Specification for Approval

Customer:_____

Model Name:_____

Supplier Approval			Customer approval
R&D Designed	R&D Approved	QC Approved	
Peter	Peng Jun		

RECORD OF REVISION

REV NO.	REV DATE	CONTENTS	Note
A	2024-09-26	NEW ISSUE	

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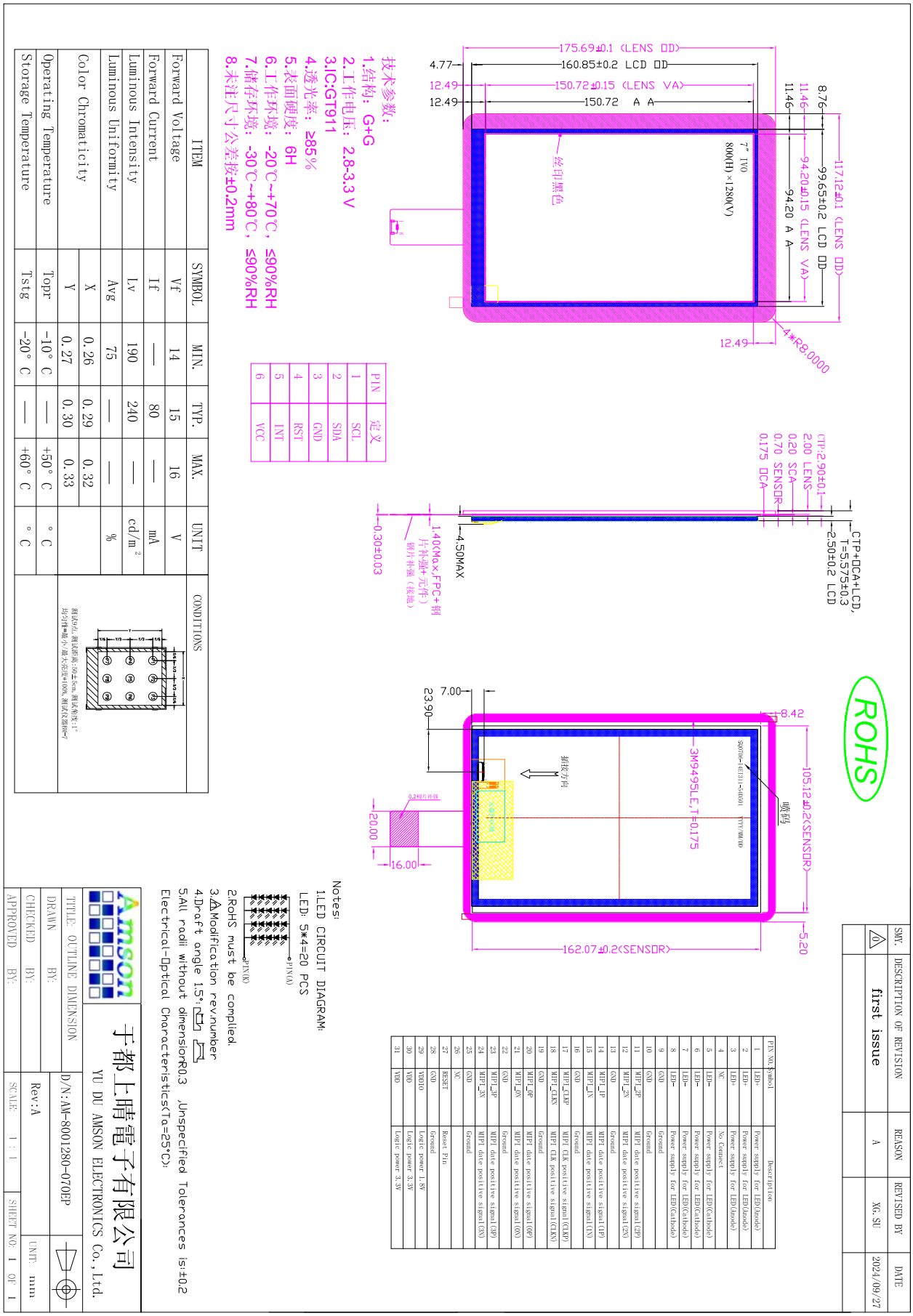
1.1 DESCRIPTION

AM-8001280-070EP 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.

1.2 FEATURES:

No.	Item	Specification	Unit
1	Panel Size	7”	inch
2	Number of Pixels	800×1280	pixels
3	Active Area	94.2 x 150.72	mm
4	Pixel Pitch	0.11775 x 0.11775	mm
5	Outline Dimension	117.12 (H)×175.69(W)×5.575(D)	mm
6	Number of Colors	16.7M	-
7	Display Mode	Normally black	-
8	Viewing Direction	IPS	-
9	Display Format	RGB vertical stripe	-
10	Luminance (cd/m^2)	240(TYP.)	CD/M2
11	Contrast Ratio	700(TYP.)	
12	Surface Treatment	Anti-Glare	-
13	Interface	MIPI	-
14	Backlight	White LED	-
15	Operation Temperature	-10~50	℃
16	Storage Temperature	-20~60	℃
17	Weight	TBD	g
18	IC	9365DA-H3	

2. MECHANICAL SPECIFICATION



3. PIN DESCRIPTION

3.1 TFT

PIN NO.	Symbol	Description	Remarks
1	LED+	Power supply for LED(Anode)	
2	LED+	Power supply for LED(Anode)	
3	LED+	Power supply for LED(Anode)	
4	NC	No Connect	
5	LED-	Power supply for LED(Cathode)	
6	LED-	Power supply for LED(Cathode)	
7	LED-	Power supply for LED(Cathode)	
8	LED-	Power supply for LED(Cathode)	
9	GND	Ground	
10	GND	Ground	
11	MIPI_2P	MIPI date positive signal(2P)	
12	MIPI_2N	MIPI date positive signal(2N)	
13	GND	Ground	
14	MIPI_1P	MIPI date positive signal(1P)	
15	MIPI_1N	MIPI date positive signal(1N)	
16	GND	Ground	
17	MIPI_CLKP	MIPI CLK positive signal(CLKP)	
18	MIPI_CLKN	MIPI CLK positive signal(CLKN)	
19	GND	Ground	
20	MIPI_0P	MIPI date positive signal(0P)	
21	MIPI_0N	MIPI date positive signal(0N)	
22	GND	Ground	
23	MIPI_3P	MIPI date positive signal(3P)	
24	MIPI_3N	MIPI date positive signal(3N)	
25	GND	Ground	
26	NC		
27	RESET	Reset Pin	
28	GND	Ground	
29	VDDIO	Logic power 1.8V	
30	VDD	Logic power 3.3V	
31	VDD	Logic power 3.3V	

3.2 CTP

PIN NO.		
1	SCL	CTP I^2C_clock
2	SDA	CTP I^2C_data
3	GND	CTP Power ground
4	RESET	CTP reset pin. Active low to enter reset state.
5	INT	CTP interruption signal.
6	VCC	CTP Digital Power.

4 Electrical Specifications

Table 3 Electrical Specifications

No.	Item	Min.	Typ.	Max.	Unit
1	Vcom voltage	(-1.34)	(-0.84)	(-0.34)	V
2	Frame Rate	(55)	(60)	(65)	Hz
3	VGH voltage	(14)	(15)	(16)	V
4	VGL voltage	(-12)	(-11)	(-10)	V

Note(1) Both VGH and VGL are TFT gate operation voltage.

Note(2) The setting of electrical parameters should follow the initial code specified by IVO. Vcom must be adjusted to optimize display quality.

Note(3) All the contents of electrical specifications and display fineness are guaranteed under Normal Conditions. Normal conditions are defined as follow: Temperature: 25℃, Humidity: 55± 10%RH.

5 Optical Characteristics

The optical characteristics are measured under stable conditions as following notes.

Table 4 Optical Characteristics

Item	Conditions		Min.	Typ.	Max.	Unit	Note
Transmittance	Center		(4.5)	(5.0)	-	%	Under C-light (1),(5),(7),(8),(10) θx=θy=0°
Contrast Ratio	Center		(640)	(800)	-	-	(1),(3),(6),(7),(8) θx=θy=0°
Response Time	Rising + Falling		-	(25)	(TBD)	ms	(1),(4),(6),(7),(8) θx=θy=0°
CF Color Chromaticity (CIE1931)	Red x		Typ. -0.02	(0.632)	Typ. +0.02	-	Under C-light (1),(5),(8) θx=θy=0°
	Red y			(0.329)		-	
	Green x			(0.267)		-	
	Green y			(0.502)		-	
	Blue x			(0.139)		-	
	Blue y			(0.119)		-	
	White x			(0.299)		-	
	White y			(0.322)		-	
NTSC	CIE1931		(45)	(50)	-	%	
Viewing Angle (CR≥10)	Horizontal	θ_{x+}	(75)	(85)	-	degree	(1),(2),(6),(7),(8)
		θ_{x-}	(75)	(85)	-		
	Vertical	θ_{y+}	(75)	(85)	-		
		θ_{y-}	(75)	(85)	-		

Note(1) Measurement Setup:

The LCD module should be stabilized at given ambient temperature (25°C) for 30 minutes to avoid abrupt temperature changing during measuring. In order to stabilize the luminance, the measurement should be executed after lighting backlight for 30 minutes in the windless room.

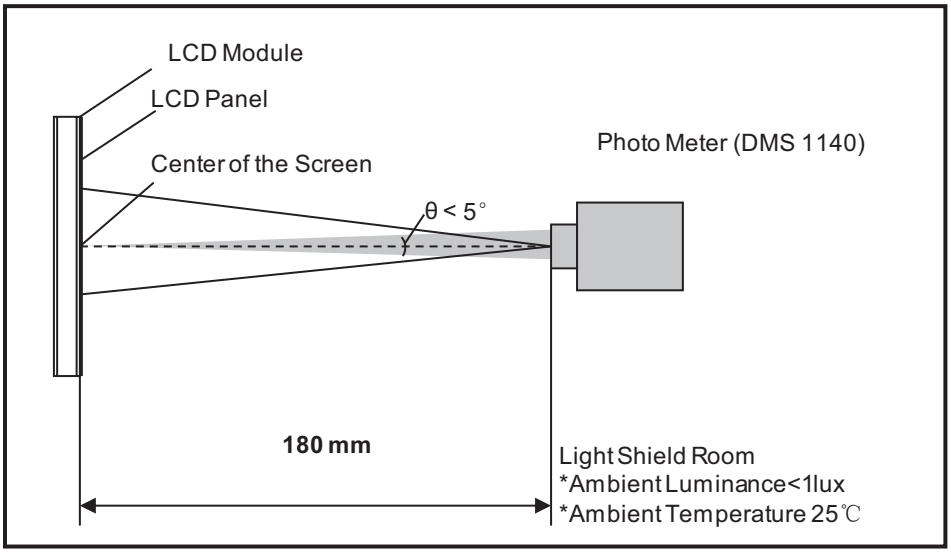


Figure 1 Optical Characteristic Measurement Equipment and Method

Note(2) Definition of Viewing Angle.

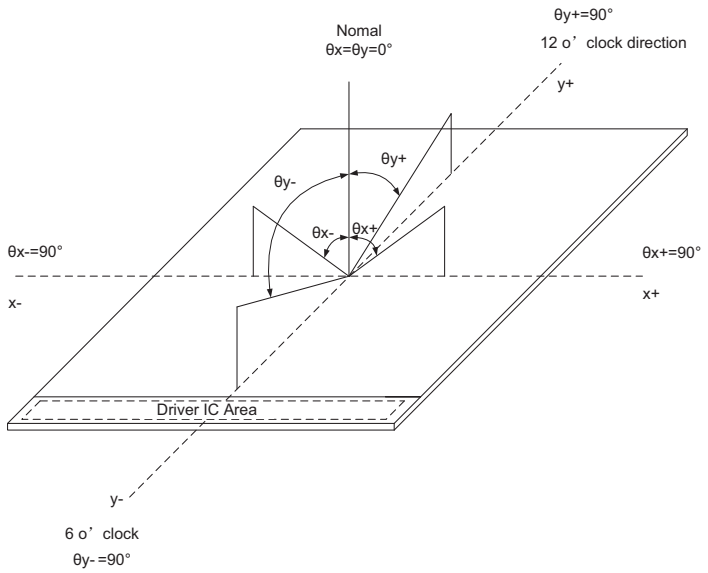


Figure 2 Definition of Viewing Angle

Note(3) Definition of Contrast Ratio (CR)

The contrast ratio can be calculated by the following expression:

Contrast Ratio (CR) = the luminance of White pattern/ the luminance of Black pattern

Note(4) Definition of Response Time

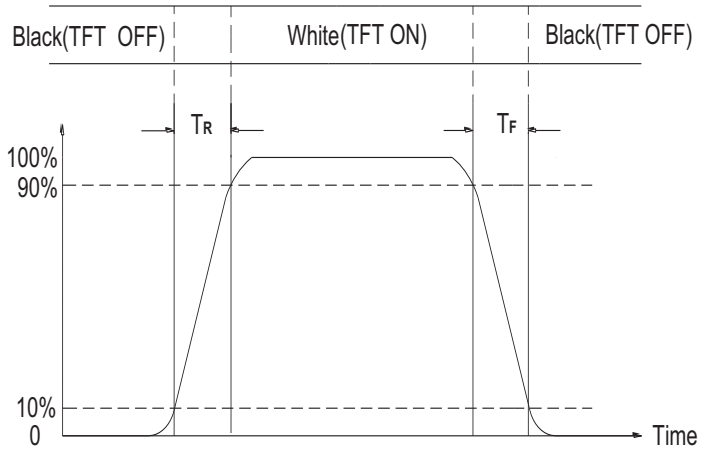


Figure 3 Definition of Response Time

Note(5) C-light Spectrum

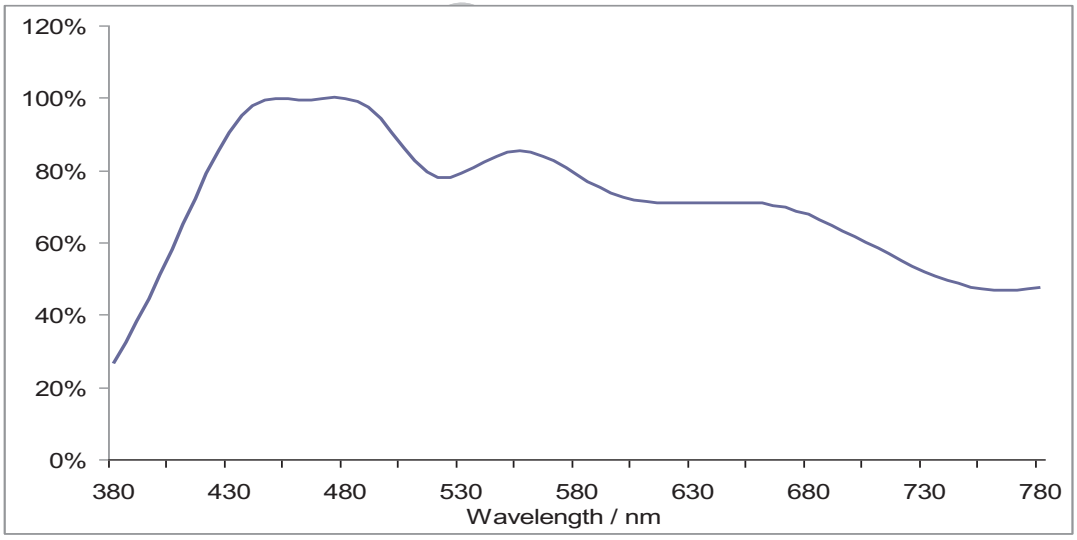


Figure 4 C-Light Spectrum

Note(6) The Back Light Spectrum

TBD

Figure 5 Back Light Spectrum

Note(7) The polarizer type: TBD

Note(8) All optical data are based on IVO given system & nominal parameter & testing machine in this document.

Note(9) The direction of polarizer. It is recommended that customer should choose O Mode or E Mode according to the actual situation.

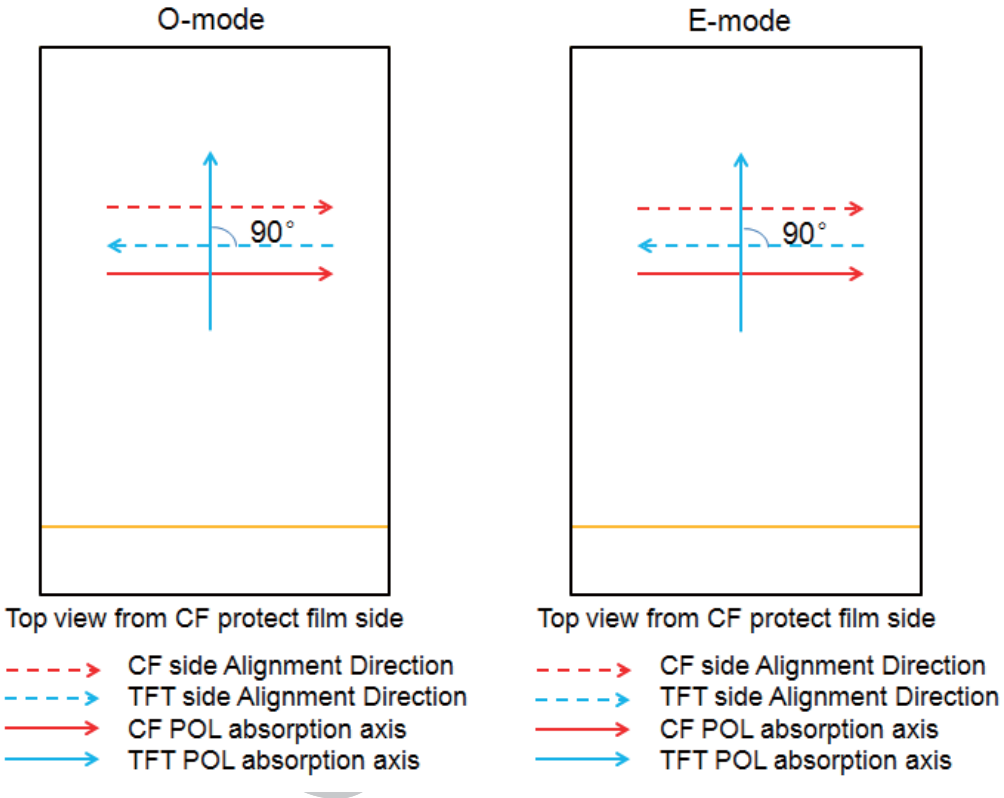


Figure 6 Polarizer Direction

Note(10) Considering each custom's spectrum of BL is different,we define transmittance spec based on C-light source（standard light source）.The differences may exist,when measure transmittance with unlike BL spectrum.if you have any questions,please contact IVO FAE.

6 Pixel Format

The figure shows the relation of the input signals and LCD panel pixel format.

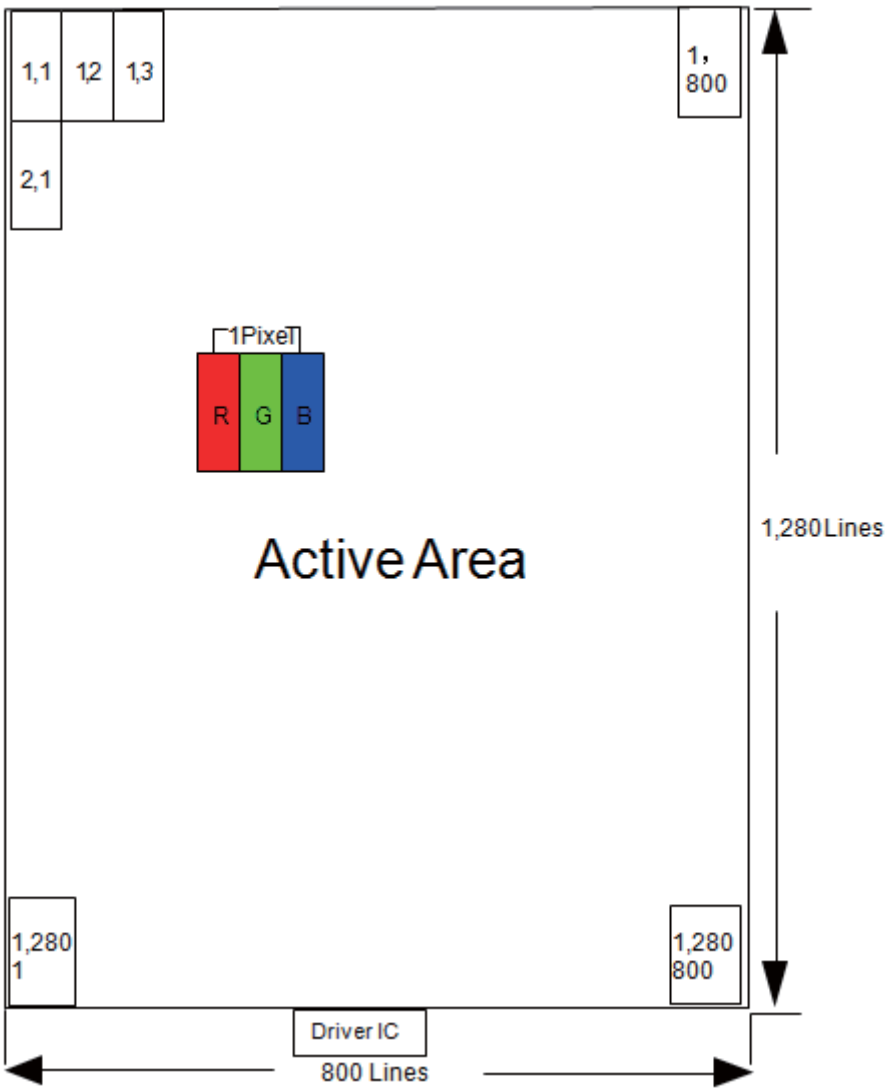


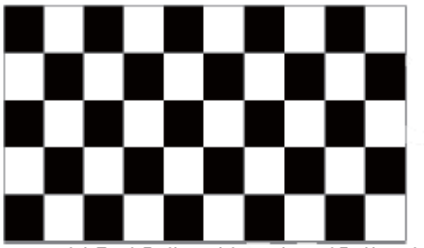
Figure 7 Pixel Format

7.RELIABILITY TEST ITEMS

7.1 TEMPERATURE AND HUMIDITY

Test Item	Test Condition	Remark
High Temperature Storage	Ta=60℃; 72hrs	IEC60068-2-1：2007 GB2423.2-2008
Low Temperature Storage	Ta=-20℃; 72hrs	IEC60068-2-1：2007 GB2423.1-2008
High Temperature Operation	Ta=50℃; 72hrs	IEC60068-2-1：2007 GB2423.2-2008
Low Temperature Operation	Ta=-10℃; 72hrs	IEC60068-2-1：2007 GB2423.1-2008
High Temperature High Humidity Operation	Ta=50℃，90%RH， 72Hrs(no condensation)	IEC60068-2-78：2001 GB/T2423.3-2006
Thermal Shock	-20℃(0.5h) ~ 60℃(0.5h) / 10cycles	Start with cold temperature， End with high temperature， IEC60068-2-14:1984,GB2423.22-2002
Image Sticking	25℃ ; 2hrs	Note1

Note1:Condition of image sticking test :25℃±2℃
Operation with test pattern sustained for 2hrs,then change to gray pattern immediately.after5 mins,themura must be disappeared completely


(a) Test Pattern (chess board Pattern)


(b) Gray Pattern

7.2ESD

Test item	Conditions	Remark	
Electro Static Discharge Test (non-operation)	150pF，330Ω， Contact:±3KV,Air:±8KV	1	IEC61000-4-2：2001 GB/T17626.2-2006
	200pF，0Ω，±200V contact test	2	

Note: Measure point :
1. LCD glass and metal bezel
2. IF connector pins

8. General Precaution

8.1 Safety

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

8.2 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.

8.3 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 very carefully.
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 the Surface of plate.
6. Do not use ketonics solvent & Aromatic solvent, use with a soft cloth soaked with a 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 the eyes or mouth in case of contact with hands, legs or clothes, it must be washed away thoroughly with soap.

8.4 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.

9. PACKAGE DRAWING