DATA MODUL

SPECIFICATION

POWERTIP

PH800480T032-ZHA

7.0" - WVGA - RGB

Version: 1.4
Date: 04.12.2020

Note: This specification is subject to change without prior notice

History of Version

Date (mm / dd / yyyy)	Ver.	Edi.	Description	Page	Design by
05/04/2020	01	001	New Drawing According to customer request modify Contents	- -	Yuan
06/23/2020	01	02	First Sample	-	Yuan
11/20/2020	01	03	Modify Parallel 24-bit RGB Input Timing	16	Yuan
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Contents

1. SPECIFICATIONS
1.1 Features
1.2 Mechanical Specifications
1.3 Absolute Maximum Ratings
1.4 DC Electrical Characteristics
1.5 Optical Characteristics
1.6 Backlight Characteristics

2. MODULE STRUCTURE
2.1 Counter Drawing
2.2 Interface Pin Description
2.3 Timing Characteristics

3. QUALITY ASSURANCE SYSTEM
3.1 Quality Assurance Flow Chart
3.2 Inspection Specification

4. RELIABILITY TEST
4.1 Reliability Test Condition

5. PRECAUTION RELATING PRODUCT HANDLING
5.1 Safety
5.2 Handling
5.3 Storage
5.4 Terms of Warranty

Appendix:
1. LCM Drawing
2. LCM Packaging Specifications

Note: For detailed information please refer to IC data sheet:
Himax---HX8249-A02
Himax---HX8678-C

1. SPECIFICATIONS

1.1 Features

Item	Standard Value
Display Resolution	800 *3 (RGB) * 480 Dots
LCD Type	IPS, Normally Black, Transmissive type
Screen size(inch)	7 inch
Surface treatment	Anti-Glare
Color configuration	R.G.B. Vertical Stripe
Weight	-
Interface	Parallel RGB (Data), SPI (Configuration)
Driver IC	Himax---HX8249-A02 Himax---HX8678-C
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	164.4 (W) * 105.9 (L) * 5.7 (H)	mm

LCD panel

Item	Standard Value	Unit
View Area	153.40 (W) * 92.44 (L)	mm
Active Area	152.40 (W) * 91.44 (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 TFT Panel	V_{DD}	GND=0V	-0.3	3.96	V	
Power Supply for Backlight Unit	V_{CC}	GND=0V	-0.3	+20.0	V	-
Operating Temperature	T_{OP}	-	-20	+70	°C	
Storage Temperature	T_{ST}	-	-30	+80	°C	

The absolute maximum rating values of this product are not allowed to be exceeded at any time. 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.

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

Note 2: Ta is the ambient temperature of samples

1.4 DC Electrical Characteristics

Module   GND = 0V, Ta = 25°C

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply for TFT Panel	VDD	GND=0V	3.0	3.3	3.6	V
Power Supply for Backlight Unit	VCC	GND=0V	5	12	15	V
Input Voltage for TFT Panel	V_{IH}	GND=0V	0.7VDD	-	VDD	V
	V_{IL}	GND=0V	0	-	0.3VDD	
Supply Current for TFT Panel	IDD	IDD@VDD=3.3V	-	100	150	mA
Supply Current for Backlight Unit	ICC	ICC@VCC=5V	-	1.5	2	A
Supply Current for Backlight Unit	ICC	ICC@VCC=12V	-	0.4	0.6	
Input Voltage for PWM Signal	VPH	GND=0V	1.2	-	-	V
	VPL	GND=0V	-	-	0.4	V
Dimming Clock Rate	fP	GND=0V	0.1	-	8	KHz

1.5 Optical Characteristics

VDD=3.3V, Ta=25°C

Item	Symbol		Condition	Min.	Typ.	Max.	unit	
Response time	Tr+Tf		Ta = 25°C θX, θY = 0°	-	30	45	ms	Note 2
Viewing angle	Top	θY+	CR ≥ 10	-	80	-	Deg.	Note 4
	Bottom	θY-		-	80	-		
	Left	θX-		-	80	-		
	Right	θX+		-	80	-		
Contrast ratio	CR			650	800	-		Note 3
Color of CIE Coordinate (With B/L)	White	X	Ta = 25°C θX , θY = 0°	0.25	0.30	0.35	-	Note1
		Y		0.29	0.34	0.39		
	Red	X		0.59	0.64	0.69		
		Y		0.30	0.35	0.40		
	Green	X		0.26	0.31	0.36		
		Y		0.59	0.64	0.69		
	Blue	X		0.08	0.13	0.18		
		Y		0.01	0.06	0.11		
Average Brightness Pattern=white display (With LCD)*1	IF		VCC=12.0V PWM="High" (Duty=100%)	800	1000	-	cd/m²	Note1
Uniformity (With LCD)*2	△B		VCC=12.0V PWM="High" (Duty=100%)	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
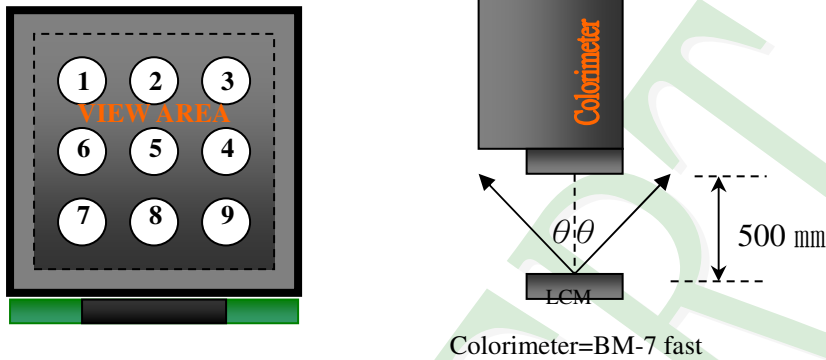
To be measured at the center area of panel with a viewing cone of 1° by Topcon
luminance meter BM-7, after 10 minutes operation (module)

Note 2: 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
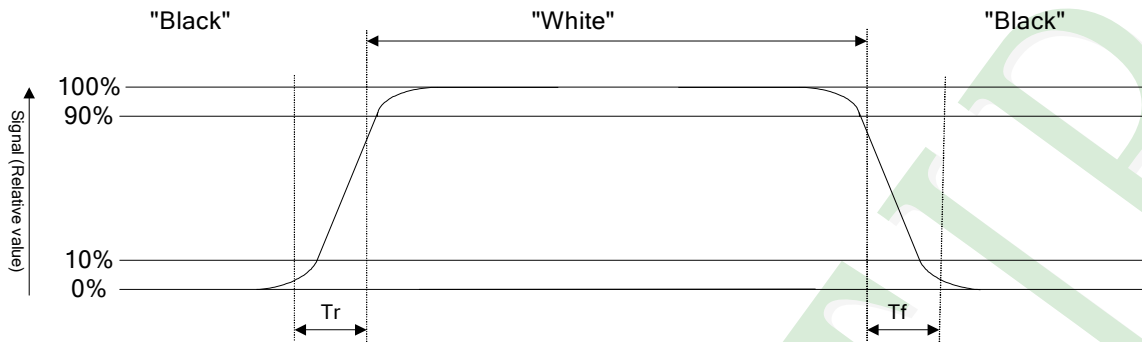
Note 3: Definition of contrast ratio:

Contrast ratio is calculated with the following formula

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

Note 4: Definition of viewing angle:

Refer to figure as below:

![POWERTIP logo]
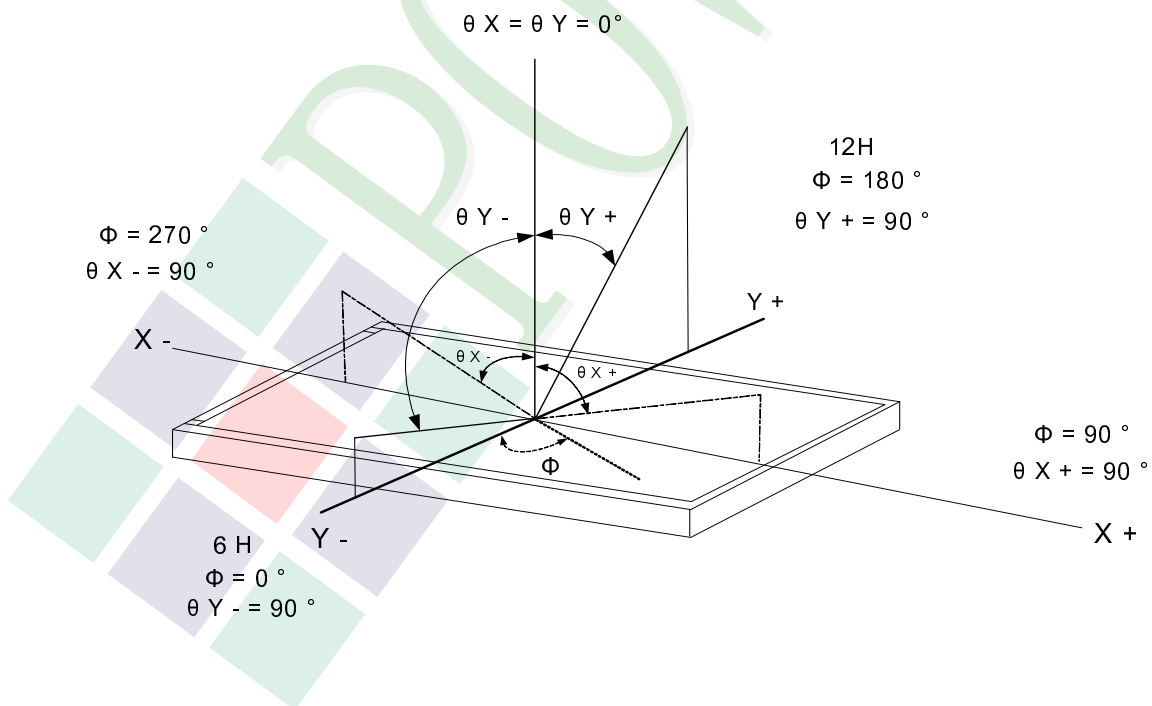
1.6 Backlight Characteristics

Maximum Ratings

Item	Symbol	Min.	Max.	Unit	Remark
LED Forward Current	I_F	-	90	mA	Per
LED Reverse Voltage	V_R	-	1.2	V	

Electrical / Optical Characteristics

Item	Symbol	Min.	Typ.	Max.	Unit	Remark
LED Voltage	V_L	22.0	24.0	26.8	V	Note1
LED Current	I_L	-	210	-	mA	-
LED life time	-	50,000	-	-	H_r	Note2

Note 1: The LED Supply Voltage is defined by the number of LED at Ta=25℃ and I_L =210 mA

Note 2: The "LED life time" is defined as the module brightness decrease to 50% original brightness at Ta=25℃ and I_L =210 mA. The LED life time could be decreased if operating I_L is larger than 210 mA
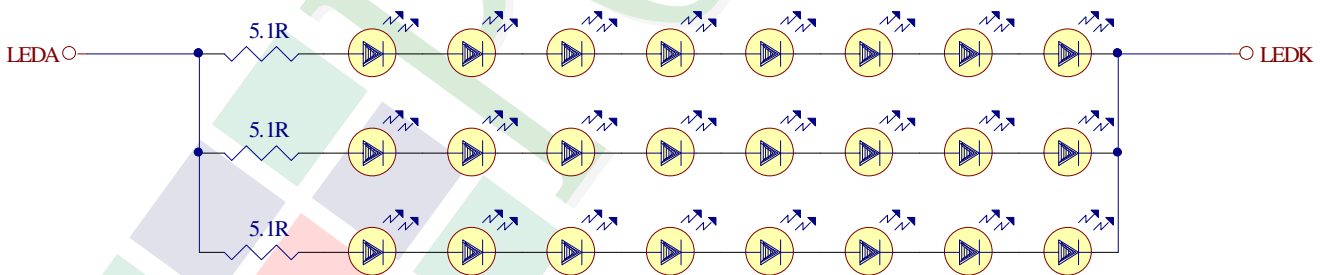
2. Module Structure

2.1 Counter Drawing

2.1.1 LCM Mechanical Diagram

* See Appendix

2.1.2 Block Diagram
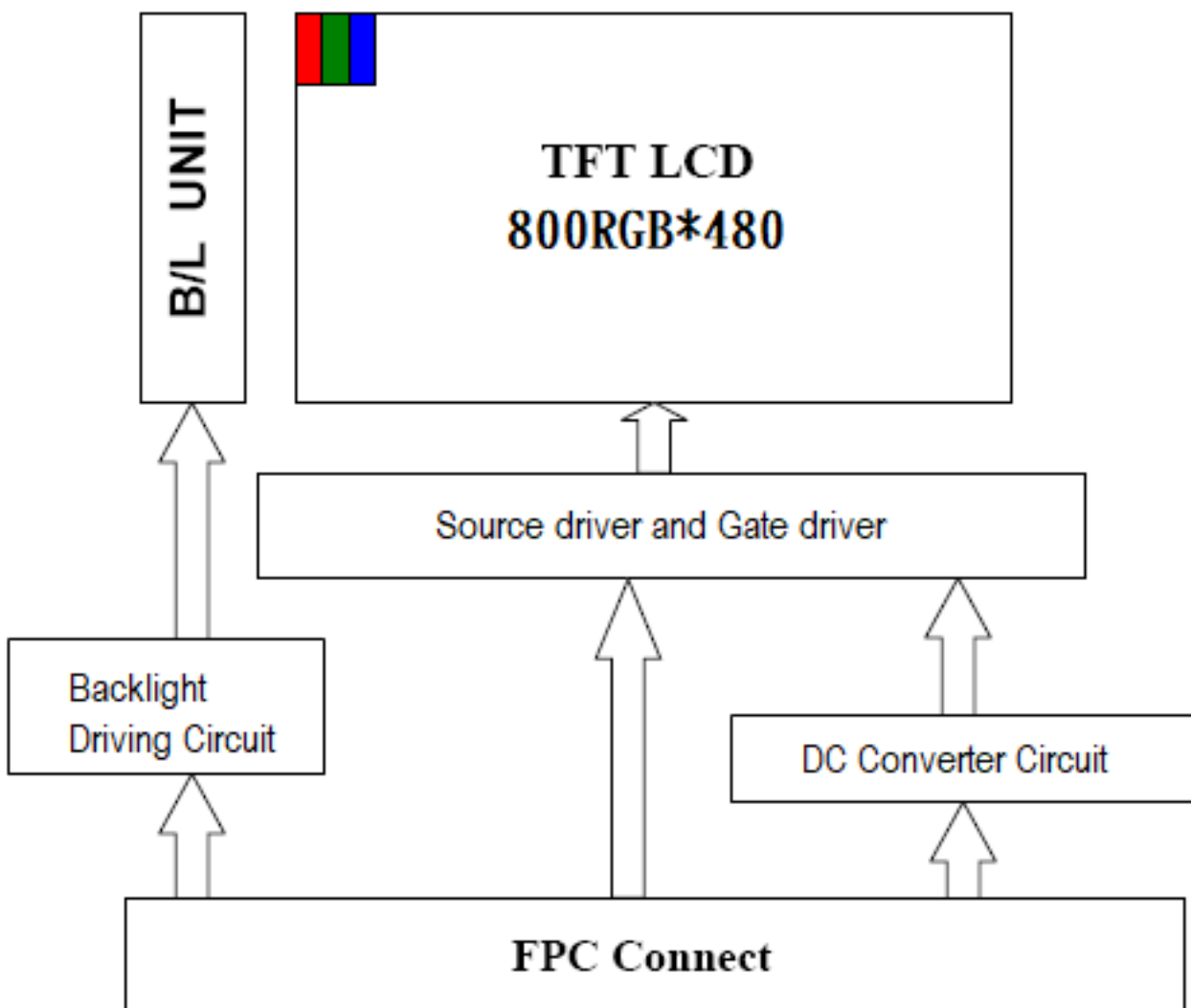
2.2 Interface Pin Description

TFT LCM Interface

Pin#	Name	Description
1	GND	Power ground.
2	VDD	Power for Digital Circuit.
3	VDD	Power for Digital Circuit.
4	VCC	Power For LED backlight.
5	VCC	Power For LED backlight.
6	PWM	Shutdown & Dimming control input for backlight. Do not allow this pin to float. "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.
29	B1	Blue Data.

Pin#	Name	Description
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	HS	Line synchronization signal. Horizontal Sync Input.
39	VS	Frame synchronization signal. Vertical Sync Input.
40	GND	Power ground.
41	DE	Data Enable
42	GND	Power ground.
43	DCLK	Sample clock. Data will be latched at the falling edge of DCLK.
44	GND	Power ground.
45	CS / ID1	Serial communication chip selection/ID[4:1]These pins select LCM type. See NOTE1
46	SDIN / ID2	Serial communication data/ ID[4:1]These pins select LCM type. See NOTE1
47	SCK / ID3	Serial communication clock/ ID[4:1]These pins select LCM type. See NOTE1
48	DISPLAY CONTROL / ID4	Display Enable(Hi Active)./ ID[4:1]These pins select LCM type. See NOTE1
49	/RESET	Global Reset (Low Active).
50	GND	Power ground.

Note1:

ID Pins Definition:

	PIN 45 ID1	PIN 46 ID2	PIN 47 ID3	PIN 48 ID3
3.5" Module	X	0	0	X
4.3" Module	X	1	0	X
5.0" Module	X	0	1	X
7.0" Module	X	1	1	X

1. Resistor = 10k ohm

2. "X" = No use

2.3 Timing Characteristics

2.3.1 RGB Mode Selection Table

RGB Mode Selection Table	DCLK	HSYNC	VSYNC	DE
SYNC Mode	Input	Input	Input	GND
DE Mode	Input	GND	GND	Input

2.3.2 Parallel RGB SYNC Mode

Horizontal
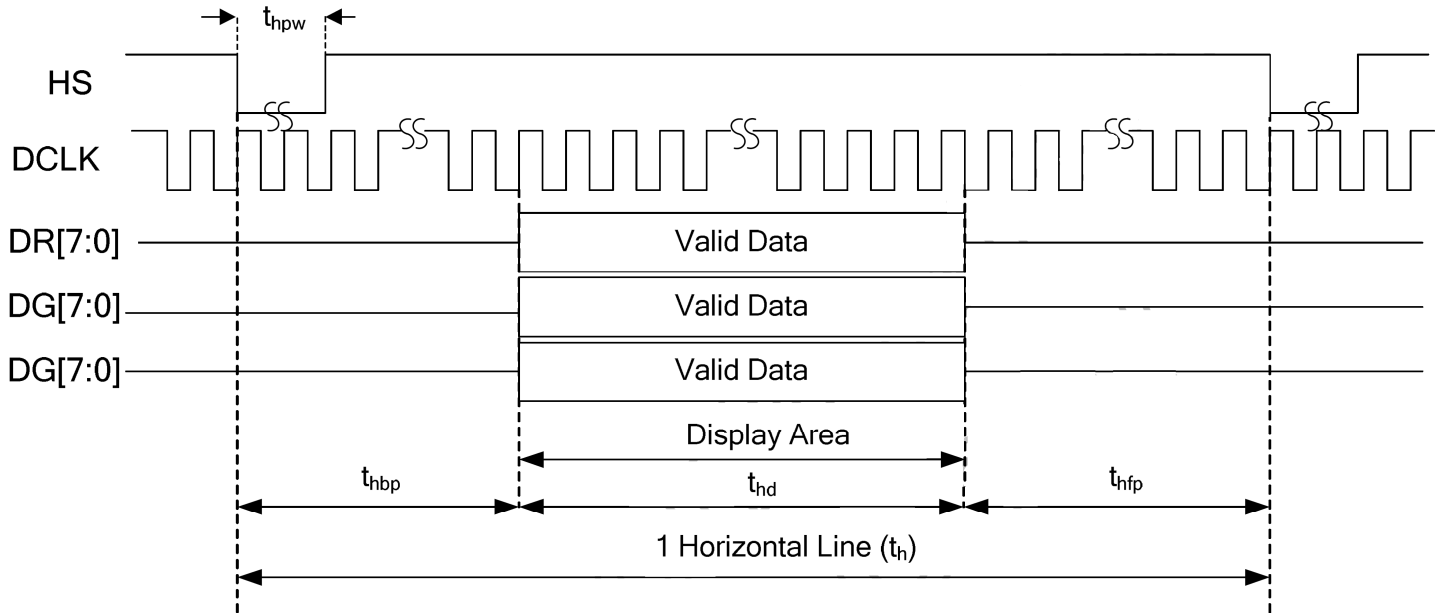
Horizontal input timing at Sync mode

Vertical
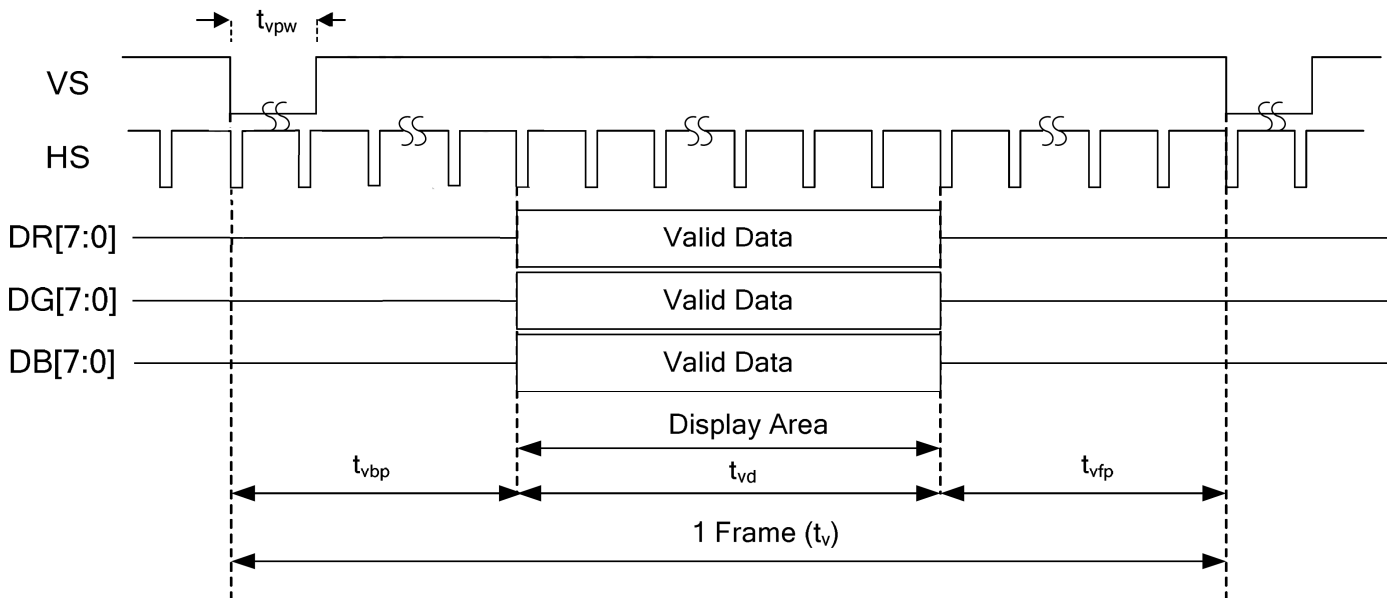
Vertical input timing at Sync mode

2.3.3 Parallel RGB at DE mode

• **Horizontal**
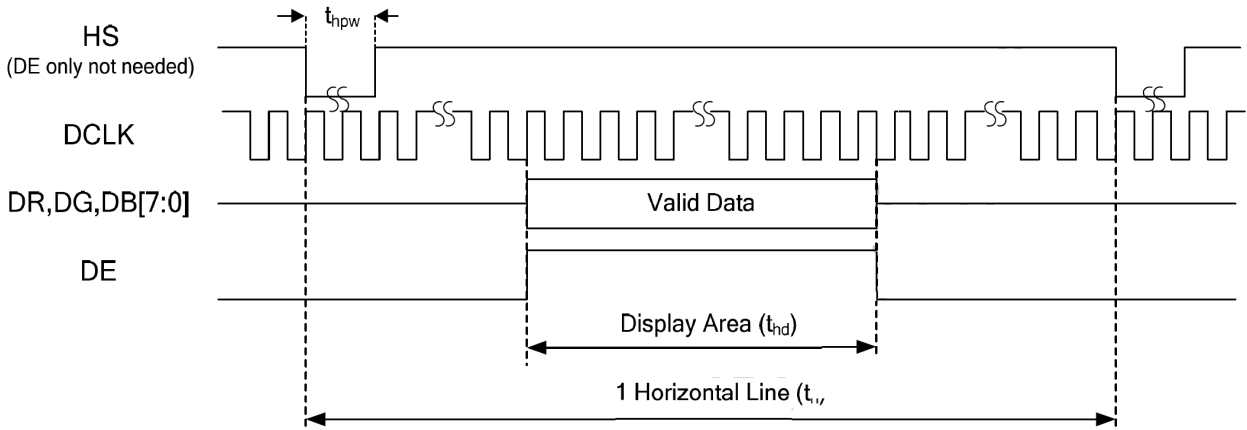
Figure 7.9: Horizontal input timing at DE only mode

• Vertical
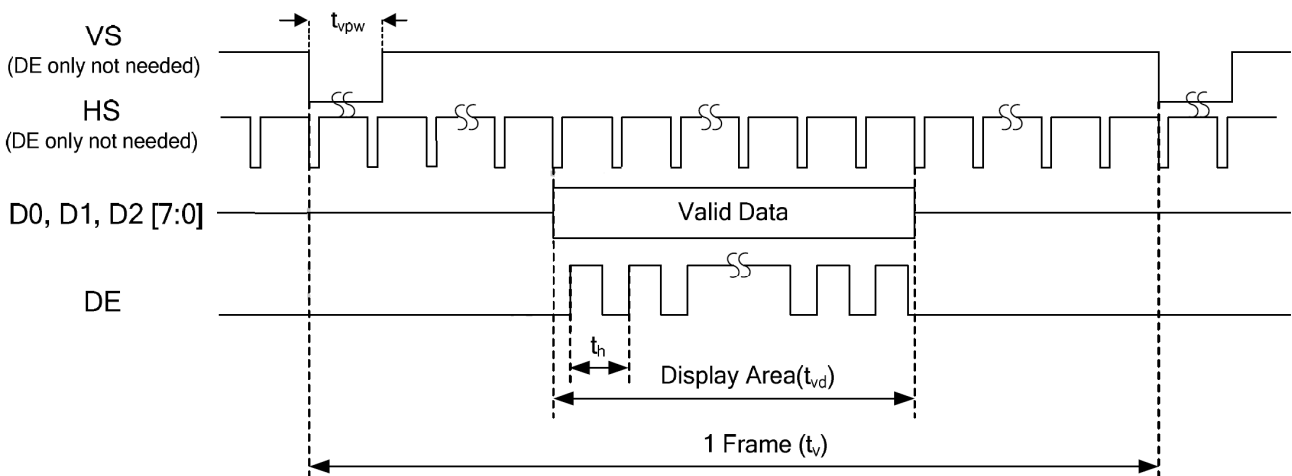
2.3.4 Parallel 24-bit RGB Input Timing

Item	Symbol	Min	Typ.	Max	Unit	Note
DCLK Frequency	FDCLK	25.2	27.2	30.5	MHz	
Horizontal valid data	thd		800		DCLK	
Hsync pulse width	thpw	1	2	100	DCLK	
Hsync back porch	thbp	5	16	101	DCLK	
Hsync front porch	thfp	19	44	115	DCLK	
1 horizontal line	th	856	860	920	DCLK	
Vertical valid data	tvd		480		HSYNC	
Vsync pulse width	tvpw	1	2	66	HSYNC	
Vsync back porch	tvbp	5	5	67	HSYNC	
Vsync front porch	tvfp	5	43	67	HSYNC	
1 vertical field	tv	490	528	552	HSYNC	
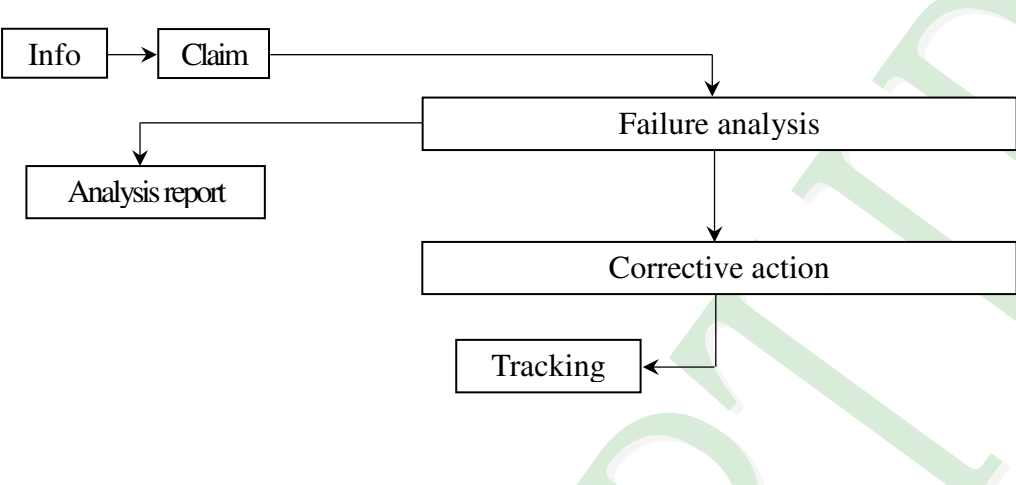
Note:

(1) thd is same to Hactive, and tvd is same to Vactive in chapter 5.1.

(2) DCLK frequency min/max value is base on frame rate 60 Hz

(3) thbp+thpw+thfp≧56 DCLK, tvbp+tvpw+tvfp≧10

3. Quality Assurance System

3.1 Quality Assurance Flow Chart

Item	Customer	Sales	R&D	Q.A	Manufacturing	Product control	Purchase	Inventory control
Marketing & Design	Info → Survey; Request → Inquiry	Inquiry → Project evaluation; Project Validation (NG → Inquiry, OK → Quote) → Quote → Contract						
Sample Approval	Contract → Design check → Sample test → Verification (NG) OK → Sample approval							
Pilot Run & Mass Product	Pilot run & Reliability test → Verification (NG) OK → Specification preparation → Mass production → Inspection (OK / NG)							
Ship Out	Shipment; Ship out							

Item	Customer	Sales	R&D	Q.A	Manufacturing	Product control	Purchase	Inventory control
Sales Service	Info → Claim → Failure analysis → Analysis report → Corrective action → Tracking							
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(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.**
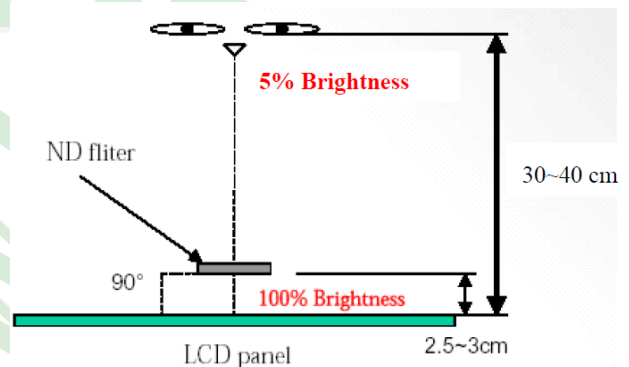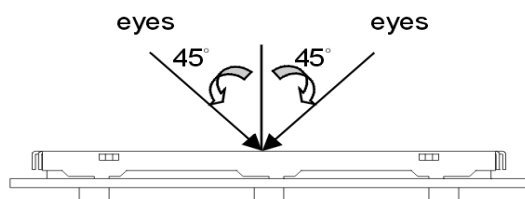
   （3）.**Definition of area.**
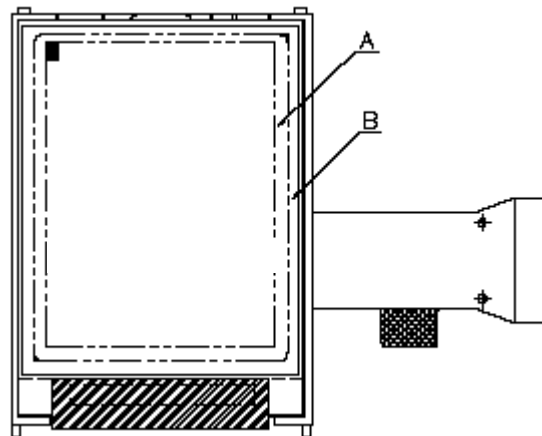
   A area: viewing area

   B area: Outside of viewing area
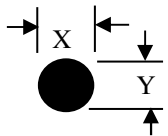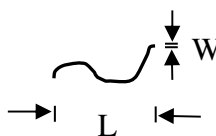
   （4）.**Standard of inspection： (Unit：mm)**

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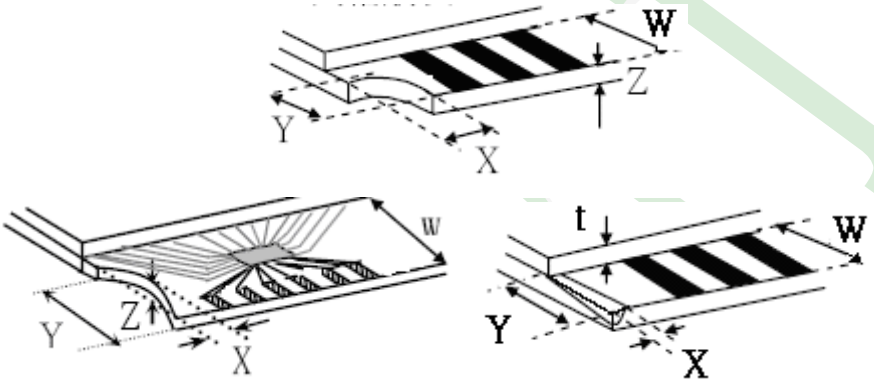◆**Specification For TFT-LCD Module 3.5″ ~15″ :** (Ver.B01)

NO	Item	Criterion	Level
01	Product condition	1.1 The part number is inconsistent with work order of production.	Major
		1.2 Mixed product types.	Major
		1.3 Assembled in inverse direction.	Major
02	Quantity	2.1 The quantity is inconsistent with work order of production.	Major
03	Outline dimension	3.1 Product dimension and structure must conform to structure diagram.	Major
04	Electrical Testing	4.1 Missing line character and icon.	Major
		4.2 No function or no display.	Major
		4.3 Display malfunction.	Major
		4.4 LCD viewing angle defect.	Major
		4.5 Current consumption exceeds product specifications.	Major
		4.6 Mura cannot be seen through 5% ND filter at 50% Gray, should be judged by the viewing angle of 90 degree.	Minor
05	Dot defect (Bright dot, Dark dot) On -display	<table><tr><th></th><th>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.	Minor

NO	Item	Criterion	Level
06	**Black or white Dot, scratch, contamination** **Round type** $\Phi = (x+y)/2$ **Line type** 	**6.1 Round type (Non-display or display):** _see table below_ **6.2 Line type(Non-display or display):** _see table below_	**Minor**

6.1 Round type (Non-display or display):

Dimension (diameter: Φ)	Acceptance (Q'ty) A area	Acceptance (Q'ty) B area
Φ ≦ 0.25	Ignore	Ignore
0.25 ＜ Φ ≦ 0.50	5	Ignore
Φ ＞ 0.50	0	Ignore
Total	5	Ignore

6.2 Line type(Non-display or display):

module size	Length (L)	Width (W)	Acceptance (Q'ty) A area	Acceptance (Q'ty) B area
3.5" to less 9"	---	W ≦ 0.03	Ignore	Ignore
	L ≦ 10.0	0.03 ＜ W ≦ 0.05	4	Ignore
	L ≦ 5.0	0.05 ＜ W ≦ 0.10	2	Ignore
	---	W ＞ 0.10	As round type	Ignore
	Total		5	
9" to 15"	---	W ≦ 0.05	Ignore	Ignore
	L ≦ 10.0	0.05 ＜ W ≦ 0.10	5	Ignore
	---	W ＞ 0.10	As round type	Ignore
	Total		5	

NO	Item	Dimension (diameter: Φ)	Acceptance (Q'ty) A area	Acceptance (Q'ty) B area	Level
07	**Polarizer Bubble**	Φ ≦ 0.25	Ignore	Ignore	**Minor**
		0.25 ＜ Φ ≦ 0.50	4	Ignore	
		0.50 ＜ Φ ≦ 0.80	1	Ignore	
		Φ ＞ 0.80	0	Ignore	
		Total	5	Ignore	

(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: 【OK】 【NG】 Seal width	Minor

X	Y	Z
$\leqq \leqq$ a	Crack can't enter viewing area	$\leqq 1/2$ t
$\leqq$ a	Crack can't exceed the half of SP width.	$1/2$ t $<$ Z $\leqq 2$ 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: _(diagram of corner crack showing X, Y, Z)_ _see table below_ 8.2 Protrusion over terminal: 8.2.1 Chip on electrode pad: _(diagrams of chip on electrode pad showing W, X, Y, Z)_ _see table below_	Minor

8.1.2 Corner crack 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.	$1/2\ t < Z \leq 2\ t$

8.2.1 Chip on electrode pad table:

	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	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
---	---	---
$\leqq 1/3\ a$	$\leqq W$	$\leqq t$ | 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
---	---	---
$\leqq a$	$\leqq 1/3\ W$	$\leqq t$ | 8.2.4 Cracking: 　　　　Not Allowed	Minor

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

NO	Item	Criterion	Level
09	Backlight elements	9.1 Backlight can't work normally.	Major
		9.2 Backlight doesn't light or color is wrong.	Major
		9.3 Illumination source flickers when lit.	Major
10	General appearance	10.1 Pin type, quantity, dimension must match type in structure diagram.	Major
		10.2 No short circuits in components on PCB or FPC.	Major
		10.3 Parts on PCB or FPC must be: no wrong parts, missing parts or excess parts.	Major
		10.4 Product packaging must the same as specified on packaging specification sheet.	Minor
		10.5 The folding and peeled off in polarizer are not acceptable.	Minor
		10.6 The PCB or FPC between B/L assembled distance(PCB or FPC) is ≦1.5 mm.	Minor

4. Reliability Test

4.1 Reliability Test Condition   (Ver.B01)

NO.	TEST ITEM	TEST CONDITION
1	High Temperature Storage Test	Keep in 80 ±5℃ 240 hrs
2	Low Temperature Storage Test	Keep in −30 ±5℃ 240 hrs
3	High Temperature / High Humidity Storage Test	Keep in 60 ℃ / 90% R.H duration for 240 hrs (Excluding the polarizer)
4	Temperature Cycling Storage Test	−30℃ → +25℃ → 80℃ → +25℃ (30mins) (5mins) (30mins) (5mins) 20 Cycle
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)	<table><tr><td>Packing Weight (Kg)</td><td>Drop Height (cm)</td></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

◎Result Evaluation Criteria :
Under the display quality test conditions with normal operations with normal operation state.
Do not change these conditions as such changes may affect practical display function.
(Normal operation state)
Temperature：+20~30℃
Humidity：50~70%
Atmospheric pressure：86~106Kpa

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
5.2.10   Caution! (LCM products with Capacitive Touch Panel)

        Strong EMI-sources such as switch-mode power supplies (SMPS) can lead to touch malfunction (e.g. ghost-touches).

        Therefore, the touch needs to be thoroughly tested inside the target application.

5.2.11   Caution: Continuously displaying same static image will result in high possibility of image sticking/image burn-in effect due to TFT panel characteristic.

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.
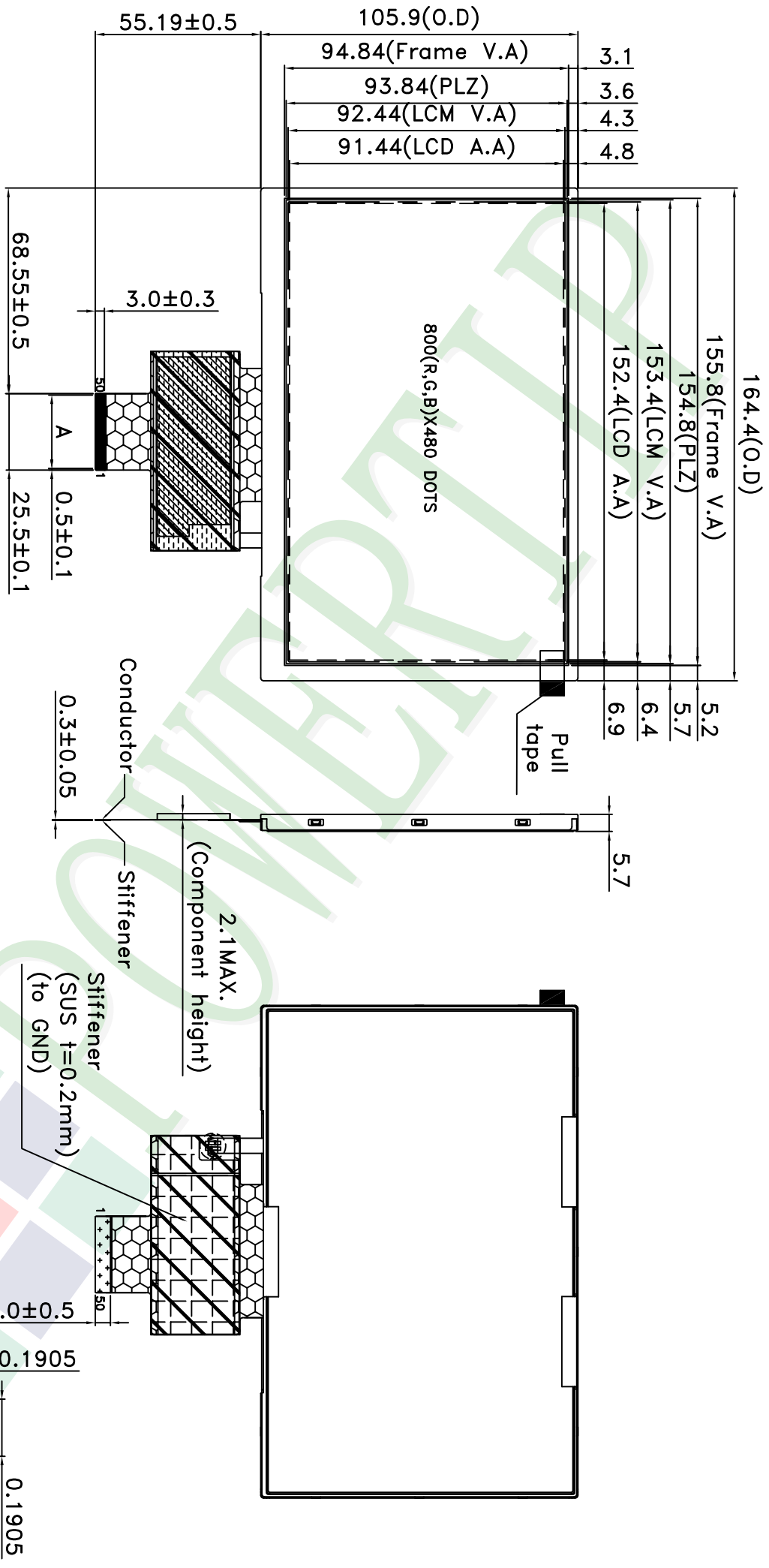
NOTES:

1. LCD TYPE: IPS LCD
2. LCD DISPLAY: NEGATIVE/TRANSMISSIVE
3. A=0.5X49=24.50±0.05 ; W=0.35±0.05
4. FPC suggested connector :CviLux CF31501D0R2-05-NH or compatible.
5. The tolerance unless classified ±0.3mm
6. ▨ Kapton tape ▨ Stiffener ▨ EMI Film ▨ Aluminum Foil

| 800(R,G,B)X480 DOTS | | |

Dimensions (top view):
- 164.4(O.D)
- 155.8(Frame V.A)
- 154.8(PLZ)
- 153.4(LCM V.A)
- 152.4(LCD A.A)
- 105.9(O.D)
- 94.84(Frame V.A)
- 93.84(PLZ)
- 92.44(LCM V.A)
- 91.44(LCD A.A)
- 3.1
- 3.6
- 4.3
- 4.8
- 5.2
- 5.7
- 6.4
- 6.9
- 55.19±0.5
- 68.55±0.5
- 25.5±0.1
- 3.0±0.3
- 0.5±0.1
- Pull tape

Side view:
- Conductor
- Stiffener
- Stiffener (SUS t=0.2mm) (to GND)
- 2.1MAX. (Component height)
- 0.3±0.05
- 5.7
- 5.0±0.5

DOTS DETAIL SCALE: 100X
- 0.1905
- 0.1905

R	G	B

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

			POWERTIP TECHNOLOGY CORPORATION
	Design	Lauren Chien	
	Check	Clare Chen	
	Approve	Rex Liao	
Unit	Scale	Page	
MM	FIT	1/1	
Surface	Material	Thickness	Quantity

PART NO.: PH800480T032-ZHA

DRAWING NAME.: LMD-PH800480T032-ZHA

TITLE: LCD MODULE DRAWING

007			
006			
005			
004			
003			
002			
001	NEW DRAWING	Lauren	2020/04/29
REV		REV BY	DATE
		REVISER	

PT-A-054-01

Ver.001				LCM包裝規格書	Approve	Check	Contact
				LCM Packaging Specifications	Rex	Clare	Lauren
Documents NO.	PKG-PH800480T032-ZHA			(For Tray)			

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

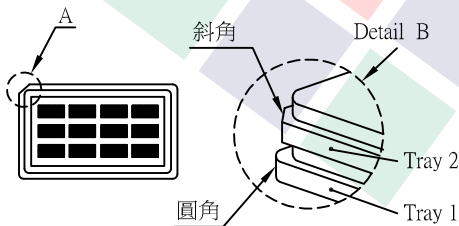| No.	Item	Model	Dimensions (mm)	1Pcs Weight	Quantity	Total Weight
1	成品 (LCM)	PH800480T032-ZHA	164.4X105.9X5.7	0.1853	48	8.8944
2	多層薄膜(1)POF	OTFILM0BA03ABA	19"X350X0.015	——	6	——
3	TRAY 盤 (2)Tray	TYSG000000490	352 X 260 X 15.8	0.099	30	2.97
4	舒美墊(3) EPE	FOAM000000047	350 X 255 X 5	0.011	6	0.066
5	舒美墊(4) EPE	FOAM000000091	160X 118 X 1	0.0005	96	0.048
6	內盒(5)Product Box	BX36627063ABBA	383 X 270 X 66	0.182	6	1.092
7	保利龍板(6)Polylon board	OTPLB00PL08ABA	550 X 393 X 20	0.0284	2	0.0568
8	外紙箱(7)Carton	BX57041027CCBA	570 X 410 X 265	1.0	1	1.0
9						

2.一 整箱總重量 (Total LCD Weight in carton) :　14.13　Kg±10%

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

(1)LCM quantity per box : no per tray 　2　 x no of tray 　4　 = 　8　

(2)Total LCM quantity in carton : quantity per box 　8　 x no of boxes 　6　 = 　48　

(4)EPE
成品 (LCM)
Use empty tray 空 盤
Put products into the tray
LCM
Tray stacking
A
B

(1)多層薄膜 POF
(2)TRAY 盤 Tray
(3)EPE
(5)內盒 Product Box

(6)保利龍板 Polylon board
(6)保利龍板 Polylon board
(7)外紙箱 Carton

特　記　事　項 (REMARK)

A
斜角
Detail B
Tray 2
圓角
Tray 1
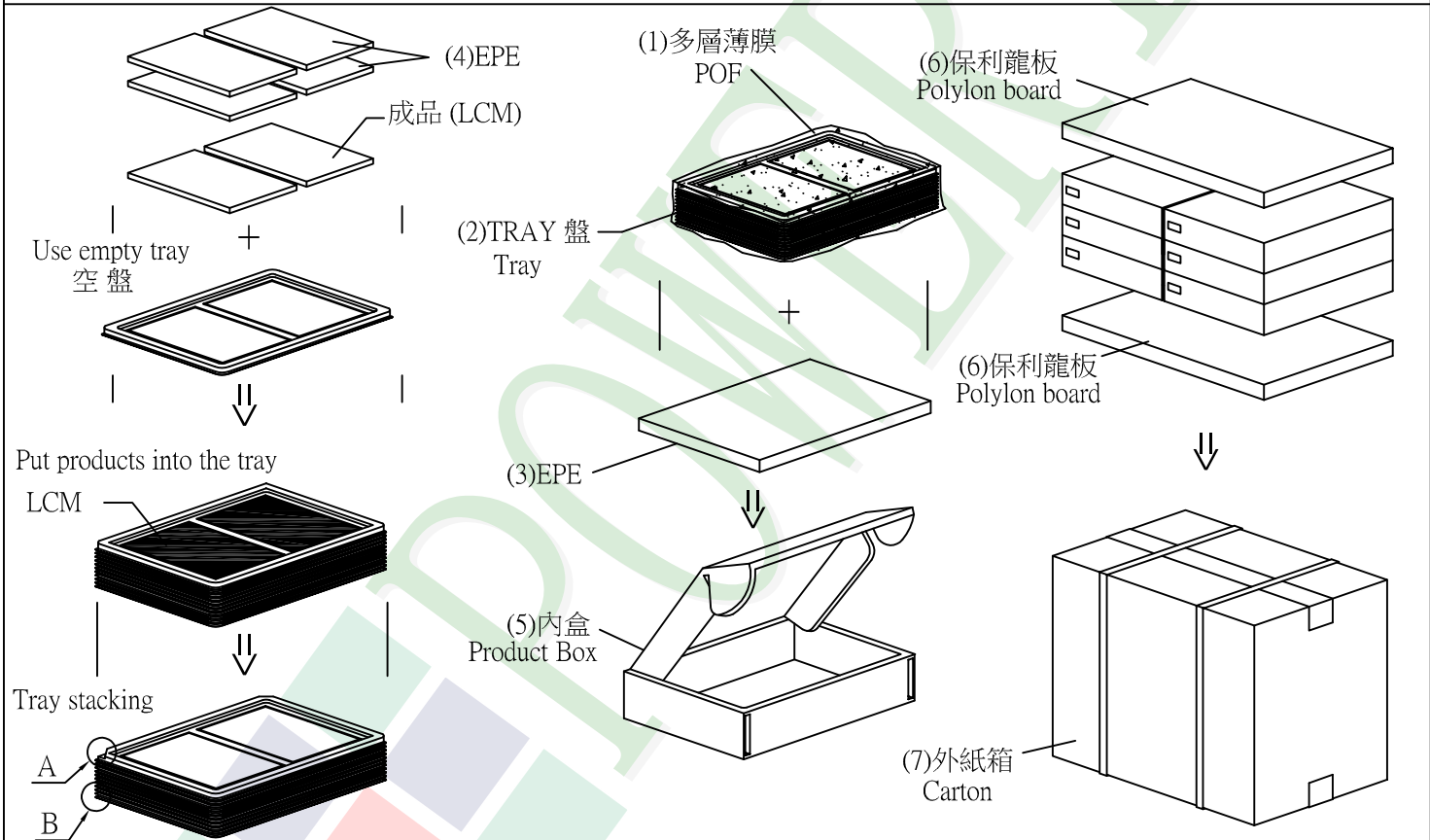
4.TRAY盤相疊時,需旋轉180度,請詳見B視圖
　Rotate tray 180 degrees and place on top of stack.
　Check the tray stack using Fig. B.

POWERTIP TECH. CORP.

DATA MODUL

ALL TECHNOLOGIES. ALL COMPETENCIES. ONE SPECIALIST.

DATA MODUL AG

Landsberger Straße 322
DE-80687 Munich
Phone: +49-89-56017-0

DATA MODUL WEIKERSHEIM GMBH

Lindenstraße 8
DE-97990 Weikersheim
Phone: +49-7934-101-0

More information and worldwide locations can be found at

www.data-modul.com