TFT DISPLAY SPECIFICATION



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SPECIFICATION

CUSTOMER : _____

MODULE NO.: WF70-800480C4P#001-FC

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

SALES BY	APPROVED BY	CHECKED BY	PREPARED BY
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ISSUED DATE: 2022/11/02			

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	165.0(W)x 104.6(H) x 9.83(D)MAX	mm
Active area	152.4 x 91.44	mm
Pixel pitch	0.1905x 0.1905	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	
Controller IC	SSD1963	
Interface	Digital 8080 family MPU(16bit Parallel)	
With /Without TP	With RTP	
Surface	Anti-Glare	

*Color tone slight changed by temperature and driving voltage.

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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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Electrical Characteristics

Operating conditions:

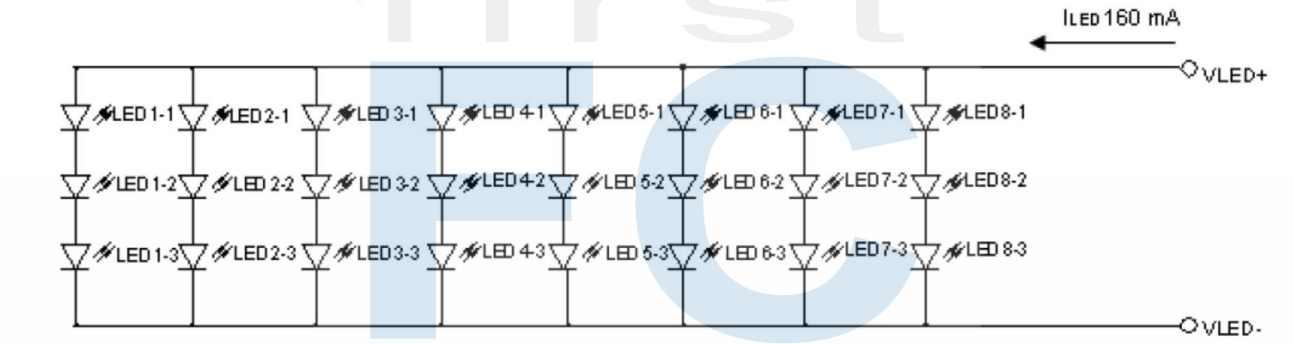
Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For LCM	VDD	-	3.0	3.3	3.6	V
Supply Current For LCM	IDD	Black Pattern	—	200	300	mA

Note 1 : This value is test for VDD=3.3V , Ta=25℃ only

LED driving conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
LED current	-	-	160	200	mA	
Power Consumption	VBL+=9.8V	-	1568	-	mW	
LED voltage	VBL+	8.4	9.8	11	V	Note 1
LED Life Time	-	-	50,000	-	Hr	Note 2,3,4

Note 1 : There are 1 Groups LED



Note 2 : Ta = 25 ℃
Note 3 : Brightness to be decreased to 50% of the initial value
Note 4 : The single LED lamp case

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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	700	1000	-	-	Note 4
Color Chromaticity	White	Wx	θ=0°、Φ=0	0.26	0.31	0.36		Note 2,6,7
		Wy		0.28	0.33	0.38		
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		-	-	200	350	-	cd/m2	Center of display
Uniformity		(U)	-	70	-	-	%	Note 5

Ta=25±2℃, ILED = 160mA

Note 1: Definition of viewing angle range

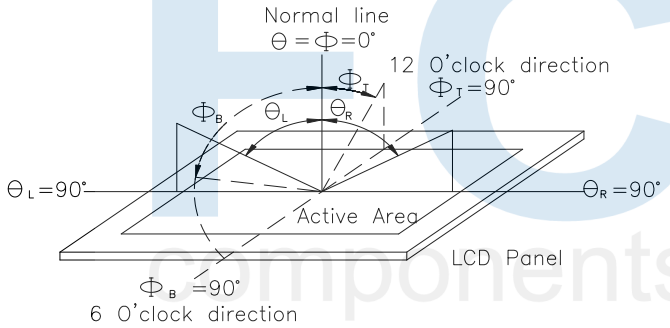


Fig.8.1. Definition of viewing angle

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

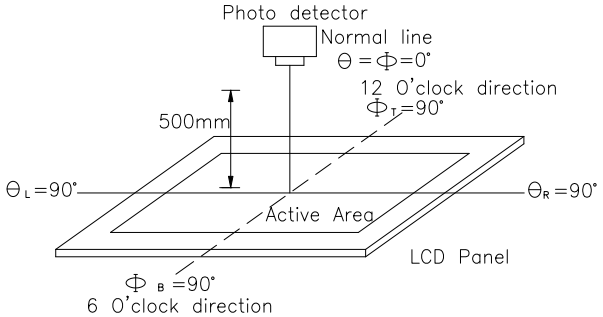


Fig. 8.2. Optical measurement system setup

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

Pin	Symbol	Description	Remark
1	VDD	Power Supply : +3.3V	
2	VDD	Power Supply : +3.3V	
3	DB0	Data bus	
4	DB1	Data bus	
5	DB2	Data bus	
6	DB3	Data bus	
7	DB4	Data bus	
8	DB5	Data bus	
9	DB6	Data bus	
10	DB7	Data bus	
11	DB8	Data bus	
12	DB9	Data bus	
13	DB10	Data bus	
14	DB11	Data bus	
15	DB12	Data bus	
16	DB13	Data bus	
17	DB14	Data bus	
18	DB15	Data bus	
19	CS	Chip select	
20	D/C	Data/Command select	
21	RD	Read strobe signal	
22	WR	Write strobe signal	
23	NC	No connect	
24	RST	Hardware reset	
25	NC	No connect	
26	NC	No connect	
27	NC	No connect	
28	NC	No connect	
29	NC	No connect	
30	NC	No connect	

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31	GND	Power Ground	
32	GND	Power Ground	

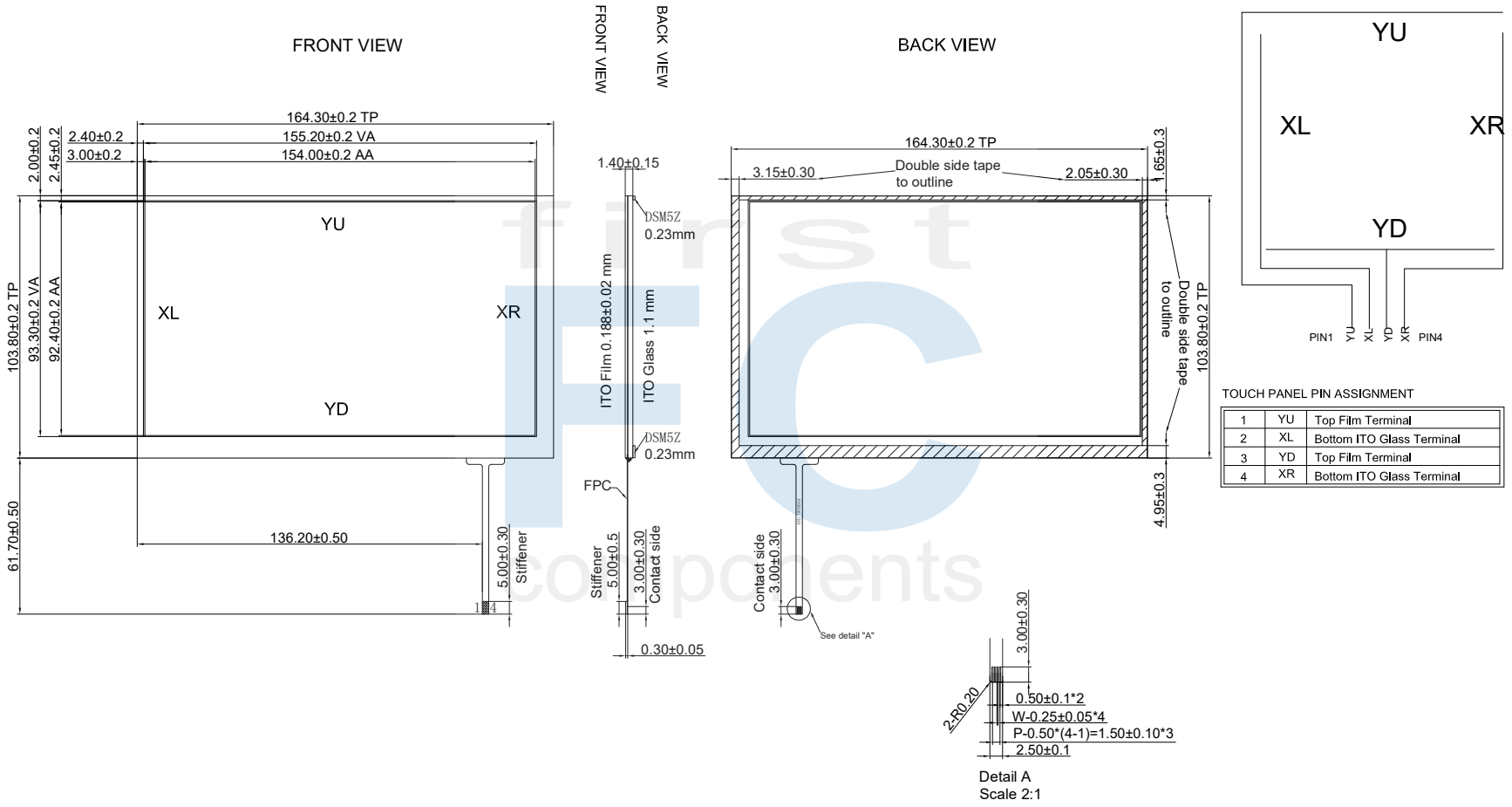
Backlight Driving Part

Pin No.	Symbol	Description
1	VLED+	Red, LED_ Anode
2	VLED-	White, LED_ Cathode

Note: The backlight interface connector is a model SM02B-BHSS-1-TB manufactured by JST or equivalent. The matching connector part number is BHSR-20VS-1 manufactured by JST or equivalent.

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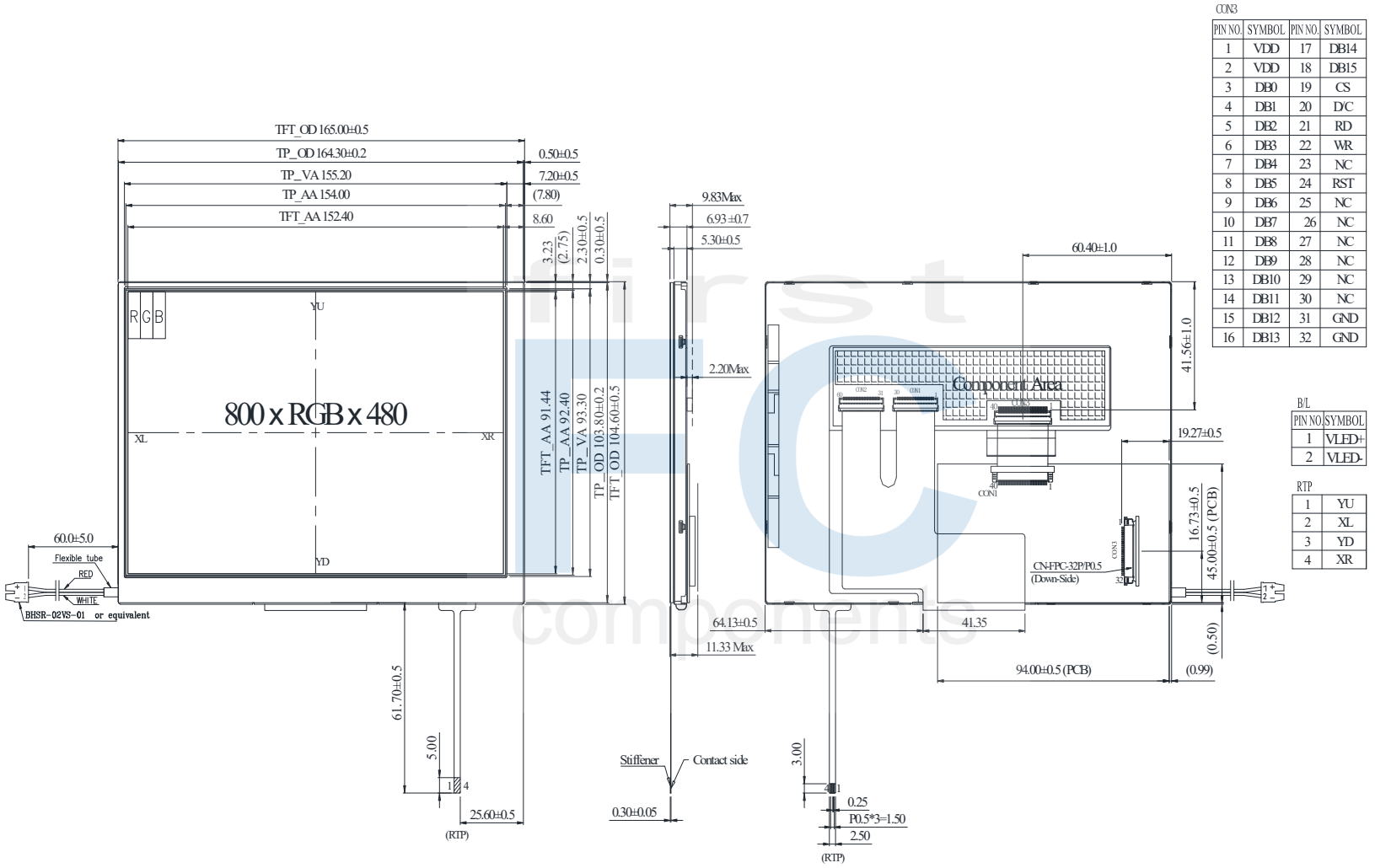
Touch Panel Information



TOUCH PANEL PIN ASSIGNMENT

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

Contour Drawing



CON3

PIN NO.	SYMBOL	PIN NO.	SYMBOL
1	VDD	17	DB14
2	VDD	18	DB15
3	DB0	19	CS
4	DB1	20	D/C
5	DB2	21	RD
6	DB3	22	WR
7	DB4	23	NC
8	DB5	24	RST
9	DB6	25	NC
10	DB7	26	NC
11	DB8	27	NC
12	DB9	28	NC
13	DB10	29	NC
14	DB11	30	NC
15	DB12	31	GND
16	DB13	32	GND

B/L

PIN NO.	SYMBOL
1	VLED+
2	VLED-

RTP

1	YU
2	XL
3	YD
4	XR

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