PRODUCT SPECIFICATION

MODEL: MX080B2140-H538C

<◇>PRELIMINARY SPECIFICATION

<◆>APPROVAL SPECIFICATION

CUSTOMER
APPROVED BY
DATE:

DESIGNED	CHECKED	APPROVED

REVISION STATUS

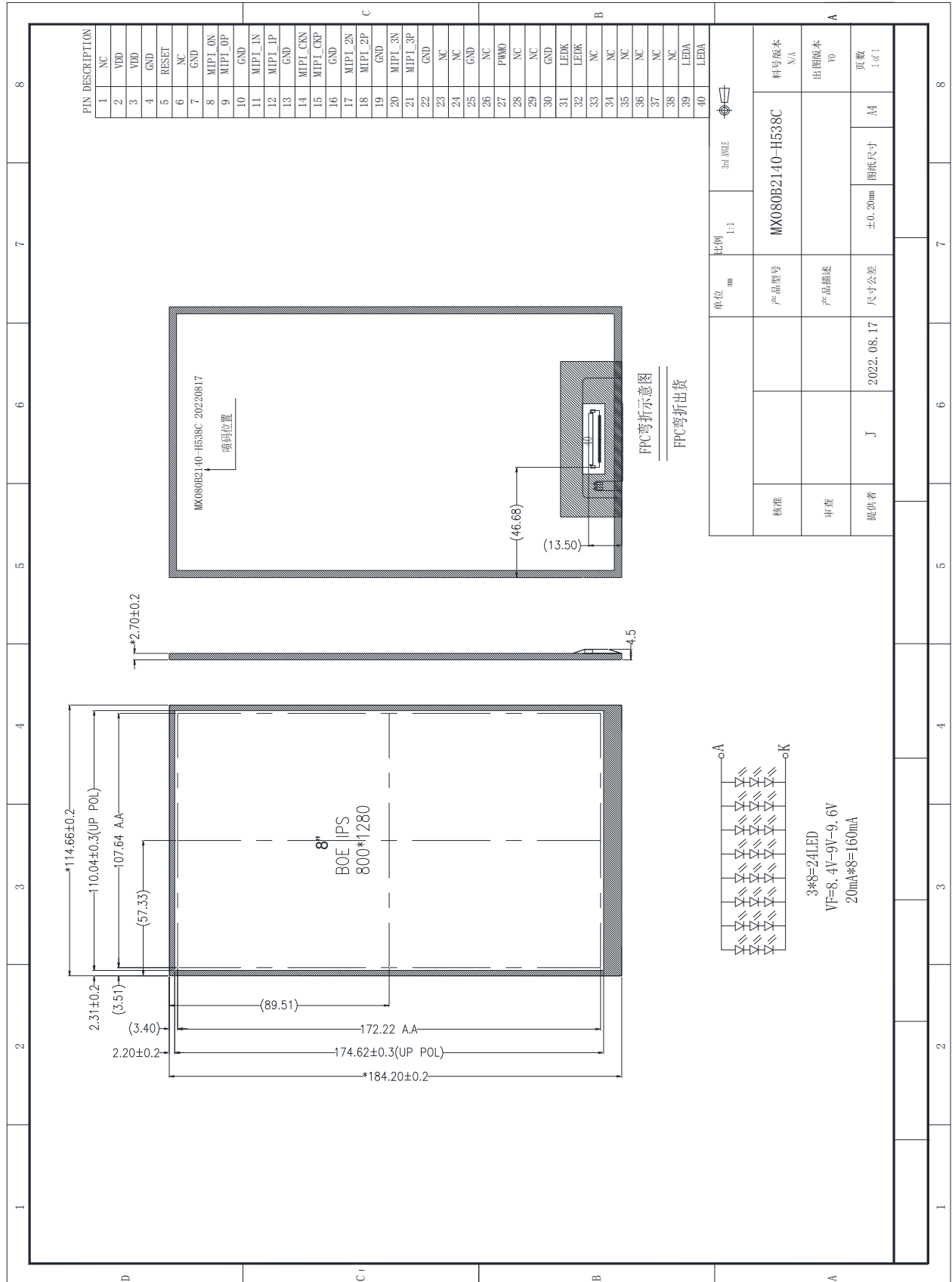| Version	Revise Date	Page	Content	Modified by
V1.0	2022.08.17	-	First Issued.	J

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1. GENERAL DESCRIPTION

1.1 DESCRIPTION

MX080B2140-H538C is 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 8-inch diagonally measured active display area with WSVGA resolution (800 vertical by 1280 horizontal pixel array).

1.2 FEATURES:

No.	Item	Specification	Unit
1	Panel Size	8 "	inch
2	Number of Pixels	800×RGB (3) ×1280	pixels
3	Active Area	107.64(H)x172.22(V)	mm
4	Outline Dimension	114.66(W)×184.2(H)×2.7(D)	mm
5	Number of Colors	16.7M	-
6	Viewing Direction	ALL	-
7	Luminance (cd/m^2)	350(TYP.)	nit
8	Interface	MIPI	-
9	Backlight	24-LEDs (White)	-
10	Operation Temperature	-10~+60	℃
11	Storage Temperature	-20~+70	℃
12	Weight	--	g
13	推荐 Source IC	ILI9881C	

2. MECHANICAL SPECIFICATION

PIN	DESCRIPTION
1	NC
2	VDD
3	VDD
4	GND
5	RESET
6	NC
7	GND
8	MIPI_0N
9	MIPI_0P
10	GND
11	MIPI_1N
12	MIPI_1P
13	GND
14	MIPI_CKN
15	MIPI_CKP
16	GND
17	MIPI_2N
18	MIPI_2P
19	GND
20	MIPI_3N
21	MIPI_3P
22	GND
23	NC
24	NC
25	GND
26	NC
27	PWM0
28	NC
29	NC
30	GND
31	LEDK
32	LEDK
33	NC
34	NC
35	NC
36	NC
37	NC
38	NC
39	LEDA
40	LEDA

FPC弯折示意图
FPC弯折出货

MX080B2140-H538C 20220817
喷码位置

(46.68)
(13.50)

*2.70±0.2
4.5

8"
BOE IPS
800*1280

*114.66±0.2
110.04±0.3(UP POL)
107.64 A.A
(57.33)
2.31±0.2
(3.51)
(3.40)
(89.51)
172.22 A.A
2.20±0.2
174.62±0.3(UP POL)
*184.20±0.2

3*8=24LED
VF=8.4V-9V-9.6V
20mA*8=160mA
A
K

料号版本 N/A		
出图版本 V0		
页数 1 of 1		

MX080B2140-H538C

单位 mm	比例 1:1	产品型号	产品描述	尺寸公差 ±0.20mm	图纸尺寸 A4

J
2022.08.17

核准
审查
提供者

3rd INTGE

3. PIN DESCRIPTION

No.	Symbol	Function
1	NC	No connection
2	VDD	Power Voltage for digital circuit 3.3V
3	VDD	Power Voltage for digital circuit 3.3V
4	GND	Ground
5	RESET	Global reset signal 3.3V
6	NC	No connection
7	GND	Ground
8	MIPI_D0N	MIPI Negative data signal(-)
9	MIPI_D0P	MIPI Positive data signal(+)
10	GND	Ground
11	MIPI_D1N	MIPI Negative data signal(-)
12	MIPI_D1P	MIPI Positive data signal(+)
13	GND	Ground
14	MIPI_CKN	MIPI Negative clock signal(-)
15	MIPI_CKP	MIPI Positive clock signal(+)
16	GND	Ground
17	MIPI_D2N	MIPI Negative data signal(-)
18	MIPI_D2P	MIPI Positive data signal(+)
19	GND	Ground
20	MIPI_D3N	MIPI Negative data signal(-)
21	MIPI_D3P	MIPI Positive data signal(+)
22	GND	Ground
23	NC	No connection
24	NC	No connection
25	GND	Ground
26	NC	No connection
27	PWMO	PWM control signal for LED driver (CABC)
28	NC	No connection
29	NC	No connection
30	GND	Ground
31	LEDK	LED Cathode
32	LEDK	LED Cathode
33	NC	No connection

34	NC	No connection
35	NC	No connection
36	NC	No connection
37	NC	No connection
38	NC	No connection
39	LEDA	LED Anode
40	LEDA	LED Anode

4. Electrical Characteristics

4.1 TFT LCD MODULE

Parameter	Symbol	Min.	Typ.	Max.	Unit
power supply voltage	VDD1V8	1.7	1.8	2.0	V
	VDD3V3	3.0	3.3	3.6	V
Input signal voltage	V_{IH}	$0.7DV_{DD}$	-	DV_{DD}	V
	V_{IL}	0	-	$0.3DV_{DD}$	V

4.2 POWER 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
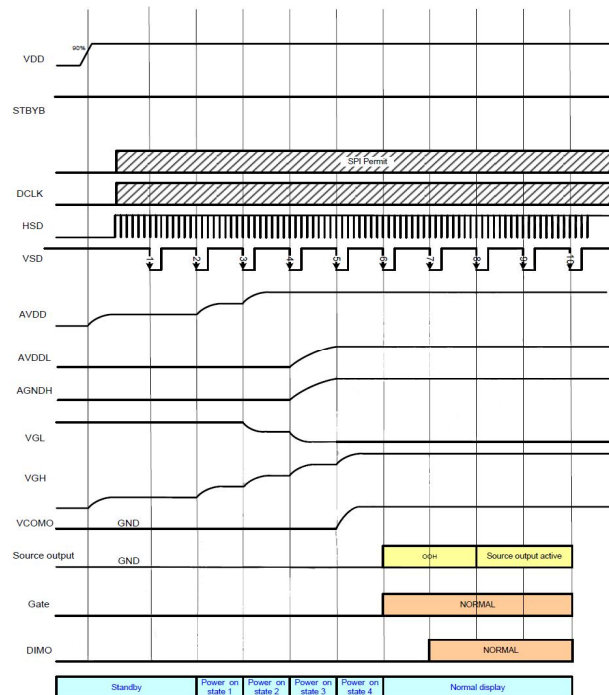
Power on timing sequence
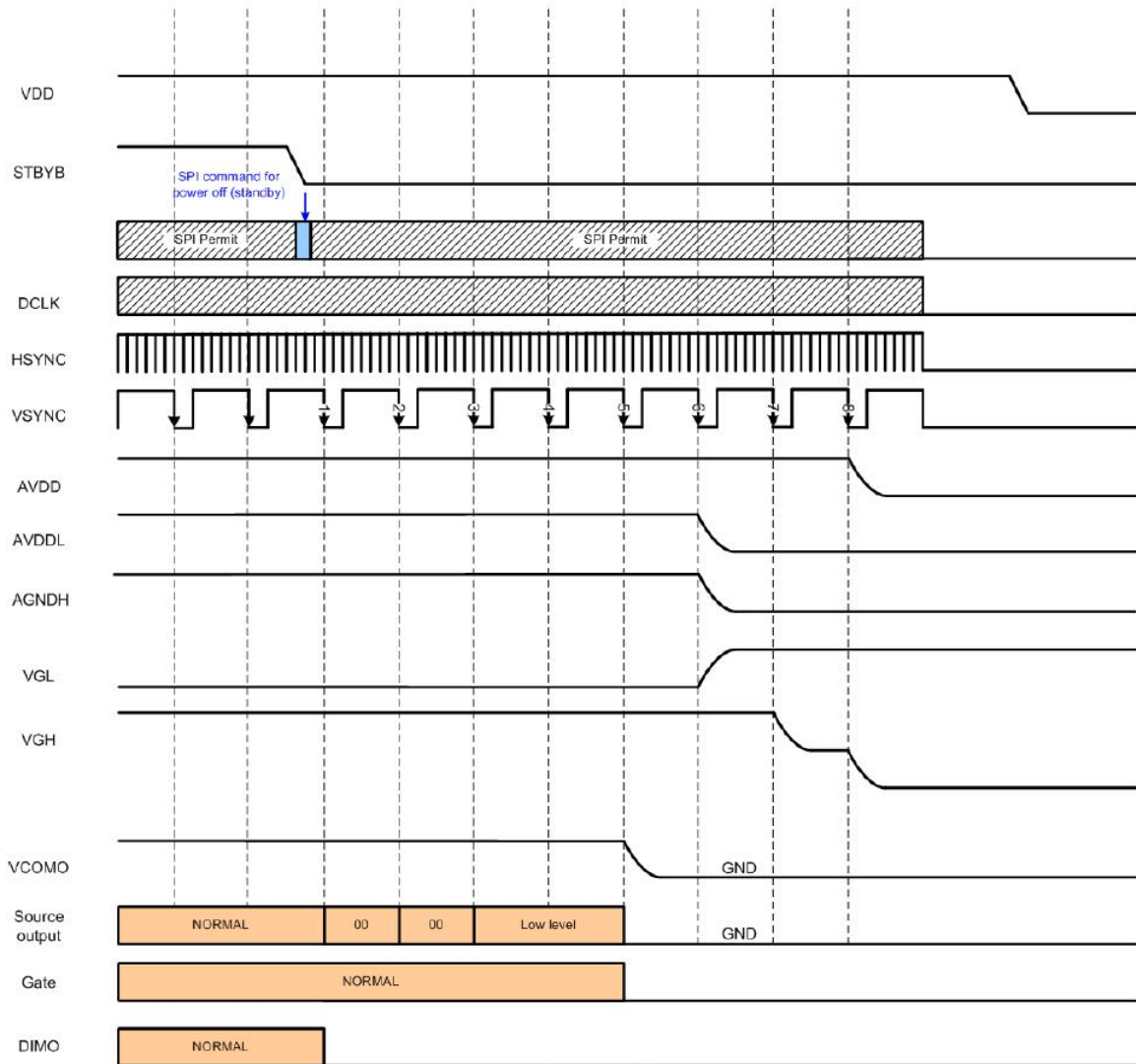
Power off timing sequence

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		160		mA	24LEDS
Forward voltage	VF	8.4	9	9.6	V	IF=160mA 24LEDS
Reverse current	IR			50	µA	VR=5V,1LED
Power dissipation	Pd		1536		mW	24LEDS
Reverse Voltage	VR		10		V	1LED

5.OPTICAL CHARACTERISTICS

Item		Symbol	Min.	Typ.	Max.	Unit	Note
Contrast Ratio		CR	-	600	800		Note1 Note3
Luminance		YL	-	350	-	cd/m2	Note1 Note5
Luminous tolerance		I IV-M	75	-	-	%	Note1 Note6
Response Time		Rising + Falling	-	25	50	ms	Note1 Note4
Viewing Angle[degrees] K=Contrast Ratio>10	Horizontal			80	85	degree	Note1 Note2
	Vertical			80	85		
Color Chromaticity	Red	x		-			Note1
		y		-			
	Green	x		-			
		y		-			
	Blue	x	-0.03	-	+0.03		
		y		-			
	White	x		0.296			
		y		0.322			
NTSC				60%			

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.
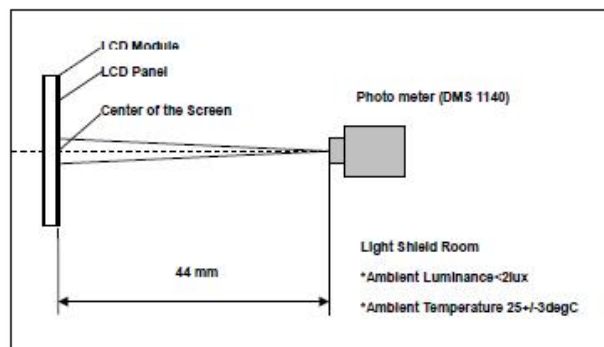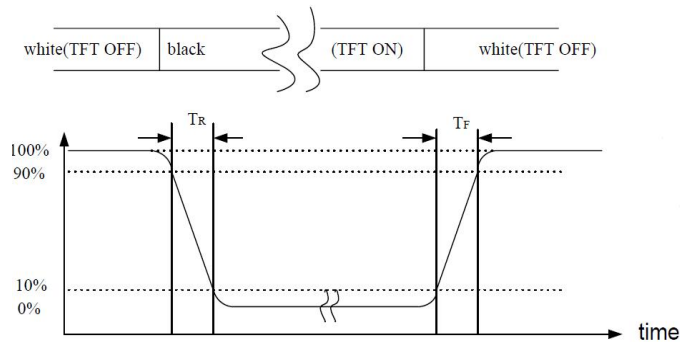

Note2:Definition of Viewing Angle
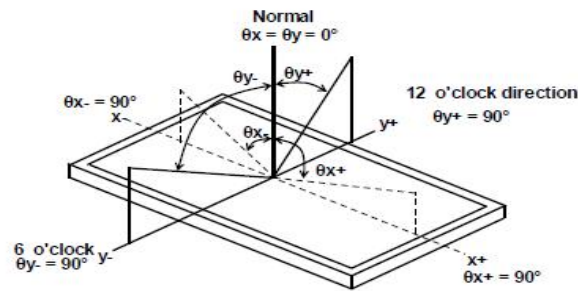
Note3:Definition of Contrast Ratio (CR)

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.
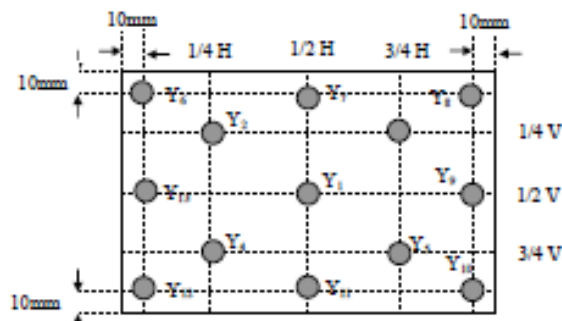
Center of Luminance = Y1

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

Note6: Definition of Luminance Uniformity(Variation)

Measure the luminance of gray level 63 at 13 points.

$$\text{Uniformity of 13 points} = \frac{\text{Min Luminance of Y1~Y13}}{\text{Max Luminance of Y1~Y13}} \times 100\%$$

$$\text{Uniformity of 5 points} = \frac{\text{Min Luminance of Y1~Y5}}{\text{Max Luminance of Y1~Y5}} \times 100\%$$

6.RELIABILITY TEST ITEMS

TEMPERATURE AND HUMIDITY

No	Test Item	Test condition	Criterion
1	High Temperature Storage	60℃±2℃ 240H	
2	Low Temperature Storage	-20℃±2℃ 240H	
3	High Temperature Operation	50℃±2℃ 240H	
4	Low Temperature Operation	0℃±2℃ 20H	
5	High Temperature/Humidity	50℃±2℃ 90%RH 240H(no condensation)	
6	Thermal Cycling Test (non operation)	-20℃(0.5hr)→+60℃(0.5hr),100cycles	
7	Image Sticking	25°C；2H	

Note: All tests above are practiced at module type.

There is no display function NG issue occurred, All the cosmetic specification is judged before the reliability stress.

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.