TFT DISPLAY SPECIFICATION



WINSTAR Display Co.,Ltd.
華凌光電股份有限公司

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SPECIFICATION

CUSTOMER : _____

MODULE NO.: WF101-1024600JL#0SP1B-FC

APPROVED BY: **(FOR CUSTOMER USE ONLY)**	**PCB VERSION:** **DATA:**

SALES BY	APPROVED BY	CHECKED BY	PREPARED BY
			周园园
ISSUED DATE: 2022/10/27			

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Winstar Display Co., LTD 華凌光電股份有限公司	MODLE NO：
RECORDS OF REVISION	**DOC. FIRST ISSUE**

VERSION	DATE	REVISED PAGE NO.	**SUMMARY**
0	2022/10/27		First issue

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2.Summary

TFT 10.1" is a color active matrix thin film transistor (TFT) liquid crystal display without polarizer. This model is composed of amorphous silicon TFT as a switching device.
This TFT LCD has a 10.1" wide (16:9) diagonally measured active display area with WVGA (1024 horizontal by 600 vertical pixel) resolution. Each pixel is divided into Red, Green, Blue dots which are arranged in vertical stripes.

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3.General Specifications

Item	Dimension	Unit
Size	10.1	inch
Dot Matrix	1024 RGB X 600	dots
Module dimension	235(W) x145(H) x 6.75 (D)	mm
Active area	222.72 (H) x 125.28(V)	mm
Pixel pitch	0.2175(W) x 0.2088(H)	mm
LCD type	TFT, Normally Black, Transmissive	
Interface	LVDS	
Driver IC	EK79001HN + EK73215BCGA or equivalent	
Viewing Angle	85/85/85/85	
Aspect Ratio	16:9	
Backlight Type	LED,Normally White	
With /Without TP	With RTP	
Surface	Anti-Glare	

*Color tone slight changed by temperature and driving voltage.

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4.Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	TOP	-20	—	+70	℃
Storage Temperature	TST	-30	—	+80	℃

Note: Device is subject to be damaged permanently if stresses beyond those absolute maximum ratings listed above

1. Temp. ≦60℃, 90% RH MAX. Temp.＞60℃, Absolute humidity shall be less than 90% RH at 60℃

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5.Electrical Characteristics

5.1. Typical Operation Conditions (At Ta = 25 °C,)

ITEM	SYMBOL	MIN	TYP	MAX	UNIT	NOTE
Digital Power Supply Voltage For LCD	VDD	3	3.3	3.6	V	Note1
Analog Power Supply Voltage	AVDD	9.89	10.2	10.5	V	-
Gate On Power Supply Voltage	VGH	19.4	20.0	20.6	V	-
Gate Off Power Supply Voltage	VGL	-10.3	-10.0	-9.7	V	-
Common Power Supply Voltage	VCOM	4.0	4.3	4.6	V	Note2
Input logic high voltage	VIH	0.7 V_{DD}	-	V_{DD}	V	Note3
Input logic low voltage	VIL	0	-	0.3 V_{DD}	V	

Note1:VDD setting should match the signals output voltage (refer to Note 3) of customer's system board.
Note 2.Please adjust VCOM to make the flicker level be minimum.
Note 3:RESET,STBYB,U/D,L/R,SELB

5.2. Current Consumption

Item	Symbol	Values			Unit	Remark
		Min.	Typ.	Max.		
Current for Driver	IGH	-	0.48	1.0	mA	VGH =20.0V
	IGL	-	1.57	2.5	mA	VGL = -10.0V
	IVDD	-	24	36	mA	VDD =3.3V
	IAVDD	-	13.7	25	mA	AVDD =10.2V

7.Optical Characteristics

Item		Symbol	Condition.	Min	Typ.	Max.	Unit	Remark
Response time		Tr	θ=0°、Φ=0°	-	10	20	.ms	Note 3
		Tf		-	20	25	.ms	
Contrast ratio		CR	At optimized viewing angle	600	800	-	-	Note 4
Color Chromaticity	White	Wx	θ=0°、Φ=0	0.252	0.302	0.352	-	Note 2,6,7
		Wy		0.274	0.324	0.374	-	
Viewing angle	Hor.	ΘR	CR≧10	80	85	-	Deg.	Note 1
		ΘL		80	85	-		
	Ver.	ΦT		80	85	-		
		ΦB		80	85	-		
Brightness		-	-	700	800	-	cd/m^2	Center of display
Uniformity		(U)	-	70	-	-	%	Note 5

Ta=25±2℃

Note 1: Definition of viewing angle range

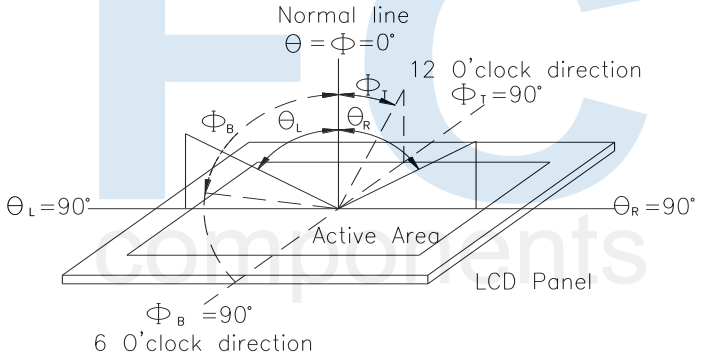


Fig. 7.1. Definition of viewing angle

Note 2: Test equipment setup:

After stabilizing and leaving the panel alone at a driven temperature for 10 minutes, the measurement should be executed. Measurement should be executed in a stable, windless, and dark room. Optical specifications are measured by Topcon BM-7 or BM-5 luminance meter 1.0° field of view at a distance of 50cm and normal direction.

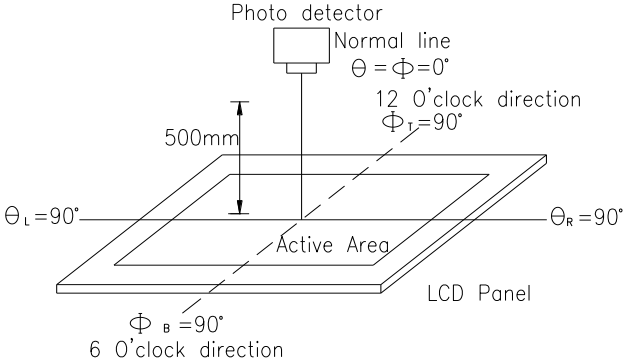


Fig. 7.2. Optical measurement system setup

8.Interface

8.1. TFT LCD MODULE

Pin No.	Symbol	Description
1	VCOM	Common voltage
2	VDD	Digital power
3	VDD	Digital power
4	NC	Not connect
5	Reset	Global reset pin. Active low to enter reset state. Suggest to connecting with an RC reset circuit for stability. Normally pull high. (R=10KΩ，C=1μF)
6	STBYB	Standby mode, normally pull high STBYB=”1”, normal operation STBYB=”0”,timing control, source driver will turn off, all output are high-Z
7	GND	Digital ground
8	RXIN0-	Negative LVDS differential data inputs
9	RXIN0+	Positive LVDS differential data inputs
10	GND	Digital ground
11	RXIN1-	Negative LVDS differential data inputs
12	RXIN1+	Positive LVDS differential data inputs
13	GND	Digital ground
14	RXIN2-	Negative LVDS differential data inputs
15	RXIN2+	Positive LVDS differential data inputs
16	GND	Digital ground
17	RXCLKN-	Negative LVDS differential clock inputs
18	RXCLKN+	Positive LVDS differential clock inputs
19	GND	Digital ground
20	RXIN3-	Negative LVDS differential data inputs
21	RXIN3+	Positive LVDS differential data inputs
22	GND	Digital ground
23	NC	Not connect
24	NC	Not connect
25	GND	Digital ground
26	NC	Not connect
27	NC	Not connect
28	SELB	6-bit/8-bit input select SELB = L , 8-bit ; SELB = H , 6-bit

29	AVDD	Analog power
30	GND	Digital ground
31	LED-	LED Cathode
32	LED-	LED Cathode
33	L/R	Left or right display control
34	U/D	Up / down display control
35	VGL	Negative power for TFT
36	NC	Not connect
37	NC	Not connect
38	VGH	Positive power for TFT
39	LED+	LED Anode
40	LED+	LED Anode

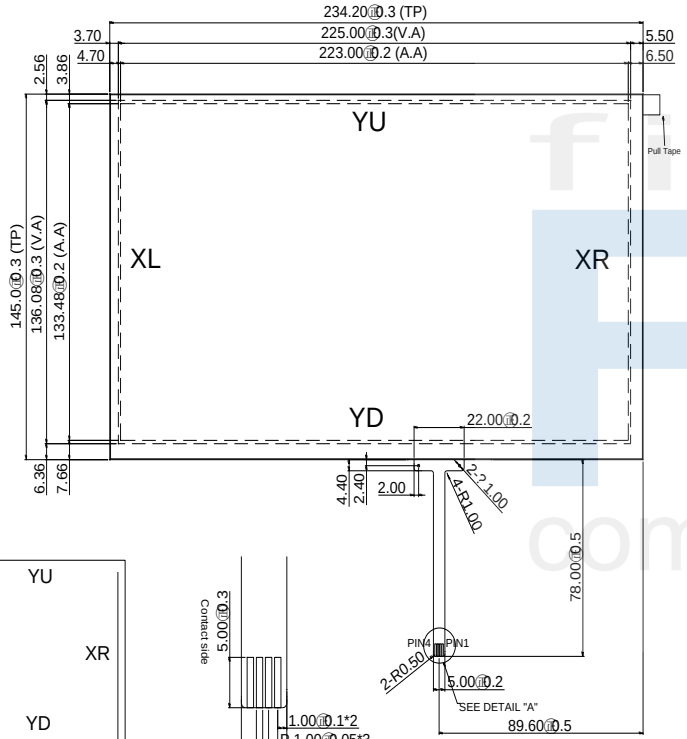
When L/R=”0”,set right to left scan direction.
When L/R=”1”,set left to right scan direction.
When U/D=”0”,set top to bottom scan direction.
When U/D=”1”,set bottom to top scan direction.

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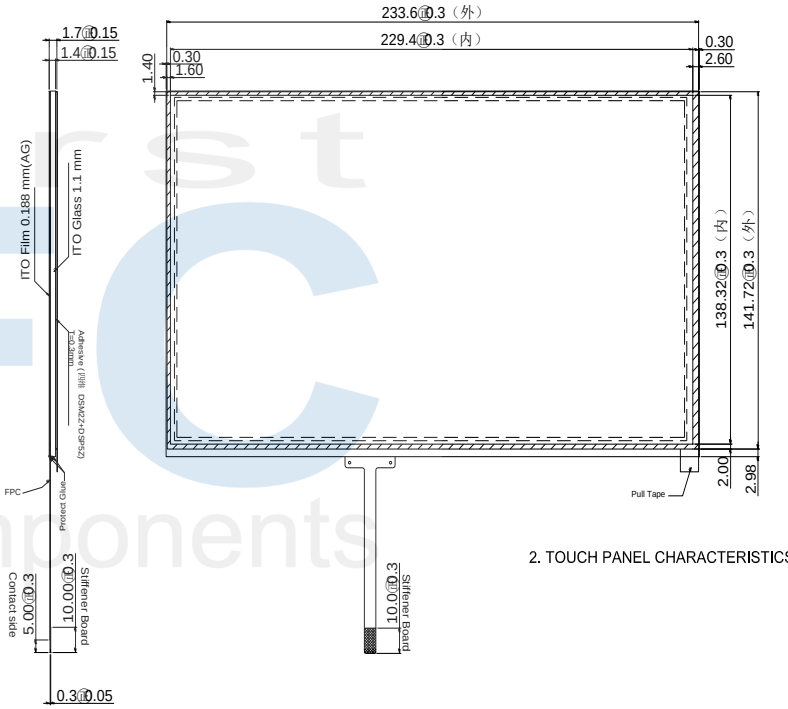
10.Touch Panel Information

NOTES: ALL MATERIALS AND COMPONENTS MUST BE RoHS COMPLIANT.

FRONT VIEW



BACK VIEW



逻辑线路图

Detail A
Scale 4:1

1. TOUCH PANEL PIN ASSIGNMENT

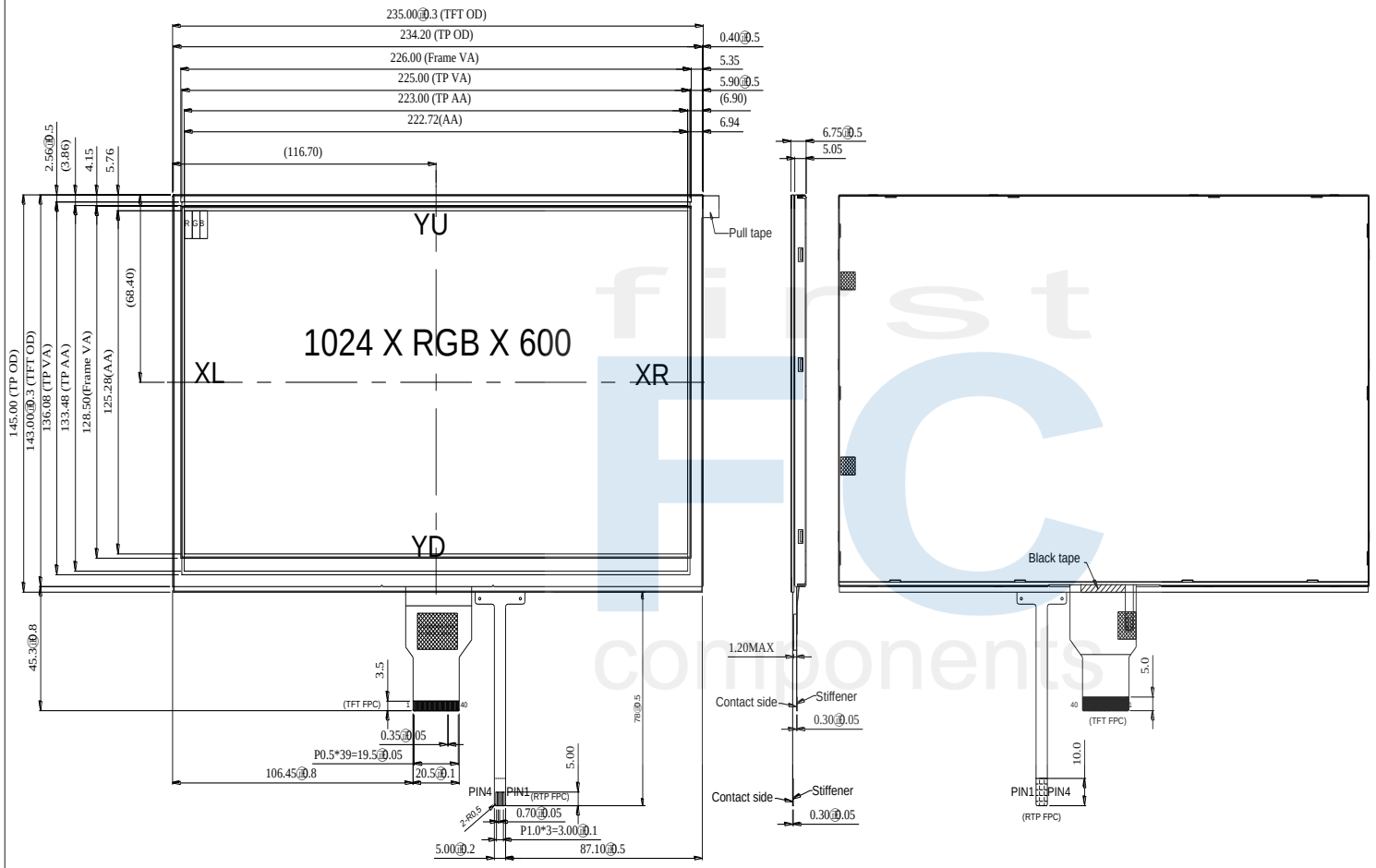
1	YU	Top ITO Film Terminal
2	XR	Bottom ITO Glass Terminal
3	YD	Top ITO Film Terminal
4	XL	Bottom ITO Glass Terminal

2. TOUCH PANEL CHARACTERISTICS

2.TOLERANCE NO SPEICFIED: ±0.3mm

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11.Contour Drawing



TFT FPC

PIN NO.	SYMBOL	PIN NO.	SYMBOL
1	VCOM	21	RXin3+
2	VDD	22	GND
3	VDD	23	NC
4	NC	24	NC
5	Reset	25	GND
6	STBYB	26	NC
7	GND	27	NC
8	RXin0-	28	SELB
9	RXin0+	29	AVDD
10	GND	30	GND
11	RXin1-	31	LED-
12	RXin1+	32	LED-
13	GND	33	L/R
14	RXin2-	34	U/D
15	RXin2+	35	VGL
16	GND	36	NC
17	RXCLKN-	37	NC
18	RXCLKN+	38	VGH
19	GND	39	LED+
20	RXin3-	40	LED+

RTP FPC

PIN NO.	SYMBOL
1	YU
2	XR
3	YD
4	XL

The non-specified tolerance of dimension is ±0.3 mm .