



LCDModuleSPECIFICATION

液晶显示模组规格书

ZX5D00C8048RC001-cRD

深圳市启明智显科技有限公司

0. RevisionHistory(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

1. Application (应用)

This datasheet is to introduce the specification of ZX5D00C8048RC001-cRD active matrix 16.7M color TFTLCD module. Main color LCD module is controlled by Driver IC ST7262. 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ZX5D00C8048RC001-cRD有源矩阵16.7M彩色TFTLCD模块的规格。主彩色液晶显示模块由驱动芯片ST7262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》。

2. Construction and Outline (结构与大纲)

Construction: LCD panel, Driver (COG), FPC with electric components, 12 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，12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。

3. Mechanical Specification (参数规格) Table1 (表1)

Item(项目)	Specifications(规格)	Unit(单位)
Screen size(屏幕尺寸)	5.0	inch
Display mode(显示模式)	IPS/Transmissive/Normally Black	-
Active area(显示范围)	107.00(H) × 63.80(V)	mm
Display format(分辨率)	800(H)*RGBx480(V)	-
Pixel configuration(像素)	/	mm
Outline Dimensions(外形尺寸)	120.20(H) × 75.30(V) × 2.70(T)	Note1
View Angle(视角)	ALL	
Base color Notes(基色)	Black	-
Weight(重量)	TBD	
Driver IC(驱动IC)	ST7262	

Note1: Not include FPCs & Bezel extrude structure.

备注1: 不包括排线和面板构造

4. LCDModuleOutLinedimensions (模组外形图)

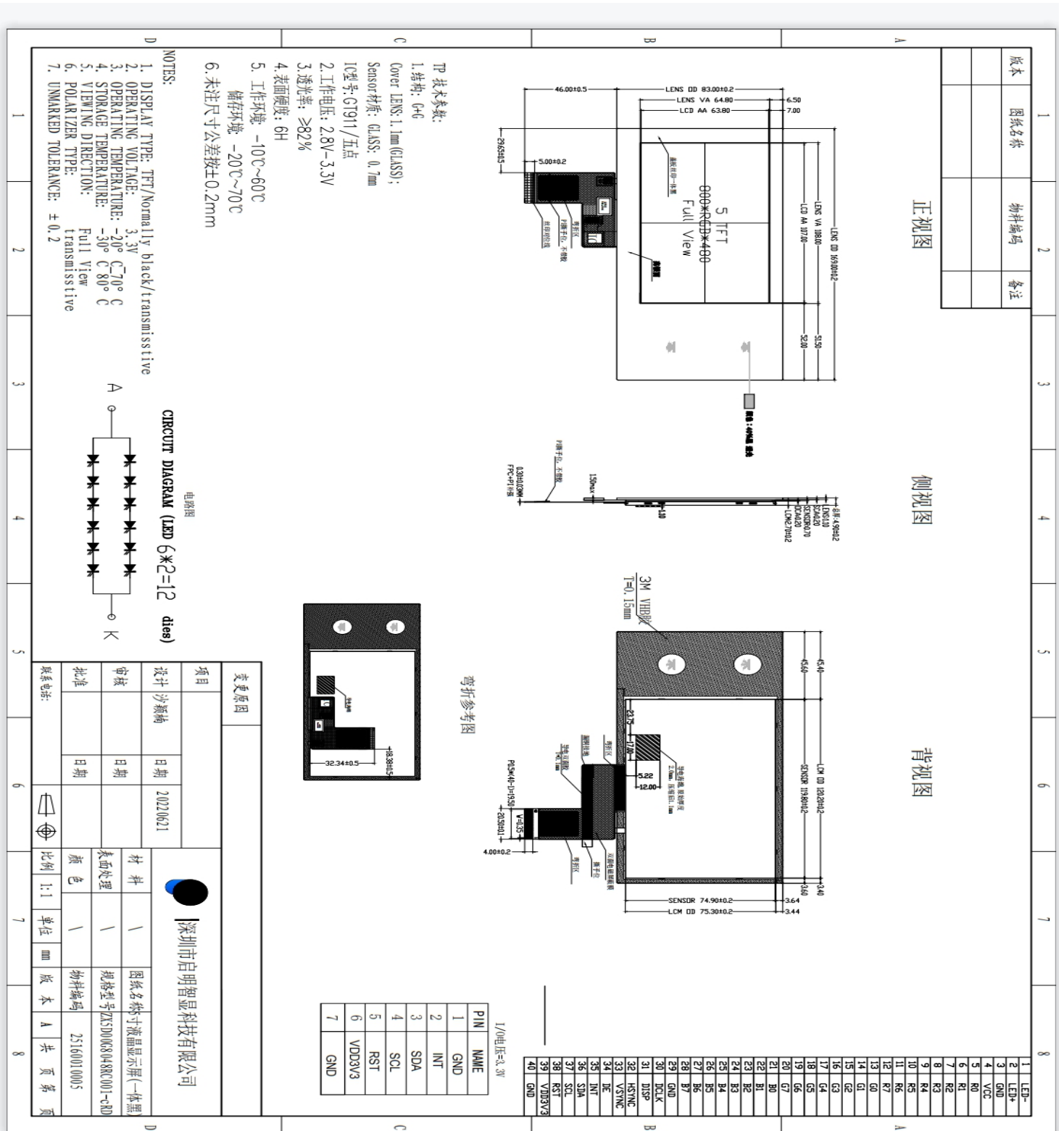


Fig. 1 (图1)

5. Interfacesignals (接口信号) Table2 (表2)

PinNo.	Symbol	FUNCTION	Remark						
1	LEDK	LEDCathode							
2	LEDA	LEDAnode							
3	GND	PowerGround							
4	VCC	PowerSupplyforAnalog, VCC=2.5V~3.3V.							
5-12	R0-R7	RGBinterfaceandLVDSinterfacedatainputpins. 8 bitdatabusdisplayreddata.							
13-20	G0-G7	RGBinterfaceandLVDSinterfacedatainputpins. 8 bitdatabusdisplaygreendata.							
21-28	B0-B7	RGBinterfaceandLVDSinterfacedatainputpins. 8 bitdatabusdisplaybluedata.							
29	GND	PowerGround							
30	DCLK	RGBinterface:pixelclockinputpin							
31	DISP	DISPsetsthe displaymode. <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>DISP</th> <th>Function Description</th> </tr> </thead> <tbody> <tr> <td>L</td> <td>Standby mode (Default)</td> </tr> <tr> <td>H</td> <td>Normal display mode</td> </tr> </tbody> </table>	DISP	Function Description	L	Standby mode (Default)	H	Normal display mode	
DISP	Function Description								
L	Standby mode (Default)								
H	Normal display mode								
32	HSYNC	HorizontalsyncsignalappliedtotheRGBinterface							
33	VSYNC	VerticalsyncsignalappliedtotheRGBinterface.							
34	DE	DatainputenableappliedtotheRGBinterface.							
35	TP_INT	Interruptsignalto mainprocessorofTouchPanel; If noused, letthispinopen.							
36	TP_SDA	I ² CdatasignalofTouchPanel; Ifnoused, letthis pinopen.							
37	TP_SCL	I ² CclocksignalofTouchPanel; Ifnoused, letthis pinopen.							
38	TP_RST	SystemresetofTouchPanel; Ifnoused, letthispin open.							
39	VDD3.3V	PowerSupplyforTP, VDD=3.3V.							
40	GND	PowerGround							

6. ELECTRICAL CHARACTERISTICS (电气特征)

6.1 ABSOLUTE MAXIMUM RATINGS (绝对最大额定值) Table 3 (表3)

Item		Symbol	Values		Unit
			Min.	Max.	
Supply Voltage	Power supply	VDD	-0.3	+4.0	V
	Analog	-	-	-	V
	I/O	IOVDD	-0.3	+4.0	V
Input Voltage		V _i	-0.3	IOVDD+0.3	V
Storage temperature		T _{stg}	-30	+70	°C
Operating temperature		T _{op}	-20	+60	°C
Storage humidity		H _{stg}	10	Note 1	%RH
Operating humidity		H _{op}	10	Note 1	%RH

6.2 DC Characteristics Table 4 (表4)

Item		Symbol	Values			Unit
			Min.	Typ.	Max.	
Supply Voltage	Power supply	VDD	3.1	3.3	3.6	V
	Analog	VCI	3.1	3.3	3.6	V
	I/O	IOVDD	3.1	3.3	3.6	V
Logic Low input voltage		V _{IL}	DGND	-	0.3 IOVDD	V
Logic High input voltage		V _{IH}	0.7 IOVDD	-	IOVDD	V
Logic Low output voltage		V _{OL}	DGND	-	DGND+0.4	V
Logic High output voltage		V _{OH}	IOVDD-0.4	-	IOVDD	V
Current Consumption	Normal display	I _{vdd}	-	135	-	mA
	Standby mode I _{vdd}		-	50	-	uA
Frame Frequency		f _{FR}	-	60	-	Hz

6. 30Optical Specifications Table 5 (表5)

Ta=25°C, VDD=2.8V, TNLC+Polarizer

	Item	Symbol	Condition	Specification			Unit	
				Min.	Typ.	Max.		
Backlight On (Transmissive Mode)	Luminance on surface ($I_f=20mA$)	L_v	Normally viewing angle $\theta_x = \theta_y = 0^\circ$		300	-	cd/m ²	
	Contrast ratio	CR		-	600	-	-	
	Response time	T_R		-	10	20	ms	
		T_F	-	20	30			
	Chromaticity Transmissive	Red	X_R	-	0.614	0.644	0.674	-
			Y_R		0.290	0.320	0.350	-
		Green	X_G		0.270	0.300	0.330	-
			Y_G		0.540	0.570	0.600	-
		Blue	X_B		0.104	0.134	0.164	-
			Y_B		0.097	0.127	0.157	-
	White	X_W	0.267	0.297	0.327	-		
		Y_W	0.302	0.332	0.362	-		
	Viewing Angle	Horizontal	θ_{x+}	Center $CR \geq 10$	-	80	-	Deg.
			θ_{x-}		-	80	-	
Vertical		θ_{y+}	-		80	-		
		θ_{y-}	-		80	-		
	NTSC Ratio(Gamut)	-	-	-	60	-	%	

7. LEDbacklight (背光灯) Table6 (表6)

At main panel the backlight uses 8 pcs edge light type white LED. 在背光的主面板用12颗白色LED灯

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
ConnectionType		6*2pcsLEDs				

Note:

*12pcsofLED

*PleaseconsiderAllowableForwardCurrentonusedtemperature*12颗灯

*请考虑允许范围内的正向电流的使用温度

CIRCUIT DIAGRAM (LED 6*2=12 dies)

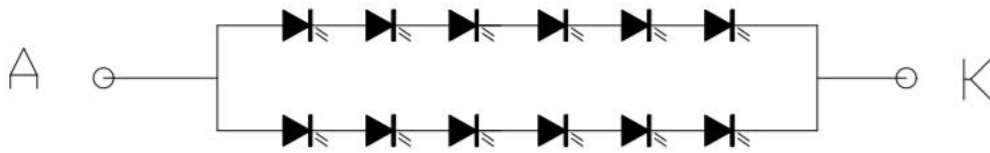


Fig. 3*Schematicdrawingoflighting (绘制照明图图. 3)

Note: constantcurrentcircuitforeveryLED, andthoughLEDlampcurrentislessthan20mA. Recommand between15mAand20mAforeveryLED.

8. Reliability Specification Table 7 (表7)

Item	Condition	Cycle Time	Quantity	Remark
Constant Temp. and Constant Humidity Operation Test	+40 ± 3°C, 90 ± 3%RH	96hrs	--	*1
High Temp. Operation Test	+70 ± 3°C	96hrs	--	
Low Temp. Operation Test	-20 ± 3°C	96hrs	--	
Thermal Shock Test	-20 ± 3°C (30min) +70 ± 3°C (30min)	10cycles	--	
ESD Test(end product)	150pF, 330Ω, ±2KV, Contact	10times	--	*2, *3
	150pF, 330Ω, ±6KV, Air			
Vibration Test (for packaging)	Frequency: 10Hz to 55Hz to 10Hz, Swing: 1.5mm, time: X, Y, Z each 2H.	6hrs	One inner carton	*4

Note 1. For humidity test, DI water should be used.

Inspection Standard: Inspect after 1-2hrs storage at room temperature, the sample shall be free from the following defects:

- Air bubble in the LCD
- Seal Leakage
- Non-display
- Missing Segment
- Glass Crack
- IDD is greater than twice initial value.
- Others as per QA Inspection Criteria

Note 2. No defect is allowed after testing

The End Product ESD value is only indicative and depends on customer ESD protection design for the whole system.

Note 3. ESD should be applied to LCD glass panel, not other areas (such as on IC and so on)
IDD should be within twice initial value.

In case of malfunction defect caused by ESD damage, if it would be recovered to normal state after resetting, it would be judged as a good part.

Note 4. Only upon request.

Fig. 4(图4)

9. General Precaution (一般注意事项)

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、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 organic 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 CMOSLSI.
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 headway 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 repair or modify the LCM. It may cause function to lose efficacy, Starry does not warrant the LCM.
3. All process and material comply ROHS.

10. Contact information (联系信息)

网址: <http://www.panel-tag.cn/>

联系邮箱: panlee@smartpanle.com

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

微信公众号: 启明智显



深圳市启明智显