

SPECIFICATION FOR APPROVAL

Preliminary Specification

Final Specification

MODEL NAME : RS215HVN-NE10

APPROVED BY

REVIEWED BY

PREPARED BY

Lion / Engineer

1. General Description

This specification applies to the 21.5 inch Color TFT-LCD Module RS215HVN. This LCD module has a TFT active matrix type liquid crystal panel 1920x1080 pixels, and diagonal size of 21.5 inch.

It is intended to support displays where high brightness, wide viewing angle.

* General Information

Items	Specification	Unit	Note
Active Screen Size	21.5 inches diagonal	inch	
Display Area	476.064 (H) x 267.786 (V)	mm	
Outline Dimension	495.6 (H) *292.4(V)*10.5(D)	mm	D:MAX
Driver Element	a-Si TFT Active Matrix		
Display Colors	8-bit, 16.7M colors	colors	
Number of Pixels	1920 horiz. by 1080 vert	pixel	
Pixel Arrangement	RGB Vertical strip		
Display Mode	Transmissive mode, Normally black		
Surface Treatment	Anti-Glare (Haze 2% & 40%), 3H		
Interface	LVDS 2 port		
Center Luminance of White	1000	nits	MIN:900
Weight	1.83	kg	

2. Absolute Maximum Ratings

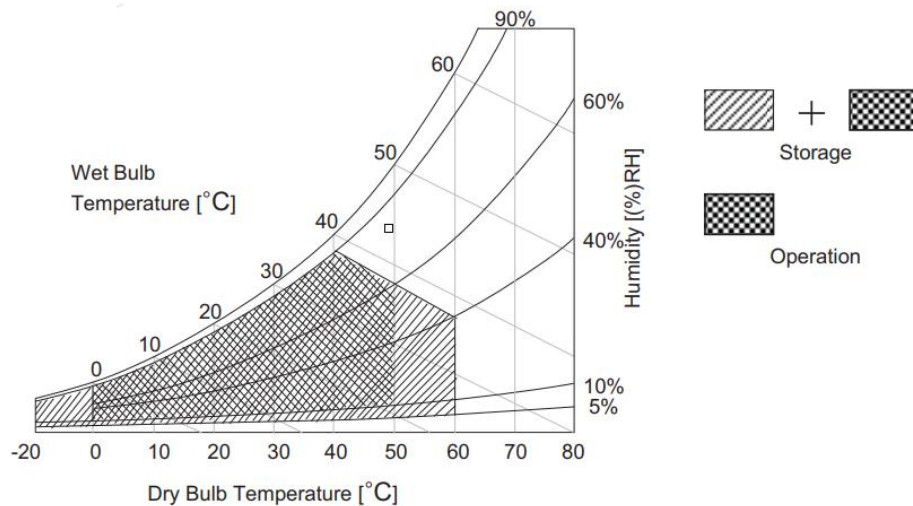
The followings are maximum values which, if exceeded, may cause faulty operation or damage to the unit.

Item	Symbol	Min	Max	Unit	Note
Logic/LCD Drive Voltage	Vcc	-0.3	6.0	[Volt]	1
Input Voltage of Signal	Vin	-	-	[Volt]	1
Operating Temperature	TOP	0	+50	[°C]	2
Operating Humidity	HOP	10	90	[%RH]	2
Storage Temperature	TST	-20	60	[°C]	2
Storage Humidity	HST	10	90	[%RH]	2
Panel Surface Temperature	PST		60	[°C]	3

Note 1: Duration:50 msec.

Note 2 : Maximum Wet-Bulb should be 39°C and No condensation. The relative humidity must not exceed 90% non-condensing at temperatures of 40°C or less. At temperatures greater than 40°C, the wet bulb temperature must not exceed 39°C.

Note 3: Surface temperature is measured at 50 °C Dry condition.



3. Electrical Specification

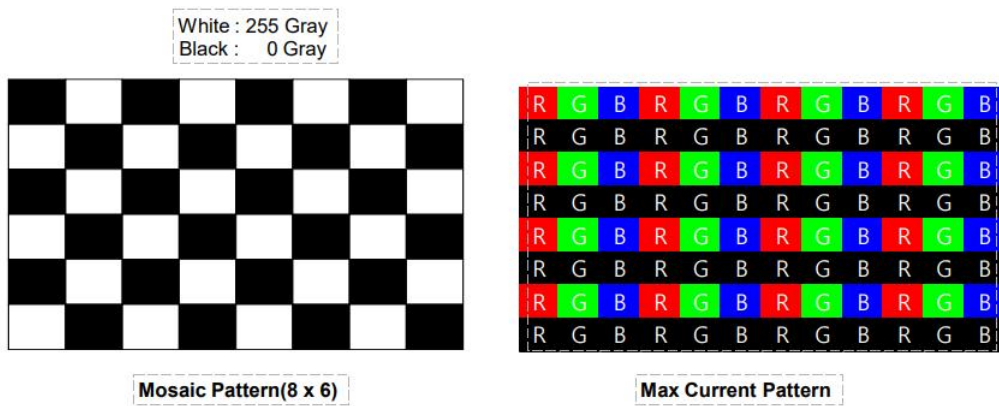
3-1 TFT LCD Module

3-1-1 Power Specification

Item	Symbol	Vaule			Unit	Note
		Min	TYP	Max		
Power Input Voltage	VLCD	4.5	5.0	5.5	VDC	
Power Input Current	ILCD	-	620	740	mA	1
T-CON Option	Input High Voltage	VIH	2.7	-	3.3	VDC
U-Selection Voltage	Input Low Voltage	VIL	0	-	0.6	
Power Consumption	PLCD	-	3.1	3.7	Walt	1
Rush current		-	-	3.0	A	2

Note 1. The supply voltage is measured and specified at the interface connector of LCM. The current draw and power consumption specified is for VDD=12.0V, Frame rate fV=60Hz and Clock frequency = 75.4MHz. Test Pattern of power supply current

2. The duration of rush current is about 2ms and rising time of Power Input is 1ms(min)



3-2. Interface Connections

30-pin connector is used for the module electronics.

3-2-1. LCD Module

- LCD Connector:FI-X30HL (JAE)

PIN NO	Symbol	Description	Remark
1	RxO0-	Negative LVDS differential data input (Odd data)	
2	RxO0+	Positive LVDS differential data input (Odd data)	
3	RxO1-	Negative LVDS differential data input (Odd data)	
4	RxO1+	Positive LVDS differential data input (Odd data)	
5	RxO2-	Negative LVDS differential data input (Odd data)	
6	RxO2+	Positive LVDS differential data input (Odd data)	
7	GND	Ground	
8	RxOCLK-	Negative LVDS differential clock input (Odd clock)	
9	RxOCLK+	Positive LVDS differential clock input (Odd clock)	
10	RxO3-	Negative LVDS differential data input (Odd data)	
11	RxO3+	Positive LVDS differential data input (Odd data)	
12	RxE0-	Negative LVDS differential data input (Even data)	
13	RxE0+	Positive LVDS differential data input (Even data)	
14	GND	Ground	
15	RxE1-	Negative LVDS differential data input (Even data)	
16	RxE1+	Positive LVDS differential data input (Even data)	
17	GND	Ground	
18	RxE2-	Negative LVDS differential data input (Even data)	
19	RxE2+	Positive LVDS differential data input (Even data)	
20	RxECLK-	Negative LVDS differential clock input (Even clock)	
21	RxECLK+	Positive LVDS differential clock input (Even clock)	
22	RxE3-	Negative LVDS differential data input (Even data)	
23	RxE3+	Positive LVDS differential data input (Even data)	
24	WP	Digital-Vcom write protection	
25	NC	No Connection	
26	SCL	I2C-Compatible Serial-Clock Input for Vcom adjust	
27	SDA	I2C-Compatible Serial-Data Input / Output for Vcom	
28	VCC	Power Supply Input Voltage	
29	VCC	Power Supply Input Voltage	
30	VCC	Power Supply Input Voltage	

4. Backlight Electrical Specification

4-1 Electrical Specification

Parameter		Symbol	Values			Unit	Notes
			Min	Typ	Max		
Power Supply Input Voltage		VBL	11.5	12	13	Vdc	
Power Supply Input Current		IBL		2.33		A	
Power Consumption (Total)		PBL		28		W	MAX
Input Voltage for Control System Signals	On/Off	On	Von	2		5	Vdc
		Off	Voff	0		0.5	Vdc
	Brightnes Adjust	EXTVBR-B	20		100	%	Automatic light sensitive control
Life Time			30000	50000		Hrs	1

Note1:

The life time is determined as the time at which brightness of the LED is 50% compared to that of initial value at the typical LED current on condition of continuous operating at $25 \pm 2^{\circ}\text{C}$, based on Brightest state.

4-2 Input Pin Assignment

4-2-1 LED Driver Board connector

CN1:PH2.0-6PIN (2.0mm*6)

CN1	Symbol	Description
1	VCC	Power Supply input Voltage
2	VCC	Power Supply input Voltage
3	N/F	Backlight ON/OFF control
4	NC	Not connect
5	GND	Power ground
6	GND	Power ground

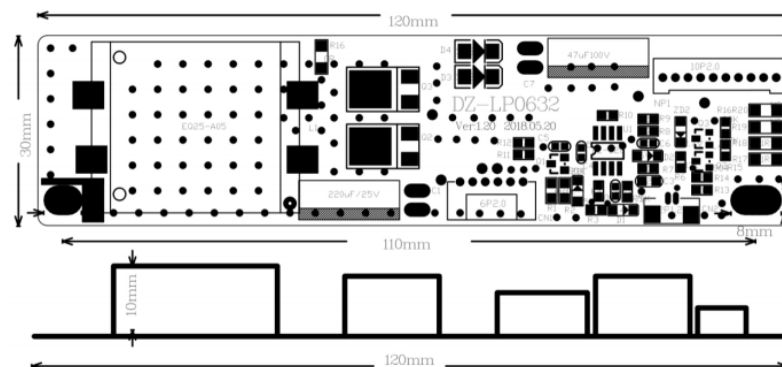
CN2 : PH1.25-2PIN (1.25mm*2) Light sensor connector

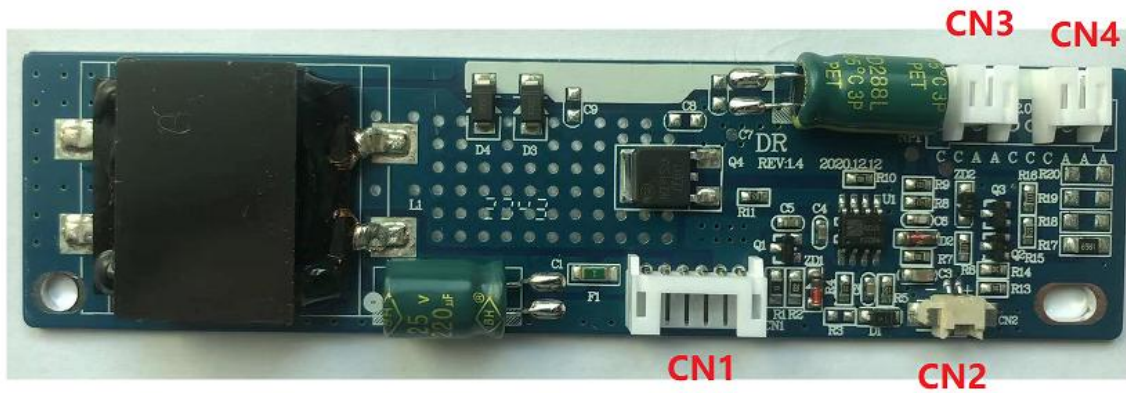
CN2	Symbol	Description
1	G+	Light sensor anode
2	G-	Light sensor cathode

CN3/CN4 : PH2.0-2PIN (2.0mm*2) LED Light Bar Current output connector

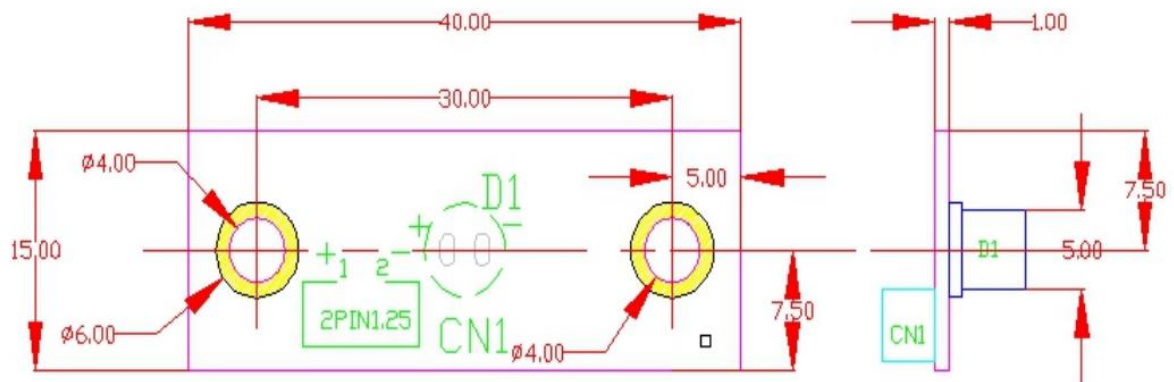
CN3/CN4	Symbol	Description
1	LED+	LED Light Bar Current output anode
2	LED-	LED Light Bar Current output cathode

LED Driver Board dimensional drawing





Light Sensor Board dimensional drawing



5. Mechanical Characteristics

UNIT:mm

