SPECIFICATIONS
FOR
LCD MODULE

Customer: _____

Model name: TY0801IE50RI-127C

Description: LIQUID CRYSTAL DISPLAY MODULE

Date: 2024-06-20

CUSTOMER APPROVAL

Customer Approval	☐ Accept ☐ Reject comment: Approved by: _____

SUPPLIER APPROVAL

APPROVED	CHECKED	ORGANIZED

2、 OTHERS:

History of revision

Revision	Contents	Date	Note
01	**New Revision**	2024-06-20	1.0

CONTENTS PAGE

1. Introduction And General Specifications

Liquid crystal Displays (LCDS) have widely used in many applications such as industrial measurements, office mechanisms, and household electronic–equipment etc. LCM (LCD Module) integrates with LCD and driving circuit that is easily to be interfaced by user. This LCM contains a standard built-in dot –matrix font set.

1.1Applications of LCM

Telephone
Facsimile mechanism
Electronic Typewriter
Word processor
Electronic memo pads
Remote controller

1.2 Features of LCM

Compact, thin and light
Wide view angle
Low power consumption
High contrast image
Wide operating temperature
High reliability

1.2 General specification

Parameter	Value	Unit
Display Mode	Normal white	-
Display Resolution	800*RGB*600	pixels
Pixel Arrangement	RGB-stripe	-
Viewing Direction	Free	
Display Mode	Normally white	
IC Package Type	COG	-
MPU Interface	24-bit parallel RGB interface	-
Power Supply Voltage	2.8~3.3	V
Back-light	White LED*27	pcs

1.3 Absolute Maximum Ratings

Item	Symbol	Min	Max	Unit	Remark
Power Voltage	VDD	-0.05	3.3	V	
Operating Temperature	TOPR	-20.0	70.0	℃	
Storage Temperature	TSTG	-30.0	80.0	℃	

1.4 Electrical Characteristics

Item	Symbol	Specification			Unit
		Min.	Typ.	Max.	
TFT Gate On Voltage	VGH	--	20	--	V
TFT Gate Off Voltage	VGL	--	-7.0	--	V
TFT Common Electrode Voltage	Vcom	--	3.9	--	V
AVDD	Avdd	--	10.6	--	V

Note:

(1) Vcom must be adjusted to optimize display quality: cross talk, contrast ratio and etc.

(2) VGH is TFT gate on voltage

(3) VGL is TFT gate off voltage

The storage capacitance structure of this product is Cst(Storage on Common).

The low voltage level of VGL signal must be fluctuated with same phase as Vcom, in case of Storage on Gate structure.

(4) Environmental condition : 25℃

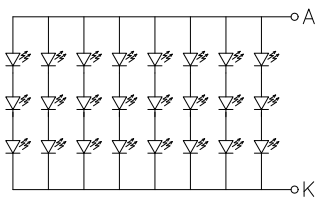
1.5 LCM And Backlight Driving Conditions

Item	Symbol	Values			Unit	Remark
		Min.	Typ.	Max.		
LED forward voltage	VL	-	9.0	9.6	V	Note 2,3
LED forward current	IL	-	180	-	mA	Note 3
LCD forward current	IL	-	78	-	mA	
LED life time	-	20,000	-	-	Hr	Note 1
LED Luminance	Lv	3500	-	-	cd/㎡	
LCM Luminance	Lv		350	400	cd/㎡	

Note 1: The “LED life time” is defined as the module brightness decrease to 50% original brightness that the ambient temperature is 25℃ and IL =20mA. The LED lifetime could be decreased if operating IL is lager than 20 mA.

Note 2: The LED Supply Voltage is defined by the number of LED at Ta=25℃ and IL =20mA. In the case of 3pcs LED , VL=3.2*3=9.6V

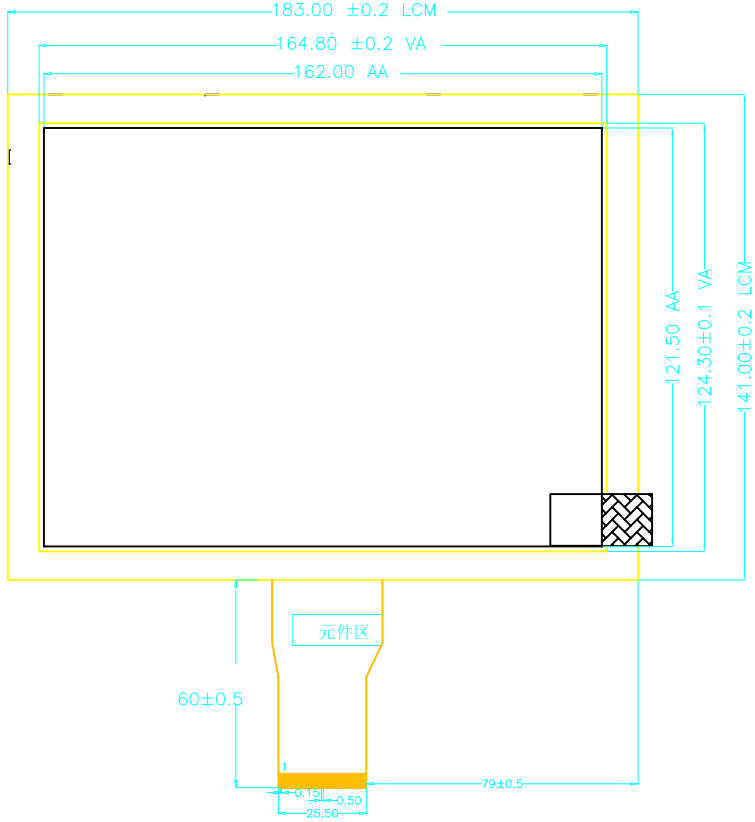
Note 3: The LED driving condition is defined for each LED module (3LED Serial 9 parallel).

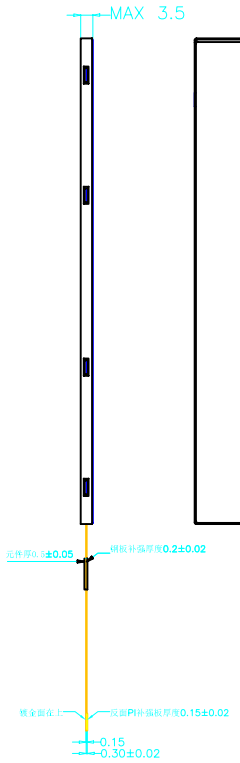


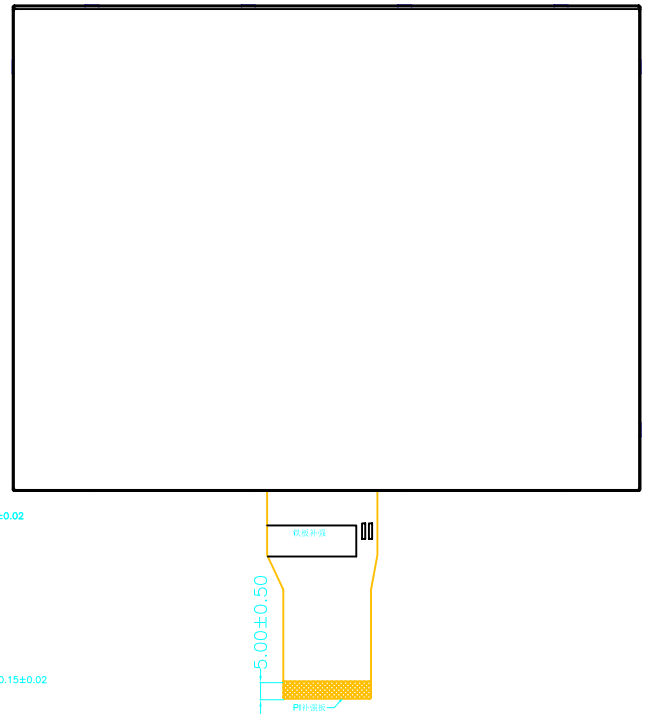
BACKLIGHT CIRCUIT

客户型号：

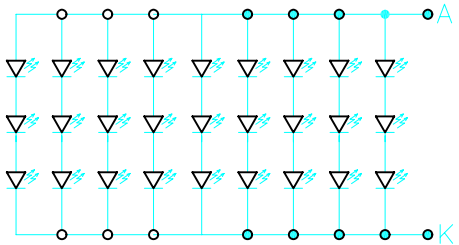
REV	REVISION RECORD	DATE	APPROVED	NAME
1				







PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	LEDA	26	G1
2	LEDA	27	G0
3	LEDK	28	R7
4	LEDK	29	R6
5	GND	30	R5
6	VCOM	31	R4
7	VCC	32	R3
8	MODE	33	R2
9	DE	34	R1
10	VS	35	R0
11	HS	36	GND
12	B7	37	DCLK
13	B6	38	GND
14	B5	39	L/R
15	B4	40	U/D
16	B3	41	VGH
17	B2	42	VGL
18	B1	43	AVDD
19	B0	44	RESET
20	G7	45	NC
21	G6	46	VCOM
22	G5	47	DITHB
23	G4	48	GND
24	G3	49	NC
25	G2	50	NC



BACKLIGHT CIRCUIT

NOTES:

1. DISPLAY TYPE : TFT 16.7M
2. POLARIZER MODE : TRANSMISSIVE/POSITIVE
3. VIEWING DIRECTION: : ALL
4. MAIN LCD BACKLIGHT : 3-CHIP WHITE LED
5. OPERATING TEMP : -20°C~70°C
6. STORAGE TEMP : -30°C~80°C
7. DRIVER IC : JD9165
8. LED OPERATING VOLTAGE : 9.0 V

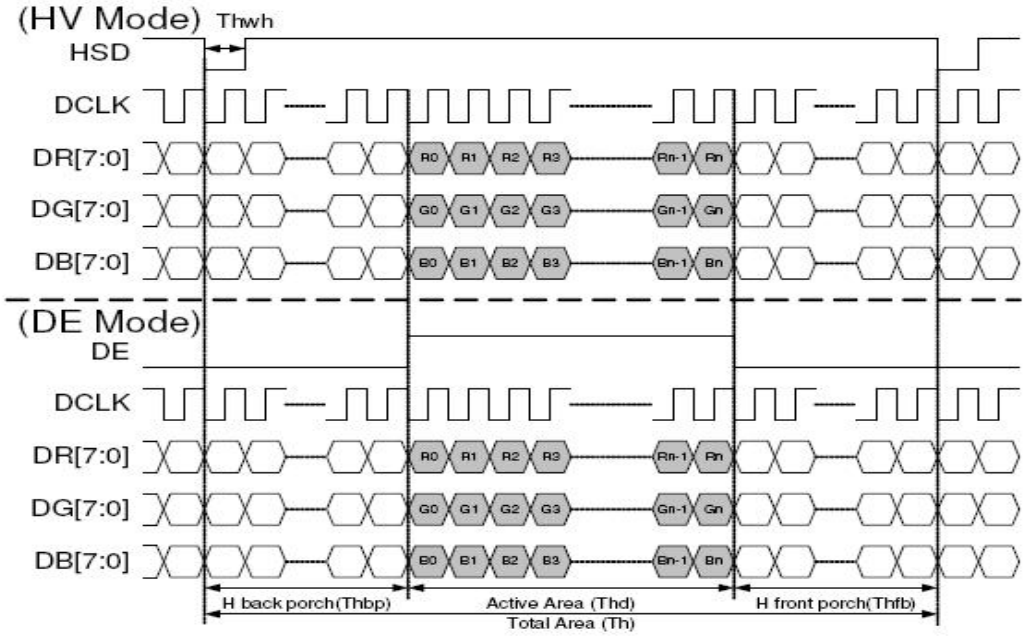
TOLERANCE	MATERIAL	FINISH	MODEL NAME	TY0801IE50RI-127C
±0.2				
VERSION	SCALE	NO.	UNIT	TITLE LCM
A	1:1	1/1	mm	
DATE	APPROVED	CHECKED	DRAWN	FILE NAME E://800600
2011.07.07			LILAC	

3. 24-bit Interface pin Connections Circuit Block Diagram

PIN NO.	SYMBOL	DESCRIPTION
1	LED+	Power for LED backlight(Anode)
2	LED+	Power for LED backlight(Anode)
3	LED-	Power for LED backlight(Cathode)
4	LED-	Power for LED backlight(Cathode)
5	GND	Power ground
6	VCOM	Common voltage
7	DVDD	Powre for Digital Circuit
8	MODE	DE/SYNC mode select
9	DE	Data Input Enable
10	VS	Vertical Sync Input
11	HS	Horizontal Sync Input
12-19	B7-B0	Blue data
20-27	G7-G0	Green data
28-35	R7-R0	Red data
36	GND	Power ground
37	DCLK	Sample clock
38	GND	Power ground
39	L/R	Left/right selection
40	U/D	Up/down selection
41	VGH	Gate ON Voltage
42	VGL	Gate OFF Voltage
43	AVDD	Power for Analog Circuit
44	RESET	Global reset pin.
45	NC	Not connect
46	VCOM	Common Voltage
47	DITHB	Dithering function
48	GND	Power ground
49	NC	Not connect
50	NC	Not connect

4. 24-bit parallel RGB interface

Parallel RGB Mode Data format

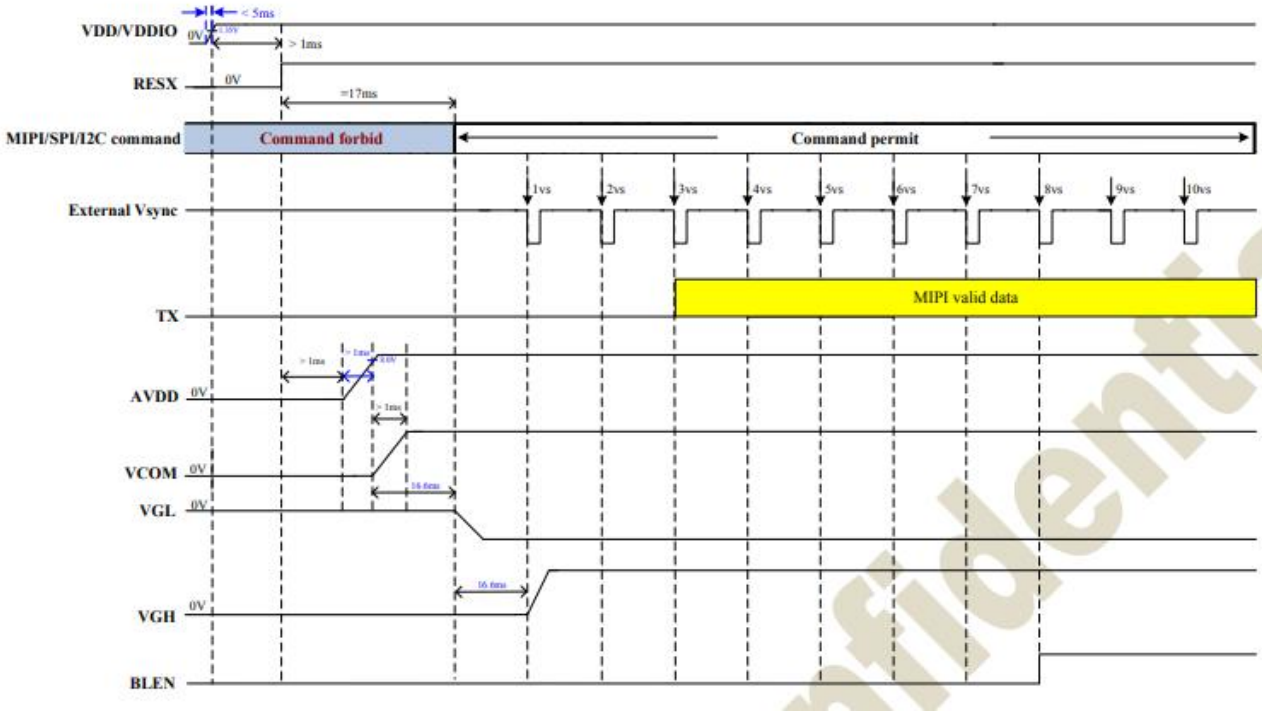


Resolution:800x600

MIPI Input Timing	Symbol	1024RGBx768			1024RGBx600			800RGBx600			Unit
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
MIPI 24-bit RGB@ 2 lane Operating Frequency	-	500	-	750	400	-	750	330	-	750	Mbps
MIPI 24-bit RGB@ 4 lane Operating Frequency	-	250	-	500	200	-	500	165	-	500	Mbps
Horizontal Total	tht	1114	1344	1400	1114	1344	1400	890	1000	1300	DCLK
Hsync Pulse width	ths	1	24	HBP-1	1	24	HBP-1	1	24	HBP-1	DCLK
Horizontal Back Porch	thb	60	160	160	60	160	160	60	88	250	DCLK
Horizontal Valid Data	thd		1024			1024			800		DCLK
Horizontal Front Porch	thfp	30	160	216	30	160	216	30	112	250	DCLK
Vertical Total	tvt	788	806	845	620	635	800	620	660	800	THT
Vsync Pulse Width	tvs	1	2	VBP-1	1	2	VBP-1	1	2	VBP-1	THT
Vertical Back Porch	tvb	8	23	33	8	23	100	8	39	100	THT
Vertical Valid Data	tvd		768			600			600		THT
Vertical Front Porch	tvfp	12	15	44	12	12	100	12	21	100	THT

5. Power sequence

5.1 Power On Sequence



5.2 Power Off Sequence

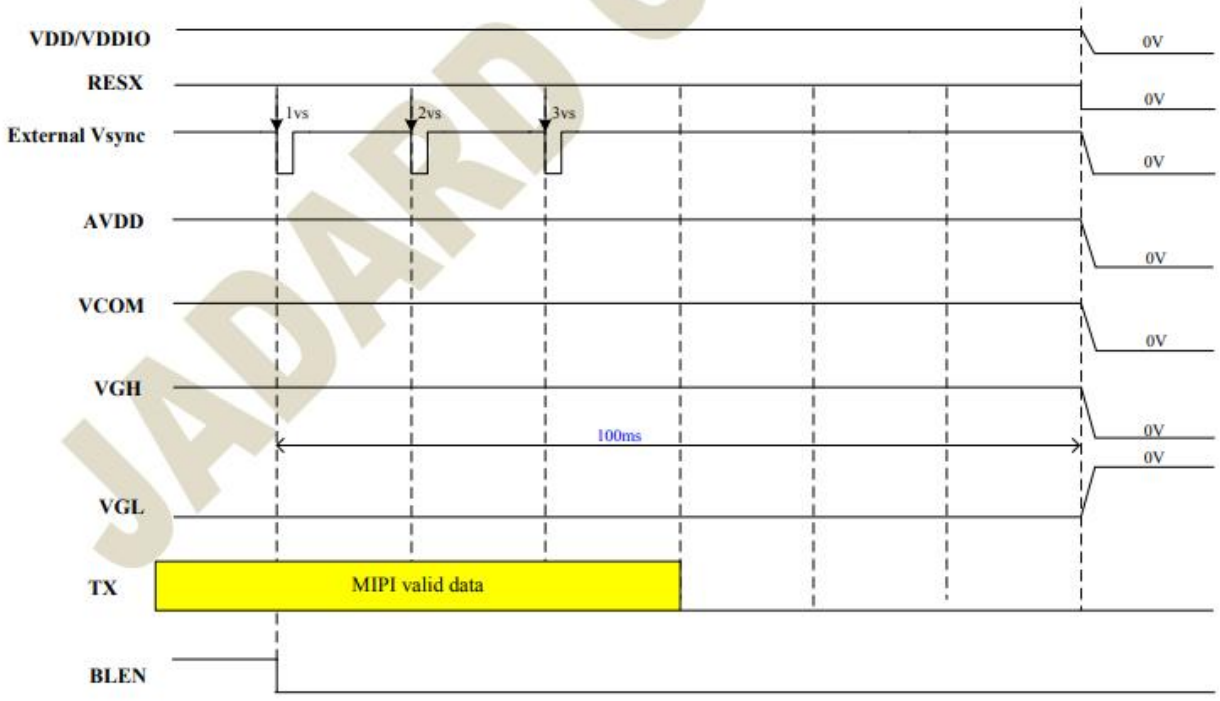


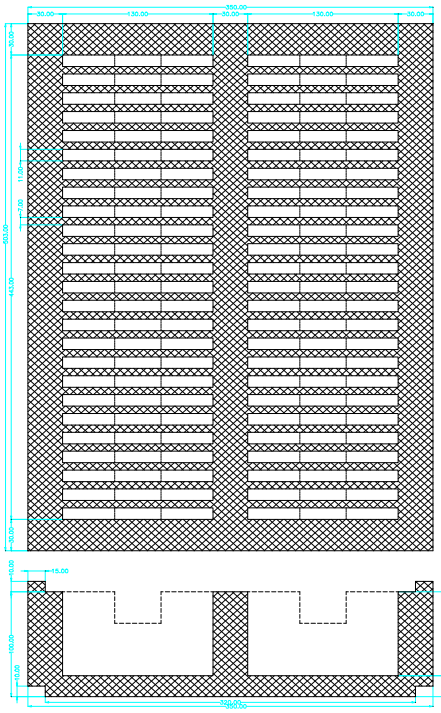
Figure 5.2: Power Off timing chart

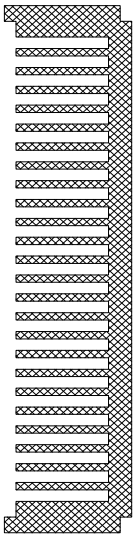
6. **Notice packing method**

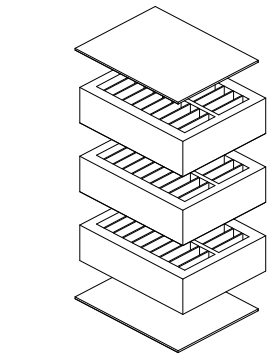
Pack the products so that they may not touch each other.
Put the inner cartons containing module into outer carton.
Attach the display label on the visible location on the outer carton.

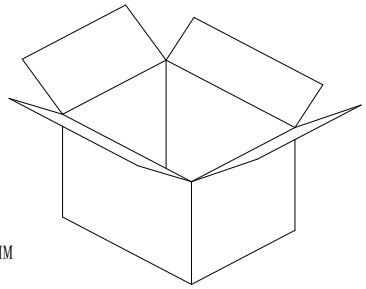
客户型号:

REV	REVISION RECORD	DATE	APPROVED	NAME
1				









备注：所有尺寸单位是MM

XinShengDa Display System The LCD Specialist		TOLERANCE	MATERIAL	FINISH	MODEL NAME
		±0.2			
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	DATE	APPROVED	CHECKED	DRAWN	FILE NAME
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