

TABLE OF CONTENT

- GENERAL SPECIFICATIONS
- ABSOLUTE MAXIMUM RATINGS
- ELECTRICAL CHARACTERISTICS
- DIMENSIONAL DRAWING
- INTERFACE PIN CONNECTIONS
- TIMING CHARACTERISTICS OF INPUT SIGNAL
- ELECTRO-OPTICAL CHARACTERISTICS
- RELIABILITY
- INSPECTION CRITERIA
- PACKING DRAWING
- HANDLING PRECAUTION

江西欧云智能科技有限公司

1.0 GENERAL SPECIFICATION

Y800007A-00 is a color active matrix LCD module incorporating amorphous silicon TFT (Thin Film Transistor). It is composed of a color TFT-LCD panel, driver IC, FPC and a back light unit. The module display area contains 800x 1280pixels. This product accords with RoHS environmental criterion.

Item	Specification	Unit
Panel Size	8.0"	inch
Number of Pixels	800×1280	pixels
Shape size	114.6*184.1*2.5	mm
Display Area	107.64(H) x 172.224(V)	mm
Pixel pitch	0.0448*0.1344	mm
Number of Colors	16.7M	-
Display Mode	Normally Black	-
Viewing direction	Full View	-
Luminance	250(TYP.)	(cd/m ²)
Contrast Ratio	700(TYP.)	
Interface	MIPI	-

江西欧云智能科技有限公司

2.0 ABSOLUTE MAXIMUM RATINGS^L

AGND=GND=0V, Ta = 25

The following are maximum values which, if exceeded may cause operation or damage to the unit.

Item	Symbol	Min	Max	Unit	Note
Logic/LCD e Drive Voltage	Vin	-0.3	0.4	V	

Note: If users use the product out off the environment operation range temperature and humidity it will have visual quality concerns

3.0 ELECTRICAL CHARACTERISTICS

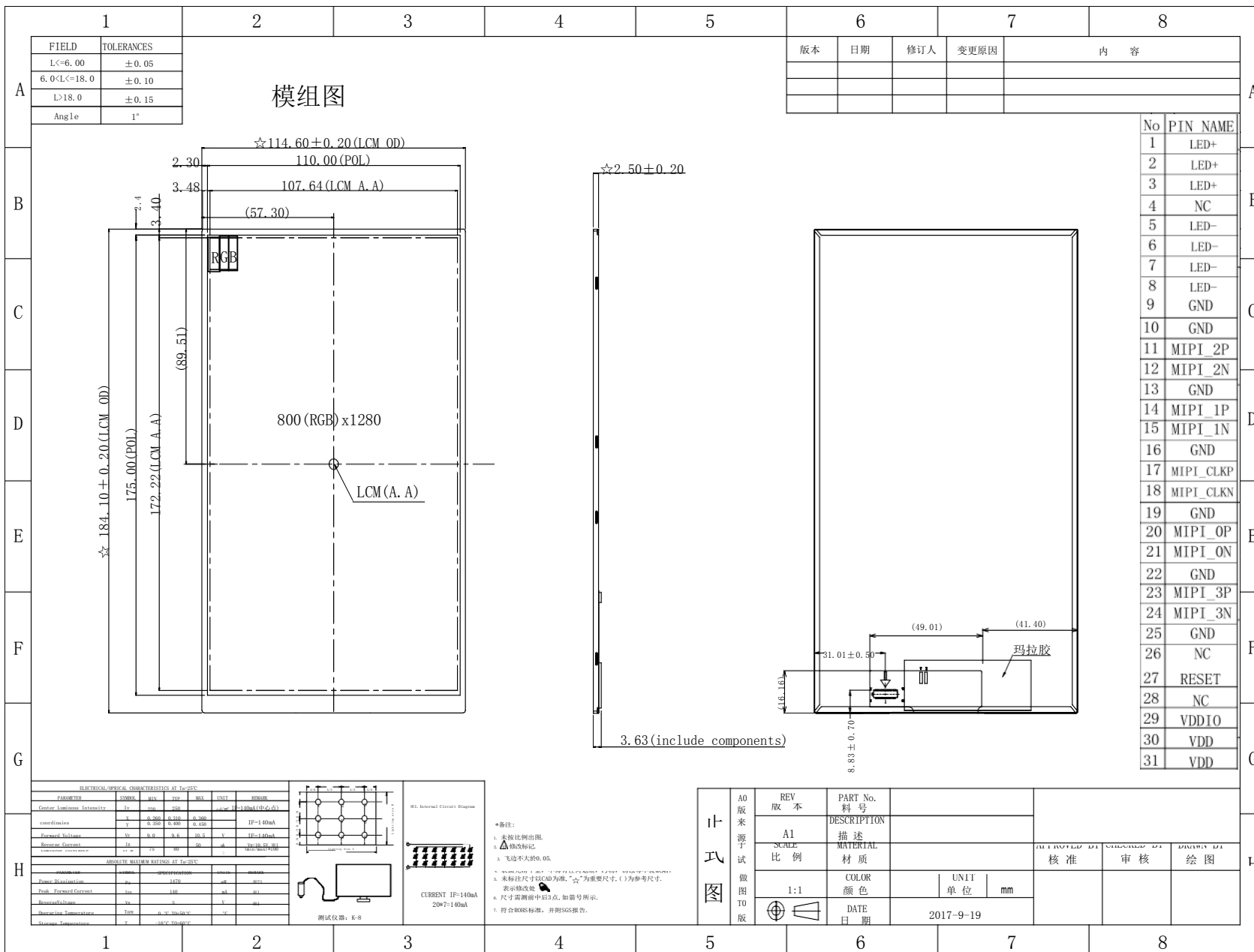
3.1 Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Power Voltage	VDD	3.0	3.3	3.6	V	
	VDDIO	1.6	1.8	2.0	V	
Digital power current	VDDIO		20		mA	
Analog power current	VDD		100		mA	
LED Current	ILED		20		mA	

3.2 BACKLIGHT CHARACTERISTICS

Item	Symbol	Min	Typ	Max	Unit	Condition
Forward voltage	Vf	9.0	9.6	10.8	V	If=140mA
Luminance	vL	220	250	--	cd/m	If=140mA
Connection mode	P	3chips serial *7				

4.0 DIMENSIONAL



江西欧云智能科技有限公司

5.0 INTERFACE PIN CONNECTIONS

No.	Symbol	Function	Remark
1-3	LED+	LED Anode	
4	NC	Not Connect	
5-8	LED-	LED cathode	
9.10	GND	Power ground	
11	MIPI_2P	MIPI data pair2 positive signal	
12	MIPI_2N	MIPI data pair2 negative signal	
13	GND	Power ground	
14	MIPI_1P	MIPI data pair1 positive signal	
15	MIPI_1N	MIPI data pai1 negative signal	
16	GND	Power ground	
17	MIPI -CLKP	MIPI clock positive signal	
18	MIPI _CLKN	MIPI clock negative signal	
19	GND	Power ground	
20	MIPI_0P	MIPI data pair0 positive signal	
21	MIPI_0N	MIPI data pair0 negative signal	
22	GND	Power ground	
23	MIPI_3P	MIPI data pair3 positive signal	
24	MIPI_3N	MIPI data pair3 negative signal	
25	GND	Power ground	
26	NC	Not Connect	
27	RESET	Device reset signal (1.8V)	
28	NC	Not Connect	
29	VDDIO	Power supply for VDDIO (1.8V)	
30.31	VDD	Power supply for VDD (3.3V)	

江西欧云智能科技有限公司

6

6.1 DE Mode

Parameter	Symbol	Spec			Unit
		MIN	TYP	Max	
Horizontal Display Area	thd	800			DCLK
DLCK Frequency	Fclk	30	66.8	85	MHZ
HSD Period	Th	860	864	1344	DCLK
HSD Blanking	thbp+thfp	60	64	544	DCLK
Vertical Display Area	tvd	1280			H
VSD period	tv	1285	1288	1510	H
VSD Blanking	Tvbp+tvfp	5	8	230	H

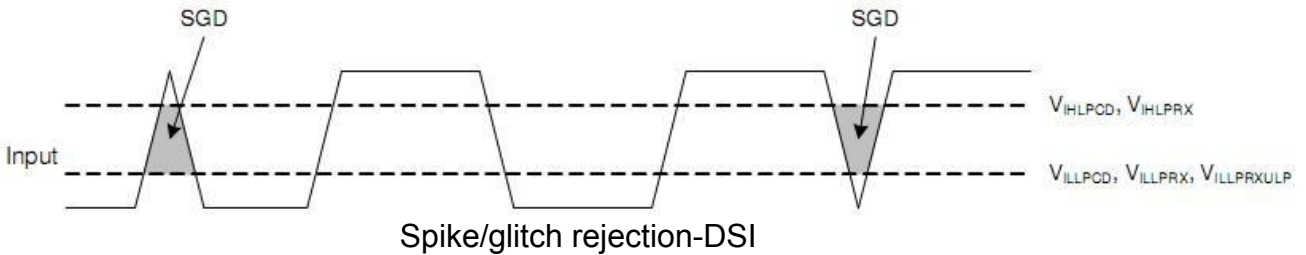
6.2 HV mode

Parameter	Symbol	Value			Unit
		MIN	TYP	Max	
Horizontal Display Area	thd	800			DCLK
DLCK Frequency	Fclk	30	66.8	85	MHZ
HSD Period	Th	860	864	1344	DCLK
HSD Pulse Width	thpw	1	-	40	DCLK
HSD Back Porch	thbp	48			DCLK
HSD Front Porch	tfbp	12	16	512	DCLK
Vertical Display Area	tvd	1280			H
VSD period	tv	1285	1288	1510	H
VSD Pulse Width	Typw	1	-	20	H
VSD Back Porch	Tvbp	3			H
VSD Front Porch	tvfp	2	5	227	H

江西欧云智能科技有限公司

6.3 MODE DC ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Conditions	Specification			UNIT
			MIN	TYP	MAX	
Logic high level input voltage	V _{IHLPCD}	LP-CD	450	-	1350	mV
Logic low level input voltage	V _{ILLPCD}	LP-CD	0	-	200	mV
Logic high level input voltage	V _{IHLPRX}	LP-RX (CLK, D0, D1)	880	-	1350	mV
Logic low level input voltage	V _{ILLPRX}	LP-RX (CLK, D0, D1)	0	-	550	mV
Logic low level input voltage	V _{ILLPRXULP}	LP-RX (CLK ULP mode)	0	-	300	mV
Logic high level output voltage	V _{OHLPTX}	LP-TX (D0)	1.1	-	1.3	V
Logic low level output voltage	V _{OLLPTX}	LP-TX (D0)	-50	-	50	mV
Logic high level input current	I _{IH}	LP-CD, LP-RX	-	-	10	μA
Logic low level input current	I _{IL}	LP-CD, LP-RX	-10	-	-	μA
Input pulse rejection	SGD	DSI-CLK+/-, DSI-Dn+/- (Note 3)	-	-	300	Vps

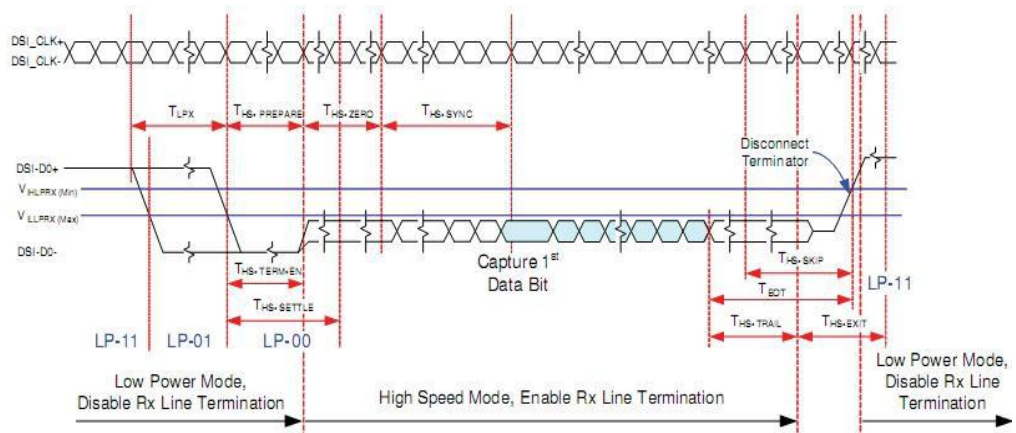
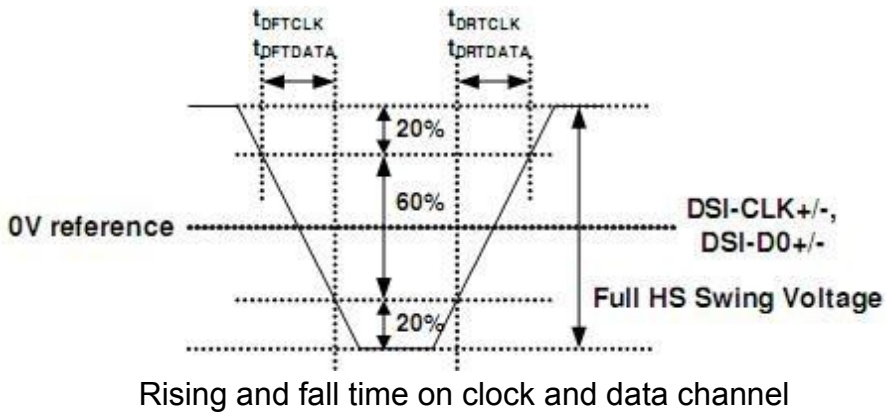
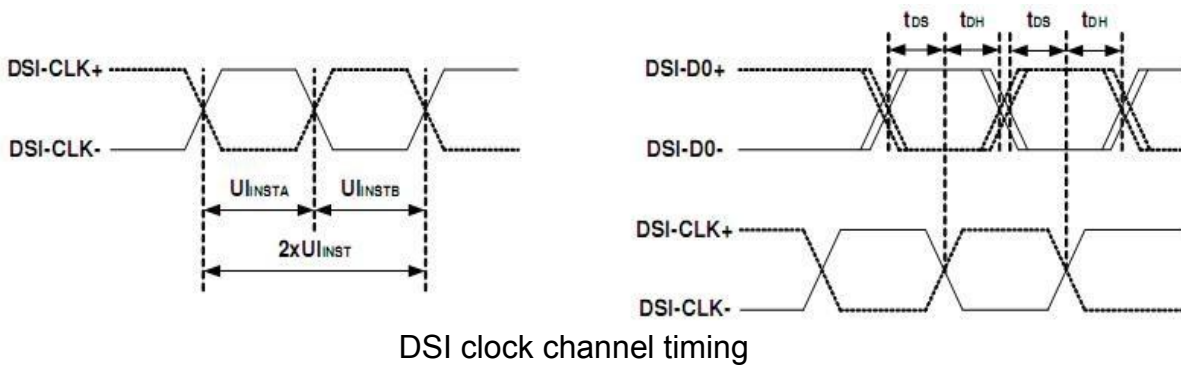


6.4 AC CHARACTERISTICS

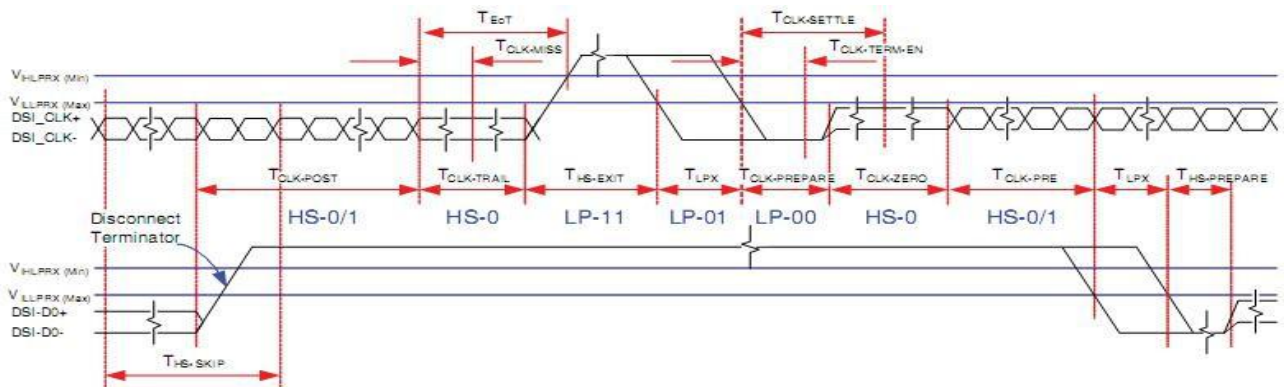
(V_{SS}=V_{SSI}=DV_{SS}=0V, V_{DDI}=1.65V to 3.6V, V_{DD}=2.5V to 3.6V, T_a = -30 to 70 °C)

Signal	Symbol	Parameter	MIN	TYP	MAX	Unit	Description
DSI-CLK+/-	2xU _{IINST}	Double UI instantaneous	4	-	8	ns	4 Lane (Note 2)
			3	-	8	ns	3 Lane (Note 2)
			2.352	-	8	ns	2 Lane (Note 3)
DSI-CLK+/-	U _{IINSTA} U _{IINSTB}	UI instantaneous halves (U _I = U _{IINSTA} = U _{IINSTB})	2	-	4	ns	4 Lane (Note 2)
			1.5	-	4	ns	3 Lane (Note 2)
			1.176	-	4	ns	2 Lane (Note 3)
DSI-Dn+/-	t _{DS}	Data to clock setup time	0.15xUI	-	-	ps	
DSI-Dn+/-	t _{DH}	Data to clock hold time	0.15xUI	-	-	ps	
DSI-CLK+/-	t _{DRTCLK}	Differential rise time for clock	150	-	0.3xUI	ps	
DSI-Dn+/-	t _{DRTDATA}	Differential rise time for data	150	-	0.3xUI	ps	
DSI-CLK+/-	t _{DFTCLK}	Differential fall time for clock	150	-	0.3xUI	ps	
DSI-Dn+/-	t _{DFTDATA}	Differential fall time for data	150	-	0.3xUI	ps	

江西欧云智能科技有限公司



6.4.1 CLOCK LANES-HIGH SPEED MODE TO/FROM LOW POWER MODE TIMING



江西欧云智能科技有限公司

7.0 ELECTRO-OPTICAL CHARACTERISTICS

Ta=25

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT	NOTE
Luminance	L	$\theta = 0^\circ$	220	250	--	cd/m ²	Note1
Luminance Uniformity	YU	9points	75	80	-	%	Note5
Contrast Ratio	CR	Point-5	--	700	--	-	Note3
Response Time	Rr+Tf	Point-5	--	35	50	ms	Note4
Viewing Angle K=Contrast Ratio>10	Horizontal	θL	CR > 10 θ = 0°	--	85	--	Note2
		θR		--	85	--	
	Vertical	θU		--	85	--	
		θD		--	85	--	
Color Filter Chromaticity	White	X	$\theta = 0^\circ$	0.260	0.310	0.360	Note1
		Y		0.350	0.400	0.450	
	Red	X	$\theta = 0^\circ$	TBD	TBD	TBD	
		Y		TBD	TBD	TBD	
	Green	X	$\theta = 0^\circ$	TBD	TBD	TBD	
		Y		TBD	TBD	TBD	
	Blue	X	$\theta = 0^\circ$	TBD	TBD	TBD	
		Y		TBD	TBD	TBD	
Color gamut (NTSC ratio)				TBD		%	

*Note(1) Definition of Contrast Ratio (CR):

The contrast ratio can be calculated by the following expression.

$$\text{Contrast Ratio (CR)} = L_{255} / L_0$$

L255 : Luminance of gray level 255

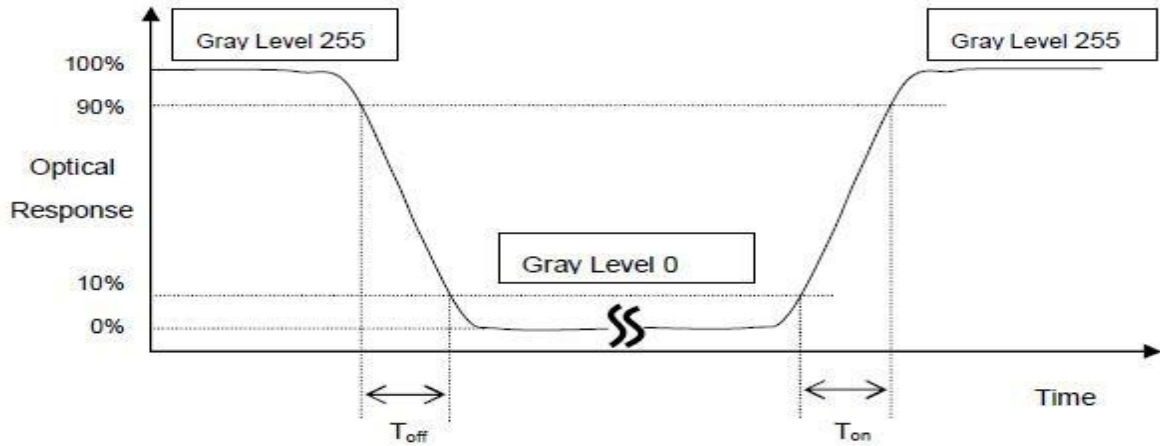
L 0: Luminance of gray level 0

CR = CR (5)

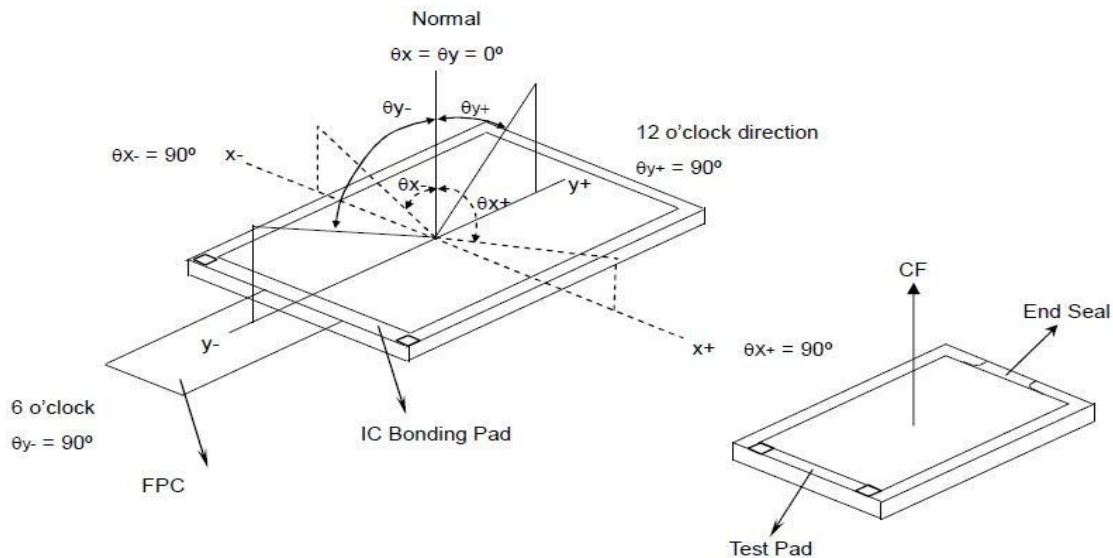
CR (X) is corresponding to the Contrast Ratio of the point X at Figure in Note (5).

江西欧云智能科技有限公司

Note (2) Definition of Response Time (T_{on} , T_{off}):



Note(3) Definition of Viewing Angle

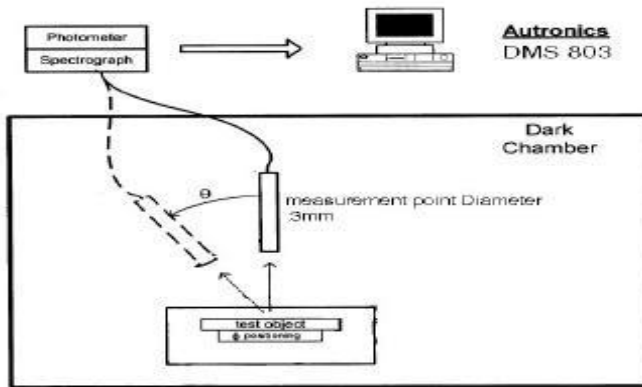


*Note (4) Measurement Set-Up:

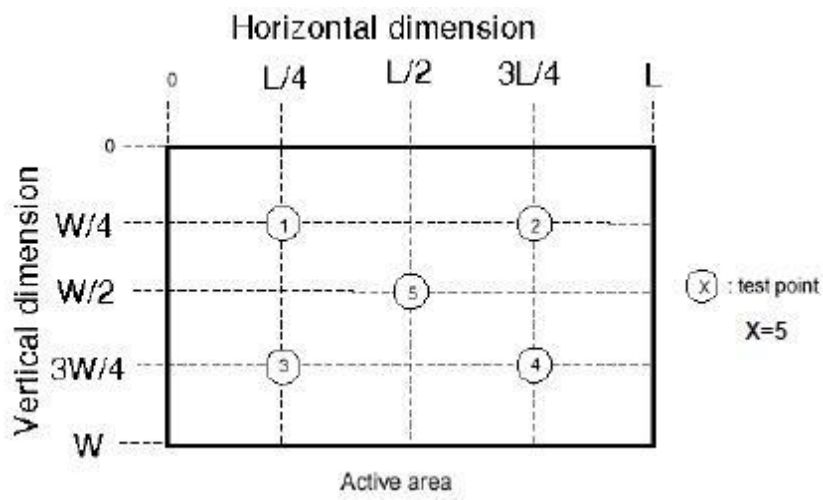
The LCD module should be stabilized at a given temperature for 20 minutes to avoid abrupt temperature change during measuring. In order to stabilize the luminance, the measurement should be executed after lighting Backlight for

20 minutes in a windless room.

江西欧云智能科技有限公司



Note (5)



江西欧云智能科技有限公司

8.0 RELIABILITY

8.1 MTBF

The LCD module shall be designed to meet a minimum MTBF value of 50000 hours with normal. (25°C in the room without sunlight)

8.2 TESTS

NO.	Test Item	Test condition	Criterion
1	High Temperature Storage	60°C±2°C 96H Restore 2H at 25°C Power off	
2	Low Temperature Storage	-10°C±2°C 96H Restore 2H at 25°C Power off	
3	High Temperature Operation	50°C±2°C 96H Restore 2H at 25°C Power on	
4	Low Temperature Operation	0°C±2°C 96H Restore 2H at 25°C Power on	
5	High Temperature & Humidity Operation	40°C±2°C 90%RH 96H Power on	
6	Temperature Cycle	-10°C ↔ 25°C ↔ 60°C 30min 5min 30min after 10cycle, Restore 2H at 25°C Power off	Aftertesting, cosmetic and electrical defects should not happen.
7	Vibration Test	10Hz~45Hz, 100m/s ² , 120min	
8	Shock Test	Half-sinewave, 300m/s ² , 11ms	
9	Drop Test(package state)	800mm, concrete floor, 1corner, 3edges, 6 sides each time	1. After testing, cosmetic and electrical defects should not happen. 2. the product should remain at initial place 3. Product uncovered or package broken is not permitted.
10	Electro Static Discharge Test (non-operation)	150pF, 330Ω, Contact: ±4KV, Air: ±8KV Measure point :LCD glass and metal bezel 200pF, 0Ω, ±200V contact test Measure point :IF connector pins	IEC61000-4-2: 2001 GB/T17626.2-2006

9.0 INSPECTION STANDARDS

9.1 Purpose

This incoming inspection standard shall be applied to TFT-LCD supplied by ZHONGSHEN to its customer.

9.2 Scope

This inspection standard contains Cosmetic Specifications and Electrical Specifications.

9.3 Classification of defects

9.3.1 Major defect.

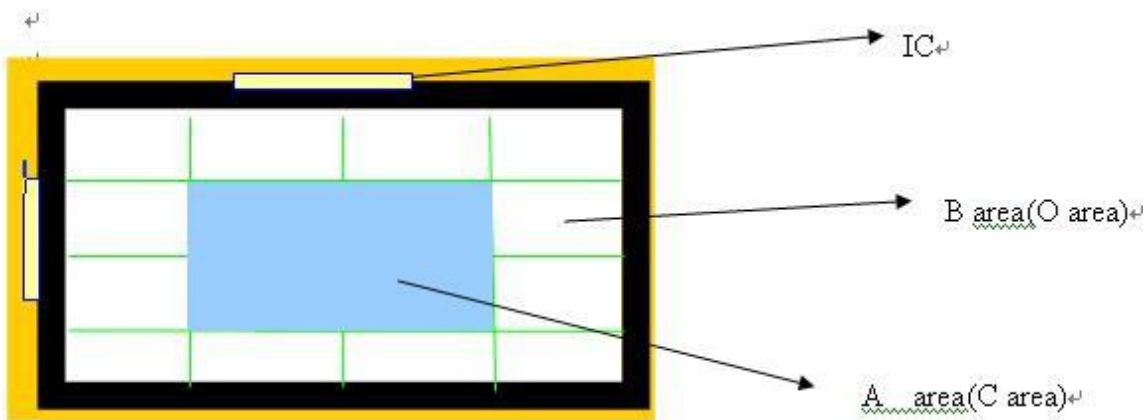
The major defect is a defect that is likely to result in product failure or reduction in Product's intended usage.

9.3.2 Minor defect.

The minor defect is a defect that has little bearing on the effective use or Operation of the product.

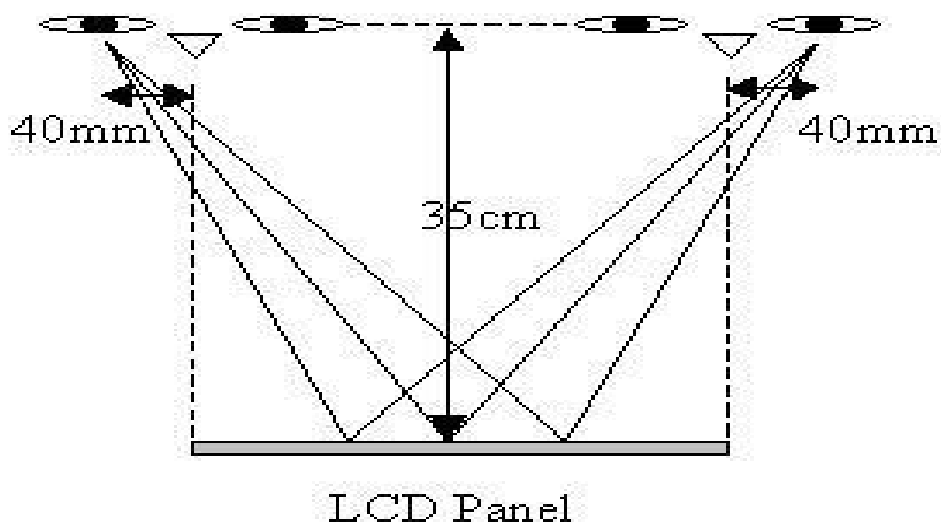
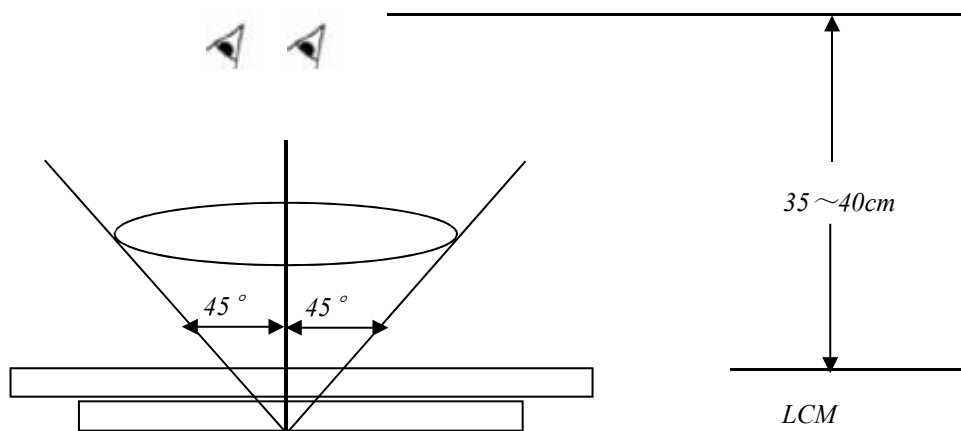
9.4 Definition

9.4.1 Display area definition



9.5 Inspection conditions is as follows

- 9.5.1 Viewing distance is approximately 35-40 cm
- 9.5.2 Viewing angle is normal to the LCD panel as 45°
- 9.5.3 Ambient temperature is approximately $25 \pm 5^\circ\text{C}$
- 9.5.4 Ambient humidity is $60 \pm 5\% \text{ RH}$
- 9.5.5 Ambient luminance is from 300-500 Lux.
- 9.5.6 Input signal timing should be typical value(3s-5s).
- 9.5.7 Mura & Light leakage inspection at ND-Filter 6%.



江西欧云智能科技有限公司

9.6 Sampling method

9.6.1 According to the MIL-STD-105E general inspection level , II Sampling plan.

9.6.2 AQL: MA 0.65 MI 1.0

9.7 Inspection Criteria

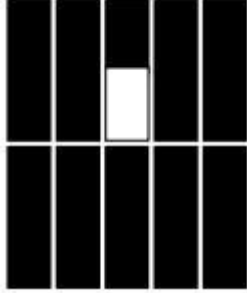
DEFECT TYPE			LIMIT			Defect	Note
VISUAL DEFECT	SCRATCH		$W \leq 0.05\text{mm}$ and $L \leq 5\text{mm}$		Ignore	Maj	NOTE1
			$0.05\text{mm} < W \leq 0.2\text{mm}$ $L \leq 10\text{mm}$		$N \leq 4$		
			$10\text{mm} < L, 0.1\text{mm} < W$		$N = 0$		
	INTERNAL	SPOT	$\Phi \leq 0.2\text{mm}$		Ignore		
			$0.2\text{mm} < \Phi \leq 0.5\text{mm}$		$N \leq 4$		
			$\Phi > 0.5\text{mm}$		$N = 0$		
		FIBER	$0.1\text{mm} \leq W \leq 0.2\text{mm}$ $L \leq 2.5\text{mm}$		$N \leq 4$		
			$0.2\text{mm} < W, 2.5\text{mm} < L$		$N = 0$		
		POLARIZER BUBBLE	$\Phi \leq 0.25\text{mm}$		Ignore		
			$0.25\text{mm} < \Phi \leq 0.5\text{mm}$		$N \leq 4$		
			$\Phi > 0.5\text{mm}$		$N = 0$		
		DENT	$\Phi < 0.25\text{mm}$		Ignore		
			$0.25\text{mm} \leq \Phi \leq 0.5\text{mm}$		$N \leq 4$		
			$\Phi > 0.5\text{mm}$		$N = 0$		
ELECTRICAL DEFECT	BRIGHT DOT		C Area	O Area	Total	Maj	NOTE2 NOTE3
			$N \leq 4$ (contain C area and O area)		$N \leq 4$		
	DARK DOT		$N \leq 5$ (contain C area and O area)		$N \leq 5$		
	TWO ADJACENT DOT		$N \leq 1$	$N \leq 2$	$N \leq 3$		
	THREE OR MORE ADJACENT DOT		NOT ALLOWLED				
	LINE DEFECT		NOT ALLOWLED				

江西欧云智能科技有限公司

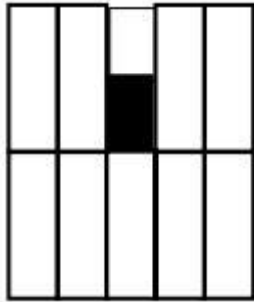
Note1: Minimum distance between dot defects and spot is 5mm;

Note2: The definition of Bright dot and Dark dot

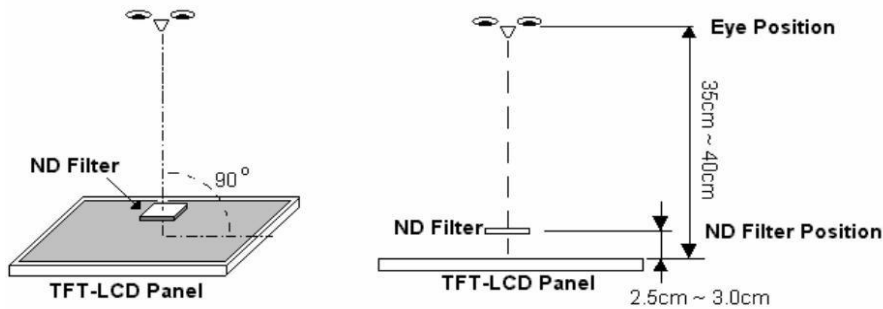
-bright area is more than 50% of one dot



-dark area is more than 50% of one dot



-The bright dot shall be visible under ND-Filter 5% as following:



NOTE3:

-A bit rate(bright dot model) $\leq 10\%$;

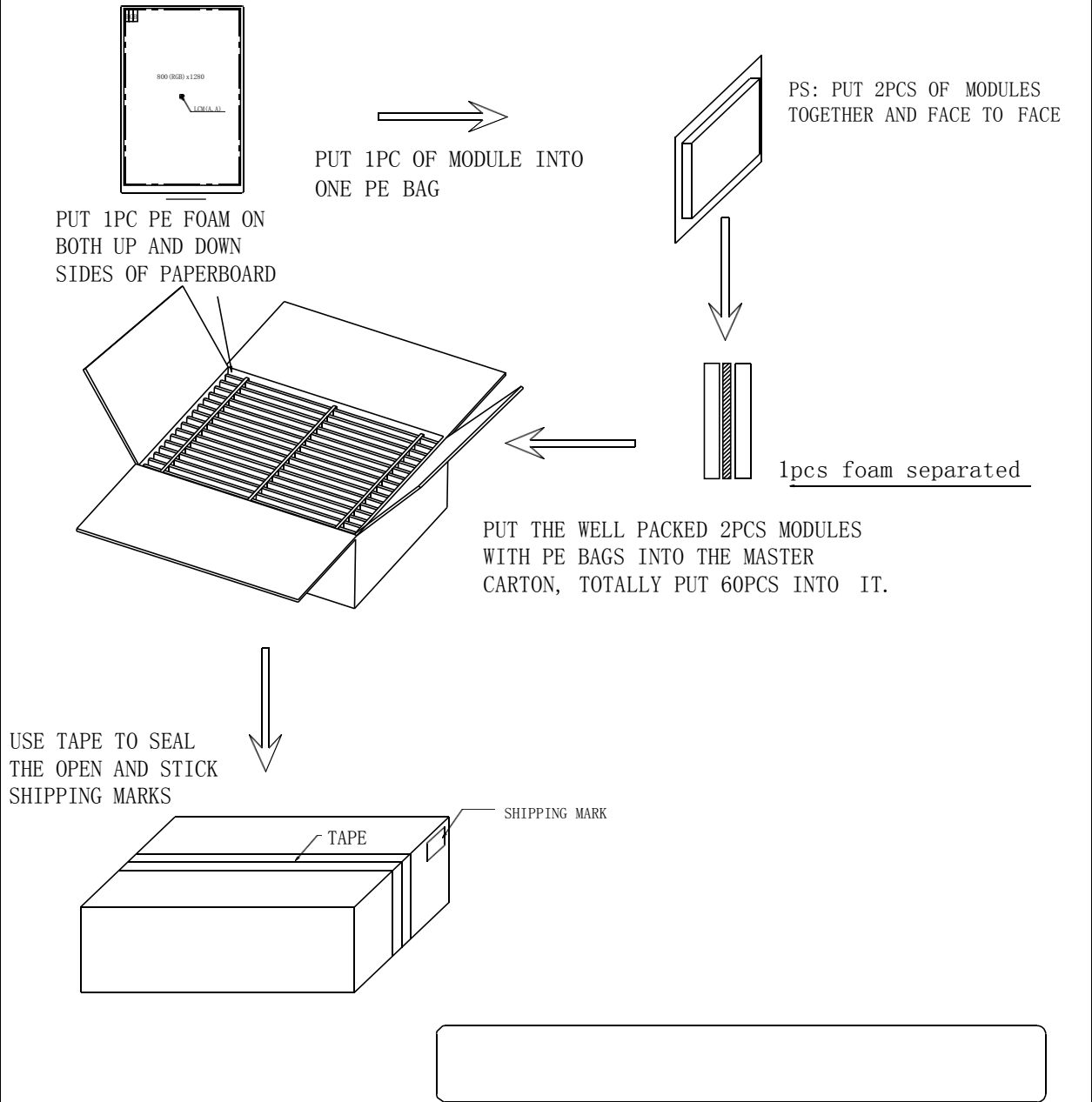
-Class Chipping but not affect the function of quality OK;

-Polarizing film appearance does not affect the function OK;

江西欧云智能科技有限公司

10.0 PACKINGDRAWING

PACKING DIAGRAM



REVISION 版本	A0	<input checked="" type="checkbox"/> 正式 <input type="checkbox"/> 临时	REVISER 修订人	MODEL NO 产品料号	CHECKED BY 审核			AUDITING 会签		
DATE 日期	2017-8-22			中深: ZS080NH3103E3H711-A	APPROVED BY 核准	CHECKED BY 审核	DRAWN BY 绘图	PROCESSING DEPARTMENT 工艺部	QUALITY DEPARTMENT 品质部	STANDARDIZATION-CHECKING 标准化检查
PAGE 页码	6/6		段太军	客户:						

江西欧云智能科技有限公司

11. 0 HANDLING PRECAUTION

- (1) Don't disassemble and reassemble the module by self.
(禁止自行拆解)
- (2) Acid, alkali, alcohol or touched directly by hand will damage the display.
(酸性、碱性、酒精或手的直接接触将会损伤显示面)
- (3) Static electricity will damage the module. Please configure grounding device.
(静电会损伤模组，请装配接地设备)
- (4) The strong vibration, shock, twist or bend will cause material damage, even module broken.
(强烈的撞击、震动、扭转或弯曲将会造成原材损伤，甚至面板破裂)
- (5) It is easy to cause image sticking while displaying the same pattern for very long time.
(长期显示同一画面会造成影像残留)
- (6) The response time, brightness and performance will vary from different temperature.
(响应时间、亮度与均匀性会因温度而有所改变)