






SPECIFICATIONS

CUSTOMER : _____
MODEL NO. : **GFT043HA480272Y**
VERSION : **E**
DATE : **2023.03.09**
CERTIFICATION : **ROHS**

Customer Sign	Approved By	Prepared By	Prepared By
			

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Revision Record

Data(y/m/d)	Ver.	Description	page
2011.02.14	A	Specification released	
2015.11.23	B	Modify Reliability Test time	21
2017.07.28	C	修改公司抬頭、格式統一	
2017.12.11	D	Add Package Drawing	
2023.03.09	E	更新公司抬頭認證圖示	



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1. General Specifications

No.	Item	Specification	Remark
1	LCD size	4.3 inch(Diagonal)	
2	Driver element	a-Si TFT active matrix	
3	Resolution	480 x 3(RGB) x 272	
4	Display mode	Normally White, Transmissive	
5	Dot pitch	0.066(W) x 0.198(H) mm	
6	Active area	95.04 (W) x 53.856(H) mm	
7	Module size	105.5(W) x 67.2(H) x 4.05(D) mm	Note 1
8	Surface treatment	Anti-Glare	
9	Color arrangement	RGB-stripe	
10	Interface	Digital	
11	Backlight Power consumption	0.558W(Typ.)	Note 2
12	Panel Power consumption	0.056W(Typ.)	Note 3
13	Weight	Weight 59 g (Typ.)	

Note 1: Refer to Mechanical Drawing.



2.Pin Assignment

2.1. TFT LCD Panel Driving Section

FPC Connector is used for the module electronics interface. The recommended model is “FH19SC-40S-0.5SH” manufactured by HIROSE.

Pin No.	Symbol	I/O	Function	Remark
1	VLED-	P	Power for LED backlight cathode	
2	VLED+	P	Power for LED backlight anode	
3	GND	P	Power ground	
4	VDD	P	Power voltage	
5	R0	I	Red data (LSB)	
6	R1	I	Red data	
7	R2	I	Red data	
8	R3	I	Red data	
9	R4	I	Red data	
10	R5	I	Red data	
11	R6	I	Red data	
12	R7	I	Red data (MSB)	
13	G0	I	Green data (LSB)	
14	G1	I	Green data	
15	G2	I	Green data	
16	G3	I	Green data	
17	G4	I	Green data	
18	G5	I	Green data	
19	G6	I	Green data	
20	G7	I	Green data (MSB)	
21	B0	I	Blue data (LSB)	



22	B1	I	Blue data	
23	B2	I	Blue data	
24	B3	I	Blue data	
25	B4	I	Blue data	
26	B5	I	Blue data	
27	B6	I	Blue data	
28	B7	I	Blue data (MSB)	
29	GND	P	Power ground	
30	CLK	I	Pixel clock	
31	DISP	I	Display on/off	
32	NC	-	No connection	
33	NC	-	No connection	
34	DE	I	Data Enable	
35	NC	-	No connection	
36	GND	P	Power ground	
37	X1	I/O	Right electrode – differential analog	
38	Y1	I/O	Bottom electrode – differential analog	
39	X2	I/O	Left electrode – differential analog	
40	Y2	I/O	Top electrode – differential analog	

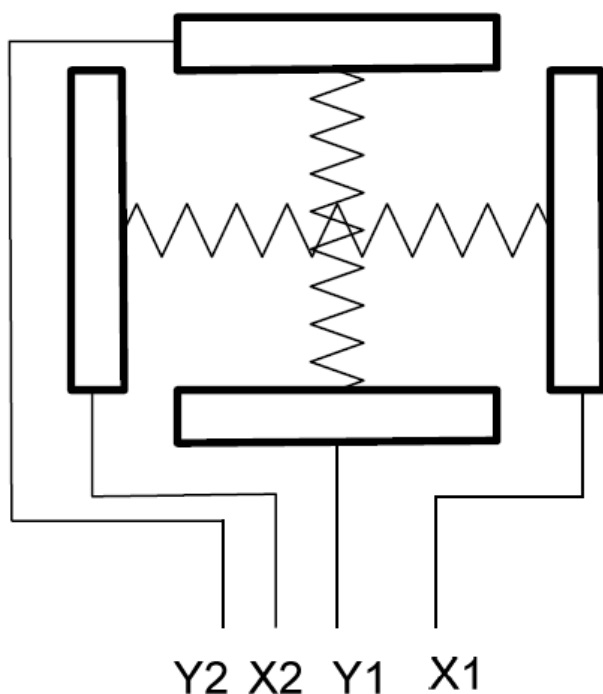
Note: I: input, O: output t, P: Power



2.2. Touch Screen Panel Section

Pin No.	Symbol	I/O	Function	Remark
1	X1	Right	Right electrode – differential analog	
2	Y1	Bottom	Bottom electrode – differential analog	
3	X2	Left	Left electrode – differential analog	
4	Y2	Top	Top electrode – differential analog	

Note: Touch Screen Panel Block



Top View



3. Operation Specifications

3.1. Absolute Maximum Ratings

Item	Symbol	Values		Unit	Remark
		Min.	Max.		
Power voltage	VCC	-0.5	5.0	V	
Input signal voltage	Logic input	-0.5	5.0	V	
Operation temperature	T _{OP}	-20	70	°C	Note 3,4
Storage temperature	T _{ST}	-30	80	°C	Note 3,4
LED Reverse Voltage	V _R	-	1.2	V	Each LED Note 2
LED Forward Current	I _F	-	25	mA	Each LED

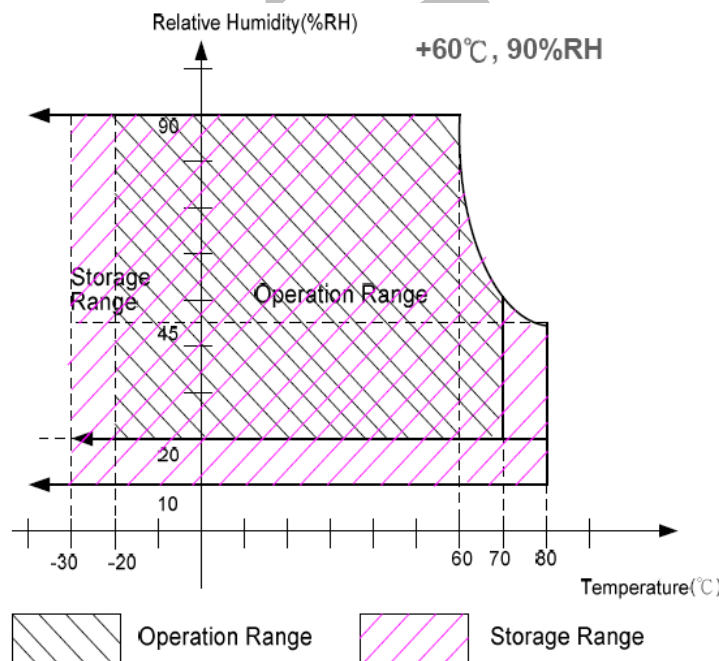
Note 1: The absolute maximum rating values of this product are not allowed to be exceeded at any times.

A module should be used with any of the absolute maximum ratings exceeded, the characteristics of the module may not be recovered, or in an extreme condition, the module may be permanently destroyed.

Note 2: V_R Conditions: Zener Diode 20mA

Note 3: 90% RH Max. (Max wet temp. is 60°C)

Maximum wet-bulb temperature is at 60°C or less. And No condensation (no drops of dew)



Note 4: In case of temperature below 0°C, the response time of liquid crystal (LC) becomes slower and the color of panel darker than normal one.



3.2. Typical Operation Conditions

Item	Symbol	Values			Unit	Remark
		Min.	Typ.	Max.		
Power voltage	V _{DD}	3.1	3.3	3.5	V	
Current for Driver	I _{VDD}	-	17	25	mA	V _{DD} =3.3V
Input logic high voltage	V _{IH}	0.8V _{DD}	-	V _{DD}	V	Note1
Input logic low voltage	V _{IL}	GND	-	0.2V _{DD}	V	

Note1: CLK, DE, R0~ R7, G0~ G7, B0~ B7.

3.3 Backlight Driving Conditions

Item	Symbol	Values			Unit	Remark
		Min.	Typ.	Max.		
Voltage for LED Backlight	V _L	25.2	27.9	31.5	V	Note2
Current for LED Backlight	I _L	18	20	22	mA	
LED life time	-	20,000	-	-	Hr	Note3

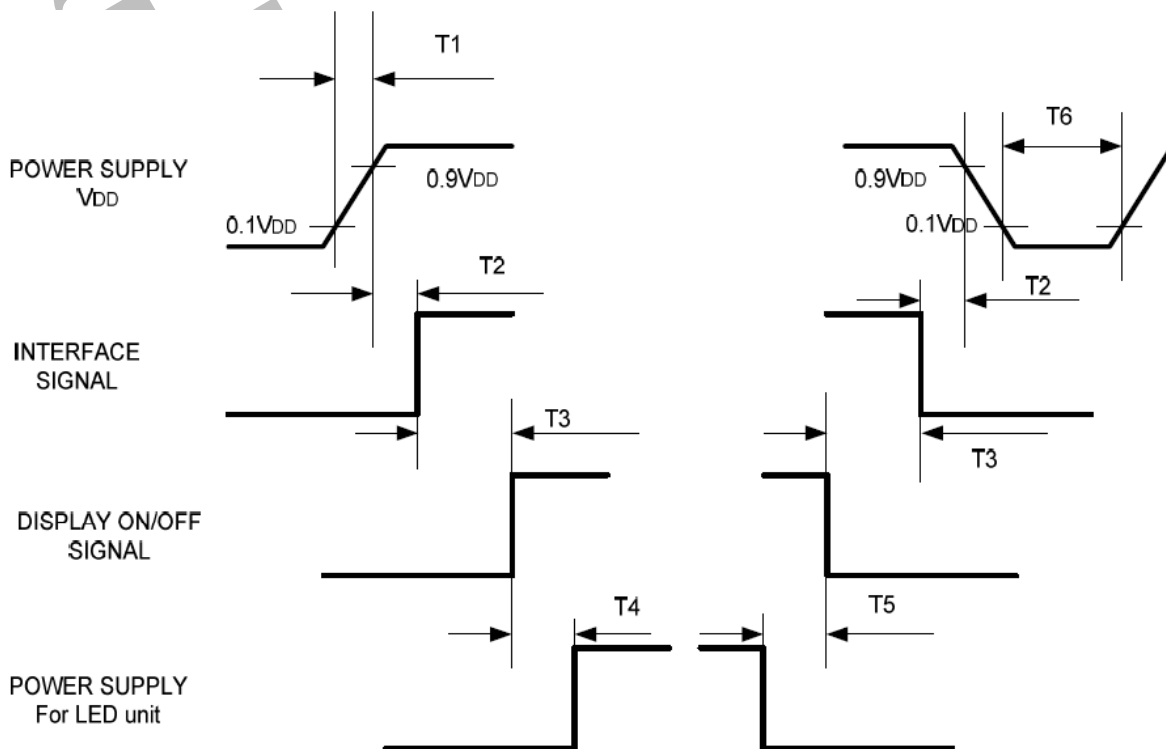
Note 1: The "LED life time" is defined as the module brightness decrease to 50% original brightness that the ambient temperature is 25°C and I_L=20mA. The LED lifetime could be decreased if operating I_L is larger than 20 mA.

Note 2: The LED Supply Voltage is defined by the number of LED at Ta=25°C and I_L=20mA.



3.4. Power Sequence

To prevent a latch-up or DC operation of the LCD module, the power on/off sequence should be as the diagram below.



Symbol	Specification	Symbol	Specification
T1	$0 \leq T1 \leq 10 \text{ msec}$	T4	$160 \text{ msec} \leq T4$
T2	$0 \leq T2 \leq 100 \text{ msec}$	T5	$160 \text{ msec} \leq T5$
T3	$0 \leq T3 \leq 200 \text{ msec}$	T6	$1 \text{ msec} \leq T6$



3.5. Timing Characteristics

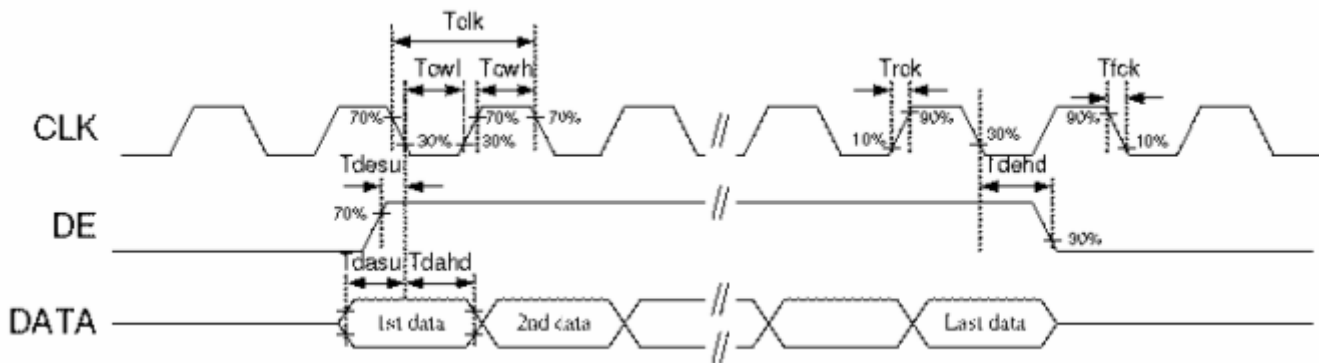
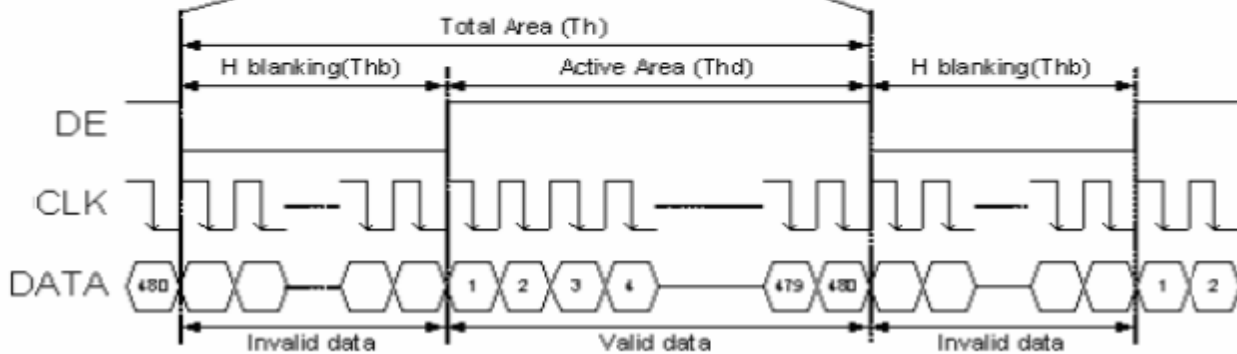
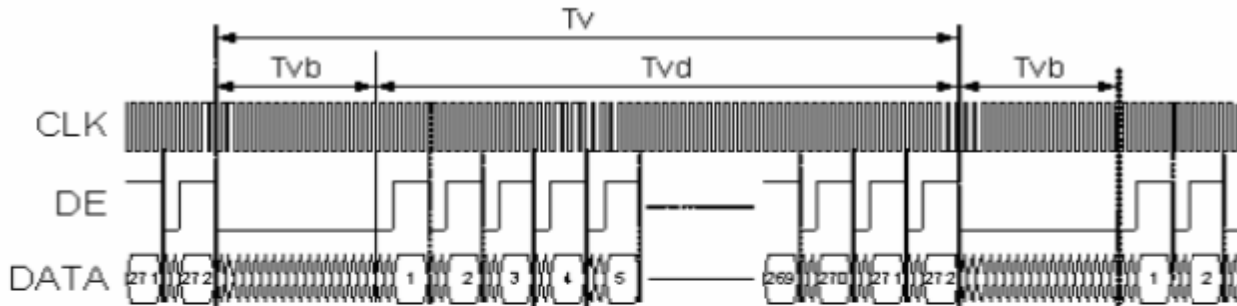
3.5.1. Timing Conditions

Parallel DE mode RGB input timing table

Parameter	Symbol	Values			Unit
		Min.	Typ.	Max.	
CLK frequency	fclk	7	9	12	MHz
DEV period time	Tv	277	288	400	H
DEV display area	Tvd	272			H
DEV blanking	Tvb	5	16	128	H
DEH period time	Th	520	525	800	CLK
DEH display area	Thd	480			CLK
DEH blanking	Thb	40	45	320	CLK
CLK cycle time	Tclk	83	110	143	ns
Clock width of high level	Tcwh	40	50	60	%
Clock width of low level	Tcwl	40	50	60	%
Clock rising time	trck		-	9	ns
Clock falling time	tfck		-	9	ns
Data Setup Time	tdesu	10	-	-	ns
Data Hold Time	tdahd	10	-	-	ns
DE Setup Time	tdesu	10	-	-	ns
DE Hold Time	tdehd	10	-	-	ns



3.5.2. Timing Diagram



400Y



4. Touch Screen Panel Specifications

4.1. Electrical Characteristics

Item	Values			Unit	Remark
	Min.	Typ.	Max.		
Linearity	-1.5	-	1.5	%	Analog X and Y directions
Terminal Resistance	300	-	1500	Ω	X
	100	-	900	Ω	Y
Insulation resistance	25	-	-	MΩ	DC 25V
Voltage	-	5	7	V	DC
Chattering	-	-	10	ms	100kΩ pull-up
Transparency	80	-	-	%	JIS K7105

Note: Avoid operating with hard or sharp material such as a ball point pen or a mechanical pencil except a polyacetal pen (tip R0.8mm or less) or a finger.

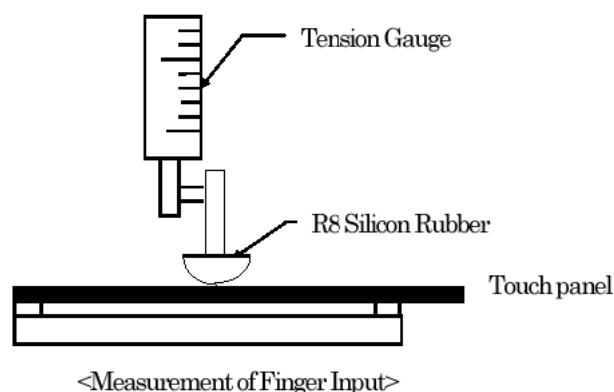
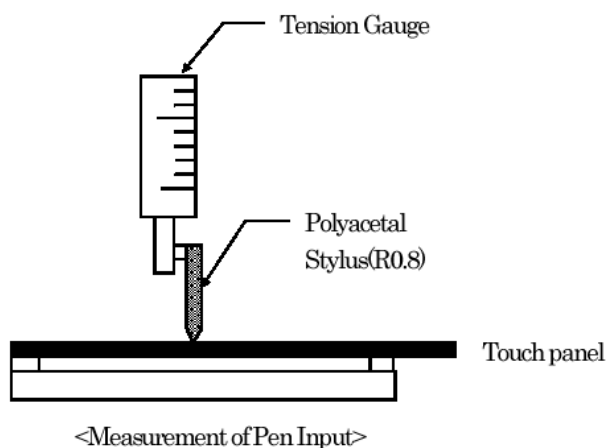


4.2. Mechanical & Reliability Characteristics

Item	Values			Unit	Remark
	Min.	Typ.	Max.		
Activation force	80	-	-	gf	Note 1
Durability-surface scratching	Write 100,000	-	-	characters	Note 2
Durability-surface pitting	1,000,000	-	-	touches	Note 3
Surface hardness	3	-	-	H	JIS K5400

Note 1: Activation force test condition

- (1) Input DC 5V on X direction, Drop off Polyacetal Stylus (R0.8), until output voltage stabilize ,then get the activation force °
- (2) R8.0mm Silicon rubber for finger Activation force test
- (3) Test point: 9 points



Note 2: Measurement for surface area.

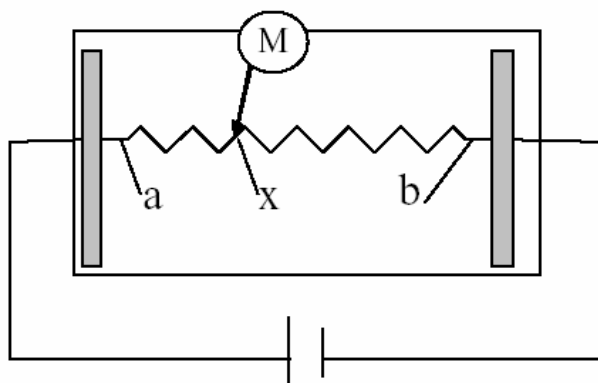
- Scratch 100,000 times straight line on the film with a stylus change every 20,000 times.
- Force: 250gf.
- Speed: 60mm/sec.
- Stylus: R0.8 polyacetal tip.

Note 3: Pit 1,000,000 times on the film with a R0.8 silicon rubber.

- Force: 250gf.
- Speed: 2times/sec.



4.3. Linearity Definition



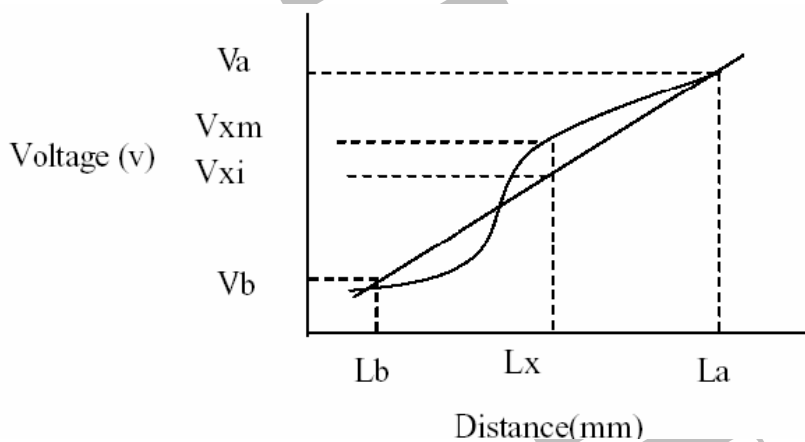
Va: maximum voltage in the active area of touch panel

Vb: minimum voltage in the active area of touch panel

X: random measuring point

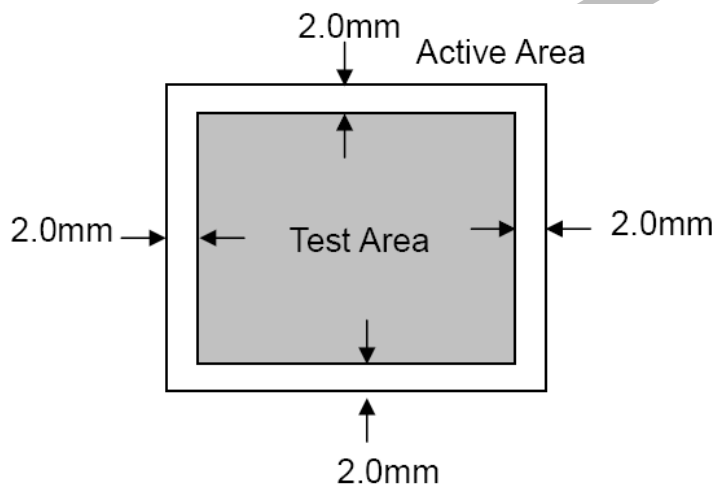
Vxm: actual voltage of Lx point

Vxi: theoretical voltage of Lx point



$$\text{Linearity} = \frac{|Vxi - Vxm|}{(Va - Vb)} * 100\%$$

Note: Test area is as follows and operation force is 150gf.

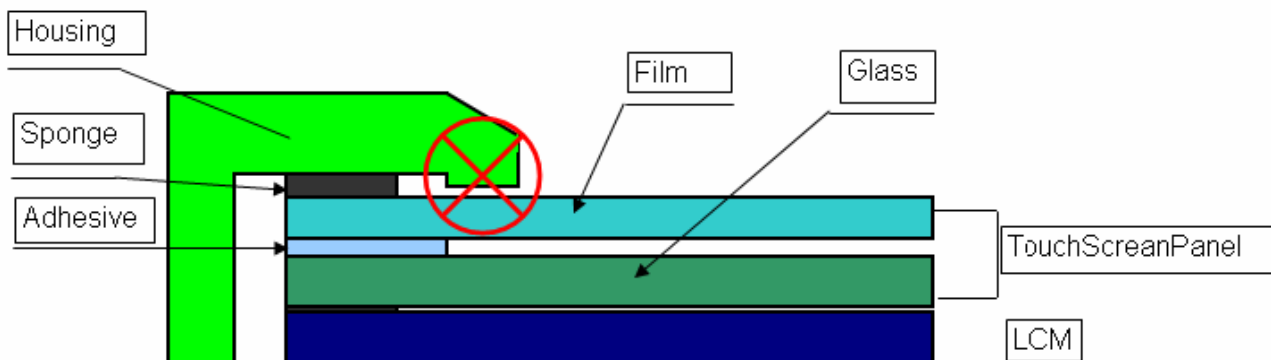




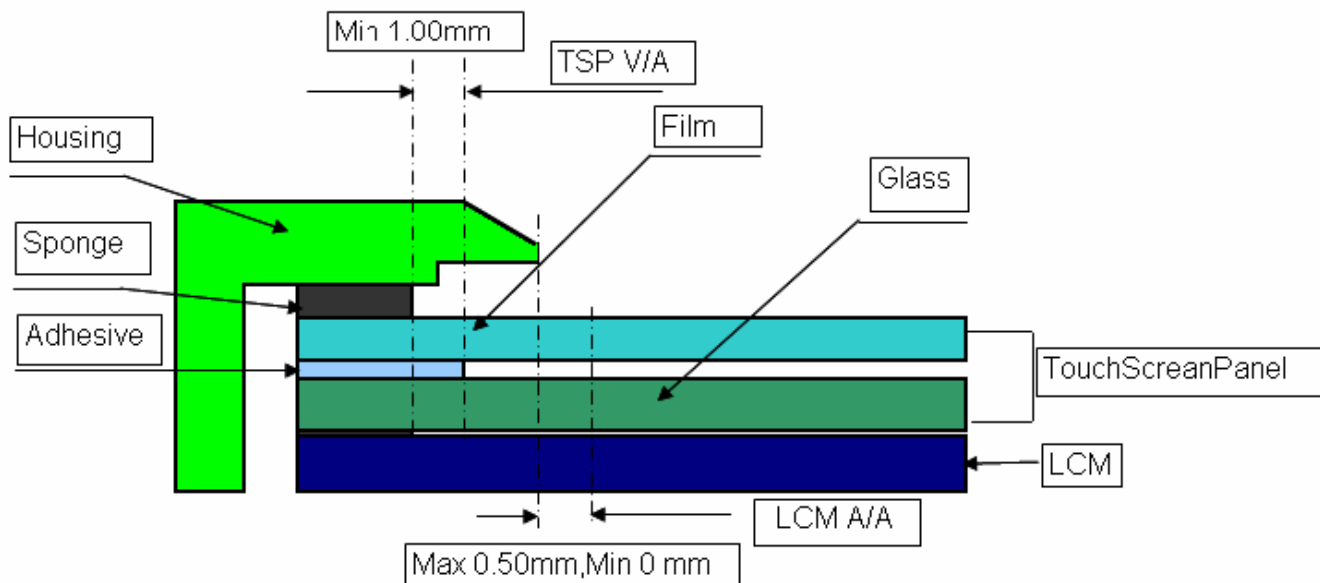
4.4. Housing design guide

Housing design follow as below

- 1) Avoid the design that housing overlap and press on the active area of the LCM
- 2) Give enough gap(over 0.5mm at compressed) between the housing and TSP to protect wrong operating.



- 3) Use a buffer material(Gasket) between the TSP and housing to protect damage and wrong operating
- 4) Avoid the design that buffer material overlap and press on the inside of TSP view area.





5. Optical Specifications

Item	Symbol	Condition	Values			Unit	Remark
			Min.	Typ.	Max.		
Viewing angle (CR≥10)	θ_L	$\Phi=180^\circ$ (9 o'clock)	60	70	-	degree	Note 1 Note 7
	θ_R	$\Phi=0^\circ$ (3 o'clock)	60	70	-		
	θ_T	$\Phi=90^\circ$ (12 o'clock)	40	50	-		
	θ_B	$\Phi=270^\circ$ (6 o'clock)	60	70	-		
Response time	T_{ON}	Normal $\theta=\Phi=0^\circ$	-	10	20	msec	Note 3
	T_{OFF}		-	15	30	msec	Note 3
Contrast ratio	CR		400	500	-	-	Note 4
Color chromaticity	W_x		0.26	0.31	0.36	-	Note 2
	W_y		0.28	0.33	0.38	-	Note 5 Note 6 Note 7
Luminance	L		350	400	-	cd/m ²	Note 6
Luminance uniformity	Y _u		70	75	-	%	Note 8

Test Conditions:

- $V_{DD}=3.3V$, $I_L=20mA$ (Backlight current), the ambient temperature is $25^\circ C$.
- The test systems refer to Note 2.



Note 1: Definition of viewing angle range

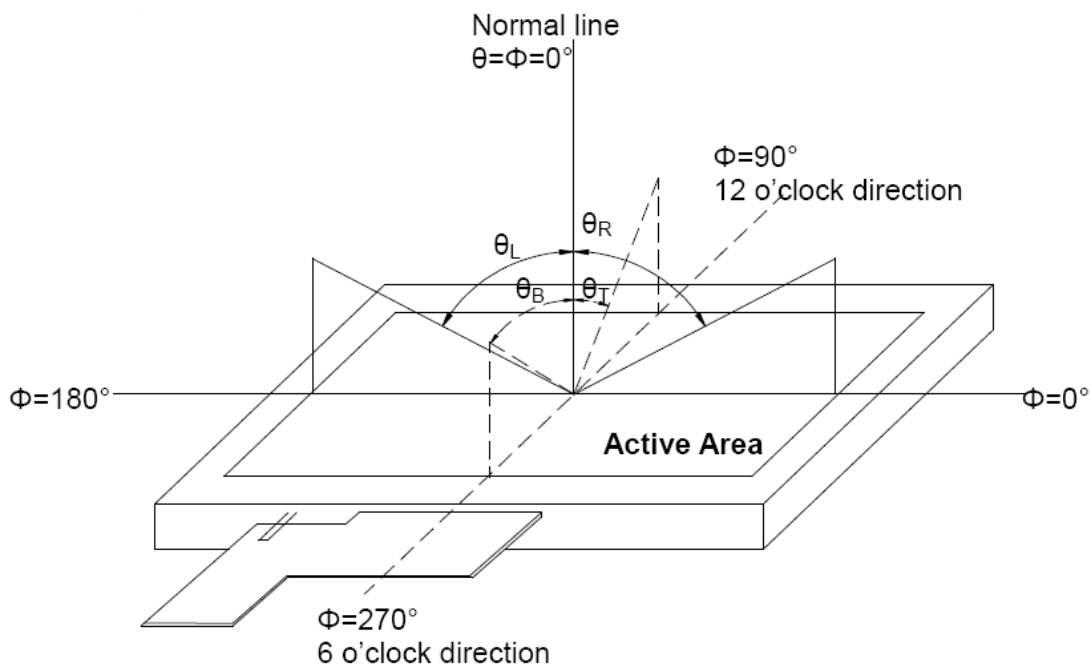


Fig. 4-1 Definition of viewing angle

Note 2: Definition of optical measurement system.

The optical characteristics should be measured in dark room. After 30 minutes operation, the optical properties are measured at the center point of the LCD screen. (Response time is measured by Photo detector TOPCON BM-7, other items are measured by BM-5A/Field of view: 1° /Height: 500mm.)

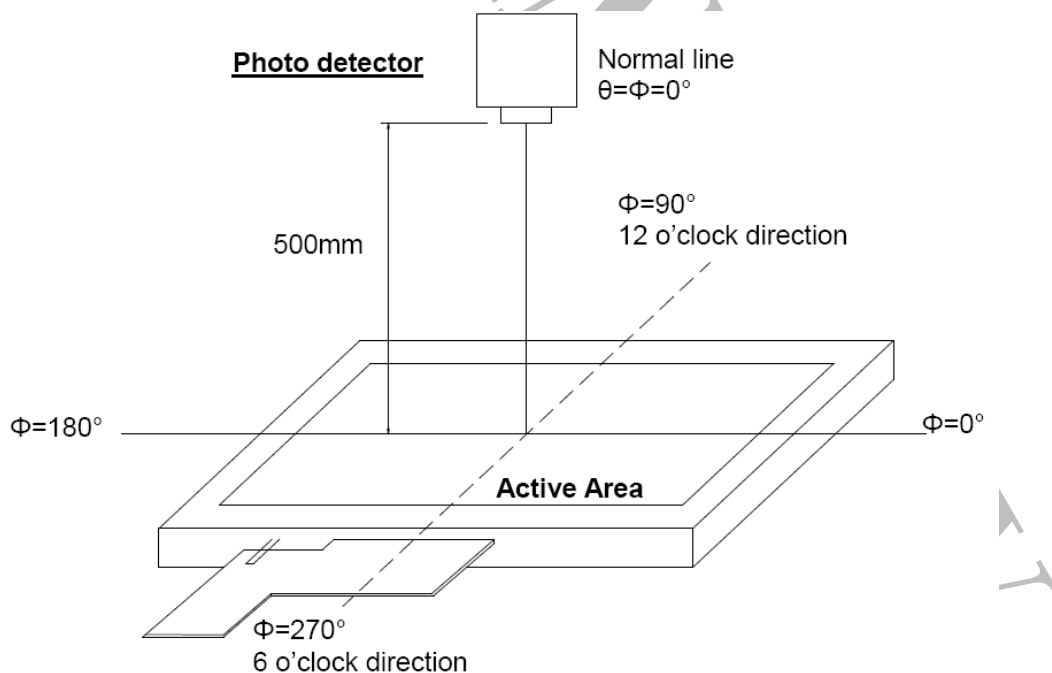


Fig. 4-2 Optical measurement system setup



Note 3: Definition of Response time

The response time is defined as the LCD optical switching time interval between "White" state and "Black" state. Rise time (T_{ON}) is the time between photo detector output intensity changed from 90% to 10%. And fall time (T_{OFF}) is the time between photo detector output intensity changed from 10% to 90%.

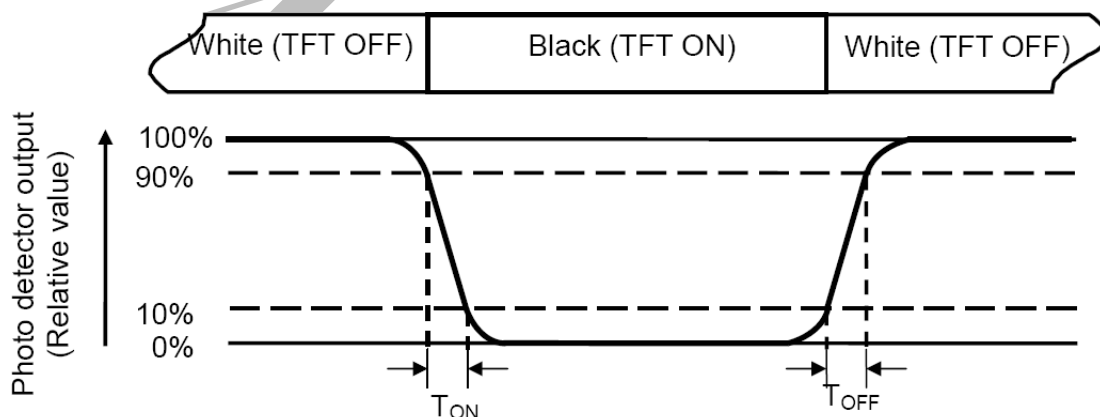


Fig. 4-3 Definition of response time

Note 4: Definition of contrast ratio

Luminance measured when LCD on the "White" state

$$\text{Contrast ratio (CR)} = \frac{\text{Luminance measured when LCD on the "White" state}}{\text{Luminance measured when LCD on the "Black" state}}$$

Note 5: Definition of color chromaticity (CIE1931)

Color coordinates measured at center point of LCD.

Note 6: All input terminals LCD panel must be ground while measuring the center area of the panel. The LED driving condition is $I_L=20\text{mA}$.

Note 7: The values shall be measured without Touch Screen Panel.



Note8: Definition of Luminance Uniformity

Active area is divided into 9 measuring areas (Refer to Fig. 4-4).Every measuring point is placed at the center of each measuring area.

$$\text{Luminance Uniformity (Yu)} = \frac{B_{\min}}{B_{\max}}$$

L-----Active area length W----- Active area width

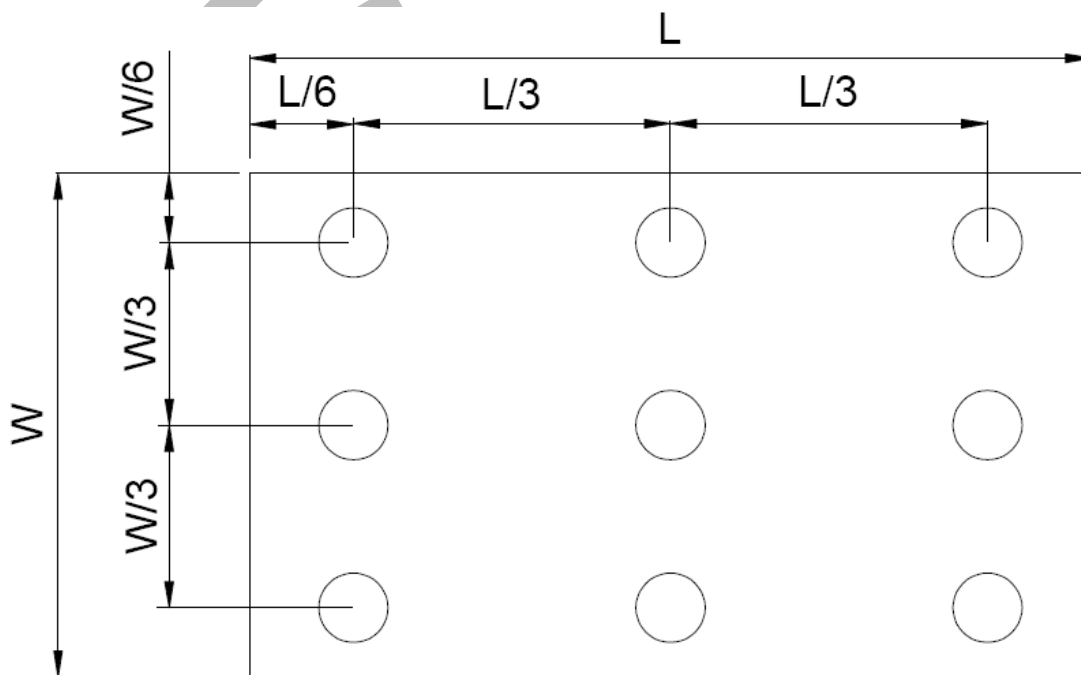


Fig. 4-4 Definition of measuring points

B_{\max} : The measured maximum luminance of all measurement position.

B_{\min} : The measured minimum luminance of all measurement position.



6. Reliability Test

NO.	ITEM	CONDITION		STANDARD	NOTE
1	High Temp. Storage	80°C	120 hrs	Appearance Without defect	
2	Low Temp. Storage	-30°C	120 hrs	Appearance Without defect	
3	High Temp. & High Humi. Storage	40°C 90% RH	120 hrs	Appearance Without defect	
4	High Temp. Operating Display	70°C	120 hrs	Appearance Without defect	
5	Low Temp. Operating Display	-20°C	120 hrs	Appearance Without defect	
6	Thermal Shock	-20°C, 30min. → 70°C, 30min. ↑ (1cycle)		Appearance Without defect	10 cycles

** Dissipation current, contrast and display functions

** Polarizing filter deterioration, other appearance defects

** The function test shall be conducted after 4hours storage at the normal temperature and humidity after remove from the test chamber.



7. General Precautions

7.1. Safety

Liquid crystal is poisonous. Do not put it in your mouth. If liquid crystal touches your skin or clothes, wash it off immediately by using soap and water.

7.2. Handling

1. The LCD panel is plate glass. Do not subject the panel to mechanical shock or to excessive force on its surface.
2. The polarizer attached to the display is easily damaged. Please handle it carefully to avoid scratch or other damages.
3. To avoid contamination on the display surface, do not touch the module surface with bare hands.
4. Keep a space so that the LCD panels do not touch other components.
5. Put cover board such as acrylic board on the surface of LCD panel to protect panel from damages.
6. Transparent electrodes may be disconnected if you use the LCD panel under environmental conditions where the condensation of dew occurs.
7. Do not leave module in direct sunlight to avoid malfunction of the ICs.

7.3. Static Electricity

1. Be sure to ground module before turning on power or operating module.
2. Do not apply voltage which exceeds the absolute maximum rating value.

7.4. Storage

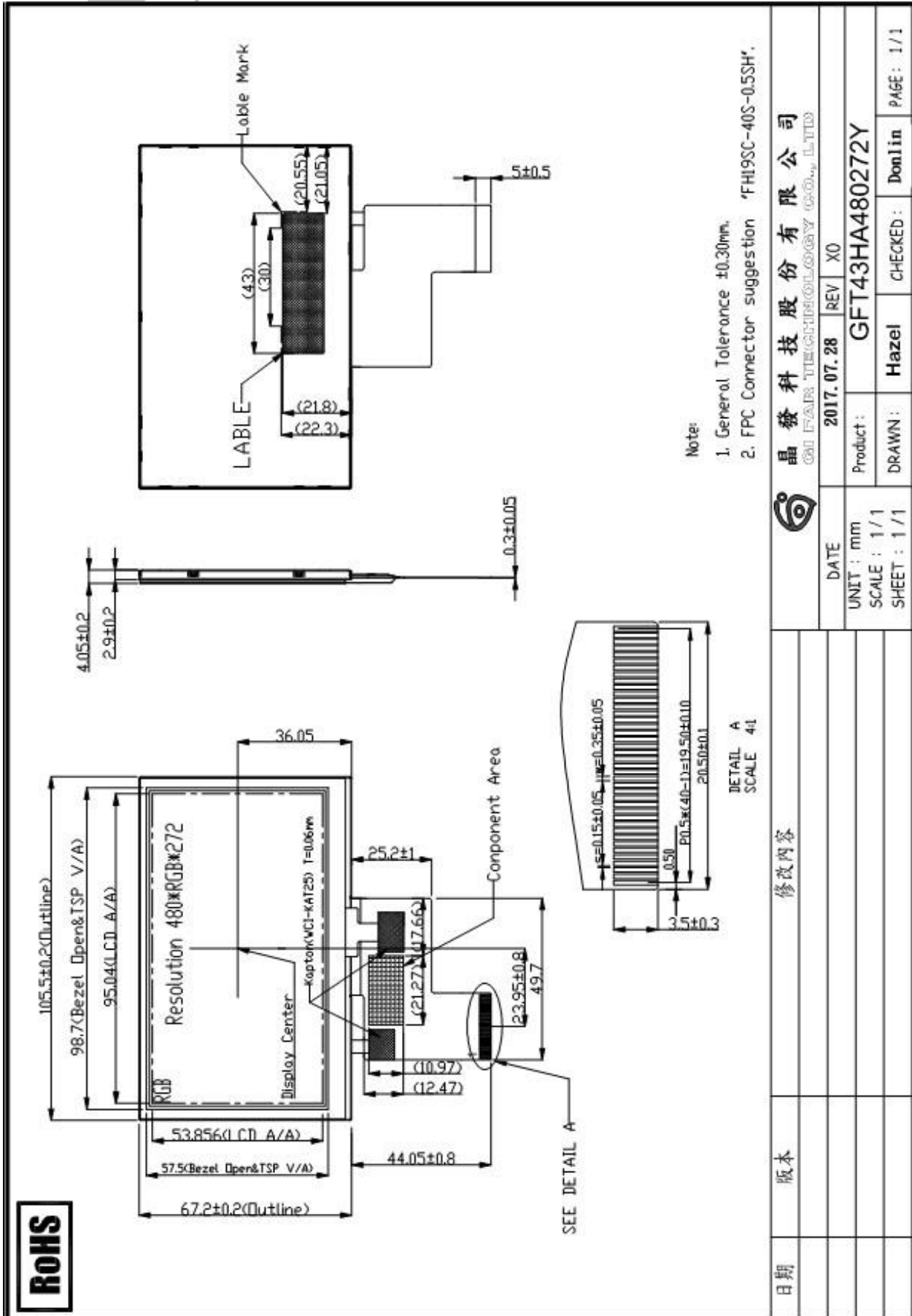
1. Store the module in a dark room where must keep at $25\pm 10^{\circ}\text{C}$ and 65%RH or less.
2. Do not store the module in surroundings containing organic solvent or corrosive gas.
3. Store the module in an anti-electrostatic container or bag.

7.5. Cleaning

1. Do not wipe the polarizer with dry cloth. It might cause scratch.
2. Only use a soft sloth with IPA to wipe the polarizer, other chemicals might permanent damage to the polarizer.



8. Mechanical Drawing



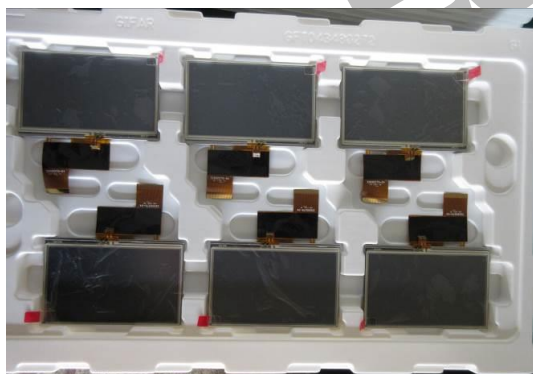


9. PACKAGE INFORMATION

1	1 Tray	:	6 pcs (modules)
2	1 stack	:	10 tray +1 Cover tray
3	1 Carton	:	(1 Cover tray + 10 tray) 3 stack
4	Total pcs	:	1 Carton (6pcs * 10tray * 3 stack) = 18 pcs
5	Carton size = NO. 17	:	495*315*435mm
6	Net weight	:	10.0 KG
7	Gross weight	:	14.5 KG

** Packaging information **

- 1 Tray = 6 pcs



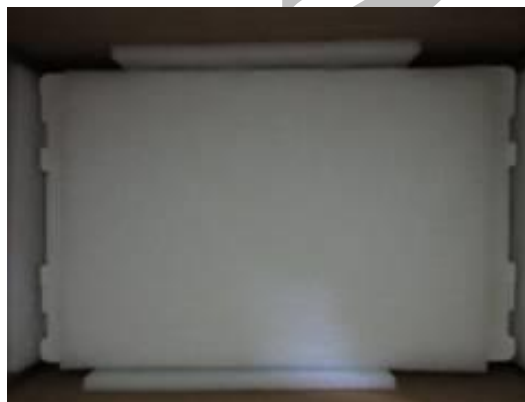
- 1 stack=10 tray+1 Cover tray

**Each layer of tray should be staggered stacked



WW

- 1 Carton = 3 stack, Total pcs = 180 pcs



出貨檢驗標準書
Shipping inspection standard

核准 Approved by	審核 Checked by	作成 Made by
ANDY	JACKY	RUBY

1.目的 Purpose :

規範出貨產品之檢驗項目及判斷標準，確保產品出貨能滿足客戶要求。

Standardize the inspection items and judgment standards to ensure the products that shipped out can meet customer's requirements.

2.範圍 Area :

適用於出廠之所有產品。

Applicable to all products shipped from the factory.

3.名詞解釋 Explanation of terms :

3-1 主要缺陷：亦會造成功能缺失或嚴重外觀缺陷。

Major Defects: It also causes loss of function or serious appearance defects.

3-2 次要缺陷：稍有缺陷但不影響客戶使用。

Minor defect: Slightly defective but does not affect customer use.

4.檢驗體制 Inspection system :

4-1 抽樣計劃：依 ANSI/ASQ Z1.4 一般檢驗水準 II 之 正常檢驗一次抽驗方案。

Sampling plan: According to ANSI/ASQ Z1.4 general inspection level II the normal inspection one-time sampling plan.

4-2 允收水準 Acceptable Level : (AQL)

主要缺陷 Major defect : 0.4 %

次要缺陷 Minor defect : 0.65 %

5.檢驗條件 Inspection conditions :

5-1 使用相關之檢測儀器及測試、量測工具。

Use relevant testing instrument, testing and measuring tools .

5-2 環境要求：其條件需控制在常溫下 $23^{\circ}\text{C}\pm 3^{\circ}\text{C}$ 及溼度 70%RH 以下。

Environmental requirements: The conditions should be controlled at room temperature $23^{\circ}\text{C}\pm 3^{\circ}\text{C}$ and humidity below 70%RH.

5-3 外觀檢驗：須在 $380\pm 20\%$ LUX 的白色日光燈下，其目視距離需於產品離 30 ± 5 cm 檢驗。

Appearance inspection: Under the white fluorescent lamp of $380\pm 20\%$ LUX , the visual distance shall be checked above the product 30 ± 5 cm.

5-4 電性測試 Electrical Testing :

5-4-1 有背光之產品需關燈並在 $5\sim 300\text{Lux}\pm 3\%$ 下檢驗。

The products with backlight should be tested at $5\sim 300\pm 3\%$ Lux.

5-4-2 無背光之產品需開燈並在 $60\sim 300\text{Lux}\pm 3\%$ 白色日光燈下檢驗。

Products without backlight need to be turned on and tested under $60\sim 300 \pm 3\%$ LUX white fluorescent lamps .

5-5 檢查視角依產品視角方向。

Check the viewing angle according to the product viewing angle.

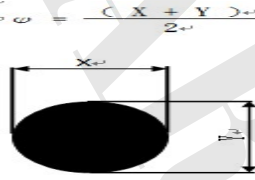
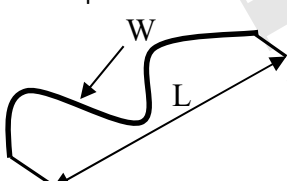
5-6 其不良現象檢視區域 Bad phenomenon View area

5-6-1 適用種類 Applicable category : COB、TFT



5-6-2 適用種類 Applicable category : COG、TAB、TN



種類 Category		TFT																
編號 No.	檢驗項目 Item	檢驗內容及判定標準 Inspection Content & Standard	區域 Zone	類別 Category	缺陷等級 Level													
1	點類(一) Dot (1)	氣泡...圓狀 Bubble ...round shape 	兩點距離須超過 5 mm Two points have to be ≥ 5 mm <table border="1"> <tr> <th>ϕ (mm)</th> <th>允收數 Acceptance Qty</th> </tr> <tr> <td>$\phi \leq 0.25$</td> <td>無視 Ignore</td> </tr> <tr> <td>$0.25 < \phi \leq 0.5$</td> <td>3</td> </tr> <tr> <td>$\phi > 0.5$</td> <td>0</td> </tr> </table>	ϕ (mm)	允收數 Acceptance Qty	$\phi \leq 0.25$	無視 Ignore	$0.25 < \phi \leq 0.5$	3	$\phi > 0.5$	0	A	外觀 Appearance	次要 Minor AQL0.65%				
ϕ (mm)	允收數 Acceptance Qty																	
$\phi \leq 0.25$	無視 Ignore																	
$0.25 < \phi \leq 0.5$	3																	
$\phi > 0.5$	0																	
2	線類 Line	刮傷、毛屑...等線狀 Scratch、Fiber.. and other linear shape. 	<table border="1"> <tr> <th>L (mm)</th> <th>W (mm)</th> <th>允收數 Acceptance Qty</th> </tr> <tr> <td>--</td> <td>$W \leq 0.01$</td> <td>無視 Ignore</td> </tr> <tr> <td>$L \leq 3$</td> <td>$0.01 < W \leq 0.05$</td> <td>3</td> </tr> <tr> <td>$L > 3$</td> <td>$W > 0.05$</td> <td>0</td> </tr> </table>	L (mm)	W (mm)	允收數 Acceptance Qty	--	$W \leq 0.01$	無視 Ignore	$L \leq 3$	$0.01 < W \leq 0.05$	3	$L > 3$	$W > 0.05$	0	A	外觀 Appearance	次要 Minor AQL0.65%
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$L \leq 3$	$0.01 < W \leq 0.05$	3																
$L > 3$	$W > 0.05$	0																
3	FPC 外觀 FPC Appearance	※ FPC 上刺傷導致線路無法導通 拒收 Stabbing on the FPC causes the line to fail to conduct Reject ※ FPC 上髒污或是殘留異物以致線路無法導通 拒收 Dirty or residual foreign matter on the FPC makes the circuit unable to conduct Reject ※ FPC 直角折痕、斷裂 拒收 FPC right-angle crease and fracture Reject	C	外觀 Appearance	次要 Minor AQL0.65%													
4	點類(二) Dot (2)	<table border="1"> <tr> <th>類型 Type</th> <th>允收數 Acceptance Qty</th> </tr> <tr> <td>亮點 Highlights</td> <td>$N \leq 2$</td> </tr> <tr> <td>暗點 dark spot</td> <td>$N \leq 3$</td> </tr> </table> ※ 缺陷點面積暫全點 1/2 則為一個缺陷點 Temporarily full area of defect point 1/2 is a defect point ※ 亮點：於黑畫面中使用 2% ND Filter 遮蓋須不可見 Highlights: Use 2% ND Filter in a black screen to cover up invisible ※ 暗點：在純紅、綠、藍模式下判定 Dark spot: judged in pure red, green and blue mode	類型 Type	允收數 Acceptance Qty	亮點 Highlights	$N \leq 2$	暗點 dark spot	$N \leq 3$	AA	電訊 Electronics	次要 Minor AQL0.65%							
類型 Type	允收數 Acceptance Qty																	
亮點 Highlights	$N \leq 2$																	
暗點 dark spot	$N \leq 3$																	

5	無動作 No reaction	顯示畫面一直處於起始畫面而無法進行切換 拒收 The display (view area) always shows in the initial screen and can't be switched to others. Reject	AA	電訊 Electronics	主要 Major AQL 0.4%
6	無畫面 No display	通電後，完全無任何畫面顯示 拒收 After connecting to the power, there is no display. Reject	AA	電訊 Electronics	主要 Major AQL 0.4%
7	斷線 Broken line	顯示畫面中少直、橫線 拒收 There is a lack of vertical or horizontal lines in the view area. Reject	AA	電訊 Electronics	主要 Major AQL 0.4%
8	I CON	顯示畫面缺少部份顯示圖案 拒收 Lack of partial ICON in the view area. Reject	AA	電訊 Electronics	主要 Major AQL 0.4%
9	深淺不一 Color difference	顯示畫面的對比，比其他顯示深或淺並依電氣規格(VOP)值判定 The contrast of display is obviously lighter or darker than others and according to the VOP value in the electronics specification. 拒收或與客端簽訂限度樣 Reject or inspect according to the golden sample	AA	電訊 Electronics	次要 Minor AQL0.65%
10	畫面異常 Abnormal screen	通電後畫面出現未定義之電訊不良現象 拒收 After connecting to the power, there is a undefined electronics appearance showing in the view area. Reject	AA	電訊 Electronics	主要 Major AQL 0.4%
11	牛頓環 Newton ring	點亮後目視有環、圓或曲線狀 拒收 There are rings, circles or curves visually after lighting Reject	A	電訊 Electronics	次要 Minor AQL0.65%
12	背光色不均 Uneven color of backlight	※ 點亮後 LED 有明暗不均現象依其均勻度判定 拒收 After lighting LEDs have brightness and darkness uneven the determined according to its uniformity. Reject ※ 點亮後 LED 色澤不一致 拒收 LED color is inconsistent after lighting Reject	A	電訊 Electronics	次要 Minor AQL0.65%
13	亮度不足 Lack of brightness	波長、色座標、輝度與圖面標示定義不符 拒收 Wave length, chromatic coordinates, brightness don't correspond to the definition of the drawing. Reject	A	電訊 Electronics	主要 Major AQL 0.4%

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14	觸控 Touch	測試時無法點觸或劃，其靈敏度判定則依 SPEC 上定義判定 拒收 It cannot be touched or swiped during the test. Its sensitivity is judged according to the definition on SPEC Reject	A	電訊 Electronics	主要 Major AQL 0.4%
15	尺寸量測 Size Measurement	未依圖面上標示 拒收 No correspond to the indication on the drawing. Reject	ALL	外觀 Appearance	主要 Major AQL 0.4%
16	其他 Other	如發現有上述未定義之不良則與客端簽訂限度樣 If there is another undefined defective situation. It will be listed as others. The inspection standard is according to the golden sample.	ALL	電訊 Electronics 外觀 Appearance	次要 Minor AQL0.65%