億力光電股份有限公司

EVERVISION ELECTRONICS CO., LTD.

Product Specification For LCD Module

(KVPF-7B-002-16)

Model NO.：VGG322426-7UFLWF(RoHS)

REVISION：4

☐APPROVAL FOR SPECIFICATIONS ONLY

■APPROVAL FOR SPECIFICATIONS AND SAMPLE

CUSTOMER：	APPROVED BY：
STD.	

EVERVISION LCM R&D CENTER

APPROVED BY	CHECKED BY		PREPARED BY	
Eversion 2020.03.09 Roger Chu	Eversion 2020.03.09 Allen Chang	Eversion 2020.03.09 Bright Chiang	Eversion 2020.03.09 Ino Yu	Eversion 2020.03.09 Anugs Lin
DIRECTOR	MANAGER		Mechanism Engineer	Electronic Engineer

Represented by:

first FC components

FIRST Components s.r.l.
www.first-components.com
sales@first-components.com
+39 0332 1888005

4. Application

This specification is applied to the 5.7 inch QVGA supported TFT-LCD module, and can display true 262,144 colors(6 bit/ color). The module is designed for OA, Car TV application and other electronic products which require flat panel display of digital signal interface. This module is composed of a 5.7”TFT-LCD panel, a driver circuit and LED backlight unit.

5. Features

- QVGA (320×240 pixels) resolution.
- Digital 18 bit parallel RGB.
- Line inversion mode with stripe type.
- SYNC mode is supported for digital RGB input data format.
- LED driver circuit is built in this module to provide PWM Dimmer function.

6. General Specifications

Item	Specifications	Unit
Screen Size	5.7 (Diagonal)	inch
Display Format	320RGB(H)×240(V)	dot
Active Area	115.2(H)×86.4(V)	mm
Dot Size	0.120(H)×0.360(V)	mm
Pixel Configuration	RGB Vertical Stripe	-
Display Mode	TN Type Transmissive Mode Normally White	-
Surface Treatment	Anti-Glare and Hard Coating(3H)	-
Viewing Direction	12 O’clock (The Gray Inversion will appear at this direction)	-
Outline Dimension	144.0(W)×104.6(H)×13.0(D)	mm
Weight	(153)	g
RoHS Compliance	RoHS Compliance	-

7. Absolute Maximum Ratings

7.1 Absolute Ratings of Environment

Item	Symbol	Value		Unit	Note
		Min.	Max.		
Storage Temperature	T_{ST}	-30	+80	°C	(1)(2)
Operating Ambient Temperature	T_{OP}	-20	+70	°C	(1)(2)

Note1: Background color changes slightly depending on ambient temperature.
This phenomenon is reversible.

Note2: Please refer to item of RELIABILITY.

7.2 Electrical Absolute Ratings

7.2.1 TFT-LCD Module

(Ta=25±2°C, GND=V_{SS}=0V)

Item	Symbol	Value		Unit	Note
		Min.	Max.		
Digital Power Supply Voltage	V_{CC}	-0.3	4.3	V	-

7.2.2 LED Driver Absolute Maximum Ratings

(Ta=25±2°C)

Item	Symbol	Value		Unit	Note
		Min.	Max.		
LED Driver Supply Voltage	V_{LED}	-0.3	17	V	(1)
LED Driver PWM	PWM	-0.3	6	V	(1)

Note (1) Permanent damage to the device may occur if maximum values are exceeded or reverse voltage is loaded.

8. Electrical Characteristics

8.1 TFT-LCD Module

(Ta=25±2°C)

Item	Symbol	Value			Unit	Note
		Min.	Typ.	Max.		
Power Supply Voltage	V_{CC}	3.0	3.3	3.6	V	-
Input High Threshold Voltage	V_{IH}	0.7VCC	-	VCC	V	-
Input Low Threshold Voltage	V_{IL}	0	-	0.3VCC	V	-
Power Supply Current	I_{CC}	-	27.0	37.8	mA	(1)
Power Consumption	P_L		0.089	0.125	W	(1)
Frame Frequency	F_V	-	60	-	Hz	-
Dot Clock	CLK	-	6.4	7	MHz	-

Note (1) The specified power consumption is under the conditions at V_{CC}=3.3V, F_V=60Hz, whereas a power dissipation check pattern below is displayed.

Black Pattern / 0 Gray



Active Area

8.2 LED Driver Unit

(Ta=25±2°C)

Item	Symbol	Value			Unit	Note
		Min.	Typ.	Max.		
Voltage of LED Driver Unit	$V_{LED(DU)}$	4.5	5	12.5	V	-
Voltage of LED Driver Unit	$V_{LED(DU)}$	4.5	12	12.5	V	-
Current of LED Driver Unit	$I_{LED(DU)}$	-	500	700	mA	I_{LED}=200mA, V_{LED}=5V
Current of LED Driver Unit	$I_{LED(DU)}$	-	370	518	mA	I_{LED}=150mA, V_{LED}=5V
Current of LED Driver Unit	$I_{LED(DU)}$	-	260	364	mA	I_{LED}=100mA, V_{LED}=5V
Current of LED Driver Unit	$I_{LED(DU)}$	-	230	322	mA	I_{LED}=200mA, V_{LED}=12V
Current of LED Driver Unit	$I_{LED(DU)}$	-	170	238	mA	I_{LED}=150mA, V_{LED}=12V
Current of LED Driver Unit	$I_{LED(DU)}$	-	110	154	mA	I_{LED}=100mA, V_{LED}=12V
PWM Signal Low Voltage	V_{PWML}	0	-	0.4	V	-
PWM Signal High Voltage	V_{PWMH}	1.4	-	5.5	V	-
PWM frequency	f_{PWM}	100	-	1000	Hz	-
LED Life Time(25℃)	-	40000	50000	-	hr	(1)(2)

PWM=High:ON, PWM=Low:OFF

Note (1)：LED life time is defined as under 25±2°C , when the average brightness decrease to 50% of original brightness

Note (2)：Lifetime statement is concerning to the max backlight current of 200mA.

10. Input / Output Terminals Pin Assignment

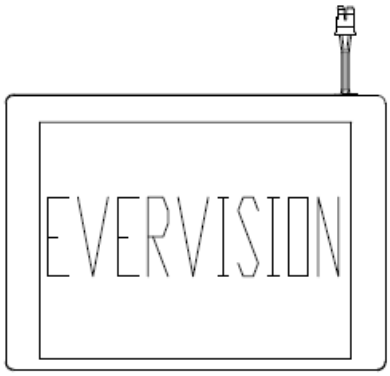
10.1 TFT-LCD Module

Connector: CVILUX CF25331D0R0-05

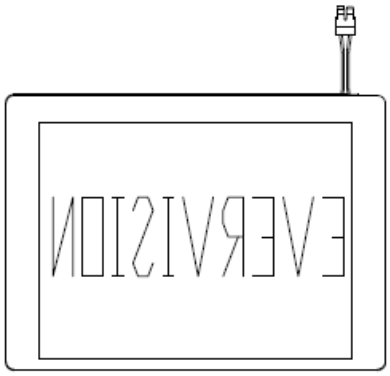
Pin No.	Symbol	I/O	Description
1	V_{SS}	I	Ground
2	CLK	I	Clock signal
3	IHS	I	Horizontal synchronous signal
4	IVS	I	Vertical synchronous signal
5	V_{SS}	I	Ground
6	R0	I	RED data (LSB)
7	R1	I	RED data
8	R2	I	RED data
9	R3	I	RED data
10	R4	I	RED data
11	R5	I	RED data(MSB)
12	V_{SS}	I	Ground
13	G0	I	GREEN data(LSB)
14	G1	I	GREEN data
15	G2	I	GREEN data
16	G3	I	GREEN data
17	G4	I	GREEN data
18	G5	I	GREEN data(MSB)
19	V_{SS}	I	Ground
20	B0	I	Blue data(LSB)
21	B1	I	Blue data
22	B2	I	Blue data
23	B3	I	Blue data
24	B4	I	Blue data
25	B5	I	Blue data(MSB)
26	V_{SS}	I	Ground
27	DEN	I	Input data enable control
28	V_{CC}	I	+3.3V power supply
29	V_{CC}	I	+3.3V power supply
30	R/L	I	Right-and-Left scan setting. (“L” : Normally , “H” : Right-and-Left reversal) .Note(1)

Pin No.	Symbol	I/O	Description
31	U/D	I	Up/down scan setting. (“H”: normal scan. “L”: Up-and-Down reversal.) Note(1)
32	NC	I	No connection
33	V_{SS}	I	Ground

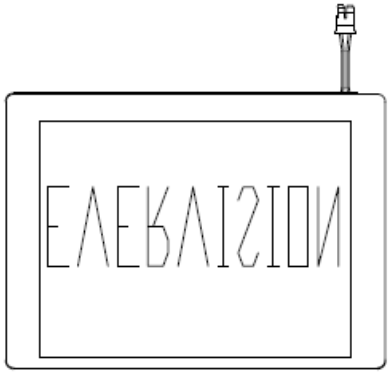
Note (1)



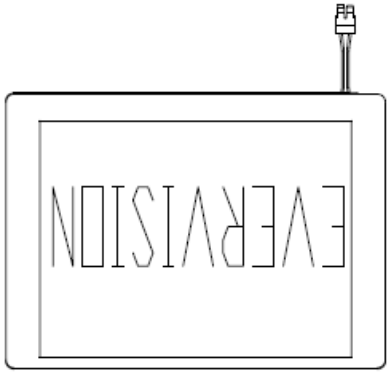
R/L=L,U/D=H



R/L=H,U/D=H



R/L=L,U/D=L



R/L=H,U/D=L

12. Optical Characteristics

The optical characteristics should be measured in a dark environment (≦ 1 lux) or equivalent state with the methods shown in Note (4).

Item		Symbol	Conditions	Min.	Typ.	Max.	Unit	Note
Contrast Ratio		CR	θ_x=0°, θ_Y =0° Viewing Normal Angle	300	（450）	-	-	（2）
Response Time		T_R		-	15	-	ms	（3）
		T_F		-	35	-	ms	
Luminance(Center)		Y	B/L=200mA	1000	（1200）	-	cd/m^2	（4）
			B/L=150mA	750	（900）	-	cd/m^2	
			B/L=100mA	500	（600）	-	cd/m^2	
Brightness uniformity		BUNI		75	（80）	-	%	（5）
Color Chromaticity	Red	Rx		0.590	0.640	0.690	-	(1),(4)
		Ry		0.300	0.350	0.400	-	
	Green	Gx		0.320	0.370	0.420	-	
		Gy		0.540	0.590	0.640	-	
	Blue	Bx		0.095	0.145	0.195	-	
		By		0.035	0.085	0.135	-	
	White	Wx		0.280	0.330	0.380	-	
		Wy		0.310	0.360	0.410	-	
Viewing Angle	Horizontal	θ_x+	CR≥10	55	（60）	-	deg.	
		θ_x-		55	（60）	-		
	Vertical	θ_Y+		55	（60）	-		
		θ_Y-		45	（50）	-		

16.Outline Drawing

