



## LCD Module SPECIFICATION

液晶显示模组规格书

ZX2D10G4848RG001

深圳市启明显示技术有限公司

## 1. Revision History (修订记录)

修订内容	时间	修订人	备注

深圳市启明智显科技有限公司

## 2. Application (应用)

This data sheet is to introduce the specification of ZX2D10G4848RG001 active matrix 262K color TFT LCD module. Main color LCD module is controlled by Driver IC ST7701S. If any problem occurs concerning the items not stated in this specification, it must be solved sincerely by both parties after deliberation. As to basic specification of driver IC refer to the IC specification and handbook.

本规格书是为了介绍 ZX2D10G4848RG001 有源矩阵 262K 彩色 TFT LCD 模块的规格。主彩色液晶显示模块由驱动芯片 ST7701S 控制 本规范未尽事宜如有问题，双方必须认真协商解决。驱动 IC 的基本规格参照《IC 规格书》和相关《手册》。

## 3. Construction and Outline (结构与大纲)

Construction: LCD panel, Driver (COG), FPC with electric components, 4 White LED lump, prism sheet, diffuser, light guide and reflector, plastic frame to fix them mechanically. There shall be no scratches, stains, chips, distortions, and other external drawbacks that may affect the display function. To realize thin module structure, double-sided adhesive tapes are used to fix LCD panels. As these tapes do not guarantee to permanently fix the panels, LCD panel may rise from the module when shipped from factory. So please make sure to design the system to hold the edges of LCD panel by the soft material such as sponge when LCD module is assembled into the cabinet.

结构:液晶面板，驱动或 COG，带电子元件的 FPC，4 个白光 LED 块，棱镜片，扩散器，导光器和反射器，塑料框架机械固定。不应有可能影响显示功能的划痕、污迹、芯片、畸变等外部缺陷。为了实现薄型模块结构，采用双面胶带固定液晶面板。由于这些胶带不能保证永久有效固定面板，LCD 面板在出厂时可能会从模块内移动。所以在液晶模块组包装和进柜时，请务必将包装设计成用海绵等软材料支撑液晶面板的边缘。

4. Mechanical Specification (参数规格) Table 1 (表 1)

Feature		Specifications
<b>Display Spec.</b>	LCD type	2.1 inch
	Resolution (H*V)	480(RGB) ×480
	Technology Type	a-Si TFT
	Pixel Configuration	R.G.B. Vertical Stripe
	Display Mode	Normally Black
	Viewing Direction	ALL
	Gray Scale Inversion Direction	-
<b>Mechanical Characteristics</b>	OutlineDimensions (W x H x T) (mm)	56.18*59.71*2.3
	Active Area(mm)	53.28*53.28
	CTP View Area(mm)	/
	With /Without Touch screen	Without
	Connector Type	0.5 PITCH 40PIN
	Backlight Type	LED
	Weight (g)	TBD
<b>Electrical Characteristics</b>	Display Interface	3SPI+18RGBI
	Number of color	262K
	Display Driver IC	ST7701S
	Touch Driver IC	/

Note 1: Not include FPCs & Bezel extrude structure.

备注 1: 不包括排线和面板构造

### 5. LCD Module Outline dimensions (模组外形图)

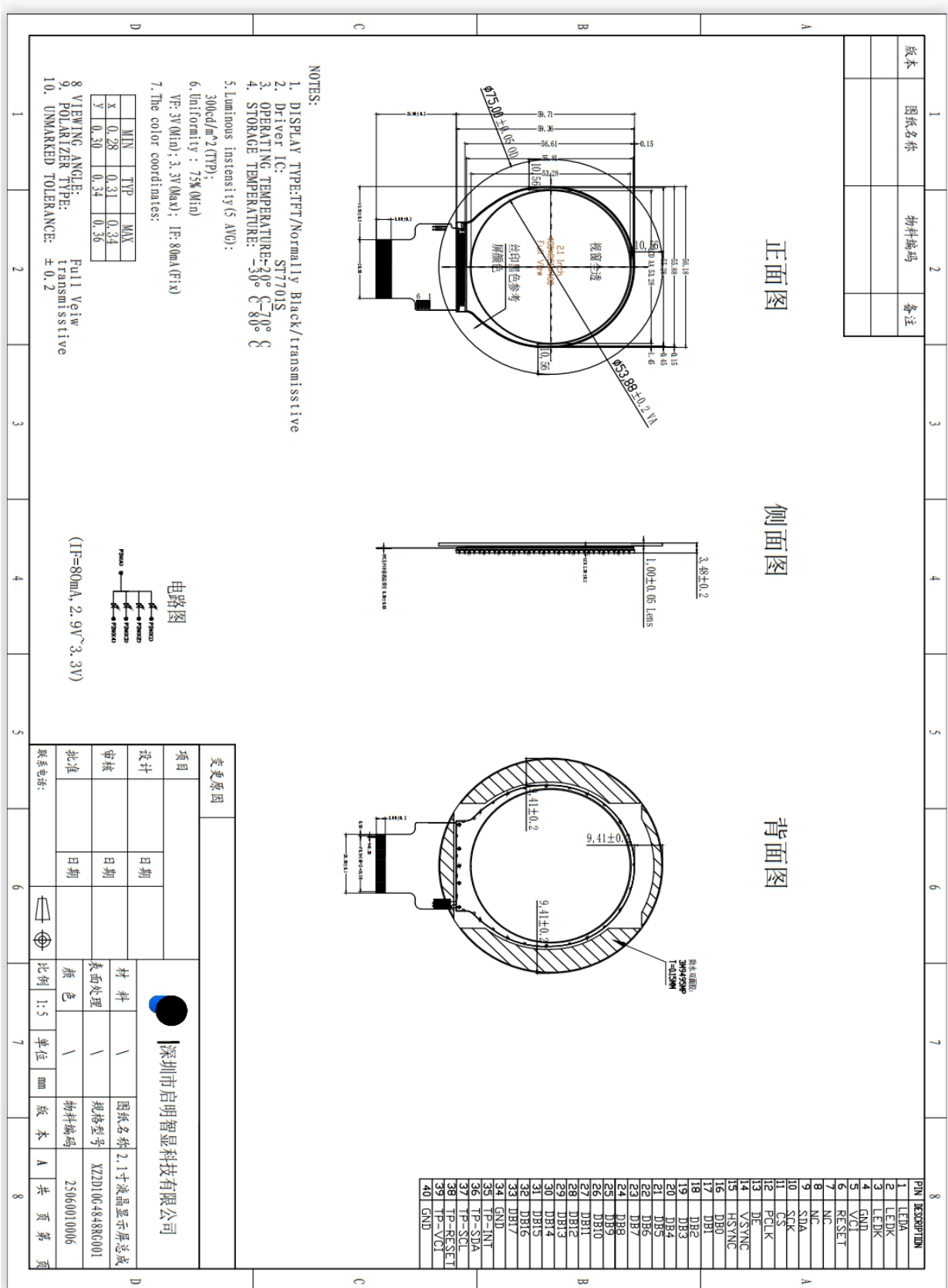


Fig. 1 (图 1)

## 6. Interface signals (接口信号) Table 2 (表 2)

1	LED A	LED ANODE
2	LED K	LED CATHODE
3	LED K	LED CATHODE
4	GND	Ground
5	VCI	Power supply
6	RESET	Reset Signal ,Active Low
7	NC	NC
8	NC	NC
9	SDA	SPI Data signal
10	SCK	SPI Clock signal
11	CS	SPI Chip select signal
12	PCLK	RGB dot clock signal
13	DE	RGB data enable signal
14	VSYNC	RGB frame synchronizing signal
15	HSYNC	RGB line synchronizing signal
16~33	DB0~DB17	RGB data signal (DB0:BLUE LSB;DB5:BLUE MSB;DB6:GREEN LSB;DB11:GREEN,MSB;DB12:RED LSB;DB17:RED MSB)
34	GND	Ground
35	TP_INT	Touch Interrupt
36	TP_SDA	Touch IIC Data signal
37	TP_SCL	Touch IIC Clock signal
38	TP_RESET	Touch Reset Signal
39	TP_VCI	Touch Power supply
40	GND	Ground

Note:

1:3SPI+18RGB interface

## 7. ELECTRICAL CHARACTERISTICS (电气特征)

### 7.1 Driving TFT LCD Panel:

Item	Symbol	Min	Type	Max	Unit	Test condition
Operating voltage	$V_{DD}$	2.5	2.8	4.8	V	-
Supply current	$I_{DD}$	-	-	50	mA	$V_{DD}=2.8V, T_a=25^{\circ}C$
Input voltage	$V_{IH}$	0.8VDD	-	VDD	V	-
	$V_{IL}$	0	-	0.2VDD	V	
Input leakage current	$I_{IL}$	-1.0	-	1.0	$\mu A$	$V_{IN}=V_{DD}$ or $V_{SS}$

Note: Voltage greater than above may damage the module.  
All voltages are specified relative to  $V_{SS}=0V$ .

### 7.2 Driving Backlight

Item	Symbol	Min	Typ	Max	Unit	Remark
Forward Current	$I_F$	--	80	88	mA	
Forward Voltage	$V_F$	-	3.2	-	V	
Connection mode		--	4Parallel	--		
LED number	/		4		pcs	

current, high ambient temperature & humidity condition. The life time of LED will be reduced. Operating life means brightness goes down to 50% initial brightness. Typical operating life time is estimated data.

## 8. LED back light (背光灯) Table 6(表 6)

At main panel the back light uses 4 pcs edge light type white LED. 在背光的主面板用 4 颗白色 LED 灯

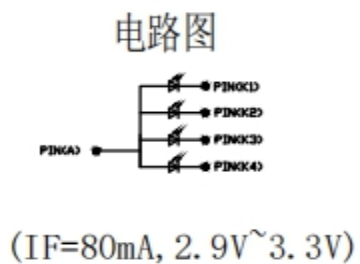


Fig. 3\*Schematics drawing of lighting (绘制照明图 图. 2)



9. Optical Characteristics (光学特征) Table 7 (表 7)

Item	Symbol	Condition	Min	Typ	Max	Unit	Remark
View Angles	$\theta T$	$CR \geq 10$	-	80	-	Degree	Note 2
	$\theta B$		-	80	-		
	$\theta L$		-	80	-		
	$\theta R$		-	80	-		
Contrast Ratio	CR	$\theta=0^\circ$	700	900	-	-	Note1 Note3
Response Time	$T_{ON}$	25°C	-	30	40	ms	Note1
	$T_{OFF}$		Note4				
Uniformity	U	-	70	80	-	%	Note1 Note6
NTSC	-	-	-	70	-	%	Note 5
Luminance	L		280	300	-	cd/m <sup>2</sup>	Note1 Note7

Test Conditions:

1.  $V_F=3.2V$ ,  $I_F=80mA$ , the ambient temperature is 25°C.
2. The test systems refer to Note 1 and Note 2.

## 10. General Precaution (一般注意事项)

### 10.1 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.

### 10.2 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  $50\pm 20\%\text{RH}$ .
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.

### 10.3 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 ketonic 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 eye so mouth in case of contact with hands, legs or clothes, it must be head way thoroughly with soap.

### 10.4 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.

## 11. Contact information (联系信息)

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样品购买地址: <https://shop212317088.taobao.com/>

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