POWERTIP TECH. CORP.

SPECIFICATIONS

CUSTOMER	:	
SAMPLE CODE	:	SH800480T024-IHA04
MASS PRODUCTION CODE	:	PH800480T024-IHA04
SAMPLE VERSION	:	01
SPECIFICATIONS EDITION	:	004
DRAWING NO. (Ver.)	:	LMD-PH800480T024-IHA04(Ver.002)
PACKAGING NO. (Ver.)	:	PKG-PH800480T024-IHA04(Ver.002)

Customer Approved

Date:

Approved	Checked	Designer
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POWERTIP
2017.07.03
TW RD APR

☐ Preliminary specification for design input

■ Specification for sample approval

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History of Version

Date (mm / dd / yyyy)	Ver.	Edi.	Description	Page	Design by
12/15/2016	**01**	**001**	**New Drawing.**	**-**	**Howard**
03/09/2017	**01**	**002**	**New Sample**	**-**	**Howard**
03/23/2017	**01**	**003**	**ADD PCB Connector**	**Appendix**	**Howard**
06/30/2017	**01**	**004**	**Modify Packing Specification**	**Appendix**	**Howard**

Total: 27 Pages

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   - 5.4 Terms of Warranty

Appendix：1.LCM Drawing
2. Packing Specification

Note : For detailed information please refer to IC data sheet :
Primacy(TFT LCD): ILITEK: ILI6122M-9G / ILI5960-9G
LVDS (Receiver IC):Thine: THC63LVDF84B

1. SPECIFICATIONS

1.1 Features

Item	Standard Value
Display Resolution	800 * 3 (RGB) * 480 Dots
LCD Type	a-Si TFT , Normally white, Transmissive type
Screen size(inch)	5.0 inch
Viewing Direction	6 O'clock
Surface treatment	Anti-Glare
Color configuration	RGB Vertical Strip
Backlight Type	White LED B/L
Weight	70g
Interface	LVDS Interface (6 Bit)
LVDS drive IC	THC63LVDF84B(Receiver) THC63LVDM83D(Transmitter for Customer Use)
ROHS	THIS PRODUCT CONFORMS THE ROHS OF PTC Detail information please refer website : http://www.powertip.com.tw/news_detail.php?Key=1&cID=1

1.2 Mechanical Specifications

Item	Standard Value	Unit
Outline Dimension	121.0(W) x 75.9 (L) x 7.1(H)(Max)	mm

LCD panel

Item	Standard Value	Unit
Viewing Area	109.0 (W) * 65.8 (L)	mm

Note : For detailed information please refer to LCM drawing

1.3 Absolute Maximum Ratings

Module

Item	Symbol	Condition	Min.	Max.	Unit	Remark
Power Supply for Digital circuit	VCC	GND=0V	-0.3	+5.0	V	-
Power Supply for Analog circuit	V5V	GND=0V	-0.3	+6.0	V	
Operating Temperature	T_{OP}	-	-20	70	℃	
Storage Temperature	T_{ST}	-	-30	80	℃	

The absolute maximum rating values of this product are not allowed to be exceeded at any times. Should a module be used with any of the absolute maximum ratings exceeded, the characteristics of the module may not be recovered, or in an extreme case, the module may be permanently destroyed.

1.4 DC Electrical Characteristics

Module GND = 0V, Ta = 25℃

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply for Digital circuit	VCC	GND=0V	3.0	3.3	3.6	V
Power Supply for Analog circuit	V5V	GND=0V	2.6	5.0	5.5	V
Input Voltage for TFT Panel	V_{IH}	GND=0V	0.7VCC	-	VCC	V
	V_{IL}	GND=0V	0	-	0.3VCC	V
Supply Current for Digital circuit	ICC	VCC=3.3V	-	130	200	mA
Supply Current for Analog circuit	IV5V	V5V=5.0V	-	380	570	mA
Input Voltage for PWM Signal	VPH	GND=0V	2.0	-	-	V
	VPL	GND=0V	-	-	0.8	V
PWM dimming frequency	fdim	-	100	-	200	KHz

1.5 Optical Characteristics

TFT LCD Module VCC= 3.3 V, Ta=25℃

Item		Symbol	Condition	Min.	Typ.	Max.	unit	-
Response time	Tr+Tf	25℃	-	-	35	55	ms	-
Viewing angle	Top	θY+	CR ≥ 10		60	-	Deg.	Note 4
	Bottom	θY-			60	-		
	Left	θX-			60	-		
	Right	θX+			60	-		
Contrast ratio		CR	Ta = 25℃ θX , θY = 0°	500	600	-	-	Note 3
Color of CIE Coordinate （With B/L & LCD）	White	X		0.24	0.29	0.34	-	Note1
		Y		0.26	0.31	0.36		
	Red	X		0.51	0.56	0.61		
		Y		0.28	0.33	0.38		
	Green	X		0.29	0.34	0.39		
		Y		0.54	0.59	0.64		
	Blue	X		0.09	0.14	0.19		
		Y		0.04	0.09	0.14		
Average Brightness Pattern=white display (With LCD)*1		IV	V5V=5.0V PWM=”High” (Duty=100%)	800	1000	-	cd/m2	Note1
Uniformity (With LCD)*2		△B		70	-	-	%	Note1

Note 1:

*1：△B=B(min) / B(max) * 100%

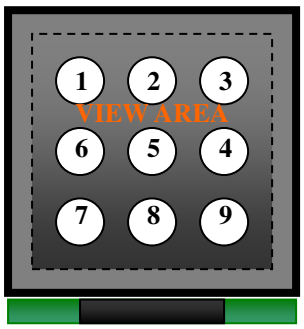
*2：Measurement Condition for Optical Characteristics:

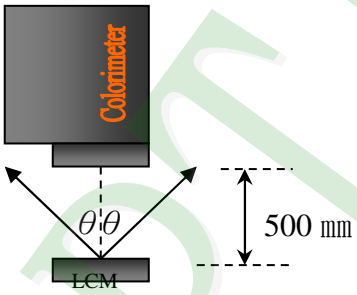
a：Environment: 25℃±5℃ / 60±20%R.H，no wind，dark room below 10 Lux at typical lamp current and typical operating frequency.

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

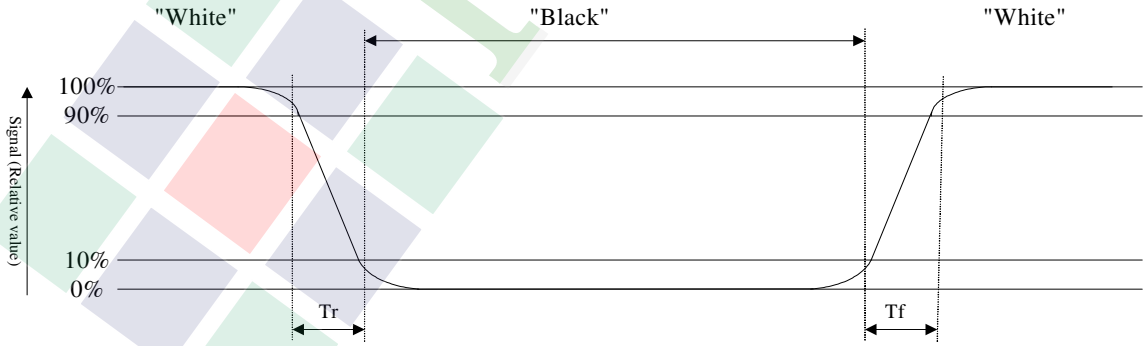
To be measured at the center area of panel with a viewing cone of 1° by Topcon luminance meter BM-7, after 10 minutes operation (module)

Note2: Definition of response time:

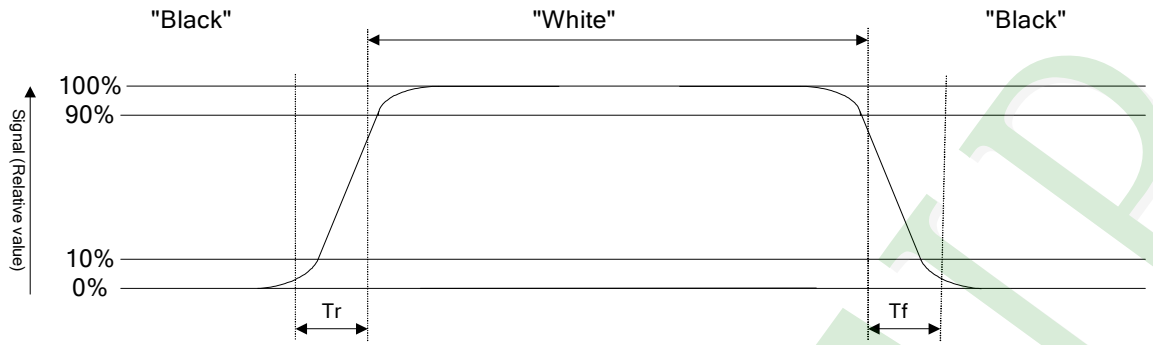
The output signals of photo detector are measured when the input signals are changed from “black” to “white”(falling time) and from “white” to “black”(rising time), respectively. The response time is defined as the time interval between the 10% and 90% of Amplitudes.

Refer to figure as below:

Normally White



Normally Black



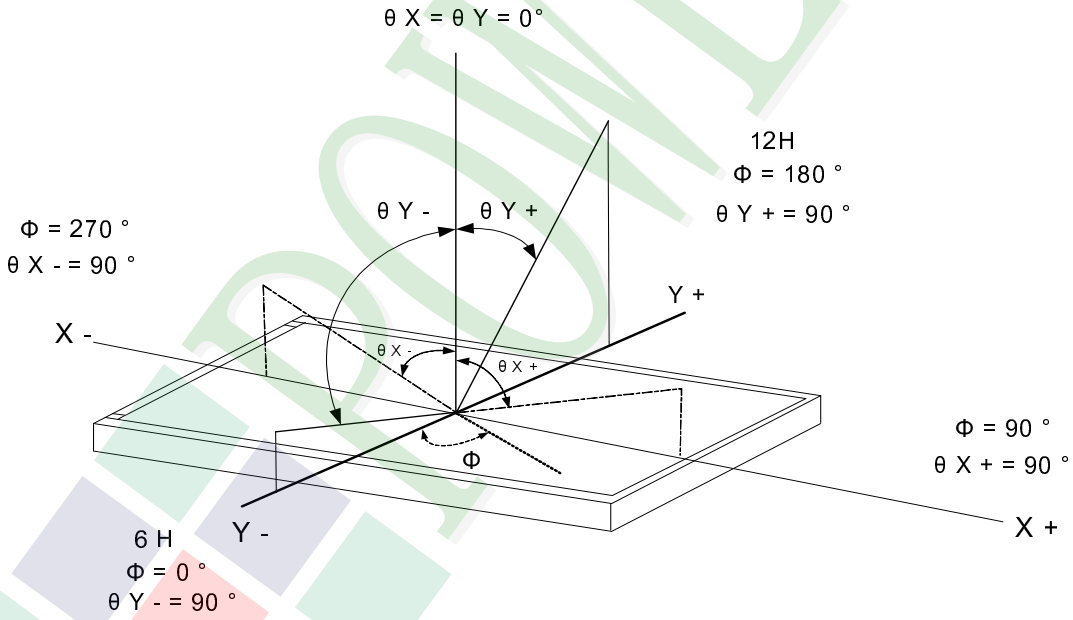
Note3: Definition of contrast ratio:

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

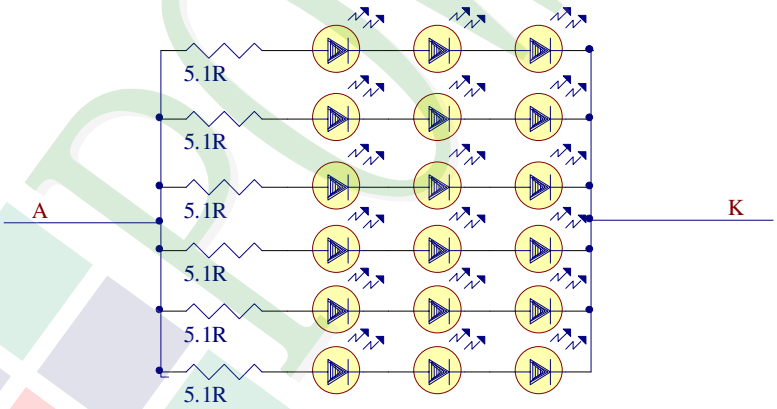
Item	Symbol	Min.	Max.	Unit	Remark
LED Forward Current	I_F	210		mA	One LED
LED Reverse Voltage	V_R	10		V	

Electrical / Optical Characteristics

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Voltage	VF	IF=90mA	16.2	18.0	19.2	V
Average Brightness (Without LCD)	IV		20000	23000	-	cd/m^2
CIE Color Coordinate (Without LCD)	X		0.25	0.28	0.31	-
	Y		0.25	0.28	0.31	
Color	White					

Note 1: The LED Supply Voltage is defined by the number of LED at Ta=25℃ and I_L=90 mA.

Note 2: The “LED life time” is defined as the module brightness decrease to 50% original brightness at Ta=25℃ and I_L=90 mA. The LED life time could be decreased if operating I_L is larger than 90 mA.



Other Description

Item	Conditions	Description
Life Time	Ta =25℃ IF= 90mA	50,000 hrs

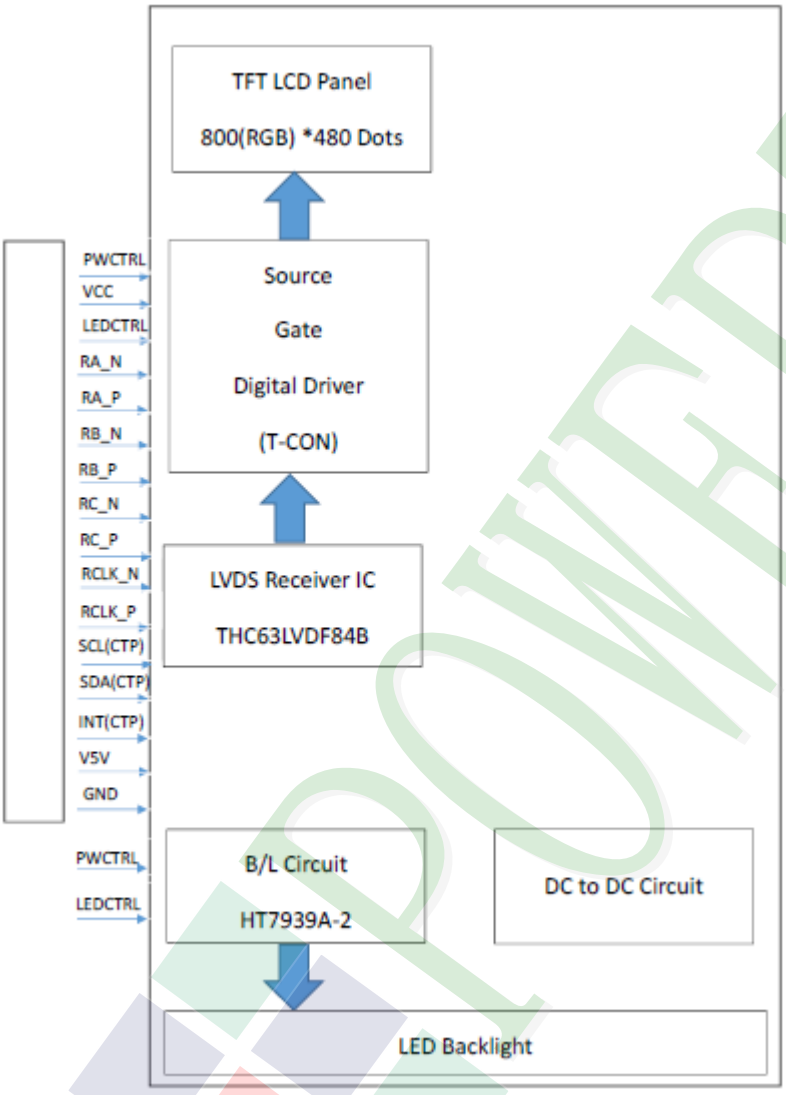
2. MODULE STRUCTURE

2.1 Counter Drawing

2.1.1 LCM Mechanical Diagram

* See Appendix

2.1.2 Block Diagram



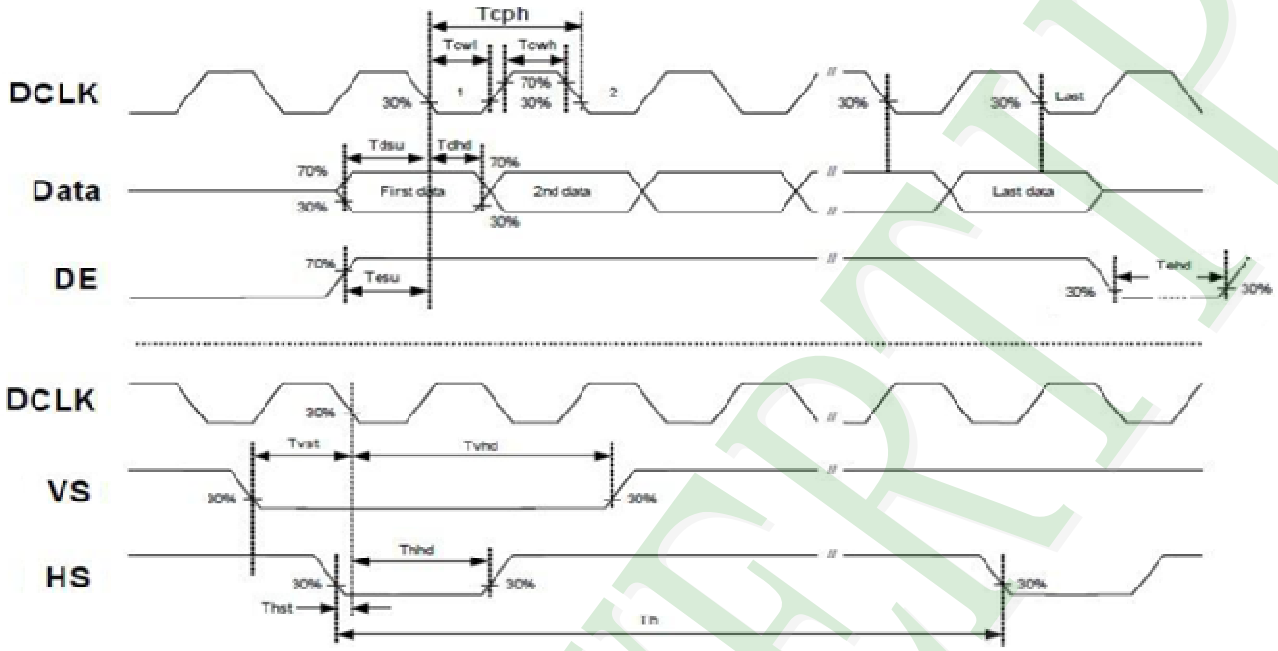
2.2 Interface Pin Description

Pin#	Name	DESCRIPTION
1	PWCTRL	Backlight on/off control input.
2	VCC	Power supply for Digital Circuit. (+3.3V)
3	VCC	Power supply for Digital Circuit. (+3.3V)
4	VCC	Power supply for Digital Circuit. (+3.3V)
5	LEDCTRL	PWM for Backlight brightness control. Active :Hi (Not use be open)
6	NC	No Connect.
7	NC	No Connect
8	RA_N	-LVDS differential data input (R0-R5, G0).
9	RA_P	+LVDS differential data input (R0-R5, G0).
10	VSS	Power ground.
11	RB_N	-LVDS differential data input (G1-G5, B0-B1).
12	RB_P	+LVDS differential data input (G1-G5, B0-B1).
13	VSS	Power ground.
14	RC_N	-LVDS differential data input (B2-B5, HS, VS, DE).
15	RC_P	+LVDS differential data input (B2-B5, HS, VS, DE).
16	VSS	Power ground.
17	RCLK_N	-LVDS differential clock input.
18	RCLK_P	+LVDS differential clock input.
19	VSS	Power ground.
20	V5V	Power supply for Analog Circuit.(+5.0V)
21	V5V	Power supply for Analog Circuit.(+5.0V)
22	VSS	Power ground.
23	VSS	Power ground.
24	V5V	Power supply for Analog Circuit.(+5.0V)
25	V5V	Power supply for Analog Circuit.(+5.0V)
26	V5V	Power supply for Analog Circuit.(+5.0V)
27	SCL(TP)	I^2C serial Clock.(For CTP)
28	SDA(TP)	I^2C serial Data. (For CTP)
29	INT(TP)	Indicate coordinate data ready. (For CTP)
30	NC	No Connect.Or PWM for Backlight brightness control .Active :Hi

Note: PCB Board VCC & TP VDD IS CONNECT.

2.3 Timing Characteristics

2.3.1 Signal AC Characteristics



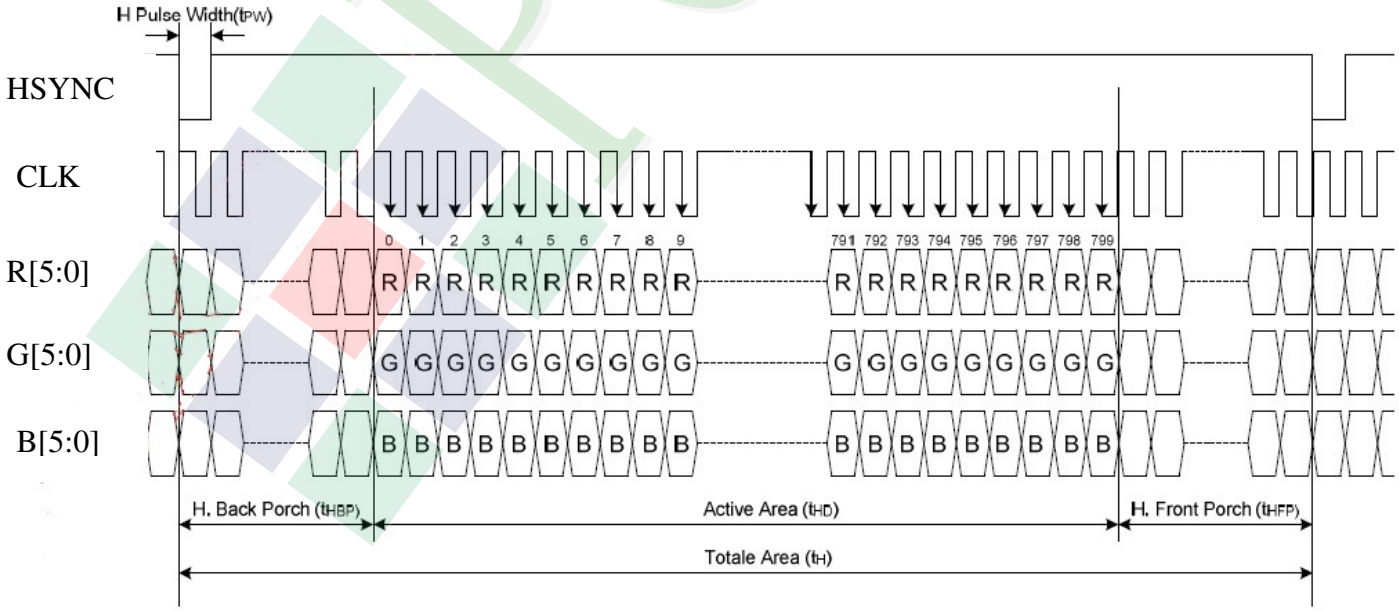
Item	Symbol	Values			Unit	Remark
		Min	Typ	Max		
HS setup time	Thst	8	-	-	ns	
HS hold time	Thhd	8	-	-	ns	
VS setup time	Tvst	8	-	-	ns	
VS hold time	Tvhd	8	-	-	ns	
Data setup time	Tdsu	8	-	-	ns	
Data hole time	Tdhd	8	-	-	ns	
DE setup time	Tesu	8	-	-	ns	
DE hold time	Tehd	8	-	-	ns	
DVDD Power On Slew rate	TPOR	-	-	20	ms	From 0 to 90% DVDD
RESET pulse width	TRst	1	-	-	ms	
DCLK cycle time	Tcph	20	30	-	ns	
Low Level Width	Tcwl	8	-	-	ns	
High Level Width	Tcwh	8	-	-	ns	
DCLK pulse duty	Duty	40	50	60	%	Tcwh / Tcph

2.3.2 Input Timing Setting

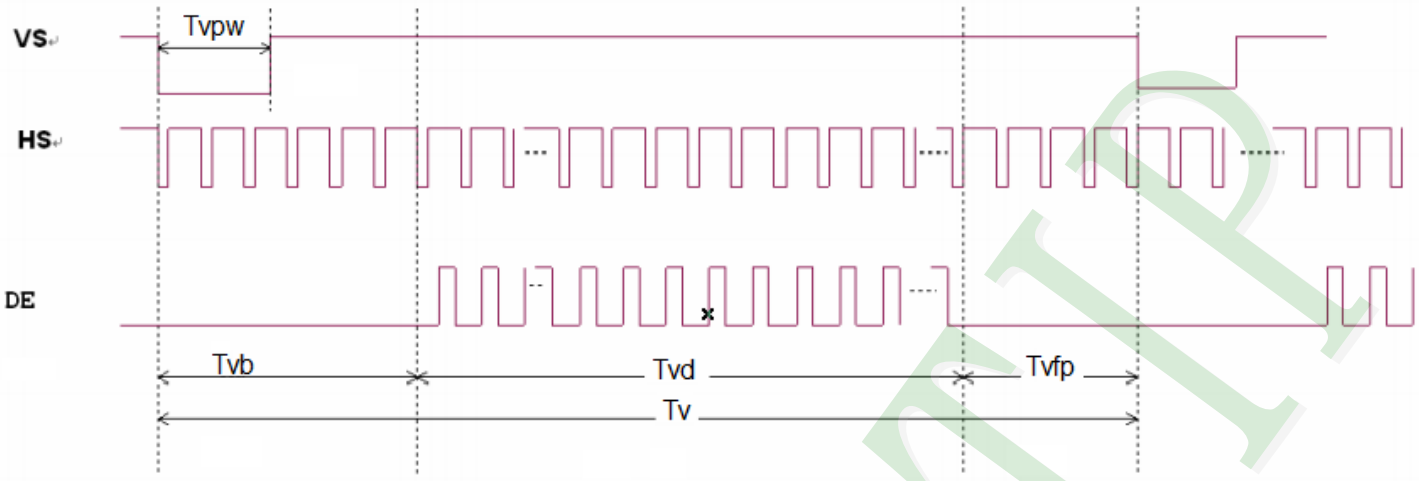
Parameter		Symbol	Value			Unit
			Min	Typ	Max	
Horizontal display area		thd		800		DCLK
DCLK frequency		fclk	-	33.3	50	MHz
1 Horizontal Line		th	862	1056	1200	DCLK
HSD pulse width	Min	thpw	-	1		
	Typ		-	-		
	Max		-	40		
HSD Back Porch (Blacking)		thp	46	46	46	
HSD Front Proch		thfb	16	210	354	

Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Vertical display area	tvd		480		H
VSYNC period time	tv	510	525	650	H
VSYNC pulse width	tvpw	1	-	20	H
VSYNC ack Porch(Blanking)	tvb	23	23	23	H
VSYNC Front Proch	tvfb	7	22	147	H

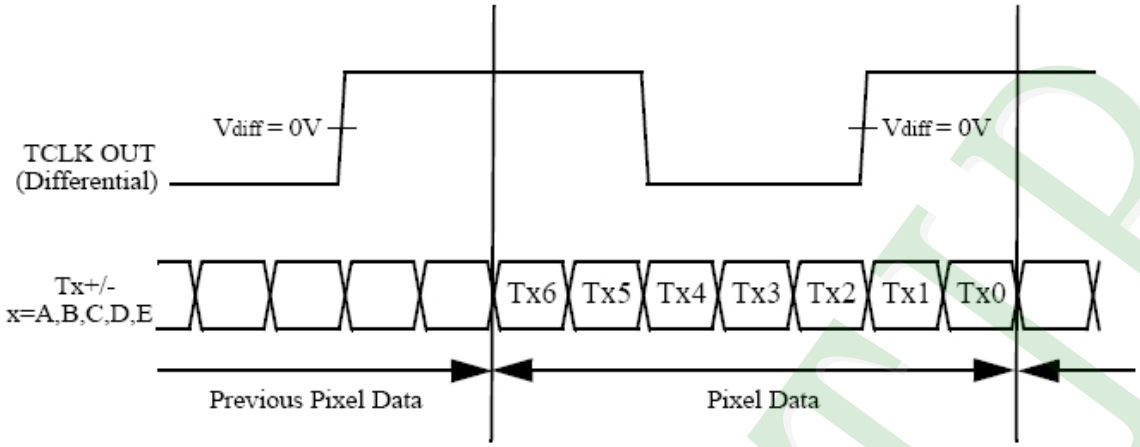
Horizontal input timing diaqram



Vertical input timing diaqram



2.3.3 LVDS Timing Characteristics



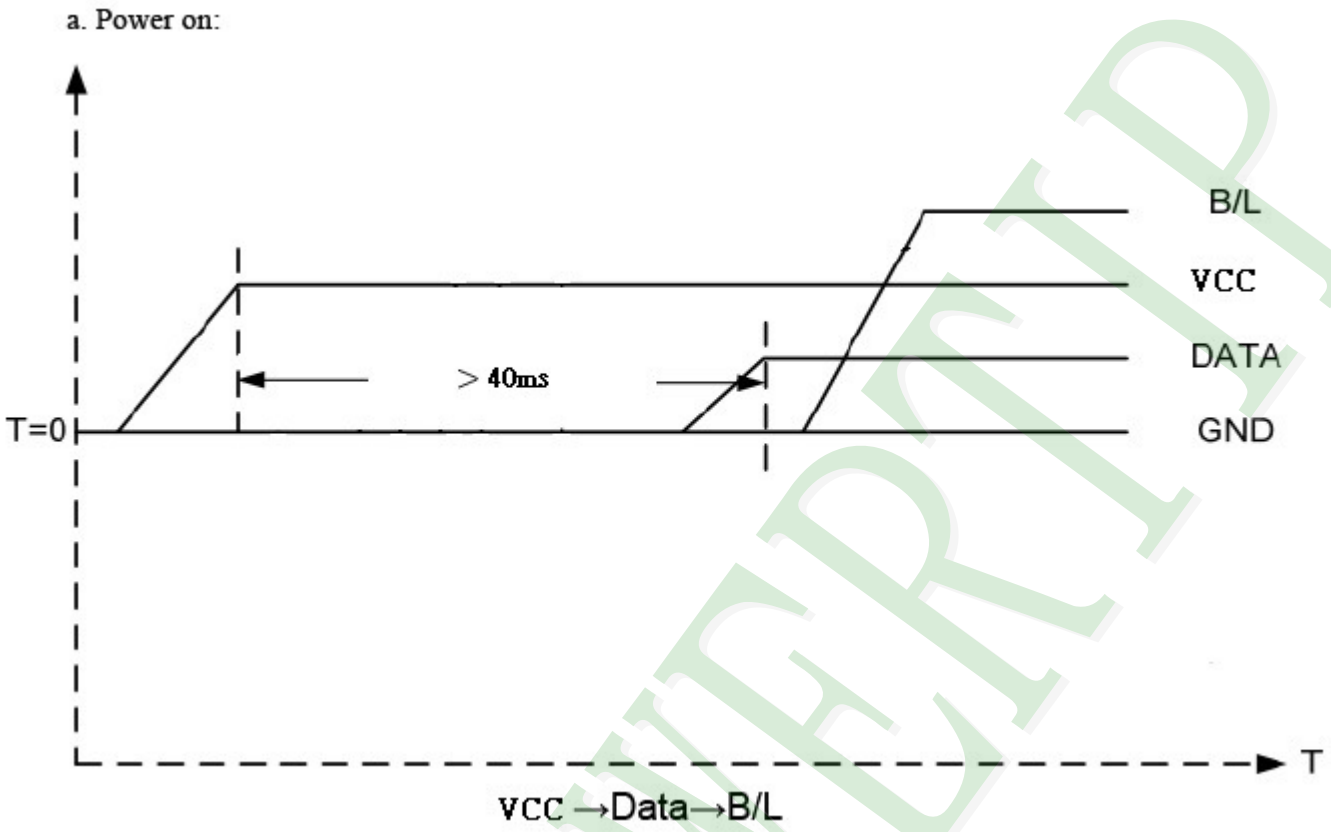
Pixel Data Assignment (6Bit Application)

	6 Bit
TA0	R2
TA1	R3
TA2	R4
TA3	R5
TA4	R6
TA5	R7
TA6	G2
TB0	G3
TB1	G4
TB2	G5
TB3	G6
TB4	G7
TB5	B2
TB6	B3
TC0	B4
TC1	B5
TC2	B6
TC3	B7
TC4	Hsync
TC5	Vsync
TC6	DE
TD0	-
TD1	-
TD2	-
TD3	-
TD4	-
TD5	-
TD6	-

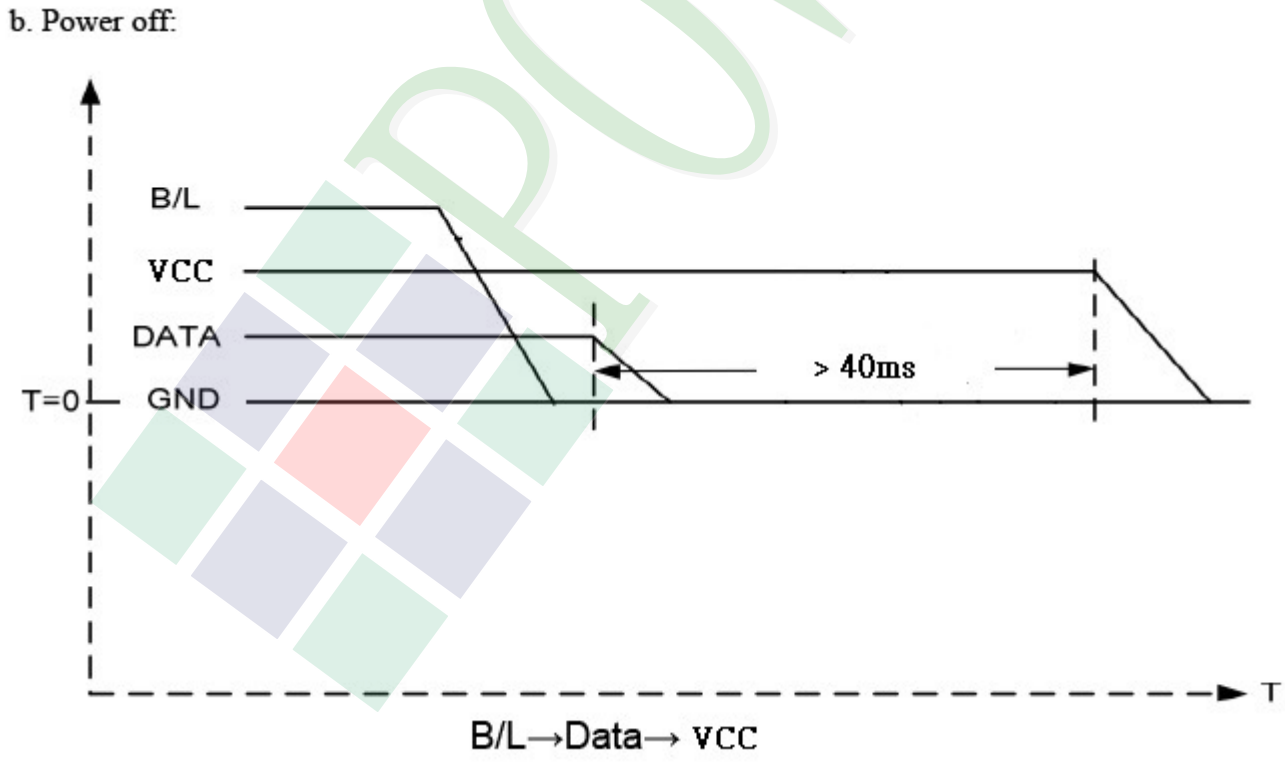
Note: For 6Bit application, use A~C channel and open TD+/- Pin

2.3.4 Power Sequence

POWER ON

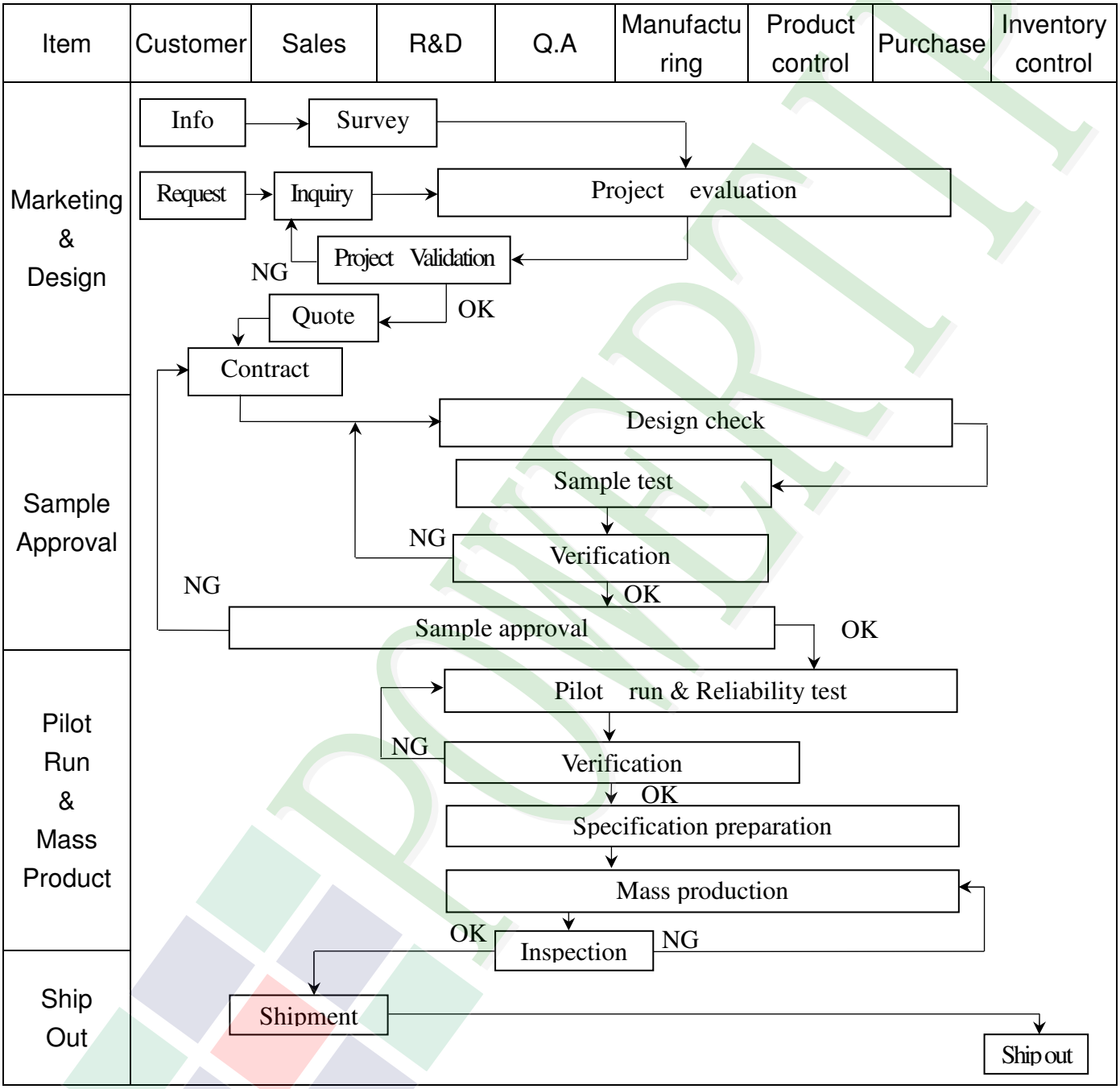


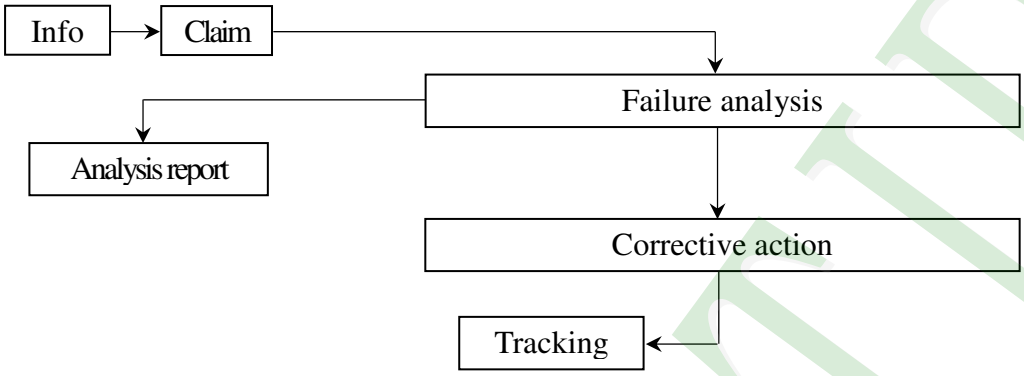
POWER OFF



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								
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″ ~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

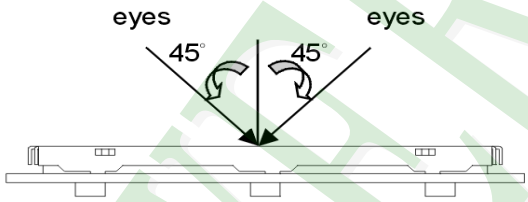
◆OUT Going Defect Level：Sampling.

◆Standard of the product appearance test：

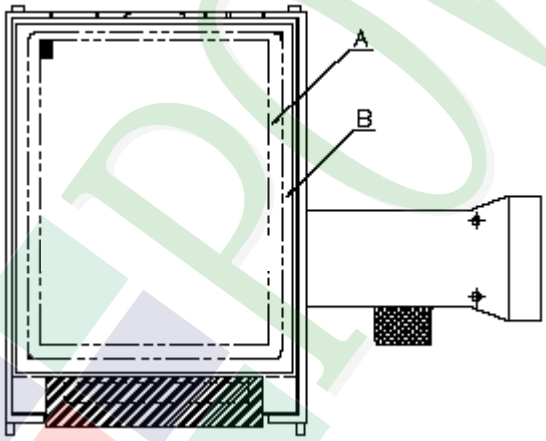
a. Manner of appearance test：

(1). The test best be under 20W×2 fluorescent light，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″ ~15″：　(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>1.1The 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>2.1The 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="6">04</td><td rowspan="6">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>4.6 Mura can not be seen through 5% ND filter.
(Mura : Under the normal examination angle of view,the picture has the non-uniform phenomenon.)</td><td>Minor</td></tr>
<tr><td>05</td><td>Dot defect

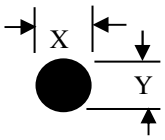
(Bright dot、Dark dot)

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.
5.4 Bright dot that can not be seen through 5% ND filter.
</td><td>Minor</td></tr>
</table>

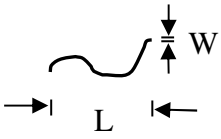
◆Specification For TFT-LCD Module 3.5″ ~15″：

(Ver.B01)

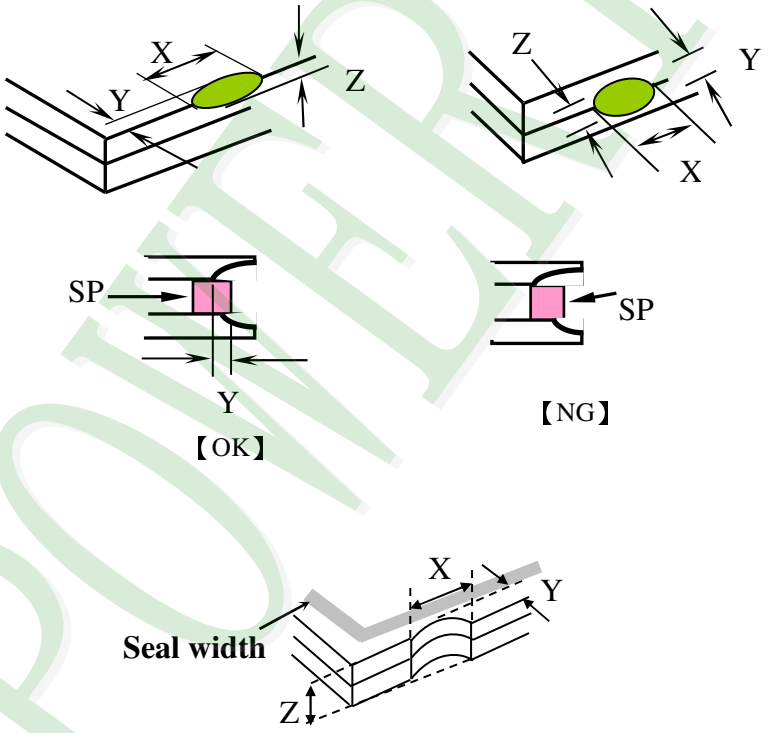
<table>
<tr><th>NO</th><th>Item</th><th>Criterion</th><th>Level</th></tr>
<tr><td>06</td><td>Black or white dot、scratch、contamination

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">module size</th><th>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 rowspan="5">3.5” to less 9”</td><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><tr><td rowspan="4">9” to 15”</td><td>---</td><td>W ≦ 0.05</td><td>Ignore</td><td rowspan="4">Ignore</td></tr><tr><td>L ≦10.0</td><td>0.05 ＜W ≦ 0.10</td><td>5</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″ ~15″ : (Ver.B01)

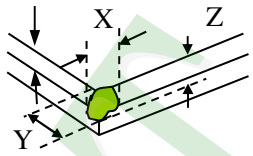
NO	Item	Criterion	Level
08	The crack of glass	Symbols : X : The length of crack Y : The width of crack. Z : The thickness of crack W : terminal length t : The thickness of glass a : LCD side length 8.1 General glass chip : 8.1.1 Chip on panel surface and crack between panels:  	Minor

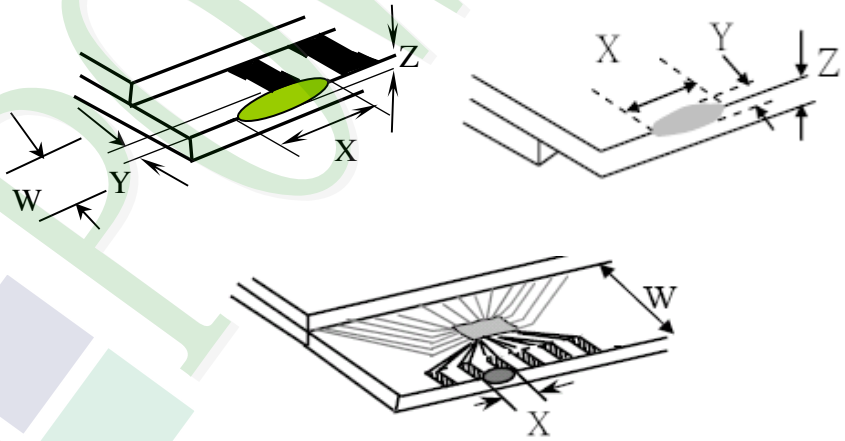
X	Y	Z
≦ a	Crack can't enter viewing area	≦1/2 t
≦ a	Crack can't exceed the half of SP width.	1/2 t < Z ≦2 t

◆Specification For TFT-LCD Module 3.5″ ~15″ : (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 :
 

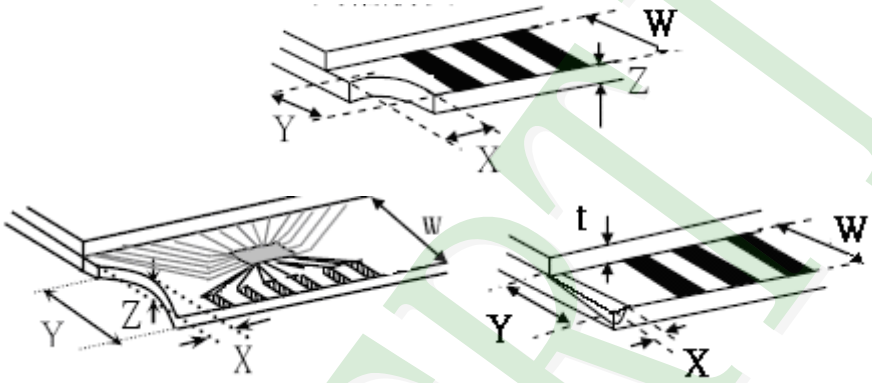
<table><tr><th>X</th><th>Y</th><th>Z</th></tr><tr><td>≦1/5 a</td><td>Crack can’t enter viewing area</td><td>Z ≦ 1/2 t</td></tr><tr><td>≦1/5 a</td><td>Crack can’t exceed the half of SP width.</td><td>1/2 t < Z ≦ 2 t</td></tr></table></td><td rowspan="2">Minor</td></tr>
<tr><td>8.2 Protrusion over terminal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

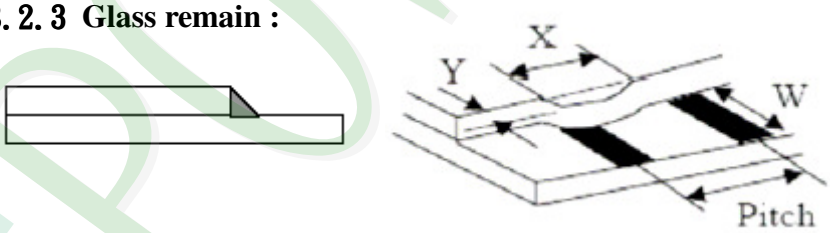
<table><tr><th></th><th>X</th><th>Y</th><th>Z</th></tr><tr><td>Front</td><td>≦ a</td><td>≦ 1/2 W</td><td>≦ t</td></tr><tr><td>Back</td><td>≦ a</td><td>≦ W</td><td>≦ 1/2 t</td></tr></table></td></tr>
</table>

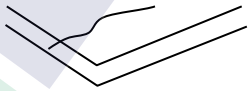
◆Specification For TFT-LCD Module 3.5″ ~15″ : (Ver.B01)

<table>
<tr><th>NO</th><th>Item</th><th>Criterion</th><th>Level</th></tr>
<tr><td>08</td><td>The crack of glass</td><td>
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 :


<table>
<tr><th>X</th><th>Y</th><th>Z</th></tr>
<tr><td>≦ 1/3 a</td><td>≦ W</td><td>≦t</td></tr>
</table>
⊙ 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 :


<table>
<tr><th>X</th><th>Y</th><th>Z</th></tr>
<tr><td>≦ a</td><td>≦ 1/3 W</td><td>≦t</td></tr>
</table>
8.2.4 Cracking

Not Allowed
</td><td>Minor</td></tr>
</table>

◆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 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℃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℃ ±5℃ 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.

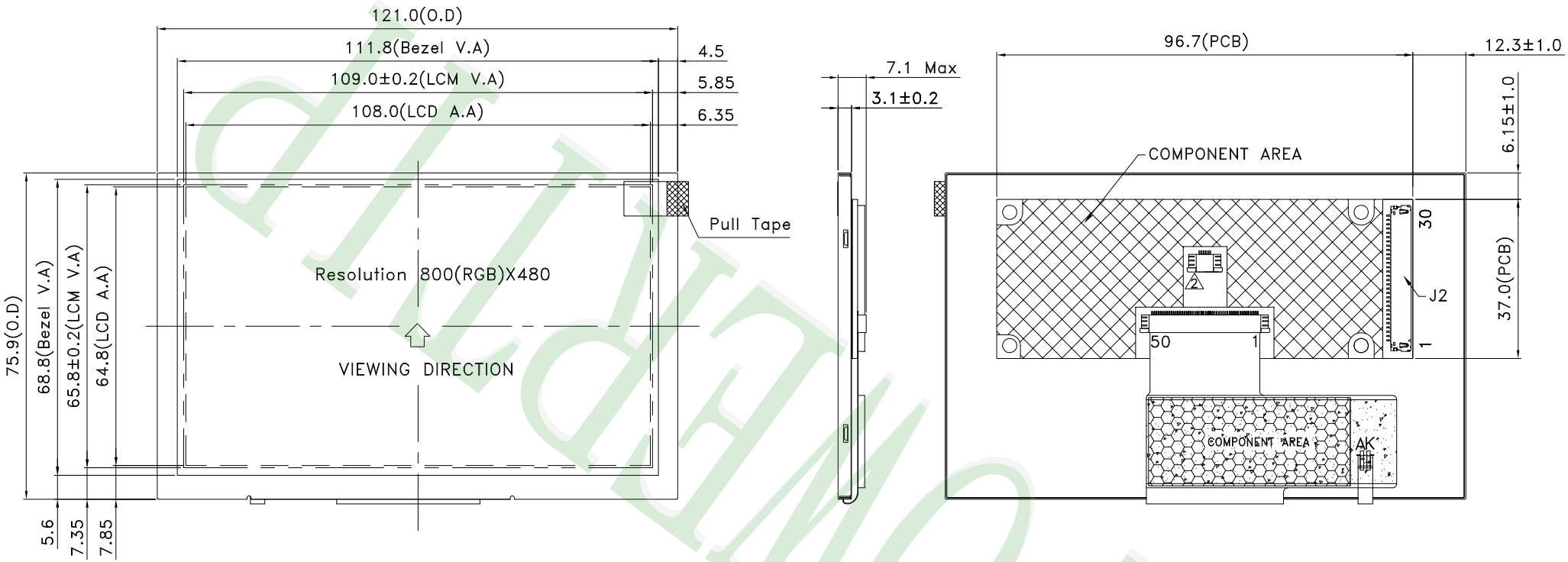
5.4 TERMS OF WARRANTY

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: 6 O'CLOCK
4.The tolerance unless classified ±0.3mm
5.J2: HIROSE DF19G-30P-1H OR EQUIVALENT

REV	REV BY	REVISER	DATE
007			
006			
005			
004			
003			
002	ADD PCB Connector	Annie	2017/03/22
001	NEW DRAWING	Annie	2016/12/15

PART NO: PH800480T024-IHA04

DRAWING NAME : LMD-PH800480T024-IHA04

TITLE: LCD MODULE DRAWING

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

Design	Annie Kang	(3)	Surface		
Check	Tina Chen	Unit	MM	Material	
Approve	Jimmy Chen	Scale	FIT	Thickness	
		Page	1/1	Quantity	

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

Ver.002 △2	Documents NO.	PKG-PH800480T024-IHA04

LCM包裝規格書
LCM Packaging Specifications

Approve	Check	Contact
Jimmy Chen	Tina Chen	Annie Kang

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

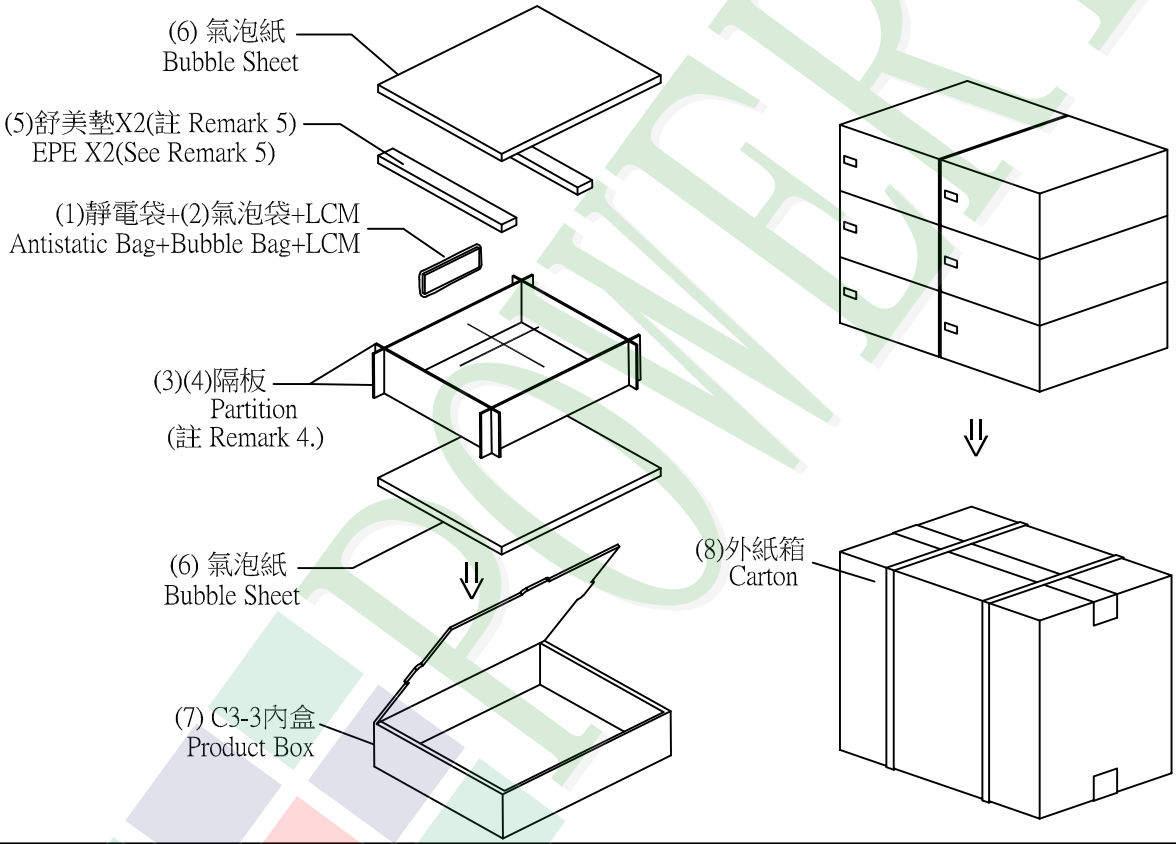
No.	Item	Model	Dimensions (mm)	1Pcs Weight	Quantity	Total Weight
1	成品 (LCM)	PH800480T024-IHA04	121.0 X 75.9	0.0606	72	4.3632
2	靜電袋Antistatic Bag	BAG240170ARABA	240 X 170	0.0048	72	0.3456
3	抗靜電氣泡袋Bubble Bag	BAG170150BRABA	170 X 150	0.0045	72	0.324
4	A7隔板(3)A7 Partition	BX29500010BZBA	295 X 105 X 3	0.0169	42	0.7098
5	B7隔板(4)B7 Partition	BX24500010BZBA	245 X 105 X 3	0.0137	18	0.2466
6	舒美墊(5)EPE	OTFOAMEP0005BA	333 X 218 X 20	0.036	2	0.072
7	氣泡紙(6)Bubble Sheet	BAG280240BWABA	280 X 240	0.006	12	0.072
8	C3-3內盒(7)Product Box	BX31025511ABBA	310 X 255 X 116	0.17	6	1.02
9	外紙箱(8)Carton	BX52732536CCBA	527 X 325 X 360	0.83	1	0.83

2.一 整箱總重量 (Total LCD Weight in carton) : 7.98 Kg±10%

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

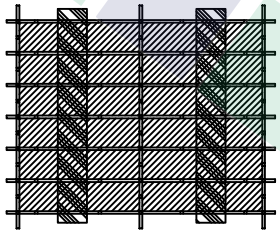
(1)Quantity Of Spacer : A7隔板 X 7 , B7隔板 X 3

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



特 記 事 項 (REMARK)

4. LCM排放示意圖(前後間隔不放置):
LCM placed as figure showing:
(First and last slot should be empty)



EPE X 2

模組(LCM) X 1pcs.

5. 將OTFOAMEP0005BA裁切成218*20mm, 可裁成11片

POWERTIP TECH. CORP.