RAYSTAR
曜凌光電股份有限公司
Web: www.raystar-optronics.com E-mail: sales@raystar-optronics.com

RFH900B-AWW-LNN

SPECIFICATION

General Specifications

- Size: 9.0 inch
- Dot Matrix: 1024 x RGB x 600(TFT) dots
- Module dimension: 211.1(W) x 126.5(H) x 5.7(D) mm
- Active area: 196.608 x 114.15 mm
- Dot pitch: 0.192 x 0.19025 mm
- LCD type: TFT, Normally White, Transmissive
- Backlight Type: LED, Normally White
- With /Without TP: Without TP
- Surface: Anti-Glare
- Aspect Ratio: 16:9

*Color tone slight changed by temperature and driving voltage.

Interface (LCM PIN Definition)

FPC connector is used for electronics interface. The recommended model is FH12A-40S-0.5SH manufactured by Hirose.

Pin No.	Symbol	I/O	Function
1	VCOM	P	Common Voltage
2	VDD	P	Power Voltage for digital circuit
3	VDD	P	Power Voltage for digital circuit
4	NC	---	No connection
5	Reset	I	Global reset pin
6	U/D	I	Vertical inversion
7	L/R	I	Horizontal inversion
8	STBYB	I	Standby mode, Normally pulled high STBYB = “1”, normal operation STBYB = “0”, timing controller, source driver will turn off, all output are High-Z
9	GND	P	Ground
10	RXCLKIN-	I	- LVDS differential data input
11	RXCLKIN+	I	+ LVDS differential data input
12	GND	P	Ground
13	RXIN0-	I	- LVDS differential data input
14	RXIN0+	I	+ LVDS differential data input
15	GND	P	Ground
16	RXIN1-	I	- LVDS differential data input
17	RXIN1+	I	+ LVDS differential data input
18	GND	P	Ground
19	RXIN2-	I	- LVDS differential clock input
20	RXIN2+	I	+ LVDS differential clock input
21	GND	P	Ground
22	RXIN3-	I	- LVDS differential data input
23	RXIN3+	I	+ LVDS differential data input
24	GND	P	Ground
25	SELB	I	6bit/8bit mode selection
26	GND	P	Ground
27	AVDD	P	Power for Analog Circuit
28	GND	P	Ground
29	VGH	P	Gate ON Voltage
30	NC	---	No connection
31	NC	---	No connection
32	VGL	P	Gate off Voltage
33	GND	P	Ground
34	NC	---	No connection
35	LED-	P	LED Cathode
36	LED-	P	LED Cathode
37	NC	---	No connection
38	NC	---	No connection

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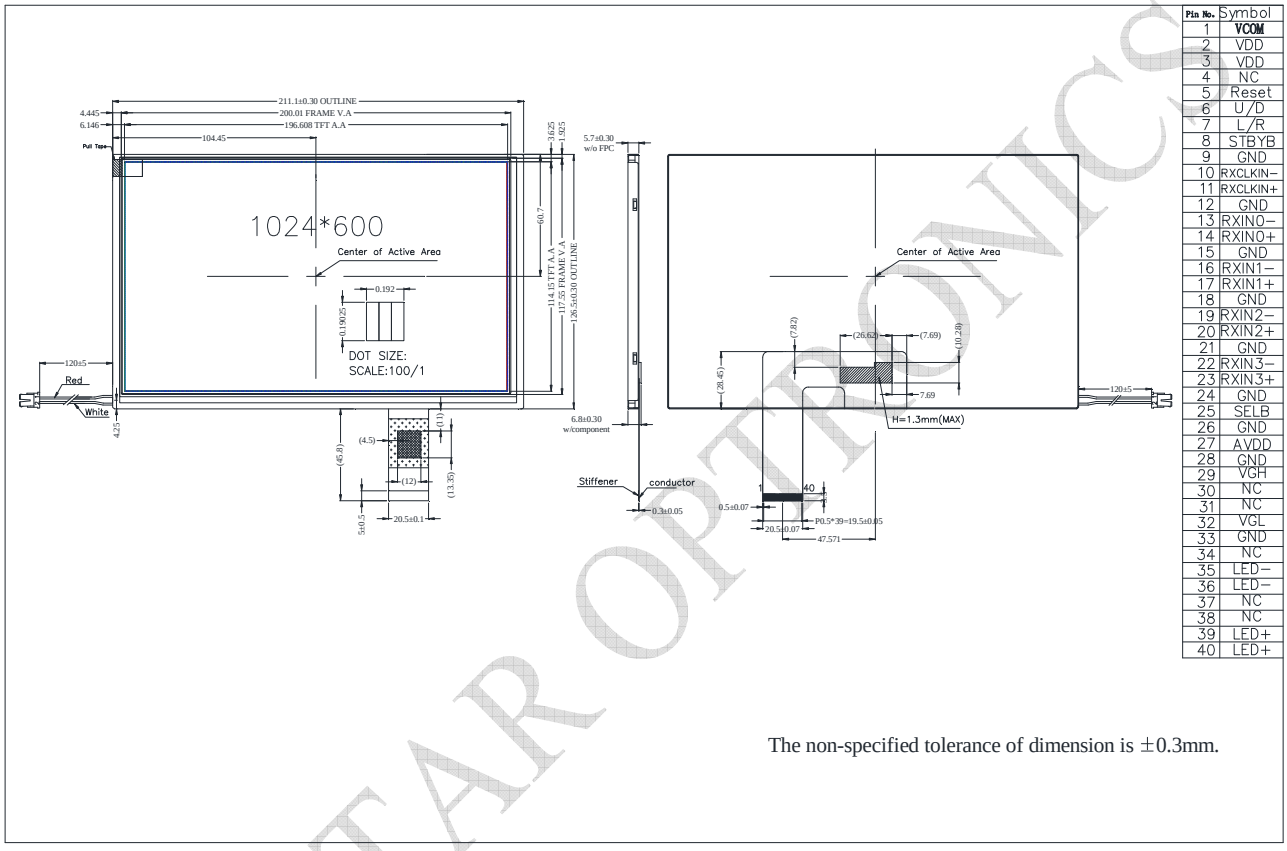
39	LED+	P	LED Anode
40	LED+	P	LED Anode

I: Input O: Output P: Power

Contour Drawing



Pin No.	Symbol
1	VCOM
2	VDD
3	VDD
4	NC
5	Reset
6	U/D
7	L/R
8	STBYB
9	GND
10	RXCLKIN−
11	RXCLKIN+
12	GND
13	RXIN0−
14	RXIN0+
15	GND
16	RXIN1−
17	RXIN1+
18	GND
19	RXIN2−
20	RXIN2+
21	GND
22	RXIN3−
23	RXIN3+
24	GND
25	SELB
26	GND
27	AVDD
28	GND
29	VGH
30	NC
31	NC
32	VGL
33	GND
34	NC
35	LED−
36	LED−
37	NC
38	NC
39	LED+
40	LED+

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

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Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	TOP	-30	—	+85	℃
Storage Temperature	TST	-30	—	+85	℃

Electrical Characteristics

TFT LCD Power Voltage

Item	Symbol	Min	Typ	Max	Unit
Supply Voltage	VDD	3.0	3.3	3.6	V
	VGH	22	23	24	V
	VGL	-9	-10	-11	V
	AVDD	12.3	12.6	12.9	V
	VCOM	5.6	5.8	6	V
Input signal voltage	ViH	0.7 VDD	-	VDD	V
	ViL	0	-	0.3 VDD	V
Current of power supply	IDD	-	23	-	mA
	IADD	-	40	-	mA
	IGH	-	0.5	-	mA
	IGL	-	1.2	-	mA
	Ivcom		0.7	-	mA

Switching Characteristics for LVDS Receiver

Item	Symbol	Min	Typ	Max	Unit	Conditions
Differential Input High Threshold	Vth	–	–	100	mV	V_{CM}=1.2V
Differential Input Low Threshold	Vtl	-100	–	–	mV	
Input Current Differential input Voltage	I_{IN}	-10	–	+10	uA	
	$\|V_{ID}\|$	0.1	–	0.6	V	
Common Mode Voltage Offset	V_{CM}	0.7	1.2	1.6	V	

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Interface Timing (DE mode)

Parameter	Symbol	Value			Unit
		Min	Typ	Max	
DCLK frequency @Frame rate=60hz	fclk	40.8	51.2	67.2	Mhz
Horizontal display area	thd		1024		DCLK
HSYNC period time	th	1114	1344	1400	DCLK
HSYNC blanking	thb+thfp	90	320	376	DCLK
Vertical display area	tvd		600		H
VSYNC period time	tv	610	635	800	H
VSYNC blanking	tvb+tvfp	10	35	200	H

LED driving conditions

Parameter	Symbol	Min	Typ	Max	Unit
LED current	I_F	-	200	-	mA
LED voltage	VBL+	-	9	9.6	V
LED Life Time		-	15.000	-	Hr

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