凯利光电香港有限公司

Product Specification

8.0” COLOR TFT-LCD MODULE

MODEL: KL080AI4303

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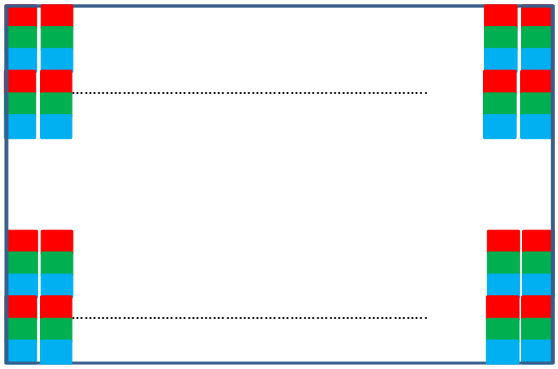
A. Physical Specifications

1. TFT LCD Panel

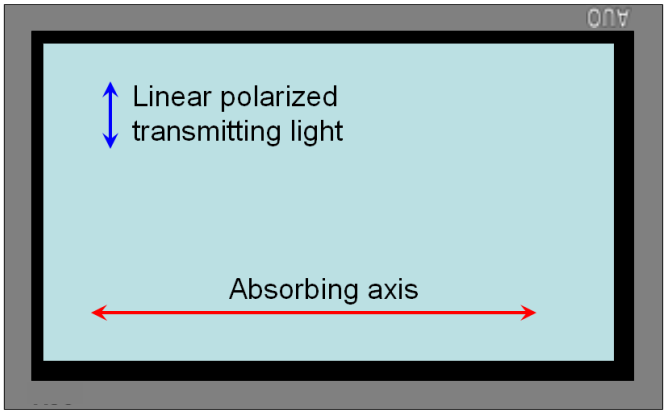
NO.	Item	Unit	Specification	Remark
1	Display Resolution	dot	1280 RGB(H)x 720(V)	
2	Active Area	mm	176.64 x 99.36	
3	Screen Size	inch	8.0(Diagonal)	
4	Dot Pitch	μm	138	
5	Color Configuration	–	R. G. B. Stripe	Note. 2
6	Color Depth	–	16.7 M colors	
7	Overall Dimension	mm	190.62(H) × 117.52(V) × 8.82(T)	Note. 1
8	Weight	g	290 (tbd) +/-10%	
9	Display Mode	–	Normally Black	
10	Surface Treatment	–	AGLR	

Note 1: FPCA is excluded. Thickness is not included the mounting tab.

Note 2: Below figure shows dot stripe arrangement.



Note 3: Below figure shows absorbing axis



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2. Touch Panel

NO.	Item	Unit	Specification	Remark
1	Screen size	inch	8"	
2	Structure	--	Glass	
3	TP Active Area	mm	176.64 (W) x 99.36 (H)	
4	Input mode		Multi Finger	
5	Channel (Resolution)	--	28 (H) × 16 (V)	
6	Sensor Pitch	mm	6.344 (W) x 6.273 (H)	
7	Sensor Mode	--	Capacitance sensor	
8	TP Dimension	mm	188(H) × 114(V) ×1.1(T)	
9	Hardness		3H	

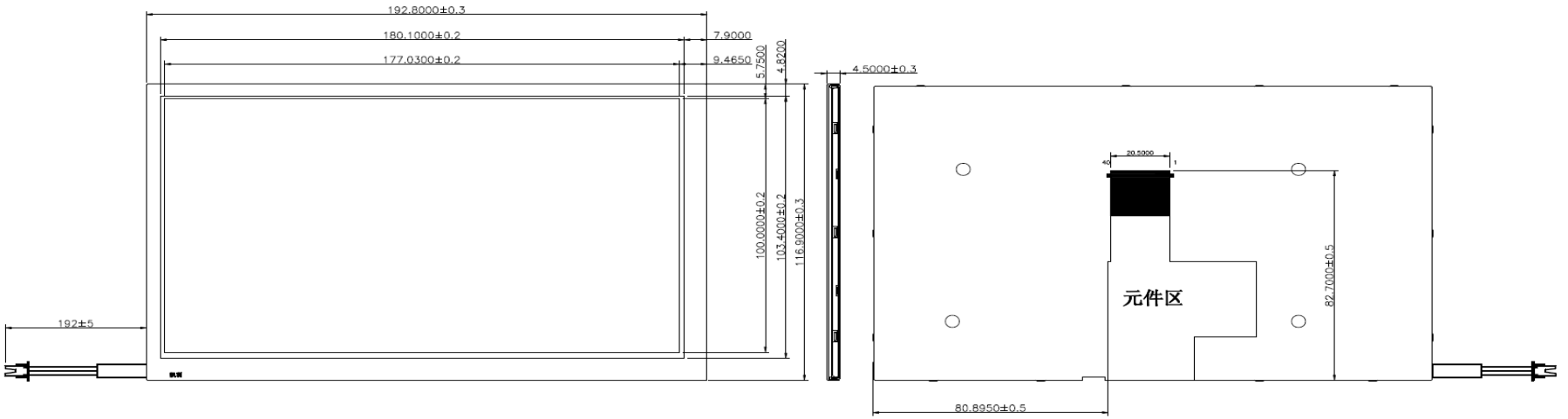
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B. Outline Dimension

1. TFT-LCD Module

Customer Code.:	KL070AI394303	SPECIFICATION OF BACKLIGHT	
CUSTOMER'S P/N:		EDITION:	01
Date: 2018.12.23	Page: 1/1	THE THIRD ANGLE	FX'S P/N(exclude wrapper):
		FX'S P/N: (include wrapper)	
		Approval(核准)	
		Check (检查)	
		Design(设计)	

REV	DATE	DESCRIPTION	REVISER



NOTES
1. Unit:mm
2. Modification rev. number
3. ✻ :Critical Parameter
4. All draft angles to be 1.5°
5. Unspecified Tolerances: ±0.2 ANGULAR:±1°
8. Measure standard is shown in the figure of right
9. The measurement instrument is BM-7 luminance Colorimeter. The height of measuring is 500 mm. The aperture is 1° field.
10. Do not use the materials which are prohibited by RoHS
11. 配用LCD: CMO
12. Operating Temperature:-20°~70° C
13. Storage Temperature: -30°~80° C

	Item	Symbol	min.	typ.	max.	Unit	Condition
BLU	Luminance	Lv	——	——	——	cd/m²	If= 260 mA 测试仪器：BM—7 测试高度500MM (亮度值为中心点值)
	Uniformity	Avg	80			%	
	Colour Coordinate	X	0.26	0.29	0.32		
		Y	0.27	0.30	0.33		
LCM	Luminance	Lv	400	450	——	cd/m²	
	Uniformity	Avg	80			%	
	Colour Coordinate	X	0.29	0.32	0.35		
		Y	0.3	0.33	0.36		
Forward Voltage		Vf	8.8	——	10.2	V	
Reverse Current		Ir		20		μA	Vr= 3.0 V

NO.	TITLE	Quantity
11	Front iron frame (上铁框)	1
10	Mara tape (玛拉胶)	2
9	HOUSING (塑胶框)	1
8	PCB(印制电路板)	1
7	FPC(软质电路板)	1
6	LED	39
5	BEF(增光片)	3
4	Diffuser film(扩散片)	1
3	Light guide plate(导光板)	1
2	Reflector film(反射膜)	1
1	Rear iron frame (下铁框)	1

Customer: 客 户	Approval Date: 确认日期	2018.12.23	Approve by: 确 认	

C. Electrical Specifications

1.1 TFT LCD Panel Pin Assignment

Recommended Connector: HIROSE FH52E-40S-0.5SH

No.	Pin Name	I/O	Description	Remarks
1	NC		Dummy	
2	SHLR	I	Horizontal scan direction control. “H” Left to Right; “L” Right to Left.	Note1
3	UPDN	I	Vertical scan direction control. “H” Down to Up; “L” Up to Down.	Note1
4	VDD	PI	Digital power supply voltage.	
5	GND	G	Digital Ground.	
6	NC/VPP		Dummy	
7	NC		Dummy	
8	GND	G	Digital Ground.	
9	CLKP	I	Positive LVDS differential clock input.	
10	CLKN	I	Negative LVDS differential clock input.	
11	GND	G	Digital Ground.	
12	PIND0	I	Positive LVDS differential input.	
13	NIND0	I	Negative LVDS differential input.	
14	GND	G	Digital Ground.	
15	PIND1	I	Positive LVDS differential input.	
16	NIND1	I	Negative LVDS differential input.	
17	GND	G	Digital Ground.	
18	PIND2	I	Positive LVDS differential input.	
19	NIND2	I	Negative LVDS differential input.	
20	GND	G	Digital Ground.	
21	PIND3	I	Positive LVDS differential input.	
22	NIND3	I	Negative LVDS differential input.	
23	GND	G	Digital Ground.	
24	GND	G	Digital Ground.	
25	VDD	PI	Digital power supply voltage.	
26	VDD	PI	Digital power supply voltage.	
27	GND	G	Digital Ground.	
28	NC		Dummy	
29	VDDA	PI	Analog power supply voltage.	
30	VDDA	PI	Analog power supply voltage.	
31	VDDA	PI	Analog power supply voltage.	
32	NC/CS		Dummy	
33	NC/SCL		Dummy	

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34	NC/SDO		Dummy	
35	NC/SDI		Dummy	
36	GNDA	G	Analog Ground.	
37	GNDA	G	Analog Ground.	
38	GNDA	G	Analog Ground.	
39	GNDA	G	Analog Ground.	
40	GNDA	G	Analog Ground.	

I: Digital signal input, O: Digital signal output, G: GND, PI: Power input

Fig. 2. Input Timing Diagram

Parameter		Symbol	Min.	Typ.	Max.	Unit.	Remark
CLK Frequency		F_{CLK}	69.5	71.2	75.5	MHz	
HSYNC	**Period**	T_H	1524	1540	1566	CLK	
	Horizontal display area	T_{HD}		1280		CLK	
	Blanking	$T_{HBP} + T_{HFP}$	244	260	286	CLK	
VSYNC	**Period**	T_V	760	770	804	HS	
	Vertical display area	T_{VD}		720		HS	
	Blanking	$T_{VBP} + T_{VFP}$	40	50	84	HS	

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1. Absolute Maximum Ratings

Items	Symbol	Values		Unit	Condition
		Min.	Max.		
Power Voltage	VDD	-0.5	5	V	GND = 0 V
	VDDA	-0.5	**6**	V	GND = 0 V
Operation Temperature	Topa	-30	85	℃	Ambient
Storage Temperature	Tstg	-40	95	℃	Ambient

Note 1: Functional operation should be restricted under normal ambient temperature.

2. DC Electrical Characteristics

The following items are measured under stable condition and suggested application circuit.

a. Power Specification

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Power Supply	**VDD**	3	3.3	3.6	V	Note 1
	IVDD		45	50	mA	Note 1
	IVDD inrush current			200	mA	
	VDDA	4.5	5.0	5.5	V	Note 1
	IVDDA		76	195	mA	Note 1
	IVDDA inrush current			500	mA	
	VDDA ripple			500	mV	Note2

a. Signal DC Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Input signal voltage	Vi	-0.3	-	VDD	V	
Input high level voltage	V_{IH}	0.7VDD	-	VDD	V	
Input low level voltage	V_{IL}	GND	-	0.3VDD	V	
Differential input high threshold	R_{XVTH}	0.2	-	-	V	**Note 1**
Differential input low threshold	R_{XVTL}	-	-	-0.2	V	**Note 1**
Input voltage range (singled-end)	R_{XVIN}	0	-	VDD-1.2+|VID|/2	V	**Note 1**
Input differential voltage	$\|V_{ID}\|$	0.2	-	0.6	V	**Note 1**
Differential Input Common Mode Voltage	R_{XVCM}	|VID|/2	-	VDD-1.2	V	**Note 1**

Note 1: **LVDS interface signal DC characteristic**

Fig. 4. LVDS DC characteristics diagram

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3.

4. AC Electrical Characteristics

a. Input AC characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
VDD power on slew time	T_{POR}	1	-	15	ms	From 0V to 90% VDD
GRB active pulse width	T_{GRB}	1	-	20	ms	VDD=3.3V

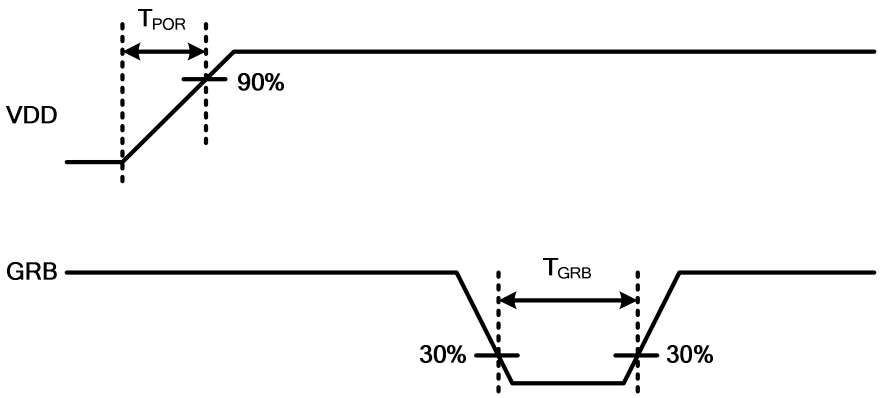


Fig. 6. VDD and GRB timing diagram

b. Differential signal AC characteristics

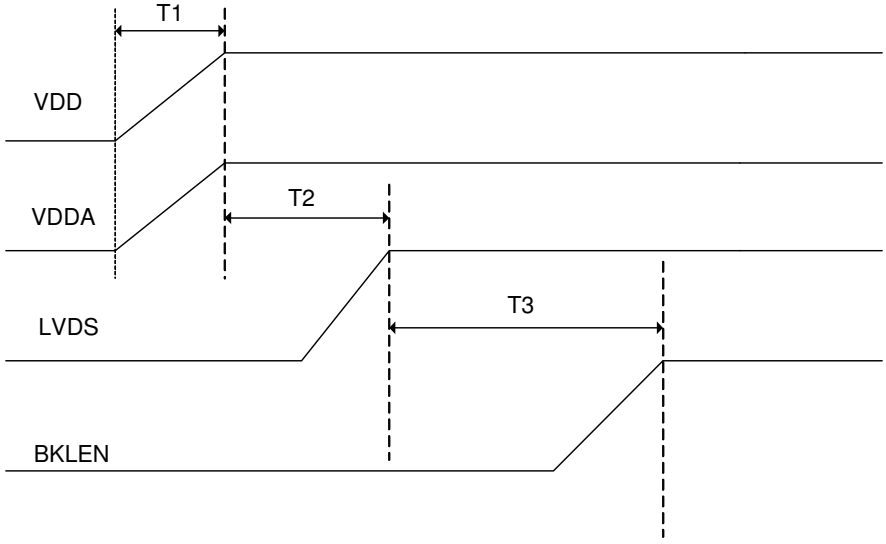
Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
Clock frequency	R_{XFCLK}	**25**	-	**72**	MHz	
Input Data Skew Margin	T_{RSKM}			400	ps	

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5. Power on/off sequence

The LCD adopts high voltage driver IC, so it could be permanently damaged under a wrong power on/off sequence. The suggested LCD power sequence is below:

a. Power on sequence:
VDD&VDDA → LVDS → BKLEN:

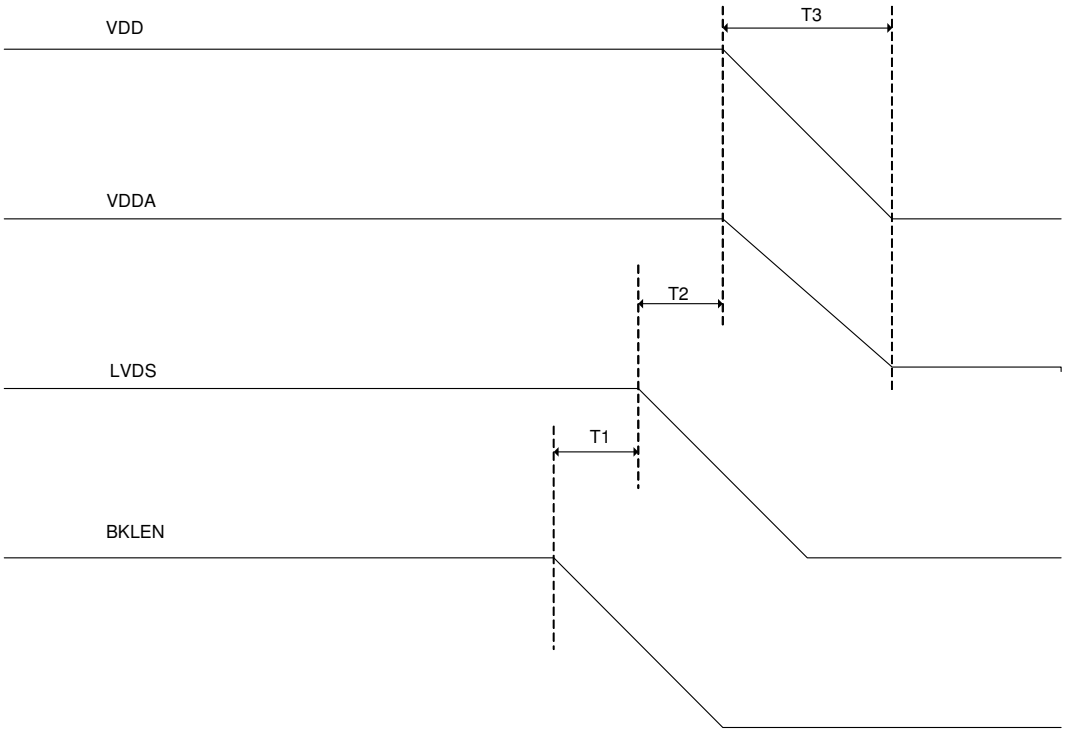


Power on timing:

Parameter	Value			Units
	Min.	Typ.	Max.	
T1	10	-	15	ms
T2	1	-	10	ms
T3	300	350	-	ms

b. Power off sequence:
BKLEN → LVDS → VDD&VDDA

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Power off timing:

Parameter	Value			Units
	Min.	Typ.	Max.	
T1	90	100	-	ms
T2	**1**		**10**	ms
T3	1		10	ms

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D. Optical specifications (Note 1, 2) (TFT Panel + Touch Panel)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit	Remark
Response	Tr+Tf	θ=0°, 25˚C	-	-	20	ms	Note 3
		θ=0°, -20˚C	-		150		
		θ=0°, -30˚C	-		350		
Contrast ratio	CR	θ=0°	800		-		Note 4, 5, 6
	CR	Area A+	800		-		Note 4, 5, 6,11
	CR	Area A	400		-		Note 4, 5, 6,11
	CR	Area B	100		-		Note 4, 5, 6,11
Viewing Angle Top Bottom Left Right		CR≧10	 70 70 70 70	 80 80 80 80	 - - - -	deg.	Note 7, 8

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E. Reliability Test Items(Note 1~3)

No.	Test items	Conditions		Remark
1	High temperature storage	Ta= 95 ℃	504 Hrs	
2	Low temperature storage	Ta= -40 ℃	504 Hrs	
3	High temperature operation	Ta= 85 ℃	504 Hrs	
4	Low temperature operation	Ta= -30 ℃	504 Hrs	
5	High temperature and high humidity	Ta= 60 ℃, 90 % RH	504 Hrs	Operation

F.

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