



RAYSTAR

RAYSTAR Optronics, Inc.
曜凌光電股份有限公司



曜凌光電股份有限公司
Raystar Optronics, Inc.

T: +886-4-2565-0761 | F: +886-4-2565-0760
sales@raystar-optronics.com | www.raystar-optronics.com

RFF50VB-1IW-DHS

SPECIFICATION

General Specifications

- Size: 5.0 inch
- Dot Matrix: 800 × 3(RGB) × 480 dots
- Module dimension: 120.7 × 75.8 × 23.0 (Max) mm
- Active area: 108.0 × 64.8 mm
- Dot pitch: 0.045 × 0.135 mm
- LCD type: TFT, Normally White, Transmissive
- View Direction: 12 o'clock
- Gray Scale Inversion Direction: 6 o'clock
- Aspect Ratio: 5:3
- Backlight Type: LED, Normally White
- Controller IC: TFP401 or equivalent
- TFT Interface: HDMI(only for DVI)
- RTP Interface: USB
- Touch Panel: Resistive Touch Panel (USB)
- Surface: Anti-Glare

*Color tone slight changed by temperature and driving voltage.

Interface

1. LCM PIN Definition(CON5)

Pin	Symbol	Function	Remark
1	3.3V	TFT Module Power limit can only output 3.3V,100mA	NOTE1
2	5V	Raspberrry Pi:Power 5V	
3	GPIO02	Raspberrry Pi:GPIO02	
4	5V	Raspberrry Pi:Power 5V	
5	GPIO03	Raspberrry Pi:GPIO03	
6	GND	Raspberrry Pi:GND	
7	GPIO04	Raspberrry Pi:GPIO04	
8	GPIO14	Raspberrry Pi:GPIO14	
9	GND	Raspberrry Pi:GND	
10	GPIO15	Raspberrry Pi:GPIO15	
11	GPIO17	Raspberrry Pi:GPIO17	
12	GPIO18	Raspberrry Pi:GPIO18 (Backlight Enable)	
13	GPIO27	Raspberrry Pi:GPIO27	
14	GND	Raspberrry Pi:GND	
15	GPIO22	Raspberrry Pi:GPIO22	
16	GPIO23	Raspberrry Pi:GPIO23	
17	3.3V	TFT Module Power limit can only output 3.3V,100mA	NOTE1
18	GPIO24	Raspberrry Pi:GPIO24	
19	GPIO10	Raspberrry Pi:GPIO10	
20	GND	Raspberrry Pi:GND	
21	GPIO09	Raspberrry Pi:GPIO09	
22	GPIO25	Raspberrry Pi:GPIO25	
23	GPIO11	Raspberrry Pi:GPIO11	
24	GPIO08	Raspberrry Pi:GPIO08	
25	GND	Raspberrry Pi:GND	
26	GPIO07	Raspberrry Pi:GPIO07	
27	ID_SD	Raspberrry Pi:ID_SD	
28	ID_SC	Raspberrry Pi:ID_SC	
29	GPIO05	Raspberrry Pi:GPIO05	
30	GND	Raspberrry Pi:GND	
31	GPIO06	Raspberrry Pi:GPIO06	
32	GPIO12	Raspberrry Pi:GPIO12	
33	GPIO13	Raspberrry Pi:GPIO13	
34	GND	Raspberrry Pi:GND	
35	GPIO19	Raspberrry Pi:GPIO19	
36	GPIO16	Raspberrry Pi:GPIO16	
37	GPIO26	Raspberrry Pi:GPIO26	
38	GPIO20	Raspberrry Pi:GPIO20	
39	GND	Raspberrry Pi:GND	
40	GPIO21	Raspberrry Pi:GPIO21	

Note1: The 3.3V supply current is limited; please pay special attention to use

2. LCM PIN Definition(CON4)

Pin	Symbol	Function	Remark
1	NC	No connection	
2	5V	Raspberry Pi:Power 5V	
3	GPIO02	Raspberry Pi:GPIO02	
4	5V	Raspberry Pi:Power 5V	
5	GPIO03	Raspberry Pi:GPIO03	
6	GND	Raspberry Pi:GND	
7	GPIO04	Raspberry Pi:GPIO04	
8	GPIO14	Raspberry Pi:GPIO14	
9	GND	Raspberry Pi:GND	
10	GPIO15	Raspberry Pi:GPIO15	
11	GPIO17	Raspberry Pi:GPIO17	
12	GPIO18	Raspberry Pi:GPIO18 (Backlight Enable)	
13	GPIO27	Raspberry Pi:GPIO27	
14	GND	Raspberry Pi:GND	
15	GPIO22	Raspberry Pi:GPIO22	
16	GPIO23	Raspberry Pi:GPIO23	
17	NC	No connection	
18	GPIO24	Raspberry Pi:GPIO24	
19	GPIO10	Raspberry Pi:GPIO10	
20	GND	Raspberry Pi:GND	
21	GPIO09	Raspberry Pi:GPIO09	
22	GPIO25	Raspberry Pi:GPIO25	
23	GPIO11	Raspberry Pi:GPIO11	
24	GPIO08	Raspberry Pi:GPIO08	
25	GND	Raspberry Pi:GND	
26	GPIO07	Raspberry Pi:GPIO07	
27	ID_SD	Raspberry Pi:ID_SD	
28	ID_SC	Raspberry Pi:ID_SC	
29	GPIO05	Raspberry Pi:GPIO05	
30	GND	Raspberry Pi:GND	
31	GPIO06	Raspberry Pi:GPIO06	
32	GPIO12	Raspberry Pi:GPIO12	
33	GPIO13	Raspberry Pi:GPIO13	
34	GND	Raspberry Pi:GND	
35	GPIO19	Raspberry Pi:GPIO19	
36	GPIO16	Raspberry Pi:GPIO16	
37	GPIO26	Raspberry Pi:GPIO26	
38	GPIO20	Raspberry Pi:GPIO20	
39	GND	Raspberry Pi:GND	
40	GPIO21	Raspberry Pi:GPIO21	

3. HDMI

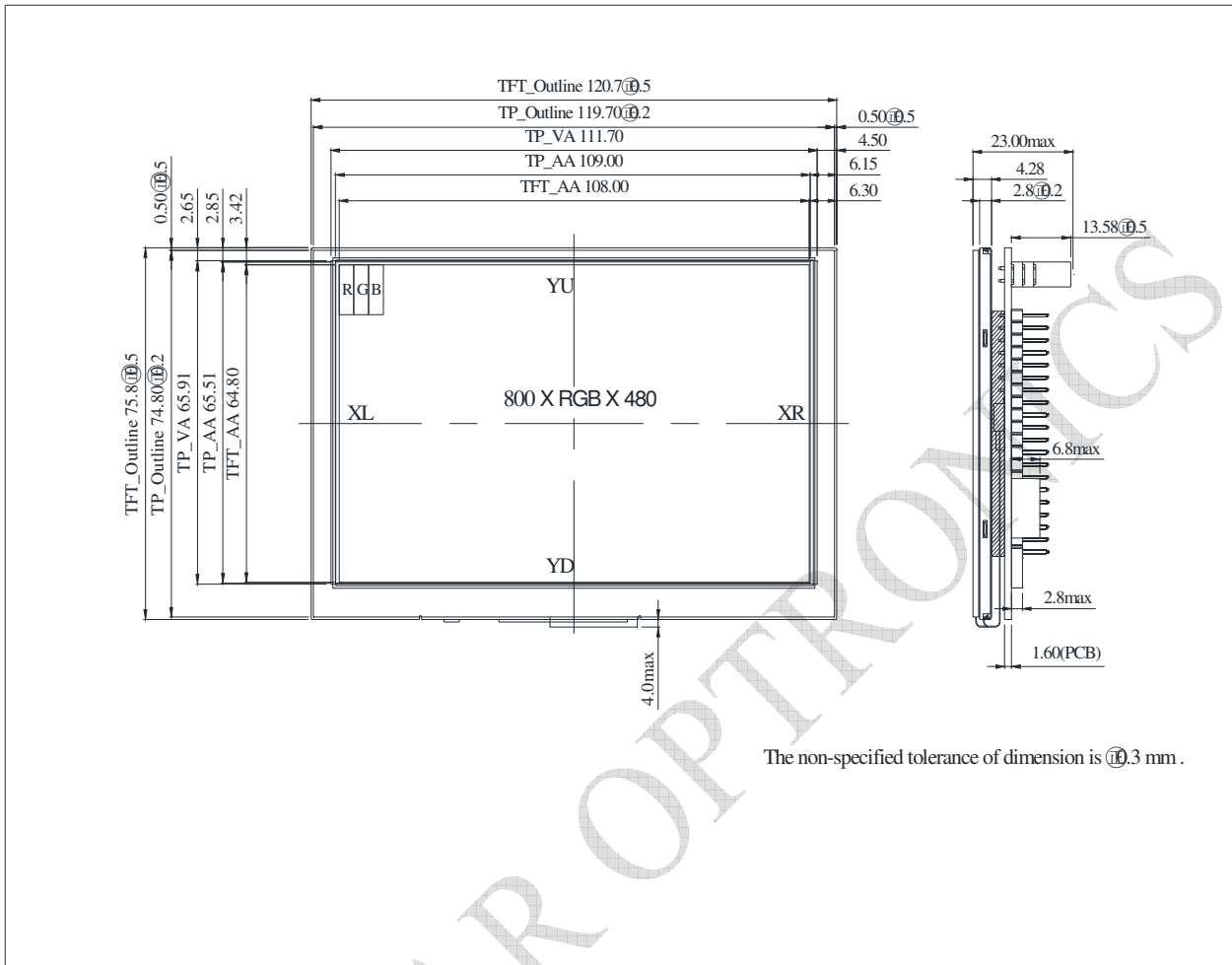
Pin No.	Symbol	I/O	Function	Remark
1	Rx2+	I	+LVDS Differential Data Input	
2	GND	P	Ground	
3	Rx2-	I	-LVDS Differential Data Input	
4	Rx1+	I	+LVDS Differential Data Input	
5	GND	P	Ground	
6	Rx1-	I	-LVDS Differential Data Input	
7	Rx0+	I	+LVDS Differential Data Input	
8	GND	P	Ground	
9	Rx0-	I	-LVDS Differential Data Input	
10	RxC+	I	+LVDS Differential Clock Input	
11	GND	P	Ground	
12	RxC-	I	-LVDS Differential Clock Input	
13-14	NC	-	No connection	
15	SCL	I/O	DDC(Data Display Channel) Clock	
16	SDA	I/O	DDC(Data Display Channel) Data	
17	GND	P	Ground	
18	5V	P	Power Supply	
19	Detect	I/O	Hot plug detect	

I: input, O: output, P: Power

4. RTP USB PIN Definition(CON3)

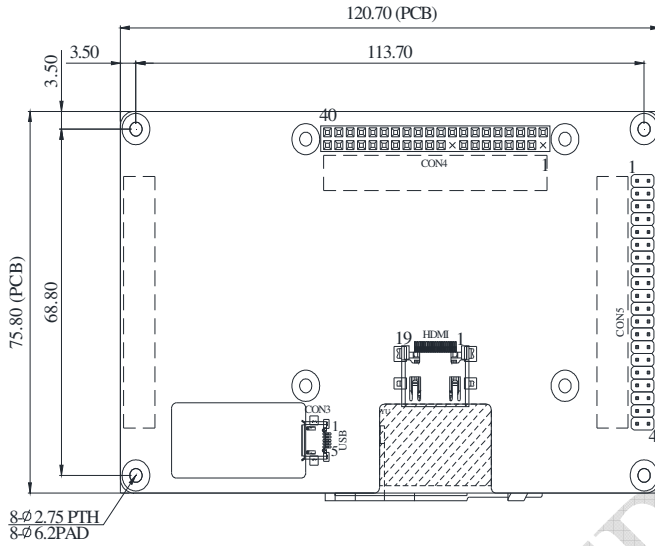
Pin No.	Symbol	I/O	Function	Remark
1	5V	P	Power Supply	
2	D-	I/O	USB Data -	
3	D+	I/O	USB Data +	
4	NC	-	No connection	
5	GND	P	Ground	

Contour Drawing



HDMI

Pin	Symbol
1	RX2+
2	GND
3	RX2-
4	RX1+
5	GND
6	RX1-
7	RXD+
8	GND
9	RXD-
10	RXC+
11	GND
12	RXC-
13	NC
14	NC
15	SCL
16	SDA
17	GND
18	5V
19	Detect



CON4

Pin	Symbol	Pin	Symbol
1	NC	21	GPIO9
2	5V	22	GPIO25
3	GPIO2	23	GPIO11
4	5V	24	GPIO8
5	GPIO3	25	GND
6	GND	26	GPIO7
7	GPIO4	27	ID_SD
8	GPIO14	28	ID_SC
9	GND	29	GPIO5
10	GPIO15	30	GND
11	GPIO17	31	GPIO6
12	GPIO18	32	GPIO12
13	GPIO27	33	GPIO13
14	GND	34	GND
15	GPIO22	35	GPIO19
16	GPIO23	36	GPIO16
17	NC	37	GPIO26
18	GPIO24	38	GPIO20
19	GPIO10	39	GND
20	GND	40	GPIO21

CON5

Pin	Symbol	Pin	Symbol
1	3.3V	21	GPIO9
2	5V	22	GPIO25
3	GPIO2	23	GPIO11
4	5V	24	GPIO8
5	GPIO3	25	GND
6	GND	26	GPIO7
7	GPIO4	27	ID_SD
8	GPIO14	28	ID_SC
9	GND	29	GPIO5
10	GPIO15	30	GND
11	GPIO17	31	GPIO6
12	GPIO18	32	GPIO12
13	GPIO27	33	GPIO13
14	GND	34	GND
15	GPIO22	35	GPIO19
16	GPIO23	36	GPIO16
17	3.3V	37	GPIO26
18	GPIO24	38	GPIO20
19	GPIO10	39	GND
20	GND	40	GPIO21

CON3

PIN NO.	SYMBOL
1	5V
2	D-
3	D+
4	NC
5	GND

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

RAYSTAR OPTRONICS

Absolute Maximum Ratings

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

Electrical Characteristics

Operating conditions:

Item	Symbol	Min	Typ	Max	Unit
Supply Voltage For LCM	VDD	4.9	5	5.1	V
Supply Current For LCM	IDD	—	450	680	mA
LED life time	—	—	50,000	—	Hr