SPECIFICATION
FOR
APPROVAL

(●) Preliminary Specification

( ) Final Specification

MODEL NAME : RS650QUB-ND20

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 64.53 inch Color TFT-LCD Module RS650QUB. This LCD module has a TFT active matrix type liquid crystal panel 3840x2160 pixels, and diagonal size of 64.53 inch.

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

*** General Information**

Items	Specification	Unit	Note
Active Screen Size	64.53 inches diagonal	inch	
Display Area	1428.48（H）*803.52(V)	mm	
Outline Dimension	1461（H）*843.1(V)*60.3(D)	mm	D:MAX
Driver Element	a-Si TFT Active Matrix		
Display Colors	10-bit(D)，1.07B	colors	
Number of Pixels	3840 horiz. by 2160 vert	pixel	
Pixel Arrangement	RGB Vertical strip		
Display Mode	Transmissive mode, Normally black		
Surface Treatment	Hard coating(3H), Anti-glare low reflection treatment of the front polarizer (Haze 1%(Typ.))		
Interface	V-by-One 8 lane		
Brightness	2000	nits	
Weight	20	kg	

2. Absolute Maximum Ratings

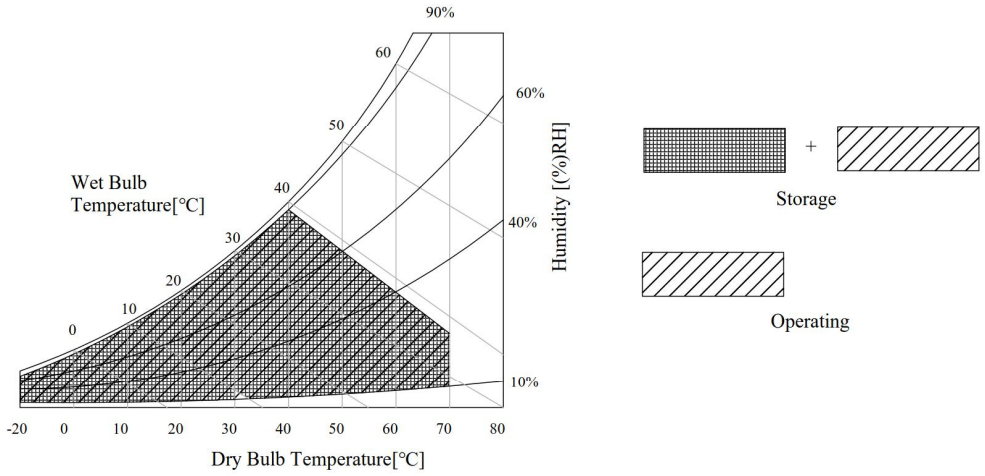
The followings are maximum values which, if exceeded, may cause faulty operation or damage to the unit.

Item	Symbol	Min	Max	Unit	Note
Logic/LCD Drive Voltage	Vcc	-0.3	13.5	[Volt]	1
Operating Temperature	TOP	-20	+70	[℃]	2
Operating Humidity	HOP	10	80	[%RH]	2
Storage Temperature	TST	-20	70	[℃]	2
Storage Humidity	HST	10	80	[%RH]	2
Panel Surface Temperature	PST		105	[℃]	3

Note 1: Duration:50 msec.

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

Note 3: Surface temperature is measured at 70 ℃ 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	10.8	12	13.2	VDC	
Power Input Current		ILCD	-	900	2000	mA	1
T-CON Option	Input High Voltage	VIH	2.31	-	3.3	VDC	
U-Selection Voltage	Input Low Voltage	VIL	-	-	0.8		
Power Consumption		PLCD	-	10.8	24	Walt	1
Rush current			-	-	10	A	3

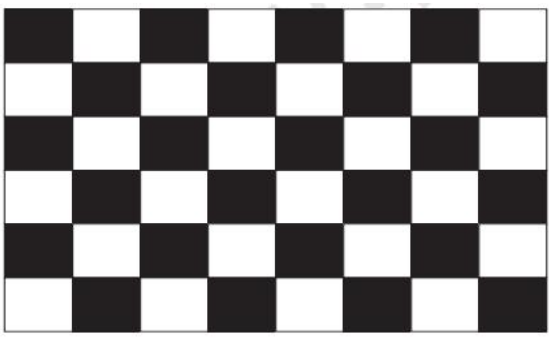
Note 1 : The supply voltage is measured and specified at the interface connector of LCM.

The current draw and power consumption specified is for VDD=12.0V,

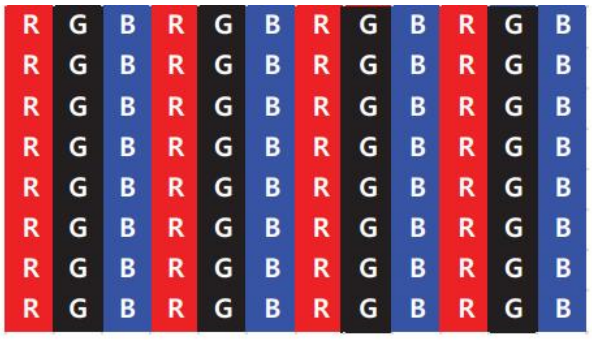
Frame rate fV=60Hz and Clock frequency = 74.25MHz.

Test Pattern of power supply current

Note 2 : The duration of rush current is about 2ms and rising time of Power Input is 0.5ms(min)



Mosaic Pattern(8 x 6)



Max Current Pattern

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(CN1): 0503HR-H51H(YEONHO)
- Mating Connector : FFC Type without Connector

PIN NO	Symbol	Description	PIN NO	Symbol	Description
1	VLCD	Power Supply +12.0V	27	GND	Ground
2	VLCD	Power Supply +12.0V	28	Rx0n	V-by-One HS Data Lane 0
3	VLCD	Power Supply +12.0V	29	Rx0p	V-by-One HS Data Lane 0
4	VLCD	Power Supply +12.0V	30	GND	Ground
5	VLCD	Power Supply +12.0V	31	Rx1n	V-by-One HS Data Lane 1
6	VLCD	Power Supply +12.0V	32	Rx1p	V-by-One HS Data Lane 1
7	VLCD	Power Supply +12.0V	33	GND	Ground
8	VLCD	Power Supply +12.0V	34	Rx2n	V-by-One HS Data Lane 2
9	NC	No Connection	35	Rx2p	V-by-One HS Data Lane 2
10	GND	Ground	36	GND	Ground
11	GND	Ground	37	Rx3n	V-by-One HS Data Lane 3
12	GND	Ground	38	Rx3p	V-by-One HS Data Lane 3
13	GND	Ground	39	GND	Ground
14	GND	Ground	40	Rx4n	V-by-One HS Data Lane 4
15	NC	No Connection	41	Rx4p	V-by-One HS Data Lane 4
16	NC	No Connection	42	GND	Ground
17	NC	No Connection	43	Rx5n	V-by-One HS Data Lane 5
18	SDA	SDA (For I^2C)	44	Rx5p	V-by-One HS Data Lane 5
19	SCL	SCL (For I^2C)	45	GND	Ground
20	NC	No Connection	46	Rx6n	V-by-One HS Data Lane 6
21	NC	No Connection	47	Rx6p	V-by-One HS Data Lane 6
22	Data format	‘L’ : Non division, ‘H’ : 2 division Default: L	48	GND	Ground
23	NC	No Connection	49	Rx7n	V-by-One HS Data Lane 7
24	GND	Ground	50	Rx7p	V-by-One HS Data Lane 7
25	HTPDN	Hot plug detect	51	GND	Ground
26	LOCKN	Lock detect			

Note 1: NC (Not Connected) : This pins are only used for BOE internal operations.

Note 2: BIST : This pin is used for selecting display pattern mode when input DE or input CLOCK quits toggling.

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		14.7		A	
Power Consumption (Total)			PBL		352.8		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
CN2:CI0112M1HRL-NH(CviLux) or equivalent

CN1	Symbol	Description	CN2	Symbol	Description
1	VCC	Power Supply Voltage	1	VCC	Power Supply Voltage
2	VCC	Power Supply Voltage	2	VCC	Power Supply Voltage
3	VCC	Power Supply Voltage	3	VCC	Power Supply Voltage
4	VCC	Power Supply Voltage	4	VCC	Power Supply Voltage
5	VCC	Power Supply Voltage	5	VCC	Power Supply Voltage
6	GND	Power ground	6	GND	Power ground
7	GND	Power ground	7	GND	Power ground
8	GND	Power ground	8	GND	Power ground
9	GND	Power ground	9	GND	Power ground
10	GND	Power ground	10	GND	Power ground
11	NC	Not connect	11	NC	Not connect
12	N/F	Backlight ON/OFF control	12	NC	Not connect
13	NC	Not connect			
14	NC	Not connect			

CN3 ： PH1.25-2PIN (1.25mm*2)　Light sensor connector

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

NOTE

1. One screen only needs one N / F signal

2. One screen only needs to be connected to a light sense

5. Mechanical Characteristics

UNIT:mm