SPECIFICATION
FOR
APPROVAL

(●) Preliminary Specification

( ) Final Specification

MODEL NAME : RS860EQL-GD40

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 85.6 inch Color TFT-LCD Module RS860EQL. This LCD module has a TFT active matrix type liquid crystal panel 3840x2160 pixels, and diagonal size of 85.6 inch.

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

*** General Information**

Items	Specification	Unit	Note
Active Screen Size	85.6 inches diagonal	inch	
Display Area	1895.04（H）*1065.96(V)	mm	
Outline Dimension	1930（H）*1111(V)*75.5(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	120hz
Pixel Arrangement	RGB Vertical strip		
Display Mode	Transmissive mode, Normally black		
Surface Treatment	Hard coating(2H), Anti-glare low reflection treatment of the front polarizer (Haze 3%(Typ.))		
Interface	V-by-One 16 lane		
Brightness	4000	nits	
Weight	40	kg	

2. Absolute Maximum Ratings

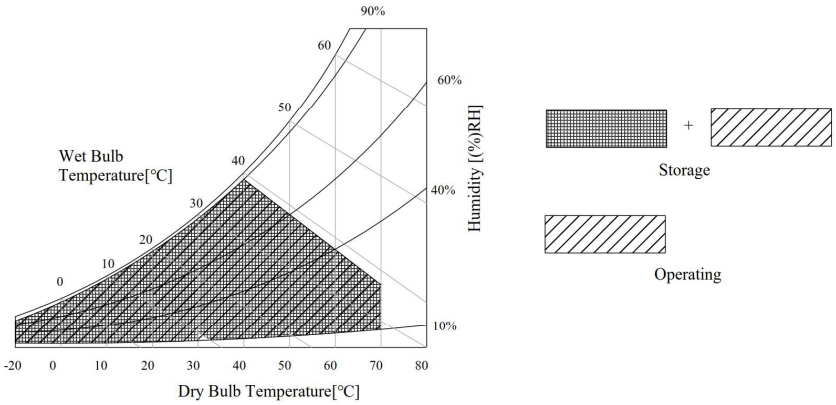
The followings are maximum values which, if exceeded, may cause faulty operation or damage to the unit.

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	90	[%RH]	2
Storage Temperature	TST	-20	70	[℃]	2
Storage Humidity	HST	10	90	[%RH]	2
Panel Surface Temperature	PST		-	[℃]	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 70 °C Dry condition.



3. Electrical Specification

3-1 TFT LCD Module

3-1-1 Power Specification

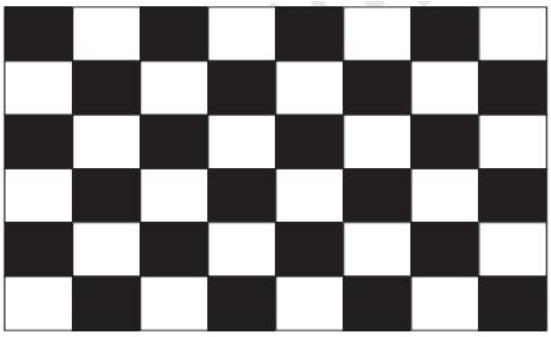
Item		Symbol	Vaule			Unit	Note
			Min	TYP	Max		
Power Input Voltage		VLCD	10.8	12	13.2	VDC	
Power Input Current		ILCD	-	1050	1365	mA	1
			-	4170	5420	mA	2
T-CON Option U-Selection Voltage	Input High Voltage	VIH	2.7	-	3.6	VDC	
	Input Low Voltage	VIL	0	-	0.7		
Power Consumption		PLCD	-	12.6	16.38	Walt	1
Rush current			-	-	12	A	3

Note

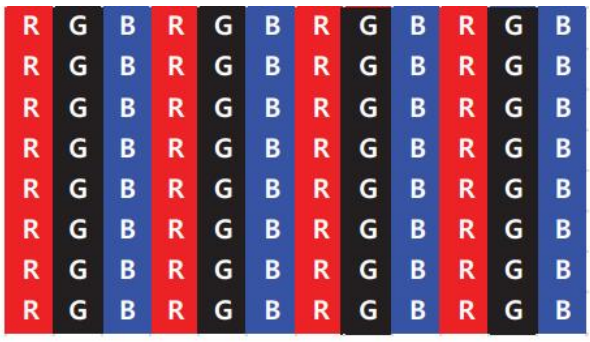
1. The specified current and power consumption are under the VLCD=12.0V, Ta=25℃, fV=60Hz condition, and mosaic pattern(8 x 6) is displayed and fV is the frame frequency.
2. The current is specified at the maximum current pattern.
3. The duration of rush current is about 2ms and rising time of power input is 0.5ms (min.).
4. Ripple voltage level is recommended under ·5% of typical voltage .

White : 255 Gray

Black : 0 Gray



Mosaic Pattern(8 x 6)



Max Current Pattern

3-2. Interface Connections

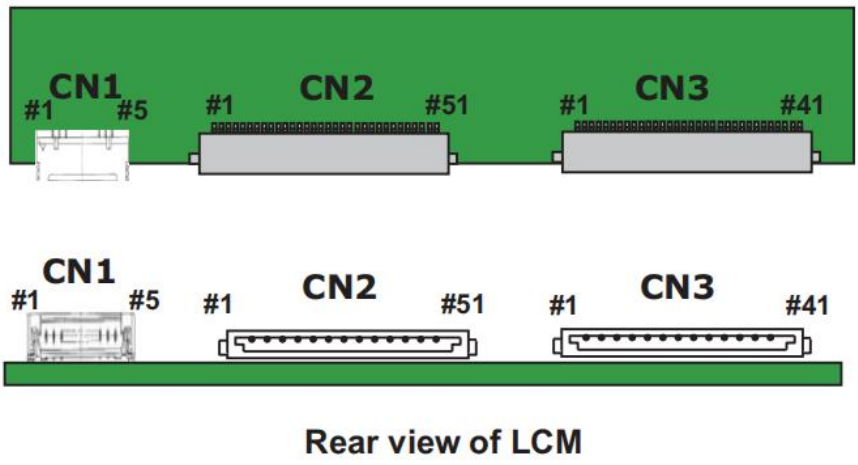
This LCD module employs two kinds of interface connection, 51-pin connector is used for the module electronics.

3-2-1. LCD Module

- LCD Connector(CN1): 20037WR-H05 (manufactured by YEONHO)

Table 3-1. MODULE CONNECTOR(CN1) PIN CONFIGURATION

PIN NO	Symbol	Description	Note
1	GND	Ground	
2	GND	Ground	
3	VLCD	Power Supply +12.0V	
4	VLCD	Power Supply +12.0V	
5	VLCD	Power Supply +12.0V	



Rear view of LCM

- LCD Connector(CN2): FI-RXE51S-HFS(manufactured by JAE) or GT05S-51S-H38(manufactured by LS)

-	Symbol	Description	PIN	Symbol	Description
1	NC	No Connection	27	GND	Ground
2	NC	No Connection	28	Rx0n	V-by-One HS Data Lane 0
3	NC	No Connection	29	Rx0p	V-by-One HS Data Lane 0
4	NC	No Connection	30	GND	Ground
5	NC	No Connection	31	Rx1n	V-by-One HS Data Lane 1
6	NC	No Connection	32	Rx1p	V-by-One HS Data Lane 1
7	NC	No Connection	33	GND	Ground
8	NC	No Connection	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	NC	No Connection	40	Rx4n	V-by-One HS Data Lane 4
15	Data format	'L' : Non division, 'H' : 2 division	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	NC	No Connection	44	Rx5p	V-by-One HS Data Lane 5
19	NC	No Connection	45	GND	Ground
20	NC	No Connection	46	Rx6n	V-by-One HS Data Lane 6
21	Bit SEL	'H' = 10bit , 'L' = 8bit	47	Rx6p	V-by-One HS Data Lane 6
22	LOCAL ON	H' = Enable	48	GND	Ground
23	M+ Bypass	'H' = RGB, 'L' = M+	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. All GND (ground) pins should be connected together to the LCD module's metal frame.
2. #1~#8 NC (No connection) : These pins are used for back up power source, VLCD (power input) . These pins are should be connected together.
3. All Input levels of V-by-One signals are based on the V-by-One HS Standard Version 1.4.
4. #9 & #14 & #16 ~#20 NC(No Connection) : These pins are used only for LGD (Do not connect)
5. Specific pin (#22) is used for Local Dimming function of the LCD module.

If not used, these pins are no connection.

- LCD Connector (CN3) : FI-RXE41S-HF (manufactured by JAE)

PIN NO	Symbol	Description	PIN NO	Symbo	Description
1	GND	Ground	22	GND	Ground
2	Rx8n	V-by-One HS Data Lane 8	23	Rx15n	V-by-One HS Data Lane15
3	Rx8p	V-by-One HS Data Lane 8	24	Rx15p	V-by-One HS Data Lane 15
4	GND	Ground	25	GND	Ground
5	Rx9n	V-by-One HS Data Lane 9	26	NC	No Connection
6	Rx9p	V-by-One HS Data Lane 9	27	NC	No Connection
7	GND	Ground	28	NC	No Connection
8	Rx10n	V-by-One HS Data Lane 10	29	NC	No Connection
9	Rx10p	V-by-One HS Data Lane 10	30	NC	No Connection
10	GND	Ground	31	NC	No Connection
11	Rx11n	V-by-One HS Data Lane 11	32	NC	No Connection
12	Rx11p	V-by-One HS Data Lane 11	33	NC	No Connection
13	GND	Ground	34	NC	No Connection
14	Rx12n	V-by-One HS Data Lane 12	35	NC	No Connection
15	Rx12p	V-by-One HS Data Lane 12	36	NC	No Connection
16	GND	Ground	37	NC	No Connection
17	Rx13n	V-by-One HS Data Lane 13	38	NC	No Connection
18	Rx13p	V-by-One HS Data Lane 13	39	NC	No Connection
19	GND	Ground	40	NC	No Connection
20	Rx14n	V-by-One HS Data Lane 14	41	NC	No Connection
21	Rx14p	V-by-One HS Data Lane 14			

notes :

1. All GND (ground) pins should be connected together to the LCD module’s metal frame.
2. #26~#41 NC (No Connection) : These pins are used only for LGD (Do not connect)

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		42.5		A	
Power Consumption (Total)			PBL		1020		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