PRODUCT SPECIFICATION

MODEL:XXR070IBC24-450

<◇>PRELIMINARY SPECIFICATION

<◆>APPROVAL SPECIFICATION

CUSTOMER
APPROVED BY
DATE:

DESIGNED	CHECKED	APPROVED

REVISION STATUS

Version	Revise Date	Page	Content	Modified by
V1.0	2022.09.29	-	First Issued.	J

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1. General Description

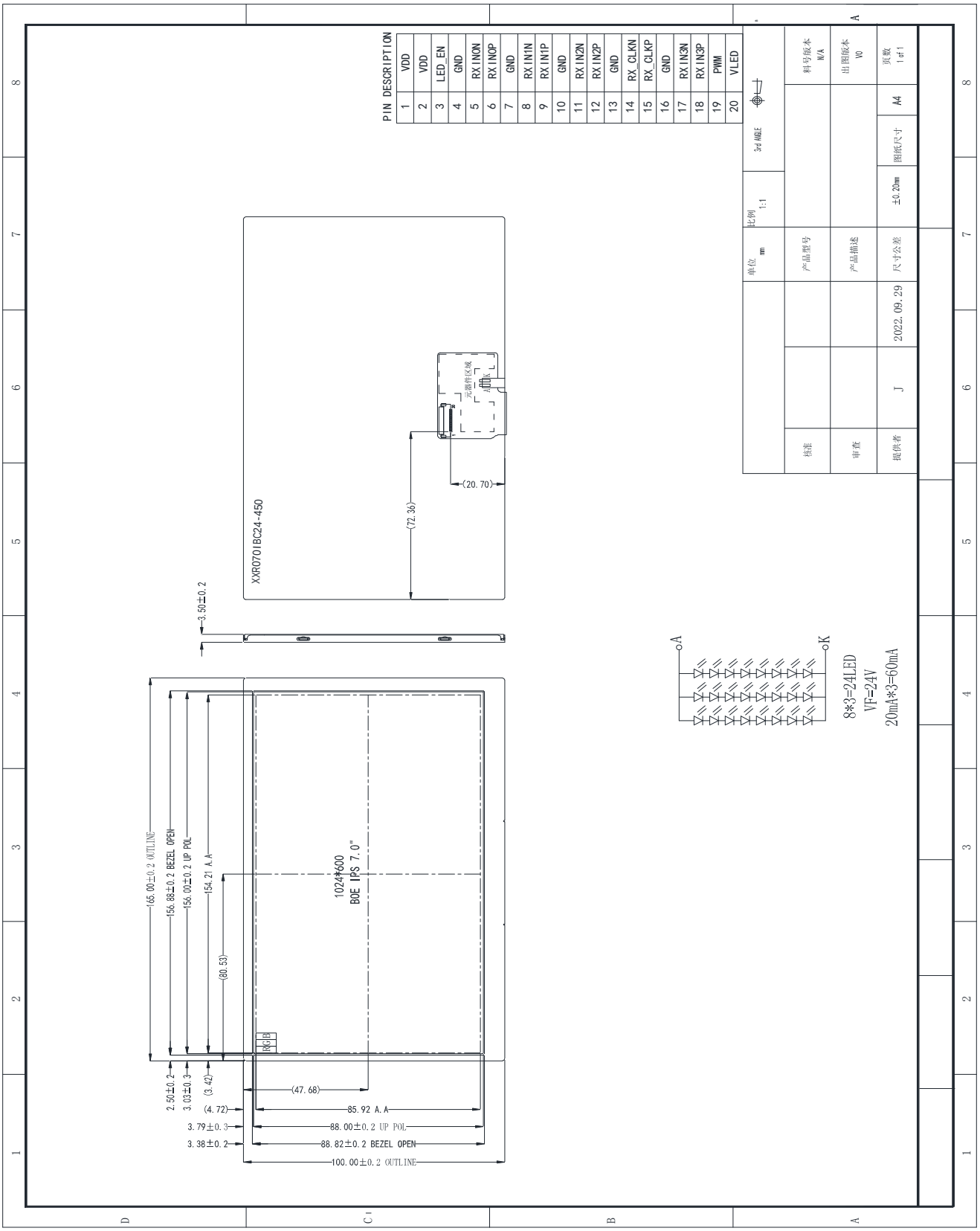
1.1 Description

XXR070IBC24-450is a color active matrix thin film transistor (TFT) IPS liquid crystal display (LCD) that uses amorphous silicon TFT as a switching device. It is composed of a TFT LCD panel, Driver IC ,FPC and Backlight, This TFT LCD has a 7.0-inch diagonally measured active display area with WSVGA resolution (1024 vertical by 600 horizontal pixel array).

1.2 Features:

No.	Item	Specification	Unit
1	Panel Size	7″	inch
2	Number of Pixels	1024×RGB (3) ×600	pixels
3	Active Area	154.2144(H)x85.92(V)	mm
4	Outline Dimension	165(W)×100(H)×3.5(D)	mm
5	Number of Colors	16.7M	-
6	Viewing Direction	ALL	-
7	Luminance (cd/m^2)	450(TYP.)	nit
8	Interface	LVDS	-
9	Backlight	24-LEDs (White)	-
10	Operation Temperature	-10~65	℃
11	Storage Temperature	-20~70	℃
12	Weight	TBD	g
13	推荐 Source IC	HX8282-A11	

2. MECHANICAL SPECIFICATION



3. PIN DESCRIPTION

No.	Symbol	Function
1	VDD	Power supply VDDIN=3.3V
2	VDD	Power supply VDDIN=3.3V
3	LED_EN	Power supply VDDIN(3.3~5.0V)
4	GND	Ground
5	RXIN0N	0-LVDS differential data
6	RXIN0P	0+LVDS differential data
7	GND	Ground
8	RXIN1N	1-LVDS differential data
9	RXIN1P	1+LVDS differential data
10	GND	Ground
11	RXIN2N	2-LVDS differential data
12	RXIN2P	2+LVDS differential data
13	GND	Ground
14	RX_CLKN	-LVDS differential clock input
15	RX_CLKP	+LVDS differential clock input
16	GND	Ground
17	RXIN3N	3-LVDS differential clock input
18	RXIN3P	3+LVDS differential clock input
19	PWM	Backlight brightness:apply 0.7V to 1.4V DC voltage signal
20	VLED	Power supply VLED=5~12V(Typ.)

4. Electrical Characteristics

4.1 TFT LCD MODULE

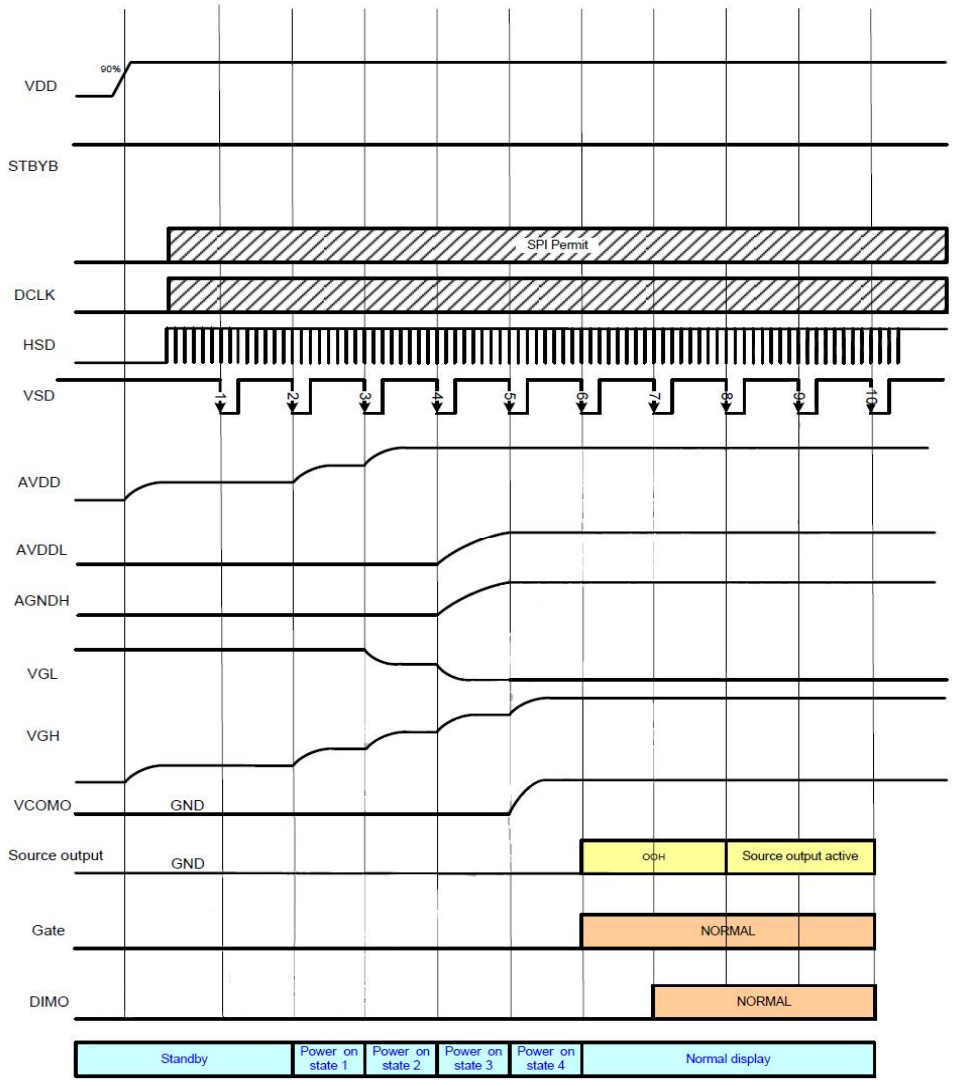
Parameter	Symbol	Min.	Typ.	Max.	Unit
Power voltage	VDD-VSS	-0.5	-	4.0	V
	VLED-VSS	-0.5	-	12	V

4.2POWER ON/OFF SEQUENCE

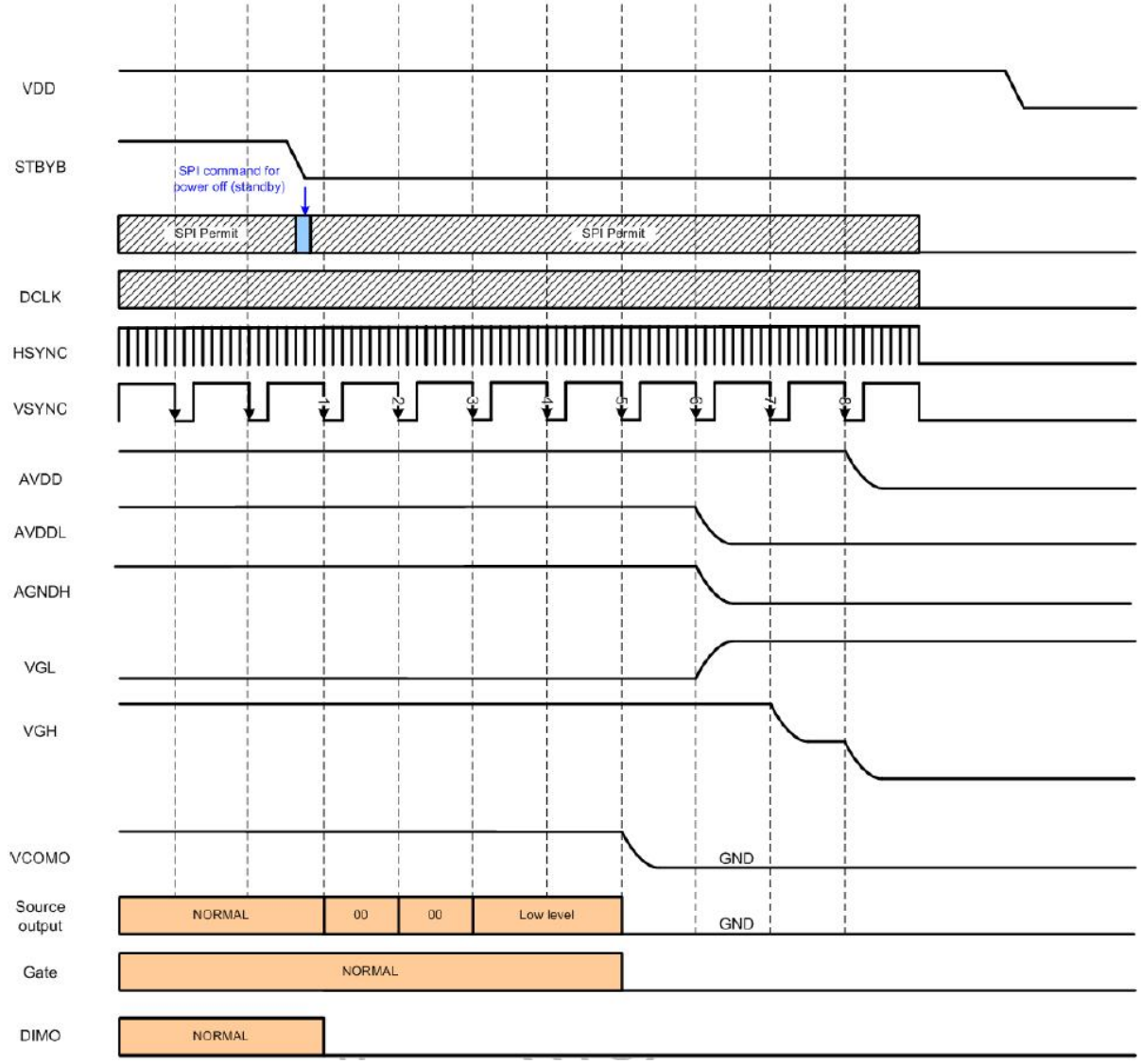
To prevent the device damage from latch up, the power on/off sequence shown below must be followed.

Power on: VDD, GND → AVDD, AGND → V1 to V14

Power off: V1 to V14 → AVDD, AGND→ VDD, GND



Power on timing sequence



Power off timing sequence

Note: Low level=3FH, when NBW=L (Normally white)
Low level=00H, when NBW=H (Normally black

4.3 BACK LIGHT UNIT

Ta=25℃

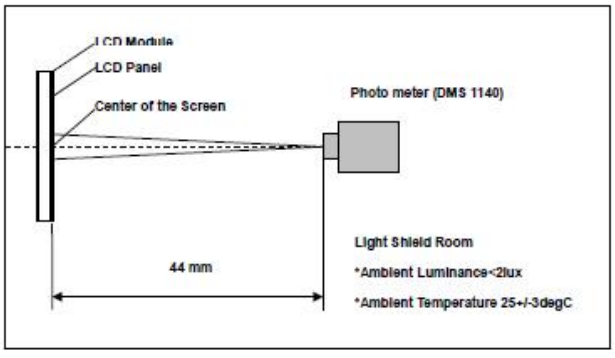
Item	Symbol	Min.	Typ.	Max.	Unit	Remark
LED current	ILED	55	60	65	mA	24LEDS
Forward voltage	VF	22.4	24	26.4	V	IF=60mA 24LEDS
Reverse current	IR			50	μA	VR=10V,1LED
Power dissipation	Pd	1584			mW	24LEDS
Reverse Voltage	VR	10			V	1LED

5.OPTICAL CHARACTERISTICS

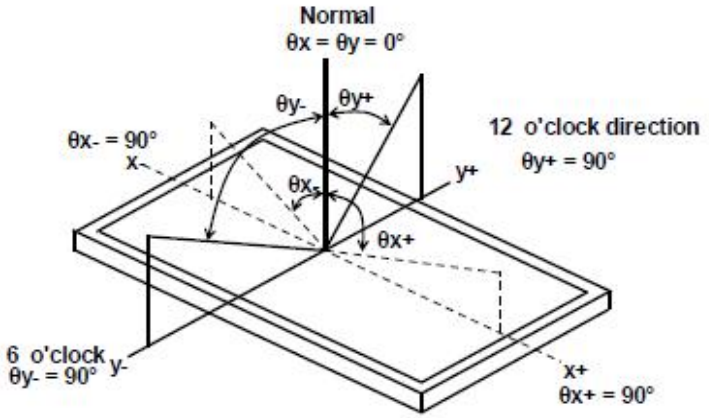
Item		Symbol	Min.	Typ.	Max.	Unit	Note
Contrast Ratio		CR	400	500	-		Note1 Note3
Luminance		YL	-	450	-	cd/m2	Note1 Note5
Luminous tolerance		YU	70	75	-	%	Note1
Response Time		Rising + Falling	-	19	25	ms	Note1 Note4
Viewing Angle[degrees] K=Contrast Ratio>10	Horizontal		-	85	-	degree	Note1 Note2
	Vertical		-	85	-		
Color Chromaticity	Red	x	-0.03	0.599	+0.03		Note1
		y		0.338			
	Green	x		0.299			
		y		0.550			
	Blue	x		0.139			
		y		0.131			
	White	x		0.29			
		y		0.31			

Note1: Measurement Setup

The LCD module should be stabilized at given temperature for 15 minutes to avoid abrupt temperature change during measuring. In order to stabilize the luminance, the measurement should be executed after lighting backlight for 15 minutes in a windless room.



Note2:Definition of Viewing Angle



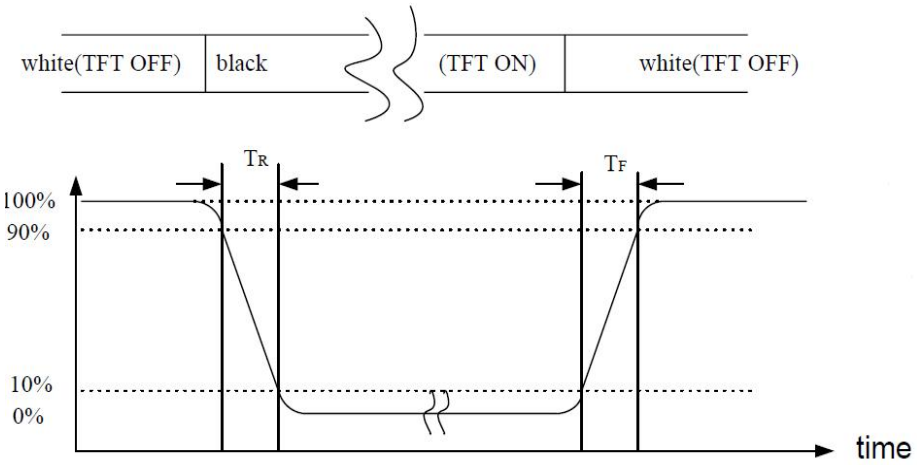
Note3:Definition of Contrast Ratio (CR)

The contrast ratio can be calculated by the following expression

Contrast Ratio (CR) = L63 / L0

L63: Luminance of gray level 63, L0: Luminance of gray level 0

Note4:Definition of Response Time (TR, TF)



Note5:Definition of Luminance White

Measure the luminance of gray level 63 at center point and 5 points.

Center of Luminance = Y1

$$\text{Average Luminance of 5 points} = \frac{Y_1 + Y_2 + Y_3 + Y_4 + Y_5}{5}$$

6.RELIABILITY TEST ITEMS

TEMPERATURE AND HUMIDITY

No	Test Item	Test condition	Criterion
1	High Temperature Storage	60℃±2℃ 240H Restore 2H at 25℃ Power off	1. After testing, cosmetic and electrical defects should not happen. 2. Total current consumption should not be more than twice of initial value.
2	Low Temperature Storage	-20℃±2℃ 240H Restore 2H at 25℃ Power off	
3	High Temperature Operation	50℃±2℃ 2406H Restore 2H at 25℃ Power on	
4	Low Temperature Operation	0℃±2℃ 240H Restore 4H at 25℃ Power on	
5	High Temperature/Humidity Operation	60℃±2℃；90%RH;240H(no condensation) Power on	
6	Thermal Shock	-20℃(0.5hrs) ~ 60℃(0.5hrs) / 100 cycles	
7	Image Sticking	25℃ ; 2hrs	
8	Electro Static Discharge Test (non-operation)	150pF,330Ω，Contact±4KV,Air :±8KV	
		200pF,0Ω，±200V Contact test	

Note： Operation: Supply 3.3V for logic system.

The inspection terms after reliability test, as below

ITEM	Inspection
Contrast	CR>50%
IDD	IDD<200%
Brightness	Brightness>60%
Color Tone	Color Tone+/-0,05

7. GENERAL PRECAUTION

7.1 SAFETY

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

7.2 STORAGE CONDITIONS

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

7.3 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 verycarefully.
(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 theSurface of plate.
(6) Do not use ketonics solvent & Aromatic solvent, use with a soft cloth soaked witha cleaning naphtha solvent.
(7) Do not operate it above the absolute maximum rating.
(8) Do not remove the panel or frame from the module.
(9)When the module is assembled, it should be attached to the system firmly,Be careful not to twist and bend the module.
(10)Wipe off water droplets or oil immediately. If you leave the droplets for a long time,staining and discoloration may occur.
(11) If the liquid crystal material leaks from the panel,it should be kept away from theeyes or mouthIn case of contact with hands,legs or clothes, it must be washedawaythoroughly with soap.

7.4 WARRANTY

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