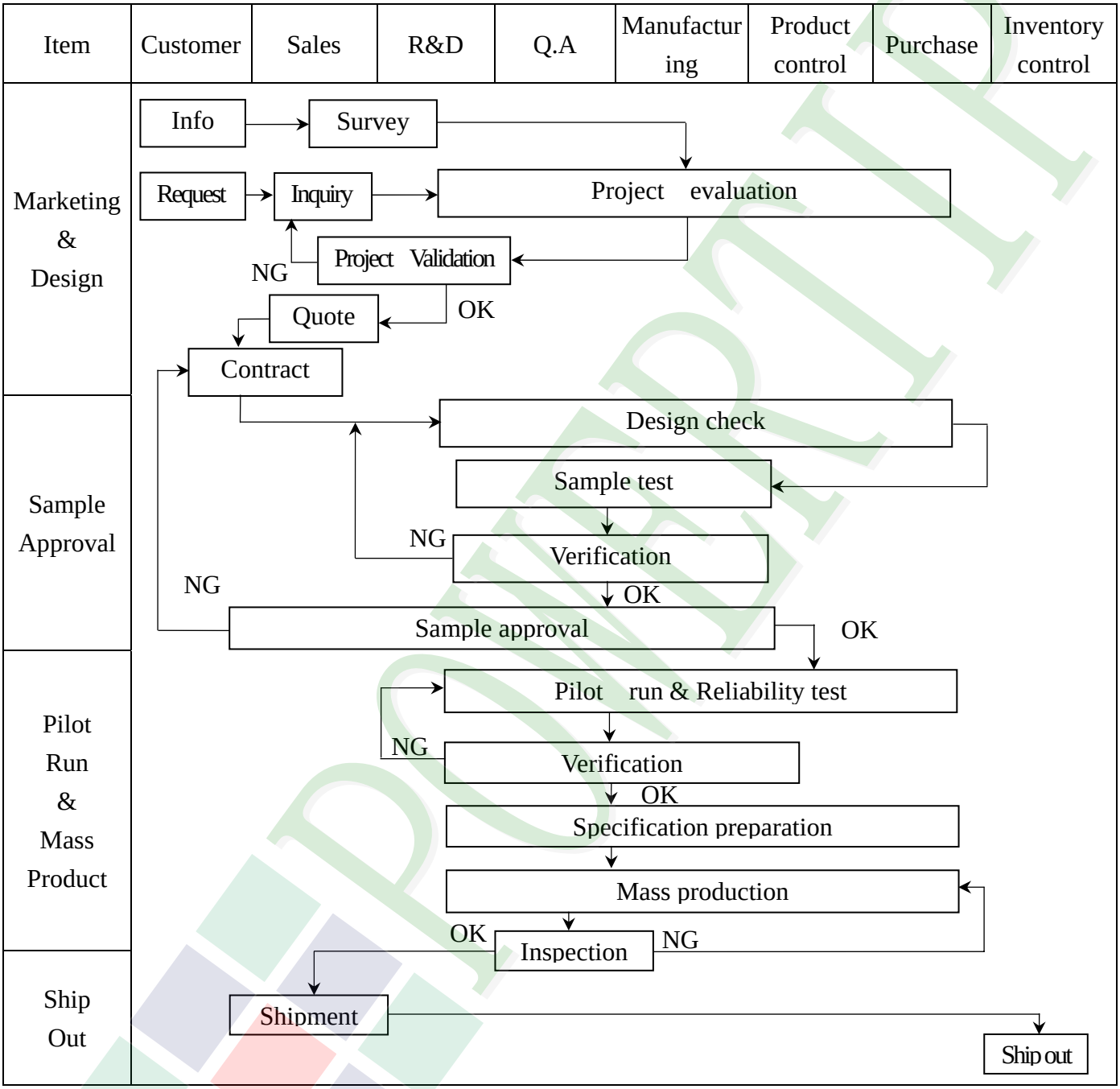
Figure 8.4: Reset input timing

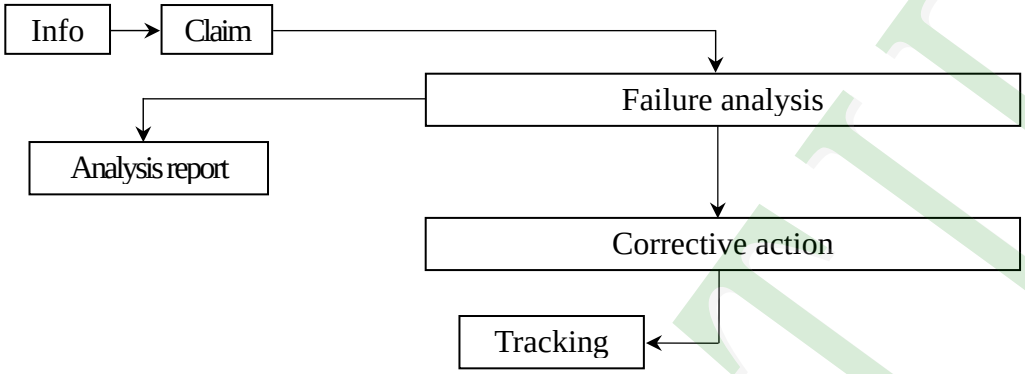
Symbol	Parameter	Related Pins	Spec.			Note	Unit
			Min.	Typ.	Max.		
tRESW	Reset low pulse width[1]	NRESET	10	-	-	-	μs
tREST	Reset complete time[2]	-	5	-	-	When reset applied during SLPIN mode	ms
		-	120	-	-	When reset applied during SLPOUT mode	ms

Table 8.6: Reset input timing

3. QUALITY ASSURANCE SYSTEM

3.1 Quality Assurance Flow Chart



Item	Customer	Sales	R&D	Q.A	Manufactu ring	Product control	Purchase	Inventory control
Sales Service								
Q.A Activity	1. ISO 9001 Maintenance Activities 2. Process improvement proposal 3. Equipment calibration 4. Education And Training Activities 5. Standardization Management							

3.2. Inspection Specification

◆Scope：The document shall be applied to TFT-LCD Module for 3.5″ ~10″ (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

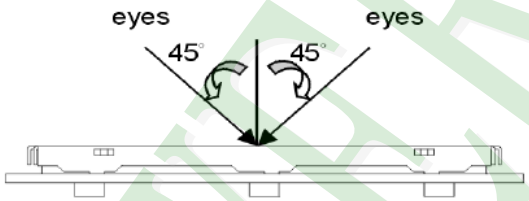
◆OUT Going Defect Level：Sampling.

◆Standard of the product appearance test：

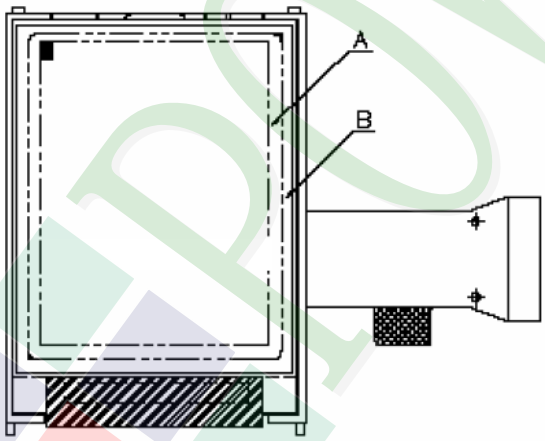
a. Manner of appearance test：

(1). The test best be under 20W×2 fluorescent light，and distance of view must be at 30 cm.

(2). The test direction is base on about around 45° of vertical line.



(3). Definition of area.



A area : viewing area

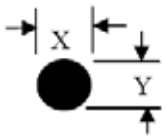
B area : Outside of viewing area

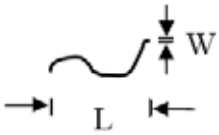
(4). Standard of inspection： (Unit：mm)

◆Specification For TFT-LCD Module 3.5″ ~10″ : (Ver.B01)

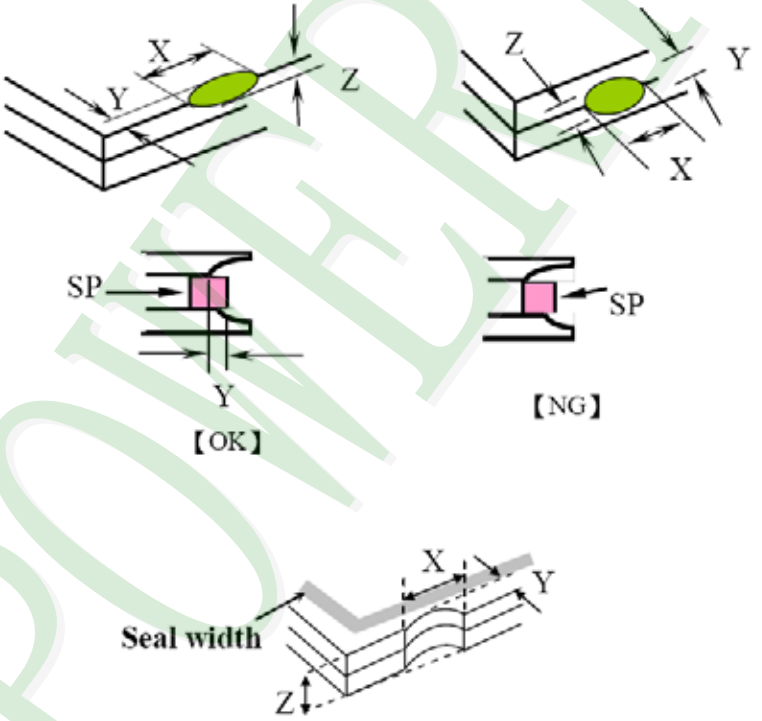
<table>
<tr><th>NO</th><th>Item</th><th>Criterion</th><th>Level</th></tr>
<tr><td rowspan="3">01</td><td rowspan="3">Product condition</td><td>1.1 The part number is inconsistent with work order of production.</td><td>Major</td></tr>
<tr><td>1.2 Mixed product types.</td><td>Major</td></tr>
<tr><td>1.3 Assembled in inverse direction.</td><td>Major</td></tr>
<tr><td>02</td><td>Quantity</td><td>2.1 The quantity is inconsistent with work order of production.</td><td>Major</td></tr>
<tr><td>03</td><td>Outline dimension</td><td>3.1 Product dimension and structure must conform to structure diagram.</td><td>Major</td></tr>
<tr><td rowspan="5">04</td><td rowspan="5">Electrical Testing</td><td>4.1 Missing line character and icon.</td><td>Major</td></tr>
<tr><td>4.2 No function or no display.</td><td>Major</td></tr>
<tr><td>4.3 Display malfunction.</td><td>Major</td></tr>
<tr><td>4.4 LCD viewing angle defect.</td><td>Major</td></tr>
<tr><td>4.5 Current consumption exceeds product specifications.</td><td>Major</td></tr>
<tr><td>05</td><td>Dot defect
(Bright dot、Dark dot)
On -display</td><td>
<table>
<tr><th colspan="2">Item</th><th>Acceptance (Q'ty)</th></tr>
<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>
</table>
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.
</td><td>Minor</td></tr>
</table>

◆Specification For TFT-LCD Module 3.5″ ~10″ : (Ver.B01)

<table>
<tr><th>NO</th><th>Item</th><th>Criterion</th><th>Level</th></tr>
<tr><td>06</td><td>Black or white dot、scratch、contamination
Round type
 

Φ=(x+y) / 2
Line type
 
</td><td>6. 1 Round type (Non-display or display) :
<table>
<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>
<tr><td>Φ ≦ 0.25</td><td>Ignore</td><td rowspan="4">Ignore</td></tr>
<tr><td>0.25 < Φ ≦ 0.50</td><td>5</td></tr>
<tr><td>Φ > 0.50</td><td>0</td></tr>
<tr><td>Total</td><td>5</td></tr>
</table>
6. 2 Line type(Non-display or display) :
<table>
<tr><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>
<tr><td>---</td><td>W ≦ 0.03</td><td>Ignore</td><td rowspan="5">Ignore</td></tr>
<tr><td>L ≦10.0</td><td>0.03 < W ≦ 0.05</td><td>4</td></tr>
<tr><td>L ≦5.0</td><td>0.05 < W ≦ 0.10</td><td>2</td></tr>
<tr><td>---</td><td>W >0.10</td><td>As round type</td></tr>
<tr><td colspan="2">Total</td><td>5</td></tr>
</table></td><td>Minor</td></tr>
<tr><td>07</td><td>Polarizer Bubble</td><td>
<table>
<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>
<tr><td>Φ ≦ 0.25</td><td>Ignore</td><td rowspan="5">Ignore</td></tr>
<tr><td>0.25 < Φ ≦ 0.50</td><td>4</td></tr>
<tr><td>0.50 < Φ ≦ 0.80</td><td>1</td></tr>
<tr><td>Φ > 0.80</td><td>0</td></tr>
<tr><td>Total</td><td>5</td></tr>
</table></td><td>Minor</td></tr>
</table>

◆Specification For TFT-LCD Module 3.5″ ~10″ : (Ver:B01)

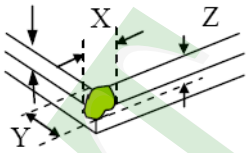
NO	Item	Criterion	Level
08	The crack of glass	Symbols : X : The length of crack Y : The width of crack. Z : The thickness of crack W : terminal length t : The thickness of glass a : LCD side length 8.1 General glass chip : 8.1.1 Chip on panel surface and crack between panels:  	Minor

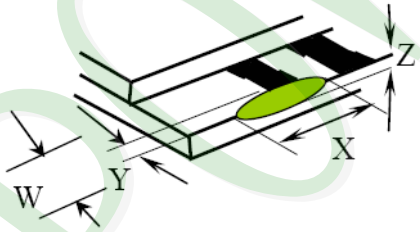
X	Y	Z
≦ a	Crack can't enter viewing area	≦1/2 t
≦ a	Crack can't exceed the half of SP width.	1/2 t < Z ≦2 t

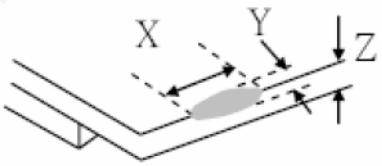
◆Specification For TFT-LCD Module 3.5″ ~10″ : (Ver.B01)

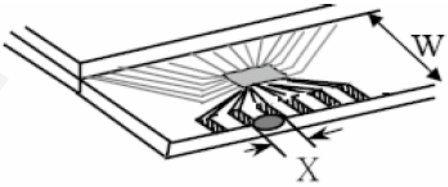
<table>
<tr><th>NO</th><th>Item</th><th>Criterion</th><th>Level</th></tr>
<tr><td rowspan="2">08</td><td rowspan="2">The crack of glass</td><td>
Symbols :

X : The length of crack
Z : The thickness of crack
t : The thickness of glass
Y : The width of crack.
W : terminal length
a : LCD side length

8.1.2 Corner crack :


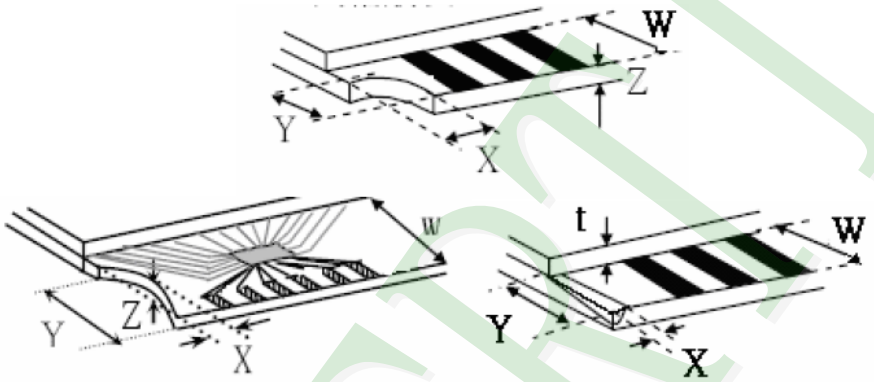
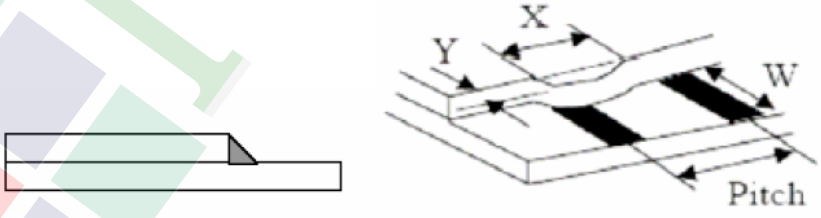
<table>
<tr><th>X</th><th>Y</th><th>Z</th></tr>
<tr><td>≦1/5 a</td><td>Crack can’t enter viewing area</td><td>Z ≦ 1/2 t</td></tr>
<tr><td>≦1/5 a</td><td>Crack can’t exceed the half of SP width.</td><td>1/2 t < Z ≦ 2 t</td></tr>
</table>
</td><td>Minor</td></tr>
<tr><td>
8.2 Protrusion over terminal :
8.2.1 Chip on electrode pad :






<table>
<tr><th></th><th>X</th><th>Y</th><th>Z</th></tr>
<tr><td>Front</td><td>≦ a</td><td>≦ 1/2 W</td><td>≦ t</td></tr>
<tr><td>Back</td><td>≦ a</td><td>≦ W</td><td>≦ 1/2 t</td></tr>
</table>
</td></tr>
</table>

◆Specification For TFT-LCD Module 3.5″ ~10″ : (Ver.B01)

NO	Item	Criterion	Level
08	The crack of glass	Symbols : X : The length of crack Y : The width of crack. Z : The thickness of crack W : terminal length t : The thickness of glass a : LCD side length 8.2.2 Non-conductive portion :  X ≦ 1/3 a; Y ≦ W; Z ≦t ⊙ If the chipped area touches the ITO terminal, over 2/3 of the ITO must remain and be inspected according to electrode terminal specifications. 8.2.3 Glass remain :  X ≦ a; Y ≦ 1/3 W; Z ≦t	Minor

◆Specification For TFT-LCD Module 3.5″ ~10″ : (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 the same as on the production characteristic chart .There should 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

4. RELIABILITY TEST

4.1 Reliability Test Condition (Ver.B01)

<table>
<tr><th>NO.</th><th>TEST ITEM</th><th>TEST CONDITION</th></tr>
<tr><td>1</td><td>High Temperature Storage Test</td><td>Keep in 80 ±2℃ 96 hrs
Surrounding temperature, then storage at normal condition 4hrs.</td></tr>
<tr><td>2</td><td>Low Temperature Storage Test</td><td>Keep in -30 ±2℃ 96 hrs
Surrounding temperature, then storage at normal condition 4hrs.</td></tr>
<tr><td>3</td><td>High Temperature / High Humidity Storage Test</td><td>Keep in +60 ℃ / 90% R.H duration for 96 hrs
Surrounding temperature, then storage at normal condition 4hrs.
(Excluding the polarizer)</td></tr>
<tr><td>4</td><td>Temperature Cycling Storage Test</td><td>-30℃→ +25℃ → 80℃ → +25℃
(30mins) (5mins) (30mins) (5mins)
10 Cycle
Surrounding temperature, then storage at normal condition 4hrs.</td></tr>
<tr><td rowspan="2">5</td><td rowspan="2">ESD Test</td><td>Air Discharge:
Apply 2 KV with 5 times
Discharge for each polarity +/-</td><td>Contact Discharge:
Apply 250 V with 5 times
discharge for each polarity +/-</td></tr>
<tr><td colspan="2">1. Temperature ambiance : 15℃～35℃
2. Humidity relative : 30%～60%
3. Energy Storage Capacitance(Cs+Cd) : 150pF±10%
4. Discharge Resistance(Rd) : 330Ω±10%
5. Discharge, mode of operation :
Single Discharge (time between successive discharges at least 1 sec)
(Tolerance if the output voltage indication : ±5%)</td></tr>
<tr><td>6</td><td>Vibration Test (Packaged)</td><td colspan="2">1. Sine wave 10 55 Hz frequency (1 min/sweep)
2. The amplitude of vibration :1.5 mm
3. Each direction (X、Y、Z) duration for 2 Hrs</td></tr>
<tr><td>7</td><td>Drop Test (Packaged)</td><td colspan="2"><table><tr><th>Packing Weight (Kg)</th><th>Drop Height (cm)</th></tr><tr><td>0 ~ 45.4</td><td>122</td></tr><tr><td>45.4 ~ 90.8</td><td>76</td></tr><tr><td>90.8 ~ 454</td><td>61</td></tr><tr><td>Over 454</td><td>46</td></tr></table>Drop Direction :※1 corner / 3 edges / 6 sides each 1time</td></tr>
</table>

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 ± 10°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°C ± 5°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.

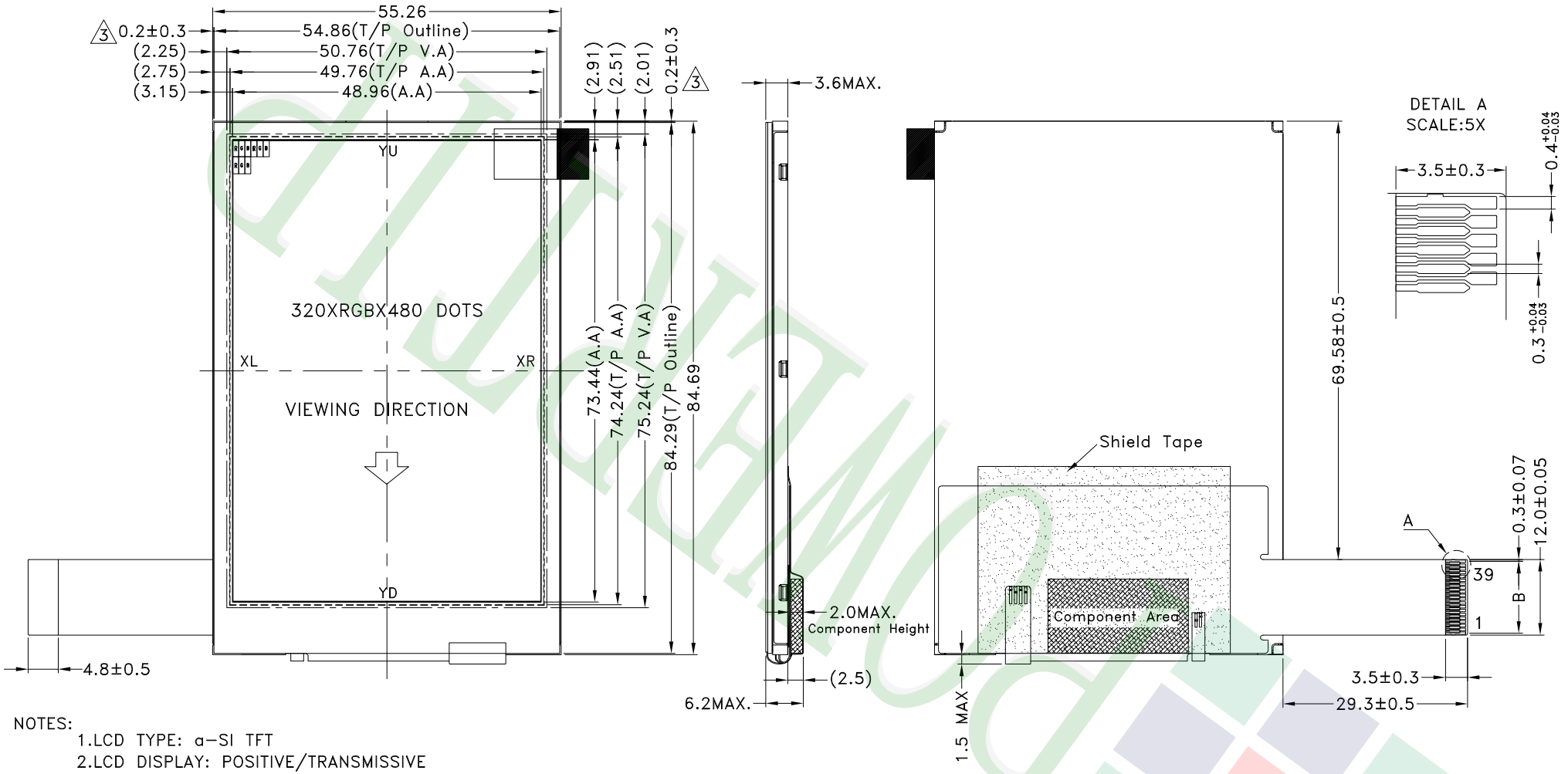
5.4 TERMS OF WARRANTY

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.



NOTES:

1. LCD TYPE: a-SI TFT
2. LCD DISPLAY: POSITIVE/TRANSMISSIVE
3. VIEW DIRECTION: 12 O'CLOCK
4. IC No.: HX8357-C OR COMPARABLE DRIVER IC
5. B:PITCH0.3*38=11.4±0.03
6. FPC PIN DESIGN REFER TO : HIRSOE FH23-39S-0.3SHW(05)
7. The tolerance unless classified ±0.2mm
8. ▨ Component (Height 2.0MAX.)

REV	REV BY	REVISER	DATE
007			
006			
005			
004			
003	Add T/P Tolerance	Mandy	2013/10/01
002	Modify Component & Shield Tape Size	Mandy	2013/09/25
001	NEW DRAWING	Mandy	2013/05/22

PART NO: PH320480T-005-L02Q

DRAWING NAME : LMD-PH320480T-005-L02Q

TITLE: LCM DRAWING

久正光電股份有限公司
POWERTIP TECHNOLOGY CORPORATION

Design	Mandy Chang	(3)	Surface	
Check	Tina Chen	Unit	MM	Material
Approve	Linda Lee	Scale	FIT	Thickness
		Page	1/1	Quantity

Length(Min) (mm)	Tolerance	Precision	Precision Level
1 ~ 4			-
4 ~ 16			-
16 ~ 63			-
63 ~ 250			-
250 ~ 1000			-

Ver.001

Documents NO.	PKG-PH320480T-005-L02Q

LCM包裝規格書
LCM Packaging Specifications

Approve	Check	Contact
Linda Lee	Tina Chen	Mandy Chang

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

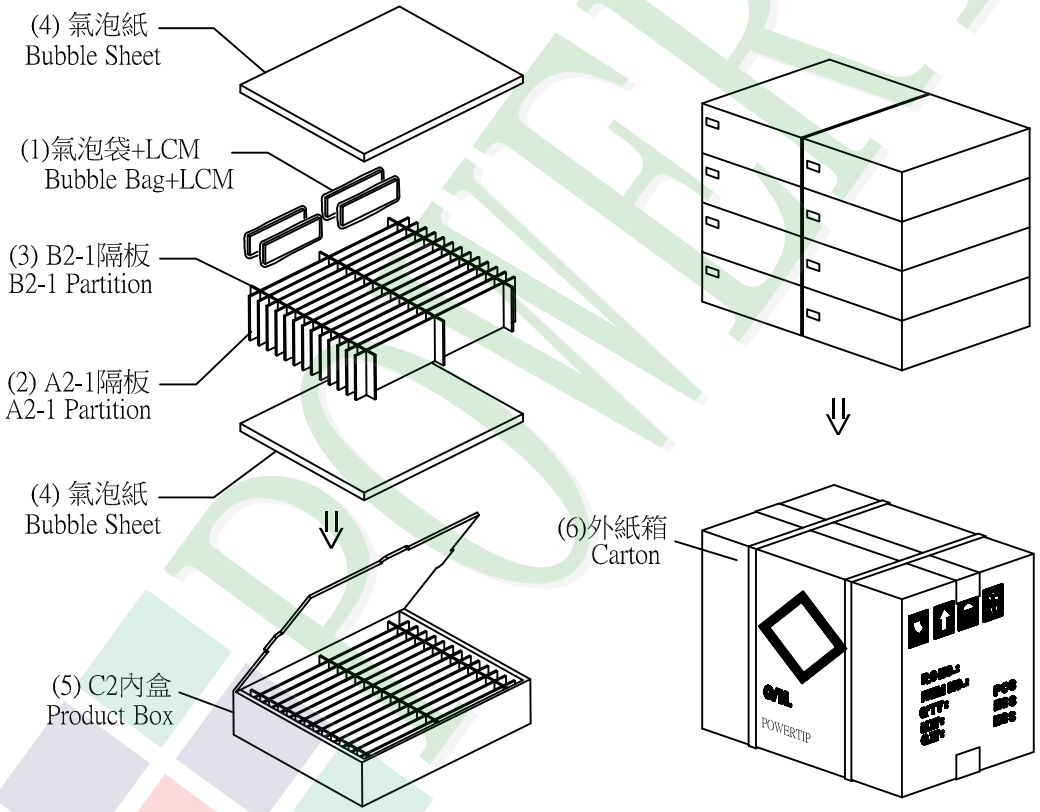
No.	Item	Model	Dimensions (mm)	1Pcs Weight	Quantity	Total Weight
1	成品 (LCM)	PH320480T-005-L02Q	55.26 X 84.69	0.03016	192	5.7907
2	氣泡袋(1)Bubble Bag	BAG0000000005	150 X 120	0.002	192	0.384
3	A2-1隔板(2)A2-1 Partition	BX29500072BZBA	295 X 72 X 3.0	0.0109	56	0.6104
4	B2-1隔板(3)B2-1 Partition	BX24500072BZBA	245 X 72 X 3.0	0.0094	24	0.2256
5	氣泡紙(4)Bubble Sheet	BAG280240BWABA	280 X 240	0.006	16	0.096
6	C2內盒(5)Product Box	BX31025580AABA	310 X 255 X 86	0.16	8	1.28
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) : 9.22 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 24 x no of boxes 8 = 192

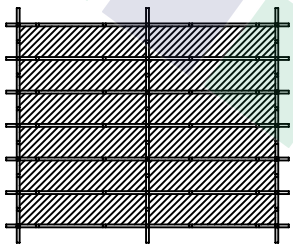


特 記 事 項 (REMARK)

4. LCM排放示意圖(前後間隔不放置):

4. LCM placed as figure showing:

(First and last slot should be empty)



模組(LCM) X 2pcs.