

TFT LCD MODULE

4.3inch 480RGB\*272DOTS

MODULE NUMBER: 043B113C-07A

REVISION: A

Customer:
Approved by

From: Wisevision Optronics Co.,Ltd.
Approved by

Notes:

1. Please contact Wisevision Optronics Co.,Ltd. before assigning your product based on this module specification
2. The information contained herein is presented merely to indicate the characteristics and performance of our products. No responsibility is assumed by Wisevision Optronics Co.,Ltd. for any intellectual property claims or other problems that may result from application based on the module described herein.

## 1. GENERAL SPECIFICATION

- 1 Resolution 分辨率: 480xRGBx272
- 2 Module Size 模组尺寸: 105.6x67.3x3mm
- 3 Panel Active Area 可视区域: 95.04(H)x53.86(V)mm
- 4 Pixel Pitch 像素尺寸: 0.066(H)x0.198(V)mm
- 5 Pixel Arrangement 像素排列: RGB
- 6 Viewing Direction 视角: ALL O" clock
- 7 Driver IC 驱动芯片: 3047
- 8 Interface 接口方式: RGB 24bit
- 9 Light Source 背光源: 7 die White side LED
- 10 NTSC 色彩饱和度: 55% (TYP)
- 11 Contrast Ratio 对比度: 800 (MIN)
- 12 Luminance 亮度: 300 cd/m<sup>2</sup> (TYP)
- 13 Number of Colors 颜色数量 16.7M
- 14 Display Color 显示颜色:16.7M
- 15 Display Mode 显示模式: Normally BLACK
- 16 Panel Type 面板类型: TFT

## 2. MAXIMUM ABSOLUTE LIMIT

Item	Symbol	Standard value	Unit
Power supply voltage for logic	V <sub>CC</sub>	-0.3~+6	V
	V <sub>DDI</sub>	-0.3~+4.5	V
Operating temperature	T <sub>opr</sub>	-20~+70	°C
Storage temperature	T <sub>stg</sub>	-30~+80	°C

Note: Voltage greater than above may damage the module

All voltages are specified relative to VSS=0V

## 3. ELECTRICAL CHARACTERISTICS.

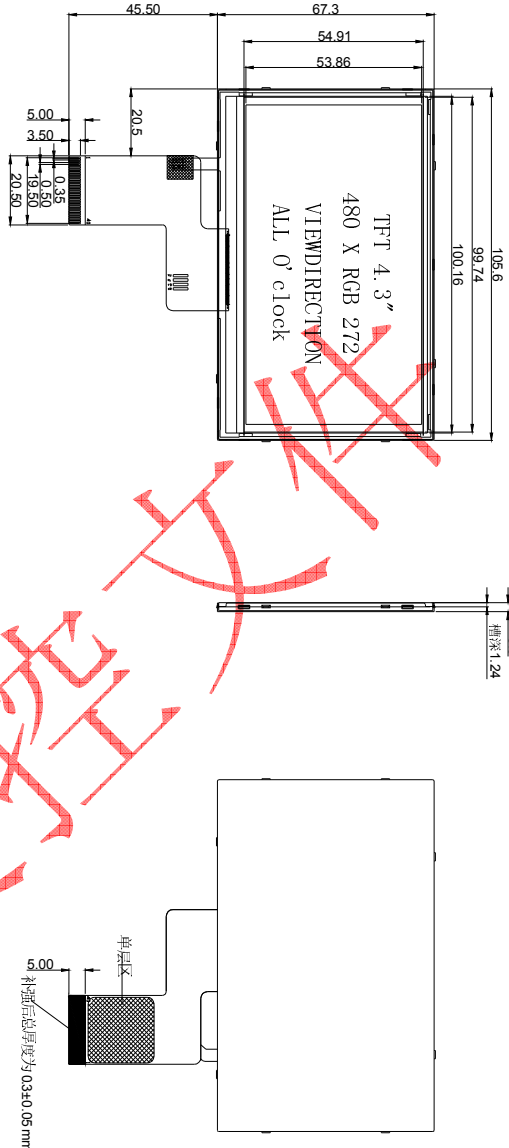
### DC Characteristics

Item	Symbol	Min	Typ	Max	Unit	Test condition
Supply voltage for logic	V <sub>CC</sub>	-	2.8	-	V	-
Supply voltage for I/O	V <sub>DDI</sub>	-	1.8	-	V	-
Backlight voltage	V <sub>BL</sub>	-	21	-	V	I <sub>BL</sub> =20mA

## 4.MECHANICAL SPECIFICATION

NOTES:

1. DISPLAY TYPE: 4.3" TFT
2. VIEWING DIRECTION: ALL
3. POLARIZER MODE: TRANSMISSIVE/NORMALLY BLACK
4. DRIVER IC:3047
5. OPERATING TEMP.: -20° C~70° C
6. STORAGE TEMP.: -30° C~80° C
7. BACK LIGHT: 10 CHIP-WHITE LED: 40MA, 16V
8. LCM Luminance: 300 CD/M2 (TYP)
9. UNMARKED TOLERANCE: ±0.2
10. 建议填充开槽可视区比 LCD A. A区单边大 0.2mm
11. 产品符合ROHS标准



Dimensions: 105.6, 99.74, 100.16, 67.3, 54.91, 53.86, 45.50, 20.5, 5.00, 3.50, 0.35, 1.50, 13.50, 20.50, 3.0, 插深1.24, 5.00, 补强点总厚度为0.3±0.05 mm, 单层区

Text on display: TFT 4.3" 480 X RGB 272 VIEWDIRECTION ALL 0' clock

Item	Date	Remark
A	20220423	Original Drawing

Customer Approval				Wisevision Optronics Co., Ltd.				Drawing Number		Rev.
Signature		Title		E. E.		Panel / E.		4.3" TFT		A
Ulans Otherwise Specified		B043B113C-07A		Jesen				Soda Lime / Polyimide		
Unit	mm	By	Date					Scale	Sheet	Size
General Requirement		Drawn	20220423					1:1	1 of 1	A3
Tolerance	±0.3									
Dimension	±1									
Angle										

No.	SCRM
1	LEDK
2	LEDA
3	GND
4	VDD
5	R0
6	R1
7	R2
8	R3
9	R4
10	R5
11	R6
12	R7
13	G0
14	G1
15	G2
16	G3
17	G4
18	G5
19	G6
20	G7
21	B0
22	B1
23	B2
24	B3
25	B4
26	B5
27	B6
28	B7
29	GND
30	CLK
31	DISP
32	Hsync
33	Vsync
34	DEN
35	NC
36	GND
37	XRNCD
38	YRNCD
39	XRNCD
40	YRNCD

## 5.PIN DESCRIPTION.

Pin no.	Symbol	Function
1	LEDK	Cathode of LED backlight
2	LEDA	Anode of LED backlight
3	GND	Ground
4	VDD	Power supply for logic 2.8V
5-12	R0-R7	Data Bus
13-20	G0-G7	Data Bus
21-28	B0-B7	Data Bus
29	GND	Ground
30	DCLK	Dot clock signal
31	DISP	Dot clock
32	HSYNC	Horizon SYNC signal
33	VSYNC	Vertical SYNC signal
34	DE	Data enable input in RGB interface
35	NC	NC
36	GND	Ground
37-40	NC	NC

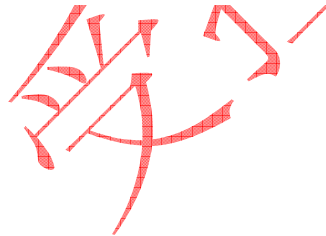
## 6. LCM Optical Characteristics

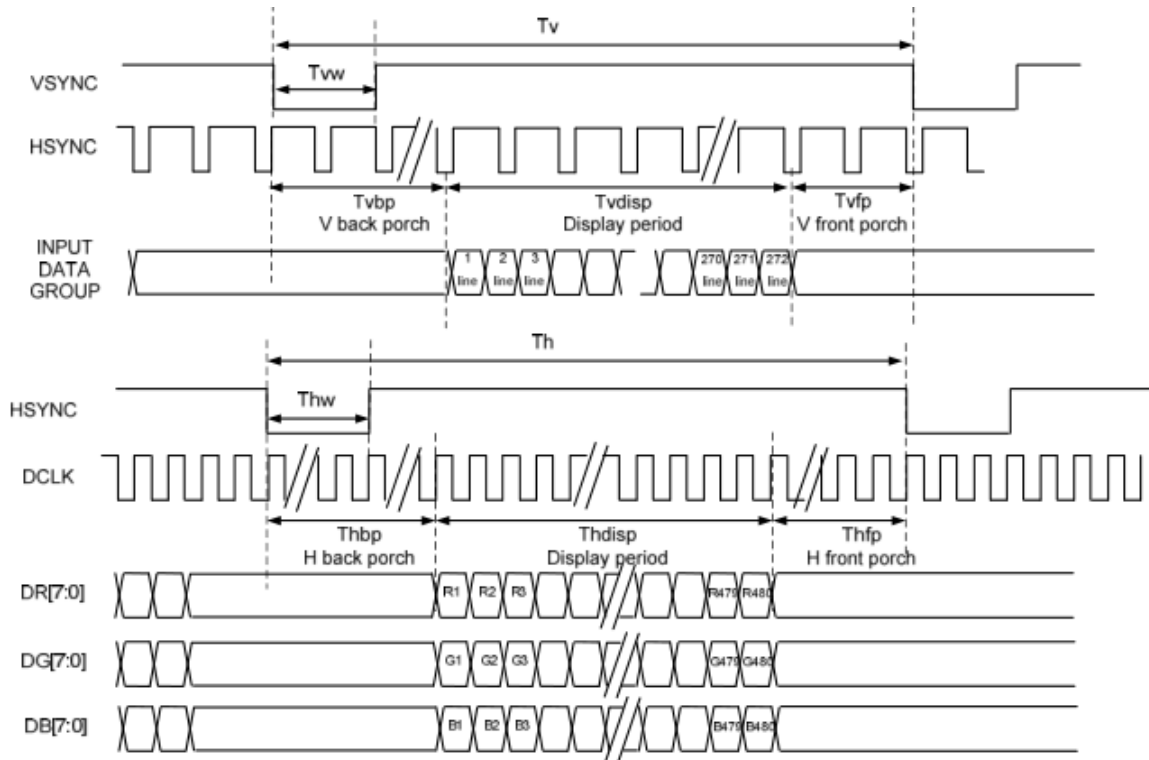
Item		Symbol	Condition	Min.	Typ.	Max.	Unit
Viewing Angle Range 视角	Left	$\theta_L$	$CR \geq 10$	-	85	-	degree
	Right	$\theta_R$		-	85	-	
	Top	$\theta_T$		-	85	-	
	Bottom	$\theta_B$		-	85	-	
Response Time		$T_{on} + T_{off}$	$\theta = \phi = 0^\circ$	-	30	40	ms
Contrast Ratio 对比度		CR	$\theta = \phi = 0^\circ$	500	800-	-	-
Luminance 亮度		L	$\theta = \phi = 0^\circ$	260	300	-	cd/m <sup>2</sup>
Color Chromaticity (CIE1931) 色坐标	White	$W_x$	Normal $\theta = \phi = 0^\circ$	-0.03	0.290	+0.03	-
		$W_y$			0.300		
	Red	$R_x$					
		$R_y$					
	Green	$G_x$					
		$G_y$					
	Blue	$B_x$					
		$B_y$					
Uniformity 均匀度		UL	$\theta = \phi = 0^\circ$	80	85	-	%
Cross Talk		Ct			2		%
Flicker 闪烁		dB	-			-25	-

## 7 time series

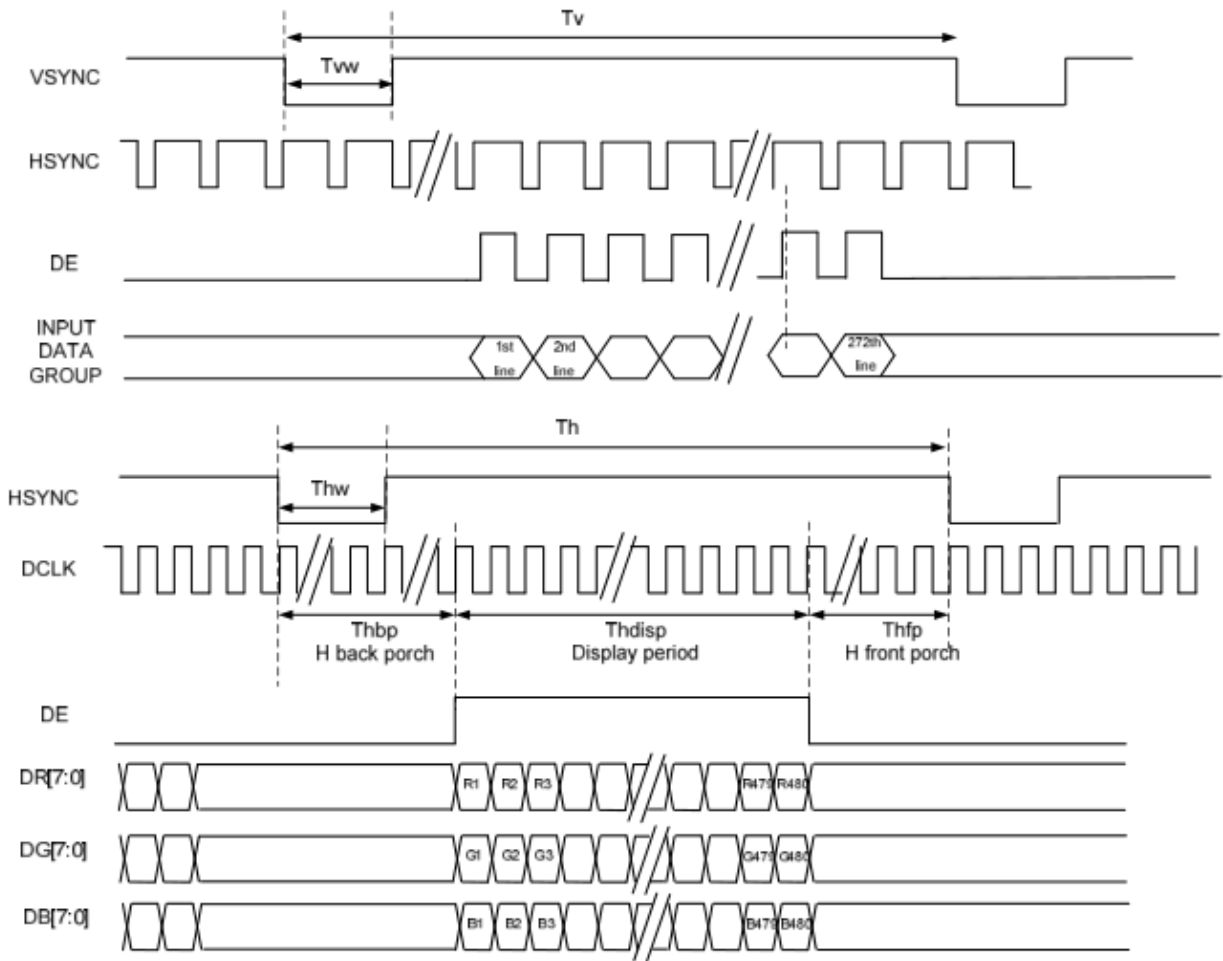
Parallel DE mode RGB input timing table

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
CLK frequency	fclk	7	9	12	MHz
DEV period time	Tv	277	288	400	H
DEV display area	Tvd	272			H
DEV blanking	Tvb	5	16	128	H
DEH period time	Th	520	525	800	CLK
DEH display area	Thd	480			CLK
DEH blanking	Thb	40	45	320	CLK
CLK cycle time	Tclk	83	110	143	ns
Clock width of high level	Tcwh	40	50	60	%
Clock width of low level	Tcwl	40	50	60	%
Clock rising time	trck		-	9	ns
Clock falling time	tfck		-	9	ns
Data Setup Time	t <sub>desu</sub>	10	-	-	ns
Data Hold Time	t <sub>dahd</sub>	10	-	-	ns
DE Setup Time	t <sub>desu</sub>	10	-	-	ns
DE Hold Time	t <sub>dahd</sub>	10	-	-	ns



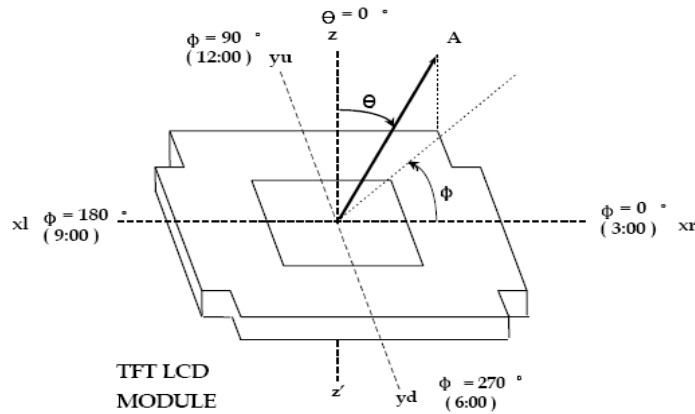


受控区



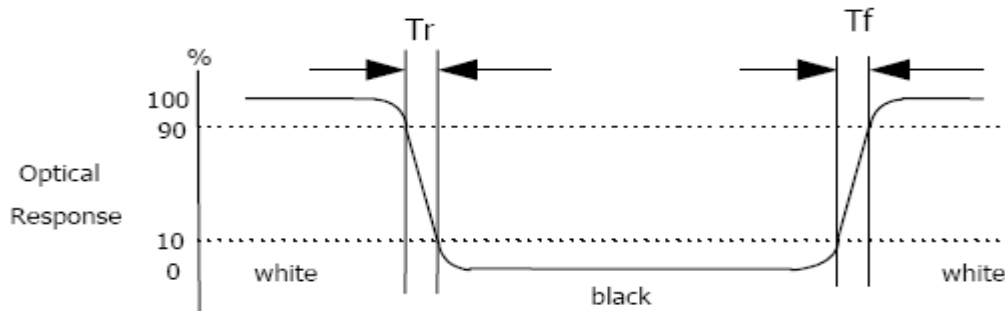


## 8. LCM Viewing Angle



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 or y axis with respect to the z axis which is normal to the LCD surface.

## 9. Response time



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

## 10. Reliability Test Items

Test Item 测试项目	Test Condition 测试条件	Test result determinant gist 实验结果判定
高温存储	80±3°C , 96H ;	试验结束后,已测试的LCD 样品必须在室内正常温湿度环境下放置2~4个小时以上才能进行功能和外观检查,样品不允许有以下缺陷: 1.模块中有气泡; 2.; 不显示; 3; 玻璃破碎; 4.需要满足模块电气性能。
低温存储	-30±3°C , 96H ;	
高温运行测试	70±3°C , 96H ;	
低温运行测试	-20±3°C , 96H ;	
高温高湿	50°C±3°C,90%±3%RH , 120H ;	
冷热冲击	-20°C/0.5h~25°C/10MIN~+70°C/0.5h for a total 10 cycles ;	
静电测试	±2KV, Human Body Mode, 150pF/330Ω ; ±8KV, Air Mode, 150pF/330Ω ;	
震动测试	Random vibration , 1. 5.0Hz,0.01g <sup>2</sup> /Hz,0.0dB/Oct 2.100.0Hz,0.01g <sup>2</sup> /Hz,-0.126xE+02dB/Oct 3. 300.0Hz, 0.0001g <sup>2</sup> /Hz, z axial 30 minutes,-z axial 10 minutes, x axial 10 minutes, y axial 10 minutes.	
Contact discharge	±2kV,±4kV to each points @ 10 discharges with +/- polarity (150pF, 330Ω),display power	
Mechanical Drop (with carton)	Height: 61cm 1 corner, 3edges, 6surfaces	

Remark: 注意 :

- 1:每个被测试的模块只能用于其中的一个测试项目。
2. 每个测试项目的样品数量为2片。
- 3.故障判断标准:基本规格,电气特性,机械特性,光电特性。