



Version	V1
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Product Specification
TFT LCD DISPLAY Module

Model : EK-043-71A1 (1 CH CVS Input)
EK-043-71A2 (2 CH CVS Input)

4.3" (480xRGBx272)

Approval

Issue by	R & D	QA	ME	Approve by

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Linkface Technology, Inc.

5F, No. 27, Lane 66, Jui-Kuang Rd, Neihu, Taipei, Taiwan
TEL : (02)2795-6800 FAX : (02)2795-4566 web: www.linkface.com.tw

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1. Features

- 16:9 Aspect Ratio Screen.
- 480x272 Resolution.
- LED Back Light
- High Brightness.
- Wide viewing angle.
- Video input channel up to 2 CH (Standard One channel).
- NTSC/PAL auto switch.
- Low cost, without Audio Amp.



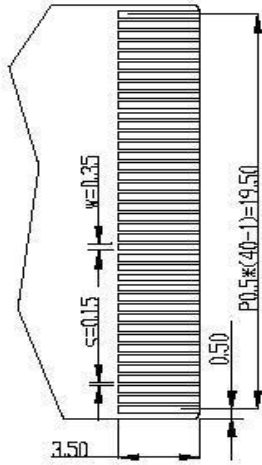
2. Specification.

Screen Size	4.3 inch
Number of Pixels	480(H) x RGB x 272(V)
Dot Pitch	0.198 (H) x 0.198 (V) mm
Pixel configuration	RGB-Stripe
Active Area (mm)	95.04(H) x 53.856(V)
Surface Treatment	Anti-glare (AG)
Operation Temp.(°C)	-20 ~ 70
Storage Temp.	-30 ~ 80
View Angle (U/D/L/R)	50/55/60/60
Brightness (nits)	410
Contrast Ratio	400
Response Time	20
Lamp Life (hrs)	20,000
Supply Voltage (VDC)	8 ~ 14
Power Consumption	1.7W (TYP.)
TV system	NTSC/PAL auto-switching
Video input Level	1V _{p-p} , 75Ω
Video input Signal	Standard Composite Video,
Video scan direction	Up to Down, Left to Right.
Video input channel	1 CH, EK-043-71A1. 2 CH, EK-043-71A2.

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3. Dimension.

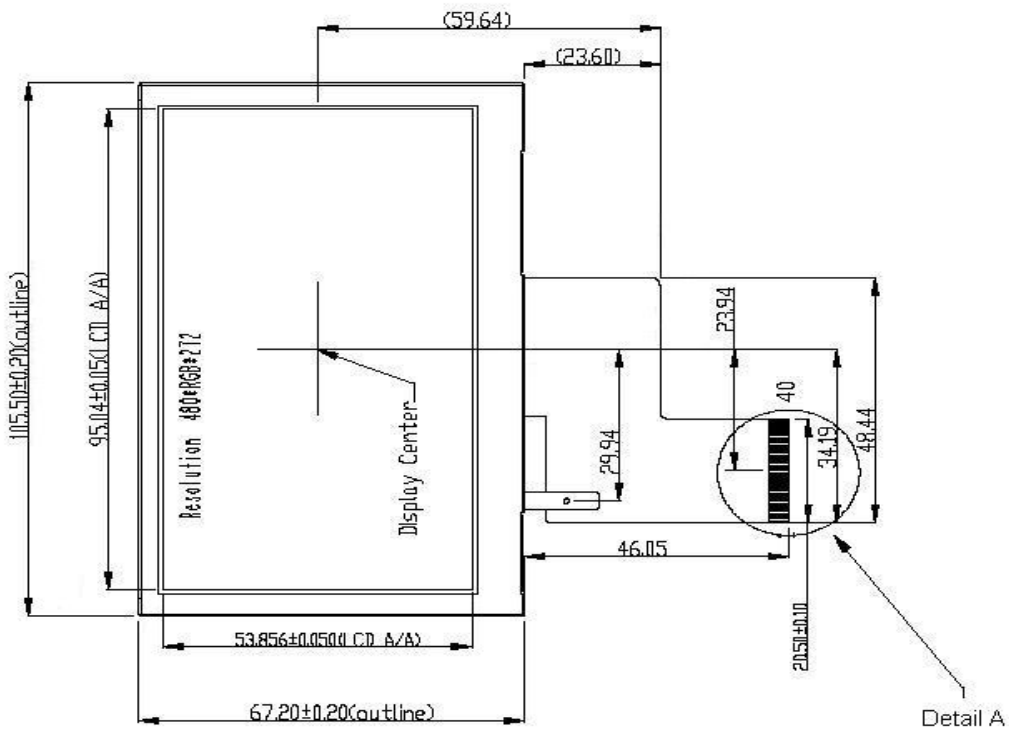
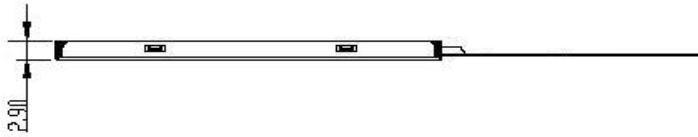
3.1. TFT LCD Panel Dimensions



DETAIL A
SCALE 4:1

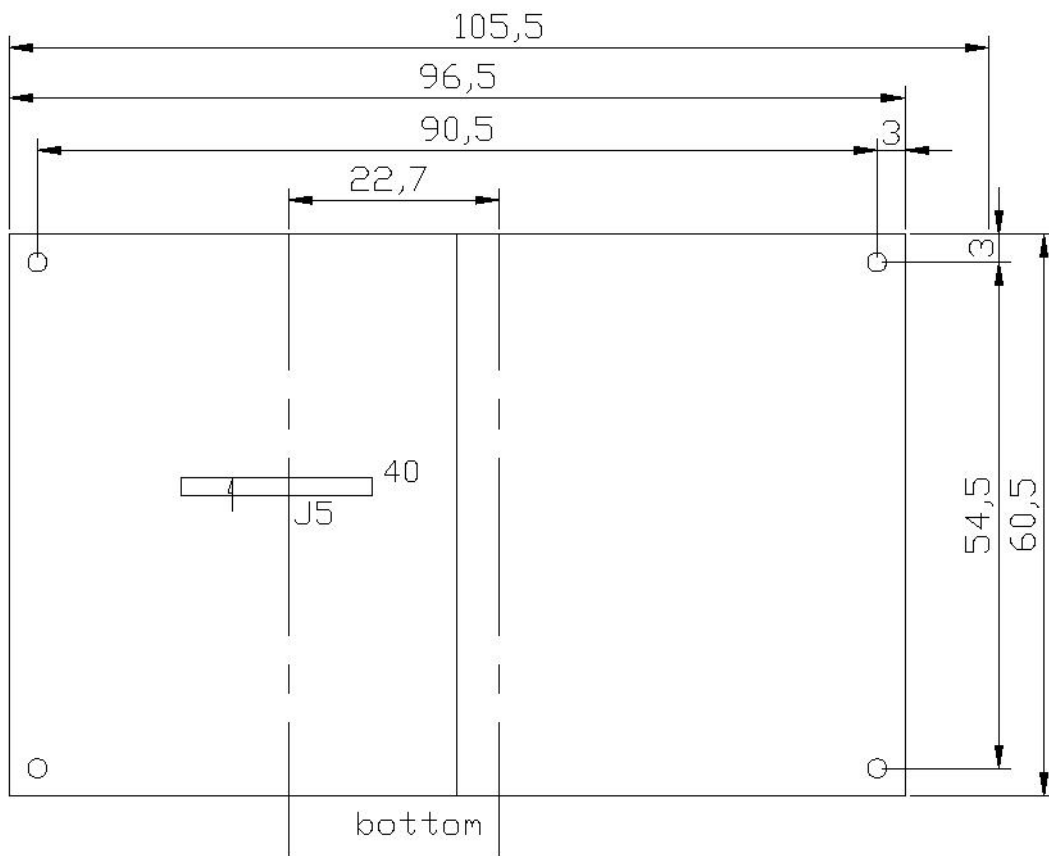
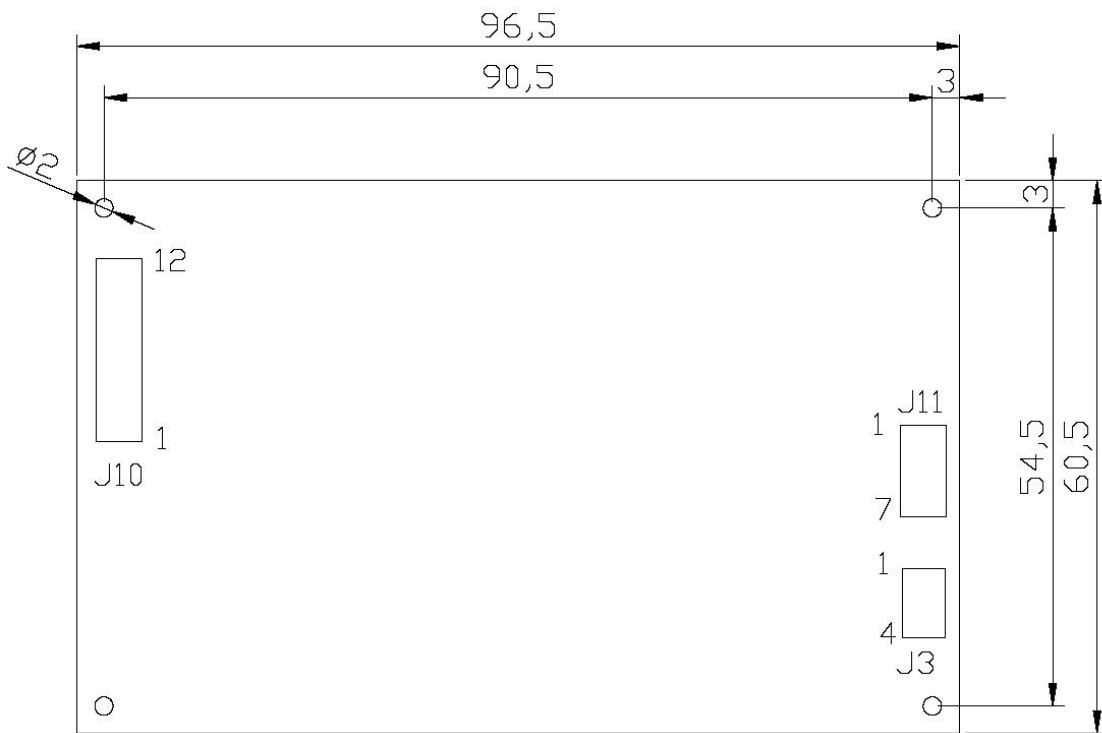
Note:

1. General Tolerance $\pm 0.30\text{mm}$.
2. FPC Connector suggestion "FH19SC-40S-0.5SH".

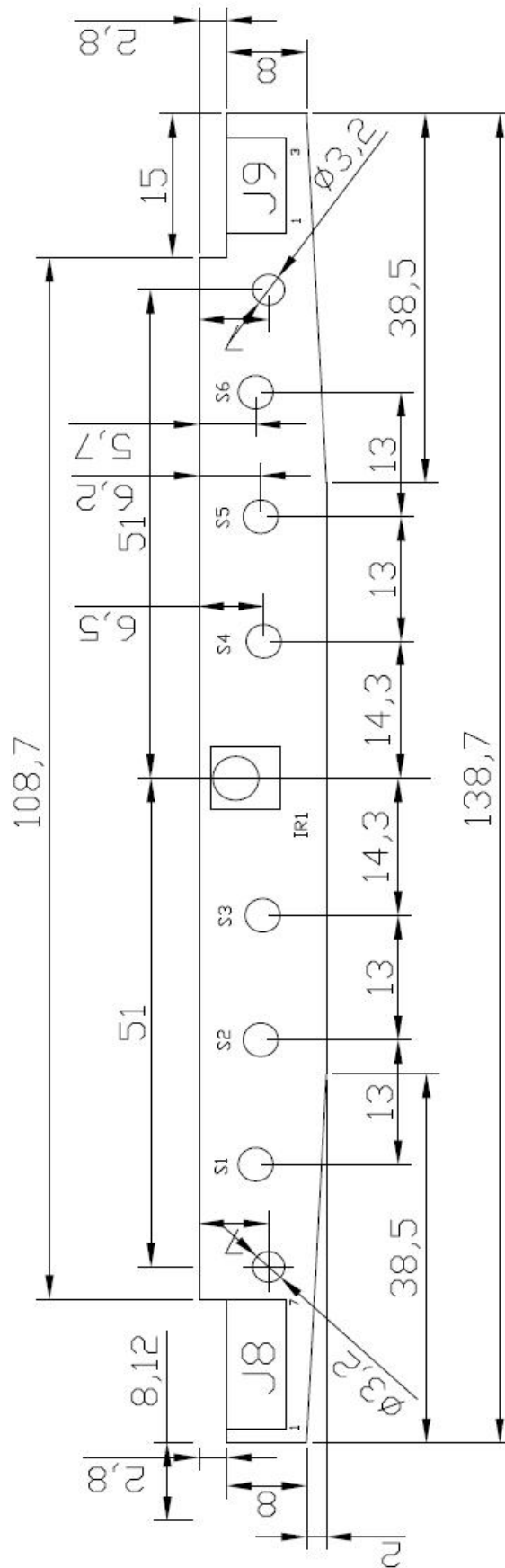


3.2. Display Module Dimensions

3.2. Driver Board Dimensions (Top View)



3.3. Key Board Dimensions (Top View)



T=1,0mm key board (component side)

4. Electrical Specifications

4.1. TFT LCD PANEL.

4.1.1. LCD PIN Assignment (J5)

Pin No.	Symbol	I/O	Function	Remark
1	V _{LED-}	P	Power voltage for LED Backlight cathode.	
2	V _{LED+}	P	Power voltage for LED Backlight anode	
3	GND	P	Power ground	
4	V _{DD}	P	Power voltage	
5	R0	I	Red data input (LSB)	
6	R1	I	Red data input	
7	R2	I	Red data input	
8	R3	I	Red data input	
9	R4	I	Red data input	
10	R5	I	Red data input	
11	R6	I	Red data input	
12	R7	I	Red data input (MSB)	
13	G0	I	Green data input (LSB)	
14	G1	I	Green data input	
15	G2	I	Green data input	
16	G3	I	Green data input	
17	G4	I	Green data input	
18	G5	I	Green data input	
19	G6	I	Green data input	
20	G7	I	Green data input (MSB)	
21	B0	I	Blue data input (LSB)	
22	B1	I	Blue data input	
23	B2	I	Blue data input	
24	B3	I	Blue data input	
25	B4	I	Blue data input	
26	B5	I	Blue data input	
27	B6	I	Blue data input	
28	B7	I	Blue data input (MSB)	
29	GND	P	Power ground	
30	CLK	I	Pixel Clock	
31	DISP	I	Display ON/OFF, H= normal, L=stand by mode.	

32	HSYNC	-	Horizontal sync signal.	
33	VSYNC	-	Vertical Sync signal.	
34	DE	I	Data enable	
35	NC	-	No Connection	
36	GND	P	Power ground	
37	NC	-	No Connection	
38	NC	-	No Connection	
39	NC	-	No Connection	
40	NC	-	No Connection	

I: input, O: output, P: power.

4.1.2. Operation Specifications

4.1.2.1. Absolute Maximum Ratings

Item	Symbol	Values		unit	Remark
		Min.	Max.		
Power voltage	V _{DD}	-0.3	4.0	V	
LED Reverse voltage	V _{RLED}	-	5	V	Each LED
LED Forward current	I _F		30	mA	Each LED
Input signal voltage	V _I	-0.5	4.0	V	
Operation Temperature	T _{OP}	-20	70	°C	
Storage Temperature	T _{ST}	-30	80	°C	

4.1.2.2. Typical Operation Conditions

Item	Symbol	Values			Unit	Remark
		Min.	Typ.	Max.		
Power voltage	V _{DD}	3.0	3.3	3.6	V	
	V _{LED}	-	30	-	V	
Current consumption	I _{CC}	-	15		mA	
	I _{LED}	-	20	-	mA	
Input logic high voltage	V _{IH}	0.8V _{DD}	-	V _{DD}	V	
Input logic low voltage	V _{IL}	0		0.2V _{DD}	V	
LED life time	-	20,000	-	-	Hr	

4.2. A/D board, Socket PIN Assignment

J10: Input Connector (Pitch= 1.25mm, 12 PIN)

Pin	Function	Note
1	DC12V	Power Input
2	DC12V	Power Input
3	NC	No connection
4	GND	Ground
5	NC	No connection
6	NC	No connection
7	GND	Ground
8	CVS 1 IN	Channel 1, display channel.
9	GND	Ground
10	CVS 2 IN	Channel 2, display channel.
11	VIR	Reserved for 5 VDC for IR remote.
12	IR DATA	Reserved for Remote IR signal input.

J3: Program download port. (Pitch= 1.25mm, 4 PIN)

Pin	Function	Note
1	VCC 5V	
2	TX	Optional
3	RX	
4	GND	

J11: Key Board Connector (Pitch= 1.25mm, 7 PIN)

Pin	Function	Note
1	GND	
2	+ / UP	
3	MENU	OSD mode
4	- / DOWN	
5	SOURCE	Input signal Select
6	MUTE	For Audio volume
7	POWER	Power on/off

4.3. Key board, Socket PIN Assignment

J8: Pitch= 1.25mm, 7 PIN.

Pin	Function	Note
1	GND	
2	+ /UP	
3	MENU	OSD mode
4	- /DOWN	
5	SOURCE	Input signal Select
6	MUTE	For Audio volume
7	POWER	Power on/off

J9: Optional IR function connector

Pin	Function	Note
1	GND	
2	IR Data Input	
3	+3.3V	

4.4. Key board, Switch function define.

NO	Function	Note
S1	- /DOWN	
S2	MENU	OSD mode
S3	+ /UP	
S4	SOURCE	Input signal Select
S5	MUTE	For Audio volume
S6	POWER	Power ON/OFF

5. Replacement Parts and assembly number:

Parts NO.	Description
EB-043-71	LCD A/D Board, 1 Channel Video input
EB-043-71A2	LCD A/D Board, 2 Channel Video input
0501-1002-06	Key board assembly
LM-043-74L	TFT LCD Module