TFT DISPLAY SPECIFICATION



WINSTAR Display Co.,Ltd.
華凌光電股份有限公司

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Winstar Display Co., LTD
華凌光電股份有限公司

SPECIFICATION

CUSTOMER : _____

MODULE NO.: WF70-800480C5D#003-FC

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

SALES BY	APPROVED BY	CHECKED BY	PREPARED BY
			周园园
ISSUED DATE: 2022/12/28			

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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	2022/12/28		First issue

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Summary

TFT 7.0”is a TN transmissive type color active matrix TFT liquid crystal display that use amorphous silicon TFT as switching devices. This module is a composed of a TFT_LCD module, It is usually designed for industrial application and this module follows RoHs.

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General Specifications

Item	Dimension	Unit
Size	7.0	inch
Dot Matrix	800 x RGBx480(TFT)	dots
Module dimension	164.9(H) ×100(V) ×7.5(D)	mm
Active area	154.08 (H) × 85.92 (V)	mm
Pixel pitch	0.1926(W) x 0.1790(H)	mm
LCD type	TFT, Normally White, Transmissive	
View Direction	12 o'clock	
Gray Scale Inversion Direction	6 o'clock	
Aspect Ratio	16:9	
Backlight Type	LED,Normally White	
Driving IC	EK79713+EK73202 or equivalent	
TFT Interface	RGB 24 bit	
CTP IC	GT911 or equivalent	
CTP FW Version	65	
CTP Interface	I2C	
CTP Resolution	800 * 480	
With /Without TP	With CTP	
Surface	Glare	

*Color tone slight changed by temperature and driving voltage.

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Absolute Maximum Ratings

Voltage (AGND=GND=0V, Ta = 25℃)

Item	Symbol	Values		Unit	Remark
		Min.	Max.		
Operating Temperature	TOP	-20	+70	℃	
Storage Temperature	TST	-30	+80	℃	
Power Voltage	DVDD	-0.3	3.96	V	
	AVDD	-0.5	14.85	V	
	VGH	-0.3	40.0	V	
	VGL	-20.0	0.3	V	
	VGH-VGL	12.0	40.0	V	

Note: The absolute maximum rating values of this product are not allowed to be exceeded at any times.
Should a module be used with any of the absolute maximum ratings case, the module may be permanently destroyed.

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Electrical Characteristics

Typical Operation Range

Item	Symbol	values			Unit
		Min.	Typ.	Max.	
Power Voltage	VDD	3.0	3.3	3.6	V
	AVDD	10.2	10.4	10.6	V
	VGH	14.5	15	15.5	V
	VGL	-10.5	-10	-9.5	V
Input signal voltage	VCOM	3.54	4.04	4.54	V
Input logic high voltage	VIH	0.7 VDD	-	VDD	V
Input logic low voltage	VIL	0	-	0.3 VDD	V
Supply CTP	VDDT	2.8	3.0	3.3	V
	I_{VDDT}	-	12	18	mA

Current Consumption

Item	Symbol	Values			Unit	Remark
		Min.	Typ.	Max.		
Current for Driver	IGH	-	0.5	1.5	mA	VGH=15V
	IGL	-	0.5	1.5	mA	VGL=-10V
	IVDD	-	10	20	mA	VDD=3.3V
	IAVDD	-	20	50	mA	AVDD=10.4V
	IVCOM	-	0.2	1.5	mA	VCOM=3.5V

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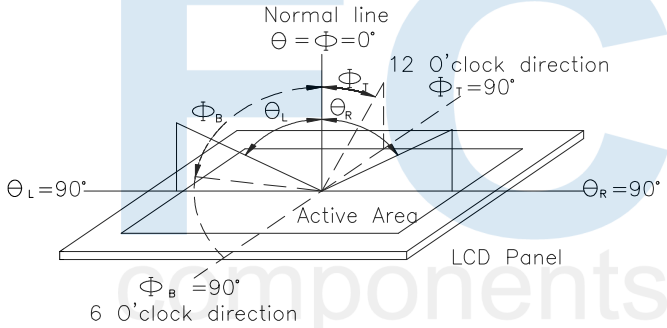
Optical Characteristics

TFT LCD characteristic

Item		Symbol	Condition.	Min	Typ.	Max.	Unit	Remark
Response time		Tr+ Tf	θ=0°、Φ=0°	-	25	50	.ms	Note 3
Contrast ratio		CR	At optimized viewing angle	500	800	-	-	Note 4
Color Chromaticity	White	Wx	θ=0°、Φ=0	0.247	0.277	0.307		Note 2,6,7
		Wy		0.265	0.295	0.325		
Viewing angle (Gray Scale Inversion Direction)	Hor.	ΘR	CR≧10	60	70	-	Deg.	Note 1
		ΘL		60	70	-		
	Ver.	ΦT		50	60	-		
		ΦB		60	70	-		
Brightness		-	-	300	340	-	cd/m²	Center of display
Uniformity		(U)	-	75	-	-	%	Note 5

Ta=25±2℃, ILED = 180mA

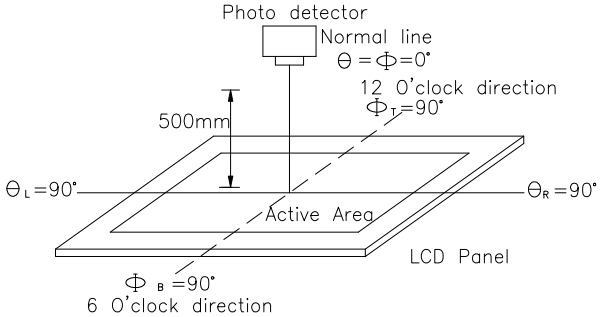
Note 1: Definition of viewing angle range



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-7orBM-5 luminance meter 1.0° field of view at a distance of 50cm and normal direction.



Optical measurement system setup

Note 3: Definition of Response time:

The response time is defined as the LCD optical switching time interval between “White” state

Interface

LCM PIN Definition

No.	Symbol	Function	Remarks
1-2	VLED+	Power for LED backlight(anode)	
3-4	VLED-	Power for LED backlight(Cathode)	
5	GND	Power Ground	
6	VCOM	Common Voltage	
7	DVDD	Power 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	No connection	
46	VCOM	Common Voltage	
47	DITHB	Dithering function	
48	GND	Power Ground	
49-50	NC	No connection	

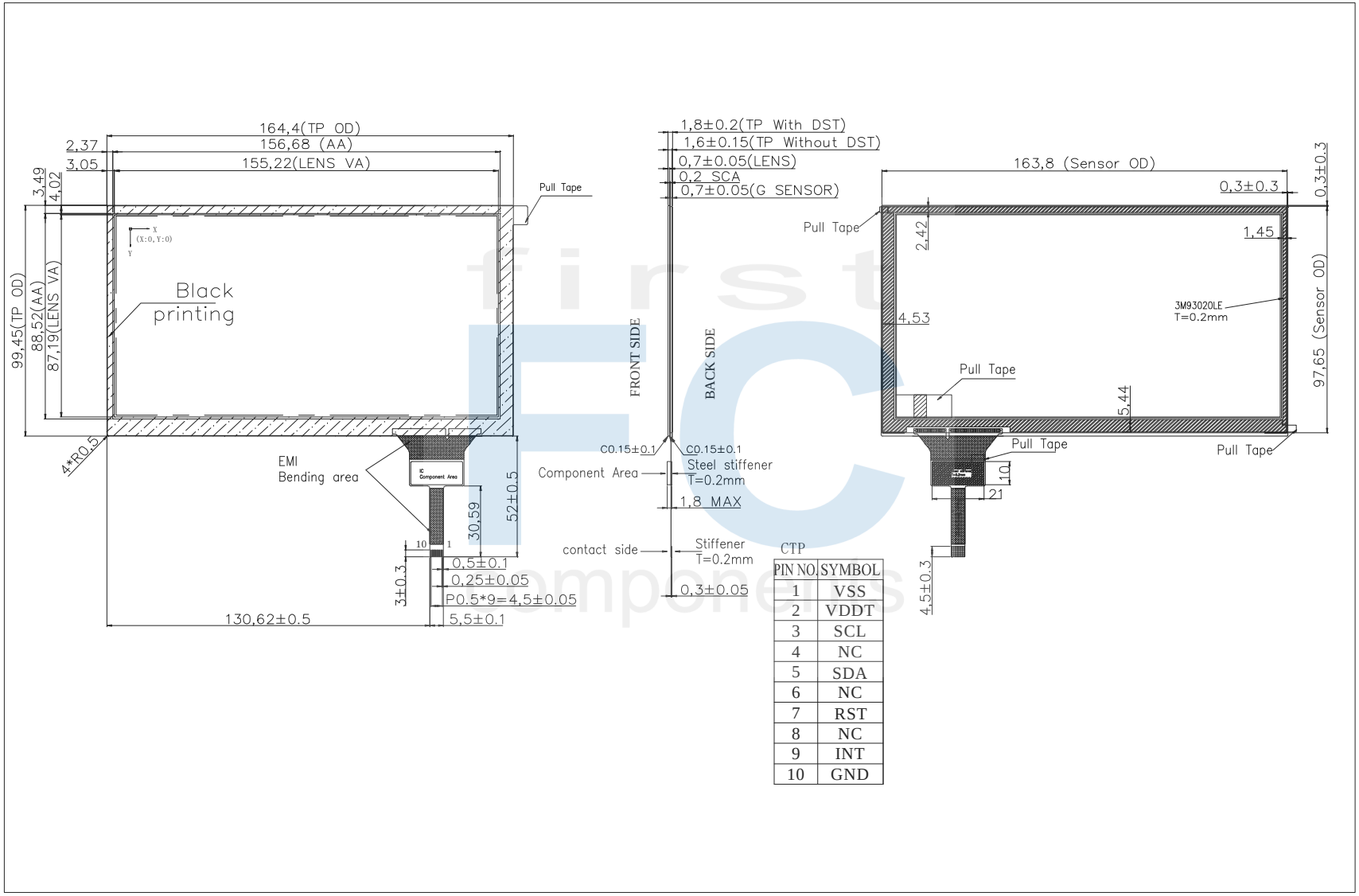
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CTP PIN Definition

Pin	Symbol	Function	Remark
1	VSS	Ground for analog circuit	
2	VDDT	Power Supply	
3	SCL	I2C clock input	
4	NC	No connect	
5	SDA	I2C data input and output	
6	NC	No connect	
7	RST	External Reset, Low is active	
8	NC	No connect	
9	INT	External interrupt to the host	
10	GND	Ground for analog circuit	

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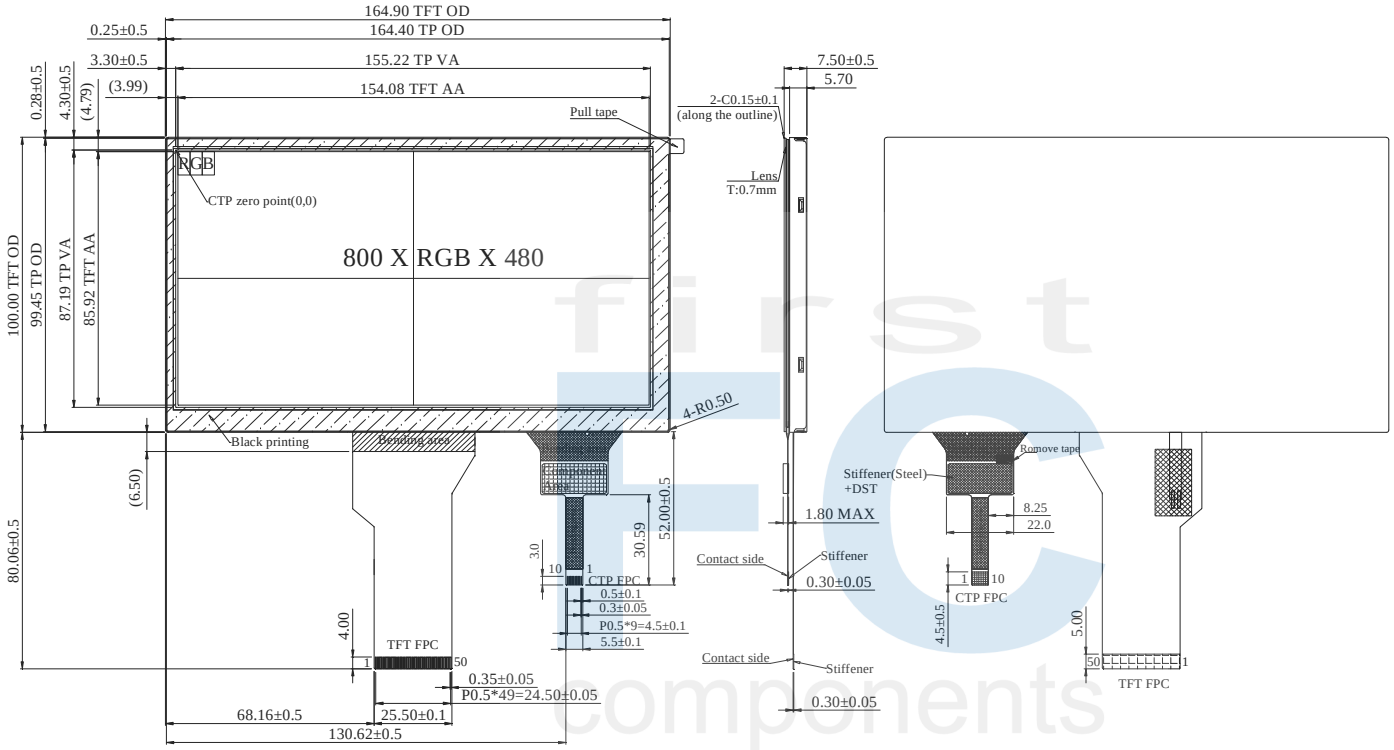
Touch Panel Information



CTP

PIN NO.	SYMBOL
1	VSS
2	VDDT
3	SCL
4	NC
5	SDA
6	NC
7	RST
8	NC
9	INT
10	GND

Contour Drawing



TFT

PIN NO.	SYMBOL	PIN NO.	SYMBOL	PIN NO.	SYMBOL
1	VLED+	21	G6	41	VGH
2	VLED+	22	G5	42	VGL
3	VLED-	23	G4	43	AVDD
4	VLED-	24	G3	44	RESET
5	GND	25	G2	45	NC
6	VCOM	26	G1	46	VCOM
7	DVDD	27	G0	47	DITHB
8	MODE	28	R7	48	GND
9	DE	29	R6	49	NC
10	VS	30	R5	50	NC
11	HS	31	R4		
12	B7	32	R3		
13	B6	33	R2		
14	B5	34	R1		
15	B4	35	R0		
16	B3	36	GND		
17	B2	37	DCLK		
18	B1	38	GND		
19	B0	39	L/R		
20	G7	40	U/D		

CTP

PIN NO.	SYMBOL
1	VSS
2	VDDT
3	SCL
4	NC
5	SDA
6	NC
7	RST
8	NC
9	INT
10	GND

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

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