



Product Specification

Customer: _____
Model Name: H043IWQ40T2502B-T
Date: _____
Version: _____

Preliminary Specification

Final Specification

For Customer's Acceptance

Approved by	Comment

Approved by	Reviewed by	Prepared by



深圳市勋瑞光电科技有限公司

Xunrui photoelectric technology (shenzhen) CO.,LTD.

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2 General Specifications

	Feature	Spec
Characteristics	LCD Size	4.3 inch
	Display Format	480 (RGB) × 272
	Interface	24-bit RGB
	Color Depth	16.7M
	Technology type	a-Si
	Display Spec.	0.198 x 0.198
	Display Mode	Normally White
	Driver IC	ILI6485
	Surface Treatment	HC
	Viewing Direction	12 O'clock
	Gray Viewing Direction	6 O'clock
Mechanical	LCM (W x H x D) (mm)	105.50*67.20*4.20
	Active Area(mm)	95.04 x 53.86
	With /Without TSP	With TSP
	Weight (g)	TBD
	LED Numbers	7 LEDs

Note 1: Viewing direction is following the data which measured by optics equipment.

Note 2: Requirements on Environmental Protection: RoHS

Note 3: LCM weight tolerance: +/- 5%



3 Input/Output Terminals

No.	Symbol	Description
1	LEDK	Backlight LED Cathode
2	LEDA	Backlight LED Anode.
3	GND	System Ground
4	VDD	Power supply for logic operation
5~12	R0~R7	Data bus
13~20	G0~G7	Data bus
21~28	B0~B7	Data bus
29	GND	System Ground
30	DCLK	Pixel clock signal
31	DISP	Display on/off control
32	HSYNC	Horizontal Sync signal
33	VSYNC	Vertical Sync signal
34	DE	Data Enable
35	NC	No connect
36	GND	System Ground
37	NC/XR	TP pin XR
38	NC/YD	TP pin YD
39	NC/XL	TP pin XL
40	NC/YU	TP pin YU



4 Absolute Maximum Ratings

Item	Symbol	MIN	MAX	Unit	Remark
Supply Voltage	V_{DD}	-0.3	4.6	V	
Input Signal Voltage	V_{in}	-0.3	$V_{DD}+0.3$	V	
Logic Output Voltage	V_{OUT}	-0.3	$V_{DD}+0.3$	V	
Operating Temperature	T_{OPR}	-20	70	°C	
Storage Temperature	T_{STG}	-30	80	°C	

5 Electrical Characteristics

5.1 Operating conditions:

Parameter	Symbol	MIN	TYP	MAX	Unit	Remark
Power Voltage	V_{DD}	3.0	3.3	3.6	V	
Digital Operation Current	I_{DD}	-	20	-	mA	
Gate On Power	V_{GH}	10.16	15	18	V	
Gate Off Power	V_{GL}	-13	-10	-7	V	
Vcom Voltage	V_{com}	-2	-	-0.2	V	



5.2 Driving Backlight

Item	Symbol	MIN	TYP	MAX	Unit	Remark
LED current	I_F	-	20	25	mA	Note 1 Note 2,3
Power Consumption			448	525	mW	
LED Voltage	V_F	-	22.4	23.1	V	
LED Life Time	W_{BL}	50000	-	-	Hr	

Note 1 : There are 1 Groups LED



Note 2 : $T_a = 25^\circ\text{C}$

Note 3 : Brightness to be decreased to 50% of the initial value



6 Interface Timing

6.1 Parallel RGB Data Format

480RGB X 272 Resolution Timing Table							
Item	Symbol	Min.	Typ.	Max.	Unit	Remark	
DCLK Frequency	Fclk	8	9	12	MHz		
DCLK Period	Tclk	125	111	83	ns		
HSYNC	Period Time	Th	487	531	598	DCLK	
	Display Period	Thdisp	-	480	-	DCLK	
	Back Porch	Thbp	3	43	43	DCLK	By H_Blanking setting
	Front Porch	Thfp	4	8	75	DCLK	
	Pulse Width	Thw	2	4	75	DCLK	
VSYNC	Period Time	Tv	276	292	321	H	
	Display Period	Tvdisp	-	272	-	H	
	Back Porch	Tvbp	2	12	12	H	By V_Blanking setting
	Front Porch	Tvfp	2	8	37	H	
	Pulse Width	Tvw	2	4	37	H	

Note: 1.It is necessary to keep Tvbp =12 and Thbp =43 in sync mode. DE mode is unnecessary to keep it.

2.Thbp+Thfp >=7

RGB Mode Selection Table

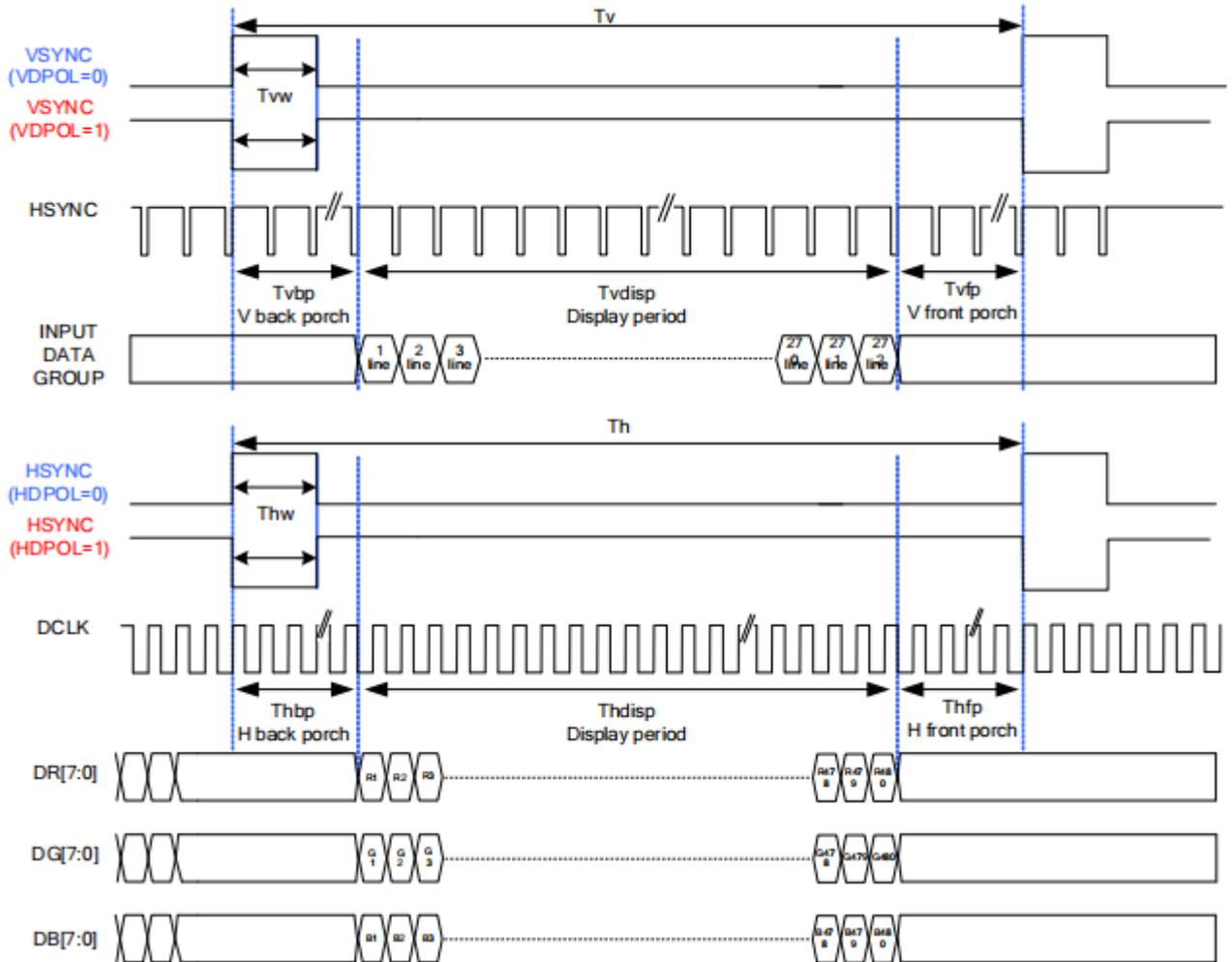
RGB Mode	DCLK	HSYNC	VSYNC	DE	DR[0:7]	DG[0:7]	DB[0:7]
Parallel RGB SYNC-DE Mode	Input	Input	Input	Input	Input	Input	Input
Parallel RGB SYNC Mode	Input	Input	Input	VSSD	Input	Input	Input
Parallel RGB DE Mode	Input	VSSD	VSSD	Input	Input	Input	Input
Serial RGB SYNC-DE Mode	Input	Input	Input	Input	VSSD	Input	VSSD
Serial RGB SYNC Mode	Input	Input	Input	VSSD	VSSD	Input	VSSD
Serial RGB DE Mode	Input	VSSD	VSSD	Input	VSSD	Input	VSSD



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6.2 SYNC Mode Timing Diagram

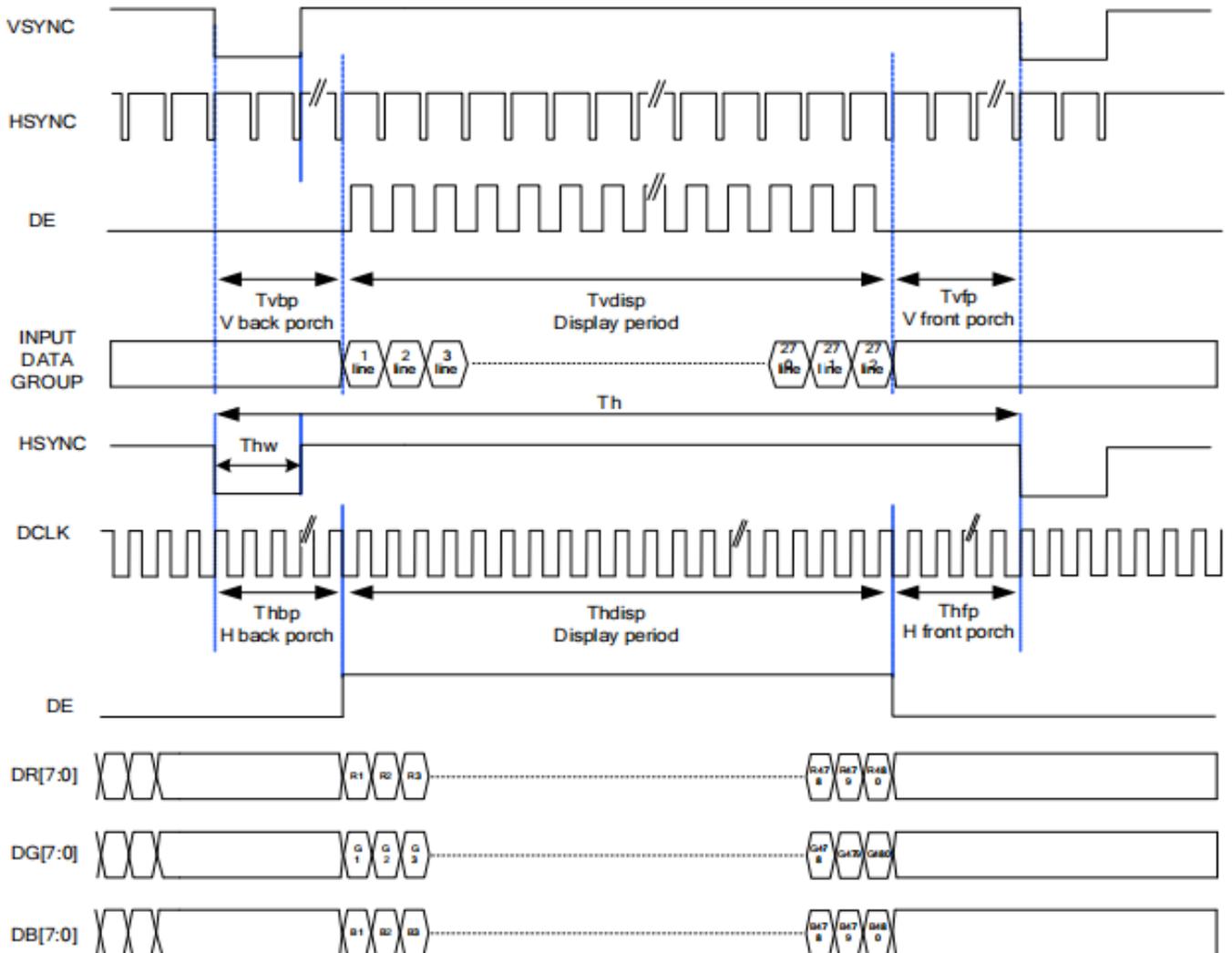




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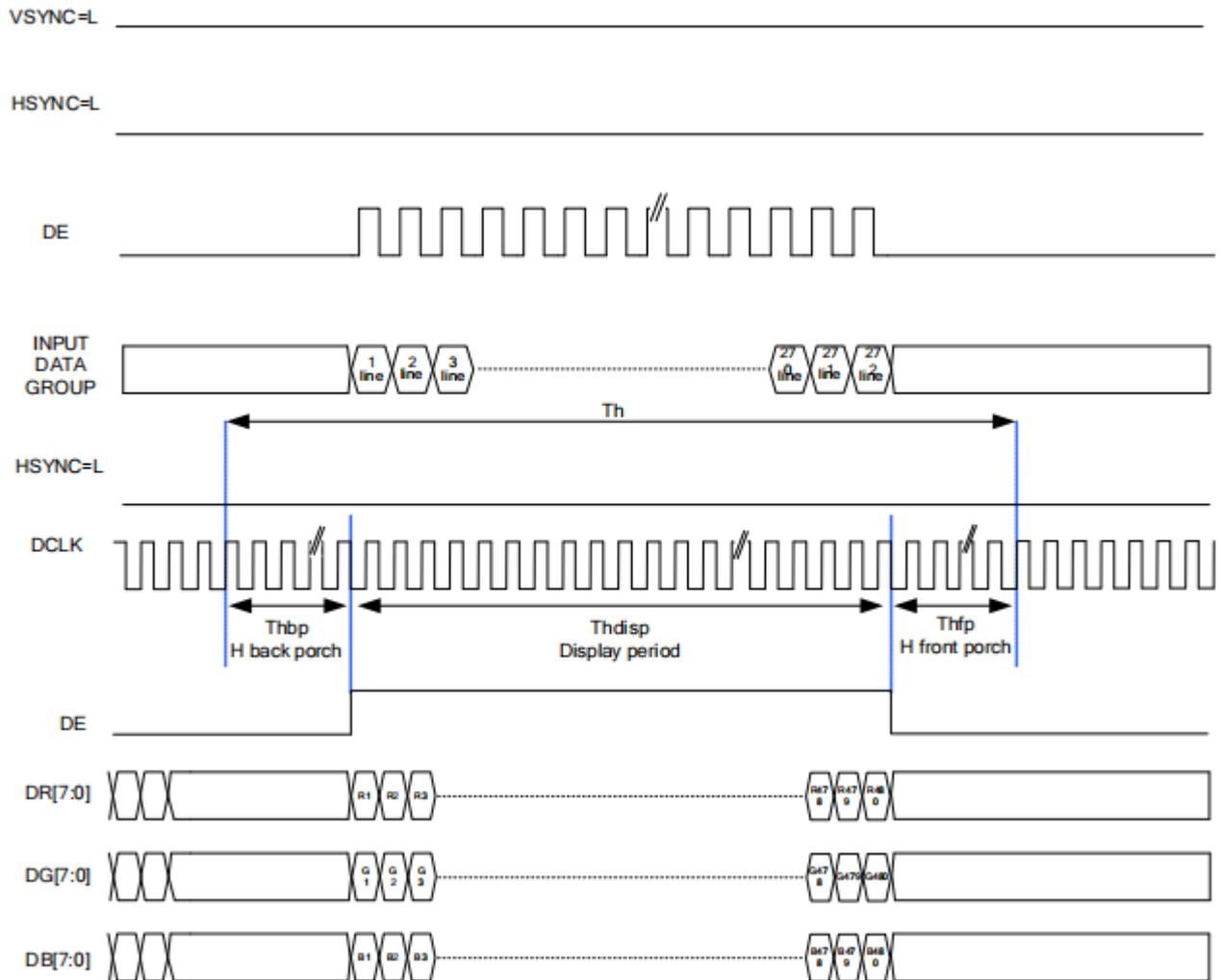
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6.3 SYNC-DE Mode Timing Diagram



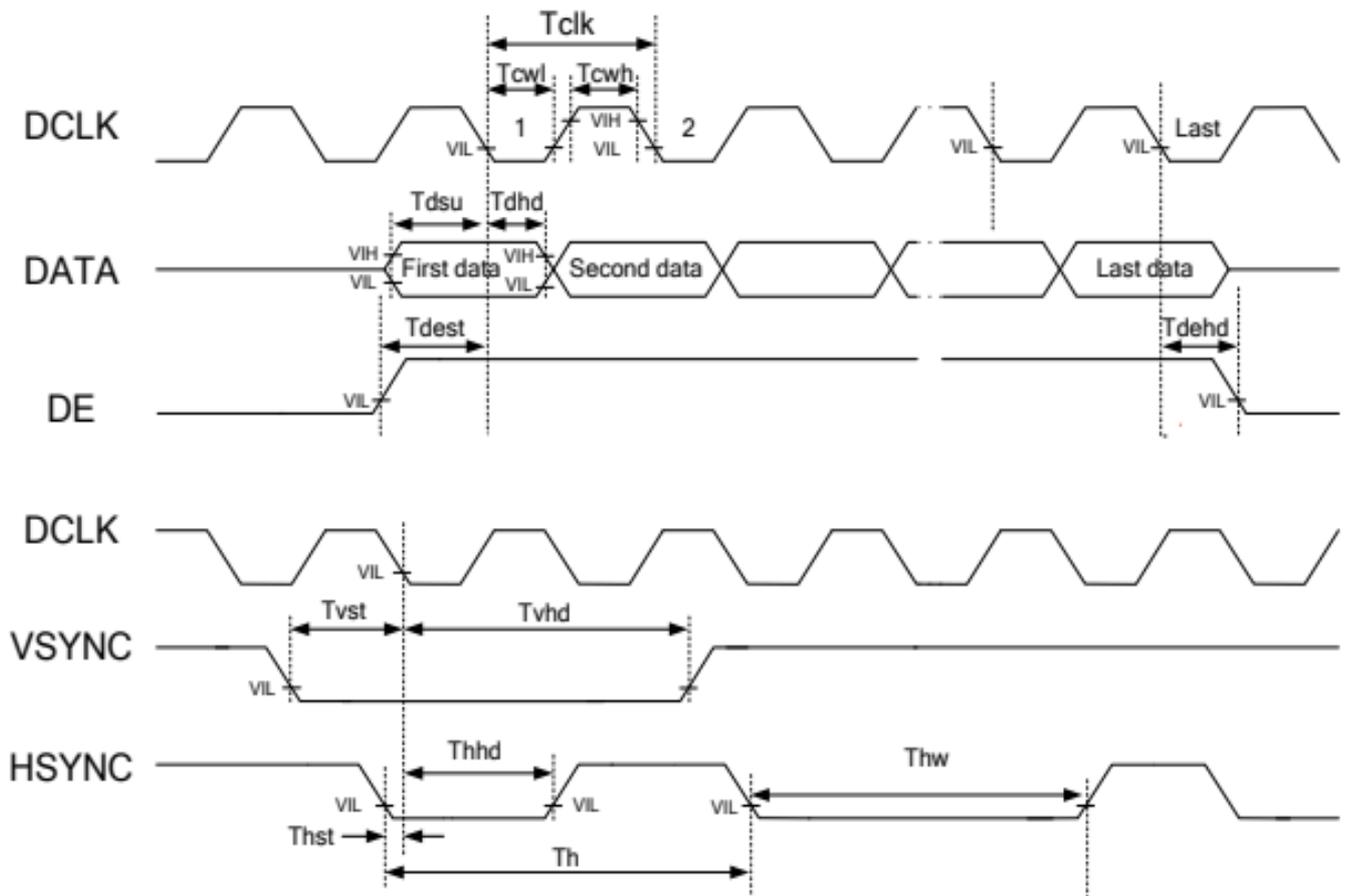


DE Mode Timing Diagram





6.4 Clock and Data Input Timing Diagram





7 Optical Characteristics

Items	Symbol	Condition	Min.	Typ.	Max.	Unit	Remark	
Viewing angles	θ_T	Center CR \geq 10	-	50	-	Degree.	Note2	
	θ_B		-	70	-			
	θ_L		-	70	-			
	θ_R		-	70	-			
Contrast Ratio	CR	$\Theta = 0$	-	500	-	-	Note1, Note3	
Response Time	T _{ON}	25° C	-	30	45	ms	Note1, Note4	
	T _{OFF}		-	30	45			
Chromaticity	White	Backlight is on	X _W	0.282	0.312	0.342	-	Note1, Note5
			Y _W	0.319	0.349	0.379	-	
	Red		X _R	0.609	0.639	0.669	-	
			Y _R	0.314	0.344	0.374	-	
	Green		X _G	0.264	0.294	0.324	-	
			Y _G	0.557	0.587	0.617	-	
	Blue		X _B	0.102	0.132	0.162	-	
			Y _B	0.106	0.136	0.166	-	
Uniformity	U		75	80	-	%	Note1, Note6	
NTSC			-	52	-	%	Note5	
Luminance	L		200	250	-	CD/M ²	Note1, Note7	

Test Conditions:

1. IF= 20Ma (one channel),the ambient temperature is 25°C.
2. The test systems refer to Note 1 and Note 2.

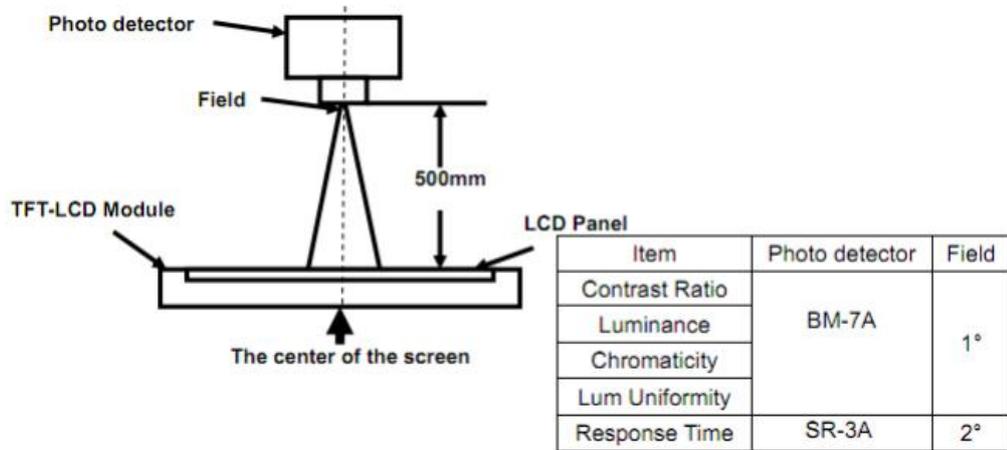
Note 1: Definition of optical measurement system.

The optical characteristics should be measured in dark room. After 5 minutes operation, the optical Properties are measured at the center point of the LCD screen. All input terminals LCD panel must be ground when measuring the center area of the panel.



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Note 2: Definition of viewing angle range and measurement system.

Viewing angle is measured at the center point of the LCD by CONOSCOPE (ergo-80).

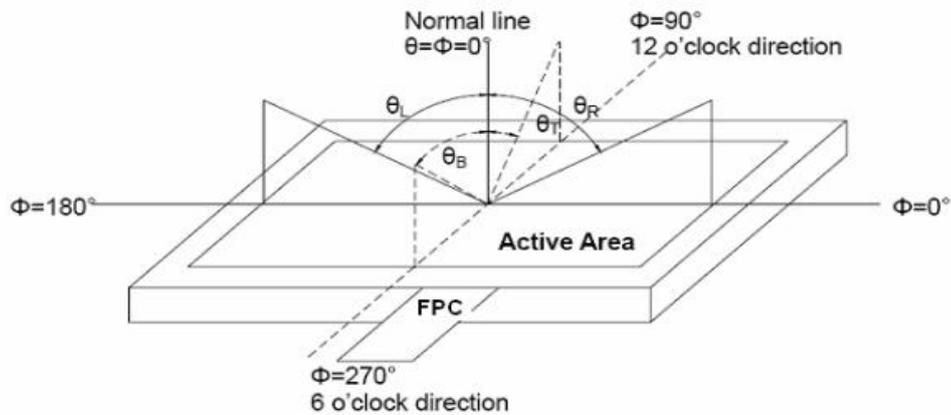


Fig. 1 Definition of viewing angle

Note 3: Definition of contrast ratio

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

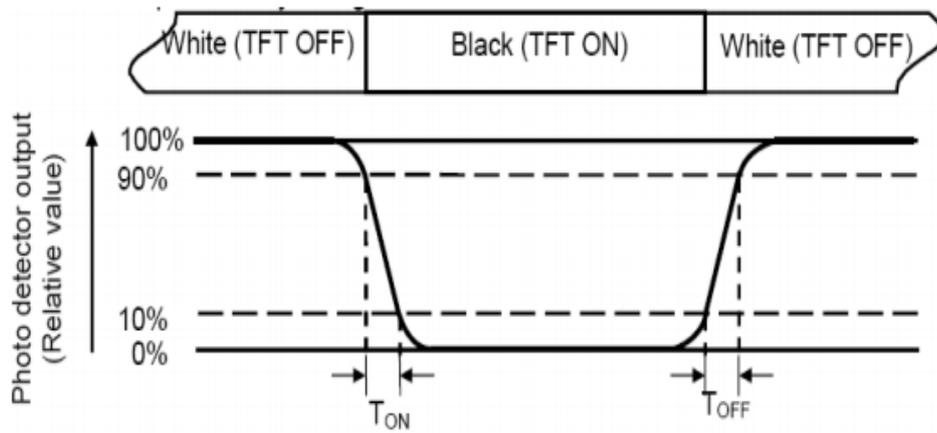
Note 4: Definition of Response time

The response time is defined as the LCD optical switching time interval Between "White" state and "Black" state. Rise time (TON) is the time between Photo detector output intensity changed from 90% to 10%. And fall time (TOFF) is The time between photo detector output intensity changed from 10% to 90%



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Note 5: Definition of color chromaticity (CIE1931)

Color coordinates measured at center point of LCD.

Note 6: Definition of Luminance Uniformity

Active area is divided into 9 measuring areas (Refer Fig. 2). Every measuring point is placed at the Center of each measuring area

$$\text{Luminance Uniformity (U)} = \text{Lmin} / \text{Lmax} \times 100\%$$

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

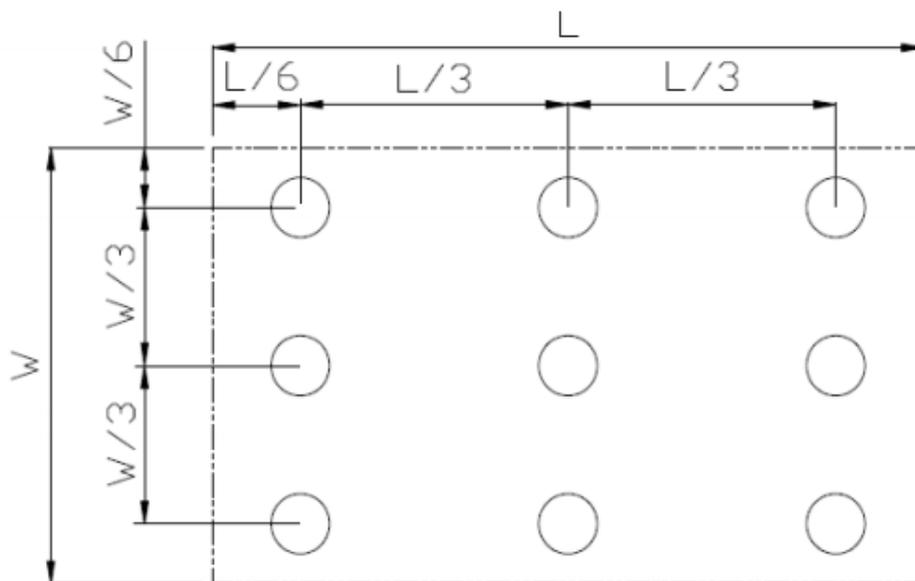


Fig. 2 Definition of uniformity

Lmax: The measured maximum luminance of all measurement position.

Lmin: The measured minimum luminance of all measurement position.

Note 7: Definition of Luminance:

Measure the luminance of white state at center point.



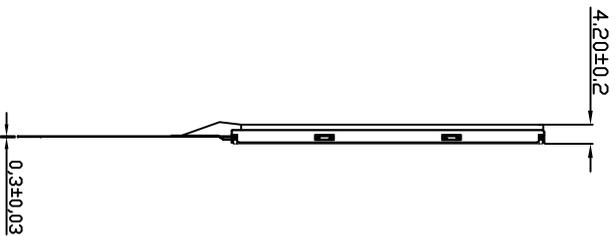
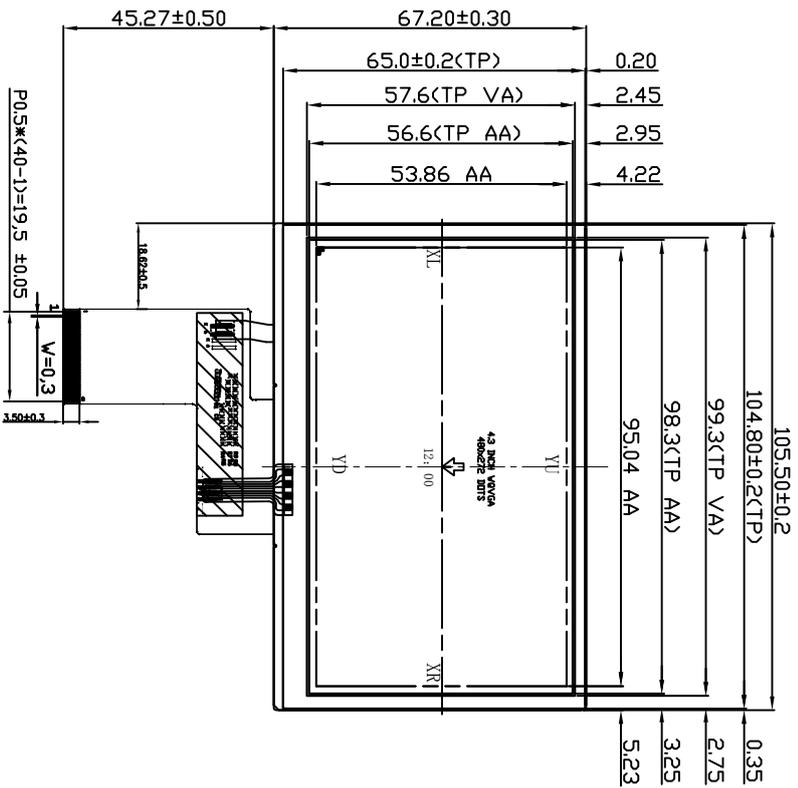
8 Environmental / Reliability Tests

No	Test Item	Condition	Remarks
1	High Temperature Operation	Ts= +70°C, 240hrs	Note 1 IEC60068-2-2, GB2423. 2-89
2	Low Temperature Operation	Ta= -20°C, 240hrs	Note 2 IEC60068-2-1 GB2423.1-89
3	High Temperature Storage	Ta= +80°C, 240hrs	IEC60068-2-2 GB2423. 2-89
4	Low Temperature Storage	Ta= -30°C, 240hrs	IEC60068-2-1 GB/T2423.1-89
5	High Temperature & Humidity Storage	Ta= +60°C, 90% RH max, 160 hours	IEC60068-2-3 GB/T2423.3-2006
6	Thermal Shock (Non-operation)	-30°C 30 min ~ +80°C 30 min Change time: 5min, 30 Cycle	Start with cold temperature, end with high temperature IEC60068-2-14, GB2423.22-87
7	Electro Discharge (Operation) Static	C=150pF, R=330 Ω, 5 points/panel Air:±8KV, 5 times; Contact: ±4KV, 5 times; (Environment: 15°C ~ 35°C, 30% ~ 60%, 86Kpa ~ 106Kpa)	IEC61000-4-2 GB/T17626.2-1998
8	Vibration (Non-operation)	Frequency range: 10~55Hz, Stroke: 1.mm Sweep: 10Hz~55Hz~10Hz 2 hours for each direction of X .Y. Z. (package condition)	IEC60068-2-6 GB/T2423.5-1995
9	Shock (Non-operation)	60G 6ms, ± X, ±Y , ± Z 3 times for each direction	IEC60068-2-27 GB/T2423.5-1995
10	Package Drop Test	Height: 60 cm, 1 corner, 3 edges, 6 surfaces	IEC60068-2-32 GB/T2423.8-1995

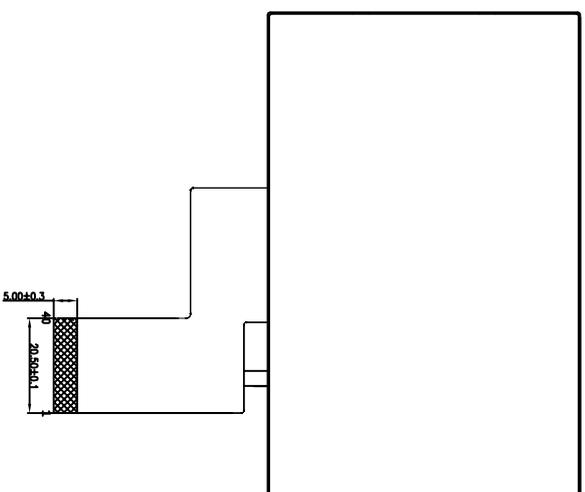
Note: 1. Ts is the temperature of panel's surface.
2. Ta is the ambient temperature of sample.

9 Mechanical Drawing

REV.	DATE	MODIFICATION
1.0	2019/04/29	First Issue



LDD- 〰〰〰〰〰〰〰〰〰〰 LDD-
CIRCUIT DIAGRAM



TP逻辑

PIN SYMBOL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40		
LEDK	LEDK	LEDA	GND	VDD	R0	R1	R2	R3	R4	R5	R6	R7	G0	G1	G2	G3	G4	G5	G6	G7	B0	B1	B2	B3	B4	B5	B6	B7	GND	DCLK	DISP	HSYNC	VSYNC	DE	NC	GND	NC	NC	NC	NC		
OUT	YU	XL	YD	XR																																						

INTERFACE		RGB Interface		MODEL NAME		 深圳市勋睿光电技术有限公司 Xunruo Shenzhen Optoelectronics Technology Co., Ltd.	
VIEWING DIRECTION		FPC Connector		TFT Display Module		PART NO.	
Gray Scale		6 O'clock		DWN		H0431WQ40T2502B-1	
DIRECTION		12 O'clock		CHKD		REV. SHEET OF	
				PROJECTION		TOLERANCE UNLESS SPECIFIED	
				3RD ANGLE		UNIT SCALE	
				MM		MM 1:1	

NOTES:

1. DISPLAY TYPE: 4.3 INCH TFT / TRANSMISSIVE
2. BACKLIGHT: 7 CHIP WHITE LED, IN PARALLEL
3. OPERATING TEMP: -20°C~+70°C
4. STORAGE TEMP: -30°C~+80°C
5. RESOLUTION: 480XRGBx272
6. LCD IC: ILI6485
7. "()" reference dimension. "*" critical dimension
8. RoHS Compliant

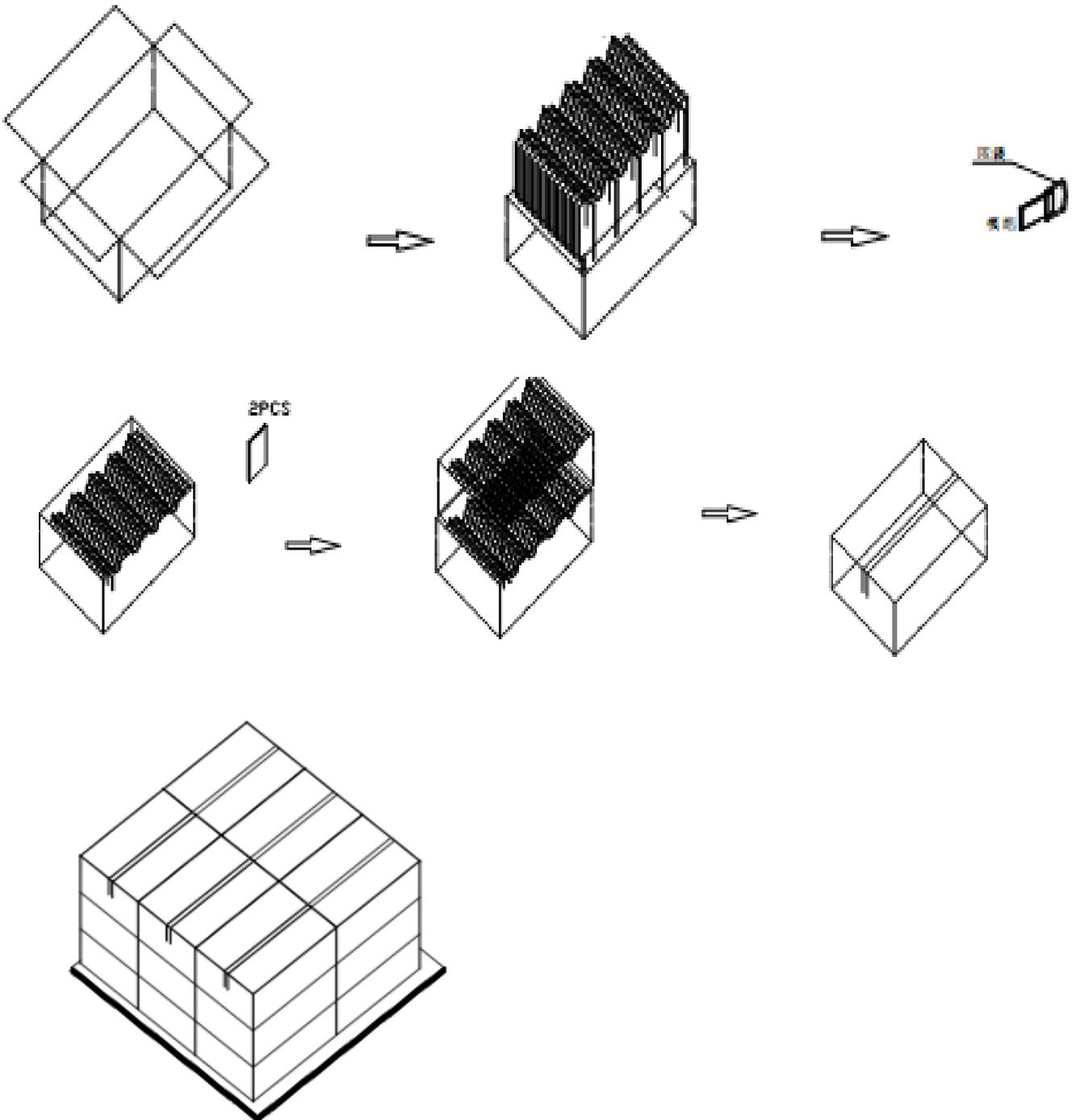


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1 0.Packing

Packing Method





11. Precautions for Use of LCD modules

11.1 Handling Precautions

11.1.1. The display panel is made of glass. Do not subject it to a mechanical shock by dropping it from a high place, etc.

11.1.2. If the display panel is damaged and the liquid crystal substance inside it leaks out, be sure not to get any in your mouth, if the substance comes into contact with your skin or clothes, promptly wash it off using soap and water.

11.1.3. Do not apply excessive force to the display surface or the adjoining areas since this may cause the color tone to vary.

11.1.4. The polarizer covering the display surface of the LCD module is soft and easily scratched. Handle this polarizer carefully.

11.1.5. If the display surface is contaminated, breathe on the surface and gently wipe it with a soft dry cloth. If still not completely clear, moisten cloth with one of the following solvents:

- Isopropyl alcohol
- Ethyl alcohol

Solvents other than those mentioned above may damage the polarizer. Especially, do not use the following:

Water ; Ketene ; Aromatic solvents

11.1.6. Do not attempt to disassemble the LCD Module.

11.1.7. If the logic circuit power is off, do not apply the input signals.

11.1.8. To prevent destruction of the elements by static electricity, be careful to maintain an optimum work environment.

11.1.8.1. Be sure to ground the body when handling the LCD Modules.

11.1.8.2. Tools required for assembly, such as soldering irons, must be properly ground.

11.1.8.3. To reduce the amount of static electricity generated, do not conduct assembly and other work under dry conditions.

11.1.8.4. The LCD Module is coated with a film to protect the display surface. Be care when peeling off this protective film since static electricity may be generated.

11.2 Storage Precautions

11.2.1. When storing the LCD modules, avoid exposure to direct sunlight or to the light of fluorescent lamps.

11.2.2. The LCD modules should be stored under the storage temperature range. If the LCD modules will be stored for a long time, the recommend condition is:

Temperature : 0℃ ~ 40℃ Relatively humidity: ≤80%

11.2.3. The LCD modules should be stored in the room without acid, alkali and harmful gas.

11.3 Transportation Precautions

The LCD modules should be no falling and violent shocking during transportation, and also should avoid excessive press, water, damp and sunshine.



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PRODUCT SPECIFICATIONS

产 品 规 格 书

Customer(客户):

Model (型号): XRA-043001-41

Mode(种类): Four- Multi wire Analog Touch Panel

Date(日期): 2021. 03. 20

Version(版本): A/0

Customer Approval

客 户 签 认

Checked Approve 检查 确认	Designed 设计
陈文勇	Amorll.邓

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01. Circumscription The specification is for Four-Wire analog resistive touch panel.

[范围]

[此规格适用于四线-模拟电阻式触控屏幕]

02. Features

[特性]

Item [项目]		Specifications [规格]
(1)	Type [型式]	Four-Multi Wire Analog Resistive [四线-多线模拟电阻式]
(2)	Input Mode [操作模式]	Stylus or Finger [笔触或手触]
(3)	Connector [连接方式]	FPC

03. General Specification

[规格总则]

Item [项目]		Specifications [规格]
	Product Structure [产品结构]	ITO胶片(0.188mm)/ITO玻璃(0.7mm 普通玻璃)
(1)	Frame Size [外形尺寸]	104.8×65.0±0.2mm
(2)	View Area [可视区]	99.3×57.6±0.3mm
(3)	Total Thickness [总厚度]	1.15±0.10mm
(4)	Tail Length [出线长度]	18.0±0.5mm

04. Environmental Characteristics

[环境特性]

Item [项目]		Specifications [规格]	
		Temperature [温度]	Humidity [湿度] (Non Condensing) [不可结雾]
(1)	Operation [操作]	-10°C ~ +60°C	20%RH ~ 85%RH
(2)	Storage [储存]	-20°C ~ +70°C	10%RH ~ 90%RH

Note: The environment is under normal atmosphere pressure.

[注:于正常的1 大气压下]

05. Optical Characteristics
[光学特性]

	Item [项目]	Specifications [规格]
(1)	Transparency [透光率]	$\geq 78\%$ -550nm

06. Electrical Characteristics
[电子特性]

	Item [项目]	Specifications [规格]
(1)	Linearity [线性]	X : 1.5 %, Y : 1.5%
(2)	Terminal resistance [回路电阻]	Rx-x: 180-900 Ω Ry-y: 180-900 Ω
(3)	Insulation [绝缘阻抗]	$\geq 20M\Omega/25V(DC)$
(4)	Chattering [触点抖动时间]	$\leq 10ms$

07. Mechanical Characteristics
[机械特性]

	Item [项目]	Specification [规格]	Condition [条件]
(1)	Operating Force [操作压力]	Stylus=R0.8 [笔式=R0.8]	Range at 30g~100g
(2)	Impact [撞击]	20.0 ψ DIA. Steel Ball/30g Height=50cm [20 ψ /30g 不锈钢球 高=50cm]	1 time, no damage [Impact at center area] [中央区域撞击1次,不能破损]
(3)	Hardness [硬度]	3H pencil, pressure 1N/45 [铅笔3H,压力1N/45° (JIS K5400)]	$\geq 3H$
(4)	FPC Peeling [FPC拉力]	X>2.5Kg, Y>0.5Kg	X>2.5Kg, Y>0.5Kg
(5)	FPC Bending [FPC绕折]	180° 10 times left & right [180° 角,左右来回10次]	Satisfy (2) of Item 6 [符合6项目(2)]
(6)	FPC Welding [FPC焊接]	TEM. 320 \pm 5°C, within 3s, More than 2 times, Use below 60w flatiron	Satisfy (1)(2) of Item 6 [符合6项目(1)(2)]

08. Reliability

[信赖性]

	Item [项目]	Specifications [规格]	Condition [条件]
(1)	Constant Temperature /Humidity [恒温恒湿]	60°C /90%RH, 120 hrs and normalized for 24hrs [60°C /90%RH, 120 小时, 回常温24小时后始可测试]	Satisfy:(1),(2),(3)of Item 6; (1) of Item7 [符合6 项目(1)、(2)、(3) 及 7 项目(1)]
(2)	Heat Test [高温测试]	70°C /120 hrs and normalized for 24 hrs [70°C /120 小时, 回常温24 小时后始可测试]	Same as above [同上]
(3)	Cold Test [低温测试]	-20°C /120 hrs and normalized for 24 hrs [-20°C /120 小时, 回常温24 小时后可测试]	Same as above [同上]
(4)	Thermal Cycle [冷热循环]	-20°C ~70°C [30 min./cycle] *10cycles and normalized for 24hrs [-20°C ~70°C, 每循环30 分钟, 共10次循环, 回常温24 小时后始可测试]	Same as above [同上]

09. Durability

[耐久性]

	Item [项目]	Specifications [规格]	Condition [条件]
	Knock Test [敲击测试]	1,000,000 times [R8,hardness 60°,120gf]	Satisfy (2), (3) of Item 6; (1) of item 6 satisfies X \leq 2.0%, Y \leq 2.0% [符合6 项目(2), (3); 6 项目(1)符合 X \leq 2.0%,Y \leq 2.0%] 敲击位置必须离AA区边缘5mm 以上
	Stroke Test [笔划测试]	100,000 times [R0.8mm,with 120gf]	Satisfy (2), (3) of Item 6; (1) of item 6 satisfies X \leq 2.0%, Y \leq 2.0% [符合 6 项目(2)、(3); 6 项目(1)符合 X \leq 2.0%,Y \leq 2.0%] 划线区域必须离AA区边缘5mm 以上, 划线压力须均匀

注意: 由于 RTP 夹层内有空气, 在做高温高湿试验时结雾属正常现象。
Cautions:since there is air in the RTP interlayer, fog formation is normal phenomenon in high temperature and high humidity test.

10. Appearance Inspection
[外观检查]

(1) The flaws and impurities are allowed outside viewing area except for those affecting electrical functions.

[(1) 只要不影响电器功能性, 可视区外之外观瑕疵是可以被允许的]

(2) The inspection was performed with one 30W fluorescent lamp lighting from side. The panel was placed 30cm away from eyes.

(Figure 11-1).

[(2) 检测始用之灯光为一盏30W 白炽灯光, 并于面板上侧照射, 检测时须放置在离眼睛30cm 处(Figure11-1)]

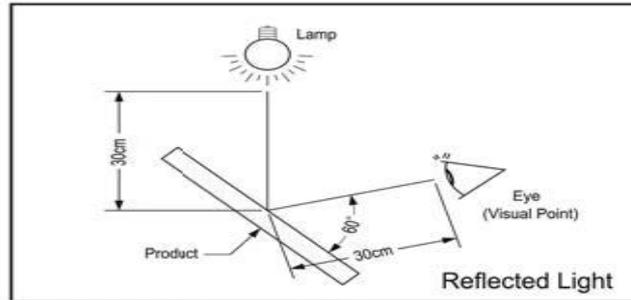


Figure 11-1

(3) Glass Flaw [玻璃瑕疵]

Item [项目]	Picture [图示]	Specification 规格
Corner Flaw [角瑕疵]		$X \leq 3\text{mm}$ $Y \leq 1.5\text{mm}$ $Z \leq GT$ 且不影响产品功能
Edge Flaw [边缘瑕疵]		$X \leq 4\text{mm}$ $Y \leq 1.5\text{mm}$ $Z \leq GT$ 且不影响产品功能
Progressive Flaw [裂纹瑕疵]		Not allowed [不允许]

Note: GT=Glass thickness

(4) Please refer to Appendix I : Appearance Specification.

[(4)外观规格请详见(附注1)]

11. Attention of Mounting Condition

[装机注意事项]

- (1) The gasket support of touch panel must be designed on the outside of Viewable area, as well as to avoid pressing on touch panel accidentally, the enclosure must be designed with enough clearance to panel surface.

To avoid pressing error on touch panel accidentally, please remain space between the surface of panel and the Bezel.

[请将固定触控屏用的支撑体(support)设计于可视区(Viewable area)之外。为避免不小心碰到触控屏而产生动作，请预留空间于面板与机体外壳之间]

- (2) Bezel opening must be between Viewable area and Active area. Bezel opening must not touch Viewable area.

[外壳内缘(Bezel opening)应设计于可视区及动作区之间，并且不得碰到面板]

- (3) We recommend elastic material made support.

[建议使用弹性物质制成的支撑体]

- (4) Do not use adhesive to bond top surface (ITO Film) of touch panel with enclosure.

[请勿使用黏着剂固定触控屏面板和机体外壳]

- (5) The edge of touch panel is conductive. Don't touch it with metal after mounting.

[触控屏面板四周有可能会导电，安装时后请勿与其它金属物质接触]

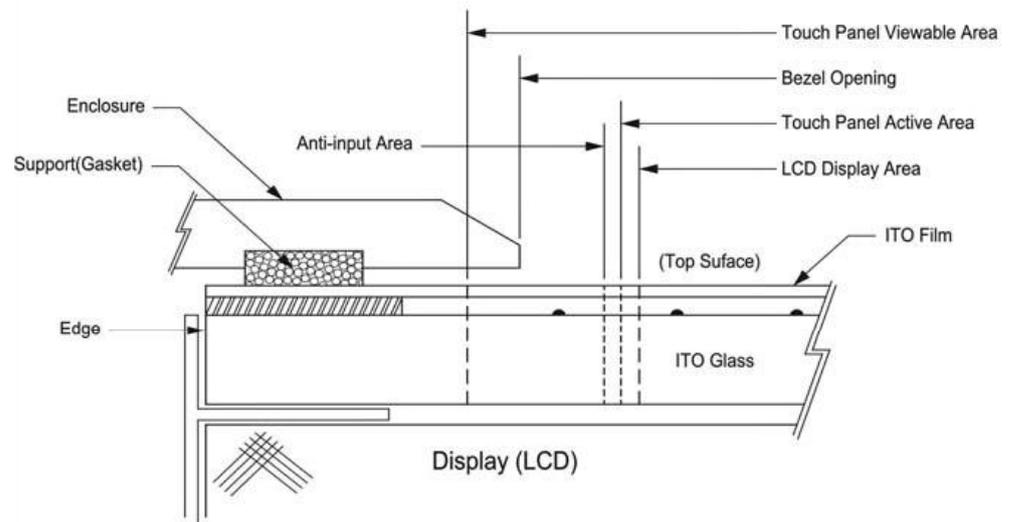


Figure 12-1

12. Guaranty

[保固]

RX comes with a 1-year guaranty on all RX products.

RX guaranty provide for repair and replacement without any charge during this period.

RX reserves the right in its sole discretion to determine the defects received, and will take the responsibility if there is any defect or damages.

[除了下列3点所述外,瑞翔所生产制造的产品保固期限为1年,若判定瑞翔为之责任,则产品更换。瑞翔保留判定责任归属之权益]

Notice: RX is not responsible for following situation:

1. Damages caused by improper handling from clients, such as the shipping period or manufacturing processes.

[在客户的制程或运输中,因客户自身疏忽所造成对产品的伤害及破损]

2. Damages caused by either natural disaster or human factors after receiving the products.

[在客户收到瑞翔之产品后,因为天灾人祸所造成的伤害及破损]

3. Damage caused by self-repairs, and modifications or disassembling of RX products from clients without prior notice.

[没有知会瑞翔共同讨论,而自行变更、维修、拆卸产品所造成的伤害及破损]

13. Caution

[注意事项]

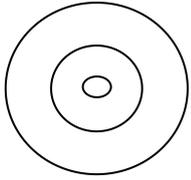
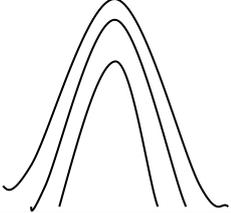
<p>Storage [储存]</p>	<p>(1)Storage shall be under the temperature and humidity that mentioned in the specification. Do not expose the products to direct sunlight or piling caused damage on the surface. [储存要注意温/湿度条件, 且不可直接暴露于阳光下, 或堆栈造成直接加压面板]</p>
<p>Unpacking [拆装]</p>	<p>(1)Check for the correct vertical direction of the package before unpacking. [注意检查包装箱之垂直方向, 以避免损坏]</p>
<p>Handing [握持]</p>	<p>(1) In order to prevent fingerprints or stain on the products, and get a cut by sharp edges of glass, clean finger sacks or glove and mask are required during handing. [配戴清洁的指套、手套、口罩, 以避免造成指纹、脏污或不小心被玻璃边缘割伤] (2) Do not touch the viewing area of the panel. [手不能接触可视区] (3) Do not handle the tail (connector) of panel directly, when you handle the touch panel. It will cause the problem of combination and reliability [拿取面板时, 不可直接拿取tail 部份, 易造成结合度及信赖性问题]</p>
<p>Cleaning [清洁]</p>	<p>(1) Clean and soft clothes with neutral detergent or with isopropyl alcohol may be used for cleaning. [使用干净且柔软的布, 沾中性清洁剂或酒精进行清洁] (2) Do not use any chemical solvent, acidic or alkali solution. [不能使用化学溶剂或酸碱液进行清洁] (3) Do not allow liquid soaking into the joint of film and glass, it may cause of peeling or malfunctioning. [避免让液体渗入至玻璃与薄膜之间, 会造成剥离或功能失效]</p>
<p>Installing and Assembling [组合与装配]</p>	<p>(1) Excessive force or strain to the panel or the tail is prohibited. [注意避免加压或拉扯面板及tail] (2) Provide a clearance of at least 0.3mm between panel and display module. [最少保留0.3mm 的空间于面板及显示器之间] (3) The panel is designed with air groove. Insulation and cushioning pads should be designed around the edges of the panel to prevent water and dust. [在设计机构时, 注意四周边缘需有缓冲垫, 以避免渗水或聚集灰尘]</p>
<p>Operating [操作]</p>	<p>(1) Use a stylus (tip R0.8 or over) or finger. Sharp edged or hard articles are prohibited. [应用塑料笔(笔尖\geqR0.8)或手指, 不能使用尖锐、坚硬的物体书写输入] (2) The gathering of dew in the panel may occur with abrupt temperature or humidity changes. A stable environment condition is recommended. [急遽的温/湿度变化会有结露现象, 易造成面板功能失效, 所以稳定的环境条件是必要的]</p>
<p>Others [其它]</p>	<p>(1) Keep the surface clean. No adhesives should be applied. [请保持表面清洁, 不要贴胶带于面板上] (2) Avoid high voltage and static charge. [避免高压与静电]</p>

Appearance Specification

外观检验标准:

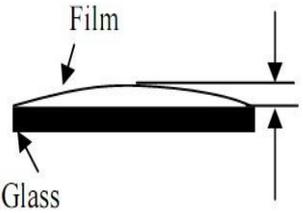
Item [项目]	Specification [规格]
Particle [颗粒异物]	(1) $D < 0.20$ 可忽略 (2) $0.20 \leq D \leq 0.25$ and total $\leq 2 \text{ } \varnothing \text{OK}$ (3) $D > 0.25 \varnothing \text{NG}$
Linear Object [线状异物]	(1) $W < 0.05$ 可忽略 (2) $0.05 \leq W \leq 0.08$ and $L \leq 5.0$, total $\leq 2 \text{ } \varnothing \text{OK}$ (3) $W > 0.08$ or $L > 5.0 \text{ } \varnothing \text{NG}$ Remark: the particle will be ignored when it is cleanable.
Scratch [刮痕]	同线状异物

Newton Ring/Rain-bow
[牛顿环/干涉纹]

Item [项目]	Standard [标准]	Picture [图示]
Rule [规则]	(1) 当牛顿环 $> 1/6$ 时, $\varnothing \text{NG}$ (2) 当牛顿环 $\leq 1/6$ 时, 且不影响文字及直线失真 $\varnothing \text{OK}$	
Abnormity [不规则]	(1) 牛顿环不论大小, 当亮灯后造成文字及直线失真 $\varnothing \text{NG}$ (2) 当牛顿环 $\leq 1/6$ 时, 且亮灯后不影响文字及直线失真 $\varnothing \text{OK}$	

<Remark> [备注栏]

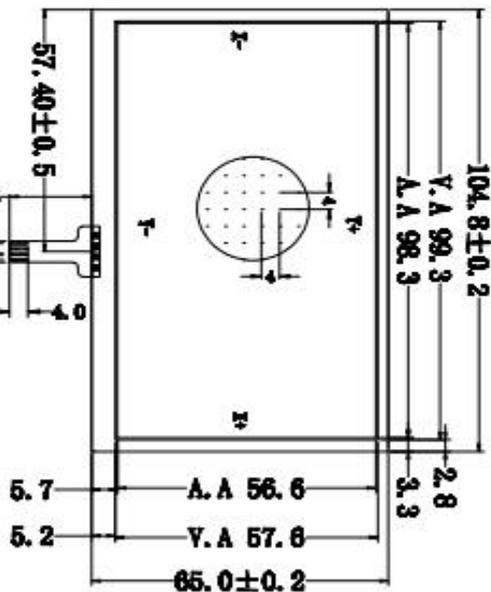
在荧光灯 (40W, 自然光) 下目测, 目测距离为40cm并且成60度-10度角检测 产品。

Film drum [膜鼓]	(1) FILM膜局部或全部鼓起 $> 0.25\text{mm} \varnothing \text{NG}$ (2) FILM 膜局部或全部鼓起 $\leq 0.20\text{mm} \varnothing \text{OK}$	
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QC抽查 抽样计划/质量允 许水平	MIL-STD-105D水平 II 抽样 AQL-Cr (严重缺点) 0.00% ----安全性缺陷 AQL-Ma (主要缺点) 0.45% ----功能异常缺陷 AQL-Ma (次要缺点) 1.0% ----刮伤与异物及外观缺陷
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REV.	DESCRIPTION	DATE
A.0	2021-06-03	2021-06-03

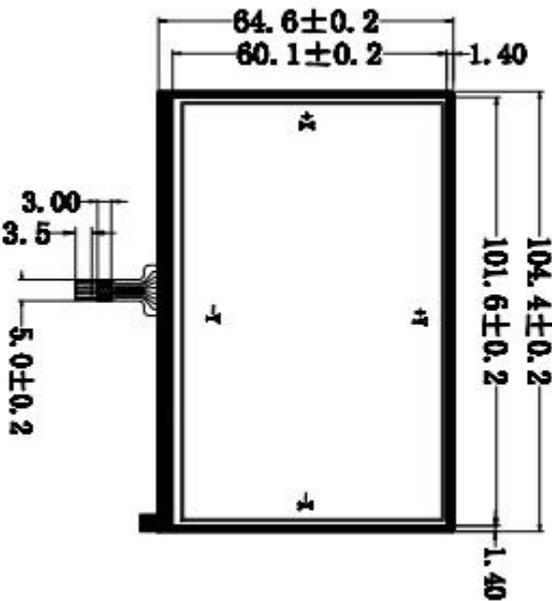
正面图



侧面图



反面图



由 Autodesk 教育版产品制作

技术参数:

1. 结构: film+glasstail

film: KIMOTO 雾面防牛 (0.180mm)

glass: 500 Q / a 普通 0.7mm

tail: FPC (pitch 1.3)

产品总厚度: 抽模厚 1.2±0.1mm

2. 电路等级: DCSV 1uA

3. 绝缘阻抗: ≥20MΩ (25V DC)

4. 特性: ≤1.5%

5. 透光率: ≥78%

6. 操作压力: 30-100g

7. 使用寿命: ≥1,000,000 次

8. 总使用寿命: ≥100,000 次

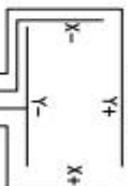
9. 工作环境: -10℃~+60℃

10. 储存环境: -20℃~+70℃

11. I: 200-900 Q T: 200-900 Ω

12. 未注尺寸公差按 ±0.50

逻辑图



PIN	OUT
1	Y+
2	X-
3	Y-

SCALE: 1:1
NOT TO SCALE

PAGE: 1 OF 2

GENERAL TOL: 0.50mm

APPROVALS:

APP Mychan 2021-06-03

CHK Amersil 2021-06-03

MODEL NUMBER:

R2A-045001-41

CUSTOMER P/N:

DATE: 2021-06-03

PROJECTION

DATE: 2021-06-03