



LCD Module SPECIFICATION

液晶显示模组规格书

ZX3D92C3232IFN01

深圳市启明显示技术有限公司

0. 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

1. Application (应用)

This data sheet is to introduce the specification of ZX3D92C32321FN01 active matrix 16.7M color TFT LCD module. Main color LCD module is controlled by Driver IC [GSL 1680](#). 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 ZX3D92C32321FN01 有源矩阵 16.7M 彩色 TFT LCD 模块的规格。主彩色液晶显示模块由驱动芯片 [GSL 1680](#) 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, 10 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，10 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，请务必将包装结构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) Table 1 (表 1)

Item(项目)	Specifications(规格)	Unit(单位)
Screen size(屏幕尺寸)	3.92	inch
Display mode(显示模式)	Normally Black, Transmissive	-
Active area(显示范围)	72.54(W) x 71.22(H)	mm
Display format(分辨率)	320x320	-
Data Transfer(数据传输)	RGB interface	mm
Outline Dimensions(外形尺寸)	84(W) X 84(H) X 3.35(D)	Note 1
View Angle(视角)	FULL	
Base color Notes(基色)	Black	-
Backlight(背光)		
Driver IC(驱动 IC)	GSL 1680	

Note 1: Not include FPCs & Bezel extrude structure.

备注 1: 不包括排线和面板构造

4. LCD Module Outline dimensions (模组外形图)

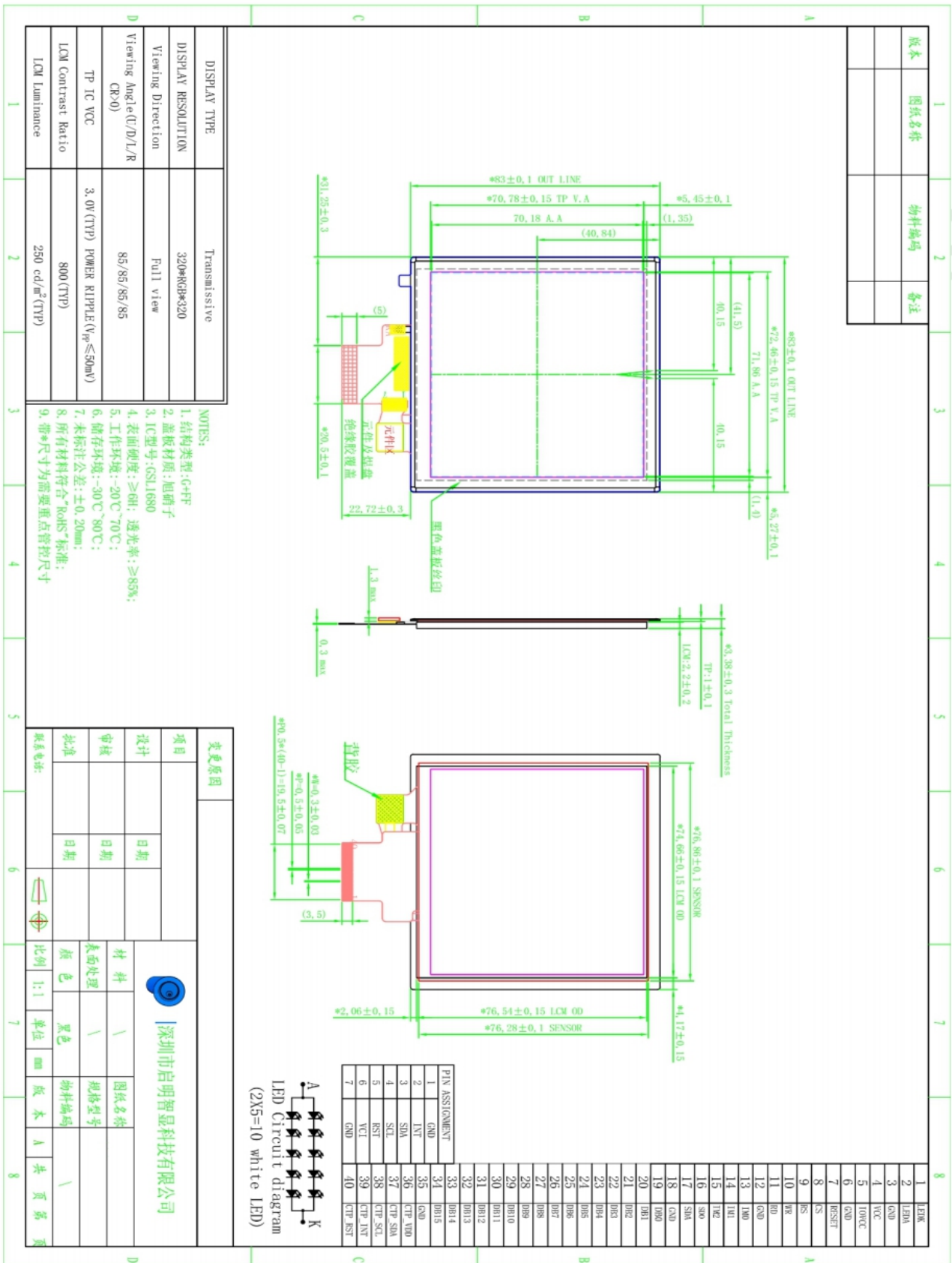


Fig. 1 (图 1)

5. Interface signals (接口信号) Table 2 (表 2)

Pin No.	Symbol	I/O	Functional	Remark
1	LEDK+	P	LCD Back-Light LED Power cathode	
2	LEDA-	P	LCD Back-Light LED Power anode	
3	GND	P	Ground	
4	VCI	P	Power supply	
5	IOVCC	P	Power supply	
6	GND	P	Ground	
7	RESET	I	The external reset input	
8	CS	I/O	Chip selection pin low:enable high:disable	
9	RS	I/O	Display data/command selection pin in parallel interface	
10	WR	I/O	Write enable in MCU parallel interface	
11	RD	I/O	Read enable in 8080 MCU parallel interface	
12	GND	P	Ground	
13	IM0	I/O	The MCU interface mode select	
14	IM1	I/O	The MCU interface mode select	
15	IM2	I/O	The MCU interface mode select	
16	SD0	I/O	Display data/command selection pin in 4-line serial interface	
17	SDA	I/O	SPI interface in/output pin	
18	GND	P	Ground	
19	DB0	I/O	Data bus	
20	DB1	I/O	Data bus	
21	DB2	I/O	Data bus	
22	DB3	I/O	Data bus	
23	DB4	I/O	Data bus	
24	DB5	I/O	Data bus	
25	DB6	I/O	Data bus	

26	DB7	I/O	Data bus	
27	DB8	I/O	Data bus	
28	DB9	I/O	Data bus	
29	DB10	I/O	Data bus	
30	DB11	I/O	Data bus	
31	DB12	I/O	Data bus	
32	DB13	I/O	Data bus	
33	DB14	I/O	Data bus	
34	DB15	I/O	Data bus	
35	GND	P	Ground	
36	CTP_VDD	P	Power supply for CTP	
37	CTP_SDA	I/O	IIC Data signal for CTP	
38	CTP_SCL	I/O	IIC Clock signal for CTP	
39	CTP_INT	I/O	Interrupt signal for CTP	
40	CTP_RST	I/O	Reset pin for CTP	

6. ELECTRICAL CHARACTERISTICS (电气特征)

6.1 Recommended Operating Range Table 3(表 3)

Item	Symbo	Min.	Typ.	Max.	Uni	Condition
	I				t	s
Supply Voltage	VDD	2.5	2.75	3.3	V	
I/O Supply Voltage	VDDI	1.65	1.8	3.3	V	

6.2 DC Characteristics for Digital Circuit. Table 4(表 4)

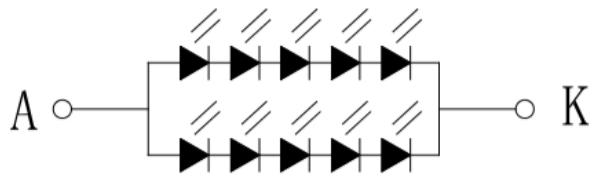
Item	Symbo	Min.	Typ.	Max.	Uni	Condi ti
Logic-High Input Voltage	I Vih	0.7VDDI	-	VDDI	t V	ons
Logic-Low Input Voltage	Vil	DGND	-	0.3VDDI	V	
Logic-High Output Voltage	Voh	0.8VDDI	-	VDDI	V	
Logic-Low Output Voltage	Vol	DGND	-	0.2VDDI	V	

7. LED back light (背光灯) Table 6(表 6)

At main panel the back light uses 18 pcs edge light type white LED. 在背光的主面板用 10 颗白色 LED 灯

Item	Symbol	MIN	TYP	MAX	Unit	Remark
Forward Current	IF	-	40	-	mA	Note 4
Forward Current Voltage	VF	-	12.8	-	V	Note 1, 2
LED lifetime	L	20000	--	--	Hours	Note1, 2, 3, 4

Backlight Driving



VF: 14.5~16V; IF: 40mA

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

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

Item	Symbol	Condition	Min	Typ	Max	Unit	Remark	
View Angles	θT	$CR \geq 10$	75	85	-	Degree	Note 2, 3, 8	
	θB		75	85	-			
	θL		75	85	-			
	θR		75	85	-			
Contrast Ratio	CR	$\theta = 0^\circ$	800	1000	-		Note 3	
Response Time	TON	25°C	-	25	35	ms	Note 4	
	TOFF							
Chromaticity	White	Backlight is on	± 0.05	0.294	± 0.05		Note 1, 5	
				y				0.329
	Red			x			-	Note 1, 5
				y			-	
	Green			x			-	Note 1, 5
				y			-	
	Blue			x			-	Note 1, 5
				y			-	
Uniformity	U		-	80	-	%	Note 6	
NTSC			55	60	-	%	Note 5	
Luminance	L		200	250	-	cd/m ²	Note 7	

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.

9.2 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.

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 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.

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.

10. Contact information (联系信息)

网址: [http://www. panel-tag. cn/](http://www.panel-tag.cn/)

联系邮箱: [panlee@smartpanle. cn](mailto:panlee@smartpanle.cn)

样品购买地址: [https://shop212317088. taobao. com/](https://shop212317088.taobao.com/)

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