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

Product Specification

Customer: _____

ModelName: DXT080BHD30I1K035

Date: 2025-06-23

Version: A0

■ **Preliminary Specification**

☐ **Final Specification**

For Customer's Acceptance

Approved by	Comment

Approved by	Reviewed by	Prepared by

REVISION STATUS

Version	Revise Date	Page	Content	Modified by
A0	2025.06.23	-	First Issued.	

Table of Contents

1. General Description

1.1 Introduction

8 inch module is a color active matrix TFT LCD module using amorphous silicon TFT‘ s (Thin Film Transistors) as an active switching devices. It is a transmissive type display operating in the normal black. The TFT-LCD has a 8 inch diagonally measured active area with resolutions (1280 horizontal by 720 vertical pixel arrays). Each pixel is divided into RED, GREEN, BLUE dots which are arranged in vertical stripe and this panel can display 16.7M colors.

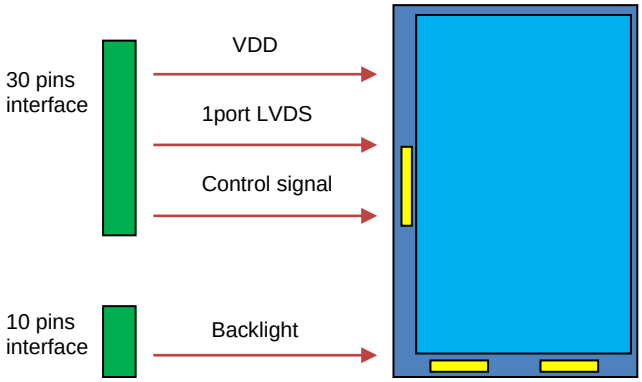


Figure 1-1 Block Diagram

1.2 Features

- Wide viewing angle (U/D/L/R)：85/85/85/85
- Color Gamut：70% Typ @ C-light
- Cell thickness：1.0t
- LVDS Interface

1.3 Application

- **Vehicle-mounted Production**

1.4 General Specification

<Table 1-1 General Specifications>

Parameter	Specification	Unit	Remarks
Active area	176.64 (H) × 99.36 (V)	mm	16：9
Number of pixels	1280(H) × RGB ×720(V)	pixels	
Pixel pitch	0.138(H) ×0.138 (V)	mm	
Pixel arrangement	RGB Vertical stripe		
Display colors	16.7M	colors	
Color gamut	70%Typ	%	@C-light
Display mode	Normally black		
Module outline	192.8(H) x 116.9 (V)	mm	
Viewing Direction (Human Eye)	U/D/L/R Min. 75/75/75/75 Typ. 85/85/85/85		
Surface Treatment	CF：HC TFT：AG		

Note:
1.At the U/D/L/R direction, the viewing angle is same;
2.The TFT and CF Align Direction;

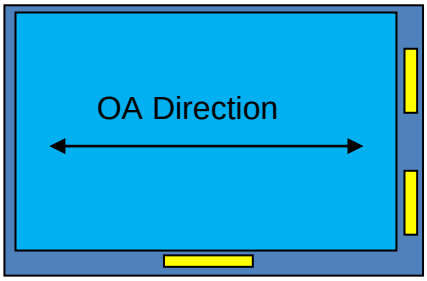
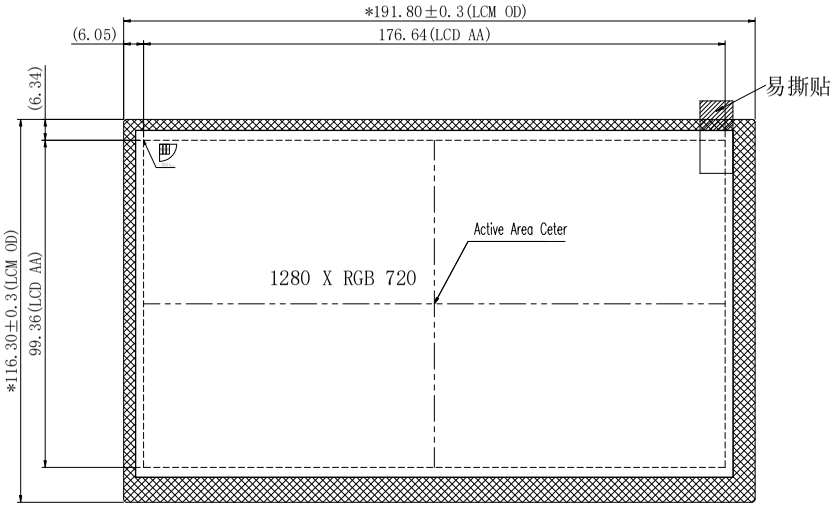
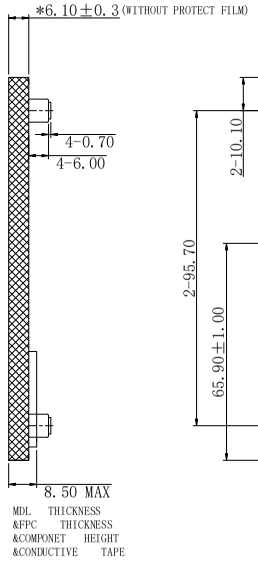


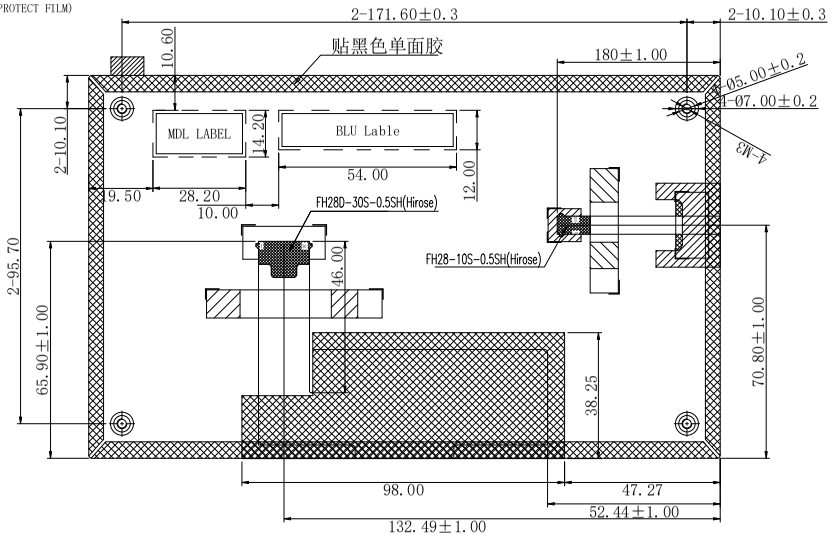
Figure 1-2 The TFT and CF Align Direction

2. MECHANICAL SPECIFICATION

REV.	DATE	MODIFICATION
A0	2025.06.23	First issue







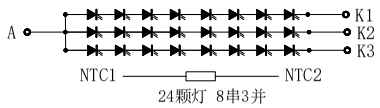
PIN	ASSIGNMENT
1	NC
2	VDD
3	VDD
4	GND
5	RESET
	STBYB
	GND
	SDA
	SCL
10	CSB
11	GND
12	TB
13	RL
14	GND
15	LVON
16	LVOP
17	GND
18	LV1N
19	LV1P
20	GND
21	LV2N
22	LV2P
23	GND
24	CLKN
25	CLKP
26	GND
27	LV3N
28	LV3P
29	GND
30	VDDOTP

BLU Connector	
1	LED+
2	LED+
3	LED+
4	NC
5	NTC+
6	NTC-
7	NC
8	LED-
9	LED-
10	LED-

NOTES:

1. DISPLAY TYPE: 8.0 INCH TFT /Normally BLACK Transmissive
2. BACKLIGHT: 24 CHIP WHITE LED, IN PARALLEL
3. OPERATING TEMP: -20° C~+80° C
4. STORAGE TEMP: -30° c~+80° c
5. RESOLUTION: 1280RGBx720
6. LCD IC:TBD
7. Typical Lumiance (CENTER) :900cd/m2(MIN),1000cd/m2(TYP)
   Chromaticity(centre point):WHITE:X:0.287+/-0.03;Y:0.327+/-0.03.
8. "( )"reference dimension. " * "critical dimension
9. RoHS Compliant

BL电路图:



BACKLIGHT CIRCUIT DIAGRAM:
(If=240mA ,VF=22.4V~25.6V)

INTERFACE	LVDS Interface	深圳市勋瑞光电科技有限公司 Xunrui photoelectric technology (shenzhen) CO,.LTD.
	FPC Connector	MODEL NAME: TFT Display Module; PART NO.: DXT080BHD30I1K035
VIEWING DIRECTION	ALL	DWN; REV.: A0; SHEET OF: 1/1
		CHKD; TOLERANCE UNLESS SPECIFIED: ±0.3
Gray Scale DIRECTION	FREE	PROJECTION: 3RD ANGLE; UNIT: mm; SCALE: 1:1

3.0 INTERFACE CONNECTION

3.1 The LCD Module Electrical Interface Connection

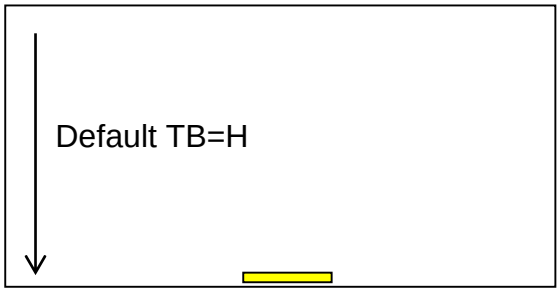
The Recommended connector is Hirose FH28-30S-0.5SH(0.5)
The connector interface pin assignments are listed in Table 9-1

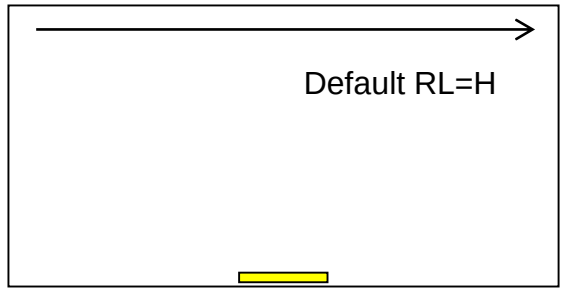
Table 3-1 Pin Assignments for the LCD Connector

PIN	SYMBOL	Description	Remark
1	NC	No connect	
2	VDD	Power pin	3.3V typ.
3	VDD	Power pin	3.3V typ.
4	GND	Ground	
5	RESET	Reset Pin	H: Normal, L:Reset,
6	STBYB	Standby Pin	H: Normal, L: Standby
7	GND	Ground	
8	SDA	SPI Data pin	NC For Customer,Suggest connect to GND
9	SCL	SPI Clock pin	NC For Customer,Suggest connect to GND
10	CSB	SPI chip select pin	NC For Customer,Suggest connect to VDD
11	GND	Ground	
12	TB	Vertical shift direction selection	Note1
13	RL	Horizontal shift direction selection	
14	GND	Ground	
15	LV0N	LVDS Data channel 0 -	
16	LV0P	LVDS Data channel 0 +	
17	GND	Ground	
18	LV1N	LVDS Data channel 1 -	
19	LV1P	LVDS Data channel 1 +	
20	GND	Ground	
21	LV2N	LVDS Data channel 2 -	
22	LV2P	LVDS Data channel 2 +	
23	GND	Ground	
24	CLKN	LVDS CLOCK -	
25	CLKP	LVDS CLOCK +	

PIN	SYMBOL	Description	Remark
26	GND	Ground	
27	LV3N	LVDS Data channel 3 -	
28	LV3P	LVDS Data channel 3 +	
29	GND	Ground	
30	VDDOTP	Power input for OTP programming	Please NC

Note 1：





4. ELECTRICAL CHARACTERISTICS

4.1 ABSOLUTE MAXIMUM RATINGS

The followings are maximum values which, if exceed, may cause faulty operation or damage to the unit. The operational and non-operational maximum voltage and current values are listed in Table 4-1

< Table 4-1 Environment Absolute Maximum Ratings>

Parameter	Symbol	Min.	Max.	Unit	Remarks
LC operating Voltage *1)	V_{OP}	-	5.8	V	Ta=25+/-2°C
Operating Temperature (Humidity)	T_{OP}	-35	+80	℃	
	RH	-	90	%	At 60°C
Storage Temperature (Humidity)	T_{ST}	-40	+90	℃	
	RH	-	90	%	At 60°C

*1)Liquid Crystal driving voltage
Due to the characteristics of LC Material, this voltage varies with environmental temperature.

4.2 Electrical Specifications

Ta=25+/-2°C

Parameter	Symbol	Values			Unit	Notes
		Min	Typ.	Max		
TFT Common Electrode Voltage	VCOM	-3	-1	0	V	
Voltage of VCC		3	3.3	3.6	V	
Current of VCC		-	250	400	mA	

Notes :
1: VGH should be set to satisfy charging ratio of TFT pixel.
2 : VCOM should be adjusted to make the flicker level be minimum and optimize display quality.
3: Frame rate=60HZ

5.0 SIGNAL SPECIFICATION

5.1 LVDS Signal Timing

Table 5 -1 LVDS Signal Timing（DE Mode）

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Clock frequency	RxFCLK	57.1	58.1	85	MHz	
Horizontal Display Area	thd		1280		DCLK	
HS Period	th	1309	1322	1664	DCLK	
HS Blanking	Thb+thfp		42		DCLK	
Vertical Display Area	tvd		720		TH	
VS Period	tv	727	733	936	TH	
VS Blanking	Tvbp+tvfp		13		TH	

5.2 Signal Format

Table 5 -2 Signal Format

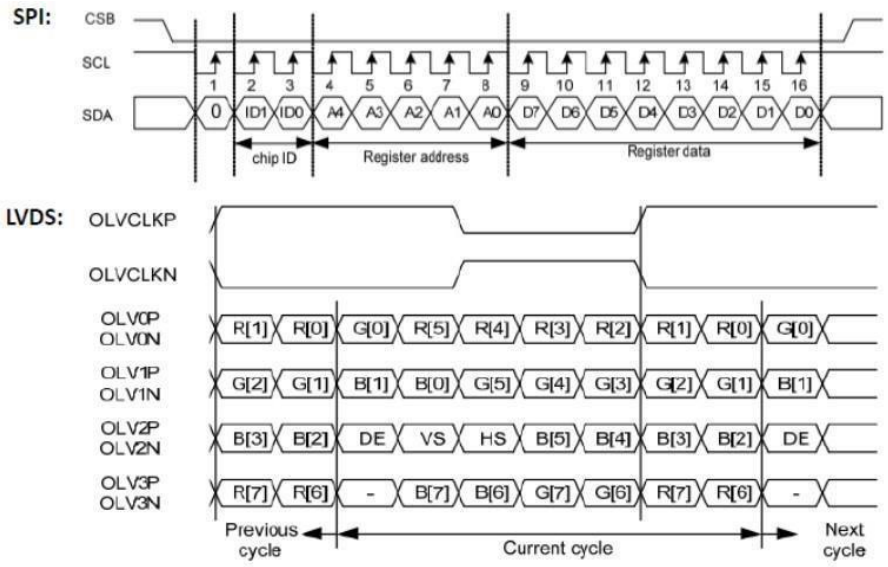


Table 5 -3: LVDS DC Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Differential input high Threshold voltage	R_{TH}	-	-	+0.1	V
Differential input low threshold voltage	R_{TL}	-0.1	-	-	V
Differential input common Mode voltage	R_{CM}	1	1.2	1.7-| V_{ID} |/2	V
LVDS input voltage	V_{INLV}	0.7		1.7	V
Differential input voltage	| V_{ID} |	0.1		0.6	V
Differential input leakage Current	IIvleak	-10	-	+10	uA

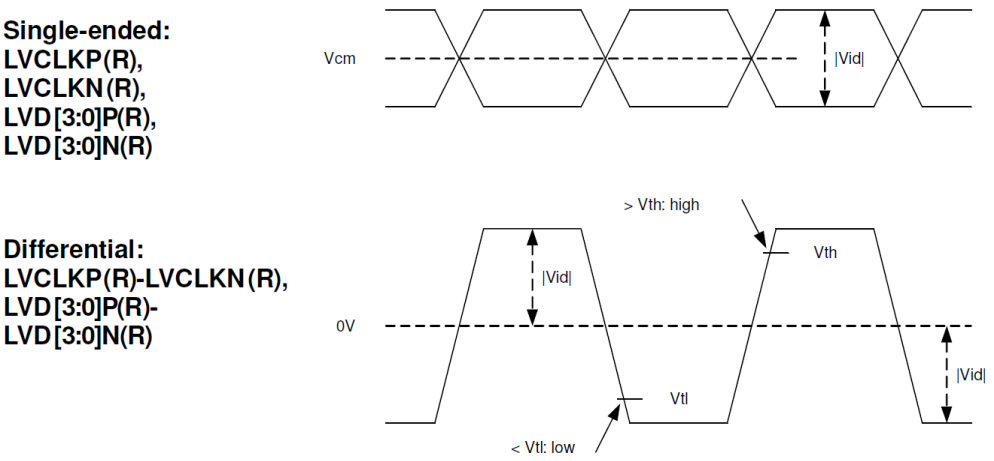


Figure 1: LVDS DC character

5.3 LVDS AC electrical characteristics

Table 5 -4: AC Characteristic of LVDS

Parameter	Symbol	Min.	Typ.	Max.	Unit
Clock frequency	F_{LVCYC}	57.1	-	85	MHz
Clock period	T_{LVCYC}	11.76		17.5	ns
1 data bit time	UI		1/7		T_{LVCYC}
Clock high time	TLVCH	2.8	4	4.2	UI
Clock low time	TLVCL	2.8	3	4.2	UI
Position 1	T_{POS1}	-0.2	0	0.2	UI
Position 0	T_{POS0}	0.8	1	1.2	UI
Position 6	T_{POS6}	1.8	2	2.2	UI
Position 5	T_{POS5}	2.8	3	3.2	UI
Position 4	T_{POS4}	3.8	4	4.2	UI
Position 3	T_{POS3}	4.8	5	5.2	UI
Position 2	T_{POS2}	5.8	6	6.2	UI
Input eye width	T_{EYEW}	0.6			UI
Input eye border	T_{EX}			0.2	UI
LVDS wake up time	T_{ENLVDS}			150	us

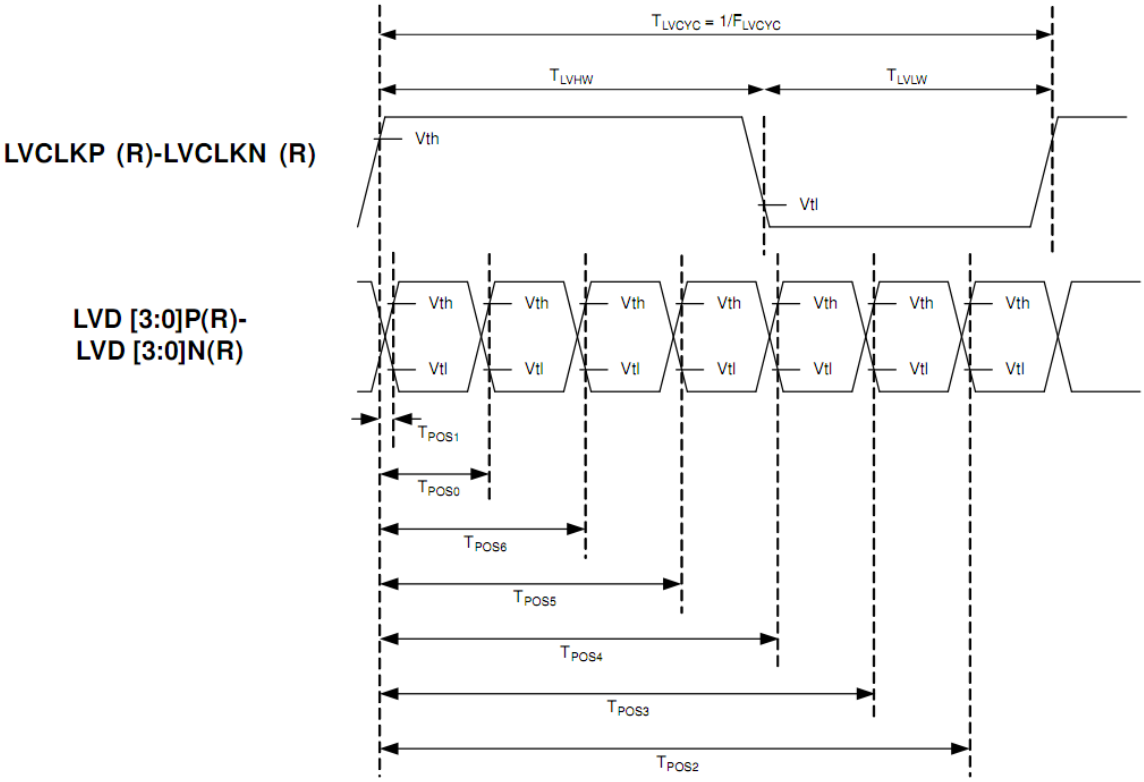
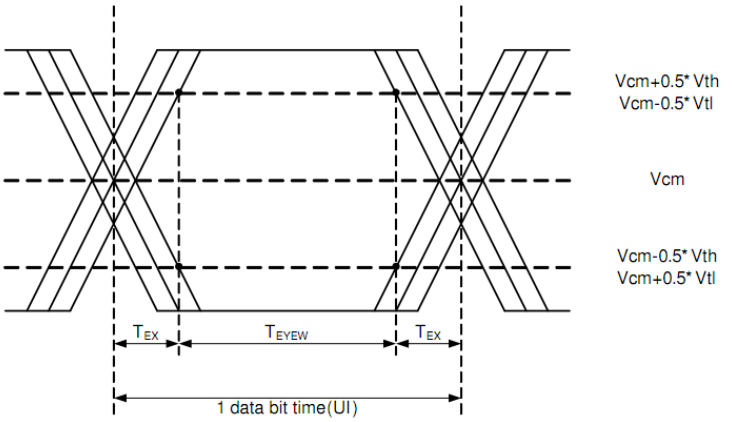
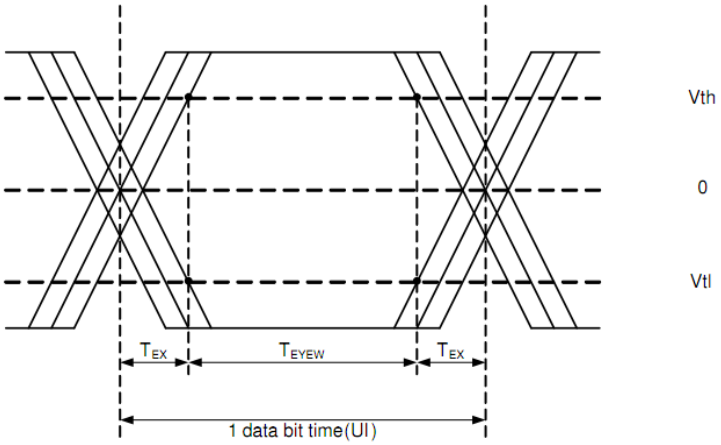


Figure 2

Single-ended:
LVD[3:0]P,
LVD[3:0]N



Differential:
LVD[3:0]P-LVD[3:0]N



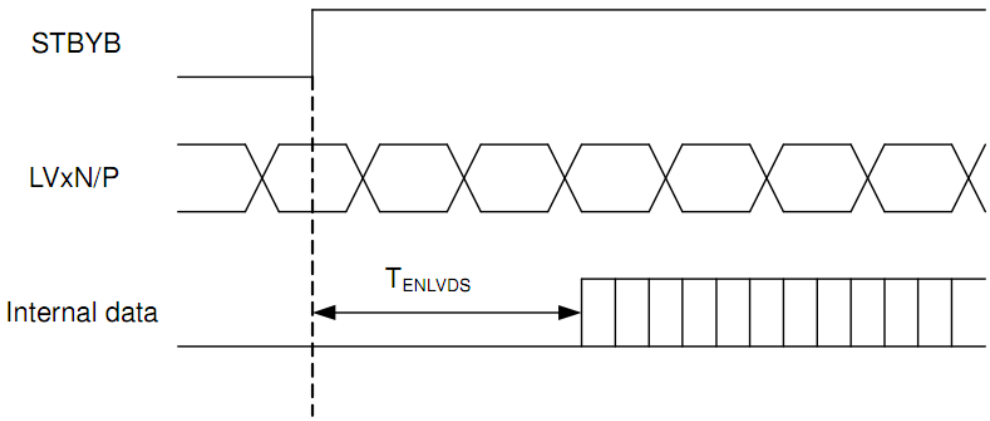


Figure 3

5.3.1 LVDS Input Format (VESA 8bit)

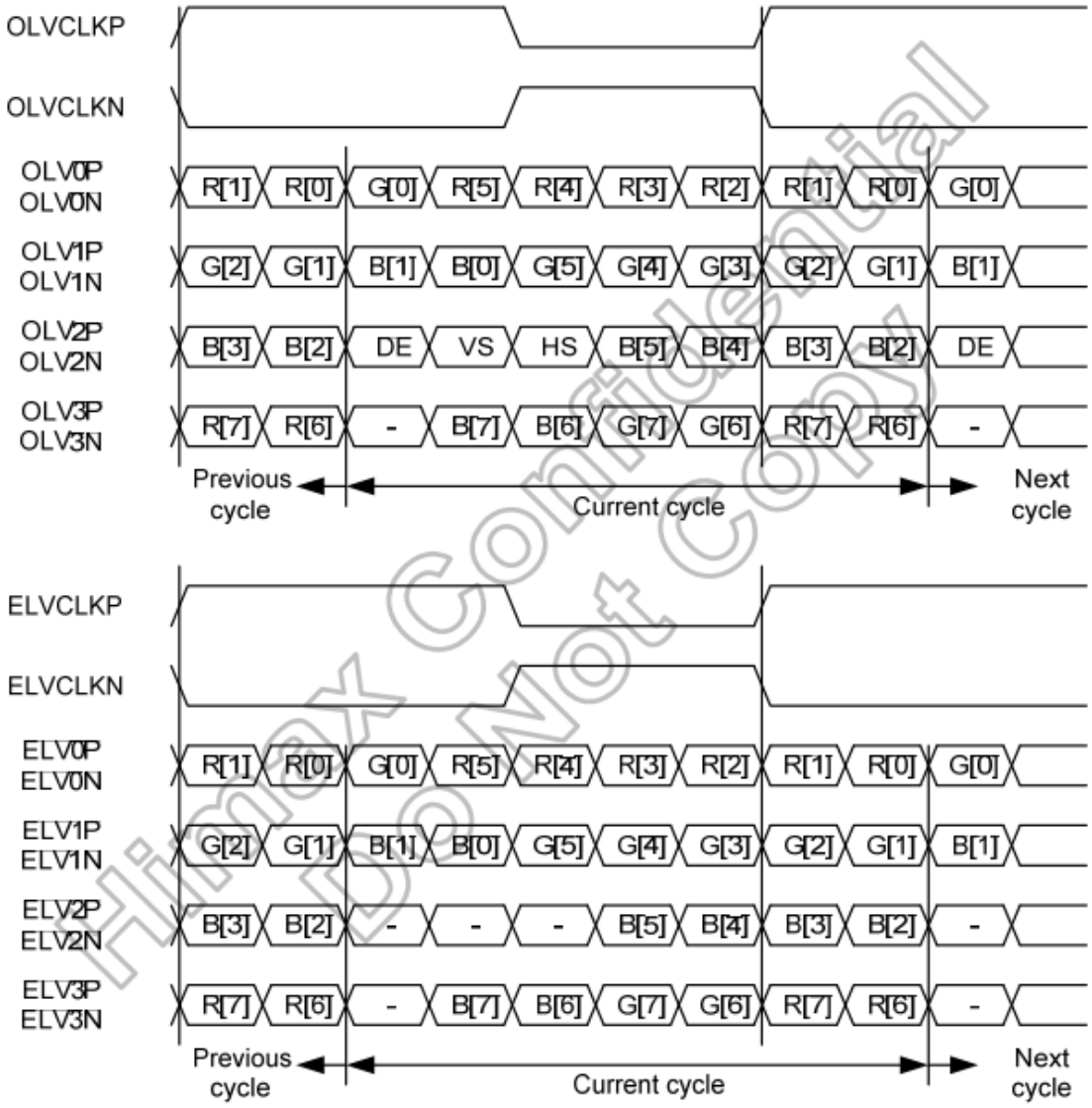
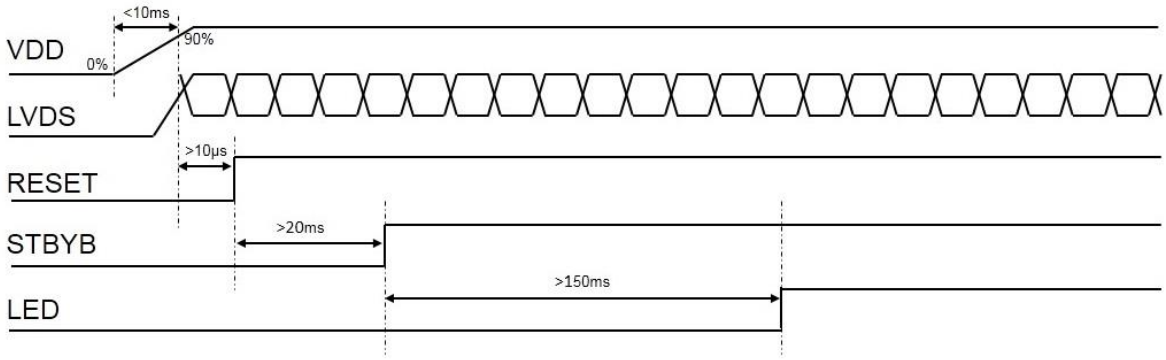


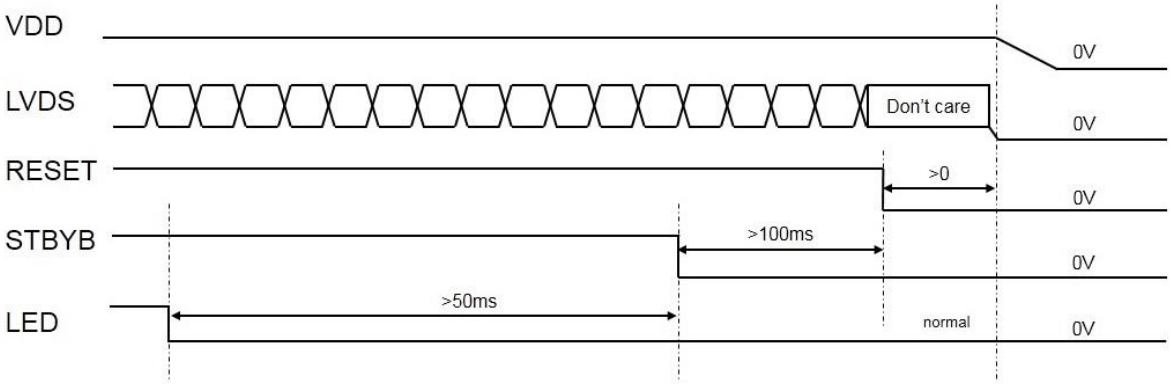
Figure 4: LVDS input data format (VESA format)

6.0 POWER ON/OFF SEQUENCE

6.1POWER ON SEQUENCE



6.2 POWER OFF SEQUENCE



7.0 OPTICAL SPECIFICATION

7.1 Overview

The test of Optical specifications shall be measured in a dark room (ambient luminance ≤ 1lux and temperature = 25±2℃) with the equipment of Luminance meter system (Goniometer system and TOPCON BM-5) and test unit shall be located at an approximate distance 50cm from the LCD surface at a viewing angle of θ and Φ equal to 0°. The center of the measuring spot on the Display surface shall stay fixed.

The backlight should be operating for 30 minutes prior to measurement.

<Table 7-1 Optical Specifications>

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit	Remark
Viewing Angle range	Horizontal	Θ_3	CR > 10	75	85	-	Deg.	Note 1
		Θ_9		75	85	-	Deg.	
	Vertical	Θ_{12}		75	85	-	Deg.	
		Θ_6		75	85	-	Deg.	
Luminance Contrast ratio		CR	Θ = 0° (Center) Normal Viewing Angle	600	900	-	-	Note 2-
Transmittance		%		**2.6**	**3.0**			Note 3
NTSC		%		-	70%	-		
White Chromaticity		x_w		Typ-0.03	0.287	Typ+0.03	-	Note 5
		y_w			0.327		-	
Reproduction of color	Red	x_R			0.660		-	
		y_R			0.313		-	
	Green	x_G			0.305		-	
		y_G			0.600		-	
	Blue	x_B			0.137		-	
		y_B			0.096		-	
Response Time (Rising / Falling)		T_{RT}	25℃ -20℃ -30℃	-	-	35 250 500	ms	Note 6
Uniformity		U		75	-	-	%	Note7, Note8
LCM Luminance		L		900	1000	–	cd/m2	Note7, Note8

Parameter	Condition	Min.	Typ.	Max.	Remark
Flicker		-	-	15%	Interval Gray Pattern between L0 and L127, after 30s light up stably, tested at panel center

Note :

1. Viewing angle is the angle at which the contrast ratio is greater than 10. The viewing are determined for the horizontal or 3, 9 o'clock direction and the vertical or 6, 12 o'clock direction with respect to the optical axis which is normal to the LCD surface.
2. Contrast measurements shall be made at viewing angle of θ= 0° and at the center of the LCD surface. Luminance shall be measured with all pixels in the view field set first to white, then to the dark (black) state. (See FIGURE 1 shown in Appendix) Luminance Contrast Ratio (CR) is defined mathematically.

$$CR = \frac{\text{Luminance when displaying a white raster}}{\text{Luminance when displaying a black raster}}$$

3. Center trans of white is defined as the LCD surface. Luminance shall be measured with all pixels in the view field set first to white. This measurement shall be taken at the locations shown in FIGURE 4 for a total of the measurements per display.
4. The White luminance uniformity on LCD surface is then expressed as :

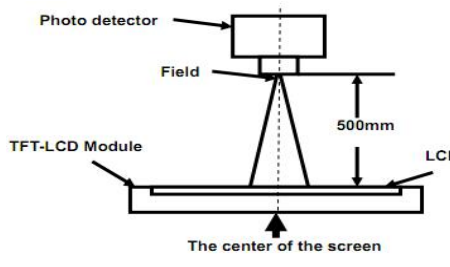
   ΔY = (Minimum Luminance of 9points / Maximum Luminance of 9points) * 100
5. The color chromaticity coordinates specified in Table 4. shall be calculated from the spectral data measured with all pixels first in red, green, blue and white. Measurement condition is C - light source.
6. The electro-optical response time measurements shall be made as FIGURE 5 shown in Appendix by switching the "data" input signal ON and OFF. The times needed for the transmittance to change from 10% to 90% is Tr, and 90% to 10% is Tf.

7. Definition of Luminance :

   Measure the luminance of white state at center point.

8.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.



Item	Photo detector	Field
Contrast Ratio	SR-3A	1°
Luminance		
Chromaticity		
Lum Uniformity		
Response Time	BM-7A	2°

8.0 OPTICAL TEST APPENDIX

Figure 5-1 The Definition of Vth & Vsat

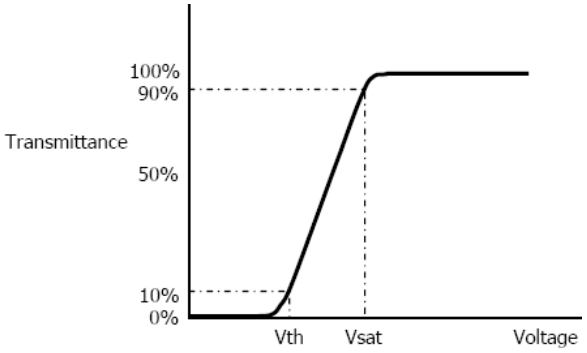


Figure 5-2 Measurement Set Up

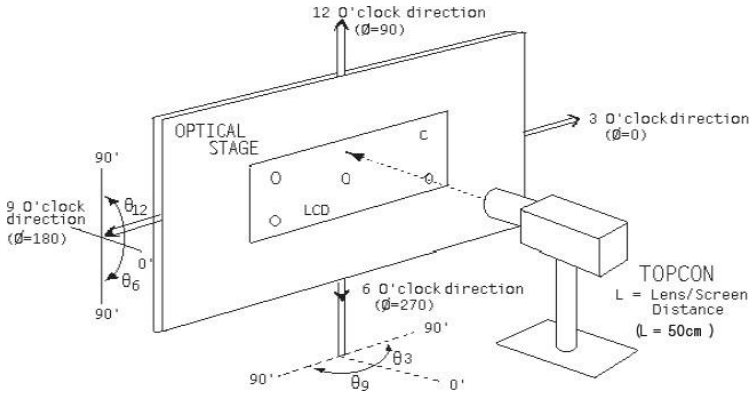
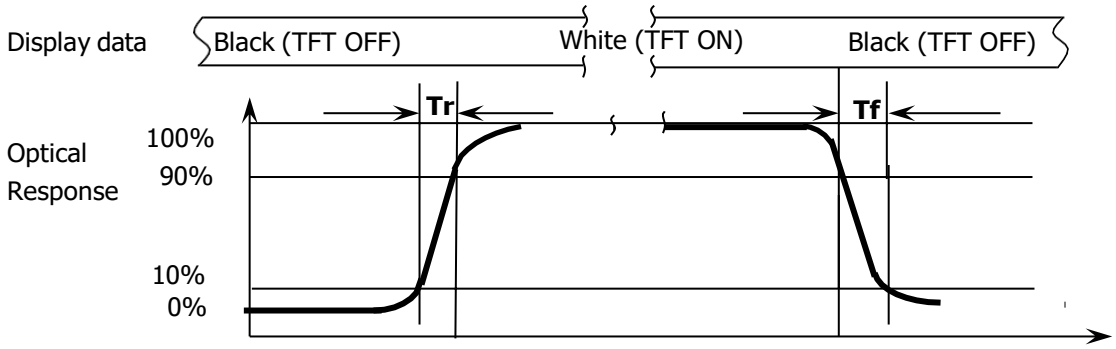


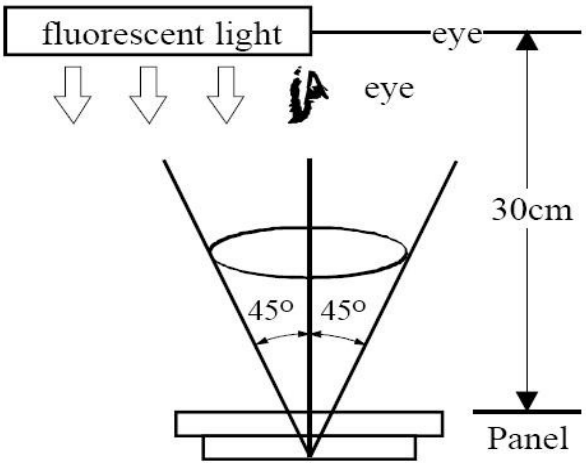
Figure 5-3 Response Time Testing



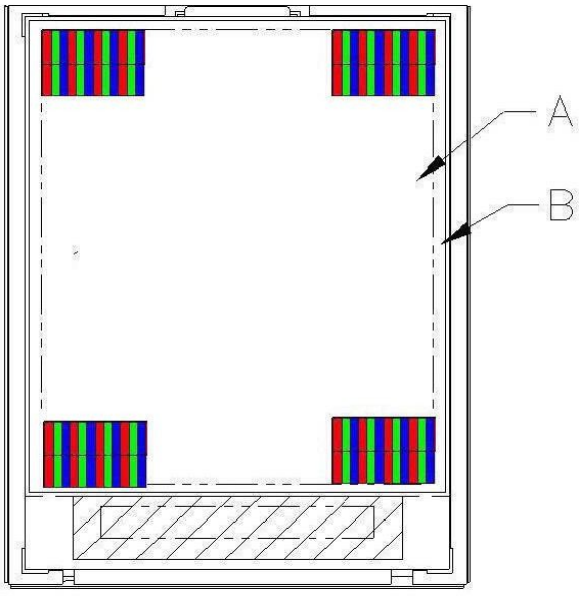
9. QUALITY SPECIFICATIONS

9.1 INSPECTION CONDITION

(1) Inspect under 300~500Lux fluorescent light, leaving 30~35cm between panels and eyes, and between panels and lights.
(2) Inspection condition is 23±5°C, 50±20%RH maximum.

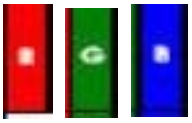


9.2 DEFINITION OF AREA



A Area : Viewing area.
B Area : Out of viewing.(outside viewing area)

9.3 INSPECTION SPECIFICATION

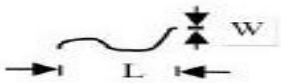
NO	Item	Acceptable specification	Judgment Criterion
1	Electrical Testing	**1-1 sub pixel classification** ● Sub Pixel: Number of sub pixel doesn't exceed one dot.  **Sub Pixel (Dot)** **a> Dark dot ----one Allowed** **b> Bright dot ---- one Allowed**	N≦1
		● Pixel : Three dots link together doesn't exceed ones  **Pixel**	N≦0
		1-2Leakage to light ● Leakage to light be not allowed.	N=0
		1-3Picture to shake ● Picture had shake, twinkle and noise etc. instable of defect that be not allowed.	N=0
		1-4 Function ● No display or No function. ● Source Line, Gate Line. ● Contrast Ratio ● Current consumption exceeds product specifications. ● Display malfunction.	N=0
2	Mechanical Dimension	2-1 Mechanical Dimension exceeds product specifications. 2-2 Out of frame and boss of plastic changed shape that be not allowed.	N=0

<table>
<tr><th>NO</th><th>Item</th><th>Acceptable specification</th><th>Judgment Criterion</th></tr>
<tr><td>3</td><td>Cosmetic Inspection</td><td>

3-1 Blemish: Line shapes of defect

<table>
<tr><th>Length</th><th>Width</th><th>Acceptable number</th><th>Mini. space</th></tr>
<tr><td>---</td><td>W≦0.05</td><td>Ignore</td><td rowspan="3">5 m m</td></tr>
<tr><td>L≦3.0</td><td>0.05<W≦0.08</td><td>4</td></tr>
<tr><td>L≦3.0</td><td>0.08<W≦0.15</td><td>3</td></tr>
<tr><td>--</td><td>W＞0.15</td><td>Not allowed</td><td>---</td></tr>
</table>

L: length(mm)
W: width(mm)



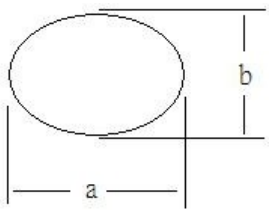
3-2 Blemish: dot shapes of defect.

<table>
<tr><th>Dimension</th><th>Acceptable number</th><th>Mini. Space</th></tr>
<tr><td>Φ≦0.15</td><td>Ignore</td><td>---</td></tr>
<tr><td>0.15＜Φ≦0.20</td><td>3</td><td rowspan="2">5 m m</td></tr>
<tr><td>0.20＜Φ≦0.30</td><td>2</td></tr>
<tr><td>Φ＞0.30</td><td>0</td><td>---</td></tr>
</table>

3-3 Polarizer Bubble

<table>
<tr><th>Dimension</th><th>Acceptable number</th><th>Mini. Space</th></tr>
<tr><td>Φ≦0.25</td><td>Ignore</td><td>---</td></tr>
<tr><td>0.25＜Φ≦0.35</td><td>3</td><td>15 m m</td></tr>
<tr><td>Φ＞0.35</td><td>0</td><td>---</td></tr>
</table>

Foreign Substances



Φ=(a+b)/2

</td><td></td></tr>
</table>

<table>
<tr><th>NO</th><th>Item</th><th>Acceptable specification</th><th>Judgment Criterion</th></tr>
<tr><td rowspan="2">3</td><td rowspan="2">Cosmetic Inspection</td><td>3-4 Scratch
● Sensate scratch not allowed.
● Impassive scratch as below.
Unit:mm</td><td rowspan="2"></td></tr>
<tr><td>
<table>
<tr><td>Length</td><td>Width</td><td>Acceptable number</td><td>Mini. space</td></tr>
<tr><td>-----</td><td>W≦0.05</td><td>Ignore</td><td rowspan="3">5 m m</td></tr>
<tr><td>L≦3.0</td><td>0.05<W≦0.08</td><td>4</td></tr>
<tr><td>L≦3.0</td><td>0.08<W≦0.15</td><td>3</td></tr>
<tr><td>----</td><td>0.15＜W</td><td>Not allowed</td><td rowspan="2">---</td></tr>
<tr><td>L>3.0</td><td>----</td><td>Not allowed</td></tr>
</table>
</td></tr>
<tr><td>4</td><td>Package</td><td>4-1 Mixed product types
4-2 Shipping q’ty should be the same as “shipping notice form” q’ty.
4-3 Outer box can’t broken.</td><td>N=0</td></tr>
<tr><td>5</td><td>LCD Mura</td><td>LCD Mura according to ND 5% keep out to determine, if keep out distance at 30cm be seen by eyes is NG, otherwise will be ok if invisible.</td><td></td></tr>
</table>

10.0 RELIABILITY TEST

<Table 10 -1 Reliability test>

No	Test Items	Conditions	Remark
1	High temperature storage test	Ta = 90 ℃, 240 hrs	
2	Low temperature storage test	Ta = -40 ℃, 240 hrs	
3	High temperature operation test	Ta = 80℃, 240 hrs	
4	Low temperature operation test	Ta = -35 ℃, 240 hrs	
5	High temperature & high humidity operation test	Ta = 60 ℃, 90%RH, 240 hrs	
6	Thermal shock	Ta = -35 ℃ ↔ 80 ℃ (0.5 hr), 100 cycle	Non-operation
7	Image Sticking	5*5 Pattern, 1hrs 60℃ check pattern Gray 127,Spec:≤L2	
8	ESD test	Air Voltage:±15KV Contact Voltage:±8KV R: 330Ω C: 150pF 5 time，Surface of AA area 9 point ClassB	Note
9	Vibration Test	Frequency：8-33.3Hz，Total Amplitude：1.3mm Frequency：33.3-400 Hz Acceleration：29.4 m/s2 Sweep time: 15 minutes 2 hours each for X and Z Directions, 4 hours for Y Direction (total 8 hours) Non-Operating	

Note
Class B，有异常而可恢复，比如闪屏
因为整机ESD水平不仅与模组相关，也与系统相关。此处承诺配合客户整机达到要求，如需要将进行ESD改善。

11. HANDLING PRECAUTION

11.1 SAFETY

(1) Do not swallow any liquid crystal, even if there is no proof that liquid stal 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.

11.2 STORAGE CONDITIONS

(1) Store the panel or module in a dark place where the temperature is 23±5℃ 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.

11.3 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 ketonic 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.

11.4 WARRANTY

1) The period is within twelve months since the date of shipping out under normal using and storage conditions.
2) According to Kingtech TFT LCD quality standard, Kingtech will rework or exchange for functional defect goods sine within one year。

12. Packaging

TBD