

12.1“ Lcd Panel With Display Kits

☒ Preliminary Specification

☐ Approval Specification

Module	12.1” LCD Panel with Display Kits
Module Name	K121LGS-T01 Rev.0

Customer

Approved by

Date

Notice: This Specification is subject to change without notice.

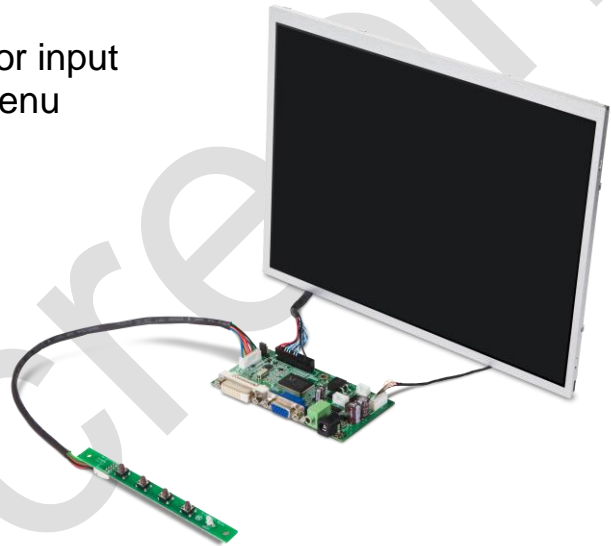
Approved By	Prepared By
Tony Chiu 2017/12/26	Ray Lin 2017/12/5

12.1“ Lcd Panel With Display Kits

K121LGS-T01

Overview

- 12.1“ a-si TFT LCD panel with resolution 1024 x 768
- Suitable for Military, Tablet, Ruggedized PC, Kiosk, Advertising, POS, Marine, Transportation....etc.
- 15 Pin D-SUB VGA connector input
- DVI-D (Digital Video Input) connector input
- OSD(On-Screen-Display) control menu
- Audio input and Audio output
- Include following parts =
 1. 12.1“ Panel
 2. ADBoard
 3. LVDS Cable
 4. B/L Cable
 5. OSD 4 key Board
 6. OSD 4 Key Cable



12.1” LCD Panel with Display Kits	
PANEL ITEM	SPECIFICATION
Module	12.1” Color TFT-LCD with LED Backlight (LVDS Interface)
Resolution (Pixels)	1024 x 768 (XGA)
White Luminance	500 cd/m2
Display Mode	TN Mode, Normally White
Contrast Ratio	700:1
Response Time	16ms (MAX 26ms)
View Angle	80/80/70/70 deg
Outline Dimension	260.5mm(H) x 204.0mm(V) x 7.7mm(T)
Weight	435 g (MAX 465g)
Power Consumption	MAX 6.6Watt
LED Life Time	30,000 Hrs

Product Specification

K121LGS-T01**K121LGS-T01 Panel General Description****General Specifications**

Item	Specification	Unit
Screen Size	12.1" diagonal	-
Driver Element	a-si TFT active matrix	-
Pixel Number	1024 x R.G.B. x 768	pixel
Pixel Pitch	0.24(H) x 0.24(V)	mm
Pixel Arrangement	RGB vertical stripe	-
Display Colors	262k / 16.2m Colors	color

Mechanical Specifications

Item		Type	Unit
Module Size	Horizontal(H)	260.5	mm
	Vertical(V)	204	mm
	Thickness(T)	7.2(MAX 7.7)	mm
Bezel Area	Horizontal	249	mm
	Vertical	187.5	mm
Active Area	Horizontal	245.76	mm
	Vertical	184.32	mm
Weight		435(MAX465)	g

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Absolute Rating of Environment

Item	Symbol	Value		Unit
		Min.	Max.	
Storage Temperature	T _{ST}	-30	+70	°C
Operating Temperature	T _{OP}	-40	+80	°C

Optical Specifications

Item	Symbol	Condition	Min.	Type	Max.	Unit
Color Chromaticity	Red	Rx	Typ – 0.05	0.625	Typ + 0.05	-
		Ry		0.358		-
	Green	Gx		0.324		-
		Gy		0.604		-
	Blue	Bx		0.144		-
		By		0.088		-
	White	Wx		0.313		-
		Wy		0.329		-
	Viewing Angle	Horizontal		θ_{x+}		70
θ_{x-}			70	80	-	
Vertical		θ_{y+}	60	70	-	
		θ_{y-}	60	70	-	

Panel Dimension

Technical drawing of a mechanical structure, likely a component of a vehicle or machine, showing dimensions and labels.

Top View:

- Overall width: 260.5 ± 0.5
- Overall height: 184.32 (AA), 187.5 ± 0.3 (Open Area)
- Internal width segments (from left to right): (26.8) , (3.92) , (26.8) , (3.92) , (26.8) , (3.92) , (26.8) , (3.92) , (26.8) , (3.92) , (26.8) , (3.92) .
- Internal height segments (from top to bottom): 53.4 ± 0.3 , 100 ± 0.3 , 5.84 ± 0.5 .
- Labels: A, B, C, D.
- Feature: Active Area (indicated by a dashed line).

Side View:

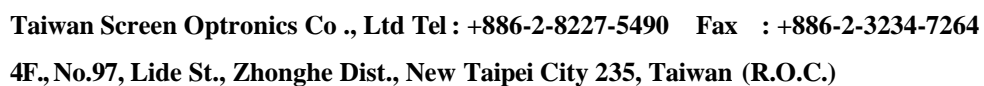
- Overall height: 4.5 ± 0.2 .
- Internal height segments (from top to bottom): 53.4 ± 0.3 , 100 ± 0.3 , 5.84 ± 0.5 .

Front View:

- Overall width: 245.76 (AA), 249 ± 0.3 (Open Area).
- Overall height: 131.0 , 162 , 159 .

Notes:

- Data CDF Position (SI mechanical structure should not touch the positions of Data CDF)
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ADBoard & OSD Key General Function

- A. TFT-LCD module drive board.
- B. Resolution up to 1920 X 1080 @ 60 Hz.
- C. 15 PIN D-SUB VGA connector input.
- D. DVI-D (Digital Video Input) connector input
- E. Dual port 8 bit LVDS interface output to panel.
- F. OSD (On Screen Display) control menu.
- G. Supporting HDCP protocol(optional)
- H. Supporting DDC/CI protocol.
- I. Supporting DCR function (optional)
- J. Audio input and audio output 1.6w x 2 at 8ohm speaker

Specification

Model	AD-17RP
Panel interface	Single/Dual LVDS (10" to 27" panel)
Maximum Resolution	Up to WUXGA 1920x1080 8 bits per color, total 16.7M Colors
Vertical Refresh Rate	VGA 、 SVGA ,XGA AND UXGA VESA standard up to 75Hz WUXGA up to 60HZ
Input Source	VGA analog (15 pin D-Sub) ,DVI ,Audio in
Dot Clock Maximum (pixel clock)	165 MHz
Key Function	Power Menu Adjust— Adjust+ Auto
Board Dimension	110 mm x 56 mm
Voltage for LCD Panel	5V, 3.3V DC (Jump Select)
Storage Temperature Limits	Temperature -40C~70C
Operation Temperature Limits	Temperature 0C~40C Humidity : Less than 85%

Product Specification

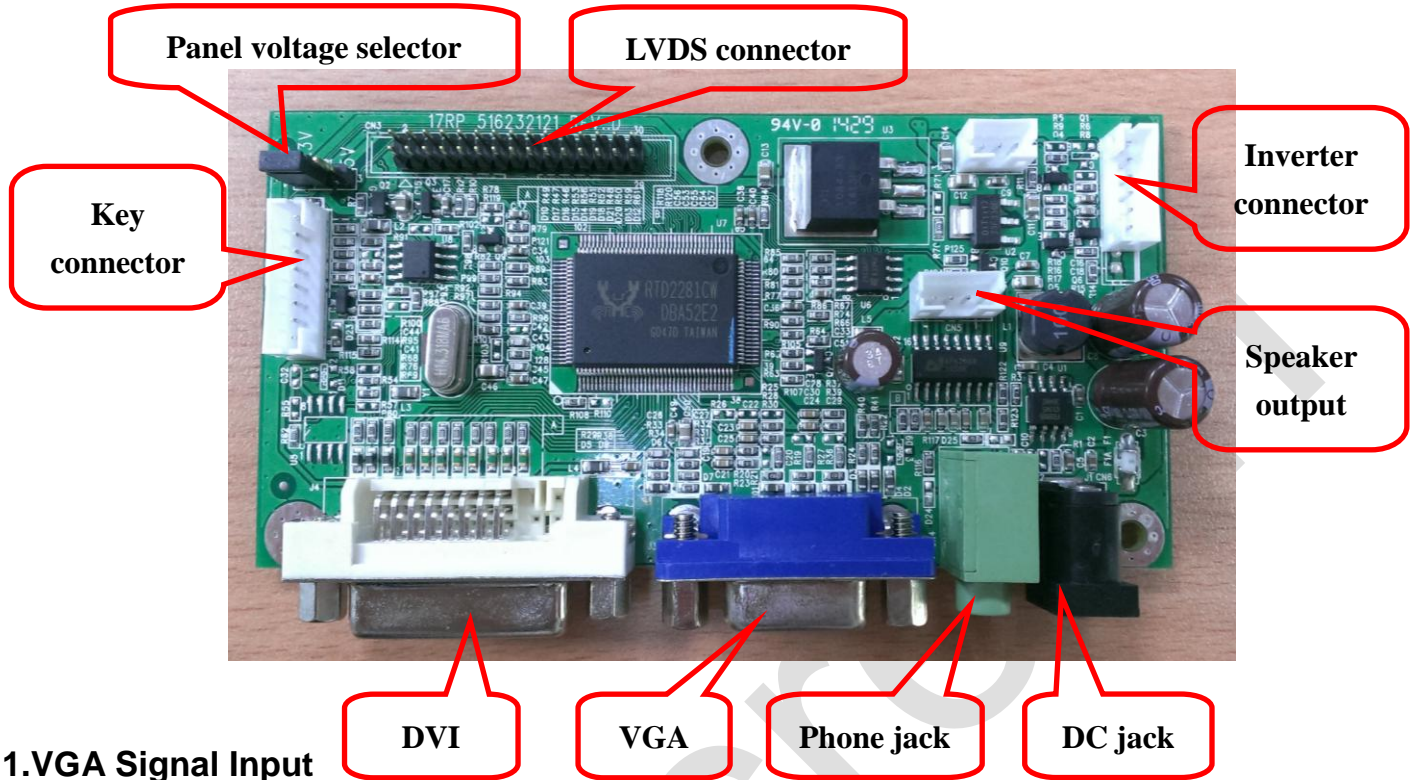
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Support PC Timing

NO.	Description	H-Freq. (KHz)	V-Freq. (Hz)
1.	VGA640×400	31.480	70
2.	VGA640×480	31.649	60
3.	VGA720×400	37.469	70
4.	VESA 640×480	37.862	72.809
5.	VESA 640×480	37.5	75
6.	VESA 800×600	35.156	56.25
7.	VESA 800×600	37.9	60
8.	VESA 800×600	48.077	72.188
9.	VESA 800×600	46.875	75
10.	VESA 1024×768	48.363	60
11.	VESA 1024×768	56.476	70
12.	VESA 1024×768	60.023	75
13.	VESA 1152×864	67.5	75
14.	VESA 1280 x 768	47.8	60
15.	VESA 1280 x 768	60.3	75
16.	VESA 1280×960	60	60
17.	VESA 1280×1024	63.981	60
18.	VESA 1280×1024	79.977	75
19.	VESA 1440x900	59.9	60
20.	VESA 1440x900	75	75
21.	VESA 1600x1200	75	60
22.	VESA 1600x1200	81.3	65 Note1
23.	VESA 1600x1200	87.5	70 Note1
24.	VESA 1600x1200	93.8	75 Note1
25.	VESA 1680x1050	65.3	60
26.	VESA 1680x1050	74.9	75 Note1
27.	VESA 1920x1080	56.25	50
28.	VESA 1920x1080	67.5	60

**** Note1 : VGA input only**

Signal Input Connections



1.VGA Signal Input

Location J3 - 15 pin Hi-Density Female D-SUB

Pin Assign and Definition

Pin No.	SYMBOL	Pin No.	SYMBOL	Pin No.	SYMBOL
1	RED IN	6	R-GND	11	GND
2	GREEN IN	7	G-GND	12	SDA DDC
3	BLUE IN	8	B-GND	13	SYNC. H
4	GND	9	PC 5V	14	SYNC. V
5	GND	10	DET	15	SCL DDC

2.DVI Input

Location J4 - 30 Pin DVI Connector

Pin Assign and Definition

Pin No.	SYMBOL	Pin No.	SYMBOL	Pin No.	SYMBOL
1	DATA2-	11	GND	21	NC
2	DATA2+	12	NC	22	GND
3	GND	13	NC	23	CLKa+
4	NC	14	DDC 5V	24	CLKa-
5	NC	15	GND	25	NC
6	DVI_DDC_SCL	16	GND	26	NC

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7	DVI_DDC_SDA	17	DATA0-	27	NC
8	NC	18	DATA0+	28	NC
9	DATA1-	19	GND	29	GND
10	DATA1+	20	NC	30	NC

3.Power Input

Location – J1 : DC JACK DC=2.5mm OR DC=2.0mm
OR

Location - CN6 : 4 Pin wafer pitch 2.0mm 180D

Pin assign and definition

Pin No.	SYMBOL
1	+12V
2	+12V
3	GND
4	GND

4.Panel power select (JP1)

Pin1,Pin2 short panel power 3.3V

Pin2,Pin3 short panel power 5V

5.LVDS Output

Location – CN3 :2X15 PIN, pitch 2.0mm

Pin Assign and Definition

Pin No.	SYMBOL	Pin No.	SYMBOL	Pin No.	SYMBOL
1	VLCD for Panel	11	LVDS RXE_2-	21	LVDS RXO_1-
2	VLCD for Panel	12	LVDS RXE_2+	22	LVDS RXO_1+
3	VLCD For Panel	13	GND	23	LVDS RXO_2-
4	NC	14	GND	24	LVDS RXO_2+
5	GND	15	LVDS RXE_CLK-	25	GND
6	GND	16	LVDS RXE_CLK+	26	GND
7	LVDS RXE_0-	17	LVDS RXE_3-	27	LVDS RXO_CLK-
8	LVDS RXE_0+	18	LVDS RXE_3+	28	LVDS RXO_CLK+
9	LVDS RXE_1-	19	LVDS RXO_0-	29	LVDS RXO_3-
10	LVDS RXE_1+	20	LVDS RXO_0+	30	LVDS RXO_3+

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6.Key Output Connector

Location – CN2: 8PIN wafer pitch 2.0mm 180D

All Key Active Low Level., All LED Active HI Level , Output Current 10mA MAX

Pin assign and definition

Pin No.	SYMBOL	Pin No.	SYMBOL	Pin No.	SYMBOL
1	MENU KEY	4	UP KEY	7	LED_O
2	AUTO KEY	5	GND	8	POWER KEY
3	DOWN KEY	6	LED_G	---	-----

7.Inverter Connector

Location – CN1: 6 PIN wafer pitch 2.0mm 180D

Pin assign and definition

Pin No.	SYMBOL	Pin No.	SYMBOL
1	GND	4	Back Light Enable
2	GND	5	+12V
3	Dimming control	6	+12V

A. Dimming: IF CCFL panel Range 0 (Inverter Current Max) to 5V (Inverter Current Min)

IF LED panel PWM Ratio 100%(LED Current Max) to PWM Ratio 20%(LED Current Min)

B. Back light enable: 5V (ON) or 0V (OFF)

8.Audio Input – CN4, SCJ368R0NXS0G04G 3P Green or equiv.

Audio Input 1Vp-p Max.

9.Speaker Output – CN5, 4 PIN wafer pitch 2.0mm 180D

Audio Output 1.6W + 1.6W at 8 Ohm

Pin assign and definition

Pin	Signal
1	R+
2	R-
3	L-
4	L+

10.Other Connector: CN7, 3 PIN wafer pitch 2.0mm 180D

Pin assign and definition

Pin	Signal
1	GND
2	NC
3	+5V

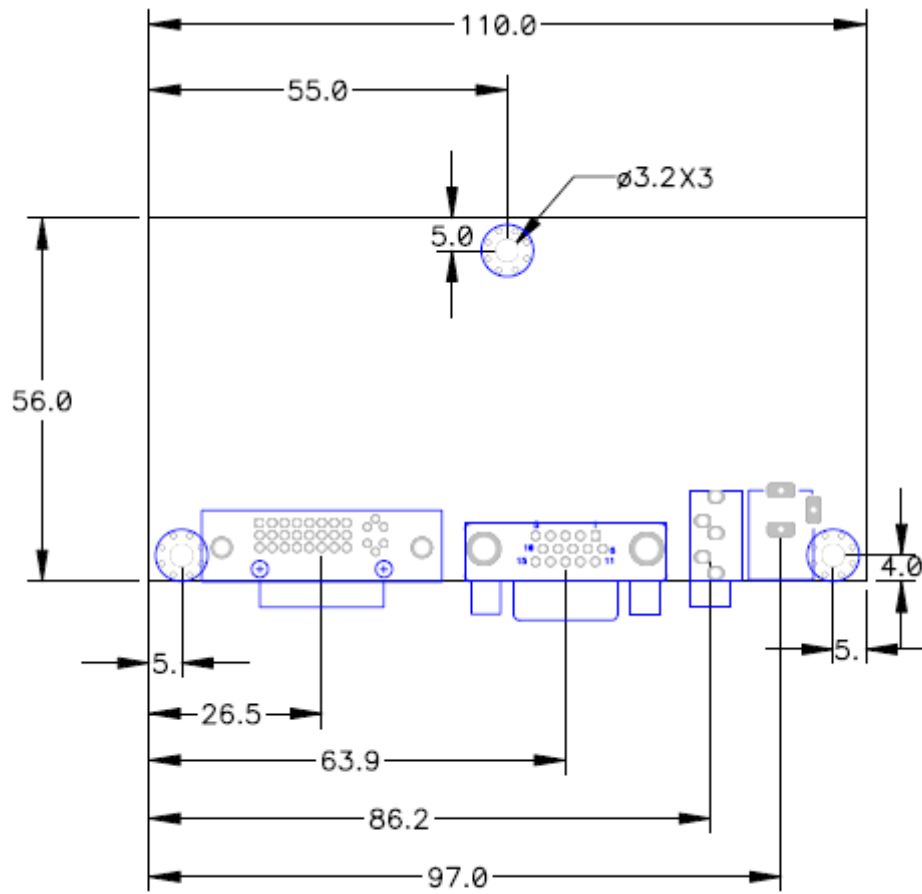
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4F., No.97, Lide St., Zhonghe Dist., New Taipei City 235, Taiwan (R.O.C.)

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PCB Dimension



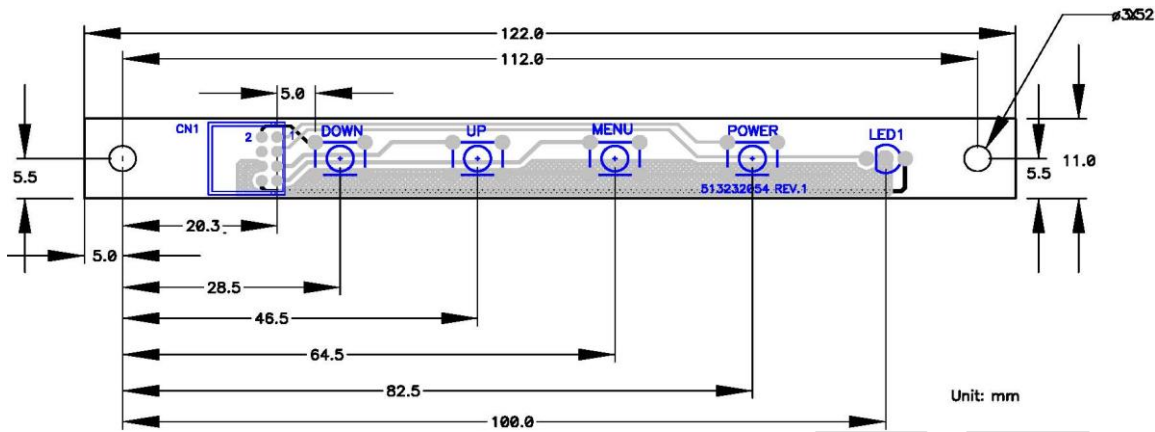
MODEL : 17RP UNIT :mm

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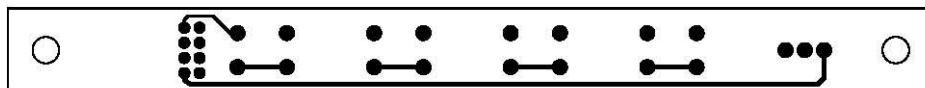
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OSD Key PCB

1.OSD Key PCB Dimension & Layout Drawings



LAYER : TOPSILK



LAYER : TOP



LAYER : BOTTOM

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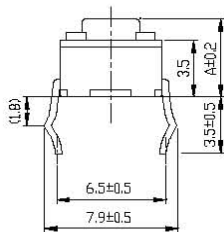
2.Output Connector

Location – CN1, Wafer PH 2.0mm 4x2 pin R/A, MD242154R or equiv.

Pin Assign and Definition

Pin No.	SYMBOL	Pin No.	SYMBOL
1	POWER	5	UP
2	DOWN	6	GND
3	LED_G	7	MENU
4	NC	8	LED_O

3.Tact Switch Spec



A = 7.0 mm