宇华国际科技有限公司
YuHua INT,L Technology Co., LIMITED

SPECIFICATION FOR LCD MODULE

Customer : _____

Product Model: YH59858BI4F18W21

Sample code: _____

Designed by	Checked by	Approved by

Final Approval by Customer

☐ **LCM Machinery OK**

Checked By _____

☐ **LCM Display OK**

Checked By _____

☐ **LCM OK**

☐ **NG，Problem survey:**

Approved By _____

※The specification of "TBD" should refer to the measured value of sample . If there is difference between the design specification and measured value, we naturally shall negotiate and agree to solution with customer.

宇华国际科技有限公司
YuHua INT,L Technology Co., LIMITED

REV.	ECN NO.	DESCRIPTION OF CHANGES	DATE	PREPARED
0	-	Initial Release	2023.06.10	

Contents

1.0 GENERAL DESCRIPTION

1.1 Introduction

5.98 inch module is a color active matrix TFT LCM 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 5.98 inch diagonally measured active area with resolutions (640 horizontal by 1280 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.

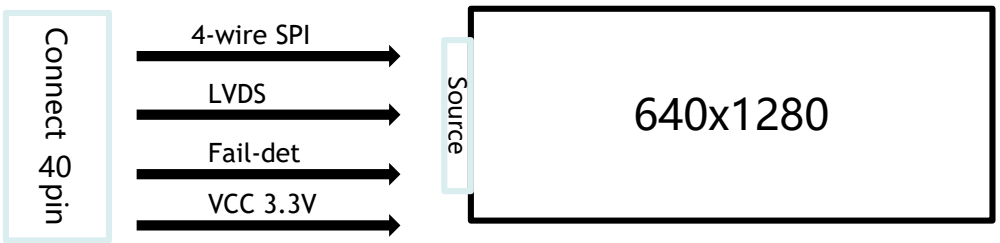


Figure 1-1 Block Diagram

1.2 Features

- Wide viewing angle (U/D/L/R)： Typ85/85/85/85 Min80/80/80/80 CR≥10
- Color Gamut： Typ75% Min70%
- RoHS/Halogen Free
- LVDS Interface
- 0.5T+0.5T glass

1.3 Application

- **Portrait screen Vehicle-mounted Production**

1.4 General Specification

Table 1-1 General Specifications

Parameter	Specification	Unit	Remarks
Active area	67.968(H) × 135.936(V)	mm	
Number of pixels	640(H) × RGB ×1280(V)	pixels	
Pixel pitch	0.1062(H) ×0.1062 (V)	mm	
Pixel arrangement	RGB Vertical stripe		
Display colors	16.7M	colors	
Color gamut	75%	%	Typ.
Display mode	Normally black		
LCM outline	76.27 ×150.96 ×5.8	mm	Without FPC and Component
Viewing Direction (Human Eye)	U/D/L/R Min 80/80/80/80 Typ 85/85/85/85		CR>10:1@25℃
Sunglass free	The absorption axis of up POL is 0 °	-	Source Pad down

Note:
1.At the U/D/L/R direction, the viewing angle is same;

1.5.The TFT and CF Align Direction

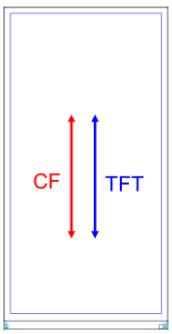


Figure 1-2 The TFT and CF Align Direction

2.0 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 2-1

Table 2-1 Environment Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit	Remarks
LCD Logic Voltage	DVDD	3.0	3.6	V	Ta=25+/-2°C
Operating Temperature (Humidity)	T_{OP}	-20	+70	℃	
	RH	-	90	%	At 60°C
Storage Temperature (Humidity)	T_{ST}	-30	+80	℃	
	RH	-	90	%	At 60°C

Note 1: Stresses above those listed under “Absolute Maximum Rating” may cause permanent damage to the device. These are stress ratings only. Functional operation of this device at the se or any other conditions above those indicated in the operational sections of this specification is not implied and exposure to absolute maximum rating conditions for extended periods may affect device reliability.

3.0 ELECTRICAL SPECIFICATIONS

3.1 The LCD Module Electrical Interface Connection

Table 3-1 Pin Assignments for the LCD
(Recommended Connector type: **FH28-40S-0.5SH**)

PIN	SYMBOL	Description	Remark
1	**NC**	Not connect	
2	**VDD**	Power Voltage for digital circuit	
3	**VDD**	Power Voltage for digital circuit	
4	**SDA**	Serial data for SPI interface	
5	**RESET**	RESET Signal	
6	**STBYB**	STBYB Signal	
7	**GND**	Ground	
8	**RXIN0-**	LVDS Receiver Signal(-)	
9	**RXIN0+**	LVDS Receiver Signal(+)	
10	**GND**	Ground	
11	**RXIN1-**	LVDS Receiver Signal(-)	
12	**RXIN1+**	LVDS Receiver Signal(+)	
13	**GND**	Ground	
14	**RXIN2-**	LVDS Receiver Signal(-)	
15	**RXIN2+**	LVDS Receiver Signal(+)	
16	**GND**	Ground	
17	**RXCLKIN-**	LVDS Receiver Signal(-)	
18	**RXCLKIN+**	LVDS Receiver Signal(+)	
19	**GND**	Ground	
20	**RXIN3-**	LVDS Receiver Signal(-)	
21	**RXIN3+**	LVDS Receiver Signal(+)	

PIN	SYMBOL	Description	Remark
22	**GND**	Ground	
23	**NTC+**	NTC thermistor terminal	
24	**NTC-**	NTC thermistor terminal	
25	**SCL(GND)**	Clock signal for SPI interface	
26	**CS**	Chip select signal for SPI interface	
27	**NC**	Not connect	
28	**NC**	Not connect	
29	**NC**	Not connect	
30	**GND**	Ground	
31	**LED-**	LED Cathode 1	
32	**LED-**	LED Cathode 2	
33	**NC**	Not connect	
34	**VDD_OTP**	Power supply for OTP circuit	
35	**NC**	Not connect	
36	**GND**	Ground	
37	**GND**	Ground	
38	**NC**	Not connect	
39	**LED+**	LED Anode	
40	**LED+**	LED Anode	

Remark:
1. For “I/O”, “I” is input; “O” is output; “P” is power ; “C” is passive
2. Pin “DC” means BOE will use it but customer don’t need ,so please Customer don’t connect it anything.

3.2 Scan direction setting as the picture below

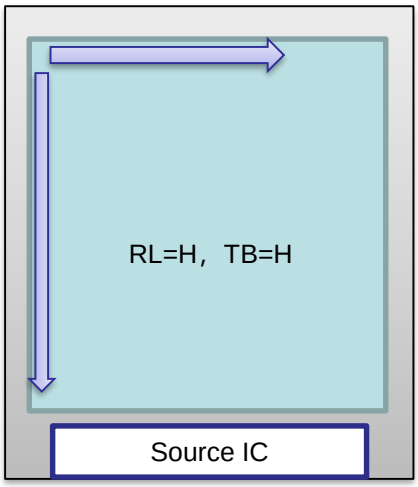


Figure 3-1 The U/D/L/R direction setting

3.3 Electrical Specifications

Table 3-2 Electrical Specifications Ta=25+/-2°C

Parameter		Symbol	Values			Unit	Remark
			Min	Typ.	Max		
TFT Logic Power	Voltage	DVDD	3.0	3.3	3.6	V	
	Current	I_{DVDD}	-	200	300	mA	

Notes :

1: Current Max is based “Gray 255”; Current Typ is based “Vertical Color Bar”;

3.4 LVDS Signal Timing

Table 3-3 LVDS Signal Timing（DE mode）

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
Clock frequency	RxFCLK	52.65	53.86	60.55	MHz	
Horizontal Display Area	Thd		640		DCLK	
HS Pulse Width	Thpw	2	2	2	DCLK	Include tHPW
HS back porch	Thbp	15	20	26	DCLK	
HS front porch	Thfp	20	20	76	DCLK	
1 horizontal line	Th	675	680	742	DCLK	
Vertical Display Area	Tvd		1280		H	
VS Pulse Width	Tvpw	2	2	2	H	
VS back porch	Tvbp	10	20	40	H	Include tVPW
VS front porch	Tvfp	10	20	40	H	
1 vertical field	Tv	1300	1320	1360	H	
Frame rate	FR	60	60	60	HZ	

3.5 Signal Format

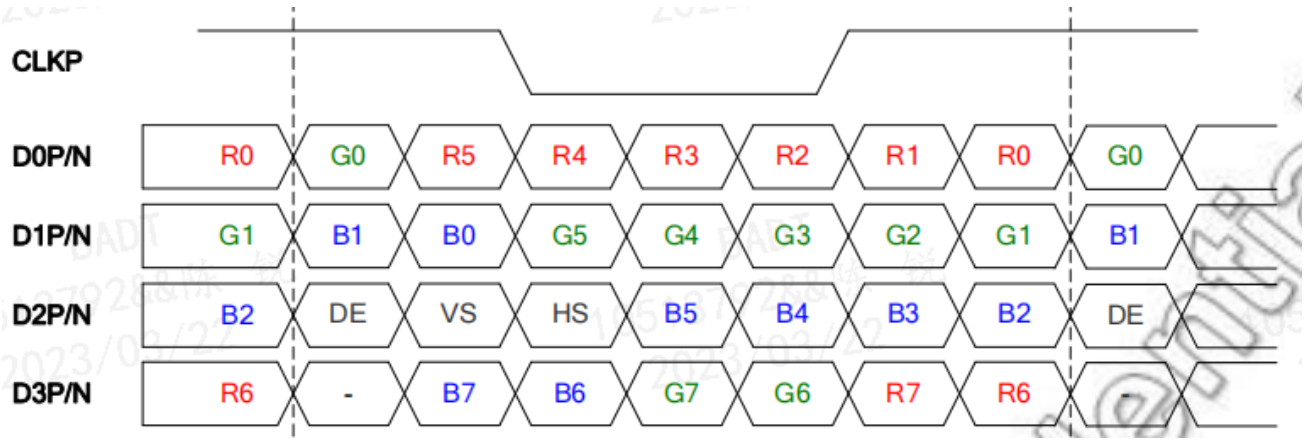


Figure 3-2 Signal Format

3.6 LVDS Characteristics

3.6.1 LVDS Mode AC Characteristics

VSSI = VSSRX = VSSP = 0V, VDDI = VDDP= VDDRX = 3.0 ~ 3.3V, Ta Temperature

Item	Signal	Symbol	Rating			Unit
			Min.	Typ.	Max.	
Clock Frequency	CLK	R_{xFCLK}	20	-	100	MHz
Clock Period		R_{xTCLK}	10	-	50	ns
1 data bit time		UI	-	1/7	-	R_{xTCLK}
Clock high time	CLK	T_{LVCH}		4		UI
Clock low time		T_{LVCL}		3		UI
Position 1	DATA	T_{POS1}	-0.25	0	0.25	UI
Position 2		T_{POS2}	0.75	-	1.25	
Position 3		T_{POS3}	0.75	1	1.25	
Position 4		T_{POS4}	1.75	-	2.25	
Position 5		T_{POS5}	1.75	2	2.25	
Position 6		T_{POS6}	2.75	-	3.25	
Position 7		T_{POS7}	2.75	3	3.25	
Position 8		T_{POS8}	3.75	-	4.25	
Position 9		T_{POS9}	3.75	4	4.25	
Position 10		T_{POS10}	4.75	-	5.25	
Position 11		T_{POS11}	4.75	5	5.25	
Position 12		T_{POS12}	5.75	-	6.25	
Position 13		T_{POS13}	5.75	6	6.25	
Position 14		T_{POS14}	6.75	-	7.25	
Input eye width		T_{EYEW}	0.5	-	-	
Input eye border		T_{EX}	-	-	0.25	
PLL wake-up time		TenPLL	-	-	150	us

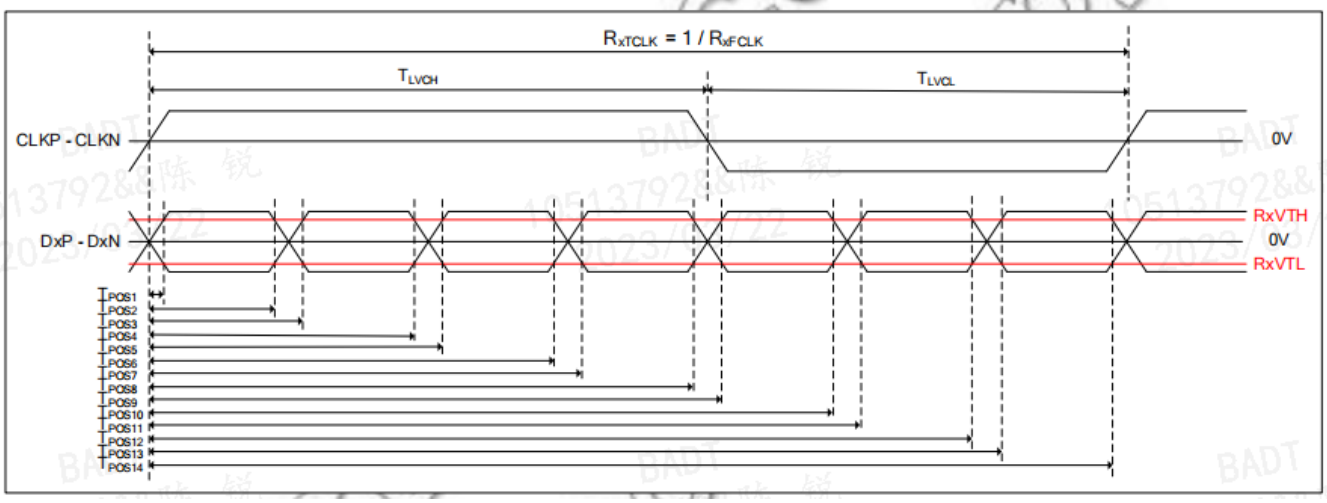


Figure 3-3 LVDS wake up time

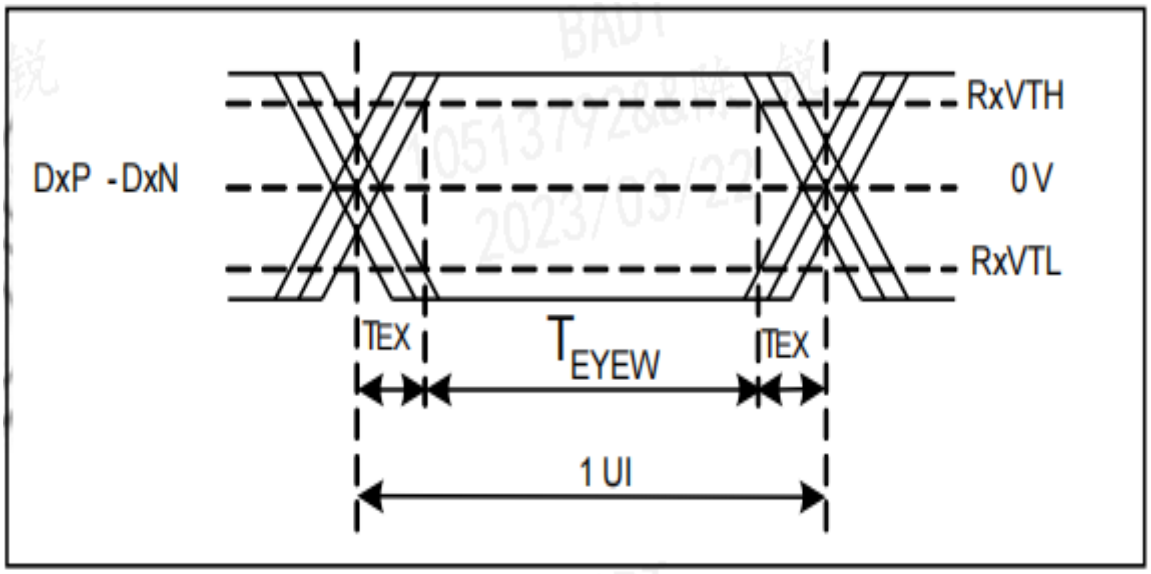
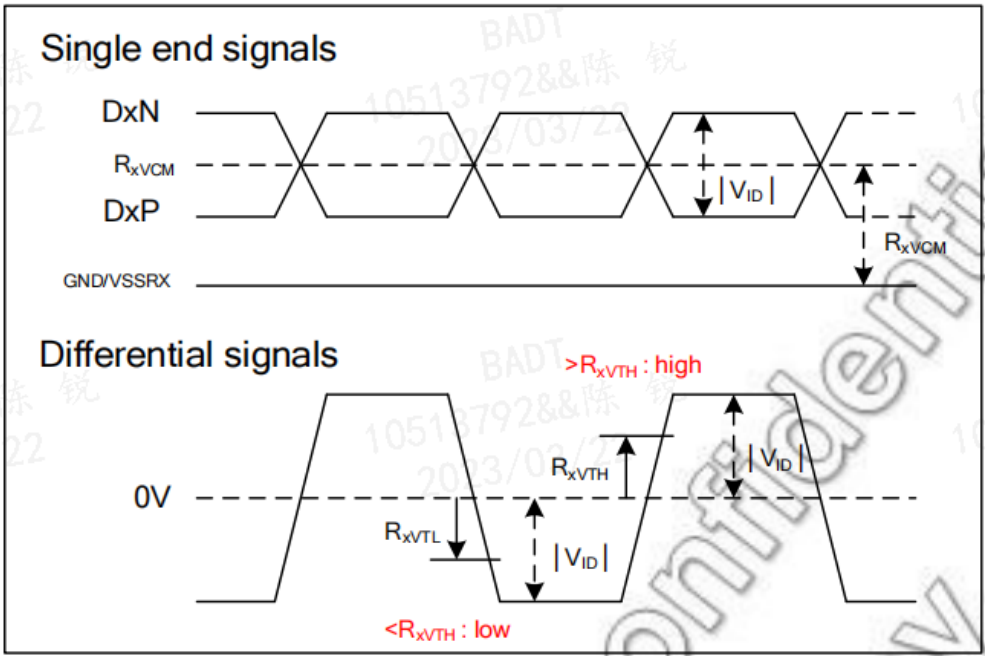


Figure 3-4 LVDS input eye diagram

3.6.2 LVDS DC Characteristics

Table 3-4 LVDS DC Characteristics

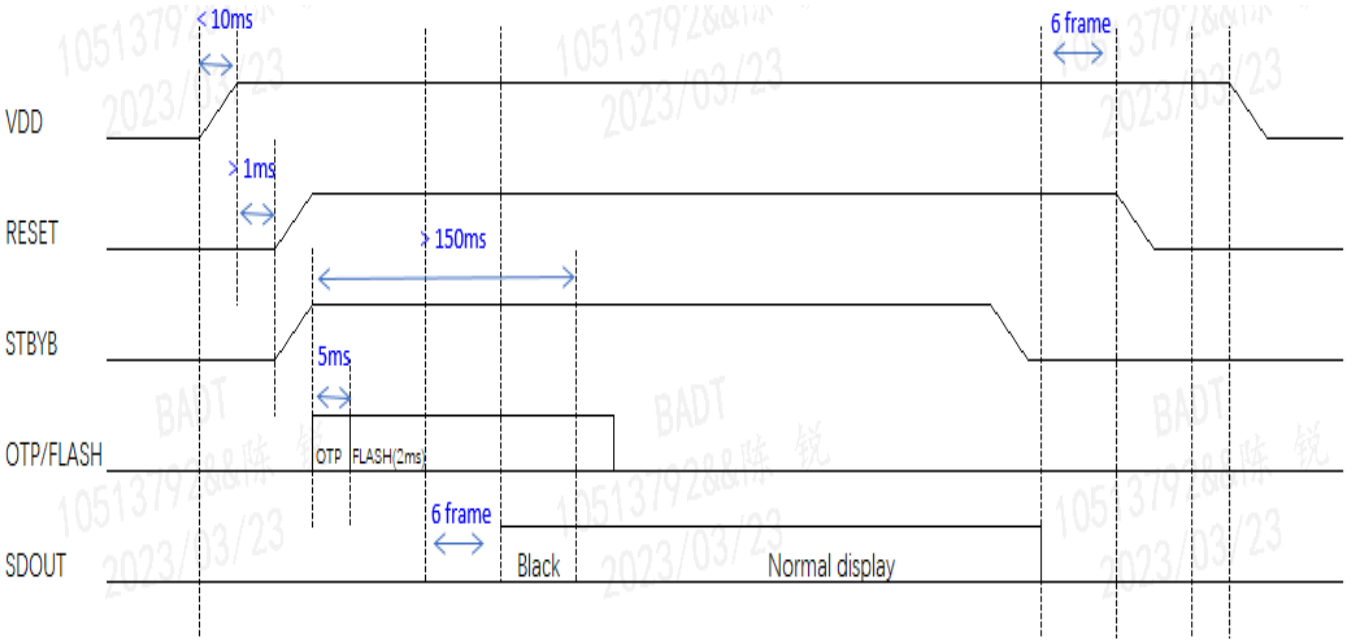
Parameter	Symbol	Spec.			Unit	Condition
		Min.	Typ.	Max.		
Differential input high Threshold voltage	Vth	-	-	0.1	V	Vcm=1.2V
Differential input low Threshold voltage	Vtl	-0.1	-	-	V	-
Differential input common modevoltage	Vcm	0.6	1.2	2.4-|vid|/2	V	-
Differential input voltage	|Vid|	0.2	0.4	0.6	V	-
Differential input leakage Current	|Lvleak|	-10	-	+10	uA	-



Note : AC and DC characteristics of the above LVDS is an acceptablespecification for the driver IC, and the system output specification needs to be tested and validated withthe entire module to meet the IC requirements .

3.7 Power on/off sequence

Figure 3-5 Power on/off sequence



4.0 OPTICAL SPECIFICATIONS

4.1 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 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.

Measurement condition:
Backlight: BEF + DBEF
LED: JF YAG
POL: Front HC POL(0°) + Rear HC POL(90°).

Table 4-1 Optical Specifications

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit	Remark
Viewing Angle range	Horizontal	Θ_3	CR > 10	80	85	-	Deg.	Note 1
		Θ_9		80	85	-	Deg.	
	Vertical	Θ_{12}		80	85	-	Deg.	
		Θ_6		80	85	-	Deg.	
Contrast ratio 25℃			H=0,V=0	1000	1200	-	-	Note 2
Response Time		T_{RT}	25℃	-	-	30	ms	Note 5
			-20℃	-	-	200		
			-30℃	-	-	500		
Reflectance		SCI	-	-	-	5.5	%	(w/o CG) ⊥/∥取平均值 Note6

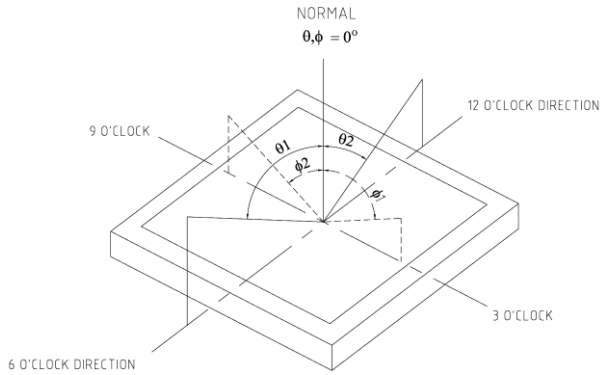
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit.	Remark
Luminance	-		1000	1200	-	-	Note 3
NTSC	%	Θ = 0° (Center) Normal Viewing Angle	70	75	-	%	CF without "OC" C light Note 4
White Chromaticity	x_w		Typ -0.015	0.303	Typ +0.015	-	
	y_w			0.319		-	
Red Chromaticity	x_R			0.660		-	
	y_R			0.320		-	
Green Chromaticity	x_G			0.280		-	
	y_G			0.600		-	
Blue Chromaticity	x_B			0.140		-	
	y_B			0.082		-	
Flicker	-	-	-	-	-20dB	-	@L127
Gamma	-	Perpendicular	1.9	2.2	2.5	-	@25℃
Crosstalk	-	-	-	-	2%	-	@25℃

Notes :
These items are measured using the following equipment:

- Trans/Color/View angle range/ 9 points trans uniformity : SR-UL1R
- Contrast ratio/9 points luminance uniformity：EYE2-400/SR-UL1R
- Response time @ room temperature: TRD-100A
- Angle contrast ratio/Angle trans/Low temperature response time/High temperature contrast ratio/Low temperature contrast ratio: DMS 903
- Reflectance/Reflection color：CM-700D,

Notes :

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.



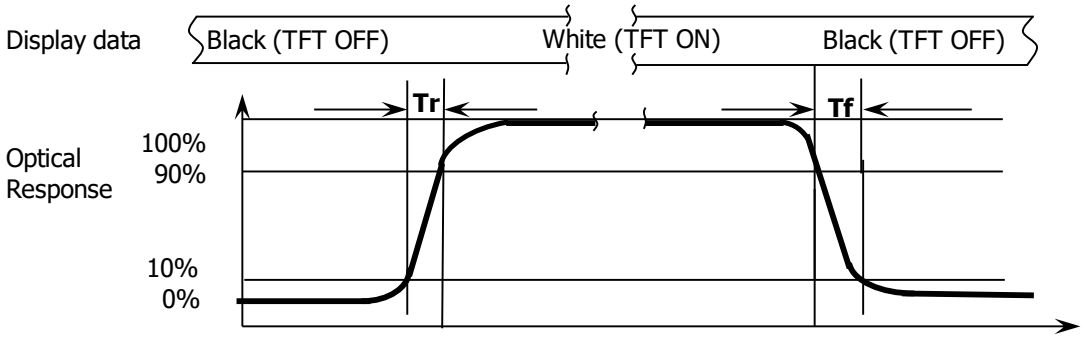
2. Contrast measurements shall be made at viewing angle of θ= 0° and at the center of the LCD surface. Luminance shall be measured with all pixels in the view field set first to white, then to the dark (black) state. (See FIGURE 4-1 shown in Appendix) Luminance Contrast Ratio (CR) is defined mathematically.

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

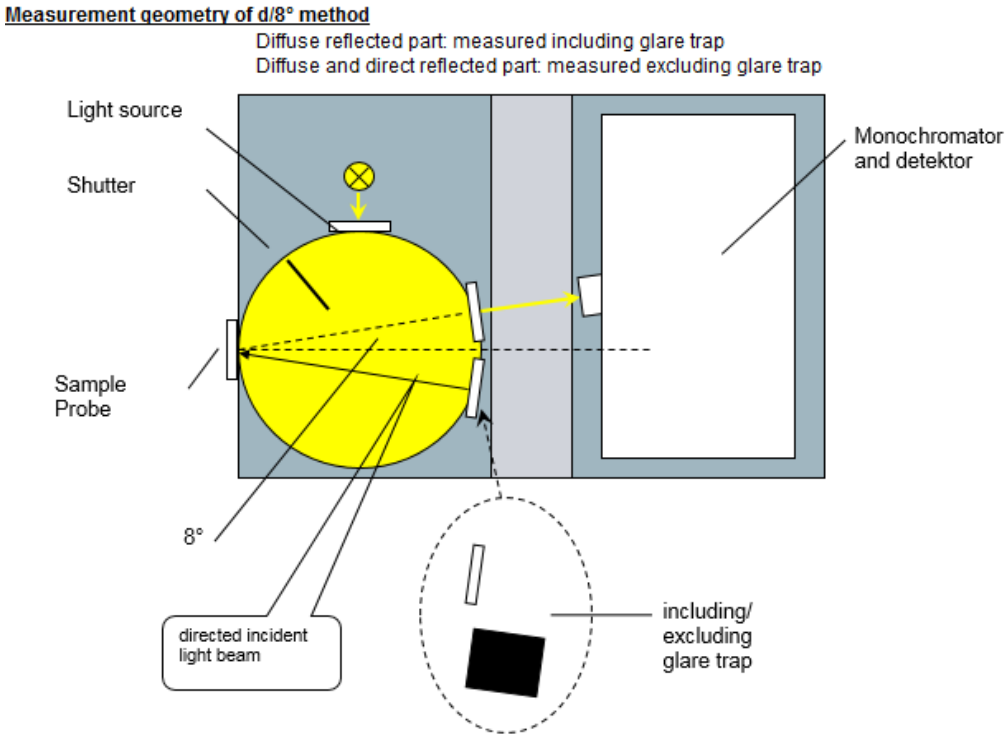
3. Center trans of white is defined as the LCD surface. Luminance shall be measured with all pixels in the view field set first to white. This measurement shall be taken at the locations shown in FIGURE 4-2 for a total of the measurements per display.

4. The color chromaticity coordinates specified in Table 4-1. shall be calculated from the spectral data measured with all pixels first in red, green, blue and white. Measurements shall be made at the center of the C/F.

5. The electro-optical response time measurements shall be made as FIGURE 4-4. Tg2g is the biggest value in the table with * mark as below. The grey levels to be measured are also defined in the below table. The measurement timing is 90%~10% or 10%~90% during grey level change.



6. Surface reflection: SCI and SCE measurements shall be performed with 8° geometry. SCI=(R//+R⊥)/2



5.0 MECHANICAL CHARACTERISTICS

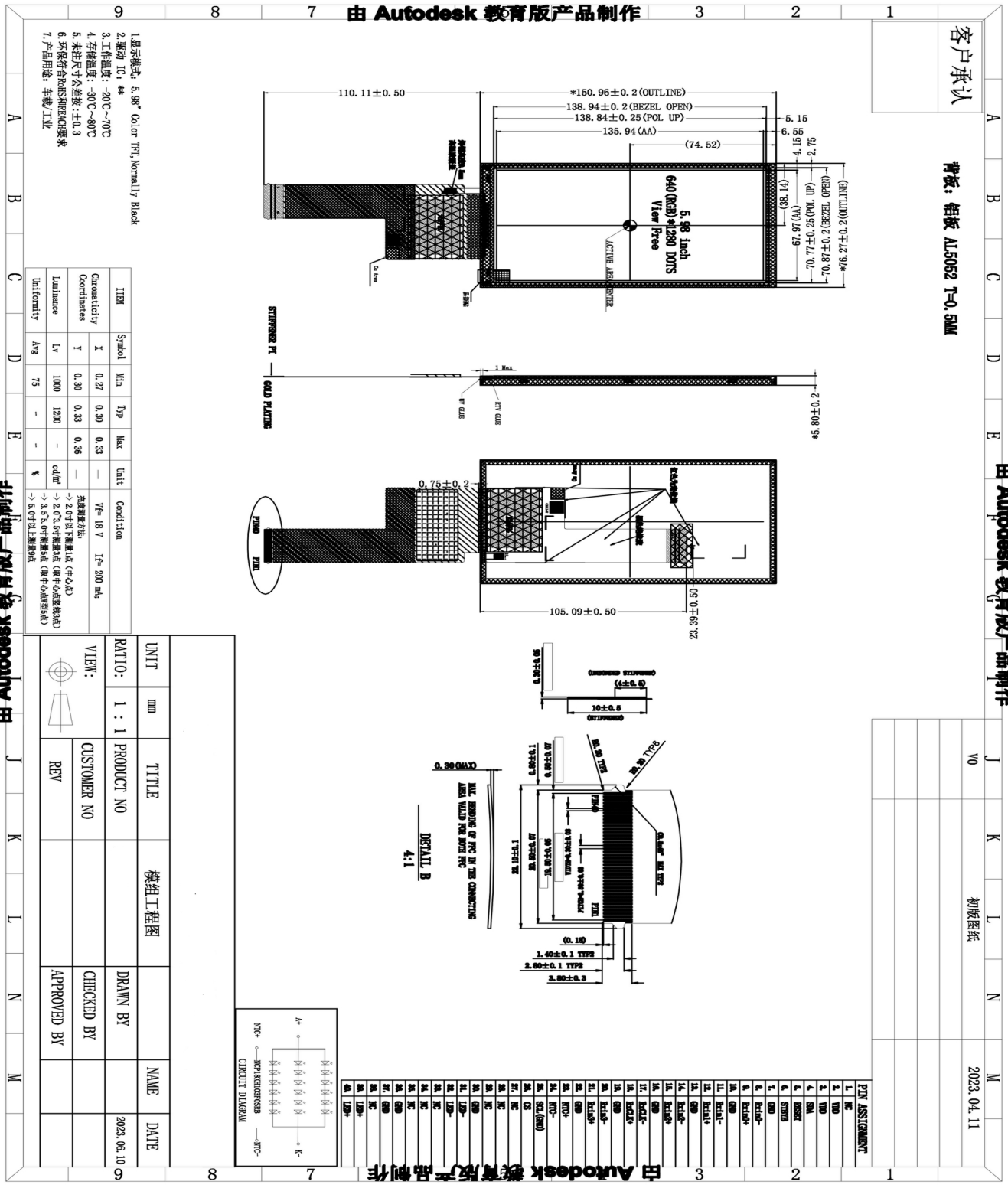
5.1 Dimensional Requirements

Figure in next page shows mechanical outlines for the FOG.

Table 5-1 Dimensional Parameters

Parameter	Specification	Unit
Active Area	67.968(H) x 135.936(V)	mm
Number of pixels	640(H) ×1280(V)	Pixels
Pixel pitch	0.1062(H) ×RGB×0.1062(V)	mm
Pixel arrangement	RGB Vertical stripe	
Display colors	16.7M	colors
Display mode	Normally black	
Panel thickness	0.5T+0.5T	mm
FOG outline	73.57(H) x 215.47(V) x 1.246(D)	mm
AA-Panel outline L/R/U/D	2.801/2.801/2.75/7.074	mm

5.2 Outline (Front)



1.显示模式：5.98" Color TFT,Normally Black
2.驱动 IC：**
3.工作温度：-20℃~70℃
4.存储温度：-30℃~80℃
5.未注尺寸公差按：±0.3
6.环保符合RoHS和REACH要求
7.产品用途：车载/工业

ITEM	Symbol	Min	Typ	Max	Unit	Condition
Chromaticity Coordinates	X	0.27	0.30	0.33	—	亮度测量方法： -> 2.0寸以下测量1点（中心点） -> 2.0~3.9寸测量3点（离中心点等边3点） -> 3.5~4.9寸测量5点（离中心点呈梅花形）
	Y	0.30	0.33	0.36	—	
Luminance	Lv	1000	1200	-	cd/m²	VF= 18 V IF= 200 mA
Uniformity	Avg	75	-	-	%	-> 5.0寸以上测量9点

PIN	ASSIGNMENT
1	NC
2	VDD
3	VDD
4	SDA
5	RESET
6	SCKOUT
7	GND
8	Data0-
9	Data0+
10	GND
11	Data1-
12	Data1+
13	GND
14	Data2-
15	Data2+
16	GND
17	Data3-
18	Data3+
19	GND
20	Data4-
21	Data4+
22	GND
23	SCL(GND)
24	NTC+
25	NTC-
26	GND
27	Data5-
28	Data5+
29	GND
30	Data6-
31	Data6+
32	GND
33	Data7-
34	Data7+
35	GND
36	NC
37	NC
38	LED-
39	LED+
40	LED+

6.0 RELIABILITY

Table 6-1 Reliability test

No	Test Items	Conditions	Remark
1	High temperature storage test	Ta = 80 ℃,240 hrs	The test result shall be evaluated after the sample has been left at room temperature and humidity for 2 hours. These defects can't be accepted: 1.Air bubble 2.Seal leak 3.Non-display 4.Missing segments 5.Glass crack
2	Low temperature storage test	Ta = -30 ℃, 240 hrs	
3	High temperature operation test	Ta = 70℃, 240 hrs	
4	Low temperature operation test	Ta = -20 ℃, 240 hrs	
5	High temperature & high humidity operation test	Ta = 60 ℃, 90%RH, 240 hrs	
6	Thermal shock	Ta = -40 ℃ ↔ 85 ℃ (0.5 hr), 100 cycle(Non-operation)	
7	Image Sticking	5*5 Pattern, 1hrs 25℃±2℃ check pattern Gray 127, after 5s, the mura must be disappeared completely	

Notes

1. All tests run in parallel.

2, After the reliability test, the product only guarantee function normally without any fatal defect (non-display, line defect, abnormal display etc). All the cosmetic specification is judged before the reliability test.

8.0 Packing

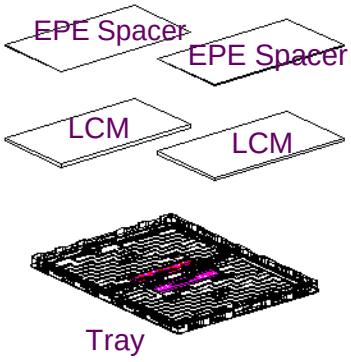
7.1. Packing Description

-. Put a LCM into a Tray

Put an EPE Spacer on surface of each LCM

-. Capacity: 2pcs / Tray

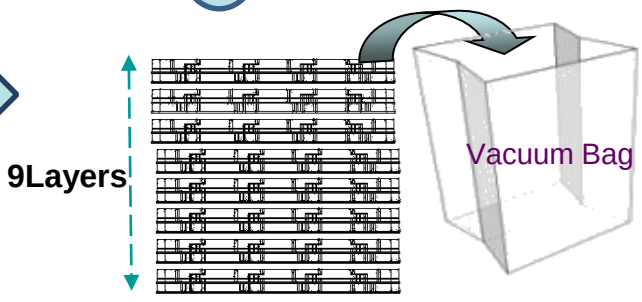
1



-. Put 9pcs PET Trays into a Vacuum Bag

-. (Include: put an empty Tray on top)

2

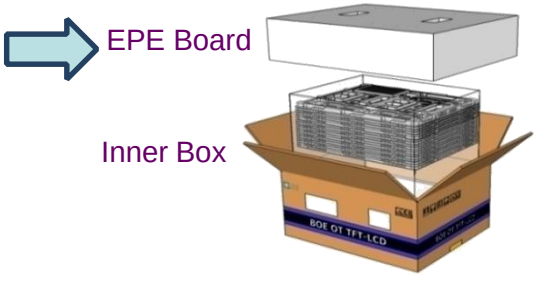


-.Put all PET Trays with Vacuum Bags into an Inner Box.

3

Put an EPE Board on top and an EPE Board on bottom.

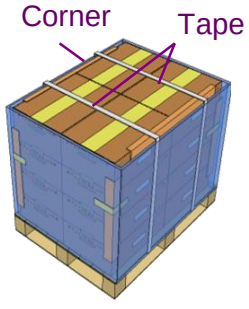
-.Capacity：16pcs modules / Inner Box



4

-. 12（2*2*3） Inner Boxes / Pallet

.Capacity: 192pcs/Pallet



9.0 PRECAUTIONS

9.1 Handing

(1) Use fingerstalls with soft gloves in order to keep display clean during the incoming inspection and assembly process.
(2) You must mount a module using specified mounting holes (Details refer to the drawings).
(3) Please make sure to avoid external forces applied to the Source PCB or FPC and D-IC during the process of handling or assembling. If not, It causes panel damage or malfunction.
(4) Note that polarizers are very fragile and could be easily damaged. Do not touch, push or rub the exposed polarizers with glass, tweezers or anything harder than HB pencil lead. And please do not rub with dust clothes with chemical treatment.
(5) Do not pull or fold the source D-IC which connect the source PCB or FPC and the panel. Do not pull or fold the LED wire.
(6) After removing the protective film, when the surface becomes dusty, please wipe gently with absorbent cotton or other soft materials like chamois soaks with alcohol or purified water. Do not strong polar solvent because they cause chemical damage to the polarizer
(7) Wipe off saliva or water drops as soon as possible. Their long time contact with . polarizer causes deformations and color fading.
(8) Protection film for polarizer on the module shall be slowly peeled off just before use so that the electrostatic charge can be minimized.
(9) Since the LCD is made of glass, do not apply strong mechanical impact or static load onto it. Handling with care since shock, vibration, and careless handling may seriously affect the product. If it falls from a high place or receives a strong shock, the glass may be broken.
(10) Do not disassemble the module.
(11) To determine the optimum mounting angle, refer to the viewing angle range in the specification for each model.
(12) If the customer's set presses the main parts of the LCD, the LCD may show the abnormal display. But this phenomenon does not mean the malfunction of the LCD and should be pressed by the way of mutual agreement.
(13)Do not drop water or any chemicals onto the LCD's surface.
(14)The ITO pad area needs special careful caution because it could be easily corroded. Do not contact the ITO pad area with HCFC, Soldering flux, Chlorine, Sulfur, saliva or fingerprint. To prevent the ITO corrosion, customers are recommended that the ITO area would be covered by UV or silicon.

注：① (4)(6)(7)(8) 涉及到Pol相关条目适用于OC/MDL出货产品，针对Q/Single建议改为LCD surface
②第(14)条适用于Q/Single出货产品

9.2 Operating Precautions

(1) Be careful for condensation at sudden temperature change. Condensation makes damage to polarizer or electrical contacted parts. And after fading condensation, smear or spot will occur.
(2) Module has high frequency circuits. Sufficient suppression to the electromagnetic interference shall be done by system manufacturers. Grounding and shielding methods may be important to minimized the interference.
(3) The electrochemical reaction caused by DC voltage will lead to LCD degradation, so DC drive should be avoided.
(4) The LCD modules use C-MOS LSI drivers, so customers are recommended that any unused input terminal would be connected to Vdd or Vss, do not input any signals before power is turn on, and ground you body, work/assembly area, assembly equipments to protect against static electricity.
(5) Do not exceed the absolute maximum rating value. (supply voltage variation, input voltage variation, variation in part contents and environmental temperature, and so on) Otherwise the Module may be damaged.
(6) Design the length of cable to connect between the connector for back-light and the converter as short as possible and the shorter cable shall be connected directly. The longer cable between that of back-light and that of converter may cause the luminance of LED to lower and need a higher startup voltage(Vs).
(7) Connectors are precise devices for connecting PCB and transmitting electrical signals. Operators should insert and unplug MDL in parallel when assembling MDL.
(8) Do not connect or disconnect the cable to/ from the module at the "Power On" condition.
(9) When the module is operating, do not lose CLK, HS,VS signals. If any one these signals is lost, the LCD panel would be damaged.
(10) Obey the supply voltage sequence. If wrong sequence is applied, the module would be damaged.
(11) Do not re-adjust variable resistor or switch etc.

注：①(1)涉及到Pol相关条目适用于OC/MDL出货产品，针对Q/Single建议改为LCD surface
②(6)(7)涉及到connector相关适用于MDL出货产品

9.3 Electrostatic Discharge Control

(1) Since a module is composed of electronic circuits, it is not strong to electrostatic discharge. Make certain that treatment persons are connected to ground through wrist band etc. And don't touch interface pin directly. Keep products as far away from static electricity as possible.
(2) Avoid the use work clothing made of synthetic fibers. We recommend cotton clothing or other conductivity-treated fibers.

9.4 Precautions for Strong Light Exposure

Strong light exposure causes degradation of polarizer and color filter. It is not allowed to store or run directly in strong light or in high temperature and humidity for a long time.

9.5 Storage Precautions

(1) When storing the LCD modules, avoid exposure to direct sunlight or to the light of fluorescent lamps.
(2) The LCD modules should be stored under the storage temperature range. the recommend condition is: Temperature : 0℃~ 40℃, Relatively humidity: ≤80%, and no more than 1 year.
(3) The LCD modules should be stored in the room without acid, alkali and harmful gas.

9.6 Handling Precautions for Protection Film （不适用于Q/Single出货产品）

(1) Remove the protective film slowly, keeping the removing direction approximate 30-degree not vertical from panel surface, If possible, under ESD control device like ion blower, and the humidity of working room should be kept over 50%RH to reduce the risk of static charge.
(2) In handling the LCD, wear non-charged material gloves. And the conducting wrist to the earth and the conducting shoes to the earth are necessary.

9.7 Operation Condition Guide

(1) Lifetime in this spec. is guaranteed only when Commercial Display is used according to operating usages.
(2) Module used in unnormal orientation mode，need to confirm with the manufacturer.
(3) Do not exceed the absolute maximum rating value. (supply voltage variation, input voltage variation, variation in part contents and environmental temperature, and so on) Otherwise the Module may be damaged.

(4) Dew drop atmosphere should be avoided.
(5) The storage room should be equipped with a good ventilation facility, which has a temperature controlling system.
(6) When expose to drastic fluctuation of temperature (hot to cold or cold to hot) ,the LCD may be affected; Specifically, drastic temperature fluctuation from cold to hot ,produces dew on the LCD's surface which may affect the operation of the polarizer and the LCD.
(7) Response time will be extremely delayed at lower temperature than the operating temperature range and on the other hand at higher temperature LCD may turn black at temperature above its operational range. However those phenomena do not mean malfunction or out of order with the LCD. The LCD will revert to normal operation once the temperature returns to the recommended temperature range for normal operation.

9.8 Others

(1)When returning the module for repair or etc., Please pack the module not to be broken. We recommend to use the original shipping packages.
(2) In order to prevent potential problems, flicker should be adjusted by optimizing the Vcom value in customer LCM.（适用于Q panel/single/OC出货）
(3) 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.
(4) For the crash damaged or unnecessary LCD, it is recommended to wash off liquid crystalby either of solvents such as acetone and ethanol an should be burned up later.
(5) If you should swallow the liquid crystal, first, wash your mouth thoroughly with water, then drink a lot of water and induce vomiting, and then, consult a physician.
(6) If the liquid crystal should get in your eyes, flush your eyes with running water for at least fifteen minutes.
(7) Client needs to add heat dissipation design , such as fan, water cooling , etc.
(8) After assembling into modules, guarantee that the temperature rise of panel surface does not exceed 20 C at room temperature.
(9) Customers need to drive current down according to derating curve.