

Product Specification

Customer: _____

Model Name: 080AII2426-A3V.7

Date: 2021.06.10

Version: 1.0

Preliminary Specification

Final Specification

For Customer's Acceptance

Approved by	Comment

Approved by	Reviewed by	Prepared by

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1. Record of Revision

Version	Revise Date	Content	Editor
1.0	2021/06/10	First Release.	

2 General Specifications

	Feature	Spec
Characteristics	LCD Size	8.0 inch
	Display Format	800 (RGB) × 1280
	Interface	4LANE MIPI interface
	Color Depth	16.7M
	Technology type	a-Si
	Display Spec.	-
	Display Mode	Normally Black
	Driver IC	ER88577
	Surface Treatment	-
	Viewing Direction	ALL
	Gray Viewing Direction	Free
Mechanical	LCM (W x H x D) (mm)	184.10*114.6*2.5
	Active Area(mm)	172.22*107.64
	With /Without TSP	Without TP
	Weight (g)	TBD
	LED Numbers	24 LEDs

Note 1: Viewing direction is following the data which measured by optics equipment.

Note 2: Requirements on Environmental Protection: RoHS

Note 3: LCM weight tolerance: +/- 5%

3 Input/Output Terminals

No.	Symbol	Description
1~3	LEDA	LED Anode
4	NC	NO connection
5	NC	NO connection
6	NC	NO connection
7	NC	NO connection
8~10	LEDK	LED Cathode
11	GND	Power Ground
12	NC	NO connection
13	GND	Power Ground
14	TDP2	MIPI differential data input (Positive)
15	TDN2	MIPI differential data input (Negative)
16	GND	Power Ground
17	TDP1	MIPI differential data input (Positive)
18	TDN1	MIPI differential data input (Negative)
19	GND	Power Ground
20	TCP	MIPI differential clock input (Positive)
21	TNP	MIPI differential clock input (Negative)
22	GND	Power Ground
23	TDP0	MIPI differential data input (Positive)
24	TDN0	MIPI differential data input (Negative)
25	GND	Power Ground
26	TDP3	MIPI differential data input (Positive)
27	TDN3	MIPI differential data input (Negative)
28	GND	Power Ground
29	LCD_ID1(GND)	ID Pin Ground
30	LCD_RST(NC)	NO connection
31	LCD_ID2(GND)	ID Pin Ground
32	IOVCC	Power for I/O Circuit
33,34	LCC_VDD	Power for Digital Circuit
35	GND	Power Ground
36	NC	NO connection
37	GND	Power Ground
38	NC	NO connection
39	LCD_ID3(GND)	ID Pin Ground
40	NC	NO connection

4 Absolute Maximum Ratings

Item	Symbol	MIN	MAX	Unit	Remark
Supply Voltage	V_{dd}	-0.3	+3.3	V	
Analog Supply Voltage, AVDD	V_{cc}	-0.3	+ 3.3	V	
Operating Temperature	T_{OPR}	-20	60	°C	
Storage Temperature	T_{STG}	-30	70	°C	

The absolute maximum rating values of this product are not allowed to be exceeded at any times. Should a module be used with any of the absolute maximum ratings exceeded, the characteristics of the module may not be recovered, or in an extreme case, the module may be permanently destroyed.

5 Electrical Characteristics

5.1 Operating conditions:

(TA = 25° C, GND = AGND = 0V)

Parameter	Symbol	Min	Typ.	Max	Unit	Remark
Power Voltage	VCC	1.71	1.8	3.3	V	
	VDD	3.0	3.3	3.6	V	
	VCOM	NC	NC	NC	V	3
	VGH	NC	NC	NC	V	1
	VGL	NC	NC	NC	V	2
Input logic high voltage	V _{IH}	0.8VDD	-	VDD	V	
Input logic low voltage	V _{IL}	0	-	0.2VDD	V	

Note:

*1. VGH is TFT Gate operating Voltage.

*2. VGL is TFT Gate operating Voltage.

The storage structure of this model is C_{ST} (Storage on Common)

*3. Vcom must be adjusted to optimize display quality Crosstalk, Contrast Ratio and etc.

*4. AVDD 10.0V

5.2 Driving Backlight

Item	Symbol	MIN	TYP	MAX	Unit	Remark
LED current	I _F	110	120	150	mA	Note 1 Note 2,3
Power Consumption					mW	
LED Voltage	V _F	11.2	12.1	13.6	V	
LED Life Time	W _{BL}	-	30000	-	Hr	

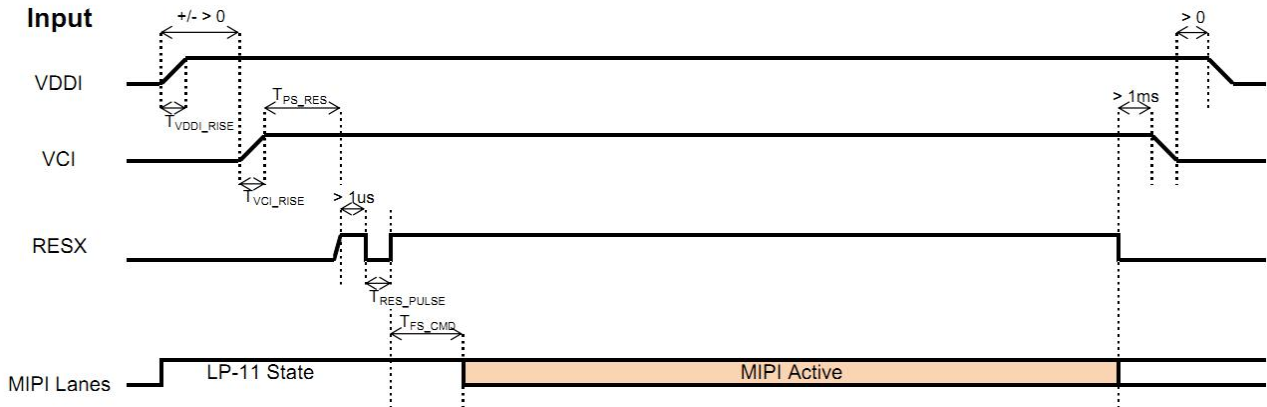
Note 1 : There are 4Groups*6=24 LED

Note 2 : Ta = 25°C

Note 3 : Brightness to be decreased to 50% of the initial value

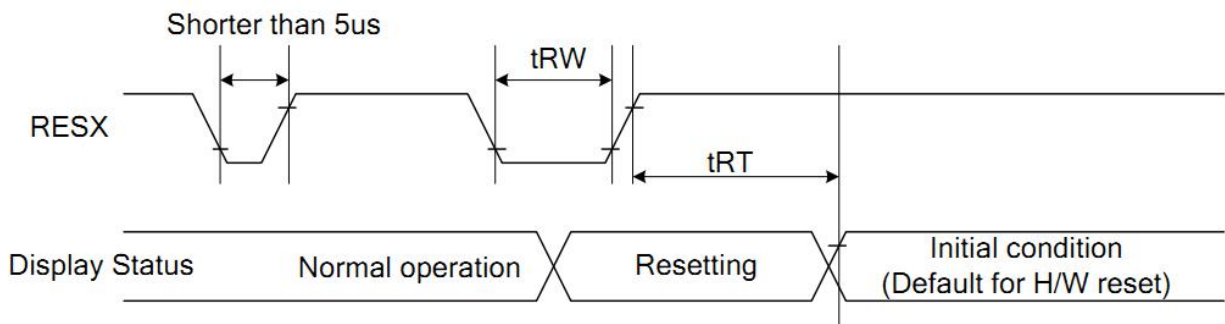
6 Interface Timing

6.1 Power ON / OFF Sequence



Symbol	Characteristics	Min.	Typ.	Max.	Units
T_{VDDI_RISE}	VDDI Rise time	10	-	-	us
T_{VCI_RISE}	Case A: VCI Rise time	130	-	-	us
	Case B: VCI Rise time	40	-	-	us
T_{PS_RES}	VDDI/VCI on to Reset high	5	-	-	ms
T_{RES_PULSE}	Reset low pulse time	10	-	-	us
T_{FS_CMD}	Reset to first command	10	-	-	ms

6.2 Reset timing characteristics



Signal	Symbol	Parameter	Min	Max	Unit
RESX	tRW	Reset pulse duration	10		uS
	tRT	Reset cancel		5 (note 1,5)	mS
				120 (note 1,6,7)	mS

Note: (1) The reset complete time also required time for loading ID bytes from OTP to registers. This loading is done every time when there is HW reset cancel time (tRT) within 5 ms after a rising edge of RESX.

(2) Spike due to an electrostatic discharge on RESX line does not cause irregular system reset according to the table below.

6.2 TimingConditions

Parameters	Symbols	Min.	Typ.	Max.	Units
Vertical sync. active	VSA	2 (Note 6)	-	-	Line
Vertical Back Porch	VBP	14 (Note 6)	-	-	Line
Vertical Front Porch	VFP	8 (Note 6)	-	-	Line
Active lines per frame	VACT	-	1280	-	Line
Horizontal sync. active	HSA	2	-	-	Pixel
Horizontal Porch period	HSA + HBP + HFP	1.6	-	-	us
Active pixels per line	HACT	-	800	-	Pixel
Bit rate	BR _{bps}	385		Note 5	Mbps/lane

1 UI=1/Bit rate

HSA(pixel)= (tHSA*lane number) / (UI* pixel format)

HBP(pixel)= (tHBP*lane number) / (UI* pixel format)

HFP(pixel)= (tHFP*lane number) / (UI* pixel format)

$$\text{Frame Rate} = \frac{\text{BR}_{\text{bps}} \times \text{Lane}_{\text{num}}}{(\text{VACT} + \text{VSA} + \text{VBP} + \text{VFP}) \times (\text{HACT} + \text{HSA} + \text{HBP} + \text{HFP}) \times \text{Pixel Format}}$$

Example : BR_{bps} = 457Mbps/lane, 1UI=2.1883ns, Frame rate=60Hz, VACT=1280, VSA=2, VBP=30, VFP=20, HACT=720, HSA=33, HBP=100, HFP=100, Lane_{num}=4(lane), Pixel Format=24(bit).

Note:

1. Lane_{num}: Date lane of MIPI-DSI.
2. Pixel Format: Please reference to "4.1DSI System Interface".
3. The formula exists slightly error because of the host-transmission way.
4. The best frame rate setting : 2 data lanes : 50~60 Hz / 3 data lanes : 50~70 Hz / 4 data lanes : 50~70 Hz.
5. Please reference to "Table 39: Limited Clock Channel Speed".
6. The minimum values of this table mean the limitation of IC without considering the panel GIP. The actual values of VSA, VBP and VFP will be changed by different panel GIP setting.

7 Optical Characteristics

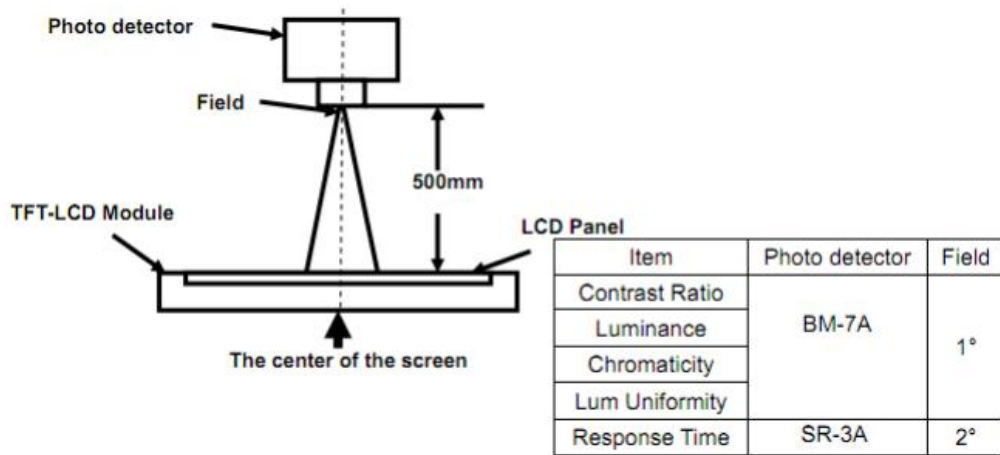
Items	Symbol	Condition	Min.	Typ.	Max.	Unit	Remark	
Viewing angles	θ_T	Center CR \geq 10	80	89	-	Degree.	Note2	
	θ_B		80	89	-			
	θ_L		80	89	-			
	θ_R		80	89	-			
Contrast Ratio	CR	$\Theta = 0$	600	800	-	-	Note1, Note3	
Response Time	T_{ON}	25°C	-	13	20	ms	Note1, Note4	
	T_{OFF}		-	15	25			
Chromaticity	White	Backlight is on	X_W	0.28	0.30	0.32	-	Note1, Note5
			Y_W	0.30	0.32	0.34	-	
	Red		X_R		TBD		-	
			Y_R		TBD		-	
	Green		X_G		TBD		-	
			Y_G		TBD		-	
	Blue		X_B		TBD		-	
			Y_B		TBD		-	
Uniformity	U		75	80	-	%	Note1, Note6	
NTSC				50		%	Note5	
Luminance	L		270	300			Note1, Note7	

Test Conditions:

1. IF= 20mA(one channel),the ambient temperature is 25°C.
2. The test systems refer to Note 1 and Note 2.

Note 1: 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.



Note 2: Definition of viewing angle range and measurement system.

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

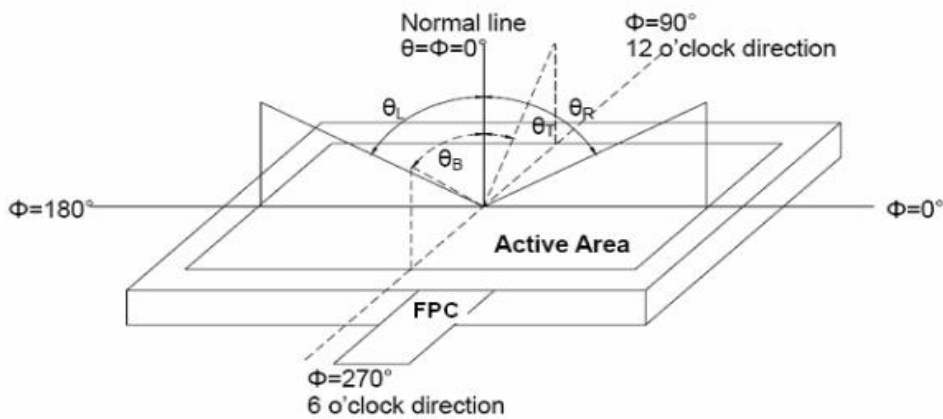


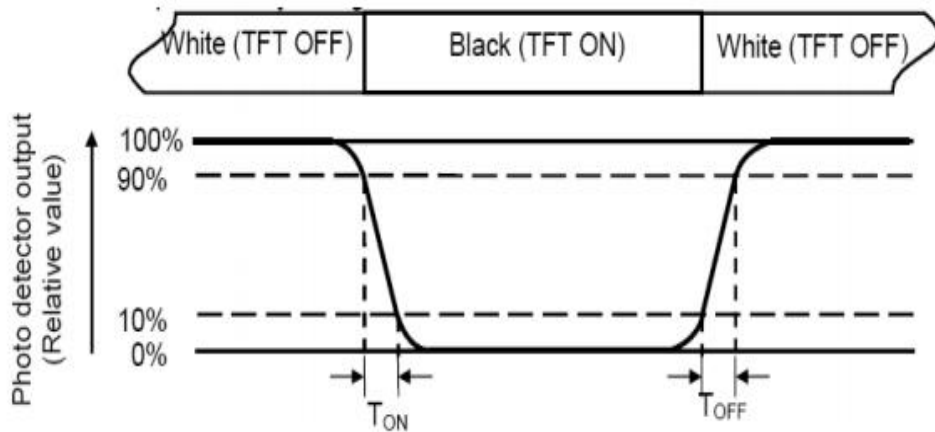
Fig. 1 Definition of viewing angle

Note 3: Definition of contrast ratio

$$\text{Contrast ratio (CR)} = \frac{\text{Luminance measured when LCD is on the "White" state}}{\text{Luminance measured when LCD is on the "Black" state}}$$

Note 4: 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%



Note 5: Definition of color chromaticity (CIE1931)

Color coordinates measured at center point of LCD.

Note 6: Definition of Luminance Uniformity

Active area is divided into 9 measuring areas (Refer Fig. 2). Every measuring point is placed at the Center of each measuring area

$$\text{Luminance Uniformity (U)} = \text{Lmin} / \text{Lmax} \times 100\%$$

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

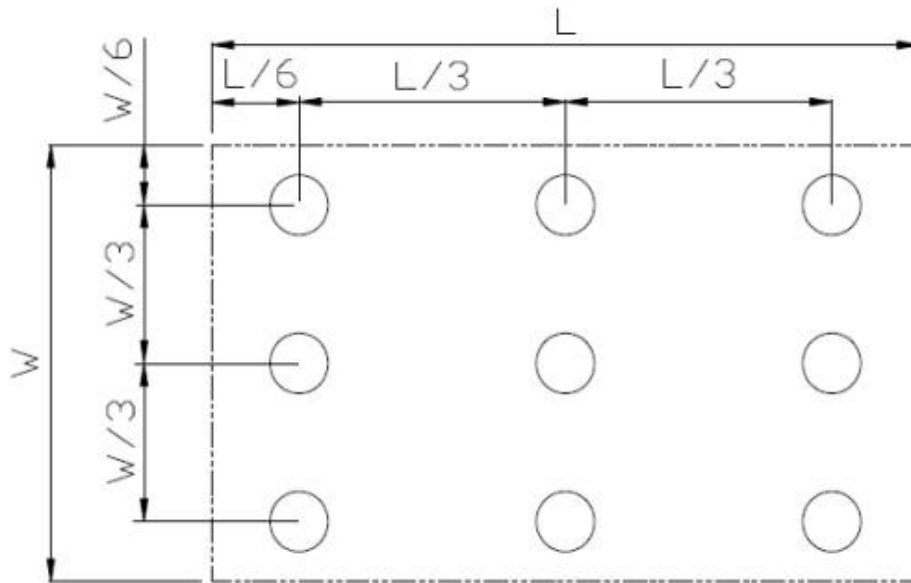


Fig. 2 Definition of uniformity

Lmax: The measured maximum luminance of all measurement position.

Lmin: The measured minimum luminance of all measurement position.

Note 7: Definition of Luminance:

Measure the luminance of white state at center point.

8 Environmental / Reliability Tests

No	Test Item	Condition	Remarks
1	High Temperature Operation	T _s = +60°C, 96hrs	Note 1 GB2423. 2-89
2	Low Temperature Operation	T _a = -20°C, 96hrs	Note 2 GB2423.1-89
3	High Temperature Storage	T _a = +70°C, 96hrs	GB2423. 2-89
4	Low Temperature Storage	T _a = -30°C, 96rs	GB/T2423.1-89
5	High Temperature & Humidity Storage	T _a = +50°C, 90% RH max, 96 hours	GB/T2423.3-2006
6	Thermal Shock (Non-operation)	-30°C 30 min ~ +70°C 30 min Change time: 5min, 10 Cycle	Start with cold temperature, end with high temperature GB2423.22-87
7	Electro Discharge (Operation) Static	C=150pF, R=330 Ω, 5 points/panel Air:±8KV, 5 times; Contact: ±4KV, 5 times; (Environment: 15°C ~ 35°C, 30% ~ 60%, 86Kpa ~ 106Kpa)	GB/T17626.2-1998
8	Vibration (Non-operation)	Frequency range: 10~55Hz, Stroke: 1.mm Sweep: 10Hz~55Hz~10Hz 2 hours for each direction of X .Y. Z. (package condition)	GB/T2423.5-1995
9	Shock (Non-operation)	60G 6ms, ± X, ±Y , ± Z 3 times for each direction	GB/T2423.5-1995
10	Package Drop Test	Height: 60 cm, 1 corner, 3 edges, 6 surfaces	GB/T2423.8-1995

Note: 1. T_s is the temperature of panel's surface.

2. T_a is the ambient temperature of sample.

9 Mechanical Drawing

NOTES:

1. GENERAL TOLERANCE: ± 0.2
2. () REFERENCE DIMENSION
3. RECOMMENDED CUSHION ADHERENT ARMA: TP V: A+1.6mm
4. REQUIREMENTS ON ENVIRONMENTAL PROTECTION: RoHS

Top View Dimensions: 184.10 ± 0.2 (D), 174.50 ± 0.2 (POL), 172.22(LCD A, B), 2.60, 3.40, 3.48, 2.30, 114.00(LCD A, B), 107.65(LCD A, B), 8.40 REF, 800W/300H/280 ALL PIN

Side View Dimensions: 4.10, 1.30(LCD), 1.30(LCD), 1.30(LCD)

Detail View Dimensions: 38.10 ± 0.5 , 51.00 ± 0.5 , 14.00, 3.00 ± 0.2 , 10.00(LCD), 14.00(LCD)

24LINES
BackLight Circuit diagram

FPC 弯折出货

DI1, DI2, DI3=000

Display Type	TFT
Viewing Angle	NORMALLY BLACK TRANSMISSIVE
LCD Driver IC	ALL
Logic Voltage	ER98872
Operation Temperature	VDD=5.3V/IOVCC 1.8V
Storage Temperature	-20°C TO 60°C
Interface	-30°C TO 70°C
Backlight	4LANE MIPI INTERFACE
Surface Luminescence	24-LED WHITE 120mA/12.4V
White X/Y	300cd/ft(type)

LCD PIN	
1	LCD_L18N
2	LCD_L18V
3	LCD_L18V
4	NC(VDD_18V)
5	NC(VDD)
6	NC(LD)
7	LCD_L18N
8	LCD_L18V
9	LCD_L18N
10	LCD_L18V
11	NC
12	NC(VDD)
13	NC
14	TH02
15	TH02
16	NC
17	TH01
18	TH01
19	NC
20	VCC
21	VCC
22	NC
23	TH00
24	TH00
25	NC
26	TH03
27	TH03
28	NC
29	LCD_L18L (GND)
30	LCD_L18L (GND)
31	LCD_L18L (GND)
32	LCD_L18L (GND)
33	LCD_L18L (GND)
34	LCD_L18L (GND)
35	NC
36	NC(STROBE)
37	NC
38	NC
39	ID3 (GND)
40	NC

TITLE

MODULE SPEC.

080A112426-A3 V.7

UNIT mm SCALE 1 OF 1

3rd Angle SHEET 1 OF 1

HONTRON

深圳市弘电显示技术有限公司
Shenzhen Hontron Display Technology Co., Ltd

DRAWING NO.

080A112426-A3 V.7

UNIT mm SCALE 1 OF 1

3rd Angle SHEET 1 OF 1

1 0.Packing

TBD

11. Precautions for Use of LCD modules

11.1 Handling Precautions

11.1.1. The display panel is made of glass. Do not subject it to a mechanical shock by dropping it from a high place, etc.

11.1.2. If the display panel is damaged and the liquid crystal substance inside it leaks out, be sure not to get any in your mouth, if the substance comes into contact with your skin or clothes, promptly wash it off using soap and water.

11.1.3. Do not apply excessive force to the display surface or the adjoining areas since this may cause the color tone to vary.

11.1.4. The polarizer covering the display surface of the LCD module is soft and easily scratched. Handle this polarizer carefully.

11.1.5. If the display surface is contaminated, breathe on the surface and gently wipe it with a soft dry cloth. If still not completely clear, moisten cloth with one of the following solvents:

- Isopropyl alcohol
- Ethyl alcohol

Solvents other than those mentioned above may damage the polarizer. Especially, do not use the following:

Water ; Ketene ; Aromatic solvents

11.1.6. Do not attempt to disassemble the LCD Module.

11.1.7. If the logic circuit power is off, do not apply the input signals.

11.1.8. To prevent destruction of the elements by static electricity, be careful to maintain an optimum work environment.

11.1.8.1. Be sure to ground the body when handling the LCD Modules.

11.1.8.2. Tools required for assembly, such as soldering irons, must be properly ground.

11.1.8.3. To reduce the amount of static electricity generated, do not conduct assembly and other work under dry conditions.

11.1.8.4. The LCD Module is coated with a film to protect the display surface. Be care when peeling off this protective film since static electricity may be generated.

11.2 Storage Precautions

11.2.1. When storing the LCD modules, avoid exposure to direct sunlight or to the light of fluorescent lamps.

11.2.2. The LCD modules should be stored under the storage temperature range. If the LCD modules will be stored for a long time, the recommend condition is:

Temperature : 0°C ~ 40°C Relatively humidity: ≤80%

11.2.3. The LCD modules should be stored in the room without acid, alkali and harmful gas.

11.3 Transportation Precautions

The LCD modules should be no falling and violent shocking during transportation, and also should avoid excessive press, water, damp and sunshine.