SPECIFICATION
FOR
APPROVAL

(●) Preliminary Specification

( ) Final Specification

MODEL NAME : RS133ZAN02-MD20

APPROVED BY

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REVIEWED BY

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PREPARED BY

Lion / Engineer

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1. General Description

This specification applies to the 13.3 inch Color TFT-LCD Module RS133ZAN02. This LCD module has a TFT active matrix type liquid crystal panel 1920x1080 pixels, and diagonal size of 13.3 inch.

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

*** General Information**

Items	Specification	Unit	Note
Active Screen Size	13.3 inches diagonal	inch	
Display Area	293.76（H）*165.24(V)	mm	
Outline Dimension	298.96（H）*177.21(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	3840 horiz. by 2160 vert	pixel	
Pixel Arrangement	RGB Vertical strip		
Display Mode	Normally black		
Surface Treatment	Hard coating(3H), Anti-glare low reflection treatment of the front polarizer (Haze 25%(Typ.))		
Interface	LVDS 2 port		
Center Luminance of White	2000	nits	
Weight	TBD	kg	

2. Absolute Maximum Ratings

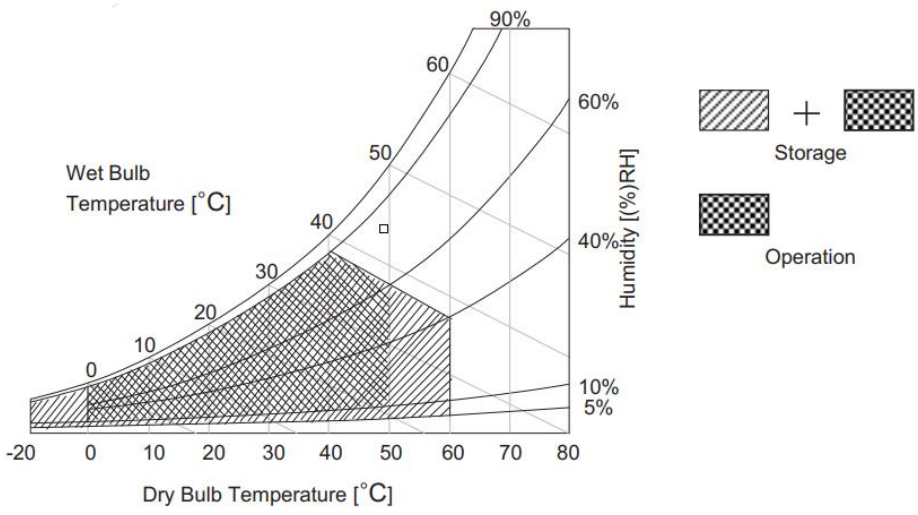
The followings are maximum values which, if exceeded, may cause faulty operation or damage to the unit.

Item	Symbol	Min	Max	Unit	Note
Logic/LCD Drive Voltage	Vcc	-0.3	6	[Volt]	1
Input Voltage of Signal	Vin	-0.3	+0.3	[Volt]	1
Operating Temperature	TOP	0	+50	[℃]	2
Operating Humidity	HOP	10	90	[%RH]	2
Storage Temperature	TST	-20	60	[℃]	2
Storage Humidity	HST	10	90	[%RH]	2
Panel Surface Temperature	PST		60	[℃]	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

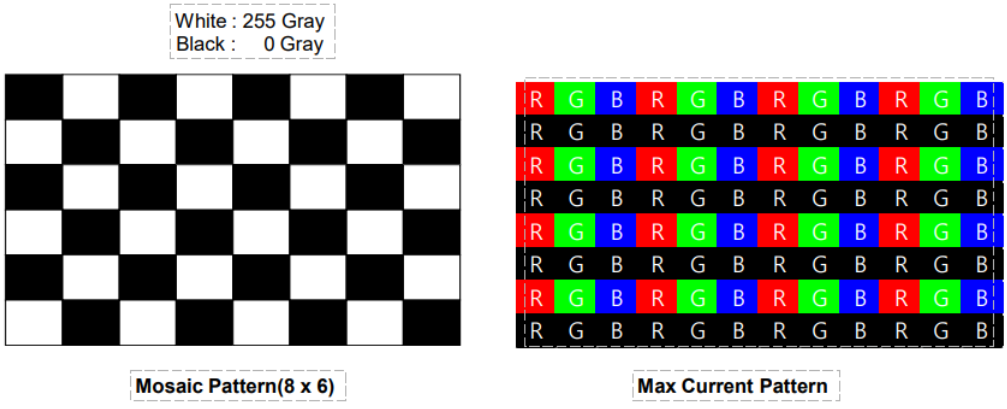
3-1 TFT LCD Module

3-1-1 Power Specification

Item		Symbol	Vaule			Unit	Note
			Min	TYP	Max		
Power Input Voltage		VLCD	4.5	5	5.5	VDC	
Power Input Current		ILCD	-	640	960	mA	1
T-CON Option U-Selection Voltage	Input High Voltage	VIH	+100	-	+300	mV	
	Input Low Voltage	VIL	-100	-	-100		
Power Consumption		PLCD	-	3.2	5.3	Walt	1
Rush current			-	-	4.0	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

This LCD module employs two kinds of interface connection, 51-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	BIST	BIST	
8	RxO CLK-	Negative LVDS differential clock input (Odd clock)	
9	RxO CLK+	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	RxE CLK-	Negative LVDS differential clock input (Even clock)	
21	RxE CLK+	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	GND	Ground	
25	SDA	I2C Data (For VCOM tuning)	
26	SCL	I2C Clock (For VCOM tuning)	
27	NC	No Connection	
28	VCC	Power Supply Input Voltage	
29	VCC	Power Supply Input Voltage	
30	VCC	Power Supply Input Voltage	

NOTE:

1. When the power supply VDD is 0V, keep the level of input signals on the low or keep high impedance.
2. Do not keep the interface signal high impedance when power is on.
3. Back Light must be turn on after power for logic and interface signal are valid
4. T7 decreases smoothly, there is none re-bouncing voltage.

4. Backlight Electrical Specification

4-1 Electrical Specification

Parameter			Symbol	Values			Unit	Notes
				Min	Typ	Max		
Power Supply Input Voltage			VBL	22.5	24	25.6	Vdc	
Power Supply Input Current			IBL		-		A	
Power Consumption (Total)			PBL		TBD		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	40		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 ±2℃, based on Brightest state.

4-2 Input Pin Assignment

4-2-1 LED DB connector

CN1:CI0114M1HRL-NH(CviLux) or equivalent

CN1	Symbol	Description
1	VCC	Power Supply input Voltage
2	VCC	Power Supply input Voltage
3	VCC	Power Supply input Voltage
4	VCC	Power Supply input Voltage
5	VCC	Power Supply input Voltage

6	GND	Power ground
7	GND	Power ground
8	GND	Power ground
9	GND	Power ground
10	GND	Power ground
11	NC	Not connect
12	N/F	Backlight ON/OFF control
13	NC	Not connect
14	NC	Not connect

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

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

5. Mechanical Characteristics

UNIT:mm