XINSUN Display Integration Ltd.

27.0" TFT MODULE SHORT FORM

MODEL NO. :   XF270FHD02A-ILNL

CUSTOMER :

1. General Specifications

Item	Specification	Unit	Note
Screen Size	597.89 (H) X 336.31 (V), (27.0 inch Diagonal)	mm	
Driver Element	a-si TFT active matrix	-	-
Pixel Number	1920 x R.G.B. x 1080	pixel	-
Pixel Pitch	0.3114 (H) x 0.3114 (V)	mm	-
Pixel Arrangement	RGB vertical stripe	-	-
Display Colors	16.7M	color	-
Transmissive Mode	Normally white	-	-
Surface Treatment	AG type, 3H hard coating, Haze 25	-	-
Luminance, White	300	Cd/m2	
RoHS,Halogen Free &TCO 6.0	RoHS, Halogen Free TCO 6.0 compliance		
Power Consumption	Total (25.07) W(Typ.) @ cell (6.1) W(Max.), BL (18.97) W(Typ.)		(1)

Note (1) The specified power consumption : Total= cell (reference 4.3.1)+BL (reference 4.3.3)

MECHANICAL SPECIFICATIONS

Item		Min.	Typ.	Max.	Unit	Note
Module Size	Horizontal (H)	629.5	630.0	630.5	mm	(1)
	Vertical (V)	367.7	368.2	368.7	mm	
	Thickness (T)	13.6	14.1	14.6	mm	
Bezel Area	Horizontal	603.4	603.9	604.4	mm	
	Vertical	341.8	342.3	342.8	mm	
Active Area	Horizontal	-	597.89	-	mm	
	Vertical	-	336.31	-	mm	
Weight		2460	2530	2600	g	

Note (1) Please refer to the attached drawings for more information of front and back outline dimensions.

2. Pin Assignment

PIN ASSIGNMENT

Pin	Name	Description
1	RXO0-	Negative LVDS differential data input. Channel O0 (odd)
2	RXO0+	Positive LVDS differential data input. Channel O0 (odd)
3	RXO1-	Negative LVDS differential data input. Channel O1 (odd)
4	RXO1+	Positive LVDS differential data input. Channel O1 (odd)
5	RXO2-	Negative LVDS differential data input. Channel O2 (odd)
6	RXO2+	Positive LVDS differential data input. Channel O2 (odd)
7	GND	Ground
8	RXOC-	Negative LVDS differential clock input. (odd)
9	RXOC+	Positive LVDS differential clock input. (odd)
10	RXO3-	Negative LVDS differential data input. Channel O3(odd)
11	RXO3+	Positive LVDS differential data input. Channel O3 (odd)
12	RXE0-	Negative LVDS differential data input. Channel E0 (even)
13	RXE0+	Positive LVDS differential data input. Channel E0 (even)
14	GND	Ground
15	RXE1-	Negative LVDS differential data input. Channel E1 (even)
16	RXE1+	Positive LVDS differential data input. Channel E1 (even)
17	GND	Ground
18	RXE2-	Negative LVDS differential data input. Channel E2 (even)
19	RXE2+	Positive LVDS differential data input. Channel E2 (even)
20	RXEC-	Negative LVDS differential clock input. (even)
21	RXEC+	Positive LVDS differential clock input. (even)
22	RXE3-	Negative LVDS differential data input. Channel E3 (even)
23	RXE3+	Positive LVDS differential data input. Channel E3 (even)
24	GND	Ground
25	NC	For LCD internal use only, Do not connect
26	NC	For LCD internal use only, Do not connect
27	NC	For LCD internal use only, Do not connect
28	Vcc	+5.0V power supply
29	Vcc	+5.0V power supply
30	Vcc	+5.0V power supply

Connector Information

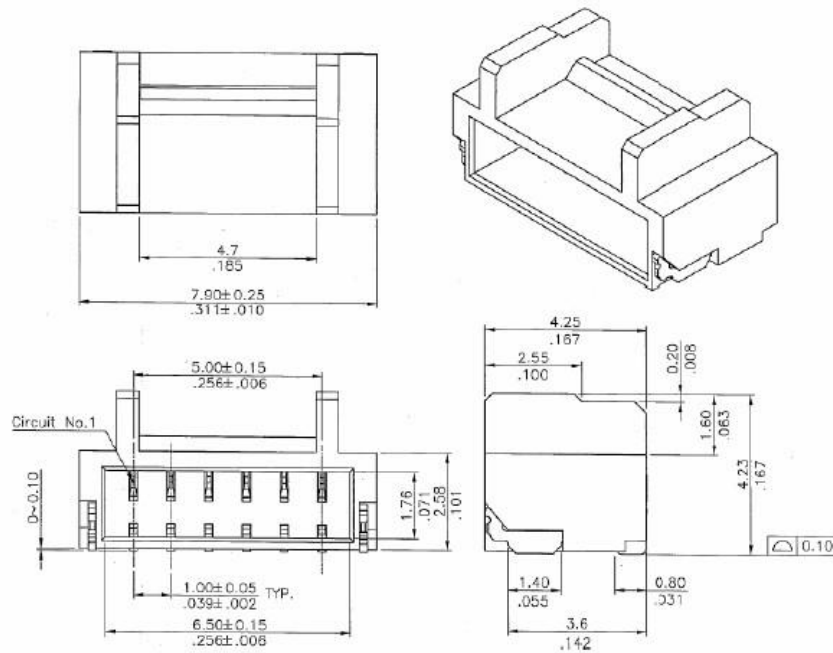| Item	Description
Manufacturer	P-TWO / Foxconn
Type part number	P-TWO: 187114-30091 Foxconn: GS23301-1321S-7H
User's Mating housing part number	JAE: FI-X30HL() Foxconn: WM13-011-3050

*Notice: There would be compatible issues if not using the indicated connectors in the matching list.

Note (1) The first pixel is odd.

Note (2) Input signal of even and odd clock should be the same timing.
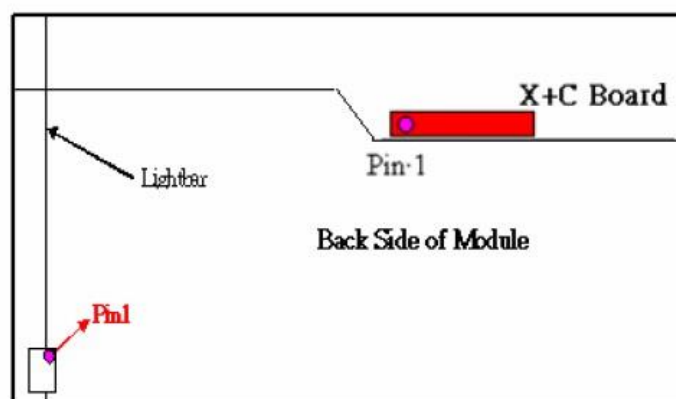
Pin Assignment for B/L

Connector:WM13-406-063N(FCN), CI1406M1HRK-NH(CVILUX).

CN1

Pin number	Description
1	Cathode of LED string
2	Cathode of LED string
3	VLED
4	VLED
5	Cathode of LED string
6	Cathode of LED string

Note (1) User's Mating Connector Part No.: CI1406SL000-NH (CviLux) or Compatible.

3.Absolute Maximum Ratings

Item	Symbol	Value Min.	Value Max.	Unit	Note
Storage Temperature	TST	-20	60	°C	(1)
Operating Ambient Temperature	TOP	0	50	°C	(1), (2)

Note (1)

(a) 90 %RH Max. (Ta <= 40 °C).

(b) Wet-bulb temperature should be 39 °C Max. (Ta > 40 °C).

(c) No condensation.

Note (2) The temperature of panel surface should be 0 °C min. and 60 °C max.

Relative Humidity (%RH) vs **Temperature (°C)** — Operating / Storage Range graph.
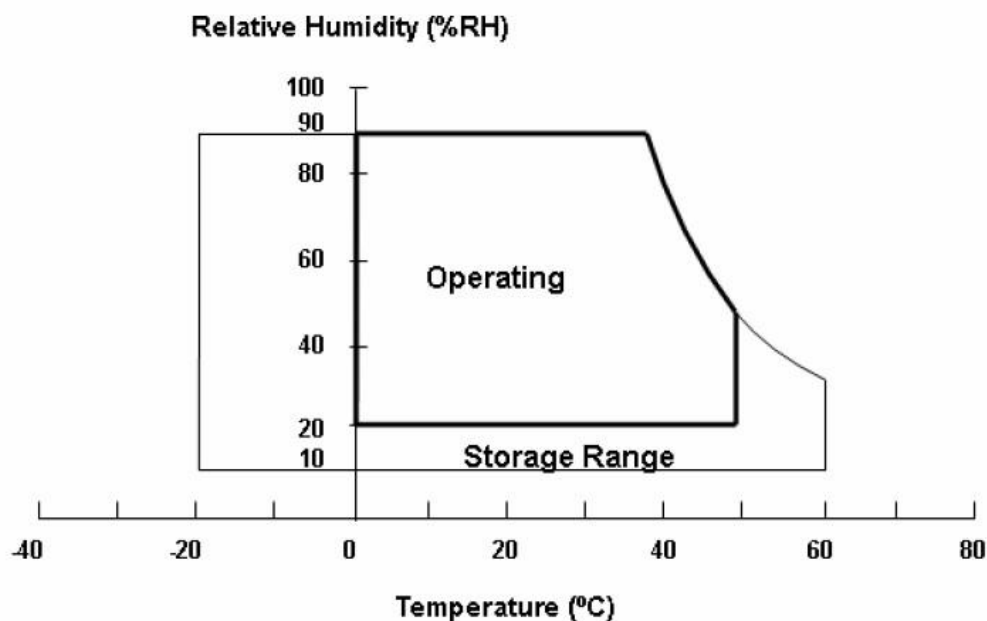
ELECTRICAL ABSOLUTE RATINGS

TFT LCD MODULE

Item	Symbol	Value Min.	Value Max.	Unit	Note
Power Supply Voltage	VCCS	-0.3	6.0	V	(1)
Logic Input Voltage	VIN	-0.3	3.6	V	

BACKLIGHT UNIT

Item	Symbol	Value Min.	Value Typ	Value Max.	Unit	Note
LED Forward Current Per Input Pin	IF		85	89	mA	(1), (2) Duty=100%
LED Pulse Forward Current Per Input Pin	IP			150	mA	(1), (2) Pulse Width≦10msec. and Duty≦10%

Note (1) Permanent damage to the device may occur if maximum values are exceeded. Function operation should be restricted to the conditions described under Normal Operating Conditions.

Note (2) Specified values are for input pin of LED light bar at Ta=25±2 ℃ (Refer to 4.3.3 and 4.3.4 for further information).

4.Electrical Characteristics

Parameter		Symbol	Value			Unit	Note
			Min.	Typ.	Max.		
Power Supply Voltage		Vcc	4.5	5.0	5.5	V	-
Ripple Voltage		V_{RP}			300	mV	-
Rush Current		I_{RUSH}			3	A	(2)
Power Supply Current	White			0.46	0.51	A	(3)a
	Black			1.08	1.22	A	(3)b
	Vertical Stripe			1.03	1.16	A	(3)c
Power Consumption		PLCD		5.4	6.1	Watt	(4)
LVDS interface	Differential Input Voltage	V_{ID}	100	-	600	mV	
	Common Input Voltage	V_{CM}	1.0	1.2	1.4	V	
	Differential Input High Threshold Voltage	V_{TH}	-	-	+100	mV	
	Differential Input Low Threshold Voltage	V_{TL}	-100	-	-	mV	

Note (1) The ambient temperature is Ta = 25 ± 2 ℃.

Note (2) Measurement Conditions:
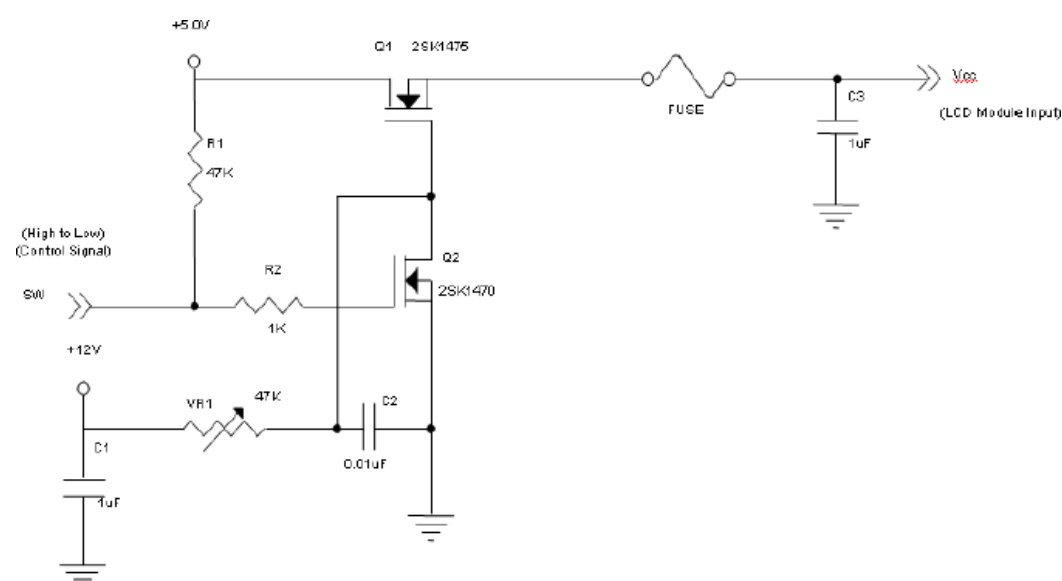
Vcc rising time is 470μs
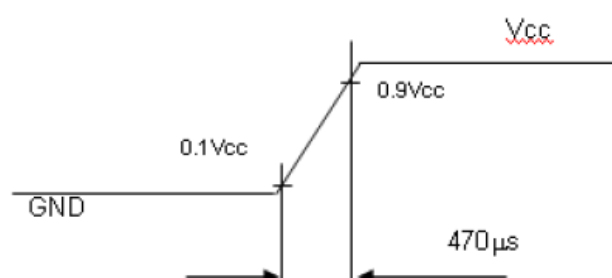
Note (3) The specified power supply current is under the conditions at Vcc = 5.0 V, Ta = 25 * 2 °C, Fr = 60Hz, whereas a power dissipation check pattern below is displayed.

a. White Patterns

b Black P attern-'
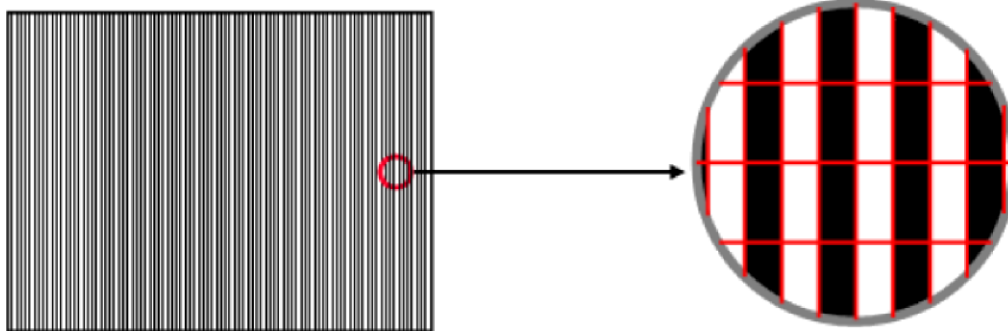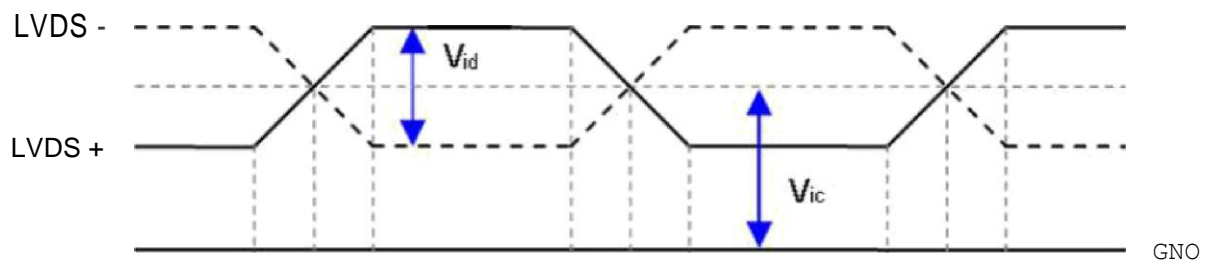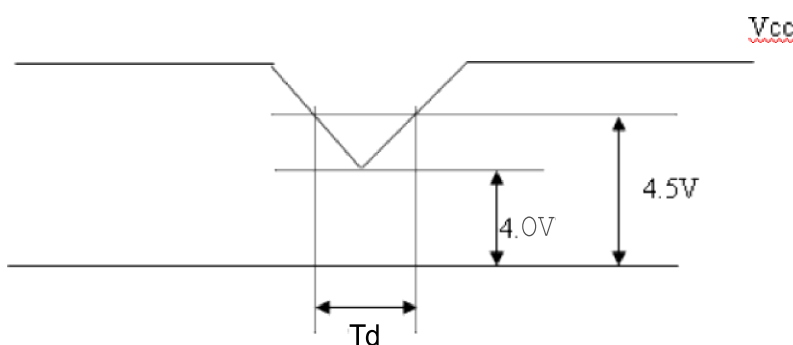
Active Area-'

Active Areas

c. Vertical Stripe P attern-'

Active Area • '

Note (4) The power consumption is specified at the pattern with the maximum current.

Note (5) VID waveform condition

LVDS -

V_{id}

LVDS +

V_{ic}

GNO

Vcc Power Dip Condition

Vcc

4.5V

4.0V

Td

Dip conditi on: 4.0 ? Vcc ? 4.5, Td ? 20 ms

BACKLIGHT UNIT

ParBmeter	symbol	Value			Unit	Note
		Min.	Typ.	Max.		
LED Light Bar Input Voltage Per Input Pin	VPIN		55.8	GO.3	V	(1), Duty=100%, IPIN=85mA
LED Light Bar Current Per Input Pin	IPIN		85	89	mA	(1), (2) Dury=100%
LED Life Time	LLED	40000			Hrs	f3)
Power Consumption	PBL		18.97	20.5	W	(1) Duty= 1009a, IPIN=85mA

Note (1) LED light bar input voltage and current are measured by utilizing a true RMS multimeter as shown below

Note (2) PBL = IPIN • VPIN (4) input pins

Note (3) The lifetime of LED is defined as the time when LED packages continue to operate under the conditions at Ta = 25 *2   and I= (85)mA (per chip) until the brightness becomes   50% of its original value.

Note (4) The module must be operated with constant driving current
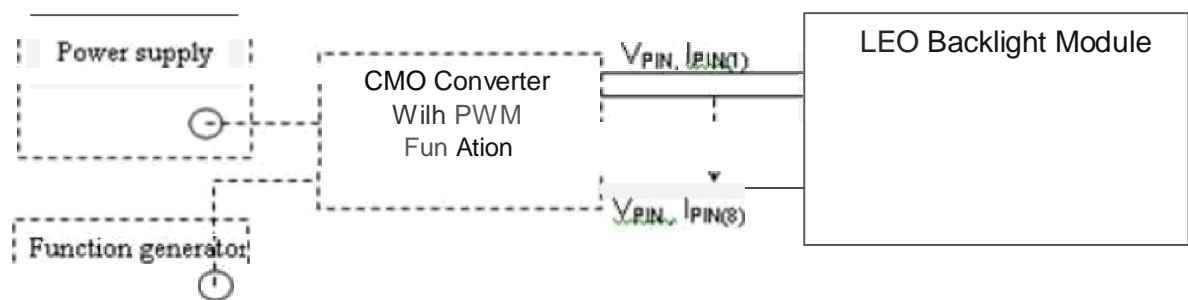
5.Optical Characteristics

Item		Symbol	Condition	Min.	Typ.	Max.	Unit
Color Chromaticity (CIE 1931)	Red	Rx	$\theta_x=0°$, $\theta_Y=0°$ CS-2000 R=G=B=255 Gray scale	Typ − 0.03	0.639	Typ + 0.03	-
		Ry			0.339		
	Green	Gx			0.314		
		Gy			0.627		
	Blue	Bx			0.156		
		By			0.057		
	White	Wx			0.313		
		Wy			0.329		
Center Luminance of White (Center of Screen)		L_C		250	300	-	cd/m^2
Contrast Ratio		CR		800	1200	-	-
Response Time		T_R	$\theta_x=0°$, $\theta_Y=0°$	-	1.5	2.5	ms
		T_F		-	3.5	5.5	
White Variation		δW	$\theta_x=0°$, $\theta_Y=0°$ USB2000		-	1.42	-
Viewing Angle	Horizontal	θx- + θx+	CR ≧ 10 USB2000	150	170	-	Deg.
	Vertical	θy- + θy+		140	160	-	
Viewing Angle	Horizontal	θx- + θx+	CR ≧ 5 USB2000	160	178	-	Deg.
	Vertical	θy- + θy+		150	170	-	

6.Mechanical Drawing

Active Area (597.888 X 336.312)