



## Product Specification

**Customer:** \_\_\_\_\_  
**ModelName:**                     H043BWV40I3580-T                      
**Date:** \_\_\_\_\_  
**Version:** \_\_\_\_\_

Preliminary Specification

Final Specification

### For Customer's Acceptance

Approved by	Comment

Approved by	Reviewed by	Prepared by



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## 2 General Specifications

	Feature	Spec
Characteristics	LCD Size	4.3 inch
	Display Format	800 (RGB) ×480
	Interface	24-bit RGB
	Color Depth	16.7M
	Technology type	a-Si
	Display Spec.	0.1188 x 0.1122
	Display Mode	Normally Black
	Driver IC	ST7262
	Surface Treatment	HC
	Viewing Direction	ALL
	Gray Viewing Direction	FREE
Mechanical	LCM+TP(WxHxD)(mm)	105.40*67.15*4.2
	Active Area(mm)	95.04x53.86
	With /Without TSP	WithTSP
	Weight (g)	TBD
	LED Numbers	7LEDs

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	VBL-	Backlight LED Cathode
2	VBL+	Backlight LED Anode.
3	GND	System Ground
4	VCC	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	CLK	Pixel clock signal
31	DISP	Display on/off control
32	HSYNC	Horizontal Sync signal
33	VSYNC	Vertical Sync signal
34	DEN	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	Rating	Unit
Power Supply Voltage	VDD	- 0.3 ~ +4.0	V
IO Supply Voltage	VDDI	- 0.3 ~ +4.0	V
Charge Pump Supply Voltage	PVDD	- 0.3 ~ +4.0	V
Enhance Charge Pump Supply Voltage	PVDD1	- 0.3 ~ +4.0	V
Logic Input Voltage Range	VIN	-0.3 ~ VDDI + 0.3	V
Logic Output Voltage Range	VOUT	-0.3 ~ VDDI + 0.3	V
Operating Temperature Range	TOPR	-20~70	°C
Storage Temperature Range	TSTG	-30~80	°C

## 5 Electrical Characteristics

### 5.1 Operating conditions:

DC Electrical Characteristics (PVDD=PVDD1=VDD=VDDI= 3.3V, AGND= 0V, TA=25°C, Bare Chip)

Item	Symbol	Min.	Typ.	Max.	Unit	Conditions
Supply Voltage	VDD	3.1	3.3	3.6	V	
IO Supply Voltage	VDDI	3.1	3.3	3.6	V	
Charge Pump Supply Voltage	PVDD	3.1	3.3	3.6	V	
Enhance Charge Pump Supply Voltage	PVDD1	3.1	3.3	3.6	V	

### 2 DC Characteristics for Digital Circuit

DC Electrical Characteristics (PVDD=PVDD1=VDD=VDDI= 3.3V, AGND= 0V, TA=25°C, Bare Chip)

Item	Symbol	Min.	Typ.	Max.	Unit	Conditions
Logic-High Input Voltage	Vih	0.7VDDI	-	VDDI	V	
Logic-Low Input Voltage	Vil	DGND	-	0.3VDDI	V	
Logic-High Output Voltage	Voh	VDDI-0.4	-	VDDI	V	
Logic-Low Output Voltage	Vol	DGND	-	DGND+0.4	V	

### 3 DC Characteristics for Analog Circuit

DC Electrical Characteristics (PVDD=PVDD1=VDD=VDDI= 3.3V, AGND= 0V, TA=25°C, Bare Chip)

Item	Symbol	Min.	Typ.	Max.	Unit	Conditions
Positive High-Voltage Power	VGHS	12	15	15.5	V	No Load@ FR=60Hz
Negative High-Voltage Power	VGL	-11.5	-10	-7	V	
Output Voltage Deviation	Vod	-	±40	±50	mV	
Standby Current	Isc	-	-	50	µA	
Operation Current	Ioc	-	50	-	mA	



## 5.2 Driving Backlight

Item	Symbol	MIN	TYP	MAX	Unit	Remark
LED current	$I_F$	-	20	-	mA	Note 1 Note 2,3
Power Consumption		-	-	-	mW	
LED Voltage	$V_F$	-	21	-	V	
LED Life Time	$W_{BL}$	25000	-	-	Hr	

Note1: There are 1 Group LED

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

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



## 6 Interface Timing

### 6.1.1 Parallel 24-bit RGB Input Timing Table

Parallel 24-bit RGB Interface Timing Table							
Item	Symbol	Min.	Typ.	Max.	Unit	Remark	
DCLK Frequency		Fclk	23	25	27	MHz	
HSYNC	Period Time	Th	808	816	896	DCLK	
	Display Period	Thdisp	800			DCLK	
	Back Porch	Thbp	4	8	48	DCLK	
	Front Porch	Thfp	4	8	48	DCLK	
	Pulse Width	Thw	2	4	8	DCLK	
VSYNC	Period Time	Tv	492	496	504	HSYNC	
	Display Period	Tvdisp	480			HSYNC	
	Back Porch	Tvbp	6	8	12	HSYNC	
	Front Porch	Tvfp	6	8	12	HSYNC	
	Pulse Width	Tvw	2	4	8	HSYNC	

Note: 1. The minimum blanking time depends on the GIP timing of the panel specification

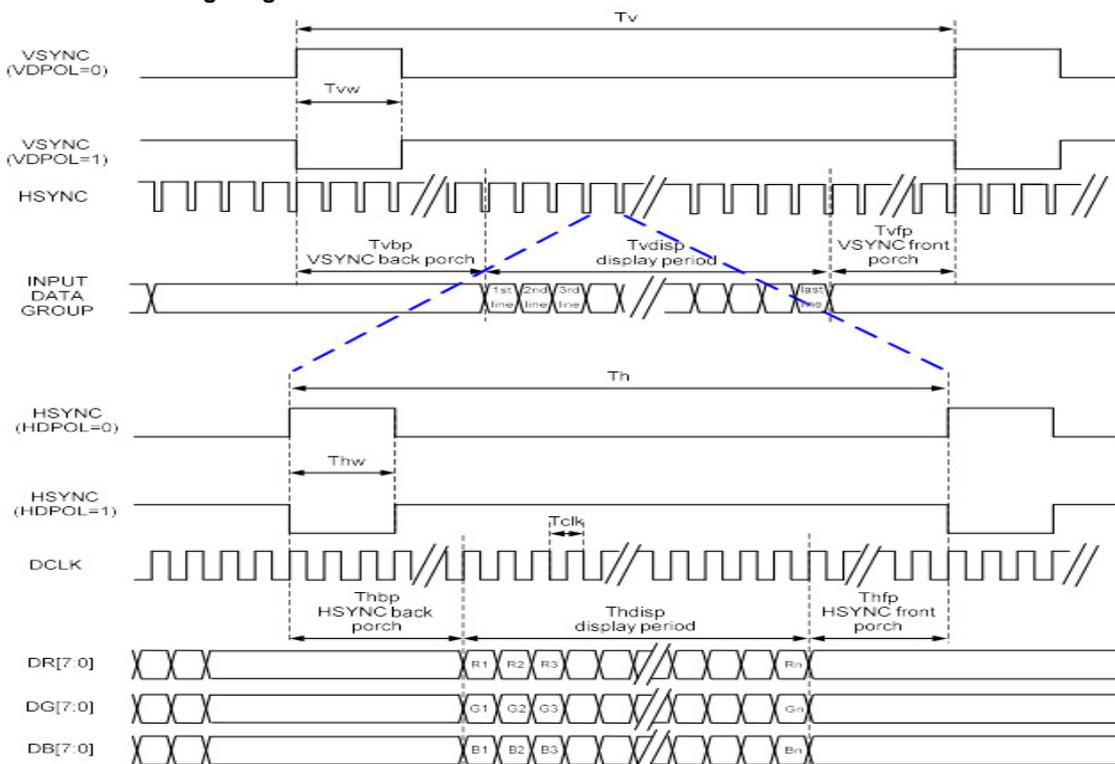
2. To ensure the compatibility of different panels, it is recommended to use the typical setting.

3. It is necessary to keep  $Tvbp = 12$  and  $Thbp = 43$  in sync mode. DE mode is unnecessary to keep it.

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

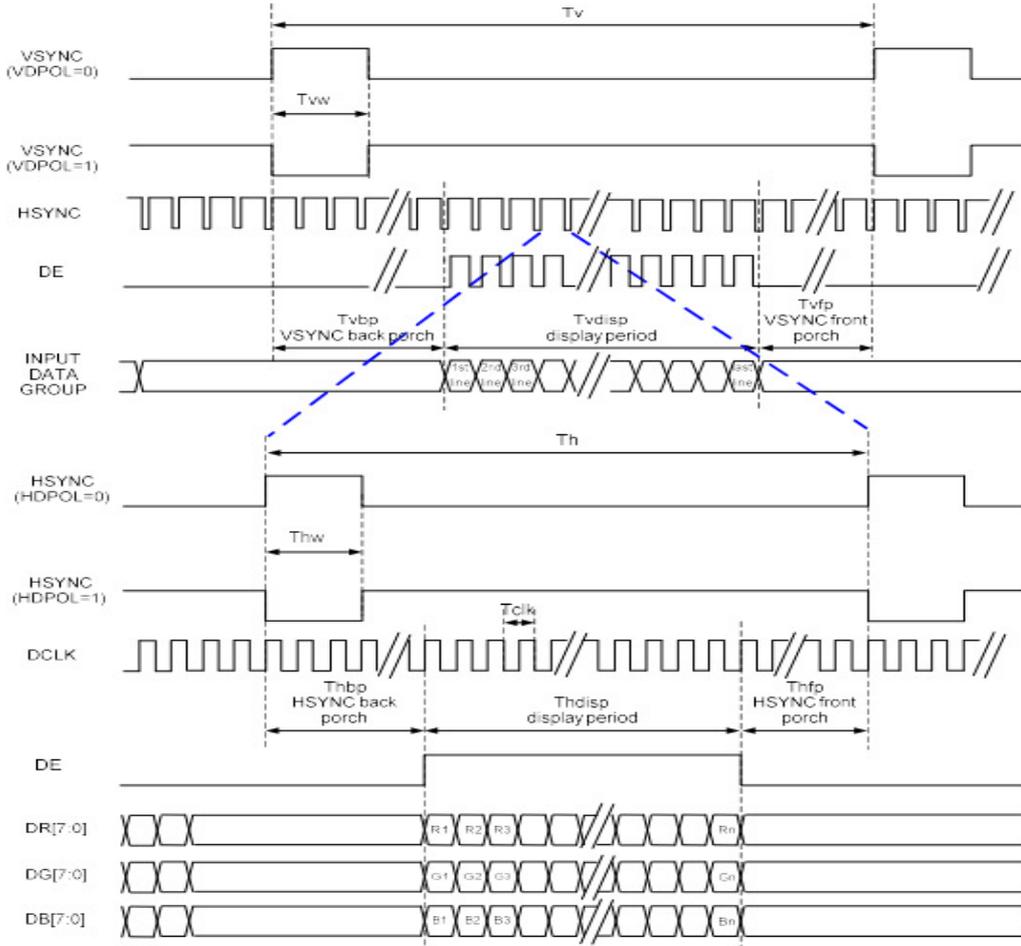
Note: "Input" means these signals are driven by host side

### 6.1.2 SYNC Mode Timing Diagram

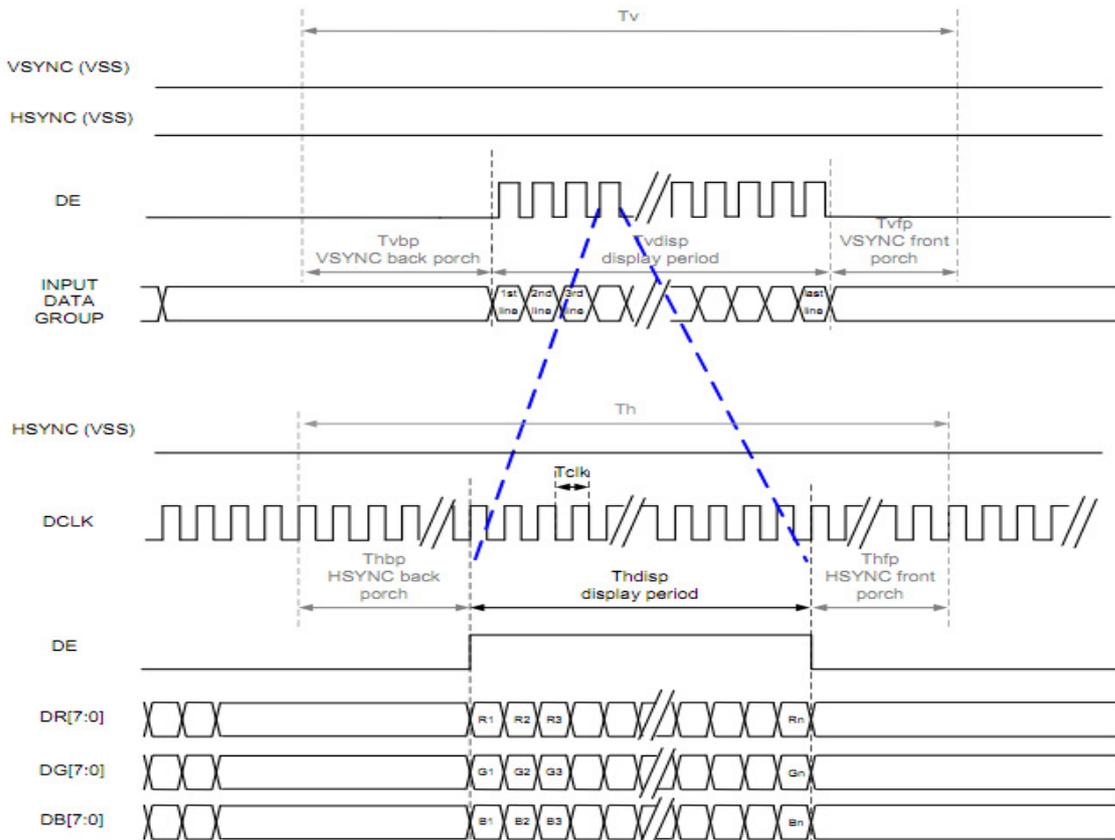




### 6.1.3 SYNC-DE Mode Timing Diagram



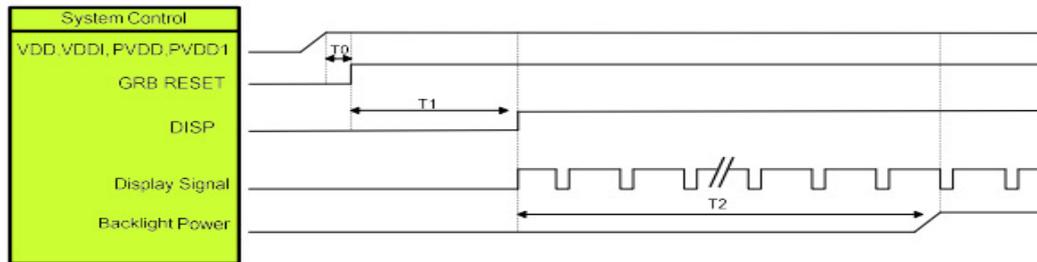
### 6.2 DE Mode Timing Diagram





## 6.3 Power ON/OFF Sequence

### 6.3.1 Power ON Sequence

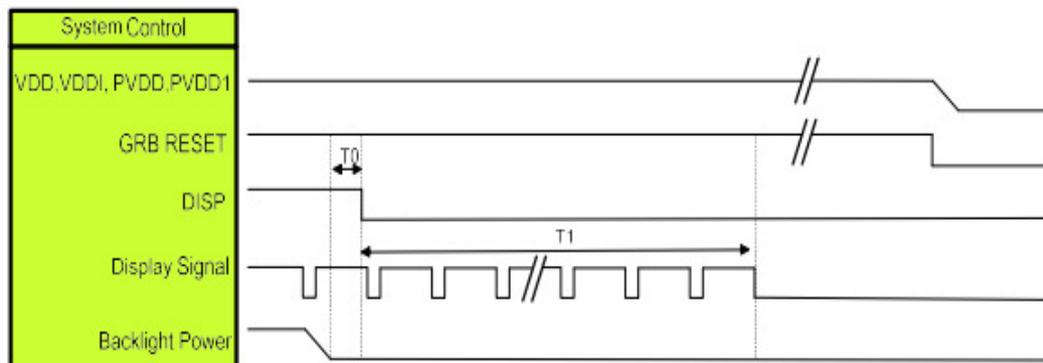


Symbol	Description	Min. Time	Unit
T0	System power stability to GRB RESET signal	0	ms
T1	GRB RESET="High" to DISP="High"	10	ms
T2	Display Signal output to Backlight Power on	250	ms

Note :

1. When DISP pull "H" or "L", IC will execute the internal power on or power off procedures .Please be careful about the timing of DISP and do not interrupt it during power on or power off procedure, otherwise unexpected errors will occur.
2. RGB interface Display signal: DCLK; VSYNC; HSYNC; DE; DR[7:0]; DG[7:0]; DB[7:0]

### 6.3.2 Power OFF Sequence



Symbol	Description	Min. Time	Unit
T0	Backlight Power off to DISP="Low"	5	ms
T1	DISP="Low" to IC internal voltage discharge complete	100	ms

Note :

1. When DISP pull "H" or "L", IC will execute the internal power on or power off procedures. Please be careful about the timing of DISP and do not interrupt it during power on or power off procedure, otherwise unexpected errors will occur.
2. RGB interface Display signal: DCLK; VSYNC; HSYNC; DE; DR[7:0]; DG[7:0]; DB[7:0]



## 7 Optical Characteristics

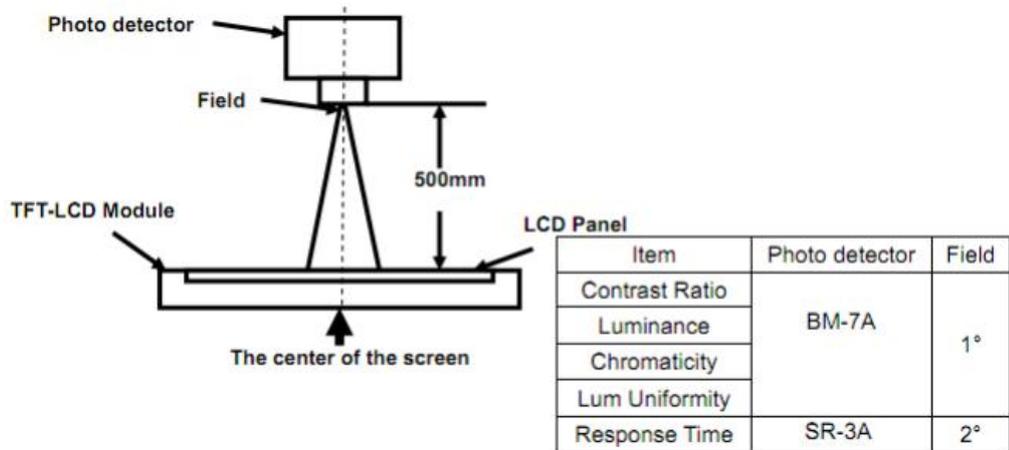
Items	Symbol	Condition	Min.	Typ.	Max.	Unit	Remark	
Viewing angles	$\theta_T$	Center CR $\geq$ 10	-	80	-	Degree.	Note2	
	$\theta_B$		-	80	-			
	$\theta_L$		-	80	-			
	$\theta_R$		-	80	-			
Contrast Ratio	CR	$\Theta = 0$	640	800	-	-	Note1, Note3	
Response Time	$T_{ON}$	25° C	-	30	45	ms	Note1, Note4	
	$T_{OFF}$		-	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		13.5	15	-	%	Note1, Note6	
NTSC				50		%	Note5	
Luminance	L			300			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.



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).

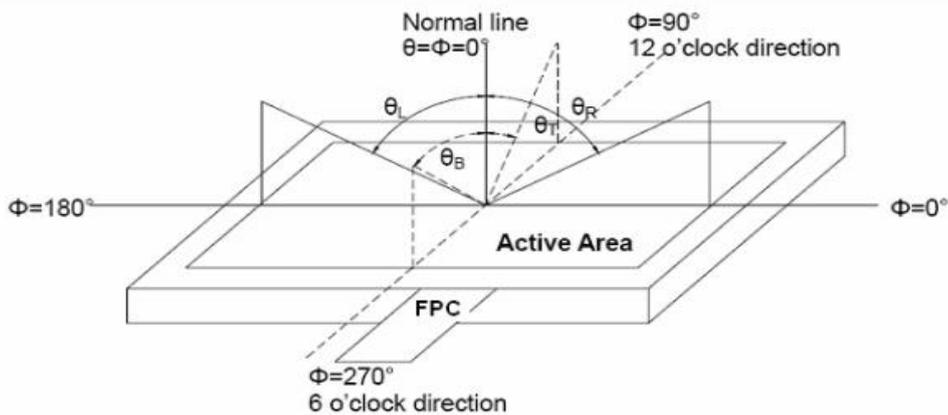


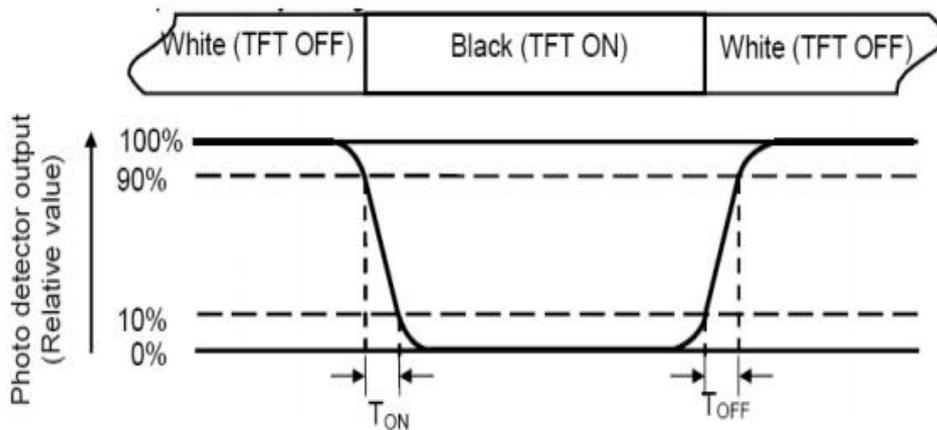
Fig. 1 Definition of viewing angle

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%



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

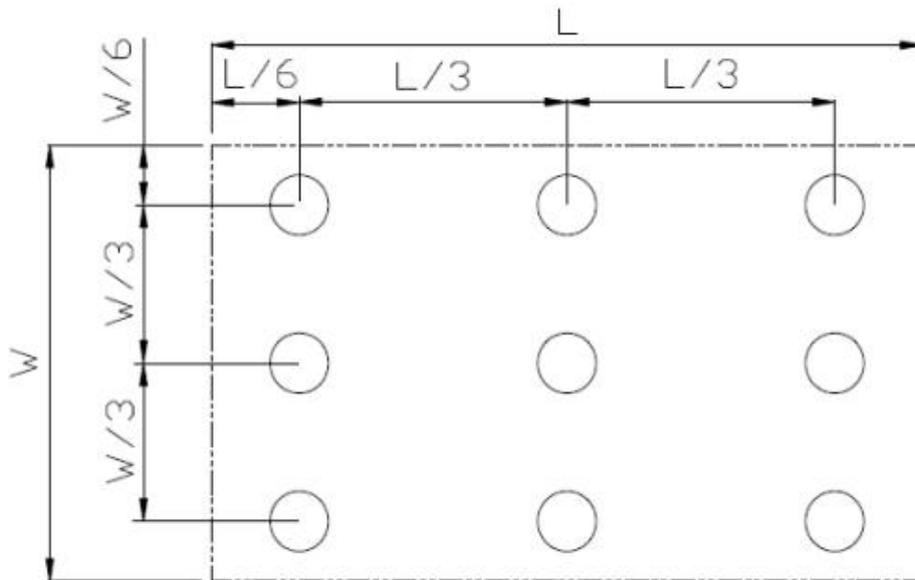


Fig. 2 Definition of uniformity

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.



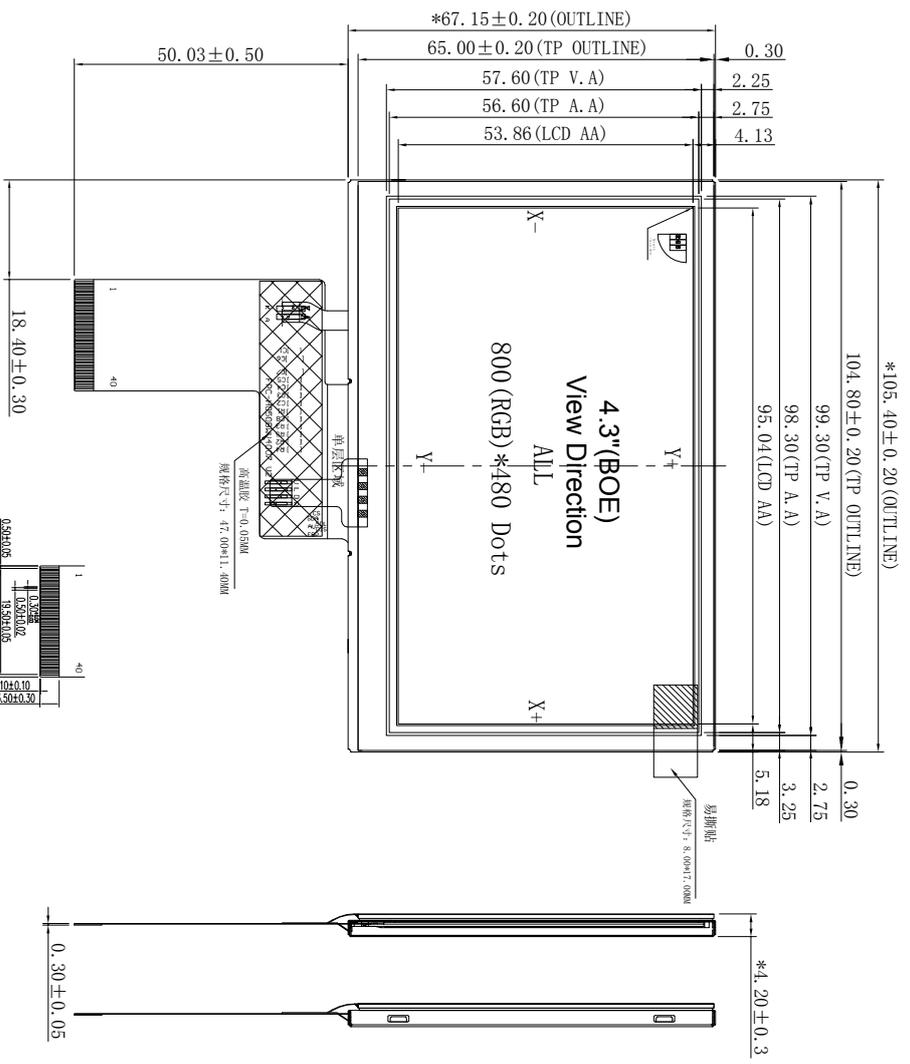
## 8 Environmental / Reliability Tests

No	Test Item	Condition	Remarks
1	High Temperature Operation	Ts=+70 °C,96hrs	
2	Low Temperature Operation	Ta=-20 °C,96hrs	
3	High Temperature Storage	Ta=+80 °C,96hrs	
4	Low Temperature Storage	Ta= -30°C,96hrs	
5	High Temperature & Humidity Storage	Ta= +60°C, 90% RH max, 160 hours	
6	Thermal Shock (Non-operation)	-30°C 30 min ~ +80°C 30 min Changetime:5min,20Cycle	
7	Electro Static Discharge (Operation)	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)	
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)	
9	Shock (Non-operation)	60G 6ms, ± X, ±Y , ± Z 3 times for each direction	
10	Package Drop Test	Height: 60 cm, 1 corner, 3 edges, 6 surfaces	

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

## 9 Mechanical Drawing

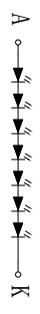
REV.	DATE	MODIFICATION
1.0		First Issue



- TP技术参数:
1. 结构: f11mm\*glass\*tail
  2. f11mm: 雾面防干 (0.188mm)
  3. glass: 500g/口 普通0.7mm
  4. tail: FPC (pitch: 1.25, 3)
  5. 产品总厚度: 触摸屏 1.2 ± 0.1mm
  6. 2. 电路等级: DC5V 1mA
  7. 3. 绝缘阻抗: ≥20MΩ (25V DC)
  8. 4. 线性: ≤1.5%
  9. 5. 透光率: ≥80%
  10. 6. 操作压力: 50±10g 垂直
  11. 7. 使用寿命: ≥1,000,000次
  12. 8. 笔划寿命: ≥100,000次
  13. 9. 工作环境: -20°C ~ +70°C
  14. 10. 储存环境: -30°C ~ +80°C
  15. 11. X: 200~900Ω Y: 200~900Ω
  16. 12. 未注尺寸公差按 ±0.50

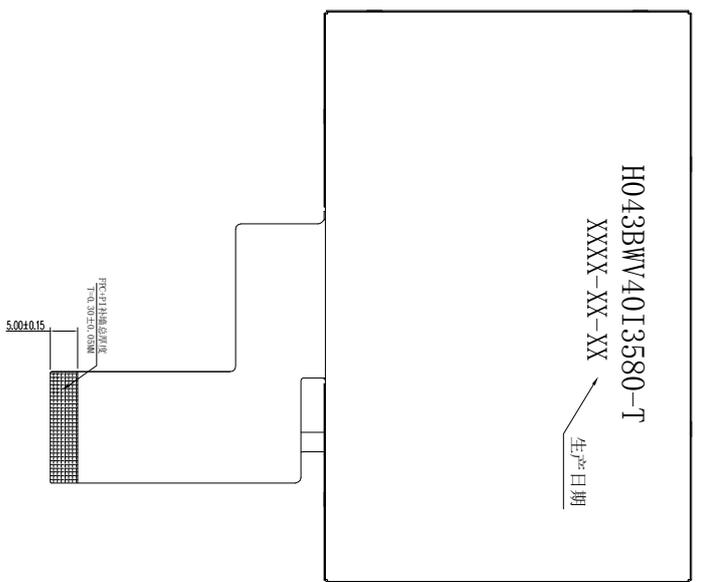
LCM:NOTES:

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: 800xRGBx480
6. LCD IC:
7. (\*) "reference dimension. \*\*"critical dimension
8. RoHS Compliant
9. 建议机壳泡棉比LED A. A区单边大0.3~0.5mm.



BACKLIGHT CIRCUIT DIAGRAM:

(If=20mA/LED, 19.60V~22.40V/LED)



TP PIN定义

Pin NO:	Assi:gment	Pin NO:	Assi:gment
1	YU	35	NC
2	XL	36	GND
3	YD	37	XR
4	XR	38	YD
		39	XL
		40	YU

INTERFACE	RGB Interface	MODEL NAME TFT Display Module	PART NO. H043BWV40I3580.
	FPC Connector		
VIEWING DIRECTION	ALL	CHKD	TOLERANCE UNLESS SPECIFIED
Gray Scale DIRECTION	FREE	PROJECTION	3RD ANGLE
		UNIT	MM
		SCALE	1:1



深圳市信努电子科技有限公司  
Xinnu Professional Technology (Guangzhou) Co., Ltd.

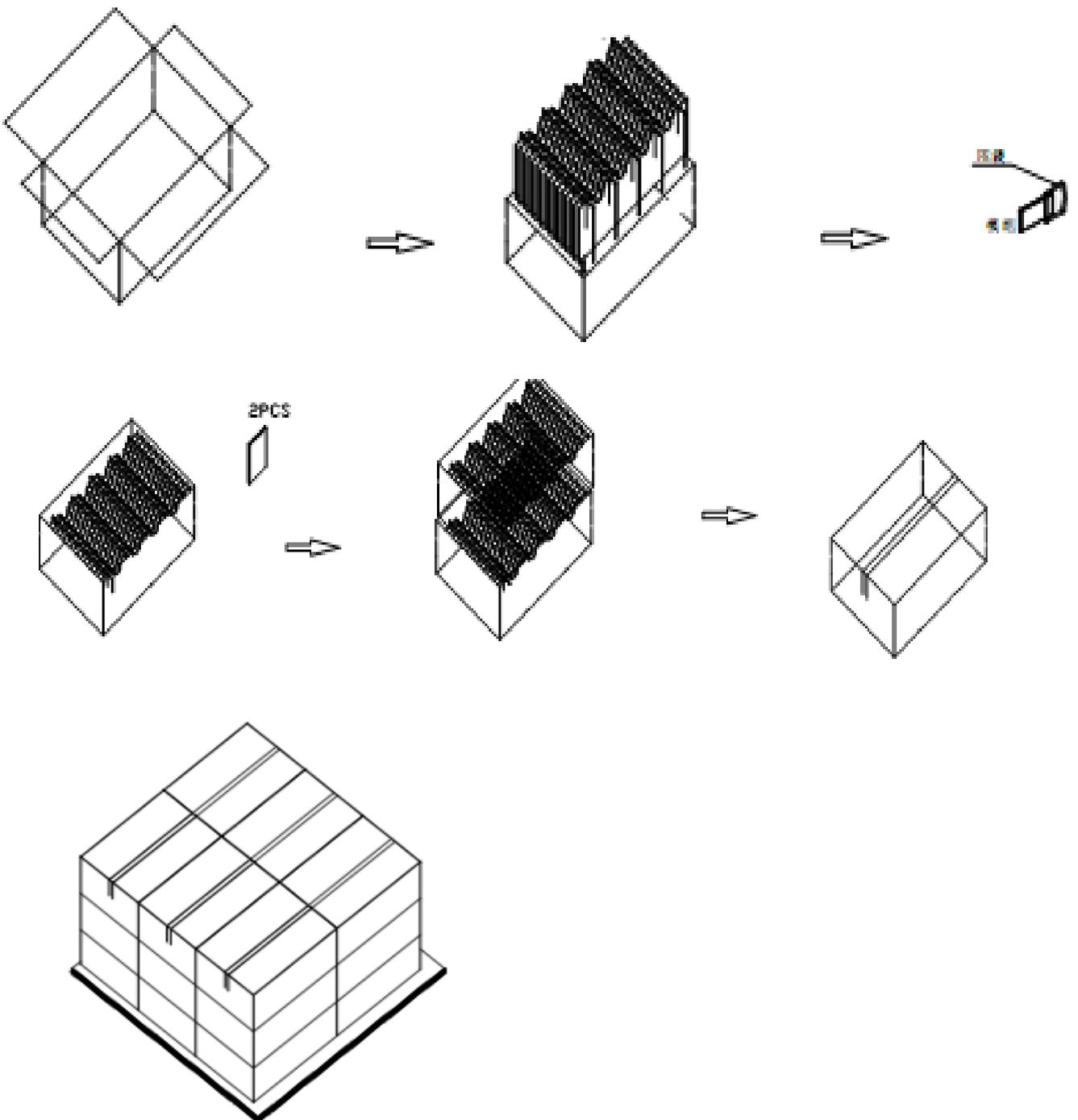


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Xunrui photoelectric technology (shenzhen) CO.,LTD.

## 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°C ~ 40°C      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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## 12. TP Specification







**02. 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]

**03. Features**

[特性]

	Item [项目]	Specifications [规格]
(1)	Product Structure [产品结构]	F+G
(2)	ITO Film [ITO 胶片]	0.188mm雾面防牛
(3)	ITO Glass [ITO 玻璃]	ITO Glass ordinary 0.7mm普通
(4)	Input Mode [操作模式]	Stylus or Finger [笔触或手触]
(5)	Connector [连接方式]	FPC

**04. General Specification**

[规格总则]

	Item [项目]	Specifications [规格]
(1)	Frame Size [外形尺寸]	104.80(长)×65.00(宽)×1.2±0.1(厚)
(2)	Tail Length [出线长度]	18.00±0.3mm

**05. Environmental Characteristics**

[环境特性]

	Item [项目]	Specifications [规格]	
(1)	Operation [操作]	-20°C ~ +70°C	20%RH ~ 90%RH
(2)	Storage [储存]	-30°C ~ +80°C	10%RH ~ 90%RH

Note: The environment is under normal atmosphere pressure.

[注:于正常的1 大气压下]

**06. Optical Characteristics**

[光学特性]

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

**07. Electrical Characteristics**

[电子特性]

	Item [项目]	Specifications [规格]
(1)	Terminal resistance [回路电阻]	Rx-x:200-900 Ω Ry-y:200-900 Ω
(2)	Linearity [线性]	≤1.5%
(3)	Chattering [触点抖动时间]	≤10ms
(4)	Insulation [绝缘阻抗]	≥20MΩ/25V(DC)



08. 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 50g~ 80g
(2)	Hardness [硬度]	3H pencil, pressure 1N/45 [铅笔3H,压力1N/45° ]	≥3H

09. 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, 160 hrs and normalized for 24hrs [60°C /90%RH, 160 小时, 回常温24小时后始可测试]	Satisfy (1),of Item6; (1),(2),(3)(4) of Item 7; (1) (2) of Item8 [符合6 项(1)、及7 项目(1)、(2)、(3)(4) 及 8 项目(1) (2) ]
(2)	Heat Test [高温测试]	70°C /96 hrs and normalized for 24 hrs [70°C / 96 小时, 回常温 24 小时后始可测试时]	Same as above [同上]
(3)	Cold Test [低温测试]	-20°C / 96 hrs and normalized for 24 hrs [-20°C / 96 小时, 回常温 24 小时后可测试]	Same as above [同上]
(4)	Thermal Cycle [冷热循环]	-30°C ~80°C [30 min./cycle] *20cycles and normalized for 24hrs [-20°C ~70°C, 每循环30 分钟, 共20次循环, 回常温 24 小时后始可测试]	Same as above [同上]

10. Durability

[耐久性]

	Item [项目]	Specifications [规格]	Condition [条件]
(1)	Knock Test [敲击测试]	1,000,000 times [R8,hardness 60°,150gf 约3次/sec]	Satisfy (1), (3) (4) of Item 7; (2) of item 7 satisfies X≤1.5%, Y≤1.5% [符合7项目 (1) (3)、(4); 7 项(2)符合X≤1.5%,Y≤1.5%]
(2)	Impact [撞击]	25Φ DIA. Steel Ball/ Hight=20cm [25Φ/ 不锈钢球 高 =20cm]	1 time, no damage [Impact at center area] [中央区域撞击1 次,不能 破损]
(3)	Stroke Test [笔划测试]	100,000 times [R0.8mm,with 120gf]	Satisfy (1), (4) of Item 7; (2) of item 7 satisfies X≤1.5%, Y ≤1.5% [符合7 项目(1)、(4); 7 项目(2)符合X≤1.5%,Y≤1.5%]



11. Appearance Inspection  
[外观检查标准]

(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 20W fluorescent lamp lighting from back or side. The panel was placed 30cm away from eyes. (Figure 11-1).

[(2) 检测始用之灯光为一盏20W 白炽灯光, 并于面板后侧或上侧照射, 检测时须放置在离眼睛30cm 处(Figure11-1)]

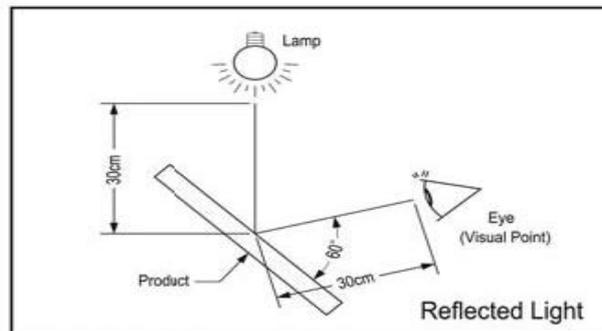


Figure 11-1

(3) Glass Flaw [玻璃瑕疵]

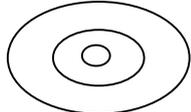
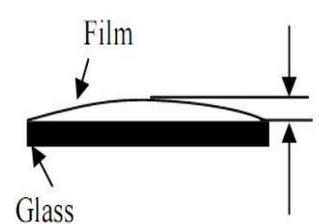
Item [项目]	Picture [图示]	Specification [规格]
Corner Flaw [角瑕疵]		$X \leq 1.0\text{mm}$ $Y \leq 1.0\text{mm}$ $Z \leq GT$ 且不影响产品功能
Edge Flaw [边缘瑕疵]		$X \leq 1.5\text{mm}$ $Y \leq 1.0\text{mm}$ $Z \leq GT$ 且不影响产品功能
Progressive Flaw [裂纹瑕疵]		Not allowed [不允许]

Note: GT=Glass thickness

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

[(4)外观规格请详见(附注1)]



Item [项目]	Specification [规格]	
<b>Appearance description</b> [外观说明]	应用区域：可视区 * 所有的外观不良只要是在可视区以外对产品功能不造成影响均不考虑在内 * 所有可以使用软布用酒精擦拭得掉的污染物均不考虑在内	
<b>Particle</b> [颗粒异物]	(1) $D < 0.15$ 可忽略 (2) $0.15 \leq D \leq 0.2$ and total $\leq 2$ □ OK (3) $D > 0.25$ □ NG	
<b>Linear Object</b> [线状异物]	(1) $W < 0.02$ 可忽略 (2) $0.02 \leq W \leq 0.05$ and $L \leq 1.5$ , total $\leq 1$ □ OK (3) $W > 0.05$ or $L > 1.5$ □ NG Remark: the particle will be ignored when it is cleanable.	
<b>Scratch</b> [刮痕]	同线状异物	
<b>QC抽查</b> 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) 0.65 ----功能异常缺陷 AQL-Ma (次要缺点) 1.5 ----刮伤与异物及外观缺陷	
<b>Newton Ring/Rain-bow</b> [牛顿环/干涉纹] (此项仅限于使用亮面胶片，如使用防牛顿环胶片不需检查此项)		
Item [项目]	Standard [标准]	Picture [图示]
<b>Rule</b> [规则]	(1) 当牛顿环 $> 1/6$ 时, □ NG (2) 当牛顿环 $\leq 1/6$ 时, 且不影响文字及直线失真 □ OK	使用防牛顿环ITO胶片不检此项 
<b>Abnormity</b> [不规则]	(1) 牛顿环不论大小, 当亮灯后造成文字及直线失真 □ NG (2) 当牛顿环 $\leq 1/6$ 时, 且亮灯后不影响文字及直线失真 □ OK	使用防牛顿环ITO胶片不检此项 
<b>Film drum</b> [膜鼓]	(1) FILM膜局部或全部鼓起 $> 0.45\text{mm}$ □ NG (2) FILM膜局部或全部鼓起 $\leq 0.45\text{mm}$ □ OK	

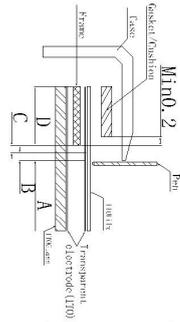


客户确认  
Customer confirmation

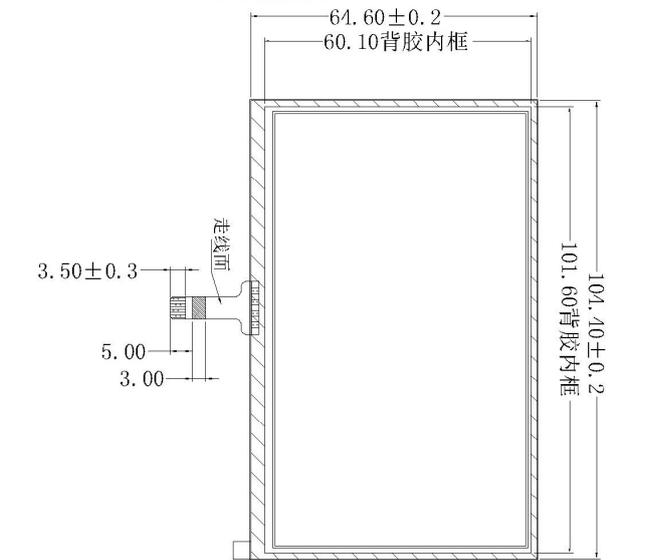
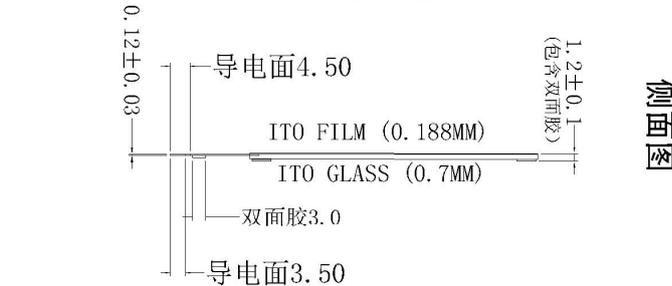
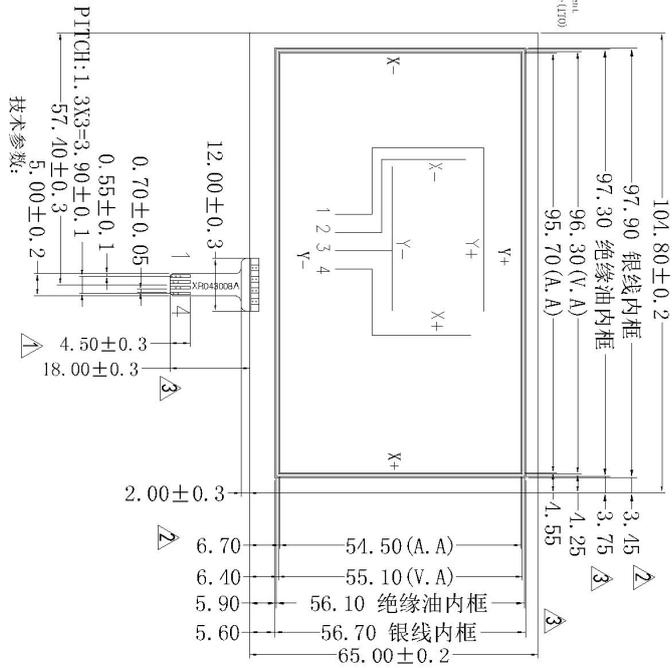
日期  
Date

No.	修改记录	修改人	日期
1.	在43008-C的基础上修改触摸屏尺寸	DJS	2020 08 09
2.			
3.			

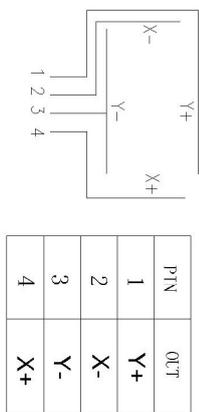
Structure and Area definition



**A.Active area**  
The area which guarantees a touch panel operation is divided into 4 zones:  
(1)Operation area, (2)Electric characteristics, (3)Trapping durability, (4)Pen sliding durability.  
B.operation non-guaranteed area  
The area which does not guarantee a touch panel operation and its function when the area of the operation is not guaranteed. The performance and durability such as pen sliding durability becomes about one-seventh compared with the active area (A) as guaranteed area) and its operation performance is not stable. About 0.5mm to this area.  
**C.Pressing prohibitor area.**  
The area which forbids pressing because an excessive load is applied a transparent electrode and a pressing lead is applied to touch sensor function by pressing.  
**D.Non-Active area**  
The area which does not activate even if pressed.



- 技术参数:  
1. 结构: film+glass+tail  
film: 雾面防牛 (0.188mm)  
glass: 500Ω/□ 普通0.7mm  
tail: FPC (pitch: 3)  
背胶: 透明双向胶0.15mm  
2. 产品总厚度: 触摸屏 1.2±0.1mm  
3. 绝缘阻抗: ≥20MΩ (25V DC)  
4. 线性: ≤1.5%  
5. 透光率: ≥80%  
6. 操作压力: 50±10g 连续触按  
7. 使用寿命: ≥1,000,000次  
8. 笔划寿命: ≥100,000次  
9. 工作环境: -20℃~+70℃  
10. 储存环境: -30℃~+80℃  
11. X: 200-900Ω; Y: 200-900Ω.  
12. 表面硬度: ≥3H  
13. 未注尺寸公差按±0.50



批准 Approved	日期 Date	日期 Date	Sheet Size	Tolerance Angles	Unit Scale	客户型号 Customer P/N	产品型号 Model No.
审核 Checked	日期 Date	2021-08-09	1/1 A4	±0.2 ±0.5°	mm 1/X		
设计 Designed	日期 Date						



深圳市勋瑞光电科技有限公司  
Xunrui photoelectric technology (shenzhen) CO.,LTD.

