
SPECIFICATION

Revision: 0.1

H24291T

This module uses RoHS material

Revision Record

Rev No	date	Description
V0.1	2016-03-08	Preliminary Specification Release

CUSTOMER:

Approved by:

YHSKEJI:

Approved by:

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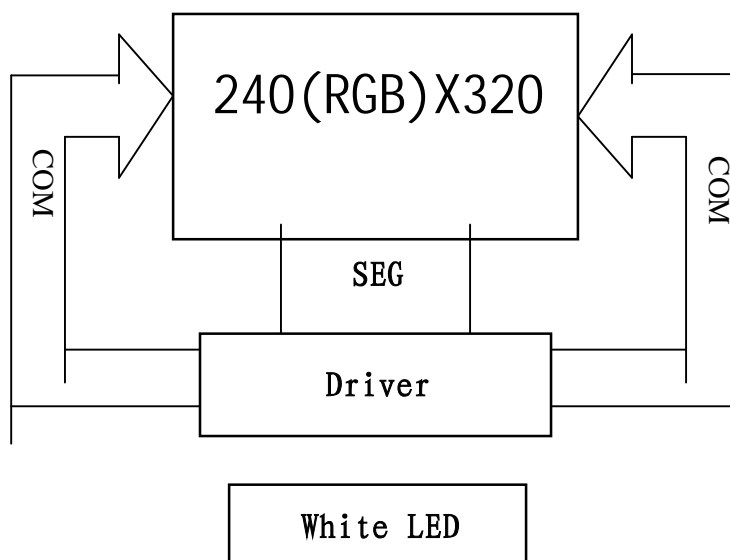
1. General Description

The model is a color TFT LCM. this module has a 2.4 inch diagonally measured active area with QVGA(240 horizontal by 320 vertical pixel array). each pixel is divided into red, green, blue dots which are arranged in vertical stripe and this module can display 262K colors.

2. General Feature

Item	Main Display	Remark
Display Mode	Normally white, Transmissive LCD	
Viewing direction	12:00 o'clock	
Driving method	a-si TFT active matrix	
Input signals	16/8 Bit CPU I/F	
Outside dimensions	60.26mm(W) × 42.72mm(H) × 3.45mm(D)(Typ)	
Active Area	36.72mm(W) × 48.96mm(H)	
Number of Pixels	240×RGB × 320 pixels	
Pixel Pitch	0.153mm(W) × 0.153mm(H)	
Pixel Arrangement	RGB vertical stripes	
Driver IC	ILI9341	
Weight	TBD	

3. Block Diagram



4.Pin Description

No.	Symbol	Description
1	DB0	Data bus
2	DB1	
3	DB2	
4	DB3	
5	GND	Ground
6	NC	NC
7	CS	Chip select signal
8	RS	Command/data select signal
9	WR	Write signal
10	RD	Read signal
11	IM0	IM0
12	XL	Tonch panel
13	YU	
14	XR	
15	YD	
16	LEDA	Backlight anode
17	LEDK1	Backlight cathode
18	LEDK2	
19	LEDK3	
20	LEDK4	
21	NC	NC
22	DB4	Data bus
23	DB8	
24	DB9	
25	DB10	
26	DB11	
27	DB12	
28	DB13	
29	DB14	
30	DB15	
31	RESET	Reset signal,active low
32	VCC	Power supply,2.6-3.3V(TYP)
33	IOVCC	Power supply for IO system,1.8~3.3V(TYP)
34	GND	Ground
35	DB5	Data bus
36	DB6	
37	DB7	

5. Absolute Maximum Ratings

$T_a=25\pm5^{\circ}\text{C}$, $V_{SS}=\text{GND}=0$

Item	Symbol	Ratings	Unit	Condition
Operating power	V_{DD}	$-0.3\sim 4.6$	V	
Operating temperature	T_{OPR}	$-20\sim 70$	$^{\circ}\text{C}$	No condensation
Storage temperature	T_{STR}	$-30\sim 80$		

6. Electrical Specification

6.1 DC Characteristics

$V_{SS}=0\text{V}$, $V_{DD}=2.85\pm 0.05\text{V}$, $T_{OPR}=-20\sim 70^{\circ}\text{C}$

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Supply power	V_{DD}		2.6	2.8	3.0	V
Input high voltage	V_{IH}		$0.8V_{DD}$	—	V_{DD}	
Input low voltage	V_{IL}		0	—	$0.2V_{DD}$	
Output high voltage	V_{OH}		$0.8V_{DD}$	—	—	
Output low voltage	V_{OL}		—	—	$0.2V_{DD}$	
Logic current consumption	I_{DD}		—	-	-	mA
Current consumption during standby mode	I_s		—	30	—	uA

6.2 Backlight Circuit Characteristics(4 LEDs parallel connection):

Item	Symbol	Min	Typ.	Max.	Unit	Condition
Operating voltage	V_{LED}	-	3.2		V	
Operating current	I_{LED}	—	60	80	mA	60 mA
Back blight luminance (display white)		3500	-	—	cd/m^2	$3500\text{ cd}/\text{m}^2$

7. Optical Specification

Optical characteristics are determined after the unit has been on and stable for approximately 30 minutes in a dark environment at 25°C . The values specified are at an approximate distance of 500mm from the LCD surface at a viewing angle θ equal to 0.

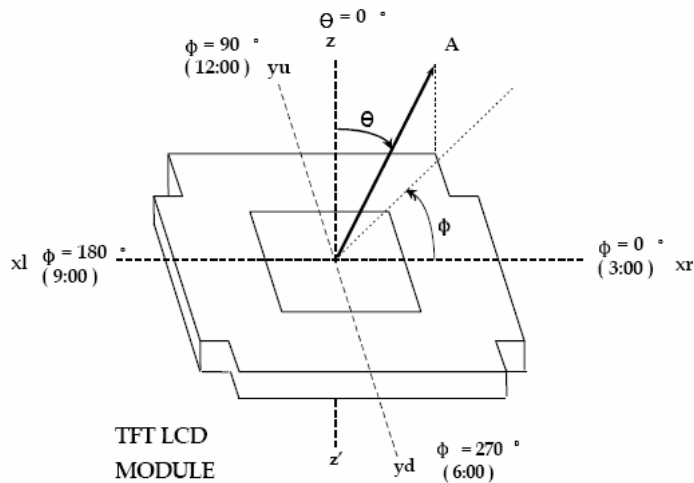
7.1 LCD Optical Characteristics

Ta=25°C

parameter		Symbol	Condition	Min	Typ	Max	Unit
Viewing Angle	$\Phi = 90^\circ$	θ	$Cr > 10$	35	45	-	deg
	$\Phi = 270^\circ$			10	20	-	
	$\Phi = 0^\circ$			35	45	-	
	$\Phi = 180^\circ$			35	45	-	
Contrast ratio		Cr	$\theta=0$ $\Phi=0$	-	500	-	
Response time		Tr+Tf		-	16	-	ms
Surface Luminance		Lv		-	-	-	Cd/m2
CIE(x,y) chromaticity	RED	X	$\theta=0$ $\Phi=0$	0.606	0.626	0.646	
		Y		0.314	0.319	0.339	
	GREEN	X		0.299	0.319	0.339	
		Y		0.537	0.557	0.577	
	BLUE	X		0.122	0.142	0.162	
		Y		0.102	0.122	0.142	
	WHITE	X		0.298	0.318	0.338	
		Y		0.317	0.337	0.357	

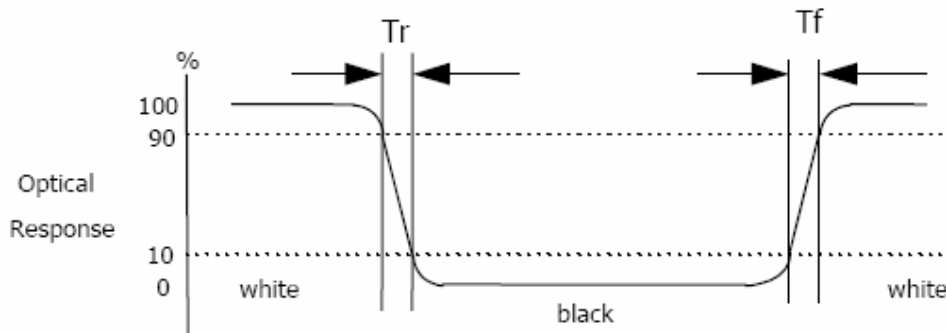
7.2 Measurement system

(1) LCD Viewing Angle



viewing angle is the angle at which the contrast ratio is greater than 10. the angles are determined for the horizontal or x axis and the vertical y axis with respect to the z axis which is normal to the lcd surface.

(2) Response time



Response time is the time required for the display to transition from white to black (Rising time, Tr) and from black to white (Falling time, Tf).for additional information

(3) Contrast Ratio(CR)

Contrast Ratio(CR) is defined mathematically as:

$$\text{Contrast Ratio} = \frac{\text{Surface Luminance with all white pixels}}{\text{Surface Luminance with all black pixels}}$$

Surface luminance is the center point across the lcd surface 500mm from the surface with all pixels displaying white.

8. Application Circuit

Please consult our technical department for detail information.

9. Outline Dimension

