SPECIFICATIONS

CUSTOMER	:	
SAMPLE CODE	:	SH800480T024-IDB01
MASS PRODUCTION CODE	:	PH800480T024-IDB01
SAMPLE VERSION	:	01
SPECIFICATIONS EDITION	:	005
DRAWING NO. (Ver.)	:	LMD-PH800480T024-IDB01(Ver.001)
PACKAGING NO. (Ver.)	:	PKG-PH800480T024-IDB01(Ver.002)

Customer Approved

Date:

Approved	Checked	Designer
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POWERTIP
2016.09.12
TWRD APR

☐ Preliminary specification for design input

■ Specification for sample approval

POWERTIP TECH. CORP.

NO.PT-A-005-8

History of Version

Date (mm / dd / yyyy)	Ver.	Edi.	Description	Page	Design by
01/12/2016	01	001	**New Drawing.**	-	**Howard**
02/26/2016	01	002	**Modify Interface Pin Description.** **Add Touch Panel Pin Define.**	16	**Howard**
04/07/2016	01	003	**New Sample**	-	**Howard**
07/29/2016	01	004	**Modify Backlight Maximum Ratings**	9	**Howard**
09/10/2016	01	005	**Modify Packing Specification**	**Appendix**	**Howard**

Total: 30 Pages

Contents

Note : For detailed information please refer to IC data sheet :
Primacy(TFT LCD): ILITEK--- ILI6122M-9G / ILI5960-9G
(Or compatible IC)

1. SPECIFICATIONS

1.1 Features

Item	Standard Value
Display Type	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
Color configuration	RGB-Strip
Backlight Type	LED B/L
Interface	Digital 24-bits RGB
Other(controller/driver IC)	Source IC : ILI6122M-9G / Gate IC: ILI5960-9G (Or Compatible IC)
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	121.0(W) x 75.9 (L) x 4.2(H)	mm

LCD panel

Item	Standard Value	Unit
Viewing Area	109.0 (W) * 65.8 (L)	mm
Active Area	108.0 (W) x 64.8 (L)	mm
Pixel Size	0.135 (W) * 0.135 (H)	mm

Touch panel

Item	Standard Value	Unit
Viewing Area	110.4 (W) * 67.4 (L)	mm
Active 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
System Power Supply Voltage	VDD	GND=0	-0.3	4.5	V
Operating Temperature	T_{OP}	-	-20	70	℃
Storage Temperature	T_{ST}	-	-30	80	℃
Storage Humidity	H_D	Ta ≦ 60 ℃	10	90	%RH

1.4 DC Electrical Characteristics

Module   GND = 0V, Ta = 25℃

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply Voltage	VDD	-	3.0	3.3	3.6	V
Input H/L Level Voltage	VIH	-	0.7VDD	-	VDD	V
	VIL	-	GND	-	0.3VDD	V
Output H/L Level Voltage	VOH	-	VDD-0.4	-	VDD	V
	VOL	-	GND	-	GND+0.4	V
Supply Current	I_{DD}	VDD= 3.3 V Pattern=Photo	-	100	-	mA
		VDD= 3.3 V Pattern=R *1	-	120	180	mA

Note1:Maximum current display

## 1.5 Optical Characteristics

TFT LCD Module

VDD= 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		500	600	-	-	Note 3
Color of CIE Coordinate （With B/L & T/P）	White	X	Ta = 25℃ θX , θY = 0°	0.26	0.31	0.36	-	Note1
		Y		0.29	0.34	0.39		
	Red	X		0.50	0.55	0.60		
		Y		0.27	0.32	0.37		
	Green	X		0.29	0.34	0.39		
		Y		0.54	0.59	0.64		
	Blue	X		0.09	0.14	0.19		
		Y		0.03	0.08	0.13		
Average Brightness Pattern=white display (With LCD & T/P)*1		IV	IF= 120 mA	600	700	-	cd/m2	Note1
Uniformity (With LCD & T/P)*2		△B	IF= 120 mA	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
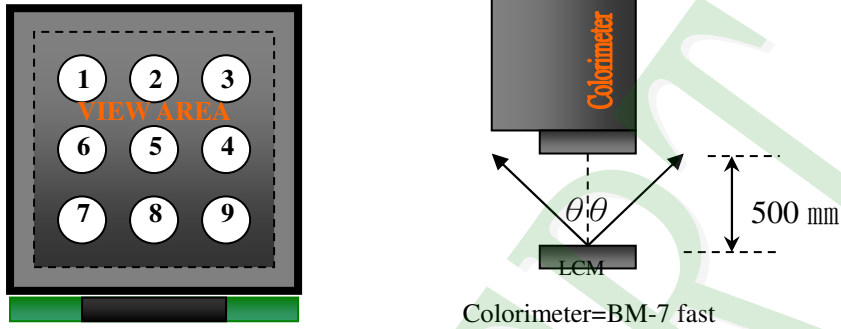
To be measured at the center area of panel with a viewing cone of 1° by Topcon luminance meter BM-7, after 10 minutes operation (module)

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
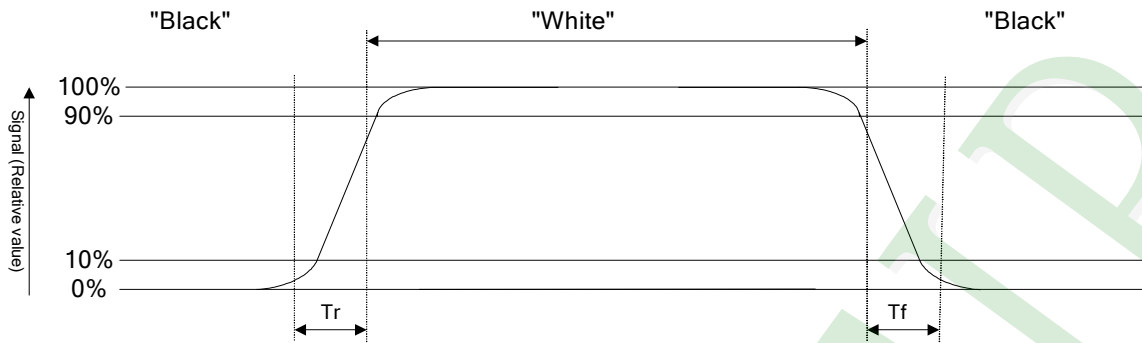
Note3: Definition of contrast ratio:

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:
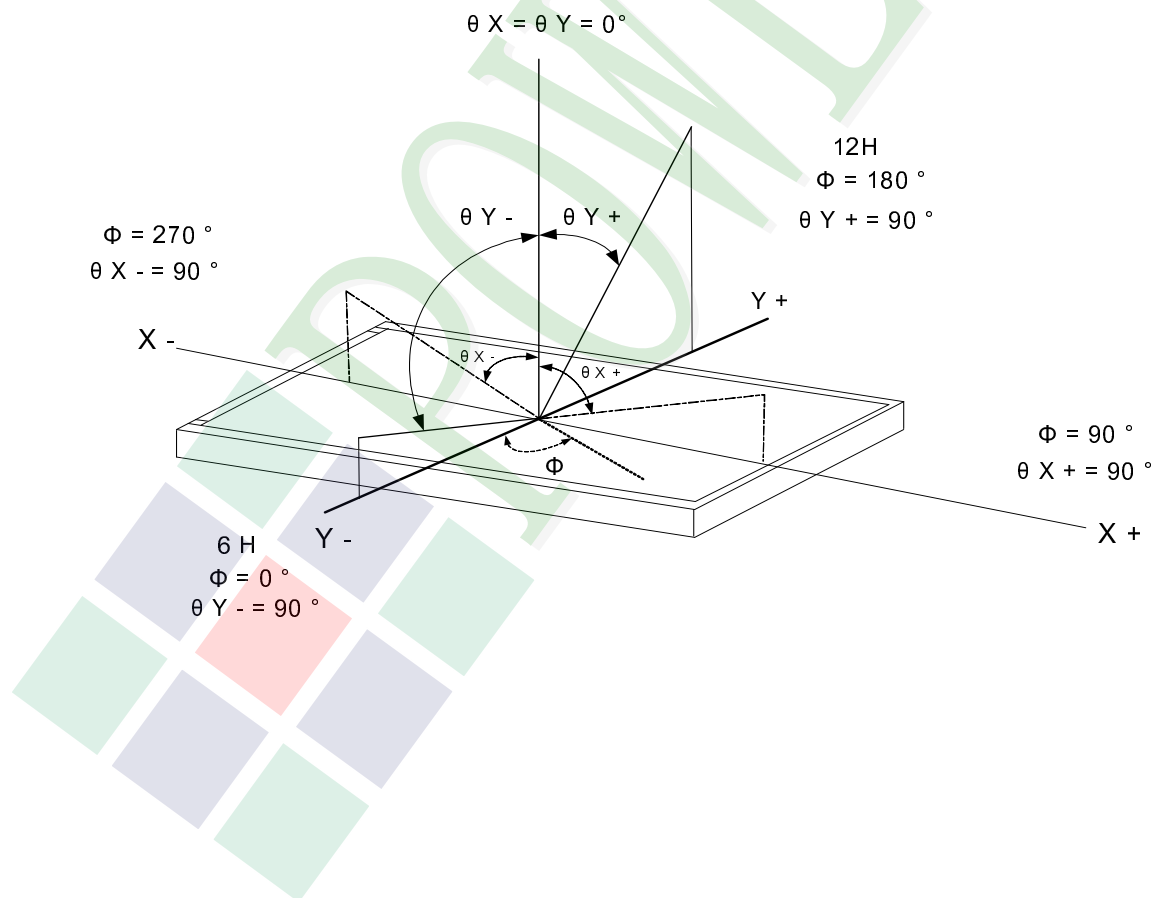
1.6 Backlight Characteristics

Maximum Ratings

Item	Symbol	Conditions	Min.	Max.	Unit
LED Forward Current	IF	Ta =25℃	-	210	mA
LED Reverse Voltage	IR	Ta =25℃	-	10	V
Power Dissipation	PD	Ta =25℃	-	4284	mW

Electrical / Optical Characteristics

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Voltage	VF		16.8	18.6	-	V
Average Brightness (Without LCD)	IV	IF=120mA	20500	23500	-	cd/m²
CIE Color Coordinate (Without LCD)	X		0.25	0.28	0.31	-
	Y		0.25	0.28	0.31	
Color		White				
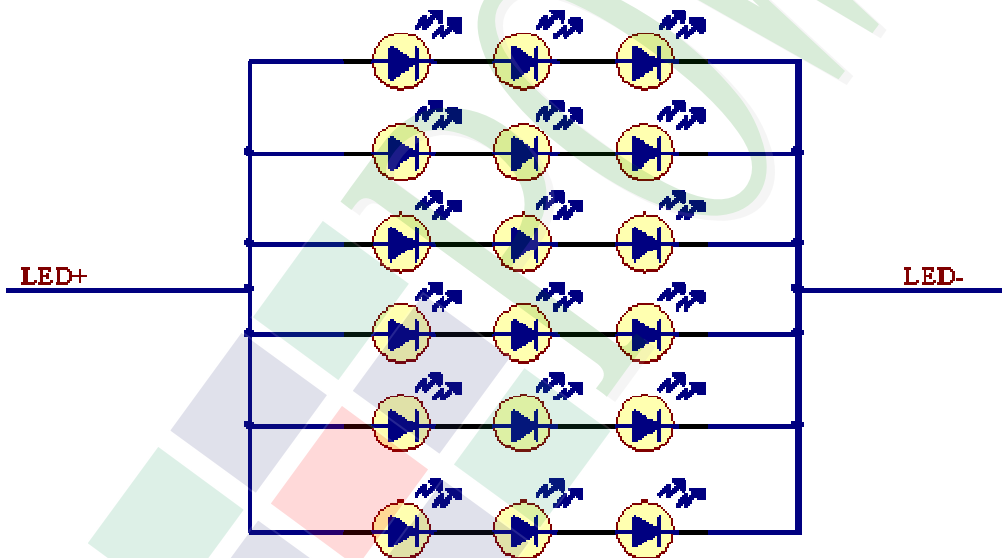
Other Description

Item	Conditions	Description
Life Time	Ta =25℃ IF= 120mA	30,000 hrs

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1.7 Touch Panel Specification

1.7.1 Optical Characteristics

Item	Specification
1.Transparency	78% Min

1.7.2 Mechanical Characteristic

Item	Specification
1.Input Method	Finger or stylus pen
2.Hardness of surface	3H -pressure 500g of ,45deg.
3.Activation Force	120gf less individual point with stylus pen(R0.8) Activation force guarantee area:3.0mm inside of Active Area.
4.Linearity Force	120gf less input with stylus pen(R0.8) Activation force guarantee area:3.0mm inside of Active Area.

1.7.3 Electrical Characteristics

Item	Specification
1.Rated Voltage	DC 5V(DC 7V Max)
2.Resistance Between Terminals.	Direction X (Film side): 200Ω~ 1050Ω
	Direction Y (Glass side): 100Ω~ 900Ω
3.Insulation Resistance	20 MΩ or more (DC 25V 1min)
4.Linearity	±1.5%. Linearity(%)= $\Delta V/（EV-SV）*100$. ΔV: The difference between the ideal voltage and measured voltage on the each measuring line. SV: Voltage of starting Points. EV: Voltage of Ending Points. (Test condition refers to 1.7.2 item4)
5.Bouncing	<10ms (Tip R 3.75mm, hardness 10°~20° ,silicon rubber ,500gf operation : 40 mm/sec)

1.7.4 Reliability Characteristic

NO	Test Item	Test Condition	Test Result
1	Hitting Durability	1,000,000times min.(R 8 mm Silicon Rubber Hardness 60°250gf 3times/sec).	Follow 1.7.3 item2 and item4.
2	Pen Sliding Durability	100,000 times min (TipR0.8mm).	Follow 1.7.3 item2 and item4.
3	Impact Resistance	ψ9mm steel ball is dropped on the surface from 30 cm height at 1 time.	No Crack
4	Flexible pattern Bending Resistance	Bending 3 times by bending radius R1.0 mm	Follow 1.7.3 item2.

1.7.5 Touch Panel Design/Handing Guide

(1) Keep the gap, for example 0.2 to 0.3mm, between bezel edge and T/P edge.
   The reason is to avoid the bezel edge from contacting T/P surface that may cause "short" with bottom layer

(2) Insertion a cushion material is recommended.

(3) The cushion material should be limited on the busbar insulation paste area. If it is over the transparent insulation paste area, a "short" may be occurred.

(4) Do not to use an adhesive tape to bond it on the front of T/P and hang it to the housing bezel.

(5) Never expand the T/P top layer (PET Film) like a balloon by internal air pressure. The life of the T/P will extremely decreasing.

(6) Top layer, PET, dimension is changing base on environment temperature and humidity. Please avoid a stress from housing bezel to top layer, because it may cause "waving".

(7) The input to the Touch Panel sometimes distorts touch panel itself.

(8) To use the stylus pen or fingernail sliding at the edge of the housing is prohibited. It would cause the cracking of the ITO coating and damage the touch panel. It also request not to press this area while assembling

(9) Purpose: In order to prevent accidental use and performance deterioration, please keep the following precautions.
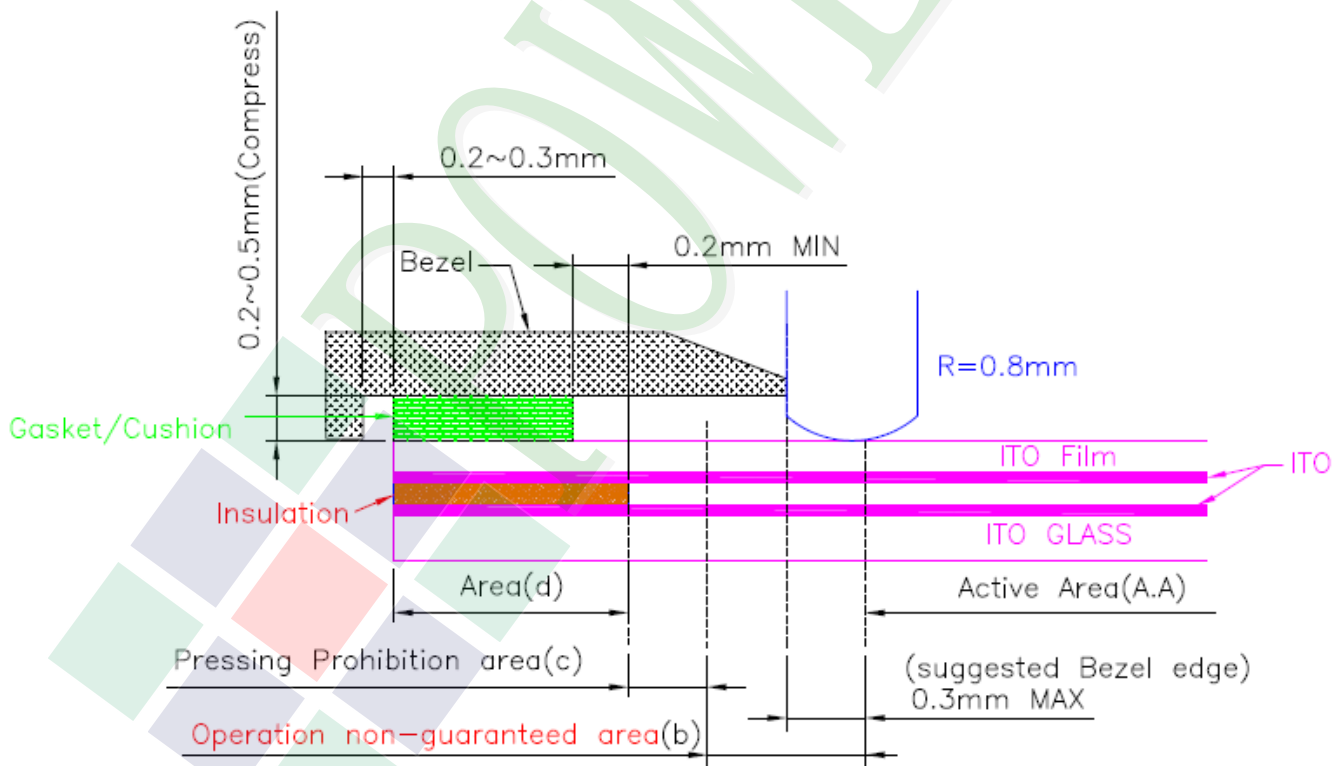
In order to prevent unusual performance degradation and malfunction of a touch panel, please carry out the set case designing and a touch panel assembling method after surely considering the definition of each area illustrated in above figure.

Area(a)：Active area

The active area is guaranteed the position data detectable precision, operation force and other operations. it is strongly recommended to place the operation button or menu keys within the active area. Due to structure, the active area is less durable at the edge or close to the edge.

Area(b)：Operation non-guaranteed area

This area does not guarantee a touch panel operation and its function. When this area is pressed, touch panel shows degradation of its performance and durability such as a pen sliding durability becomes about one-tenth compared with the active area (area-(a) as guaranteed area) and its operation force requires about double. About 0.5 mm outside from a boundary of the active area corresponds to this area.

Area(c)：Pressing prohibition area

The area which forbids pressing, because an excessive load is applied to a transparent electrode (ITO) and a serious damage is given to a touch panel function by pressing. About 0.5 mm outside from Operation non-guaranteed area .

Area(d)：Non-Active area

The area does not activate even if pressed.

2. MODULE STRUCTURE

2.1 Counter Drawing

2.1.1 LCM Mechanical Diagram

* See Appendix

2.1.2 Block Diagram
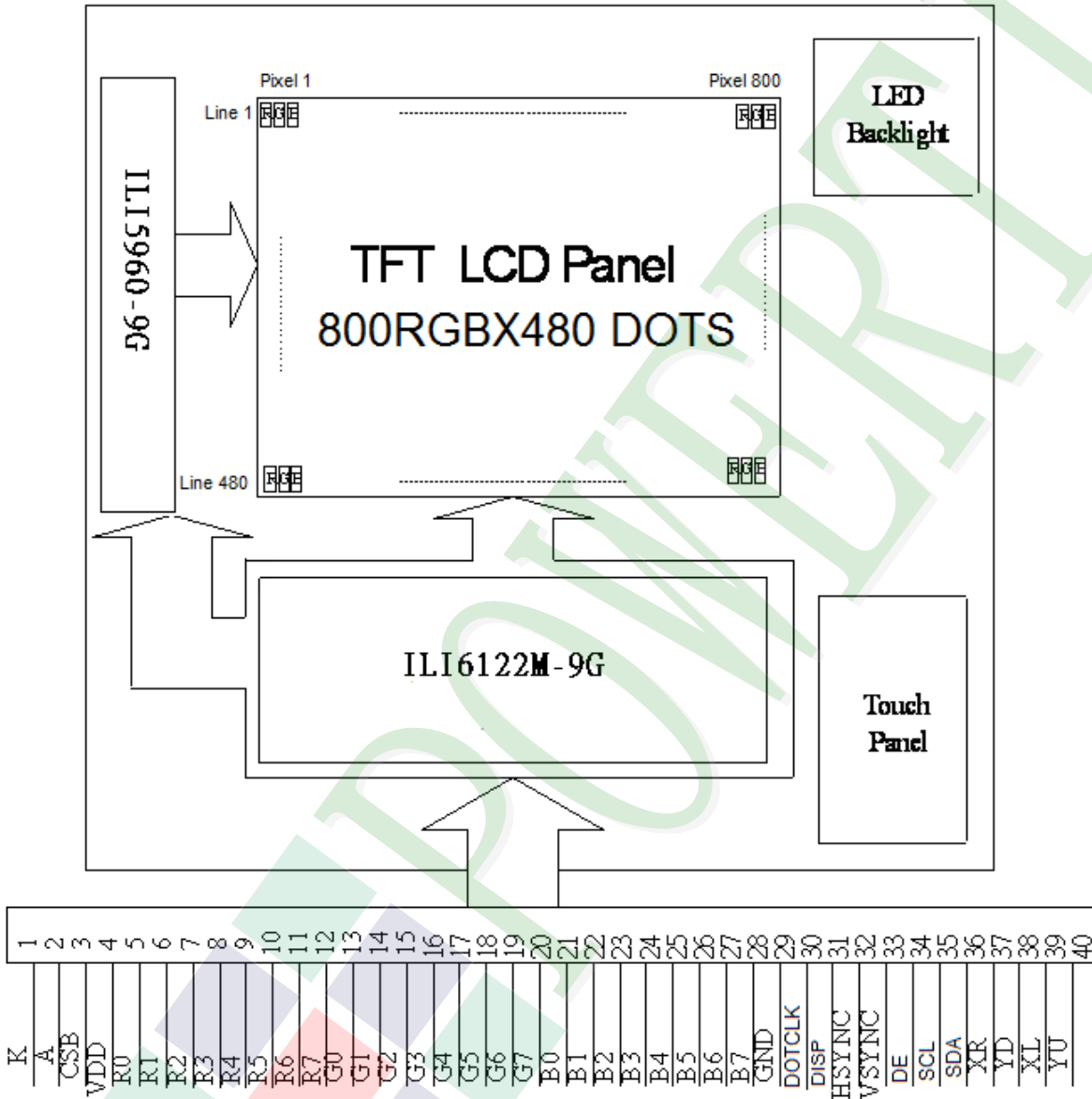
2.2   Interface Pin Description

Pin No.	Symbol	Function
1	LED-	Power supply for LED Backlight cathode input
2	LED+	Power supply for LED Backlight anode input
3	CS(NC)	Chip select pin of serial interface.
4	VDD	Digital power
5	R0	Red data bit 0
6	R1	Red data bit 1
7	R2	Red data bit 2
8	R3	Red data bit 3
9	R4	Red data bit 4
10	R5	Red data bit 5
11	R6	Red data bit 6
12	R7	Red data bit 7
13	G0	Green data bit 0
14	G1	Green data bit 1
15	G2	Green data bit 2
16	G3	Green data bit 3
17	G4	Green data bit 4
18	G5	Green data bit 5
19	G6	Green data bit 6
20	G7	Green data bit 7

Pin No.	Symbol	Function
21	B0	Blue data bit 0
22	B1	Blue data bit 1
23	B2	Blue data bit 2
24	B3	Blue data bit 3
25	B4	Blue data bit 4
26	B5	Blue data bit 5
27	B6	Blue data bit 6
28	B7	Blue data bit 7
29	GND	Ground
30	DOTCLK	Dot data clock, latching data at the rising edge
31	DISP	Display on/ off
32	HSYNC	Horizontal sync input
33	VSYNC	Vertical sync input
34	DE	Data enable
35	SCL(NC)	Data input and output in Serial communication/No connection when no using serial communication
36	SDA(NC)	Clock input in Serial communication / No connection when no using serial communication
37	XR	TP: X right
38	YD	TP: Y bottom
39	XL	TP: X left
40	YU	TP: Y top

2.3 Timing Characteristics

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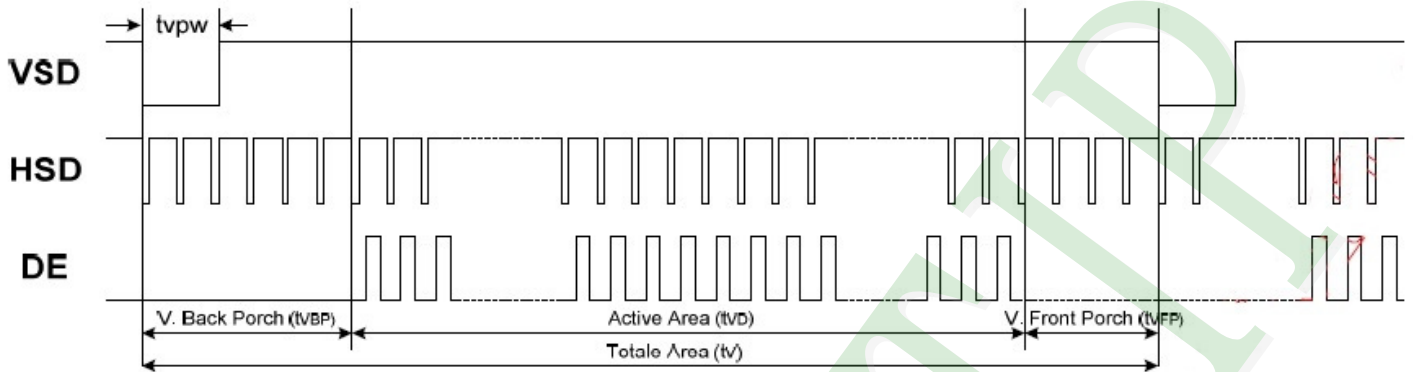
Parameter	Symbol	Value			Unit
		Min	Typ	Max	
Vertical display area	tvd		480		H
VSD period time	tv	510	525	650	H
VSD pulse width	tvpw	1	-	20	H
VSD Back Porch(Blanking)	tvb	23	23	23	H
VSD Front Proch	tvfb	7	22	147	H

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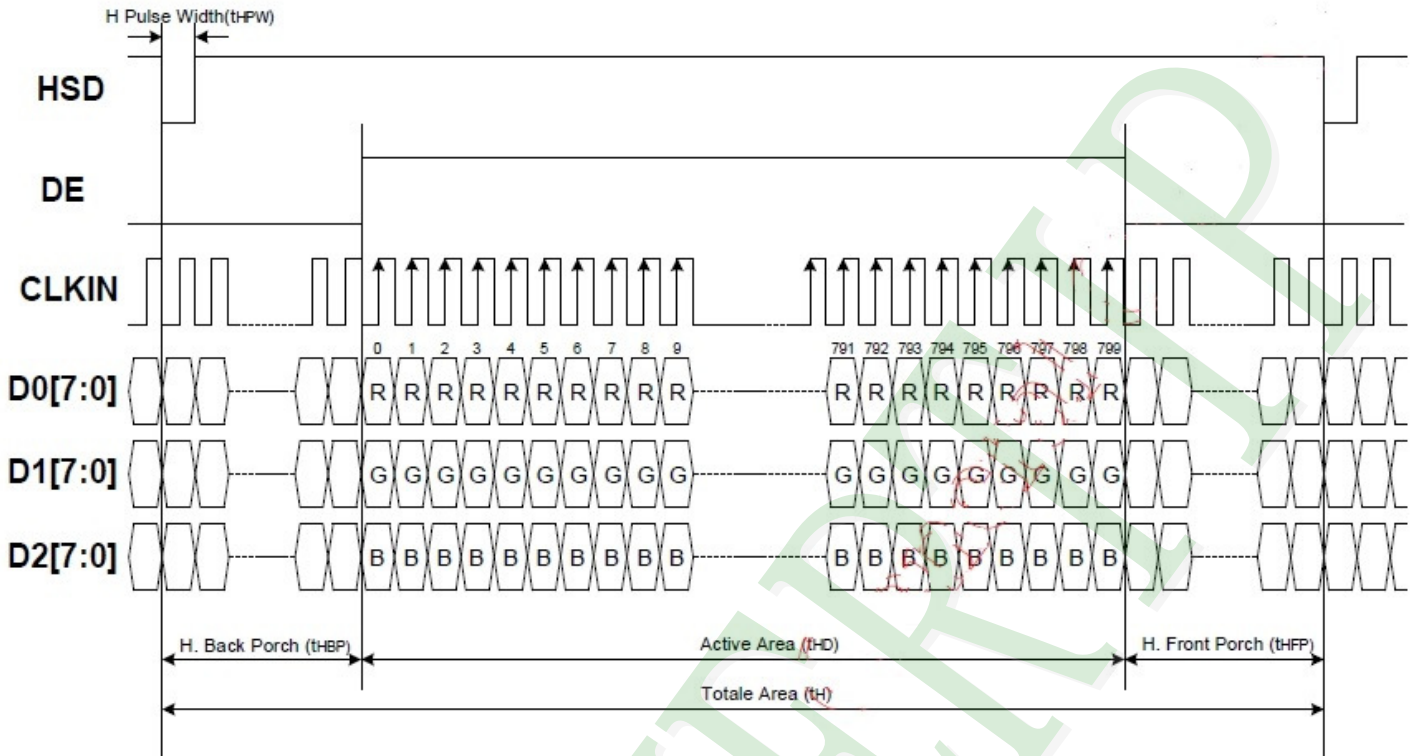
Parameter		Symbol	Value			Unit
			Min	Typ	Max	
Horizontal display area		thd		800		DCLK
DCLK frequency		fclk	-	33.3	50	MHz
1 Horizontal Line		th	862	1056	1200	
HSD pulse width	Min	thpw	-	1		DCLK
	Typ		-	-		
	Max		-	40		
HSD Back Porch (Blacking)		thp	46	46	46	
HSD Front Proch		thfb	16	210	354	

2.3.2 Input Clock and Data Timing

DE Mode
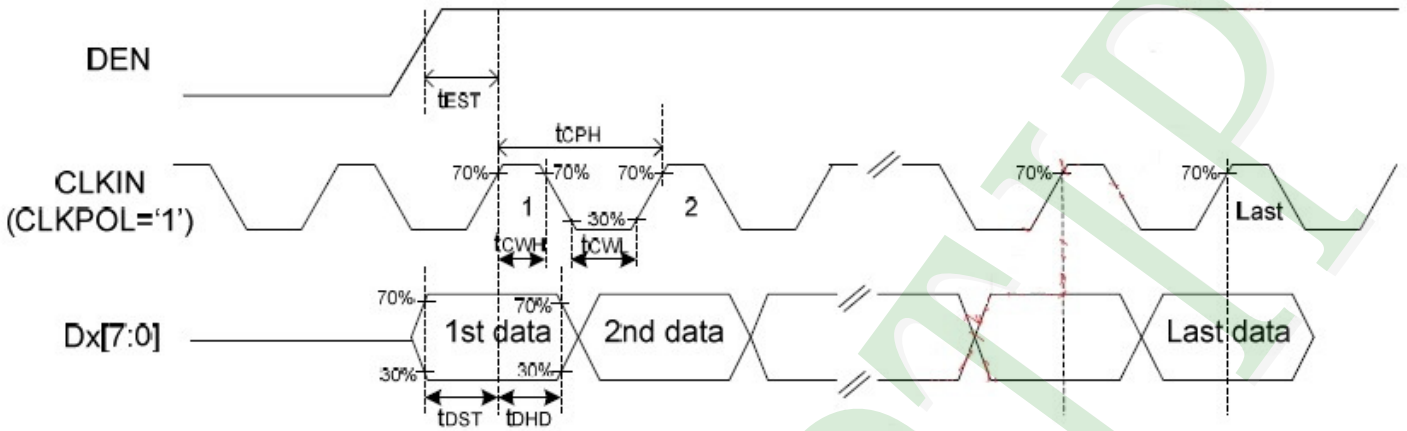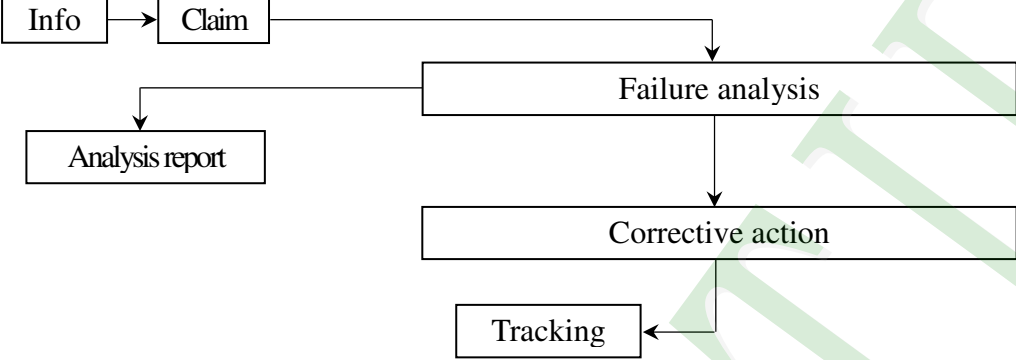
SYNC Mode
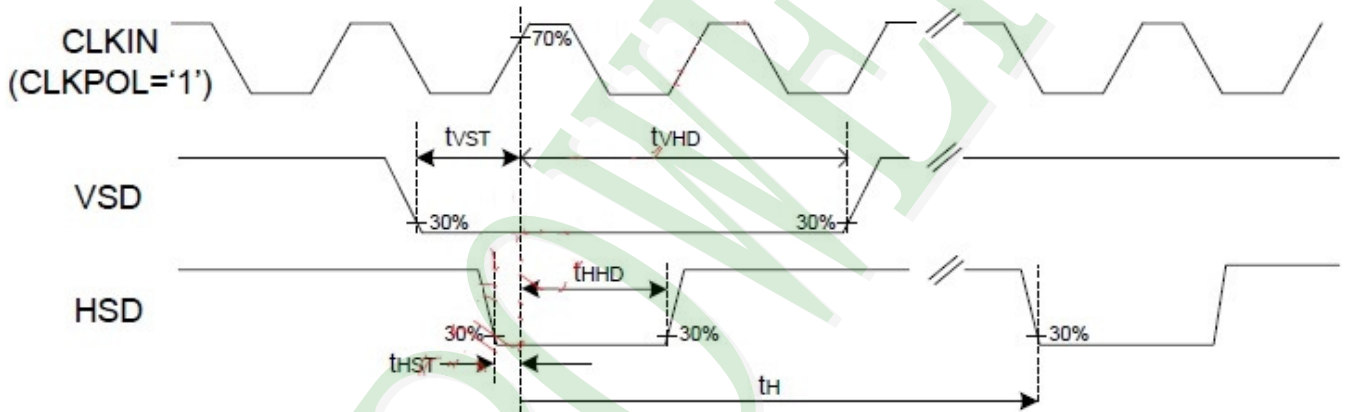
3. QUALITY ASSURANCE SYSTEM

3.1 Quality Assurance Flow Chart

Item	Customer	Sales	R&D	Q.A	Manufactu ring	Product control	Purchase	Inventory control

Marketing & Design

- Info → Survey
- Request → Inquiry → Project evaluation
- Project Validation (NG)
- OK
- Quote
- Contract

Sample Approval

- Design check
- Sample test
- NG → Verification
- OK → Sample approval (NG)
- OK

Pilot Run & Mass Product

- Pilot run & Reliability test
- NG → Verification
- OK → Specification preparation
- Mass production
- OK → Inspection → NG
- Shipment

Ship Out

- Shipment
- Ship out

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							

Info → Claim → Failure analysis → Corrective action → Tracking

Analysis report

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.
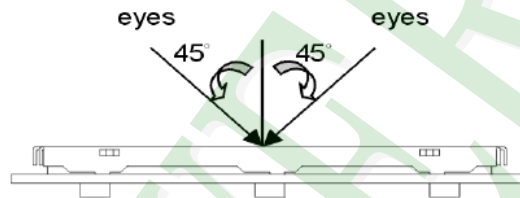
　（3）. Definition of area.
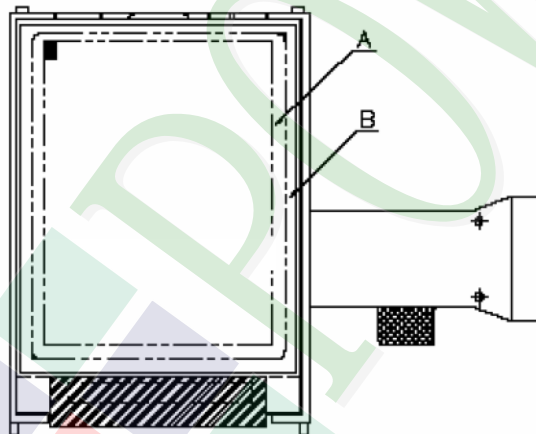
A area : viewing area

B area : Outside of viewing area

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

PH800480T024-IDB01　　　　　　　　　　Page22　　　　　　　　　　SAMPLE　Ver.01
SPEC　Edi.005

◆Specification For TFT-LCD Module 3.5″ ~10″ : (Ver.B01)
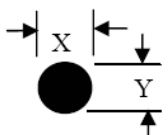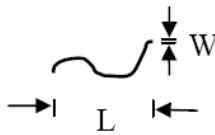
NO	Item	Criterion	Level
01	Product condition	1.1 The part number is inconsistent with work order of production.	Major
		1.2 Mixed product types.	Major
		1.3 Assembled in inverse direction.	Major
02	Quantity	2.1 The quantity is inconsistent with work order of production.	Major
03	Outline dimension	3.1 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
05	Dot defect (Bright dot、 Dark dot) On -display	<table><tr><td rowspan="4">Dot Defect</td><td>Item</td><td>Acceptance (Q'ty)</td></tr><tr><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.	Minor
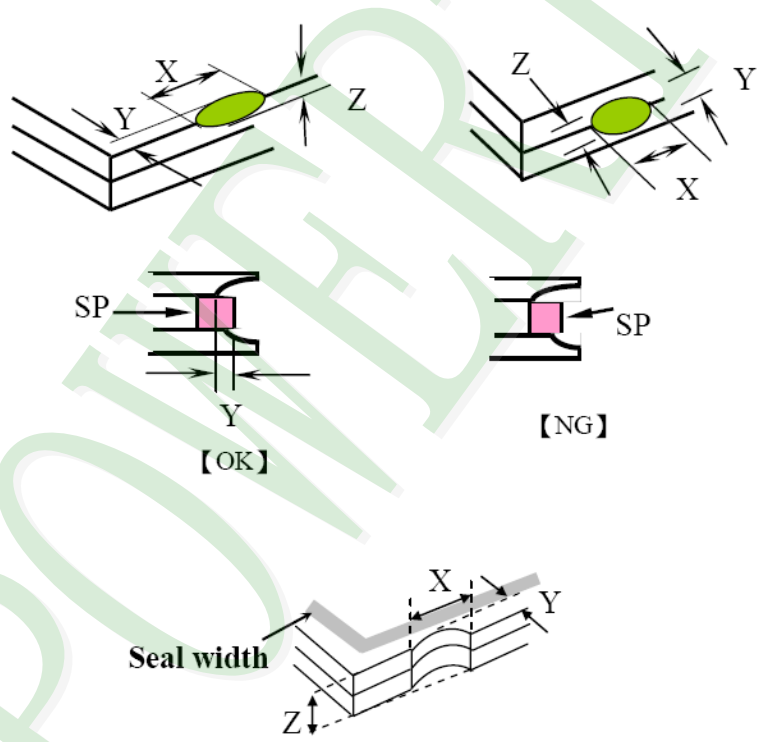
◆**Specification For TFT-LCD Module** 3.5″ ~10″： (Ver.B01)

NO	Item	Criterion	Level
06	**Black or white dot、scratch、contamination** **Round type** Φ＝(x＋y) / 2 **Line type** 	**6.1 Round type (Non-display or display)：** <table><tr><td rowspan="2">Dimension (diameter：Φ)</td><td colspan="2">Acceptance (Q'ty)</td></tr><tr><td>A area</td><td>B area</td></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><td rowspan="2">Length (L)</td><td rowspan="2">Width (W)</td><td colspan="2">Acceptance (Q'ty)</td></tr><tr><td>A area</td><td>B area</td></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>	Minor
07	**Polarizer Bubble**	<table><tr><td rowspan="2">Dimension (diameter：Φ)</td><td colspan="2">Acceptance (Q'ty)</td></tr><tr><td>A area</td><td>B area</td></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>	Minor

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
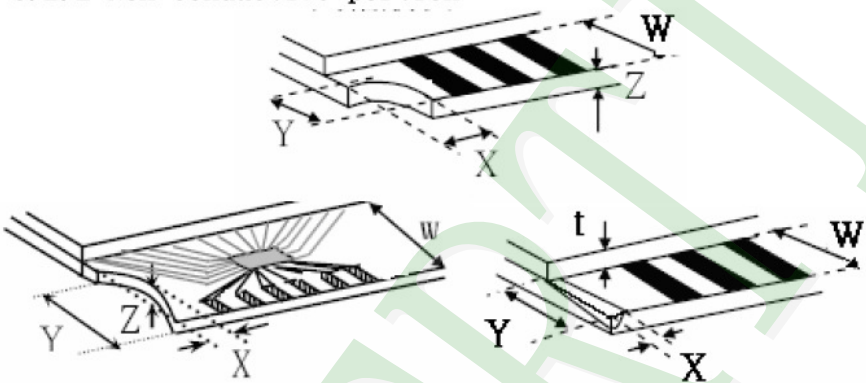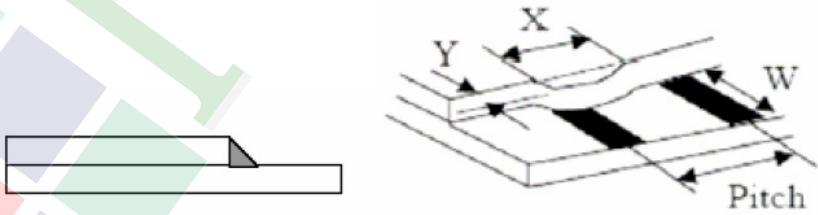
NO	Item	Criterion	Level
08	The crack of glass	Symbols： X : The length of crack　　Y : The width of crack. Z : The thickness of crack　　W : terminal length t : The thickness of glass　　a : LCD side length 8.1.2 Corner crack： 8.2 Protrusion over terminal： 8.2.1 Chip on electrode pad： 	Minor

8.1.2 Corner crack table:

X	Y	Z
≦1/5 a	Crack can't enter viewing area	Z ≦1/2 t
≦1/5 a	Crack can't exceed the half of SP width.	1/2 t < Z ≦2 t

8.2.1 Chip on electrode pad table:

	X	Y	Z
Front	≦ a	≦ 1/2 W	≦ t
Back	≦ a	≦ W	≦ 1/2 t

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	Y	Z
---	---	---
≦ 1/3 a	≦ W	≦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	Y	Z
---	---	---
≦ a	≦ 1/3 W	≦t		Minor

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)

NO.	TEST ITEM	TEST CONDITION	
1	**High Temperature Storage Test**	**Keep in +80 ±2℃ 96 hrs** **Surrounding temperature, then storage at normal condition 4hrs.**	
2	**Low Temperature Storage Test**	**Keep in −30 ±2℃ 96 hrs** **Surrounding temperature, then storage at normal condition 4hrs.**	
3	**High Temperature / High Humidity Storage Test**	**Keep in +60 ℃ / 90% R.H duration for 96 hrs** **Surrounding temperature, then storage at normal condition 4hrs.** **(Excluding the polarizer)**	
4	**Temperature Cycling Storage Test**	**−30℃ → +25℃ → +80℃ → +25℃** **(30mins) (5mins) (30mins) (5mins)** ←——————————————→ **10 Cycle** **Surrounding temperature, then storage at normal condition 4hrs.**	
5	**ESD Test**	**Air Discharge:** **Apply 2 KV with 5 times** **Discharge for each polarity +/-**	**Contact Discharge:** **Apply 250 V with 5 times** **discharge for each polarity +/-**
		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%)**	
6	**Vibration Test (Packaged)**	**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**	
7	**Drop Test (Packaged)**		

Packing Weight (Kg)	Drop Height (cm)
0 ~ 45.4	122
45.4 ~ 90.8	76
90.8 ~ 454	61
Over 454	46

Drop Direction :※1 corner / 3 edges / 6 sides each 1time

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
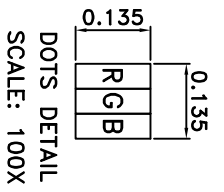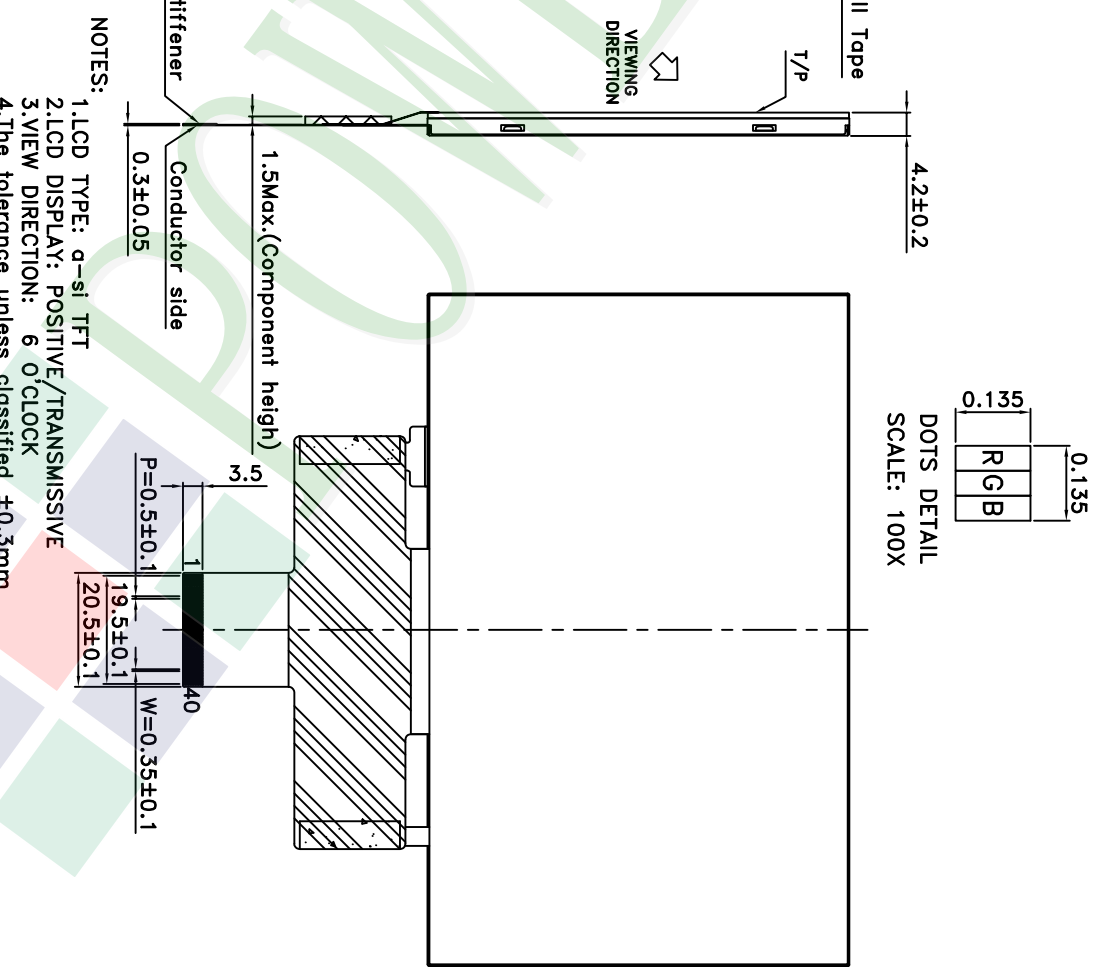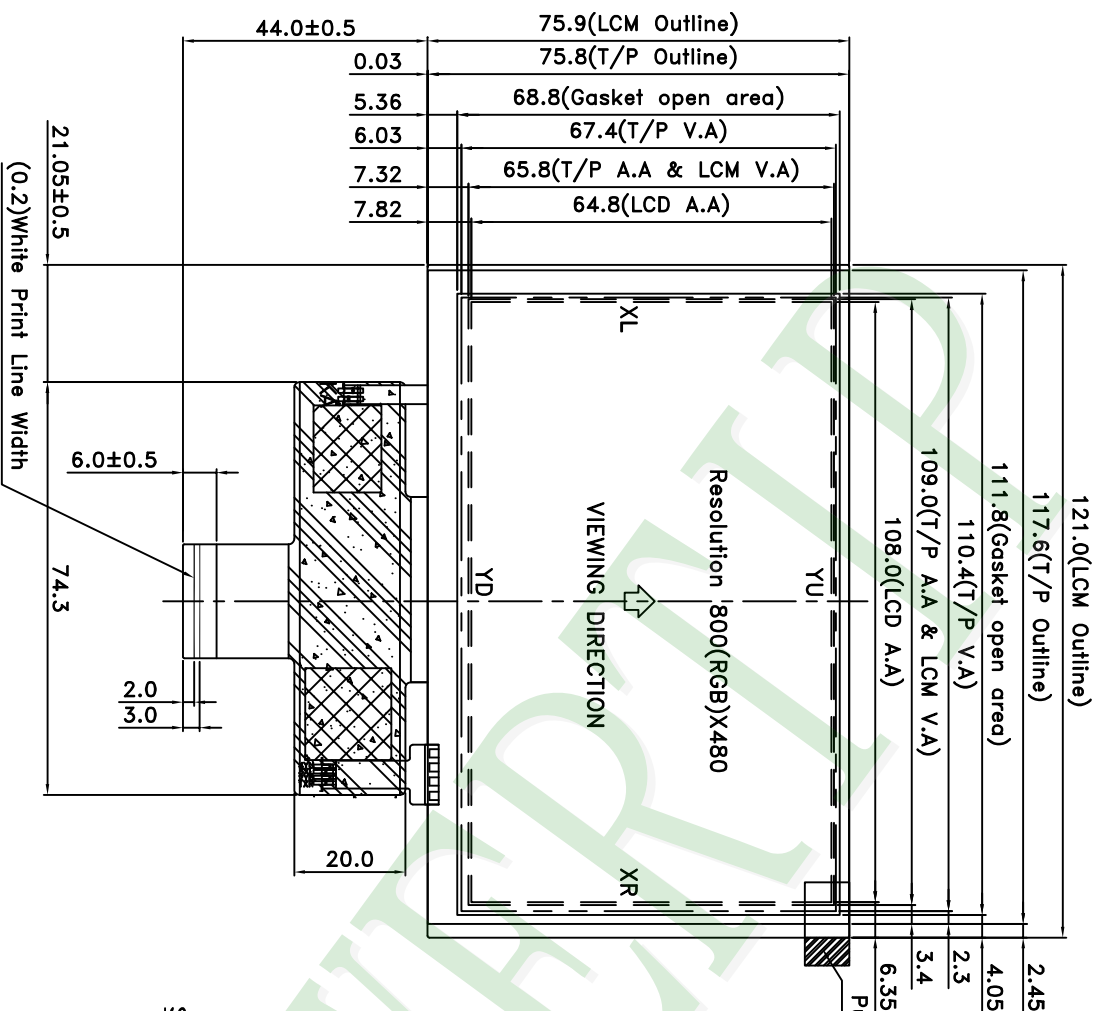
5.2.1   Avoid any strong mechanical shock which can break the glass.

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.

LCD MODULE DRAWING

VIEWING DIRECTION

Resolution 800(RGB)X480

Dimensions:
- 121.0(LCM Outline)
- 117.6(T/P Outline)
- 111.8(Gasket open area)
- 110.4(T/P V.A)
- 109.0(T/P A.A & LCM V.A)
- 108.0(LCD A.A)
- 75.9(LCM Outline)
- 75.8(T/P Outline)
- 68.8(Gasket open area)
- 67.4(T/P V.A)
- 65.8(T/P A.A & LCM V.A)
- 64.8(LCD A.A)

- 44.0±0.5
- 0.03
- 5.36
- 6.03
- 7.32
- 7.82
- 21.05±0.5
- (0.2)White Print Line Width
- 6.0±0.5
- 74.3
- 2.0
- 3.0
- 20.0
- 2.45
- 4.05
- 2.3
- 3.4
- 6.35
- Pull Tape
- XL
- YU
- YD
- XR

- 4.2±0.2
- 1.5Max.(Component heigh)
- 0.3±0.05
- Stiffener
- Conductor side
- T/P

DOTS DETAIL
SCALE: 100X
- 0.135
- R|G|B
- 0.135

- P=0.5±0.1
- 3.5
- 19.5±0.1
- 20.5±0.1
- W=0.35±0.1
- 1
- 40

NOTES:
1. LCD TYPE: a-si TFT
2. LCD DISPLAY: POSITIVE/TRANSMISSIVE
3. VIEW DIRECTION: 6 0'CLOCK
4. The tolerance unless classified ±0.3mm
5. ▨ Component area, ▧ Shielding tape, ▨ Unbending area.
6. FPC suggested connector : "Hirose" FH34SRJ-40S-0.5SH(50)" or compatible.
7. Recommended Housing open window should be less than Module V.A

PART NO.:
PH800480T024-IDB01

DRAWING NAME:
LMD-PH800480T024-IDB01

TITLE:
LCD MODULE DRAWING

		Design	Eva Liao	Unit	MM	Surface	
		Check	Tina Chen	Scale	FIT	Material	
		Approve	Linda Lee	Page	1/1	Quantity	

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

REV		REV BY	REVISER	DATE
001	NEW DRAWING		Eva	2016/01/11
002				
003				
004				
005				
006				
007				

PT-A-054-01

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

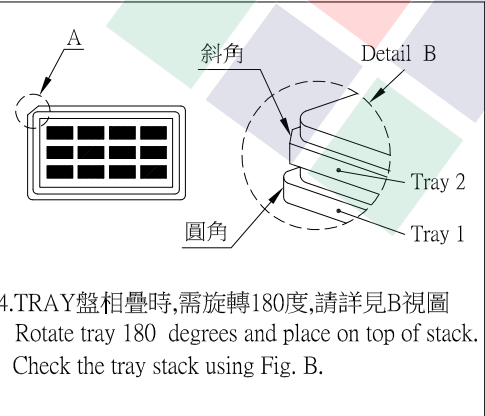| No.	Item	Model	Dimensions (mm)	1Pcs Weight	Quantity	Total Weight
1	成品 (LCM)	PH800480T024-IDB01	121.0 X 75.9	0.0801	144	11.5344
2	多層薄膜(1)POF	OTFILM0BA03ABA	19"X350X0.015	——	6	——
3	TRAY 盤 (2)Tray ⚠2	TY00000000308	352 X 260 X 12.8	0.0965	42	4.053
4	舒美墊(3) EPE ⚠2	FOAM000000047	350 X 255 X 5	0.011	6	0.066
5	內盒(4)Product Box	BX36627063ABBA	383 X 270 X 66	0.182	6	1.092
6	保利龍板(5)Polylon board	OTPLB00PL08ABA	550 X 393 X 20	0.0284	2	0.0568
7	外紙箱(6)Carton	BX57041027CCBA	570 X 410 X 265	1.0	1	1.0
8						
9						

2.一 整箱總重量 (Total LCD Weight in carton) : 17.8 Kg±10%

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

(1)LCM quantity per box : no per tray 　4　 x no of tray 　6　 = 24

(2)Total LCM quantity in carton : quantity per box 　24　 x no of boxes 　6　 = 144

Use empty tray
空 盤

+

Put products into the tray

Tray stacking

A

B

(1)多層薄膜 POF

(2)TRAY 盤 Tray

(3)EPE

(4)內盒 Product Box

(5)保利龍板 Polylon board

(5)保利龍板 Polylon board

(6)外紙箱 Carton

特 記 事 項 (REMARK)

A

斜角　　　Detail B

Tray 2

Tray 1

圓角
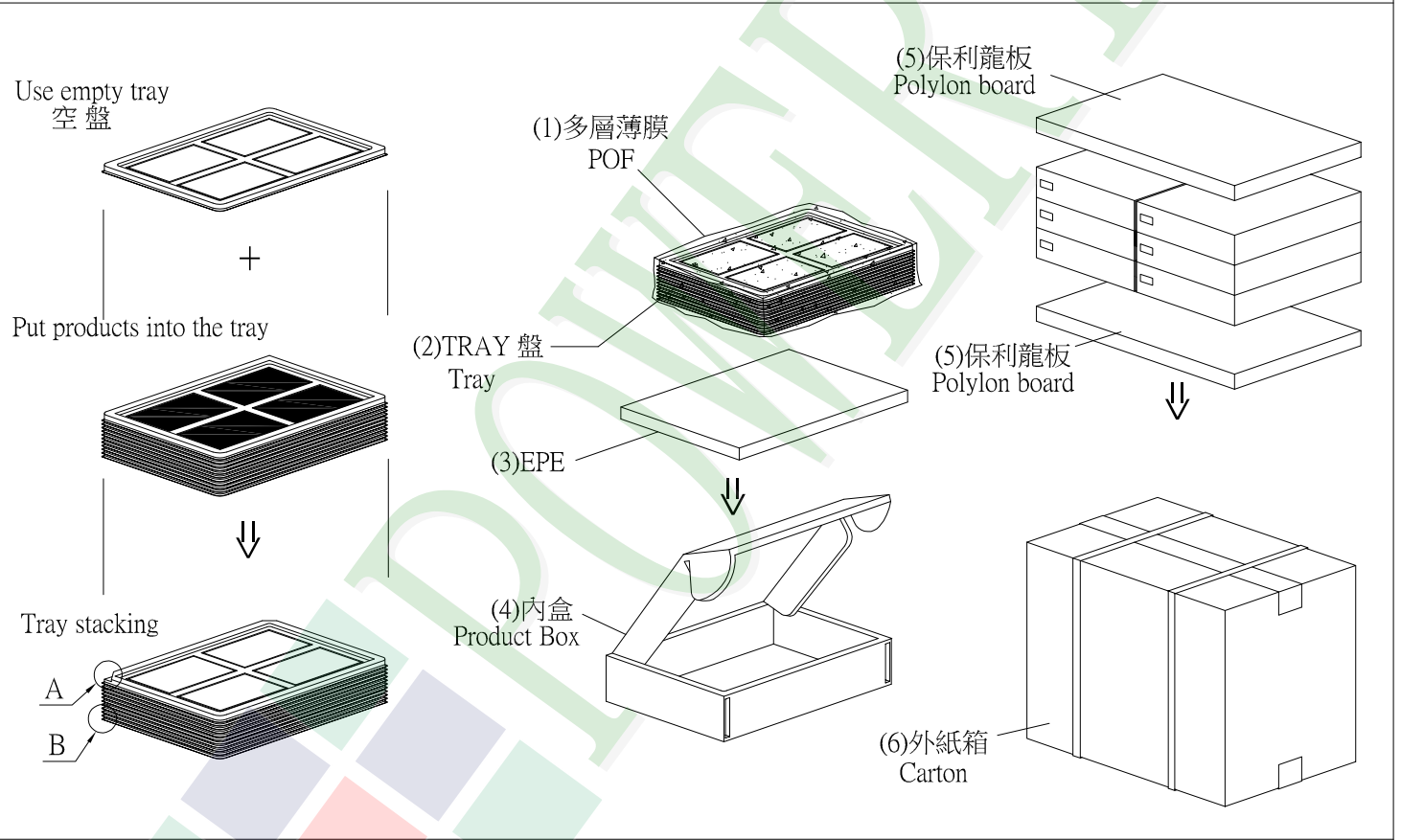
4.TRAY盤相疊時,需旋轉180度,請詳見B視圖
Rotate tray 180 degrees and place on top of stack.
Check the tray stack using Fig. B.

POWERTIP TECH. CORP.