Winstar Display Co., LTD
華凌光電股份有限公司
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SPECIFICATION

CUSTOMER : _____

MODULE NO.: WF70-800480A2816D#004-FC

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

SALES BY	APPROVED BY	CHECKED BY	PREPARED BY
first FC components			葉虹蘭
ISSUED DATE: 2021/04/21			

General Specifications

Item	Dimension	Unit
Size	7.0	inch
Dot Matrix	800 x RGB x 480 (TFT)	dots
Module dimension	182.2 x 101.2x 12.0	mm
Active area	154.08 x 85.92	mm
Pixel Pitch	0.1926 X 0.179	mm
LCD type	TFT, Normally White, Transmissive	
Controller IC	SSD1963	
Interface	Digital 8080 family MPU 8bit/16bit	
View Direction	12 o'clock	
Gray Scale Inversion Direction	6 o'clock	
Aspect Ratio	16:9	
Backlight Type	LED ,Normally White	
Color arrangement	RGB-STRIPE	
With /Without TP	Without TP	
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: (CON2.Pin1=GND, Pin2=VDD)

Item	Symbol	Condition	Min	Typ	Max	Unit	Remark
Supply Voltage For LCM	VDD	—	3.0	3.1	3.3	V	—
Supply Current For LCM	IDD	—	—	140	210	mA	Note1

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

Backlight driving conditions (CON2.Pin33,34=VLED-, Pin35,36=VLED+)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
Operation Current For LED Driver	VLED=5V	400	—	600	mA	Note 1,2
Power Consumption	VLED=5V	2000	—	3000	mW	Note 1,2
Supply Voltage For LED Driver	VLED+	—	5	—	V	—
LED Life Time	—	—	50,000	—	Hr	Note 2,3,4

Note 1 : Base on VLED= 5V for the back light driver IC specification
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

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	0.26	0.31	0.36	-	Note 2,5,6
		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		-	-	320	400	-	cd/m2	Center of display
Uniformity		(U)	-	70	-	-	%	Note 5

Ta=25±2℃, IL=180mA

Note 1: Definition of viewing angle range

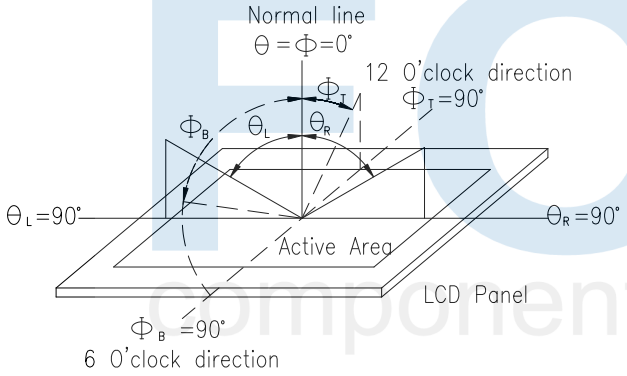
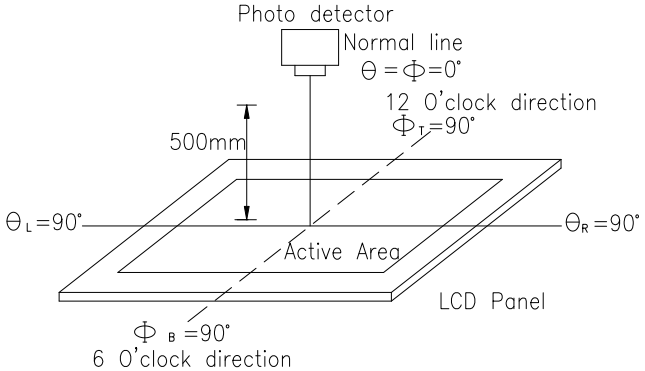


Fig. 9.1. Definition of viewing angle

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.



Interface

LCM PIN Definition (CON2)

Pin	Symbol	Function	Remark
1	GND	System ground pin of the IC .Connect to system ground.	
2	VDD	Power Supply : +3.3V	
3	BLE	Backlight control signal , H: On \ L: Off	
4	D/C	Data/Command select	
5	WR	Write strobe signal	
6	RD	Read strobe signal	
7	DB0	Data bus	
8	DB1	Data bus	
9	DB2	Data bus	
10	DB3	Data bus	
11	DB4	Data bus	
12	DB5	Data bus	
13	DB6	Data bus	
14	DB7	Data bus	
15	DB8	Data bus (When select 8bits Mode, this pin is NC)	Note1
16	DB9	Data bus (When select 8bits Mode, this pin is NC)	Note1
17	DB10	Data bus (When select 8bits Mode, this pin is NC)	Note1
18	DB11	Data bus (When select 8bits Mode, this pin is NC)	Note1
19	DB12	Data bus (When select 8bits Mode, this pin is NC)	Note1
20	DB13	Data bus (When select 8bits Mode, this pin is NC)	Note1
21	DB14	Data bus (When select 8bits Mode, this pin is NC)	Note1
22	DB15	Data bus (When select 8bits Mode, this pin is NC)	Note1
23	NC	No connect	
24	NC	No connect	
25	CS	Chip select	
26	RST	Hardware reset (RESET)	
27	L/R	Left / right selection; Default L/R=H	Note 2,3
28	U/D	Up/down selection; ; Default U/D=L	Note 2,3
29	NC	No connect	
30	NC	No connect	

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31	NC	No connect	
32	NC	No connect	
33	VLED-	Power for LED Driver IC(GND)	
34	VLED-	Power for LED Driver IC(GND)	
35	VLED+	Power for LED Driver IC(+5V)	
36	VLED+	Power for LED Driver IC(+5V)	

Note1: When select 8bit mode, DB0~DB7 be used, DB8~DB15 no connect
When select 16bit mode, DB0~DB15 be used
Note 2: Selection of scanning mode

Setting of scan control input		Scanning direction
U/D	L/R	
GND	VDD	Up to down, left to right
VDD	GND	Down to up, right to left
GND	GND	Up to down, right to left
VDD	VDD	Down to up, left to right

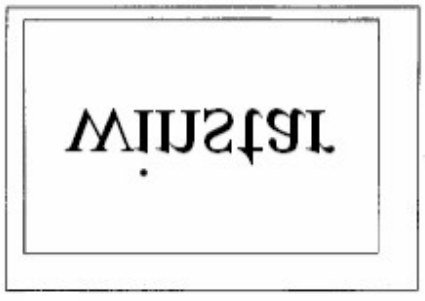
Note 3: Definition of scanning direction.Refer to the figure as below:



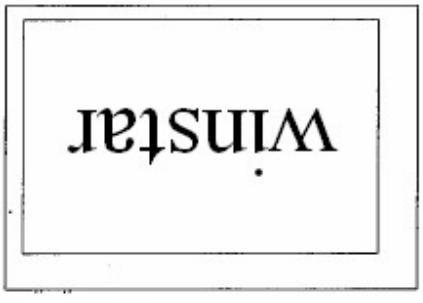
U/D=L, L/R=H



U/D=L, L/R=L

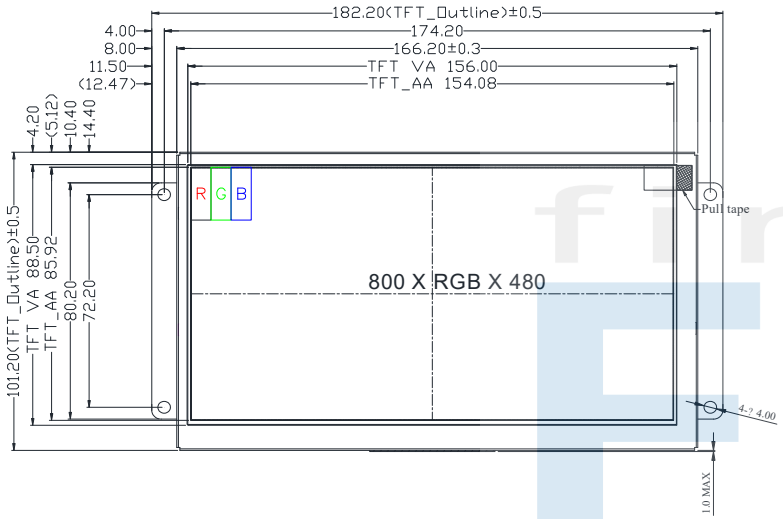


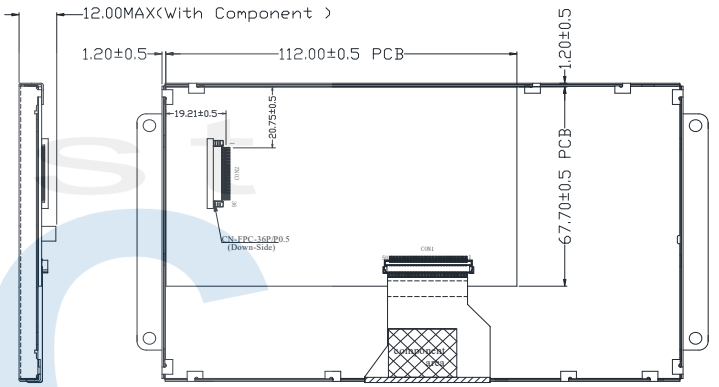
U/D=H, L/R=H



U/D=H, L/R=L

Contour Drawing





Pin	Symbol
1	GND
2	VDD
3	BLE
4	D/C
5	WR
6	RD
7	DB0
8	DB1
9	DB2
10	DB3
11	DB4
12	DB5
13	DB6
14	DB7
15	DB8
16	DB9
17	DB10
18	DB11
19	DB12
20	DB13
21	DB14
22	DB15
23	NC
24	NC
25	CS
26	RST
27	L/R
28	U/D
29	NC
30	NC
31	NC
32	NC
33	VLED-
34	VLED-
35	VLED+
36	VLED+

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

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