



# 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
V0	2024-10-14	NEW ISSUE	
V1	2024-11-06	ADD DIM	
V2	2024-11-11	ADD BACKLIGHT CHARACTERISTICS	

## TABLE OF CONTENTS

List	Description	Page No.
	COVER	1
	REVISION RECORD	2
	TABLE OF CONTENTS	3
1	GENERAL DESCRIPTION	4
2	MECHANICAL SPECIFICATION	5
3	PIN DESCRIPTION	6
4	BACKLIGHT CHARACTERISTICS	12
5	ELECTRICAL CHARACTERISTICS	13
6	OPTICAL CHARACTERISTICS	13
7	PIXEL FORMAT	17
8	RELIABILITY TEST ITEMS	18
9	GENERAL PRECAUTION	19

## 1.1 DESCRIPTION

AM-8001280-070EP-HDMI 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, Backlight, CTP and HDMI board.

## 1.2 TFT 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 <sup>2</sup> )	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	°C
16	Storage Temperature	-20~60	°C
17	Weight	TBD	g
18	IC	9365DA-H3	

## 2. MECHANICAL SPECIFICATION

**Notes:**

- 1.LED CIRCUIT DIAGRAM:
- 2.ROHS must be completed.
- 3.△Modification rev: number
- 4.Draft angle 1.5°
- 5.All radii without dimension R0.3 ,Unspecified Tolerances :±0.2
- Electrical-Optical Characteristics(Ta=25°C):

丝印黑色

4\* $R_{0.60}$

7\* 110  
800(QH)×1280(V)

CTP+LCD+PCB,  
(T=9.205)

CTP+DCA+LCD,  
T=9.75±0.3

2.50±0.2 LCD

CTP:2.90±0.1

2.00 LENS

0.20 SCA

0.70 SENSOR

0.175 DCA

6.50MAX

4.50MAX

15.98MAX

3M9495LE/T=0.175

CTP+LCD+PCB,  
(T=9.205)

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T=9.75±0.3

2.50±0.2 LCD

CTP:2.90±0.1

2.00 LENS

0.20 SCA

0.70 SENSOR

0.175 DCA

6.50MAX

4.50MAX

15.98MAX

3M9495LE/T=0.175

162.07±0.2<SENSOR>

100.00

8.42

(22.15)

105.12±0.2<SENSOR>

55.00

41.0

5.20

(20.20)

(69.75)

**技术参数:**

- 1.结构: G+G
- 2.工作电压: 2.8-3.3 V
- 3.IC:GT911
- 4.透光率: ≥85%
- 5.表面硬度: 6H
- 6.工作环境: -20°C~+70°C, ≤90%RH
- 7.储存环境: -30°C~+80°C, ≤90%RH
- 8.未注尺寸公差按±0.2mm

Q22:TITLE INCH	PIN NO.	Symbol
1	10012-	BOND2- SHIELD
2	10012-	NC
3	10012-	NC
4	110-	L10-
5	110-	L10-
6	110-	L10-
7	110-	L10-
8	110-	L10-
9	110-	L10-
10	110-	L10-
11	110-	L10-
12	110-	L10-
13	110-	L10-
14	110-	L10-
15	110-	L10-
16	110-	L10-
17	110-	L10-
18	110-	L10-
19	110-	L10-

Q23:TITLE INCH	PIN NO.	Symbol
1	10012-	BOND2- SHIELD
2	10012-	NC
3	10012-	NC
4	110-	L10-
5	110-	L10-
6	110-	L10-
7	110-	L10-
8	110-	L10-
9	110-	L10-
10	110-	L10-
11	110-	L10-
12	110-	L10-
13	110-	L10-
14	110-	L10-
15	110-	L10-
16	110-	L10-
17	110-	L10-
18	110-	L10-
19	110-	L10-

Q24:TITLE INCH	PIN NO.	Symbol
1	10012-	BOND2- SHIELD
2	10012-	NC
3	10012-	NC
4	110-	L10-
5	110-	L10-
6	110-	L10-
7	110-	L10-
8	110-	L10-
9	110-	L10-
10	110-	L10-
11	110-	L10-
12	110-	L10-
13	110-	L10-
14	110-	L10-
15	110-	L10-
16	110-	L10-
17	110-	L10-
18	110-	L10-
19	110-	L10-

SW.	DESCRIPTION OF REVISION	REASON	REVISED BY	DATE
△	first issue	V0	XG, SU	2024/10/14
△	ADD DIM	V1	XG, SU	2024/11/11

		于都上晴电子有限公司 YU DU AMSON ELECTRONICS Co., Ltd.
TITLE: OUTLINE DIMENSION	D/N: AM-8001280-070EP-HDMI	
DRAWN BY:	Rev: V1	
CHECKED BY:	SCALE: 1:1	SHEET NO. 1 OF 1
APPROVED BY:		

## 3. PIN DESCRIPTION

### 3.1 TFT

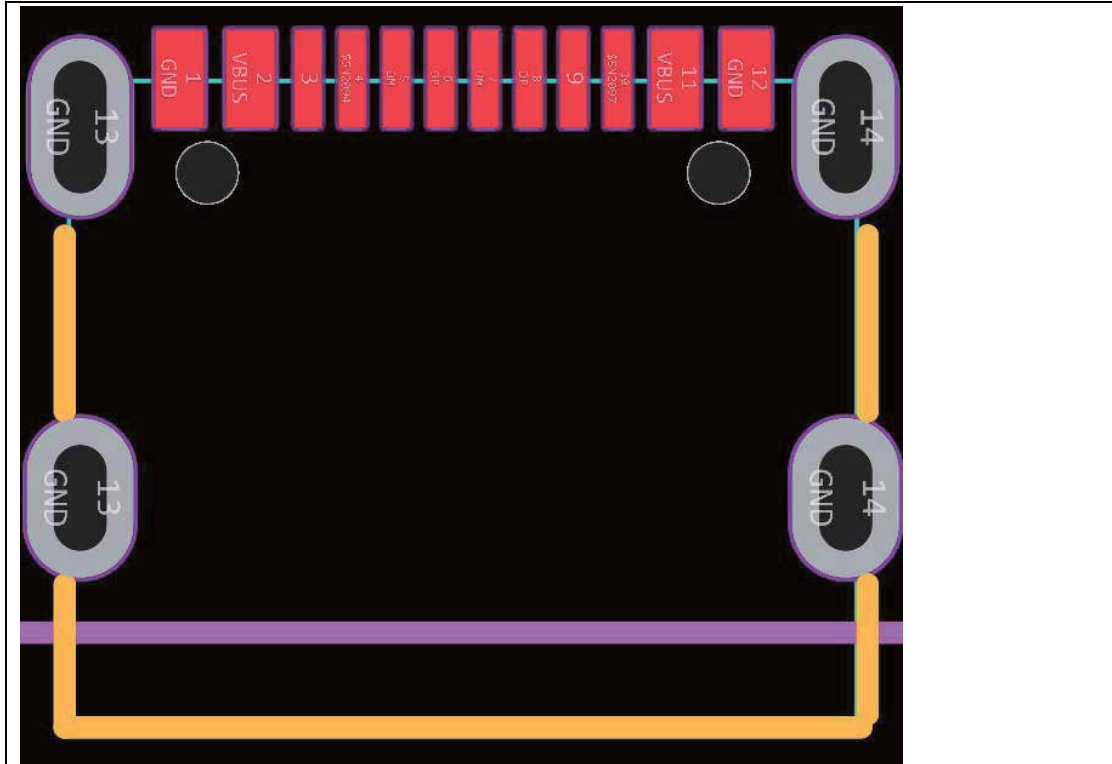
PIN NO.	Symbol	Description	Remarks
1	LED+	Power supply for LED (Anode)	
2	LED+	Power supply for LED (Anode)	
3	LED+	Power supply for LED (Anode)	
4	NC	No Connect	
5	LED-	Power supply for LED (Cathode)	
6	LED-	Power supply for LED (Cathode)	
7	LED-	Power supply for LED (Cathode)	
8	LED-	Power supply for LED (Cathode)	
9	GND	Ground	
10	GND	Ground	
11	MIPI_2P	MIPI data positive signal (2P)	
12	MIPI_2N	MIPI data positive signal (2N)	
13	GND	Ground	
14	MIPI_1P	MIPI data positive signal (1P)	
15	MIPI_1N	MIPI data 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 data positive signal (0P)	
21	MIPI_0N	MIPI data positive signal (0N)	
22	GND	Ground	
23	MIPI_3P	MIPI data positive signal (3P)	
24	MIPI_3N	MIPI data 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 <sup>2</sup> C_clock
2	SDA	CTP I <sup>2</sup> C_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.

### 3.3 HDMI BOARD:

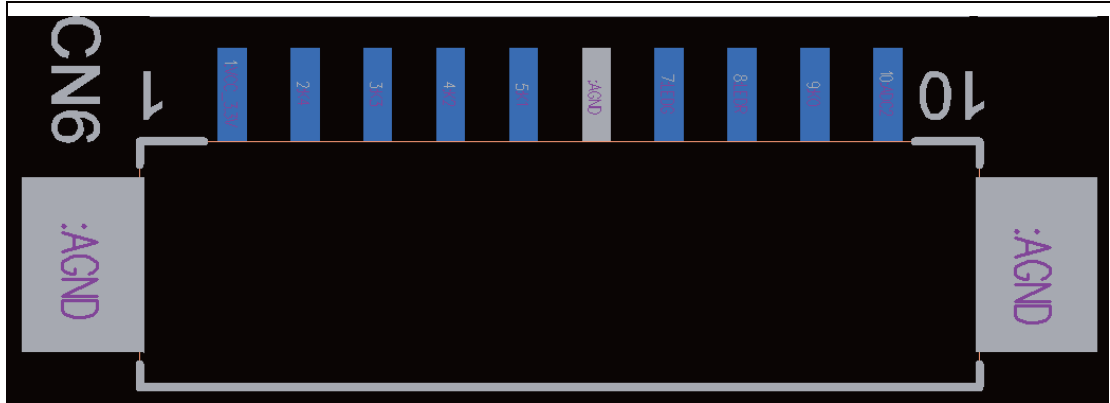
#### 3.3.1 CN10: 5V Power and USB Input



PIN 脚	信号	描述
1/12	GND	
2/11	VBUS	
3	NC	
4	CC1	
5/7	DN	
6/8	DP	
9	NC	
10	CC2	

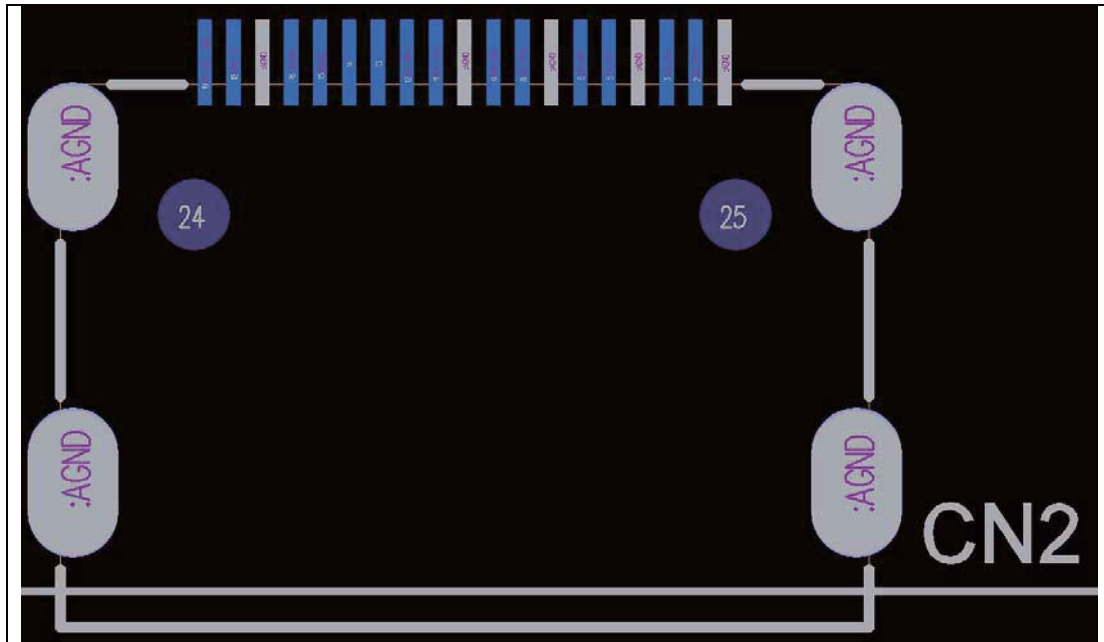


### 3.3.2 CN1/CN15: 12V Power Input (DC-44/20mm-2Pin) (Optional)



PIN 脚	信号	描述
1	3.3V	3.3V
2	MENU	菜单/确认
3	EXIT	退出
4	LEFT	左移/下移/减
5	RIGHT	右移/上移/加
6	GND	地
7	LEDG	绿灯指示灯
8	LEDR	红灯指示灯
9	POWER	开关机
10	IR	红外遥控

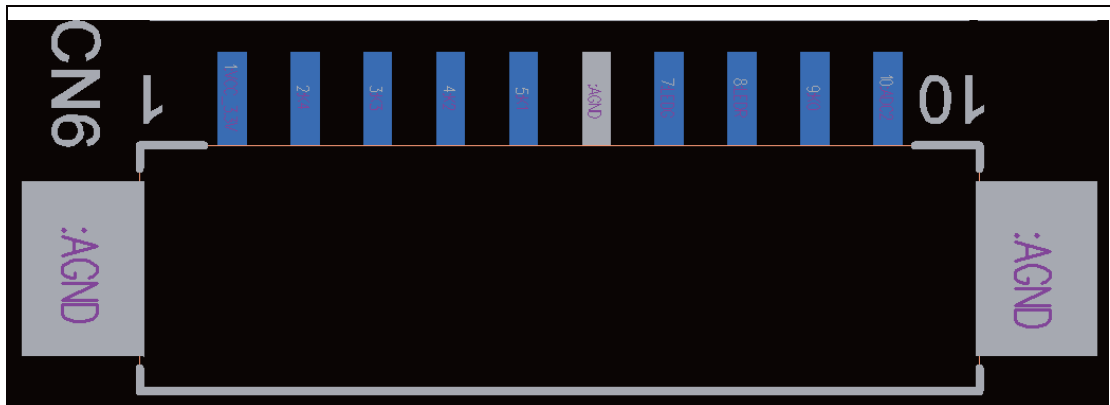
### 3.3.3 CN2: HDMI Input



Pin No.	Pin Name	Description
1	DATA2 SHIELD	HDMI Differential Signal Data 2 Shield
2	DATA2+	HDMI Differential Signal Data 2+
3	DATA2-	HDMI Differential Signal Data 2-
4	DATA1 SHIELD	HDMI Differential Signal Data 1 Shield
5	DATA1+	HDMI Differential Signal Data 1+
6	DATA1-	HDMI Differential Signal Data 1-
7	DATA0 SHIELD	HDMI Differential Signal Data 0 Shield
8	DATA0+	HDMI Differential Signal Data 0+
9	DATA0-	HDMI Differential Signal Data 0-
10	CLK SHIELD	HDMI Differential Signal Data Clock Shield
11	CLK+	HDMI Differential Signal Data Clock+
12	CLK -	HDMI Differential Signal Data Clock-
13	NC	NO Connect
14	NC	NO Connect
15	SCL	Serial Clock Line for Display Data Channel
16	SDA	Serial Data Line for Display Data Channel

17	GND	Ground
18	+5V POWER	+5V Power Line
19	HOT PLUG	Hot Plug Detect

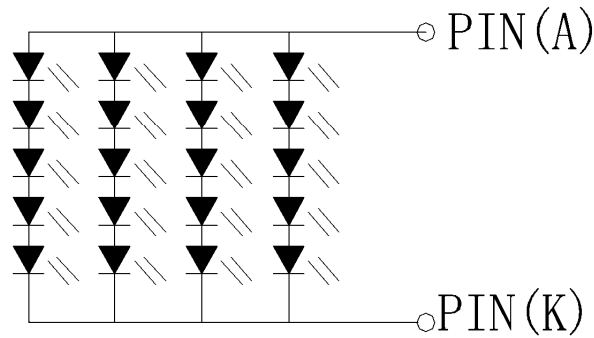
### 3.3.4 CN6: Key (1.25mm / 10Pin) (Optional)



PIN 脚	信号	描述
1	3.3V	3.3V
2	MENU	菜单/确认
3	EXIT	退出
4	LEFT	左移/下移/减
5	RIGHT	右移/上移/加
6	GND	地
7	LEDG	绿灯指示灯
8	LEDR	红灯指示灯
9	POWER	开关机
10	IR	红外遥控

## 4 Electrical Specifications

LED: 5\*4=20 PCS



Item	Symbol	MIN	TYP	MAX	UNIT	Test Condition
Supply Voltage	Vf	14	15	16	V	If=80mA
Supply Current	If	-	80	-	mA	
Luminous Intensity for LCM	-	190	240	-	cd/m <sup>2</sup>	If=80mA
Uniformity for LCM	-	75	-	-	%	If=80mA
Life Time	-	-	20000	-	Hr	If=80mA
Backlight Color	White					

## 5 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°C, Humidity: 55± 10%RH.

## 6 Optical Characteristics

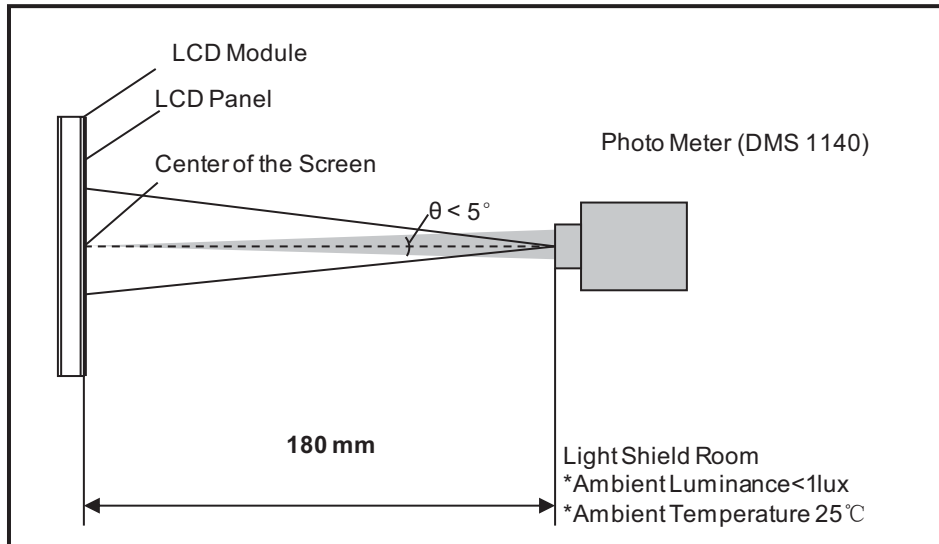
The optical characteristics are measured under stable conditions as following notes.

**Table 4 Optical Characteristics**

Item	Conditions	Min.	Typ.	Max.	Unit	Note	
Transmittance	Center	(4.5)	(5.0)	-	%	Under C-light (1),(5),(6),(8) $\theta_x=\theta_y=0^\circ$	
Contrast Ratio	Center	(640)	(800)	-	-	(1),(3),(6) $\theta_x=\theta_y=0^\circ$	
Response Time	Rising + Falling	-	(25)	(TBD)	ms	(1),(4),(6) $\theta_x=\theta_y=0^\circ$	
CF Color Chromaticity (LCM)	Red x	Typ. -0.02	(0.610)	Typ. +0.02	-	(1),(6) $\theta_x=\theta_y=0^\circ$	
	Red y		(0.354)		-		
	Green x		(0.319)		-		
	Green y		(0.549)		-		
	Blue x		(0.139)		-		
	Blue y		(0.098)		-		
	White x		(0.322)		-		
	White y		(0.364)		-		
NTSC	CIE1931	(45)	(50)	-	%		
Viewing Angle (CR≥10)	Horizontal	$\theta_{x+}$	(75)	(85)	-	degree	(1),(2),(6)
		$\theta_{x-}$	(75)	(85)	-		
	Vertical	$\theta_{y+}$	(75)	(85)	-		
		$\theta_{y-}$	(75)	(85)	-		

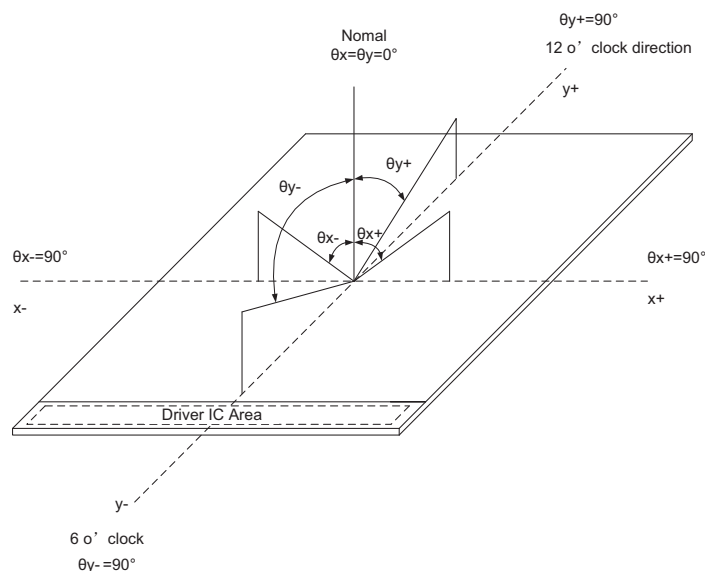
**Note(1) Measurement Setup:**

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.**



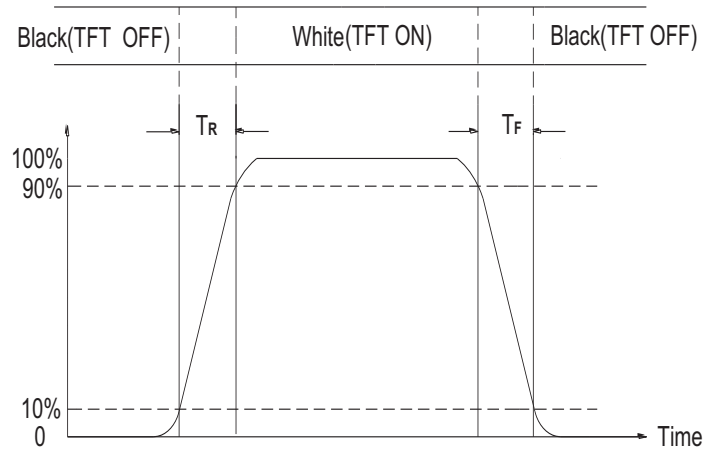
**Figure 2 Definition of Viewing Angle**

Note(3) Definition of Contrast Ratio (CR)

The contrast ratio can be calculated by the following expression:

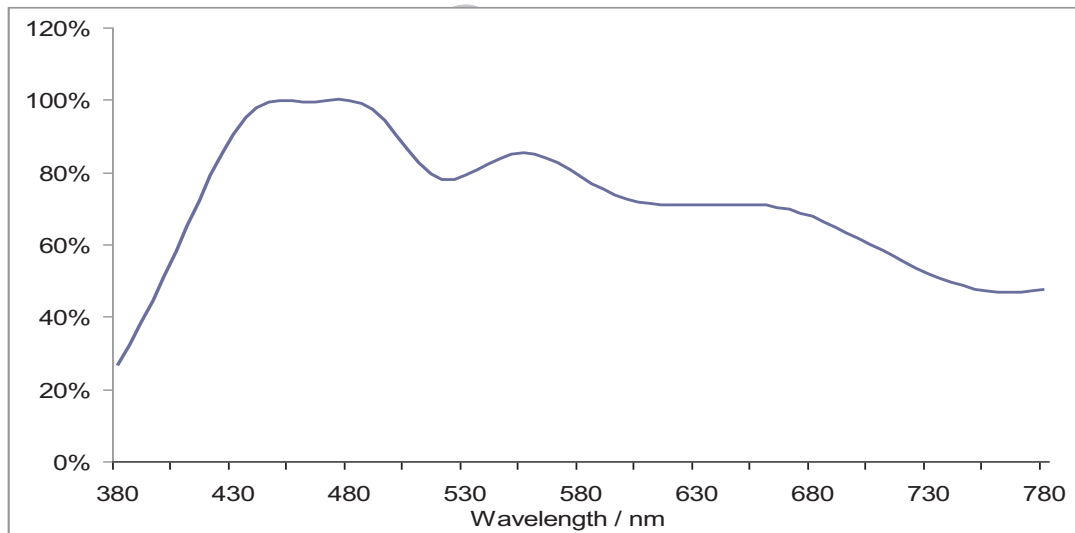
Contrast Ratio (CR) = the luminance of White pattern/ the luminance of Black pattern

Note(4) Definition of Response Time



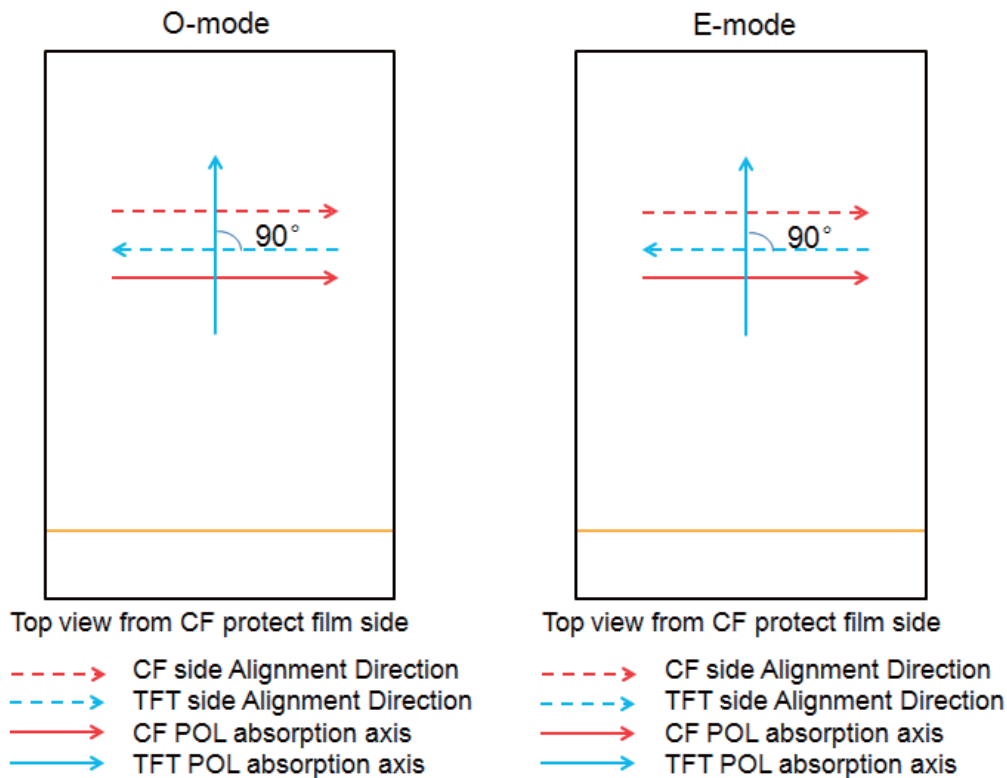
**Figure 3 Definition of Response Time**

Note(5) C-light Spectrum



**Figure 4 C-Light Spectrum**

- Note(6) All optical data are based on Amson given system & nominal parameter & testing machine in this document.
- Note(7) 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(8) 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 Amson FAE.



## 7 Pixel Format

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

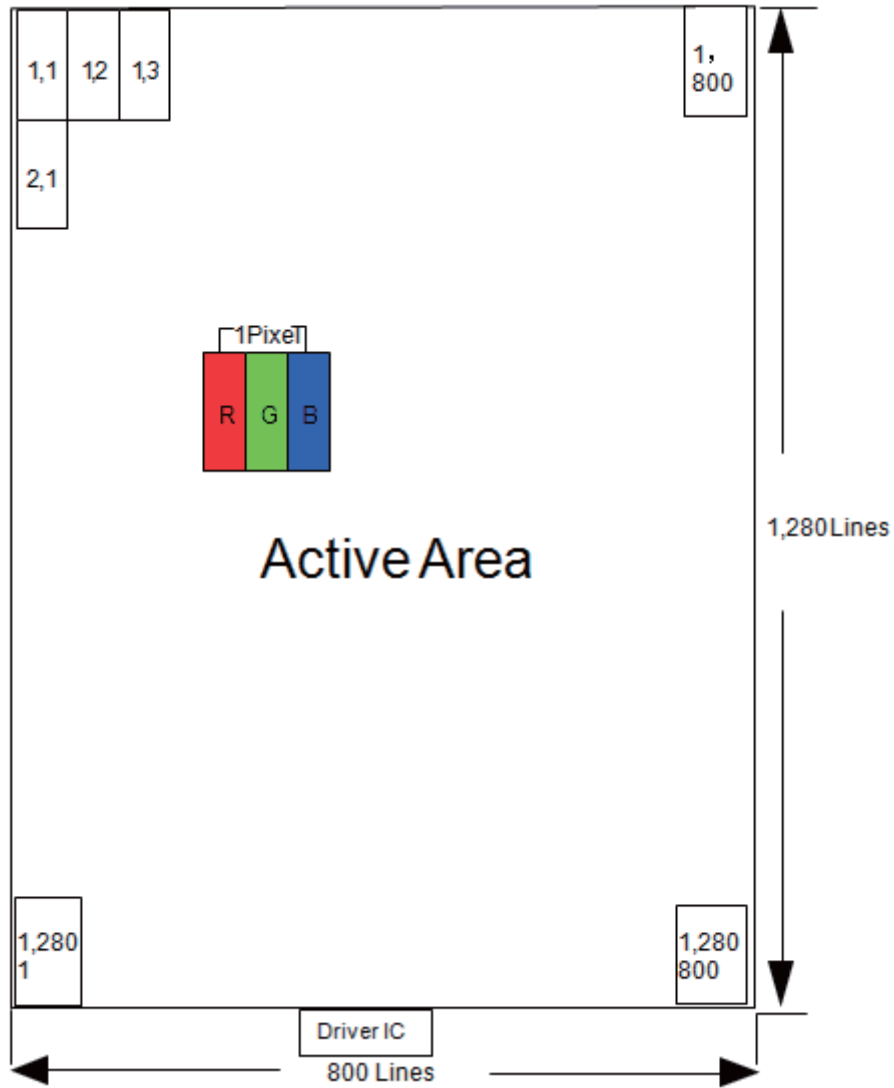


Figure 7 Pixel Format

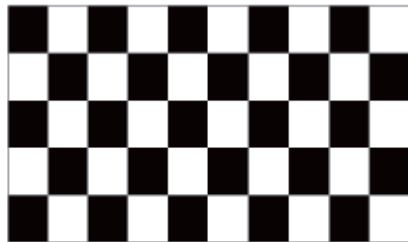
## 8. RELIABILITY TEST ITEMS

### 8.1 TEMPERATURE AND HUMIDITY

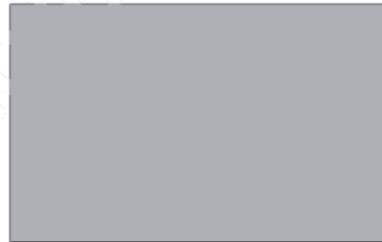
Test Item	Test Condition	Remark
High Temperature Storage	Ta=60°C; 72hrs	IEC60068-2-1: 2007 GB2423.2-2008
Low Temperature Storage	Ta=-20°C; 72hrs	IEC60068-2-1: 2007 GB2423.1-2008
High Temperature Operation	Ta=50°C; 72hrs	IEC60068-2-1: 2007 GB2423.2-2008
Low Temperature Operation	Ta=-10°C; 72hrs	IEC60068-2-1: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

Note1:Condition of image sticking test :25°C ±2°C

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

## 9. GENERAL PRECAUTION

### 9.1 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.

### 9.2 STORAGE CONDITIONS

1. Store the panel or module in a dark place where the temperature is  $23\pm 5^{\circ}\text{C}$  and The humidity is below  $50\pm 20\%RH$ .
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.

### 9.3 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.

### 9.4 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.