



## SPECIFICATIONS

<b>CUSTOMER</b>	:	_____
<b>SAMPLE CODE</b>	:	SH800480T007-IHC01
<b>MASS PRODUCTION CODE</b>	:	PH800480T007-IHC01
<b>SAMPLE VERSION</b>	:	01
<b>SPECIFICATIONS EDITION</b>	:	003
<b>DRAWING NO. (Ver.)</b>	:	LMD- PH800480T007-IHC01 (Ver.002)
<b>PACKAGING NO. (Ver.)</b>	:	PKG- PH800480T007-IHC01 (Ver.001)

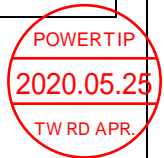
**Customer Approved**

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**Date:**

Approved	Checked	Designer
黃秋源 Oliver Huang	石建莊 Stone Shin	劉俊毅 Terry Liu

- Preliminary specification for design input
- Specification for sample approval



### POWERTIP TECH. CORP.

<b>Headquarters:</b> No.8, 6 <sup>th</sup> 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: <a href="mailto:sales@powertip.com.tw">sales@powertip.com.tw</a> Http://www.powertip.com.tw
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LCM Packaging Specifications

Source IC: HX8262-A 、 Gate IC : HX8678-A

Note: For detailed information please refer to IC datasheet.

## 1. SPECIFICATIONS

### 1.1 Features

Item	Standard Value
Screen Size(inch)	7.0 inch
Touch Panel	Projective Capacitive Touch Panel
Resolution	800* (R · G · B) * 480 Dots
Display Mode	a-Si TFT, Normally White, Transmissive
Viewing Direction	6 O'Clock
Color Configuration	RGB-Strip
Backlights Type	White LED B/L
Interface	RGB
Weight	220g
Controller	Source IC: HX8262-A · Gate IC:HX8678-A
ROHS	THIS PRODUCT CONFORMS THE ROHS OF PTC Detail information please refer website : <a href="http://www.powertip.com.tw/news_detail.php?Key=1&amp;cID=1">http://www.powertip.com.tw/news_detail.php?Key=1&amp;cID=1</a>

### 1.2 Mechanical Specifications

Item	Standard Value	Unit
Outline Dimension	193.2 (W) * 132.24 (L) * 7.14 (H)	mm

#### LCD panel

Item	Standard Value	Unit
Active Area	152.4 (W) * 91.44 (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	GND=0	-0.3	+6.0	V
	VDD		-0.3	+50.0	V
Operating Temperature	T <sub>OP</sub>	-	-20	+70	°C
Storage Temperature	T <sub>ST</sub>	-	-30	+80	°C
Storage Humidity	H <sub>D</sub>	T <sub>a</sub> < 25 °C	-	90	%RH

### 1.4 DC Electrical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply for TFT Panel	VCC	GND=0V	3.0	3.3	3.6	V
Power Supply for Backlight Unit	VDD		11.5	12.0	12.5	V
Input Voltage for TFT Panel	V <sub>IH</sub>		0.7*VCC	-	VCC	V
	V <sub>IL</sub>	0	-	0.3*VCC	V	
Supply Current for TFT Panel	ICC	VCC=3.3V	-	150	250	mA
Supply Current for Backlight Unit	IDD	VDD=12V	-	400	450	mA
Logic Interface for Backlight Driver	V <sub>IL</sub>	GND=0V	-	-	0.4	V
	V <sub>IH</sub>		1.65	-	-	V
PWM	V <sub>PWM</sub>		0	-	5.25	V
Dimming Clock Rate	f <sub>PWM</sub>		100	-	20000	Hz

Note1: Maximum current for RGB full-display.

## 1.5 Optical Characteristics

### TFT LCD Panel

VCC=3.3V , Ta=25°C

Item	Symbol	Condition	Min.	Typ.	Max.	Unit	-	
Response Time	Tr + Tf	-	-	27	40	ms	Note2	
Viewing Angle	Top	ΘY+	CR ≥ 10	-	35	-	Deg.	Note4
	Bottom	ΘY-		-	35	-		
	Left	ΘX-		-	45	-		
	Right	ΘX+		-	45	-		
Contrast Ratio	CR		200	250	-	-	Note3	
Color of CIE Coordinate (With B/L)	White	X	Duty=100%	0.25	0.30	0.35	-	Note1
		Y		0.26	0.31	0.36		
	Red	X		0.60	0.65	0.70		
		Y		0.29	0.34	0.39		
	Green	X		0.25	0.30	0.35		
		Y		0.58	0.63	0.68		
	Blue	X		0.10	0.15	0.20		
		Y		0.01	0.06	0.11		
Average Brightness Pattern=White Display	IV	IF= 120 mA	650	800	-	cd/m <sup>2</sup>	Note1	
Luminance Uniformity	YU	IF= 120 mA	70	-	-	%	Note1	

Note1:

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

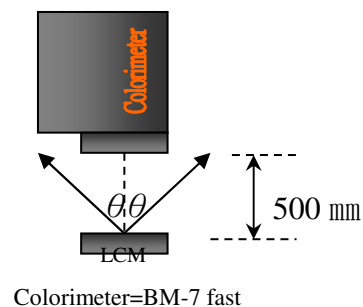
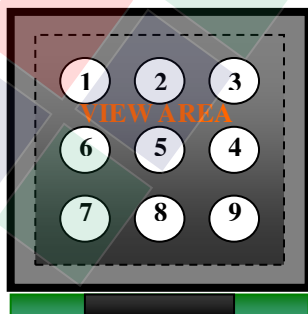
2 : Measurement Condition for Optical Characteristics:

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.

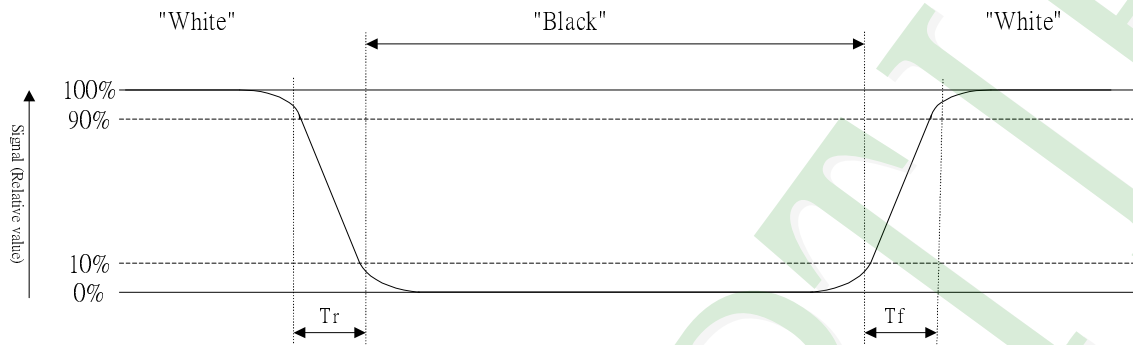
d : The uncertainty of the C.I.E coordinate measurement ± 0.01 , Average Brightness ± 4%



**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:



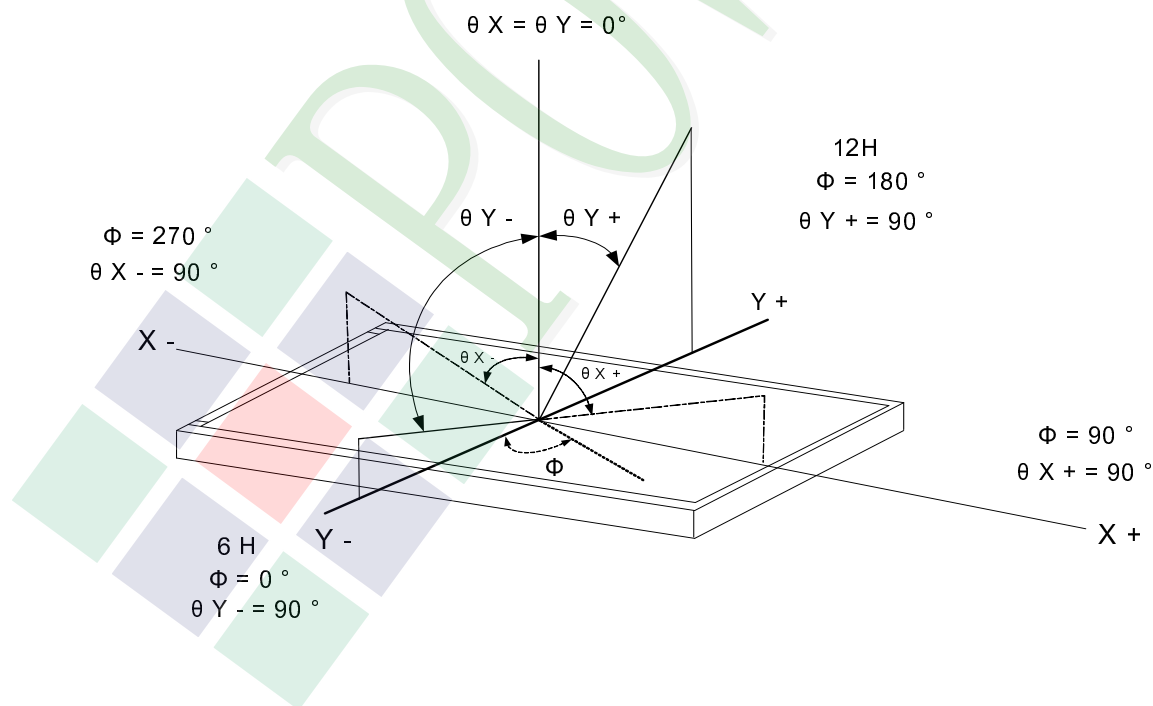
**Note3: Definition of contrast ratio:**

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

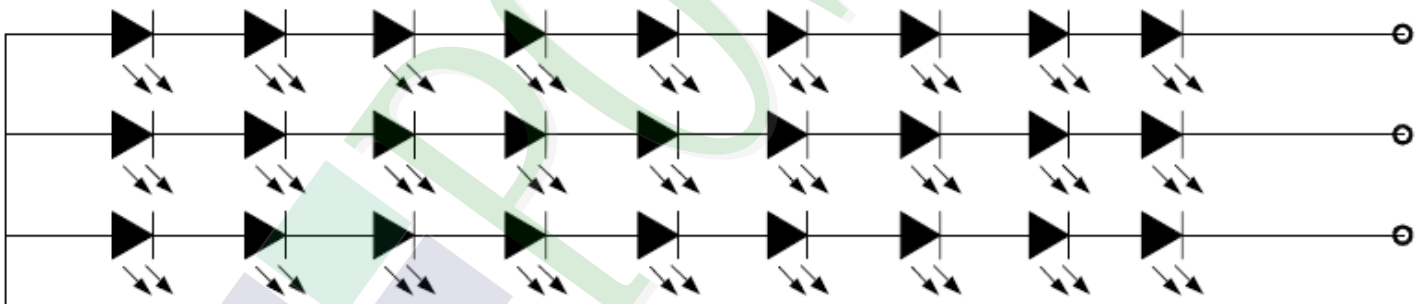
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Power Dissipation	Pd	-	-	380	-	mW
LED Forward Current	IF	1 LED	-	-	120	mA
LED Reverse Voltage	VR	1 LED	-	-	1.2	V

### Electrical / Optical Characteristics

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Voltage for LED Backlight	VF	If=120mA	24.3	26.1	27.0	V
Current for LED Backlight	IF		-	120	-	mA
Color	White					

### Other Description

Item	Conditions	Description
Life Time	Ta =25°C If= 120 mA	50000 hrs.





## 1.7 Touch Panel Characteristics

### Features

Item	Standard Value
Touch Panel Size	7"
Touch Type	Projective Capacitive Touch Panel
Input Method	Finger / 5 Points Touch
Output Interface	I <sup>2</sup> C
IC	HY4635

### Mechanical Specifications

Item	Standard Value	Unit
Viewing Area	153.20 (W) * 92.24 (L)	mm

### Absolute Maximum Ratings

Item	Symbol	Condition	Min.	Max.	Unit
Supply Voltage	TP_VDD	-	-0.3	+6.0	V
Operating Temperature	T <sub>OP</sub>	-	-20	+70	°C
Storage Temperature	T <sub>ST</sub>	-	-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: HYCON Touch Driver Porting Reference Guide

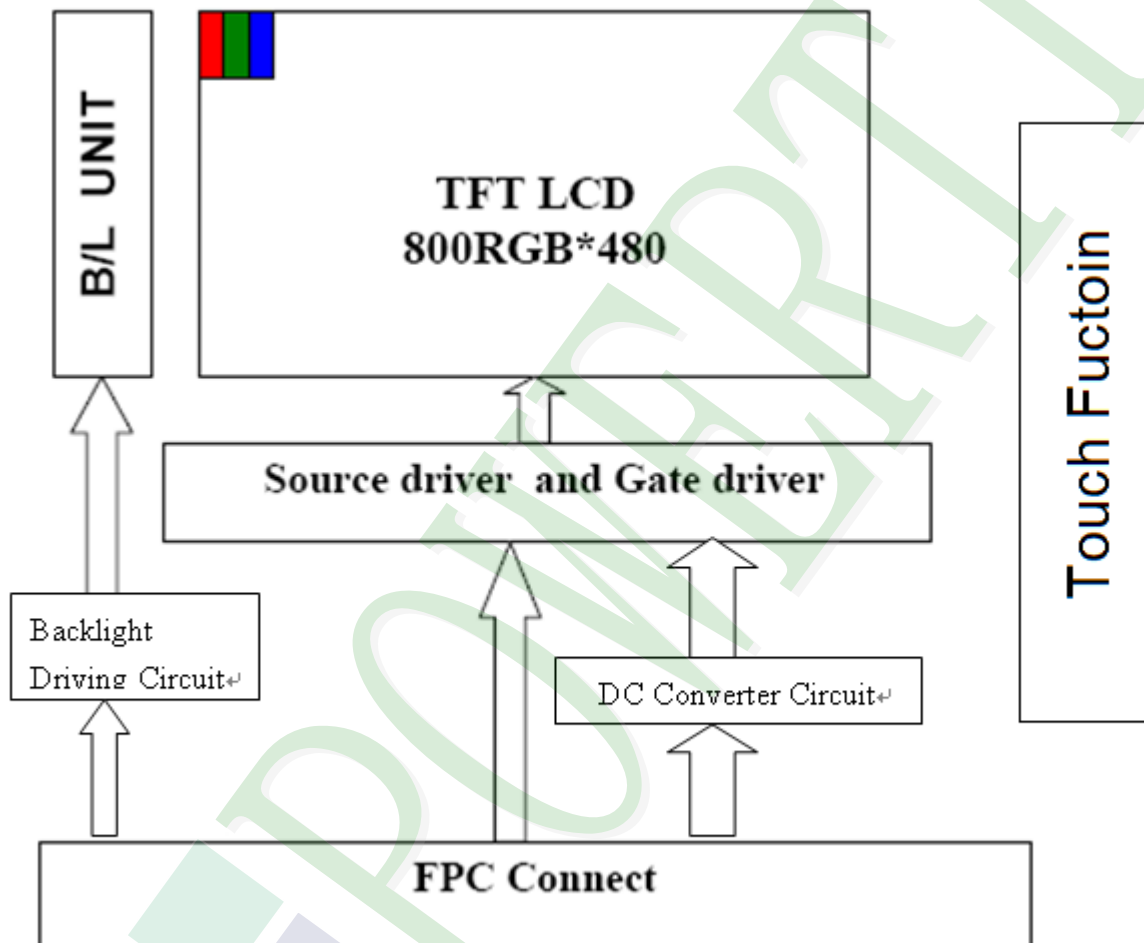
## 2. MODULE STRUCTURE

### 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 (LCD Interface)

Pin#	Name	DESCRIPTION
1	GND	Power Ground
2	VCC	Power for Digital Circuit
3	VCC	Power for Digital Circuit
4	VDD	Power For LED backlight
5	VDD	Power For LED backlight
6	V <sub>PWM</sub>	Shutdown & Dimming control input for backlight Do not allow this pin to float, (default active to 3.3v) "Hi" =100%, "Low" = 0%
7	GND	Power Ground
8	R0	Red Data
9	R1	Red Data
10	R2	Red Data
11	R3	Red Data
12	GND	Power Ground
13	R4	Red Data
14	R5	Red Data
15	R6	Red Data
16	R7	Red Data
17	GND	Power Ground
18	G0	Green Data
19	G1	Green Data
20	G2	Green Data
21	G3	Green Data
22	GND	Power Ground
23	G4	Green Data
24	G5	Green Data
25	G6	Green Data
26	G7	Green Data
27	GND	Power Ground
28	B0	Blue Data

Pin#	Name	DESCRIPTION
29	B1	Blue Data
30	B2	Blue Data
31	B3	Blue Data
32	GND	Power Ground
33	B4	Blue Data
34	B5	Blue Data
35	B6	Blue Data
36	B7	Blue Data
37	GND	Power Ground
38	HSYNC	Horizontal Synchronization Signal Input
39	VSYNC	Vertical Synchronization Signal Input
40	GND	Power Ground
41	DE	Data Enable
42	GND	Power Ground
43	DCLK	CLK polarity is inverted, latch data by falling edge of CLK
44	GND	Power Ground
45	CS(NC) / ID1	No Function./ ID[4:1] These pins select LCM type
46	SDIN(NC) / ID2	No Function./ ID[4:2] These pins select LCM type
47	SCK(NC) / ID3	No Function ./ ID[4:3] These pins select LCM type
48	DISPLAY CONTROL(NC) / ID4	No Function ./ ID[4:4] These pins have a no connection
49	RESET	Global Reset (Low Active)
50	GND	Power Ground

### 2.2.2 (CTP Interface)

Pin#	Name	DESCRIPTION
1	GND	Power Ground
2	TP_VDD	Power supply for CTP
3	SCL	Serial clock line
4	SDA	Serial data line
5	INT	Interrupt
6	RST	Reset

## 2.3 Timing Characteristics

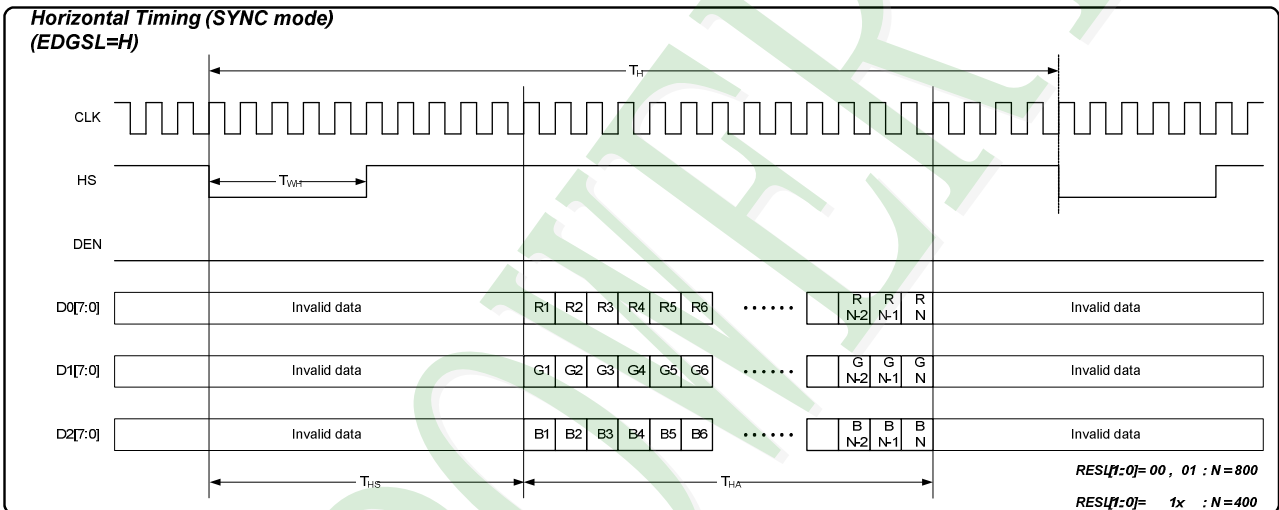
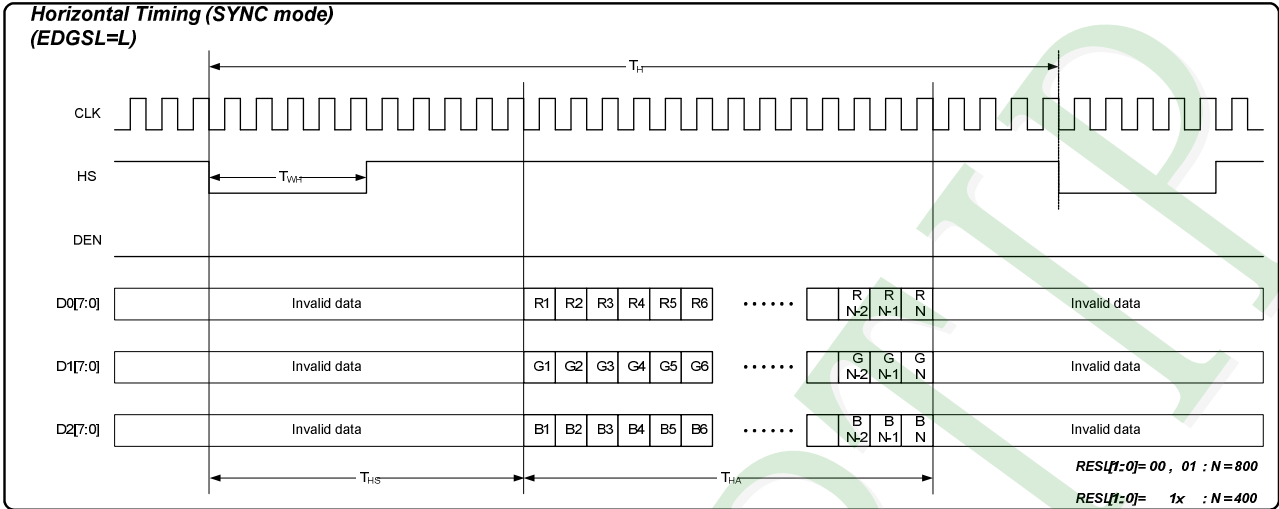
- Sync mode

Parameter	Symbol	Spec.			Unit
		Min.	Typ.	Max.	
CLK frequency	$F_{CPH}$	-	33.26	-	MHz
CLK period	$T_{CPH}$	-	30.06	-	ns
CLK pulse duty	$T_{CWH}$	40	50	60	%
HS period	$T_H$	930	1056	1057	$T_{CPH}$
HS pulse width	$T_{WH}$	1	128	-	$T_{CPH}$
HS-first horizontal data time	$T_{HS}$	STHD[7:0]+88			$T_{CPH}$
HS Active Time	$T_{HA}$	-	800	-	$T_{CPH}$
VS period	$T_V$	-	525	-	$T_H$
VS pulse width	$T_{WV}$	1	2	-	$T_H$
VS-DE time	$T_{VS}$	STVD[6:0]+8			$T_H$
VS Active Time	$T_{VA}$	-	480	-	$T_H$

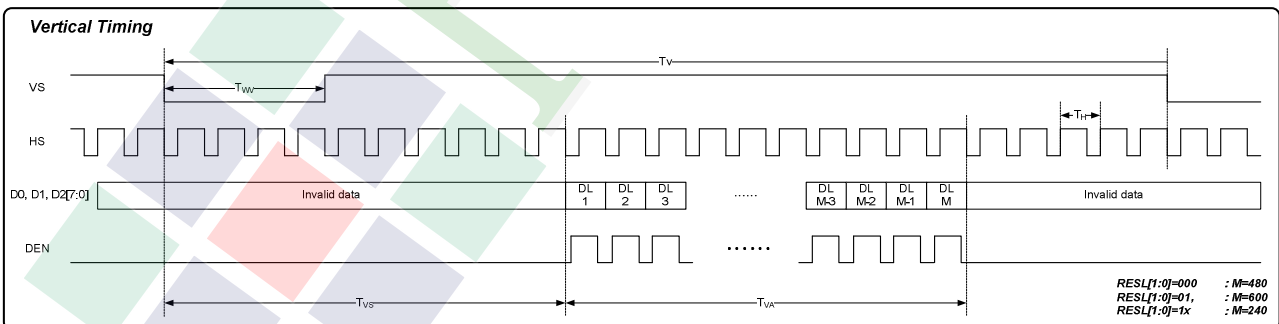
- DE mode

Parameter	Symbol	Spec.			Unit
		Min.	Typ.	Max.	
CLK frequency	$F_{CPH}$	-	33.26	-	MHz
CLK period	$T_{CPH}$	-	30.06	-	ns
CLK pulse duty	$T_{CWH}$	40	50	60	%
DE period	$T_{DEH}+T_{DEL}$	1000	1056	1200	$T_{CPH}$
DE pulse width	$T_{DEH}$	-	800	-	$T_{CPH}$
DE frame blanking	$T_{DEB}$	10	45	110	$T_{DEH}+T_{DEL}$
DE frame width	$T_{DE}$	-	480	-	$T_{DEH}+T_{DEL}$

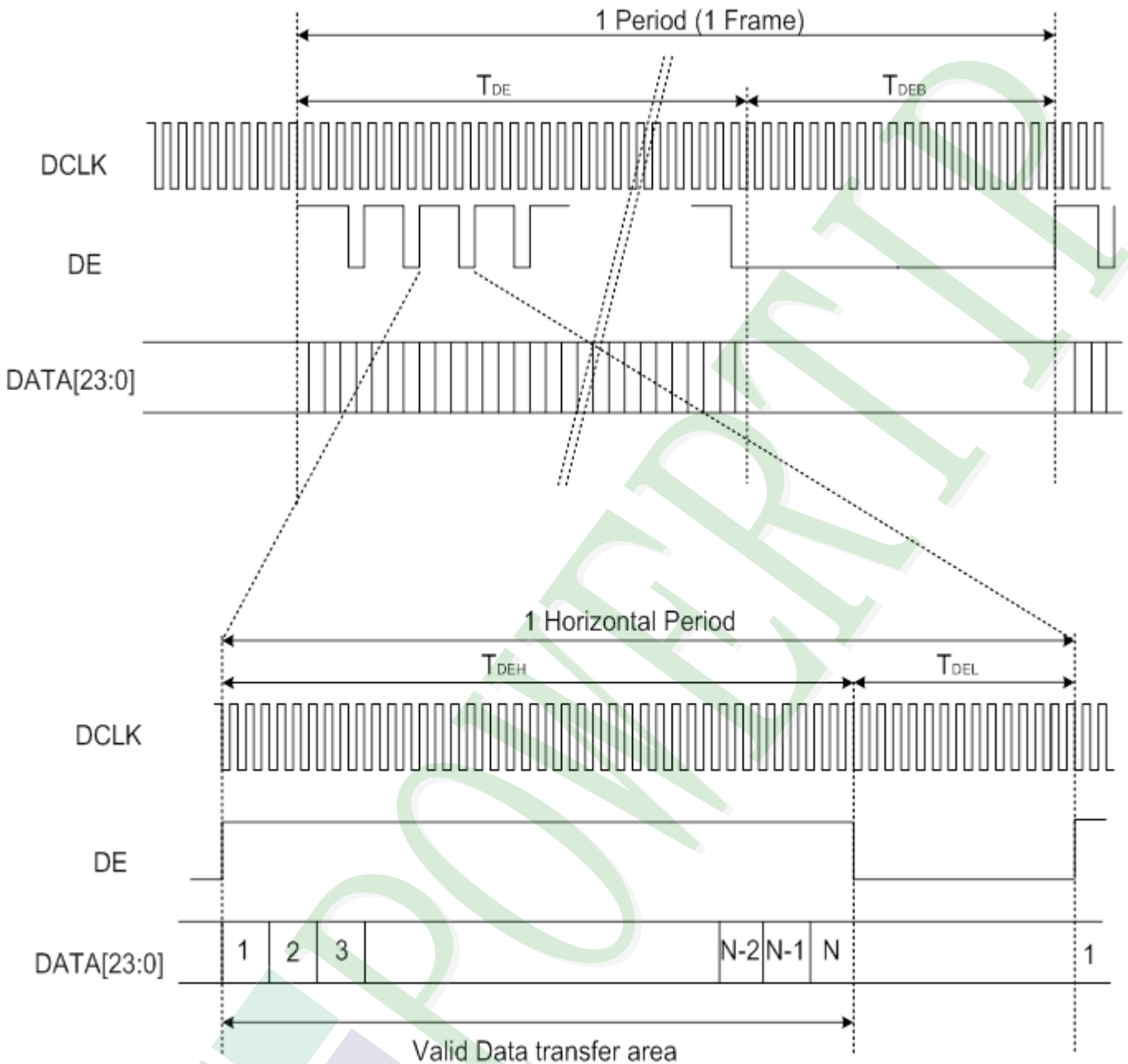
## Data Input Format



### SYNC Mode Horizontal Data Format



### SYNC Mode Vertical Data Format

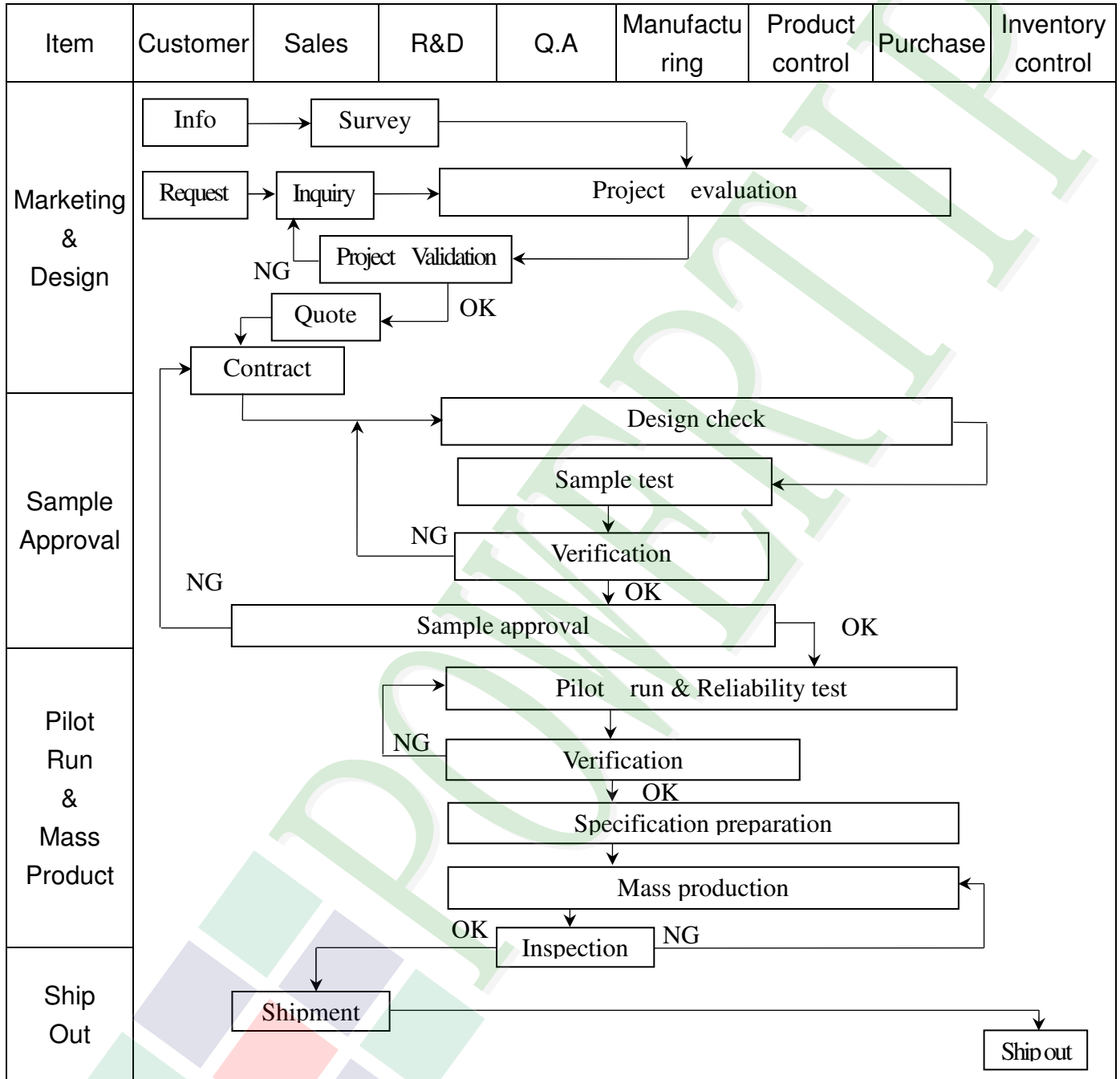


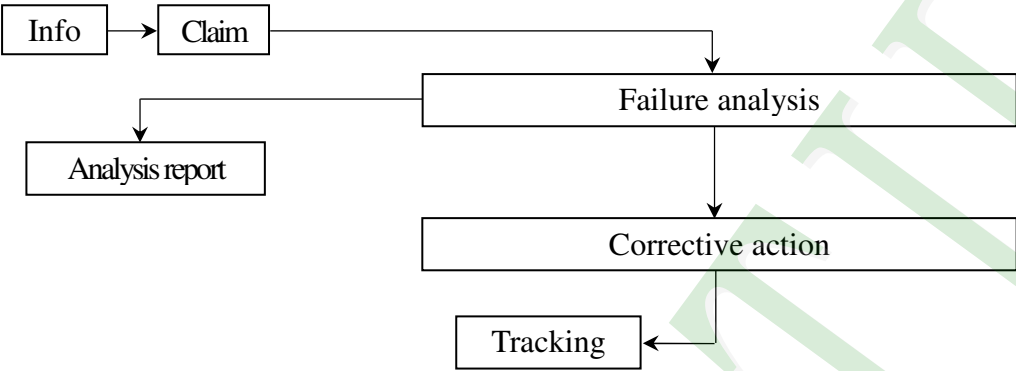
**DE Mode Data Format**



### 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] --&gt; Claim[Claim]     Claim --&gt; FA[Failure analysis]     FA --&gt; AR[Analysis report]     FA --&gt; CA[Corrective action]     CA --&gt; 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.

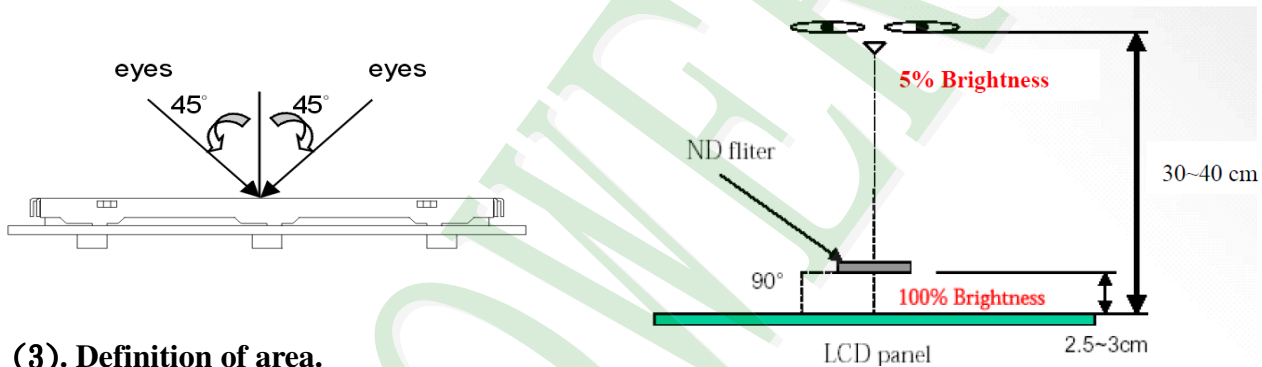
◆Standard of the product appearance test :

a. Manner of appearance test :

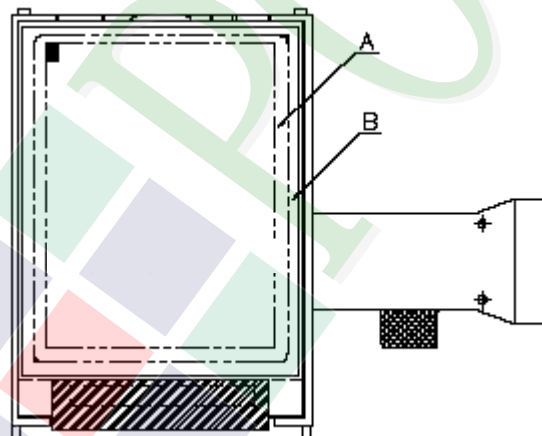
(1). The test best be under 20W×2 fluorescent light(about 300lux ~500lux)

， 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)

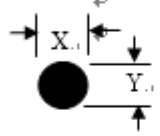
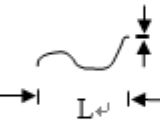
◆ Specification For TFT-LCD Module 3.5" ~15" :

(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 can not be seen through 5% ND filter at 50% Gray screen, 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>Item</th> <th>Acceptance (Q'ty)</th> </tr> </thead> <tbody> <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> </tbody> </table>	Item	Acceptance (Q'ty)	Bright Dot	≦ 4	Dark Dot	≦ 5	Joint Dot	≦ 3	Total	≦ 7	Minor
		Item	Acceptance (Q'ty)										
Bright Dot	≦ 4												
Dark Dot	≦ 5												
Joint Dot	≦ 3												
Total	≦ 7												
<p>5. 1 Inspection pattern : full white , full black , Red , Green and blue screens.</p> <p>5. 2 It is defined as dot defect if defect area &gt; 1/2 dot.</p> <p>5. 3 The distance between two dot defect ≧ 5 mm.</p> <p>5. 4 Bright dot that can not be seen through 5% ND filter.</p>													

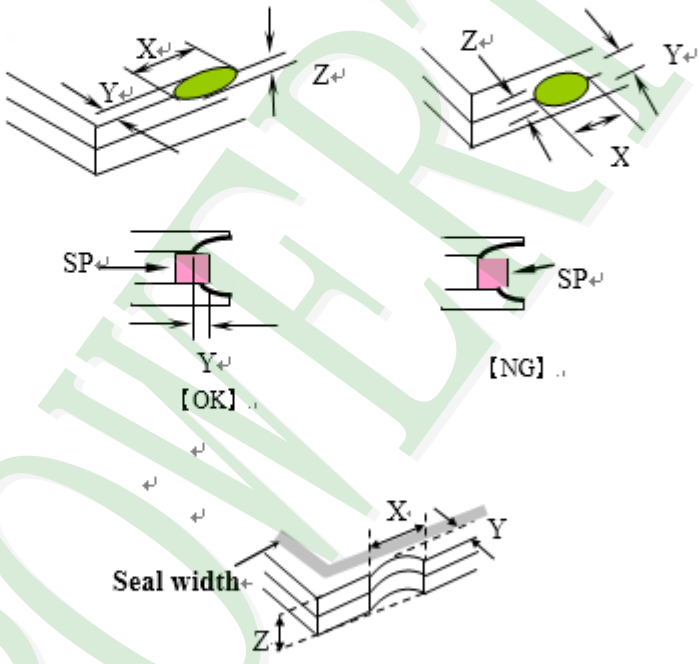
◆ Specification For TFT-LCD Module 3.5" ~15" :

(Ver.B01)

NO	Item	Criterion	Level																																																							
06	<p>Black or white dot、scratch、contamination</p> <p>Round type</p>  <p><math>\Phi = (x + y) / 2</math></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 : <math>\Phi</math>)</th> <th colspan="2">Acceptance (Q'ty)</th> </tr> <tr> <th>A area</th> <th>B area</th> </tr> </thead> <tbody> <tr> <td><math>\Phi \leq 0.25</math></td> <td>Ignore</td> <td rowspan="3">Ignore</td> </tr> <tr> <td><math>0.25 &lt; \Phi \leq 0.50</math></td> <td>5</td> </tr> <tr> <td><math>\Phi &gt; 0.50</math></td> <td>0</td> </tr> <tr> <td><b>Total</b></td> <td><b>5</b></td> <td></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="5">3.5" to less 9"</td> <td>---</td> <td><math>W \leq 0.03</math></td> <td>Ignore</td> <td rowspan="3">Ignore</td> </tr> <tr> <td><math>L \leq 10.0</math></td> <td><math>0.03 &lt; W \leq 0.05</math></td> <td>4</td> </tr> <tr> <td><math>L \leq 5.0</math></td> <td><math>0.05 &lt; W \leq 0.10</math></td> <td>2</td> </tr> <tr> <td>---</td> <td><math>W &gt; 0.10</math></td> <td>As round type</td> </tr> <tr> <td colspan="2"><b>Total</b></td> <td><b>5</b></td> <td></td> </tr> <tr> <td rowspan="4">9" to 15"</td> <td>---</td> <td><math>W \leq 0.05</math></td> <td>Ignore</td> <td rowspan="3">Ignore</td> </tr> <tr> <td><math>L \leq 10.0</math></td> <td><math>0.05 &lt; W \leq 0.10</math></td> <td>5</td> </tr> <tr> <td>---</td> <td><math>W &gt; 0.10</math></td> <td>As round type</td> </tr> <tr> <td colspan="2"><b>Total</b></td> <td><b>5</b></td> <td></td> </tr> </tbody> </table>	Dimension (diameter : $\Phi$ )	Acceptance (Q'ty)		A area	B area	$\Phi \leq 0.25$	Ignore	Ignore	$0.25 < \Phi \leq 0.50$	5	$\Phi > 0.50$	0	<b>Total</b>	<b>5</b>		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	<b>Total</b>		<b>5</b>		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	<b>Total</b>		<b>5</b>		Minor
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	<b>Total</b>		<b>5</b>																																																							
07	<p>Polarizer Bubble</p>	<table border="1"> <thead> <tr> <th rowspan="2">Dimension (diameter : <math>\Phi</math>)</th> <th colspan="2">Acceptance (Q'ty)</th> </tr> <tr> <th>A area</th> <th>B area</th> </tr> </thead> <tbody> <tr> <td><math>\Phi \leq 0.25</math></td> <td>Ignore</td> <td rowspan="4">Ignore</td> </tr> <tr> <td><math>0.25 &lt; \Phi \leq 0.50</math></td> <td>4</td> </tr> <tr> <td><math>0.50 &lt; \Phi \leq 0.80</math></td> <td>1</td> </tr> <tr> <td><math>\Phi &gt; 0.80</math></td> <td>0</td> </tr> <tr> <td><b>Total</b></td> <td><b>5</b></td> <td></td> </tr> </tbody> </table>	Dimension (diameter : $\Phi$ )	Acceptance (Q'ty)		A area	B area	$\Phi \leq 0.25$	Ignore	Ignore	$0.25 < \Phi \leq 0.50$	4	$0.50 < \Phi \leq 0.80$	1	$\Phi > 0.80$	0	<b>Total</b>	<b>5</b>		Minor																																						
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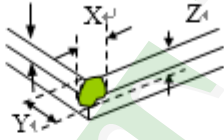
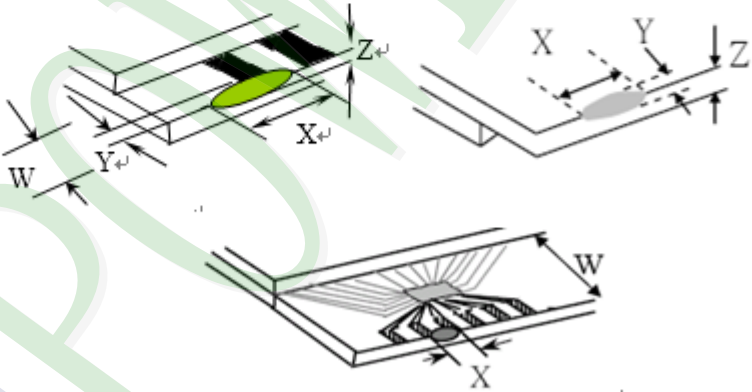
◆ Specification For TFT-LCD Module 3.5" ~15" :

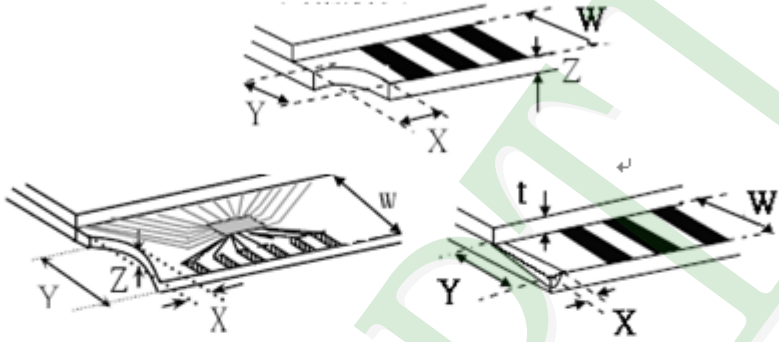
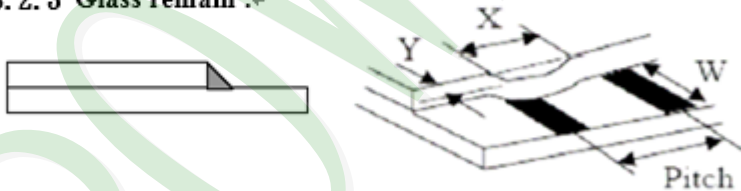

(Ver.B01)

NO	Item	Criterion	Level						
08	The crack of glass	<p>Symbols :</p> <p>X : The length of crack                      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>	Minor						
		<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 1300 1713"> <thead> <tr> <th>X</th> <th>Y</th> <th>Z</th> </tr> </thead> <tbody> <tr> <td><math>\leq a</math></td> <td>Crack can't enter viewing area</td> <td><math>\leq 1/2 t</math></td> </tr> <tr> <td><math>\leq a</math></td> <td>Crack can't exceed the half of SP width.</td> <td><math>1/2 t &lt; Z \leq 2 t</math></td> </tr> </tbody> </table>		X	Y	Z	$\leq a$	Crack can't enter viewing area	$\leq 1/2 t$
X	Y	Z							
$\leq a$	Crack can't enter viewing area	$\leq 1/2 t$							
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◆ Specification For TFT-LCD Module 3.5" ~ 15" :

(Ver.B01)

NO	Item	Criterion	Level												
		<p>Symbols :</p> <p>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</p> <hr/> <p>8.1.2 Corner crack :</p>  <table border="1" data-bbox="550 719 1278 981"> <thead> <tr> <th>X</th> <th>Y</th> <th>Z</th> </tr> </thead> <tbody> <tr> <td><math>\leq 1/5 a</math></td> <td>Crack can't enter viewing area</td> <td><math>Z \leq 1/2 t</math></td> </tr> <tr> <td><math>\leq 1/5 a</math></td> <td>Crack can't exceed the half of SP width.</td> <td><math>1/2 t &lt; Z \leq 2 t</math></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.	$1/2 t < Z \leq 2 t$				
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.	$1/2 t < Z \leq 2 t$													
08	The crack of glass	<p>8.2 Protrusion over terminal :</p> <p>8.2.1 Chip on electrode pad :</p>  <table border="1" data-bbox="582 1556 1289 1709"> <thead> <tr> <th></th> <th>X</th> <th>Y</th> <th>Z</th> </tr> </thead> <tbody> <tr> <td>Front</td> <td><math>\leq a</math></td> <td><math>\leq 1/2 W</math></td> <td><math>\leq t</math></td> </tr> <tr> <td>Back</td> <td><math>\leq a</math></td> <td><math>\leq W</math></td> <td><math>\leq 1/2 t</math></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
	X	Y	Z												
Front	$\leq a$	$\leq 1/2 W$	$\leq t$												
Back	$\leq a$	$\leq W$	$\leq 1/2 t$												

NO	Item	Criterion	Level						
08	The crack of glass	<p>Symbols :</p> <p>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</p>	Minor						
		<p>8.2.2 Non-conductive portion :</p> 							
		<table border="1" data-bbox="641 907 1209 1019"> <thead> <tr> <th>X</th> <th>Y</th> <th>Z</th> </tr> </thead> <tbody> <tr> <td><math>\leq 1/3 a</math></td> <td><math>\leq W</math></td> <td><math>\leq t</math></td> </tr> </tbody> </table>		X	Y	Z	$\leq 1/3 a$	$\leq W$	$\leq t$
		X		Y	Z				
$\leq 1/3 a$	$\leq W$	$\leq t$							
<p>⊙ If the chipped area touches the ITO terminal, over 2/3 of the ITO must remain and be inspected according to electrode terminal specifications.</p>									
<p>8.2.3 Glass remain :</p>  <table border="1" data-bbox="571 1400 1193 1512"> <thead> <tr> <th>X</th> <th>Y</th> <th>Z</th> </tr> </thead> <tbody> <tr> <td><math>\leq a</math></td> <td><math>\leq 1/3 W</math></td> <td><math>\leq t</math></td> </tr> </tbody> </table>	X	Y	Z	$\leq a$	$\leq 1/3 W$	$\leq t$			
X	Y	Z							
$\leq a$	$\leq 1/3 W$	$\leq t$							
<p>8.2.4 Cracking :</p>  <p>Not Allowed</p>									



◆ 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 <u>diagram</u> .	Major
		10.2 No short circuits in components on PCB or <u>FPC</u> .	Major
		10.3 Parts on PCB or FPC must be the same as on the production characteristic chart .There should be no <u>wrong parts</u> , missing parts or excess parts.	Major
		10.4 Product packaging must the same as specified on <u>packaging specification sheet</u> .	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 $\leq 1.5$ 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.001

Documents NO. PKG-PH800480T007-IHC01

# LCM包裝規格書

## LCM Packaging Specifications

Approve	Check	Contact
Oliver	Oliver	Stone

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

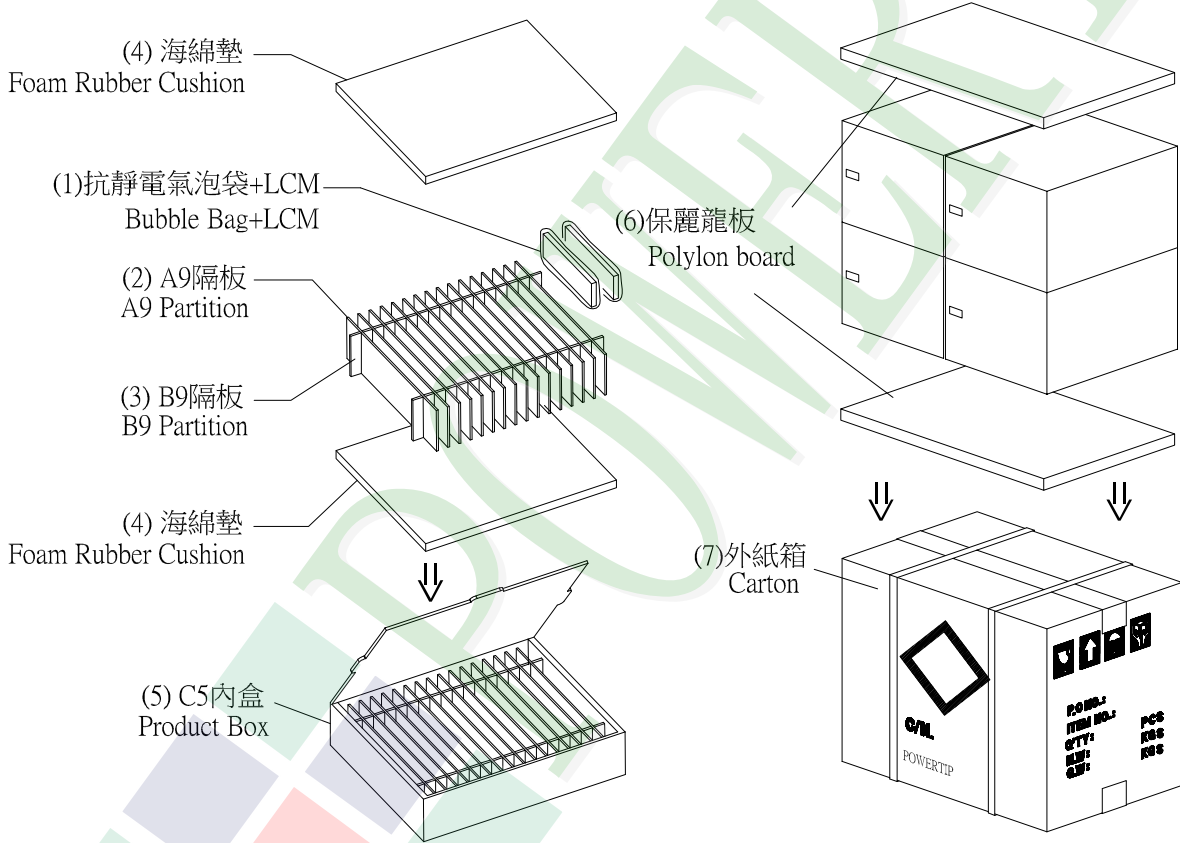
No.	Item	Model	Dimensions (mm)	1Pcs Weight	Quantity	Total Weight
1	成品 (LCM)	PH800480T007-IHC01	193.2 X 132.24	0.221	60	13.26
2	抗靜電氣泡袋(1)Bubble Bag	BAG200160BRABA	200 X 160	0.0096	60	0.576
3	A9隔板(2)A9 Partition	BX00000000058	245 X 125 X 4	0.0204	36	0.7344
4	B9隔板(3)B9 Partition	BX00000000057	295 X 125 X 4	0.0209	8	0.1672
5	海綿墊(4)Foam Rubber Cushion	OTFOAM00006ABA	290 X 240 X 10	0.02	8	0.16
6	C5內盒(5)Product Box	BX00000000059	310 X 255 X 155	0.248	4	0.992
7	外紙箱(6)Carton	BX52732536CCBA	527 X 325 X 360	0.83	1	0.83
8	保麗龍板(7)Polylon board	OTPLB00000017	510 X 310 X 15	0.025	2	0.05
9						

2. 一整箱總重量 (Total LCD Weight in carton) : 16.77 Kg±10%

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

(1)Quantity Of Spacer : A9隔板 X 9 , B9隔板 X 2

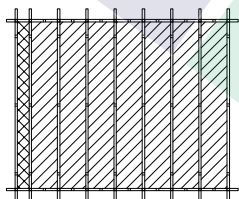
(2)Total LCM quantity in carton : quantity per box 15 x no of boxes 4 = 60



### 特 記 事 項 (REMARK)

5. LCM排放示意圖(前後間隔不放置):

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



▨ 模組(LCM) X 1pcs.

▩ 模組(LCM) X 2pcs.