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B8 GV101WXM-N80 Product Specification Rev.0

SUPPLIER	
FG-Code	GV101WXM-N80-8GP0

ITEM	BUYER SIGNATURE	DATE
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ITEM	SUPPLIER SIGNATURE	DATE
Prepared	_____	_____
Reviewed	_____	_____
Approved	_____	_____



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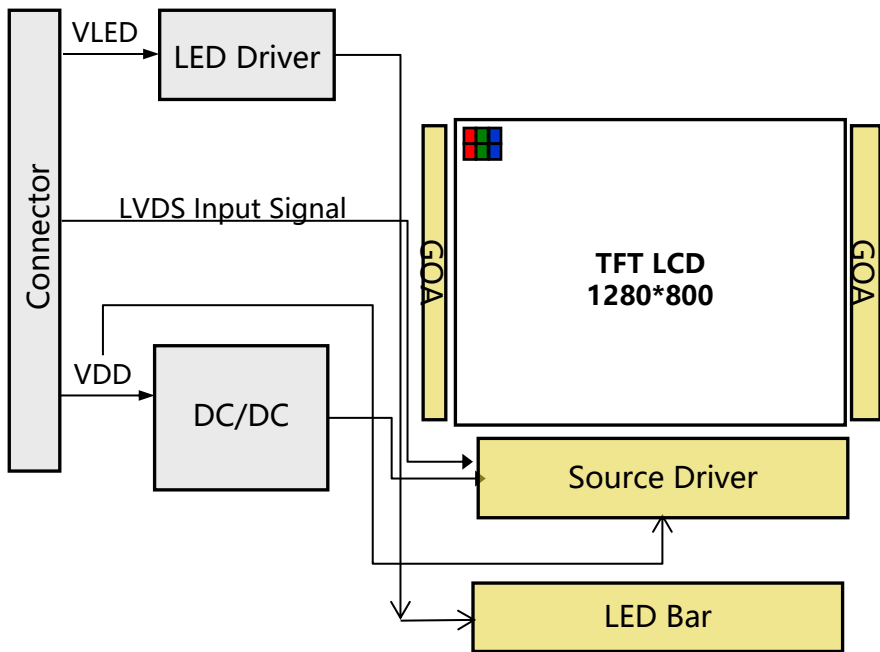
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## 1.0 GENERAL DESCRIPTION

### 1.0.1 Introduction

GV101WXM-N80 is a color active matrix TFT LCD module using amorphous silicon TFT's (Thin Film Transistors) as an active switching devices. This module has a 10.1 inch diagonally measured active area with XGA resolutions (1280 horizontal by 800 vertical pixel array). Each pixel is divided into RED, GREEN, BLUE dots which are arranged in vertical stripe and this module can display 16.7 M colors.



### 1.0.2 Features

- LED back-light
- LVDS interface
- RoHS Compliant

### 1.0.3 Application

- Video Phone/IP Phone/Smart Key/ e-cigarettes etc.

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1.0.4 General Specification

< Table 1. General Specifications >

Parameter	Specification ( 15inch 参考 )	Unit	Remarks
Active area	216.96 (H) × 135.6(V)	mm	
Number of pixels	1280(H) × 800(V)	Pixels	
Pixel pitch	0.1695(H) × 0.1695 (V)	mm	
Pixel arrangement	RGB Vertical stripe		
Display colors	16.7M	Colors	8bit
Display mode	Normally Black		
Dimensional outline	228.2±0.3(H) x 148.85±0.3(V) x 2.8max x/4.9(max.)	mm	10.0max
Weight	150 (max.)	g	
Surface treatment	Hard Coating , 3H		
Back-light	Edge side, 1-LED Lighting Bar Type		42*LED
LED Life-Time	30000	Hr	@L50%

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## 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.

< Table 2. Environment Absolute Maximum Ratings> [Ta =25 ± 2 °C]

Parameter	Symbol	Min.	Max.	Unit	Remarks
LCD Power Supply Voltage	VDD	-0.3	4	V	
LED Driver Power Supply Voltage	V <sub>LED</sub>	5	24	V	Ta = 25 °C Note 1&2
Operating Temperature	T <sub>OP</sub>	-20	70	°C	Environment Temperature
Storage Temperature	T <sub>ST</sub>	-30	80	°C	
Operating Ambient Humidity	Hop	10	90	%RH	
Storage Humidity	Hst	10	90	%RH	
Heat Release Requirement	Trls	15		°C	Note3 仅适用于Q/Sin gle/FOG出货项 目

- Note:
- These range above is maximum value not the actual operating temperature . Actual Operating temperature is no more than 40°C and temperature refers to the LCM surface temperature ;
  - BOE is not responsible for product problems beyond the use conditions.
  - When the ambient temperature is T °C, the surface temperature of Panel can not exceed (T+15)°C.

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3.0 ELECTRICAL SPECIFICATIONS

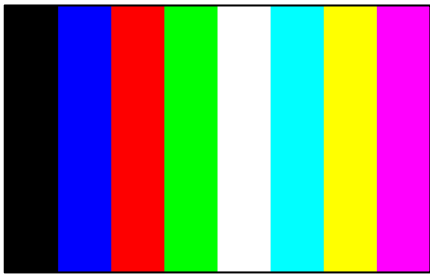
3.0.1 TFT LCD Module

< Table 3. LCD Module Electrical Specifications > [Ta =25 ± 2 °C]

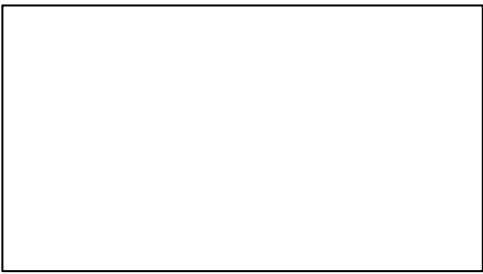
Parameter	Symbol	Values			Unit	Notes
		Min	Typ	Max		
Power Supply Input Voltage	V <sub>DD</sub>	3.3	3.3	3.6	V	Note 1
Power Supply Current	I <sub>DD</sub>	-	330	420	mA	
LED Driver Power Supply Voltage	V <sub>LED</sub>	10.8	12	13.2	V	Note 2
LED Driver Power Supply Current	I <sub>LED</sub>	-	275	300	mA	
Positive-going Input Threshold Voltage	V <sub>IT+</sub>	-	-	+100	mV	
Negative-going Input Threshold Voltage	V <sub>IT-</sub>	-100	-	-	mV	
Differential input common mode voltage	V <sub>com</sub>	0.6	1.2	2.4-  VID  /2	V	
Differential input voltage	VID	0.2	0.4	0.6		

Notes : 1. The supply voltage is measured and specified at the interface connector of LCM.  
The current draw and power consumption specified is for 3.3V at 25 °C, Typ value at colorbar Pattern, Max value at L255 Pattern

2. Calculated value for reference  $I_{LED} \times V_{LED} \div 0.85 = P_{LED}$



colorbar



L255

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3.2 Back-light Driving Unit

< Table 4. LED Driving guideline specifications > Ta=25+/-2°C

Parameter			Min.	Typ.	Max.	Unit	Remarks
Power supply voltage for L ED Driver		V <sub>LED</sub>	-	21	23.1	V	
Power supply Current for B ack light		I <sub>LED</sub>	-	120	-	mA	
Power supply for Back light		P <sub>LED</sub>	-	2.52	2.8	W	Note 1
EN Control Level	Backlight on	V <sub>ENH</sub>	1.4	-	3.3	V	EN logic high v oltage
	Backlight off	V <sub>ENL</sub>	-	-	0.6	V	EN logic low vol tage
PWM Cont rol Level	PWM High L evel	V <sub>PML</sub>	1.4	-	3.3	V	
	PWM Low Le vel	V <sub>PML</sub>	-	-	0.6	V	
PWM Control Frequency		F <sub>PWM</sub>	2	-	25	KHz	
Duty Ratio		-	10	-	100	%	

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## 4.0 INTERFACE CONNECTION.

### 4.0.1 Electrical Interface Connection

The electronics interface connector is 20455-040E-12.

The connector interface pin assignments are listed in Table 6

<Table 6. Pin Assignments for the Interface Connector>

Terminal	Symbol	Functions
Pin No.	Symbol	Description
1	NC	No Connection
2	VDDIN	Power Supply,3.3V(typical)
3	VDDIN	Power Supply,3.3V(typical)
4	VDC	EDID,3.3V(typical)
5	NC	No Connection
6	CLK_EDID	EDID时钟
7	Data_EDID	EDID data读取
8	RIN0-	-LVDS differential data lane0 input
9	RIN0+	+LVDS differential data lane0 input
10	GND	Ground
11	RIN1-	-LVDS differential data lane1 input
12	RIN1+	+LVDS differential data lane1 input
13	GND	Ground
14	RIN2-	-LVDS differential data lane2 input
15	RIN2+	+LVDS differential data lane2 input
16	GND	Ground
17	LVDS_CLK-	-LVDS differential clock input
18	LVDS_CLK+	+LVDS differential clock input
19	GND	Ground
20	RIN3-	-LVDS differential data lane3 input
21	RIN3+	+LVDS differential data lane3 input
22	NC	No Connection

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## 4.0 INTERFACE CONNECTION.

### 4.0.1 Electrical Interface Connection

The electronics interface connector is 20455-040E-12.

The connector interface pin assignments are listed in Table 6

<Table 6. Pin Assignments for the Interface Connector>

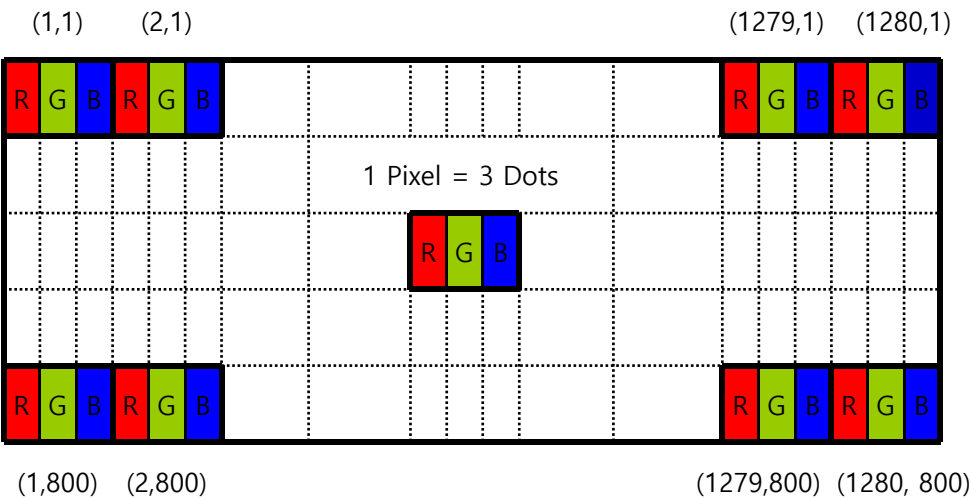
Terminal	Symbol	Functions
Pin No.	Symbol	Description
23	NC(SPI_CSB)	No Connection (SPI 片选)
24	NC(SPI_SCL)	No Connection (SPI 时钟)
25	GND	Ground
26	NC(SPI_SDAO)	No Connection (SPI Data output)
27	NC(SPI_SDAI)	No Connection (SPI Data input)
28	GND	Ground
29	NC	No Connection
30	NC	No Connection
31	LED_GND	Ground
32	LED_GND	Ground
33	LED_GND	Ground
34	NC	No Connection
35	LED_PWM	LED Driver PWM dimming control pin
36	LED_EN	LED Driver Chip Enable pin (Active High)
37	NC	No Connection
38	VLED	LED Driver Power supply input
39	VLED	LED Driver Power supply input
40	VLED	LED Driver Power supply input

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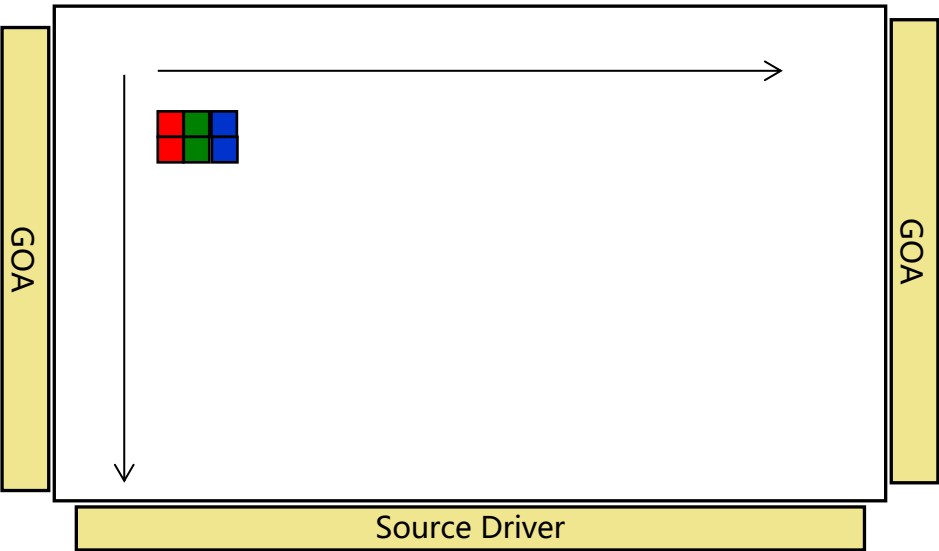
4.2 Data Input Format

Figure 5. Pixel Format



Display Position of Input Data (V-H)

Figure 6. Scan direction



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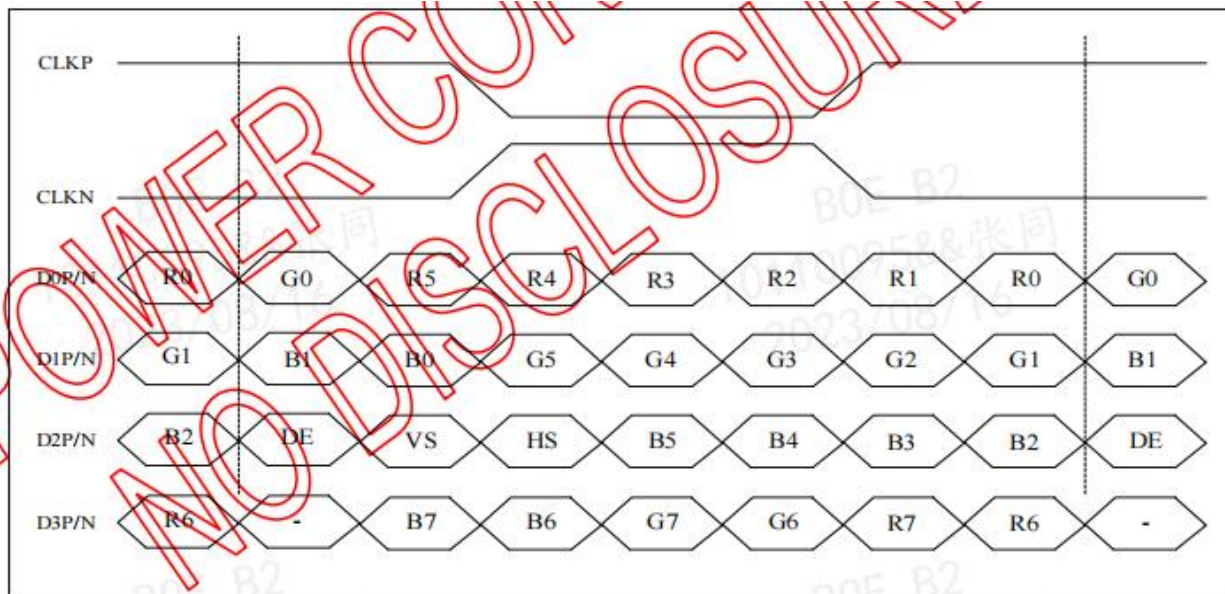
5.0 SIGNAL TIMING SPECIFICATION

5.0.1 The GV101WXM-N80 is operated by the DE only.

Item	Symbols		Min	Typ	Max	Unit	Note
DCLK	Frequency	-	68.1	69.3	70.4	MHz	以Typ Porch timing 点屏
Frame rate	Frequency	HZ	59	60	61	Hz	
Hsync	Period	tHP	1368	1408	1448	tCLK	
	Horizontal Valid	tHV	-	1280	-	tCLK	
	Horizontal Blank	tHB	88	128	168	tCLK	
	Horizontal Front Porch	tHP	40	68	80	tCLK	
	Horizontal Sync Width	tHS	20	32	60	tCLK	
Vsync	Period	tVP	818	820	847	line	
	Vertical Valid	tVV	-	800	-	line	
	Vertical Blank	tVB	18	20	47	line	
	Vertical Front Porch	tVP	8	10	20	line	
	Vertical Sync Width	tVS	3	3	20	line	

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## 5.02 LVDS data input format



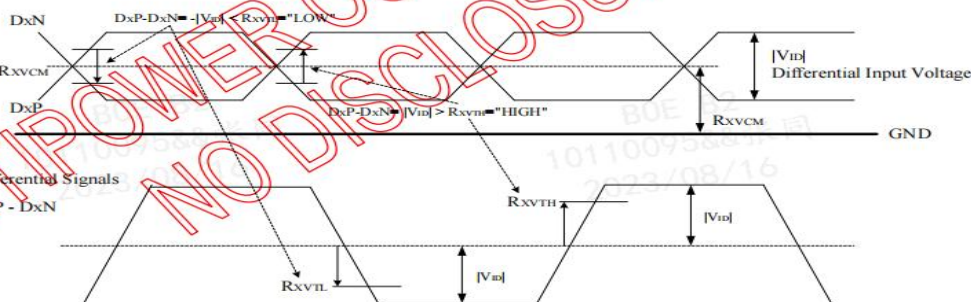
## 8-bit RGB LVDS VESA input timing

## 5.03 LVDS DC electrical characteristic

(Test condition: VDD=3.0V~3.6V, VSS=0V )

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Differential input high threshold voltage	RxVTH			+100	mV	1. $R_{xvcm} -  V_{id}  \leq 1400\text{mV}$ . 2. $R_{xvcm} -  V_{id}  \geq 400\text{mV}$ .
Differential input low threshold voltage	RxVTL	-100			mV	
Input voltage range (singled-end)	RxVIN	400	-	1400	mV	
Differential input common mode voltage	RxVCM	600	1200	1400	mV	
Differential input voltage	$ V_{id} $	200	400	600	mV	
Differential input impedance	$Z_{id}$	85	100	115	ohm	
Differential input leakage current	$I_{LCLVDS}$	-10		+10	uA	

Single-end Signals



## 5.04 LVDS AC electrical characteristic

Parameter	Symbol	Spec.			Unit	Condition
		Min.	Typ.	Max.		
Clock frequency	$R_{XCLK}$	20	-	96	MHz	Refer to input timing table for each display resolution
Input data skew margin	$T_{RSKM}$	-0.2	-	0.2	UI	$ VID  = 200mV$ $R_{xVCM} = 1.2V$ $1UI = 1/(R_{XCLK} \times 7)$
Clock high time	$T_{LVCH}$	-	$3.5/(7 \times R_{XCLK})$	-	ns	
Clock low time	$T_{LVCL}$	-	$3.5/(7 \times R_{XCLK})$	-	ns	
PLL wake-up time	$T_{enPLL}$	-	-	150	us	

Table : LVDS mode AC electrical characteristics

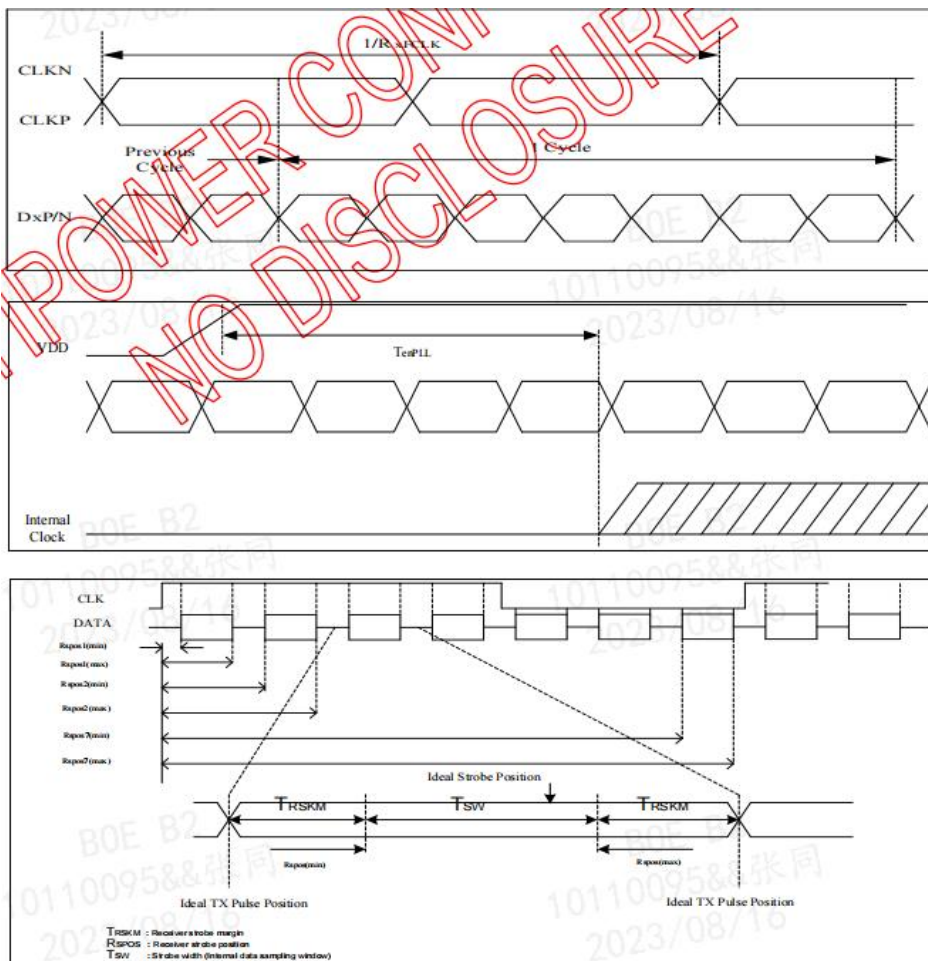


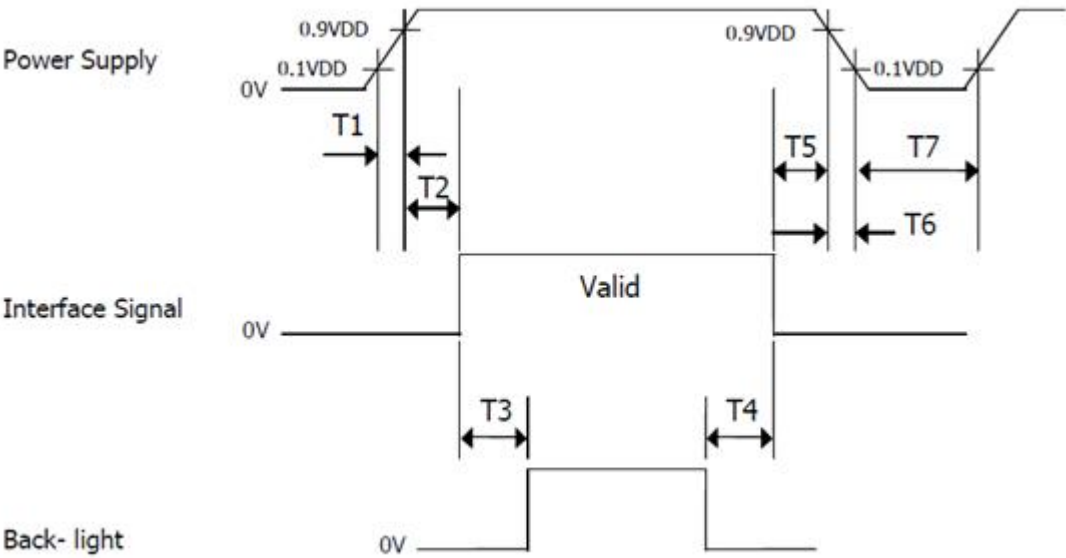
Figure : LVDS figure



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6.0 POWER SEQUENCE

To prevent a latch-up or DC operation of the LCD module, the power on/off sequence shall be as shown in below



Parameter	Values			Units
	Min	Typ	Max	
T1	0.5	-	10	ms
T2	0	-	50	ms
T3	200	-	-	ms
T4	500	-	-	ms
T5	0	-	50	ms
T6	0	-	10	ms
T7	500	-	-	ms

- Notes:
1. When the power supply VDD is 0V, keep the level of input signals on the low or keep high impedance.
  2. Do not keep the interface signal high impedance when power is on. Back Light must be turn on after power for logic and interface signal are valid.

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8.0 OPTICAL SPECIFICATION

8.0.1 Overview

The test of view angle range 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 CS2000/CA310) 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°. We refer to θ∅=0 (=θ3 ) as the 3 o'clock direction (the “right”), θ ∅=90 (= θ12 ) as the 12 o'clock direction (“upward”), θ ∅=180 (= θ9 ) as the 9 o'clock direction (“left”) and θ ∅=270(= θ6 ) as the 6 o'clock direction (“bottom”). While scanning θ and/or ∅, the center of the measuring spot on the Display surface shall stay fixed. The luminance, color and uniformity (etc) should be tested by CS2000/CA310. The backlight should be operating for 10 minutes prior to measurement. VDD shall be 3.3 ± 0.3V at 25℃.

<Table 5. Optical Specifications>

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit	Remark
Viewing Angle range	Horizontal	$\Theta_3$	CR > 10	80	85	-	Deg.	Note 1
		$\Theta_9$		80	85	-	Deg.	
	Vertical	$\Theta_{12}$		80	85	-	Deg.	
		$\Theta_6$		80	85	-	Deg.	
Luminance Contrast ratio		CR	$\Theta = 0^\circ$	900	1300	-		Note 2
Luminance of White	Center	$Y_w$	$\Theta = 0^\circ$	425	500	-	cd/m <sup>2</sup>	Note 3
White Lumina nce uniformity	9 Points or 5 Points	$\Delta Y_9$ or $\Delta Y_5$		75	80	-	%	Note 4
Color Gamut	NTSC	CIE1931	$\Theta = 0^\circ$	40	45	-	%	Note 5
Reproduction of color	White	$W_x$	$\Theta = 0^\circ$	Typ -0.03	0.313	Typ +0.03		
		$W_y$			0.329			
Response Time		Tr+Td	Ta= 25° C $\Theta = 0^\circ$	-	30	35	ms	Note 6

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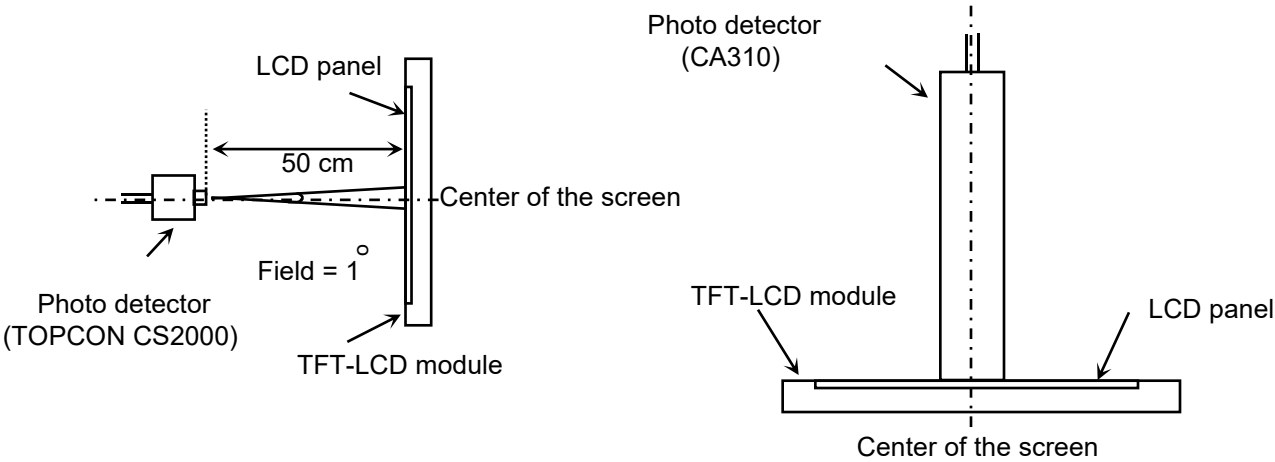


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<p>Notes : 1. Viewing angle is the angle at which the contrast ratio is greater than 10. The viewing angles are determined for the horizontal or 3, 9 o'clock direction and the vertical or 6, 12 o'clock direction with respect to the optical axis which is normal to the LCD surface (see FIGURE 1).</p> <p>2. Contrast measurements shall be made at viewing angle of <math>\Theta = 0</math> 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) Luminance Contrast Ratio (CR) is defined mathematically.</p> $CR = \frac{\text{Luminance when displaying a white raster}}{\text{Luminance when displaying a black raster}}$ <p>3. Luminance of white is defined as luminance values of center of 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 2 for a total of the measurements per display. The luminance is measured by CS2000/CA310 when the LED current is set at 60mA.</p> <p>4. The White luminance uniformity on LCD surface is then expressed as : <math>\Delta Y = \frac{\text{Minimum Luminance of 9 Points or 5 points}}{\text{Maximum Luminance of 9 Points or 5 points}}</math>(See FIGURE 2).</p> <p>5. The color chromaticity coordinates specified in Table 5. 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 panel.</p> <p>6. The electro-optical response time measurements shall be made as FIGURE 3 by switching the “data” input signal ON and OFF. The times needed for the luminance to change from 10% to 90% is Tr, and 90% to 10% is Td.</p>			
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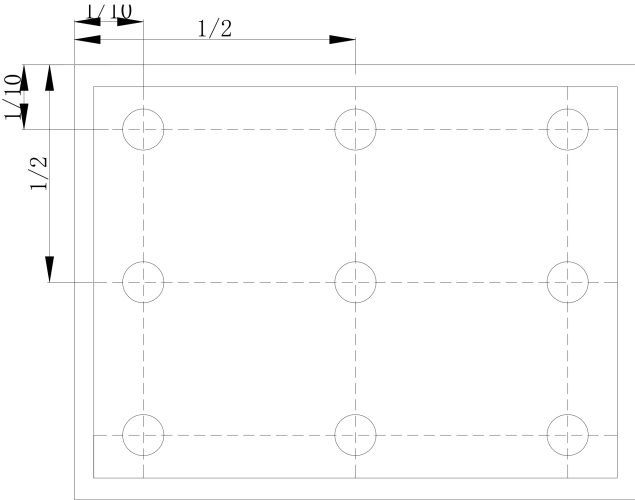
8.0.2 Optical measurements

Figure 1. Measurement Set Up



View angel range, uniformity, etc. measurement setup      Flicker, measurement setup

Figure 2. White Luminance and Uniformity Measurement Locations (9 points)



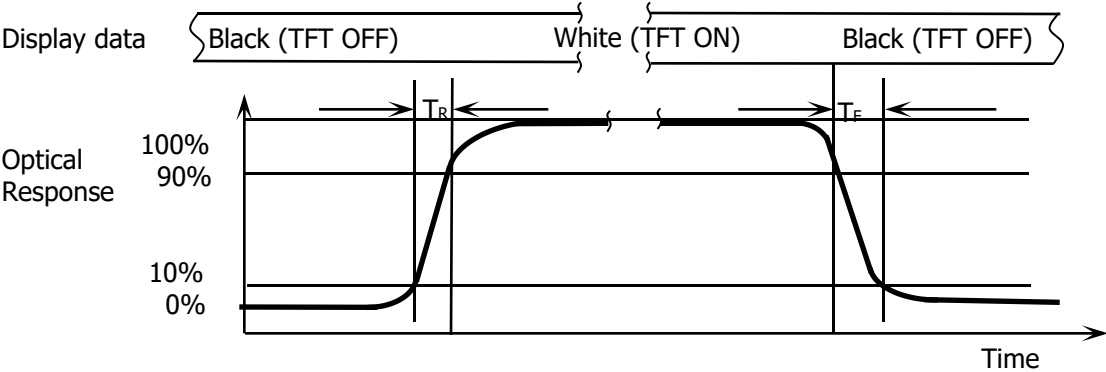
Luminance of white is defined as luminance values of center of the LCD surface. Luminance shall be measured with all pixels in the view field set first to white. This measurement shall be taken at the locations shown in FIGURE 2 for a total of the measurements per display.

The White luminance uniformity on LCD surface is then expressed as :  $\Delta Y9 = \text{Minimum Luminance of 9 points} / \text{Maximum Luminance of 9points}$  (see FIGURE 2).

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Figure 3. Response Time Testing



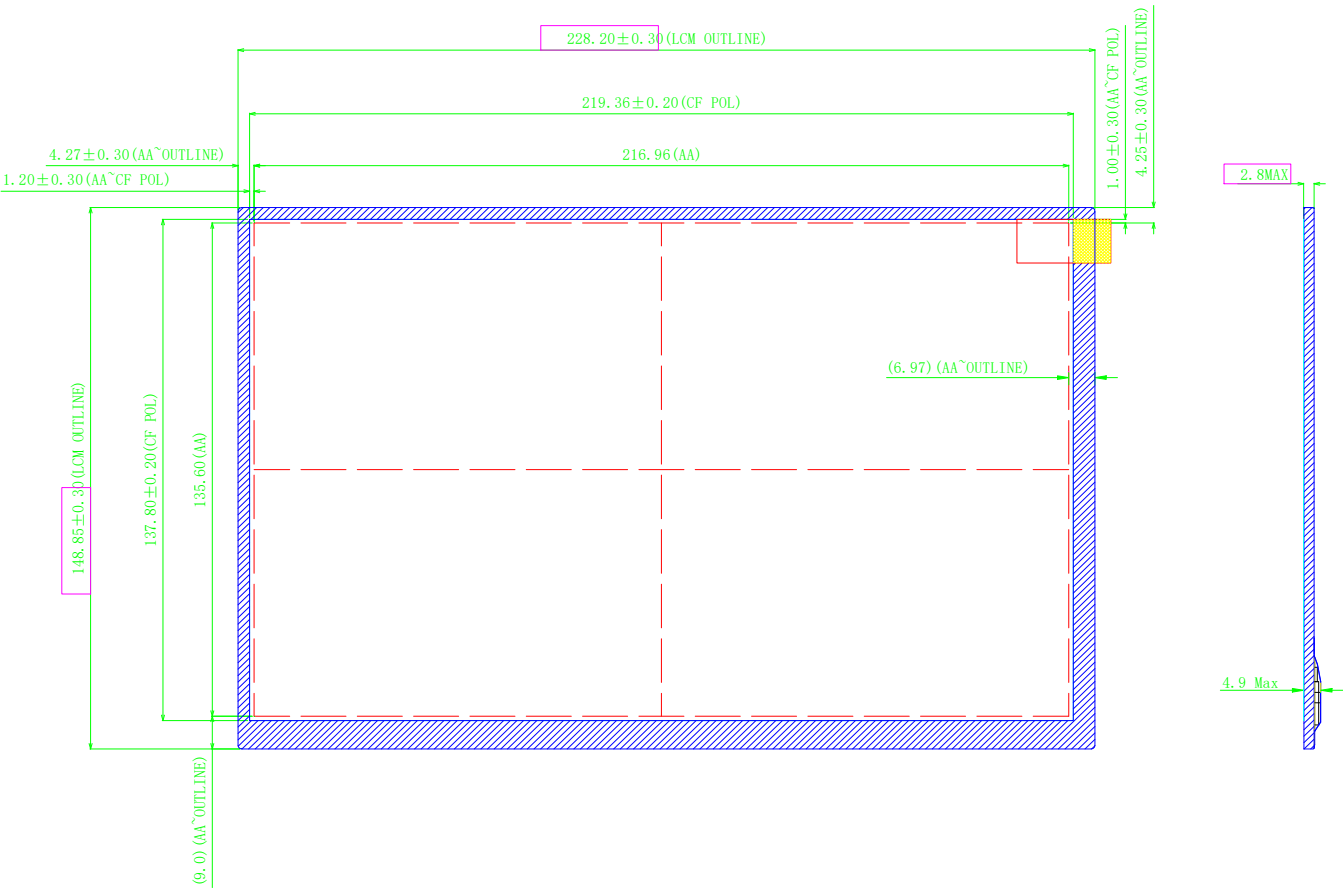
The electro-optical response time measurements shall be made as shown in FIGURE 3 by switching the “data” input signal ON and OFF. The times needed for the luminance to change from 10% to 90% is  $T_r$  and 90% to 10% is  $T_d$ .

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9.0 MECHANICAL OUTLINE DIMENSION

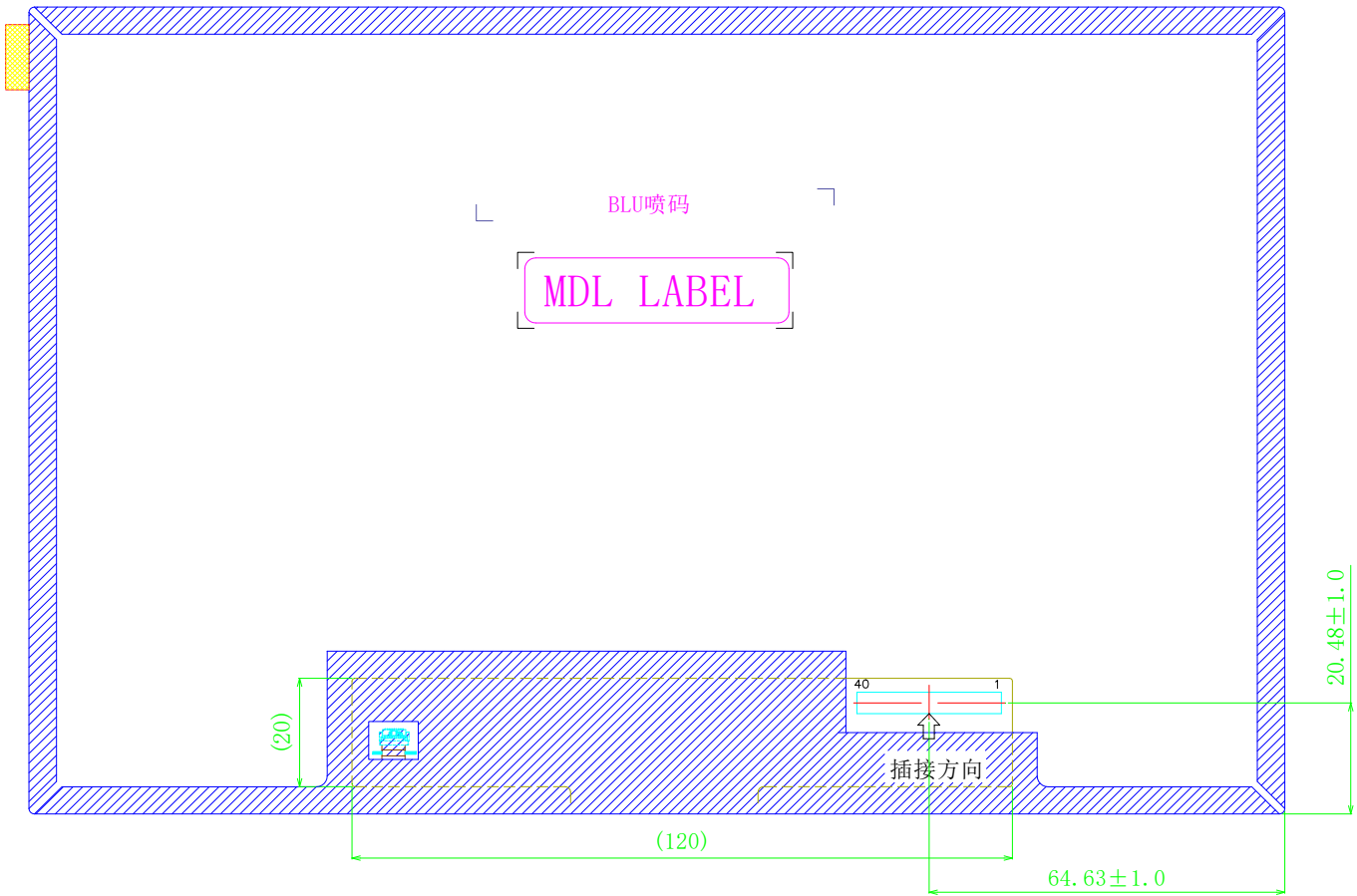
Figure 1. TFT-LCD Module Outline Dimension (Front View)



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Figure 2. TFT-LCD Module Outline Dimensions (Rear view)



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10.0 RELIABILITY TEST

The Reliability test items and its conditions are shown in below.

<Table 9. Reliability test>

No	Test Items	Conditions	Remark
1	High temperature storage test	Ta = 80℃, 300 hrs	-
2	Low temperature storage test	Ta = -30 ℃, 300 hrs	
3	High temperature operation test	Ta = 70℃, 300 hrs	
4	Low temperature operation test	Ta = -20 ℃, 300 hrs	
5	High temperature & high humidity storage test	Ta = 40 ℃, 90%RH, 300 hrs	
6	Thermal shock	Ta = -30 ℃ ↔ 80℃ (0.5 hr), 20 cycle	Non-operation
7	Image Sticking	5*5 Pattern, 2hrs 25℃±2℃ check pattern Gray 127, after 5 s, the mura must be disappeared completely	-
8	ESD test	Air Voltage:±8KV&±15KV Contact Voltage:±8KV R: 330Ω C: 150pF 5 time	

Note : 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.

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<ul style="list-style-type: none"> <li> <b>11.0 Precautions</b>  Please pay attention to the followings when you use this TFT LCD Panel. <ul style="list-style-type: none"> <li> <b>11.1 Mounting Precautions</b> <ul style="list-style-type: none"> <li>(1) Use fingerstalls with soft gloves in order to keep display clean during the incoming inspection and assembly process.</li> <li>(2) You must mount a module using specified mounting holes (Details refer to the drawings).</li> <li>(3) Please make sure to avoid external forces applied to the Source FPC and D-IC during the process of handling or assembling. If not, It causes panel damage or malfunction.</li> <li>(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.</li> <li>(5) Do not pull or fold the source D-IC which connect the source FPC and the panel.</li> <li>Do not pull or fold the LED wire.</li> <li>(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.</li> <li>Do not strong polar solvent because they cause chemical damage to the polarizer.</li> <li>(7) Wipe off saliva or water drops as soon as possible. Their long time contact with polarizer causes deformations and color fading.</li> <li>(8) Protection film for polarizer on the module shall be slowly peeled off just before use so that the electrostatic charge can be minimized.</li> <li>(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.</li> <li>(10) Do not disassemble the module.</li> <li>(11) To determine the optimum mounting angle, refer to the viewing angle range in the specification for each model.</li> <li>(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.</li> <li>(13) Do not drop water or any chemicals onto the LCD's surface.</li> </ul> </li> </ul> </li> </ul>			
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<p><b>11.2 Operating Precautions</b></p> <ul style="list-style-type: none"> <li>• (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.</li> <li>• (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.</li> <li>• (3) The electrochemical reaction caused by DC voltage will lead to LCD degradation, so DC drive should be avoided.</li> <li>• (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.</li> <li>• (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.</li> <li>• (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).</li> <li>• (7) Connectors are precise devices for connecting FPC and transmitting electrical signals. Operators should insert and unplug MDL in parallel when assembling MDL.</li> <li>• (8) Do not connect or disconnect the cable to/ from the module at the "Power On" condition.</li> <li>• (9) When the module is operating, do not lose CLK, ENAB signals. If any one these signals is lost, the LCD panel would be damaged.</li> <li>• (10) Obey the supply voltage sequence. If wrong sequence is applied, the module would be damaged.</li> <li>• (11) Do not re-adjust variable resistor or switch etc.</li> </ul> <p><b>11.3 Electrostatic Discharge Control</b></p> <ul style="list-style-type: none"> <li>• (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.</li> <li>• (2) Avoid the use work clothing made of synthetic fibers. We recommend cotton clothing or other conductivity-treated fibers.</li> </ul>			
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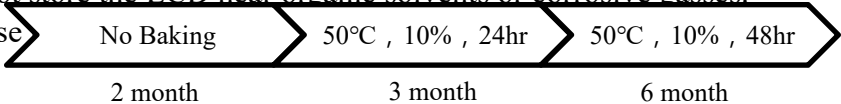
### 11.4 Precautions for Strong Light Exposure

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

### 11.5 Storage Precautions

When storing modules as spares for a long time, the following precautions are necessary.

- (1) The polarizer surface should not come in contact with any other object.  
It is recommended that they be stored in the container in which they were shipped.  
Temperature : 5 ~ 40 °C
- (2) Humidity : 35 ~ 75 %RH
- (3) Period : 6 months
- (4) Control of ventilation and temperature is necessary.
- (5) Please make sure to protect the product from strong light exposure, water or moisture.  
Be careful for condensation.
- (6) Store in a polyethylene bag with sealed so as not to enter fresh air outside in it.
- (7)Do not store the LCD near organic solvents or corrosive gasses.
- (8) Please



### 11.6 Precautions for Protection Film (适用通用产品, 含Q/Single Production)

- (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.


### 11.7 Appropriate Condition for Display

- (1) Normal operating condition
  - Temperature: 0 ~ 40°C
  - Operating Ambient Humidity : 10 ~ 90 %
  - Display pattern: dynamic pattern (Real display)
- (2) Special operating condition

If the product will be used in extreme conditions such as high temperature, humidity, display patterns or 7\*24hrs operation time etc., It is strongly recommended to contact BOE for Application engineering advice. Otherwise, its reliability and function may not be guaranteed.

- (3)Black image or moving image is strongly recommended as a screen save.

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<ul style="list-style-type: none"><li>• (4) Lifetime in this spec. is guaranteed only when commercial display is used according to operating usages.</li><li>• (5) Please contract BOE in advance when you want to switch between portrait and landscape screen</li><li>• (6) Please contact BOE in advance for outdoor operation.</li><li>• (7) Please contact BOE in advance when you display the same pattern for a long time.</li><li>• (8) If the Module keeps displaying the same pattern for a long period of time, the image may be "sticked" to the screen. To avoid image sticking, it is recommended to use a screen saver.</li><li>• (9) 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.</li><li>• (10) Dew drop atmosphere should be avoided.</li><li>• (11) The storage room should be equipped with a good ventilation facility and avoid to expose to corrosive gas , which has a temperature controlling system.</li><li>• (12) 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.</li><li>• (13) 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</li></ul> <h3>11.8 Others</h3> <h4>A. LC Leak</h4> <ul style="list-style-type: none"><li>• If the liquid crystal material leaks from the panel, it is recommended to wash the LC with acetone or ethanol and then burn it.</li><li>• In case of contact with hands, skin or clothes, it has to be washed away thoroughly with soap.</li><li>• If LC in mouth, mouth need to be washed, drink plenty of water to induce vomiting and follow medical advice.</li><li>• If LC touch eyes, eyes need to be washed with running water at least 15 minutes.</li></ul> <h4>B. Rework</h4> <ul style="list-style-type: none"><li>• When returning the module for repair or etc., Please pack the module not to be broken. We recommend to use the original shipping packages.</li></ul>			
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12.0 LABEL

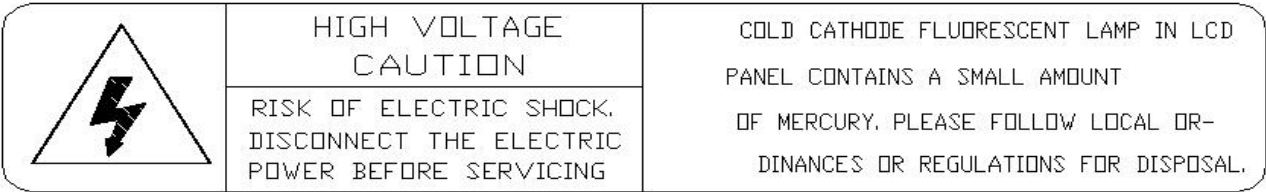
(1) Product label



1	2	3	4	5	6	7
X	X	X	X	X	X	X
X	X	X	X	X	X	X
1	0	0	X	X	X	X
X	X	X	X	X	X	X

- Type designation
- No 1. Control Number
- No 2. Rank / Grade
- No 3. Line classification (BOE OT:A/BC)
- No 4. Year (10 : 2010, 11: 2011, ...)
- No 5. Month (1, 2, 3, ..., 9, X, Y, Z)
- No 6. Product Identification (FG)
- No 7. Serial Number

(2) High voltage caution label



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(3) Box label



Figure 1. Box Label

Serial number marked part needs to print, show as follows:

1. FG-CODE(Before 12 bit)
2. Product quantity
3. Box ID
4. Date
5. The client section material number(The client)
6. FG-Code After four
7. The supplier code

Total Size:100×60mm

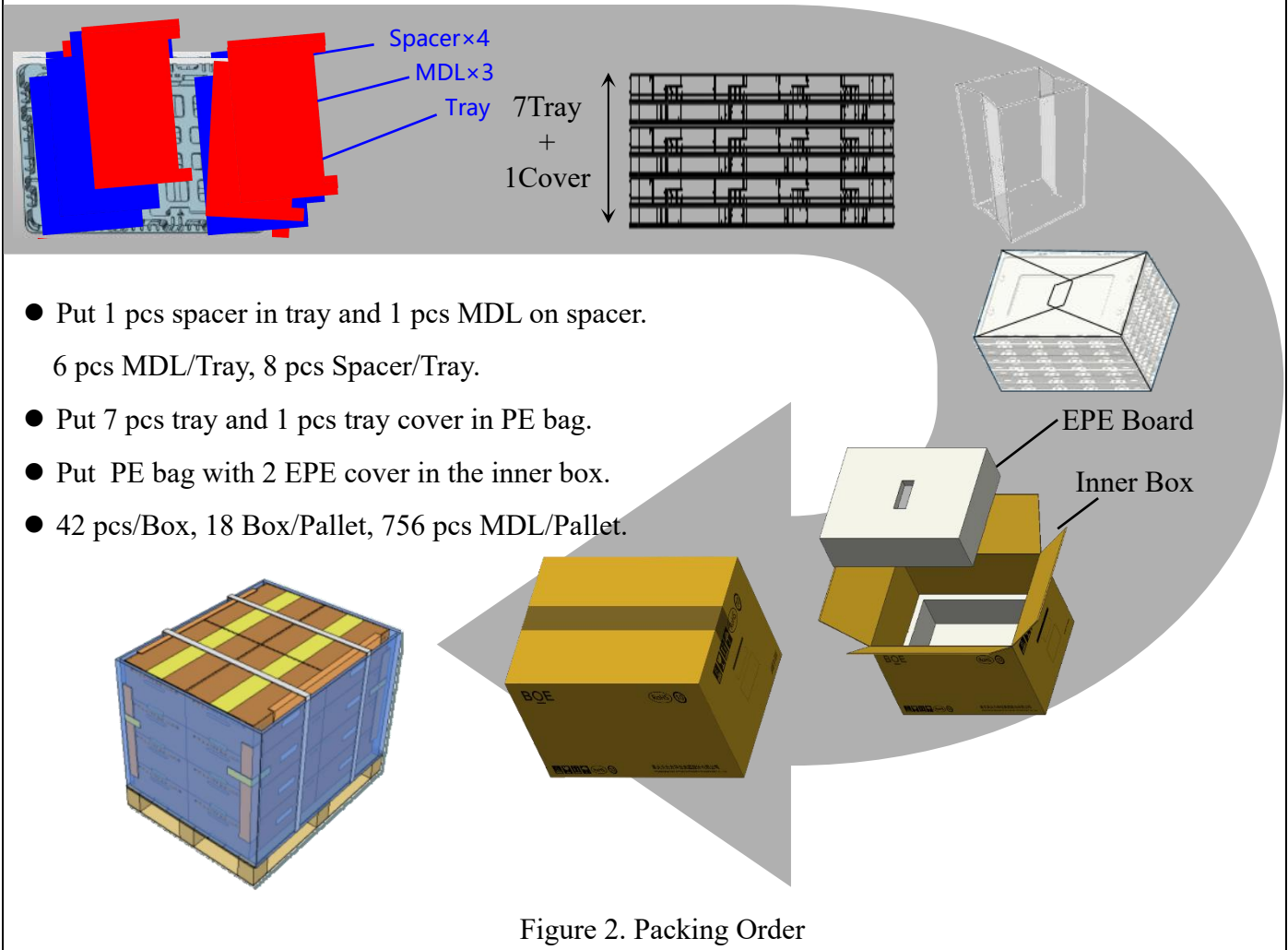
<Table 1. Box Label Naming Rule >

Digit Code	1	2	3	4	5	6	7	8	9	10	11	12	13
Code	X	X	X	X	X	X	X	X	X	X	X	X	X
Description	Product Name		Product Grade	Facility Code	Year		Month	Revision	Box Serial NO.				

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### 13.0 PACKING INFORMATION

#### 13.1 Packing Order



#### 13.2 Note

- Box dimension: 482mm\*366mm\*297mm
- Package quantity in one box: 42pcs
- Total weight: 13.4kg/Box

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