PRODUCT SPECIFICATION

MODEL: WD101SHM30AE-H2

<◇>PRELIMINARY SPECIFICATION

<◆>APPROVAL SPECIFICATION

	DESIGNED	CHECKED	APPROVED
CUSTOMER APPROVED			

	DESIGNED	CHECKED	APPROVED
SUPPLIER APPROVED			LIUXIN

PREPAREDBY:
XINHANGSHENG TECHNOLOGY (SHENZHEN) CO., LTD.
2 BUILDING, 10 HIGH TECH PARK OF BAO TONG, TONGWEI, COMMUNITY GONGMINGTOWN,GUANGMING DISTRICT,
SHENZHEN,GUANGDONG,CHINA
TEL : +86-755-23400464
Mobile : +86-13714667520

XinHangSheng 鑫航盛 Technology

REVISION STATUS

Version	Revise Date	Page	Content	Modified by
V1.0	2018.03.29	-	First Issued.	LIUXIN

XinHangSheng 鑫航盛 Technolo

TABLE OF CONTENTS

NO.	CONTENTS	PAGE
	REVISION STATUS	2
	TABLE OF CONTENTS	3
1.	GENERAL DESCRIPTION	4
2.	MECHANICAL SPECIFICATION	4
3.	PIN DESCRIPTION	6
4.	ELECTRICAL CHARACTERISTICS	7
5.	INPUT SIGNAL TIMING	10
6.	OPTICAL CHARACTERISTICS	13
7.	RELIABILITY TEST ITEMS	16
8.	GENERAL PRECAUTION	17
9.	PACKAGE DRAWING	18

XinHangSheng 鑫航盛 Technology

1. GENERAL DESCRIPTION

1.1 Introduction

Hannstar Display model WD101SHM30AE-H2 is a color active matrix thin film Transistor(TFT) liquid crystal display (LCD) that uses amorphous silicom TFT as a Switching device. This model is composed of a TFT LCD panel,a driving circuit and a back light system.This TFT LCD has a 10.1(16:9) inch diagonally measured active display area with WSVGA (1024 horizontal by 600 vertical pixel) Resolution.

1.2 Features

- 10.1 inch (16:9 diagonal) configuration
- 16.2M color by 6 bit + Hi -FRC input
- RoHS/Halogen Free Compliance

1.3 Applications

- **Automotive**

1.4 TFT LCD General information

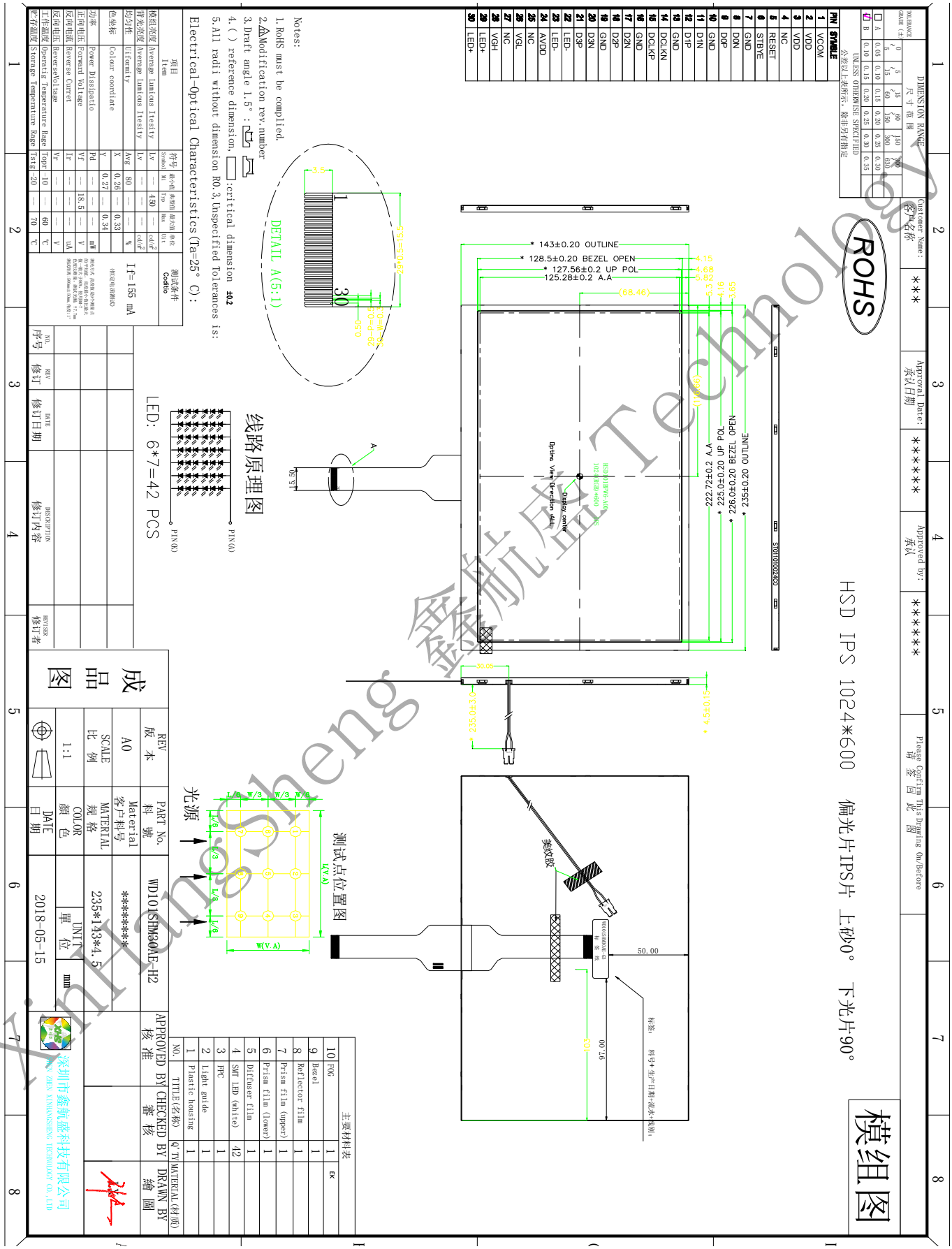
Item		Specification	Unit
Outline Dimension		235.0x143.0 (typ)	mm
Display area		222.72(H) x125.28(V)	mm
Number of pixel		1024 RGB (H) x 600(V)	pixels
Pixel pitch		0.2175 (H) x 0.2088(V)	mm
Pixel arrangement		RGB Vertical stripe	
Display mode		Normally black	
NTSC		45 (typ.)	%
Surface treatment		Antiglare with EWV Flim	
Weight		(280)g (Typ.)	g
Back-light		White LED	
Power Consumption	Logic	0.6(Max) @ Black pattern .Frame rate 60Hz	W
	BL System	3.0(typ) @ Black pattern w/o LED driver	W

1.5 Mechanical information

Item		Min.	Typ.	Max.	unit
Module size	Horizontal(H)	234.7	235.0	235.3	mm
	Vertical(V)	142.7	143.0	143.3	mm
	Depth(D)	---	4.5	4.8	mm
weight		**----**	(280)	**---**	g

XinHangSheng 鑫航盛 Technology

2. MECHANICAL SPECIFICATION



3. PIN DESCRIPTION

MIPI Connector HRS Model Number **:FH33-30S-0.5SH**

No.	Symbol	Function	Remark
1	VCOM	Common Voltage	
2	VDD	Power voltage for digital circuit	
3	VDD	Power voltage for digital circuit	
4	NC	NC	
5	RESET	Global reset pin	
6	STBYB	Standby mode .stbyb=H ,normal operation Stbyb=L ,timing contrloller,source driver Will turn off,all output aer high-z	
7	GND-	Ground	
8	MIPI_D0-	Negative MIPI differential data input	
9	MIPI_D0+	Positive MIPI differential data input	
10	GND	Ground	
11	MIPI_D1-	Negative MIPI differential data input	
12	MIPI_D1+	Positive MIPI differential data input	
13	GND	LVDS Signal(-)-channel 1	
14	MIPI_CLK-	Negative MIPI differential clock input	
15	MIPI_CLK+	Positive MIPI differential clock input	
16	GND	Ground	
17	MIPI_D2-	Negative MIPI differential data input	
18	MIPI_D2+	Positive MIPI differential data input	
19	GND	Ground	
20	MIPI_D3-	Negative MIPI differential data input	
21	MIPI_D3+	Positive MIPI differential data input	
22	GND	No connection	
23	NC	No connection	
24	AVDD	Power for analog circuit	
25	NC	Ground	
26	VGL	Gate OFF voltage	
27	NC	Ground	
28	VGH	Gate OFF voltage	
29	NC	NC	
30	GND	Ground	

XinHangSheng 鑫航盛 Technology

4. ELECTRICAL CHARACTERISTICS

4.1 ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Min.	Max.	Unit
Digital Supply Voltage	VDD	-0.3	5.0	V
Analog supply voltage	AVDD	-0.3	15	V
Gate on voltage	VGH	-0.3	25	V
Gate off voltage	VHL	-20	0.3	V

4.2 TFT LCD MODULE

4.2.1 OPERATING CONDITIONS

Parameter	Symbol	Min.	Typ.	Max.	Unit
Digital Supply Voltage	VDD	1.75	1.8	1.85	V
TFT Gate ON Voltage	VGH	19	20	21	A
TFT Gate OFF Voltage	VHL	-10.3	-10.0	-9.7	W
TFT Common electrode voltage	VCOM	3.9	4.25	4.5	A
Analog Power Supply voltage	AVDD	9.5	10.2	10.1	V
Back light Powe	V	18	18.6	20	V

NOTE

TYP VCOM is only reference value. It must be optimized according to each LCM. Be sure to use VR and OP buffer on VCOM output. Please adjust VCOM to make the flickerlevel be minimum for getting excellent image.

4.3 Current Consumption

Symbol	Item	Min.	Typ.	Max.	Unit	Remark
IVGH	Gate on current	--	0.36-	--	mA	VGH=20V
IVGL	Gate OFF current	--	0.85-	--	mA	VGL=-10V
IVDD	Digital Current	--	23	--	mA	VDD=1.8
IAVDD	Analog Power Supply voltage	--	28	--	mA	AVDD=10.2V
IVCOM	TFT Common electrode voltage	--	0.002	--	mA	VCOM=4.2V

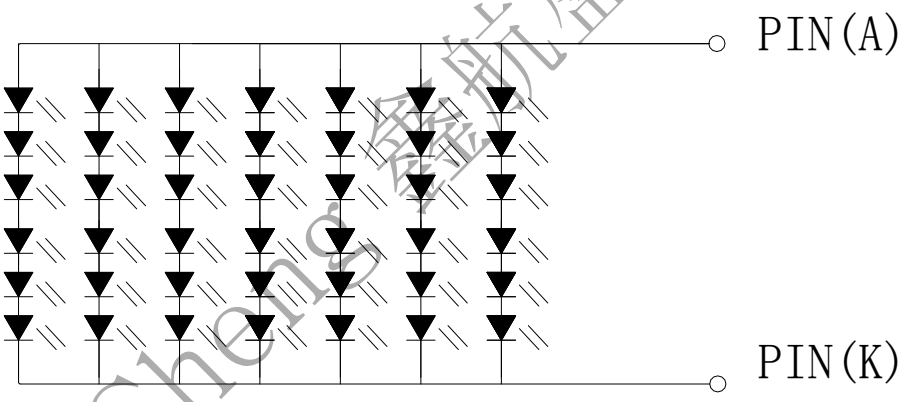
XinHangSheng 鑫航盛 Technology

4.4 BACK LIGHT UNIT

Ta=25℃

Item	Symbol	Min.	Typ.	Max.	Unit	Remark
LED current	ILED		150		mA	Total LED
Forward voltage	VF	18	18.6	20	V	IF=150mA
Reverse current	IR			50	μA	VR=5V,1LED
Power dissipation	Pd	2900			mW	Total LED
Peak forward current	IFP	25			mA	1LED
Reverse Voltage	VR	5			V	1LED

线路原理图

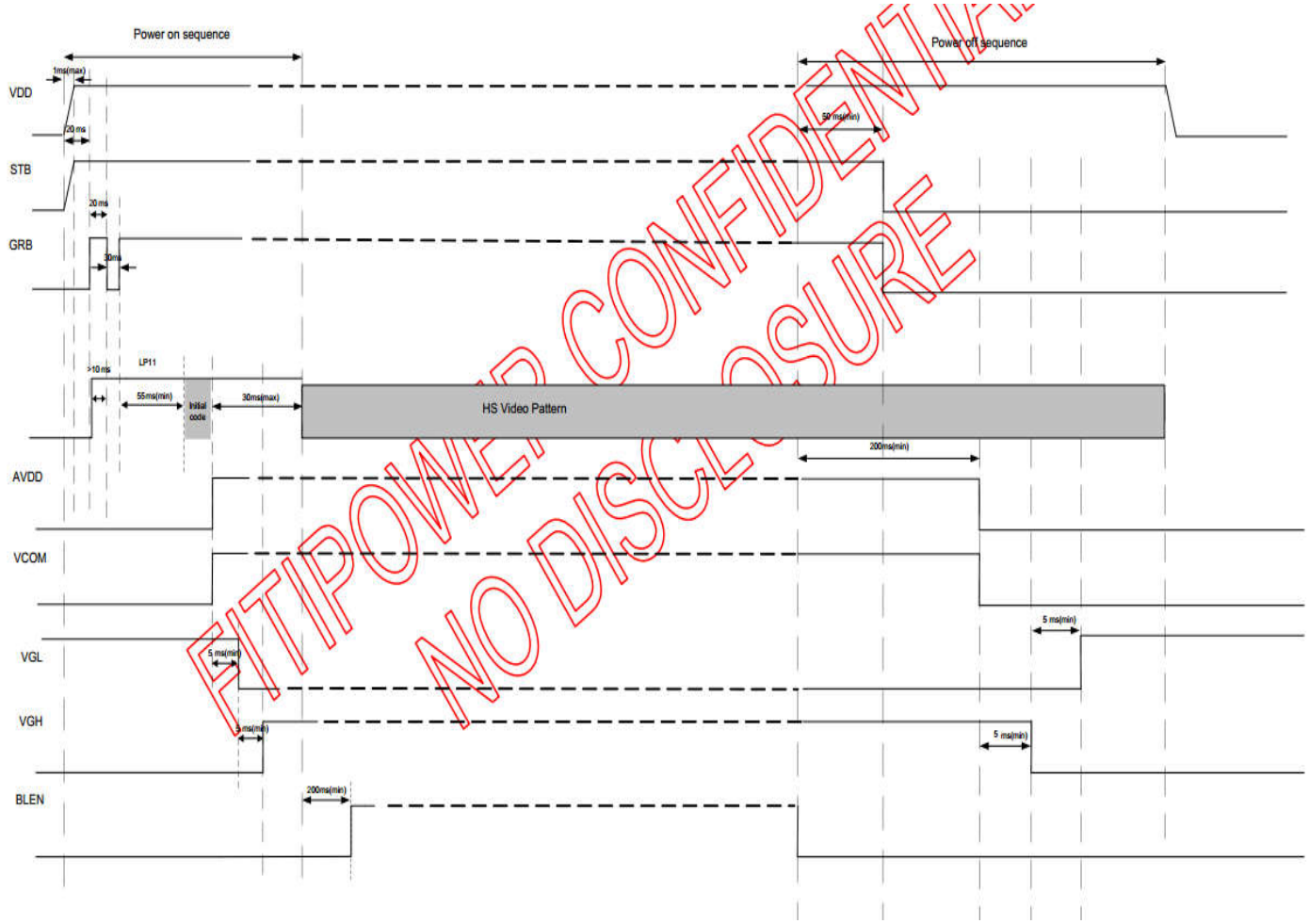


LED 6X7=42　　21.5mAX7=150.5mA

XinHangSheng 鑫航盛 Technology

4.5 POWER ON/OFF SEQUENCE

In order to prevent IC from power on reset fail, the rising time (TPOR) of the digital power supply VDD should be maintained within the given specifications. Refer to “AC Characteristics” for more detail on timing



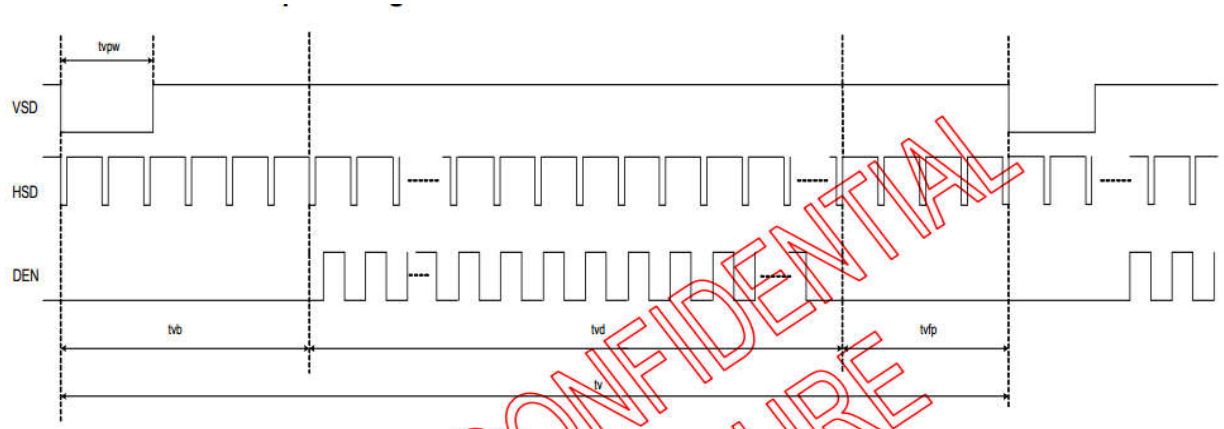
FITIPOWER CONFIDENTIAL
NO DISCLOSURE

Note: CLK and Data Lanes should keep in LP11(stop state) before GRB

5.INPUT SIGNAL TIMING.

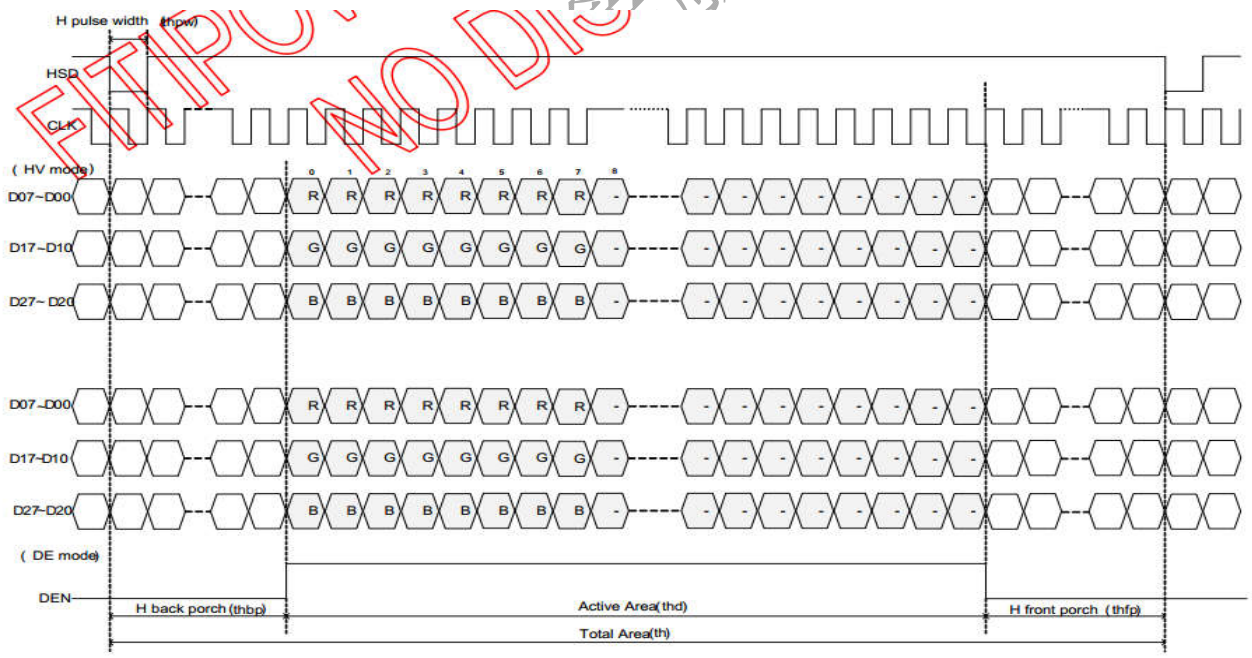
5.1 MODE DC ELECTRICAL CHARACTERISTICS.

Vertical input timing



Vertical input timing

Horizontal input timing



Horizontal input timing

FOR CONFIDENTIAL
NO DISCLOSURE

DE mode

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
DCLK frequency @Frame rate=60hz	fclk	40.8	51.2	67.2	Mhz
Horizontal display area	thd		1024		DCLK
HSYNC period time	th	1114	1344	1400	DCLK
HSYNC blanking	thb+thfp	90	320	376	DCLK
Vertical display area	Tvd		600		H
VSYNC period time	Tv	610	635	800	H
VSYNC blanking	Tvb+Tvfp	10	35	200	H

HV mode
Horizontal input timing

Parameter		Symbol	Value			Unit
Horizontal display area		thd		1024		DCLK
DCLK frequency@ Frame rate=60hz		fclk	Min.	Typ.	Max.	
			44.9	51.2	63	Mhz
1 Horizontal Line		th	1200	1344	1400	DCLK
HSYNC pulse width	Min.	thpw	1			
	Typ.		70			
	Max.		140			
HSYNC blanking		thb	160	160	160	
HSYNC front porch		thfp	16	160	216	

HV mode
Vertical input timing

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Vertical display area	tvd		600		H
VSYNC period time	tv	624	635	750	H
VSYNC pulse width	tvpw	1	10	20	H
VSYNC back porch	tvb	23	23	23	H
VSYNC front porch	tvfp	1	12	127	H

FITPOWER CONFIDENTIAL
NO DISCLOSURE

Input Timing Table (2Lane)

DE mode

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
DCLK frequency @Frame rate=60hz	fclk	40.8	51.2		Mhz
Horizontal display area	thd		1024		DCLK
HSYNC period time	th	1114	1344		DCLK
HSYNC blanking	thb+thfp	90	320		DCLK
Vertical display area	Tvd		600		H
VSYNC period time	Tv	610	635		H
VSYNC blanking	Tvb+Tvfp	10	35		H

HV mode
Horizontal input timing

Parameter		Symbol	Value			Unit
Horizontal display area		thd		1024		DCLK
DCLK frequency@ Frame rate=60hz		fclk	Min.	Typ.	Max.	
			44.9	51.2		Mhz
1 Horizontal Line		th	1200	1344		DCLK
HSYNC pulse width	Min.	thpw		1		
	Typ.			70		
	Max.			140		
HSYNC blanking		thb	160	160		
HSYNC front porch		thfp	16	160		

HV mode
Vertical input timing

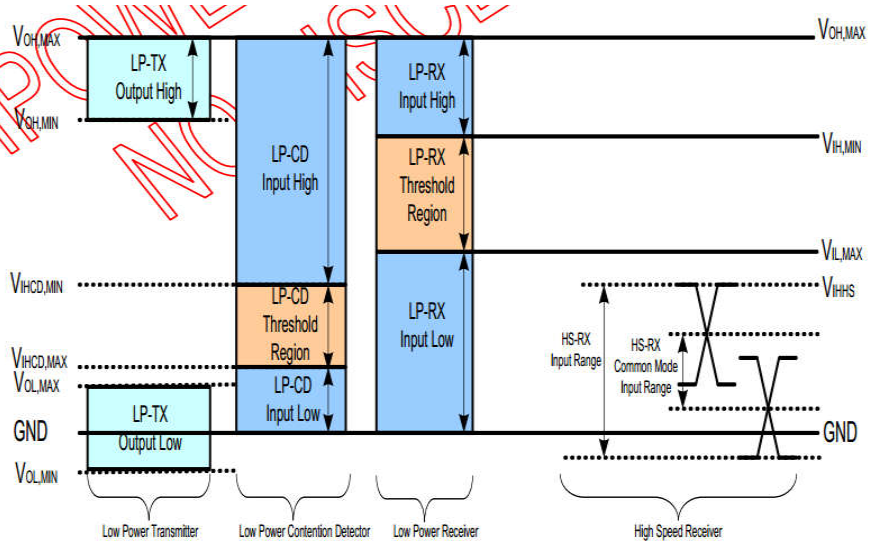
Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Vertical display area	tvd		600		H
VSYNC period time	tv	624	635		H
VSYNC pulse width	tvpw	1	20		H
VSYNC back porch	tvb	23	23		H
VSYNC front porch	tvfp	1	12		H

FITIPOWER CONFIDENTIAL
NO DISCLOSURE

5.3.1 MIPI Interface DC Characteristic

(VDD=VDD_IF=1.8V,AVDD=8 to 13.5V,GND=AGND=GND_IF=0V,TA=-20℃ to 70℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit
MIPI Characteristics for High Speed Receiver					
Single-ended input low voltage	VILHS	-40	-	-	mV
Single-ended input high voltage	VIHHS	-	-	460	mV
Common-mode voltage	VCDRXDC	70	-	330	mV
Differential input impedance	ZID		100		ohm
HS transmit differential voltage(VOD=VDP-VDN)	|VOD|	140	200	250	mV
MIPI Characteristics for Low Power Mode					
Pad signal voltage range	VI	-50		1350	mV
Ground shift	VGNDSH	-50	-	50	mV
Logic 0 input threshold	VIL	0	-	550	mV
Logic 1 input threshold	VIH	880	-	1350	mV
Input hysteresis	VHYST	25	-	-	mV
Output low level	VOL	-50	-	50	mV
Output high level	VOH	1.1	1.2	1.3	V
Output impedance of Low Power Transmitter	ZOLP	80	100	125	ohm
Logic 0 contention threshold	VILCD,MAX	-	-	200	mV
Logic 0 contention threshold	VIHCD,MIN	450	-	-	mV



5.4 Power Block DC Characteristic

(VDD=VDD_IF=1.8V, AVDD=8 to 13.5V, GND=AGND=GND_IF=0V,TA=-20 to +70℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Base drive current for PWM	IDRV	-	-	60	mA	DRVA =0.7V
DRV output voltage for PWM	VDRV	0	-	VDD	V	
Feedback voltage for PWM	VFB	1.1	1.2	1.3	V	
Duty cycle maximum	Dmax	-	-	85	%	
VCOM buffer input voltage	VCOMI	1	-	AVDD	V	
VCOM buffer output voltage	VCOMO	VCOMI-0.2	VCOMI	VCOMI+0.2	V	
VCOM buffer output current	IVCOM	-	-	10	mA	VCOMO=5V vs 4.9V

FITIPOWER CONFIDENTIAL
NOT FOR DISCLOSURE

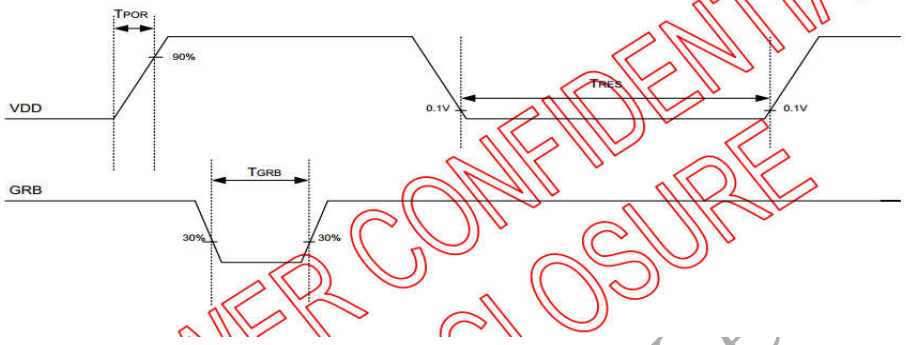
5.5 AC ELECTRICAL CHARACTERISTIC

Basic AC Characteristic

(VDD=VDD_IF=1.8V, AVDD=8 to 13.5V, GND=AGND=GND_IF=0V,TA=-20 to +70℃)

VDD/GRB AC characteristic

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
VDD power slew rate	T_{POR}	-	-	20	ms	From 0 to 90% VDD
GRB active pulse width	T_{GRB}	1	-	-	ms	VDD=VDD_IF= 1.8V
VDD resettle time	T_{RES}	1	-	-	s	

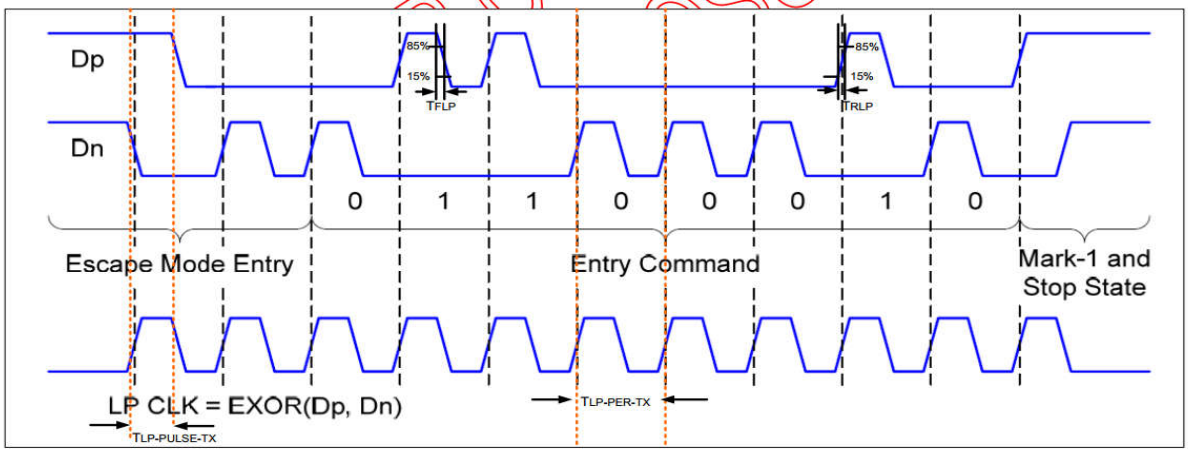


ER CONFIDENTIAL
OSURE

5.6 MIPI AC Characteristic

LP Transmitter AC Specification

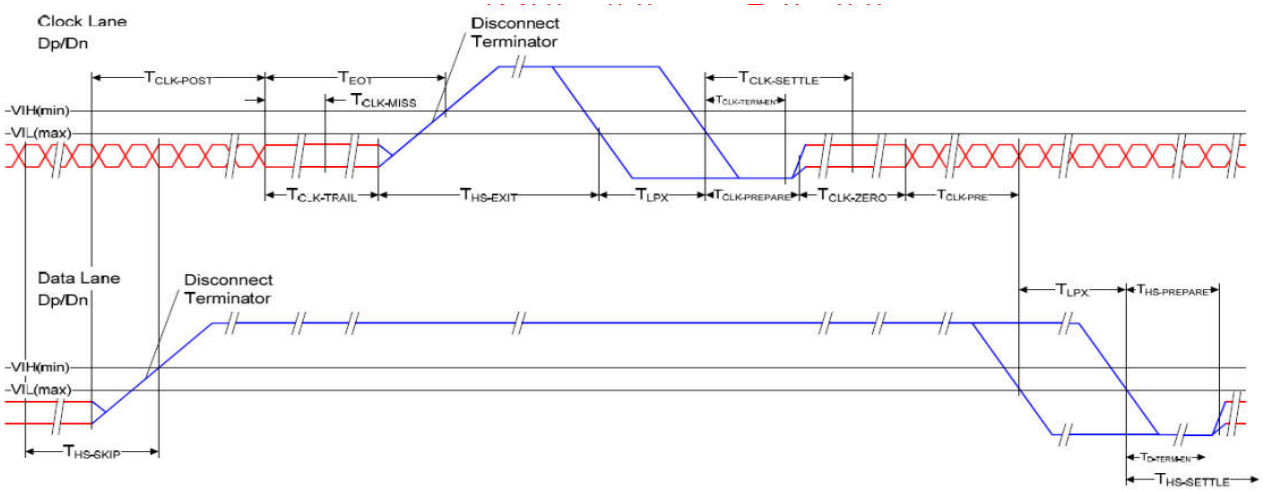
Parameter		Symbol	Min	Typ	Max	Units	Notes
15%~85% rising time and falling time		T_{RLP} /T_{FLP}	-	-	25	ns	-
30%~85% rising time and falling time		T_{REOT}	-	-	35	ns	-
Pulse width of LP exclusive-OR clock	First LP EXOR clock pulse after STOP state or Last pulse before stop state	$T_{LP-PULSE-TX}$	40	-	-	ns	-
	All other pulses		20	-	-	ns	-
Period of the LP EXOR clock		$T_{LP-PER-TX}$	90	-	-	mV/ns	-
Slew Rate @C_{LOAD} =0pF		δ V/δ t_{SR}	30	-	500	mV/ns	-
Slew Rate @C_{LOAD} =5pF			30	-	200	mV/ns	-
Slew Rate @C_{LOAD} =20pF			30	-	150	mV/ns	-
Slew Rate @C_{LOAD} =70pF			30	-	100	mV/ns	-
Load Capacitance		T_{RLP}	-	-	70	pF	-



High Speed Clock Transmission

Parameter	Symbol	Min	Typ	Max	Units
Time that the transmitter shall continue sending HS clock after the last associated Data Lane has transitioned to LP mode	TCLK-POST	60+52UI	-	-	ns
Detection time that the clock has stopped toggling	TCLK-MISS	-	-	60	ns
Time to drive LP-00 to prepare for HS clock transmission	TCLK-PREPARE	38	-	95	ns
Minimum lead HS-0 drive period before starting clock	TCLK-PREPARE + TCLK-ZERO	300	-	-	ns
Time to enable Clock Lane receiver line termination measured from when Dn cross VIL,MAX	THS-TERM-EN	-	-	38	ns
Minimum time that the HS clock must be prior to any associated data lane beginning the transmission from LP to HS mode	TCLK-PRE	8	-	-	UI
Time to drive HS differential state after last payload clock bit of a HS transmission burst	TCLK-TRAIL	60	-	-	ns

CONFIDENTIAL



4-Lane

MIPI command:

regw(0x80,0XB0);

regw(0x81,0XA0);

regw(0x82,0x86);

regw(0x83,0XD3);

regw(0x84,0x5B);

regw(0x85,0x2E);

regw(0x86,0xDD);

2-Lane

MIPI command:

regw(0xB2,0x10);

regw(0x80,0XB0);

regw(0x81,0XA0);

regw(0x82,0x86);

regw(0x83,0XD3);

regw(0x84,0x5B);

regw(0x85,0x2E);

regw(0x86,0xDD);

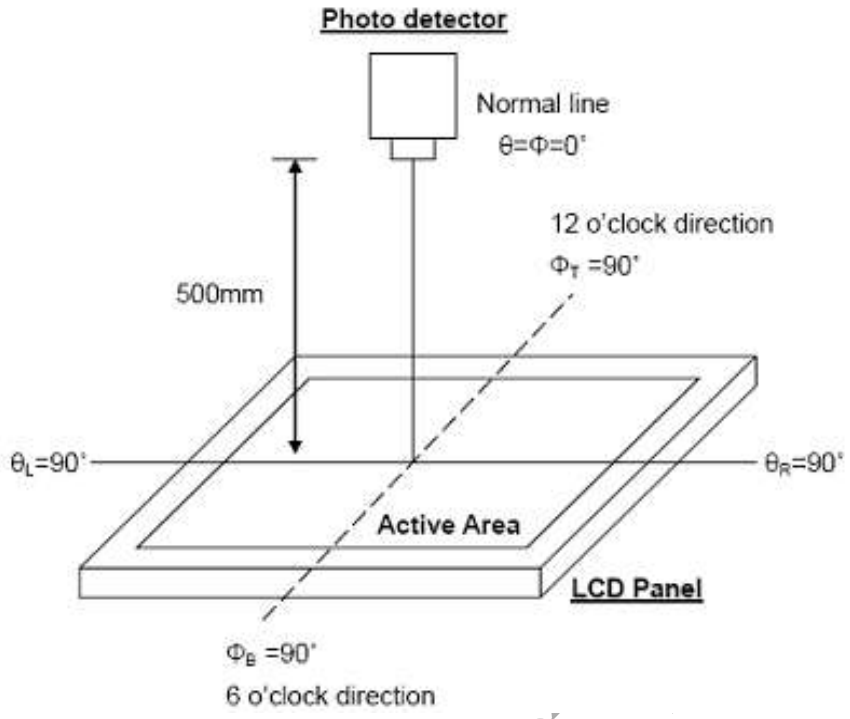
6.OPTICAL CHARACTERISTICS

Ta=25±2℃

Item		Symbol	Min.	Typ.	Max.	Unit	Note
Contrast Ratio		CR	-	500	-		Note1 Note3
Luminance(center)		L	350	400	-	cd/m2	Note1 Note5 Note7
Luminous tolerance		LU	70	75		%	Note7
Response Time		Rising + Falling	-	30	35	ms	Note1 Note4
Viewing Angle K=Contrast Ratio>10	Horizontal	θx^+	80	85	-	degree	Note2
		θx^-	80	85	-		
	Vertical	θy^+	80	85	-		
		θy^-	80	85	-		
Color Chromaticity (CIE1931)	Red	x	Typ-0.05	0.605	Typ+0.05		Note1 Note5 Note7
		y		0.327			
	Green	x		0.288			
		y		0.517			
	Blue	x		0.150			
		y		0.145			
	White	x		0.302			
		y		0.323			
Color gamut (NTSC ratio)				50		%	
Optima View Direction		All VIEW					

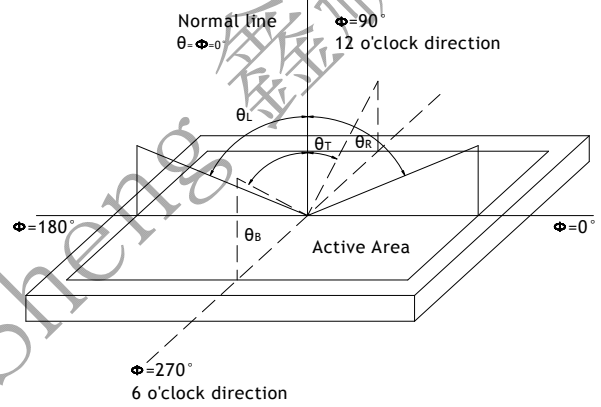
Note1: Definition of optical measurement system (BM-7)

XinHangSheng 鑫航盛 Technology



Note2: Definition of viewing angle range and measurement system

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



Note3: 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%.

XinHangSheng 鑫航盛

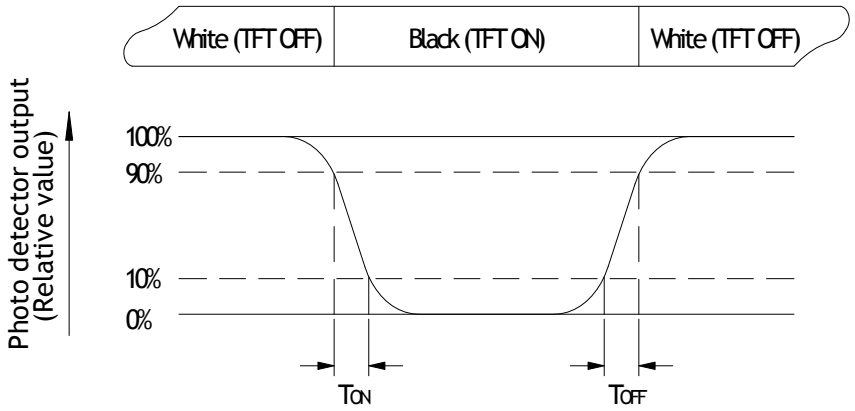


Fig. 6-3 Definition of response time

Note4: Definition of contrast ratio

Contrast ratio(CR)=错误！未找到引用源。

"White state ": The state is that the LCD should drive by Vwhite.

"Black state": The state is that the LCD should drive by Vblack.

Vwhite: To be determined Vblack: To be determined.

Note5: Definition of color chromaticity (CIE1931)

Color coordinates measured at center point of LCD.

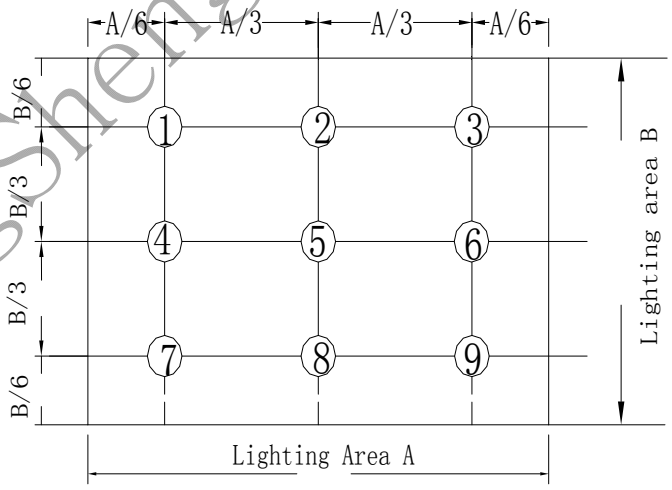
Note6: All input terminals LCD panel must be ground while measuring the center area of the panel. The LED driving condition is IL=150mA

Note7: Definition of Luminance Uniformity

Active area is divided into 9 measuring areas.Every measuring point is placed at the center of each measuring area.

Luminance Uniformity (U) = Lmin/ Lmax

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



Bmax: The measured maximum luminance of all measurement position.

Bmin: The measured minimum luminance of all measurement position.

XinHangSheng 鑫航盛 Technology

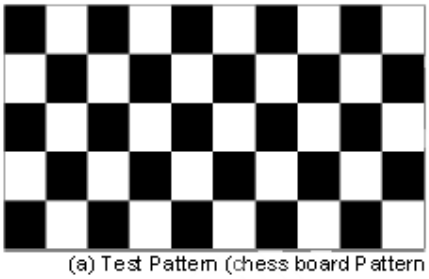
7.RELIABILITY TEST ITEMS

7.1 TEMPERATURE AND HUMIDITY

Test Item	Test Condition	Remark
High Temperature Storage	Ta=70℃; 24hrs	IEC60068-2-1：2007 GB2423.2-2008
Low Temperature Storage	Ta=-20℃;24hrs	IEC60068-2-1：2007 GB2423.1-2008
High Temperature Operation	Ta=70℃，24Hrs	IEC60068-2-1：2007 GB2423.2-2008
Low Temperature Operation	Ta=-20℃; 24hrs	IEC60068-2-1：2007 GB2423.1-2008
High Temperature High Humidity Operation	Ta=50℃，90%RH， 24Hrs(no condensation)	IEC60068-2-78：2001 GB/T2423.3-2006
Thermal Shock	-20℃(0.5h) ~ 70℃(0.5h) / 50 cycles	Start with cold temperature ， End with high temperature， IEC60068-2-14:1984,GB2423.22-2002
Image Sticking	25℃；1hrs	Note1

Note1:Condition of image sticking test :25℃±2℃

Operation with test pattern sustained for 1hrs,then change to gray pattern immediately.after 15 mins,the mura must be disappeared completely



(a) Test Pattern (chess board Pattern)



(b) Gray Pattern

7.2 VIBRATION &SHOCK

Test item	Conditions	Remark
Packing Shock (non-operation)	980m/s2,6ms, ±x,y,z 3times for direction	IEC60068-2-27：1987 GB/T2423.5-1995
Packing Vibration (non-operation)	Frequency range:10 HZ~50HZ Stroke:1.0mm,sweep:10 HZ ~50HZ x,y,z 2 hours for each direction	IEC60068-2-32：1990 GB/T2423.8-1995

7.3ESD

Test item	Conditions	Remark	
Electro Static Discharge Test (non-operation)	150pF，330Ω， Contact:±4KV,Air:±8KV	1	Class C
	200pF，0Ω，±200V contact test	2	

Note: Measure point :
1. LCD glass and metal bezel
2. IF connector pins
3. ESD class C: To allow a temporary loss of function, the equipment to be measured may stop working but should be able to automatic or manual intervention reset back to normal after operation.

8. GENERAL PRECAUTION

8.1 SAFETY

1. Do not swallow any liquid crystal, even if there is no proof that liquid crystal is poisonous.
2. If the LCD panel breaks, be careful not to get liquid crystal to touch your skin.
3. If skin is exposed to liquid crystal, wash the area thoroughly with alcohol or soap.

8.2 STORAGE CONDITIONS

1. Store the panel or module in a dark place where the temperature is 23±5°C and The humidity is below 50±20%RH.
2. Store in anti-static electricity container.
3. Store in clean environment, free from dust, active gas, and solvent.
4. Do not place the module near organics solvents or corrosive gases.
5. Do not crush, shake, or jolt the module.

8.3 HANDLING PRECAUTIONS

1. Avoid static electricity which can damage the CMOS LSI.
2. The polarizing plate of the display is very fragile. So, please handle it very carefully.
3. Do not give external shock.
4. Do not apply excessive force on the surface.
5. Do not wipe the polarizing plate with a dry cloth, as it may easily scratch the Surface of plate.
6. Do not use ketonics solvent & Aromatic solvent, use with a soft cloth soaked with a cleaning naphtha solvent.
7. Do not operate it above the absolute maximum rating.
8. Do not remove the panel or frame from the module.
9. When the module is assembled, it should be attached to the system firmly, Be careful not to twist and bend the module.
10. Wipe off water droplets or oil immediately. If you leave the droplets for a long time, staining and discoloration may occur.
11. If the liquid crystal material leaks from the panel, it should be kept away from the eyes or mouth in case of contact with hands, legs or clothes, it must be washed away thoroughly with soap.

8.4 WARRANTY

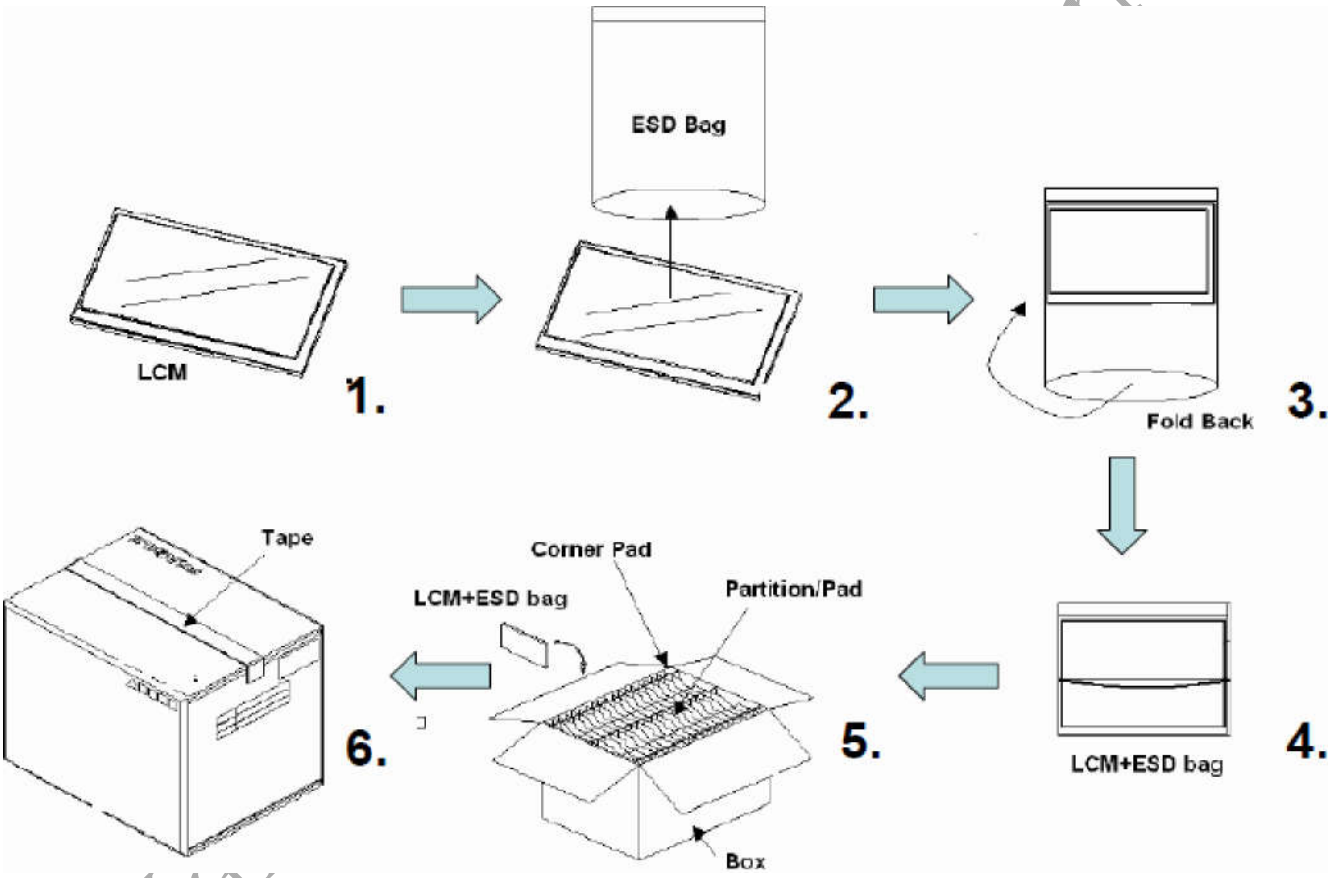
1. The period is within twelve months since the date of shipping out under normal using and storage conditions.
2. Do not repaired or modified the LCM. It may cause function to lose efficacy, Starry does not warrant the LCM.
3. All process and material comply ROHS.

Xinhangsheng 鑫航盛 Technology

9. PACKAGE DRAWING

Packing form

LCM Model	LCM Qty. in the box	Inner Box Size (mm)	Notice
WD101SHM30AE-H2	**50 pcs/box**	**460±5 x 365±5 x 178±5**	



Items	Material	Notice
Box	Corrugated Paper Board	AB Flute
Partition/Pad	Corrugated Paper Board	B Flute
Corner Pad	Corrugated Paper Board	AB Flute
ESD bag	PE	

XinHang Sheng Technology

INCOMING INSPECTION STANDARDS

MODEL: WD104SHM3001802

<◇>PRELIMINARY SPECIFICATION

<◆>APPROVAL SPECIFICATION

DESIGNED	CHECKED	APPROVED

DESIGNED	CHECKED	APPROVED

XinHangSheng 鑫航盛 Technology

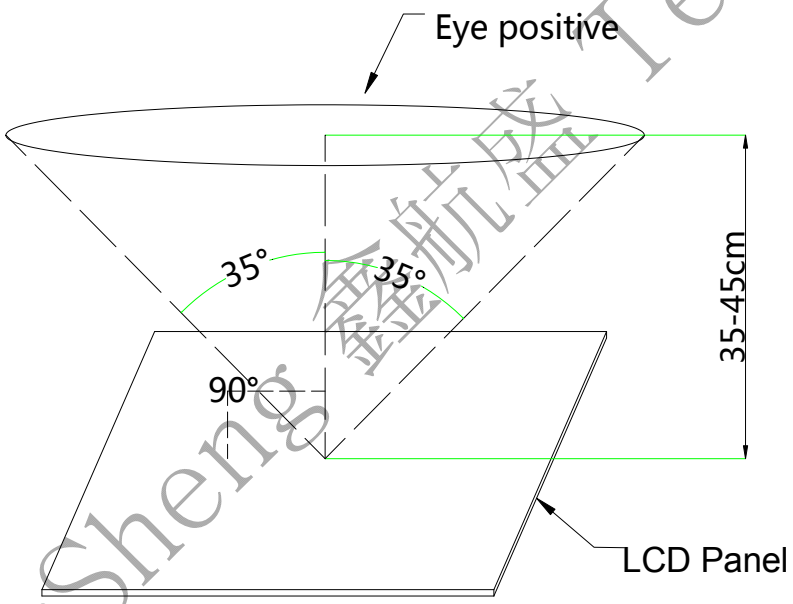
PREPAREDBY:
XINHANGSHENG TECHNOLOGY (SHENZHEN) CO., LTD.
2 BUILDING, 10 HIGH TECH PARK OF BAO TONG, TONGWEI, COMMUNITY GONGMINGTOWN,GUANGMING DISTRICT,
SHENZHEN,GUANGDONG,CHINA
TEL : +86-755-23400464
Mobile : +86-13714667520

1. Incoming inspection right

(1) The Incoming Inspection Standard will be agreed and signed by both sides(Customer an starry)

2. Inspection condition is as follows

(1) Viewing distance is approximately 35~40 cm
(2) Viewing angle is normal to the LCD panel as Fig-1(35°)
(3) Ambient temperature is approximately 25±5℃
(4) Ambient humidity is 60±5%RH
(5) Ambient illuminance is from 300~500 Lux
(6) Input signal timing should be typical value
(7) Mura & Light leakage inspection an ND-Filter 5%



3. Special condtion

(1) Viewing distance is close for inspection of adjacent dots and distance between defect Dots
(2) Viewing condition of " Shot block non-uniformity from oblique angle"is as Fig-2
(3) Exceptional case:Veiw angle±40° while inspected image-sticking

XinHangSheng 鑫航盛 Technology

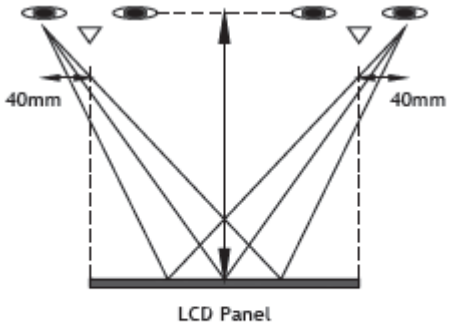
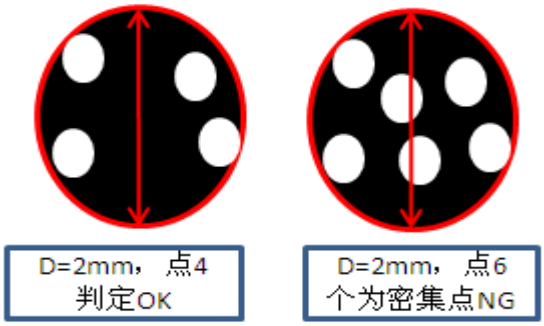


Fig-2

4. INSPECTION CRITERIA

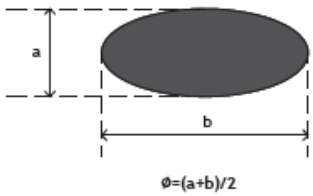
Defecttype			Limit			Note
Visual defect	Scratch		W≦0.05mm		lgnore	Note1
			0.05mm≦w≦0.1m L≦10mm		N≦3	
			20mm < l, 0.1mm < w		N=0	
	Internal	Spot	Φ < 0.2mm		lgnore	Note 1
			0.2mm≦φ≦0.4mm		N≦3	
			0.4≦φ		N=0	
		Fiber	0.1mm≦w≦0.2m L≦2.5mm		N≦4	Note 1
			0.2mm < w, 2.5mm < l		N=0	
		Polarizer bubble	Φ < 0.3mm		lgnore	Note 1
			0.25mm≦φ≦0.5mm		N≦2	
			0.5≦φ		N=0	
		Dent	Φ < 0.25mm		lgnore	Note 1
			0.25mm≦φ≦0.5mm		N≦4	
			0.5≦φ		N=0	
Electrical Defect	Bright dot		C area	O area	Total	Note 2 Note 3 use of ND5 % invisible OK
			N≦1	N≦2	N≦3	
	Dark dot		N≦2	N≦4	N≦4	
	Total dot		N≦3	N≦4	N≦4	

XinHangSheng 鑫航盛 Technology

	Dense point	Using ND5 % visible by intensive foreign standard judgement, ND5 % invisible OK  	Note 4

(1) One pixel consists of 3 sub-pixel,including r,g,ang b dot.(sub-pixel=dot)
(2) Panel is acceptable if distance between 2 dot defects are greater or equal to 5mm.

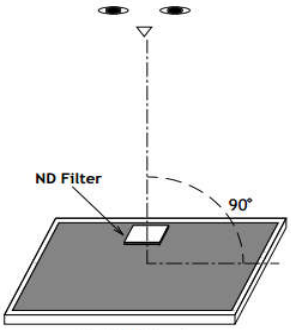
Note1 : W : Width[mm], L : Length[mm], N : Number, φ: Average Diameter



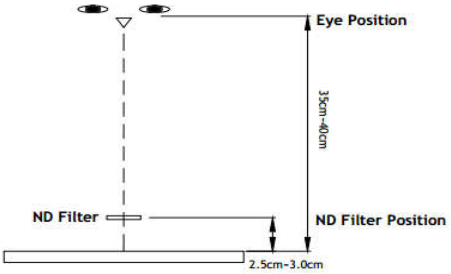
1.(White ,Black) Spot
2.Polarizer Bubble



Scratch & Fiber

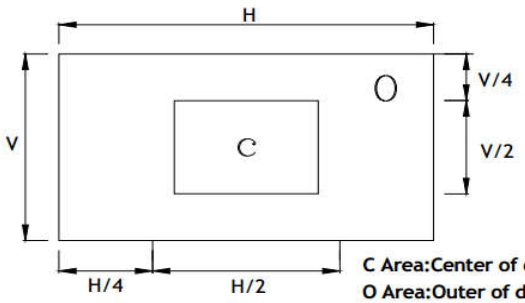


TFT-LCD Panel



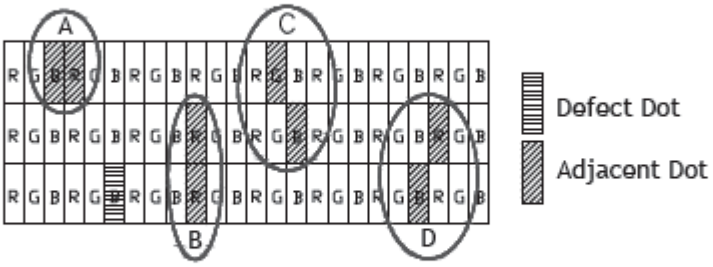
TFT-LCD Panel

Note3 :



C Area:Center of display area
O Area:Outer of display area

Note4：Judge defect dot and adjacent dot as following. Allow below (as A, B, C and D status) adjacent defect dots, including bright and dart adjacent dot. And they will be counted 2defect dots in total quantity.



Note5：Other condition

(1) The defects that are not defined above and considered to be problem shall be reviewed anddiscussed by both parties.

(2) Defects on the Black Matrix, out of Display area, are not considered as a defect or counted.

5.HADLING 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,咸性,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料损伤，甚至面板破裂)

（5）It is easy to cause igage stickong while displaying the same pattern for very long time.

(长期显示同一画会造成影像残留)

（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)

（7）The Period within 12 months since the date of shipping out under normal using And Storage conditions.

(从出货之日开始,在正常使用和存储条件下,产品保质期为12个月)

XinHangSheng 鑫航盛 Technology