# LCD-Kit01A

# VGA Input LCD Kit

## 6.4” TFT Color 640x480 – 18bits Display

## (Ver. 2.0)


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# 1

# Introduction

Welcome to the LCD-Kit01A 6.4" TFT color LCD. The LCD-Kit01A is an Amorphous Silicon TFT LCD panel with VGA input and OSD (On Screen Display) control. It is made for the system manufacturers, integrators, or VARs that want to provide all the performance, quality and reliability.

The LCD-Kit01A is designed with 640 x 480 resolution and 18-bits display colors, wide view angle, High Contrast and Low Reflection to present a High Image Quality. With its compact size (6.4"), LCD-Kit01A is also the most suitable solution for OA Equipment, Display Terminals, and Industrial portable Workstation LCD monitor.

The LCD-Kit01A comes with specifically designed mounting kit for fast installation. It is also *Plug and Play*, can be directly and easily connected to any VGA port.

## 1.1 Kit Specifications :

- Single Supply Voltage : +12V
- Outline Dimensions: 203.4mm x 131.0mm x 47.0mm
- Panel Size : 6.4" (17cm) Diagonal
- Active Area: 129.60mm (H) x 97.44mm (V)
- Display Colors : 18-bits = 262.144 Colors
- Number of Pixels : 640 (H) x 480 (V)
- Pixel Format : 1 pixel = R + G + B dots
- Pixel Arrangement : R, G, B Vertical Strip
- Brightness : 300 $cd/m^2$
- Pixel Pitch : 203 μm (H) x 203 μm (V)
- Dot Pitch : 67.5 μm (H) x 203 μm (V)
- Image Reversion : Up/Down and Left/Right
- Viewing Direction : 6 o' clock
- Viewing Angle : +/- $50^o$ (H), $-10^o$ ~ $+30^o$ (V)
- Contrast Ratio : > 100 : 1
- Surface Treatment : Hard Coating (or Anti-reflection)
- Operating Temperature : 0~$55^o$C
- LCD MTBF : 50,000 hours
- Backlight MTBF : 15,000 hours (min)
- VGA Input
- OSD built
- RS232 I/F Touch Panel (option)

## 1.2 What You Have

In addition to this *User's Manual*, the LCD-Kit01A package includes the following items:

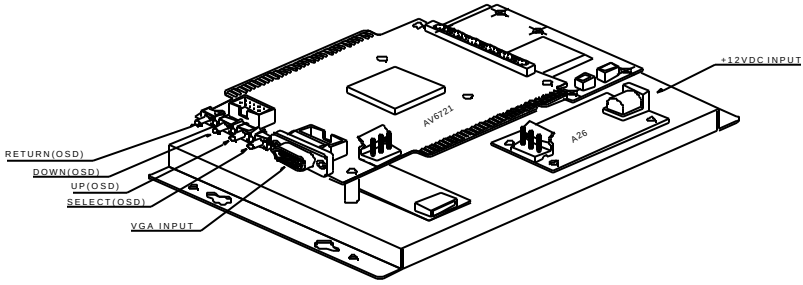
- 6721 User's Manual
- LCD-Kit01A User's Manual
- Power adapter
- AC power cord
- VGA cable (1.8M)

If any of these items is missing or damaged, contact the dealer from whom you purchased the product. Save the shipping materials and carton in case you want to ship or store the product in the future.

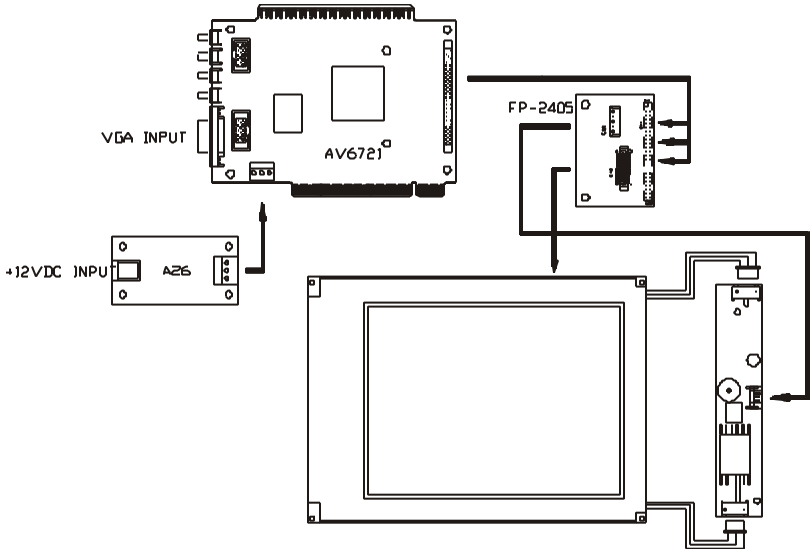
2

# Installation

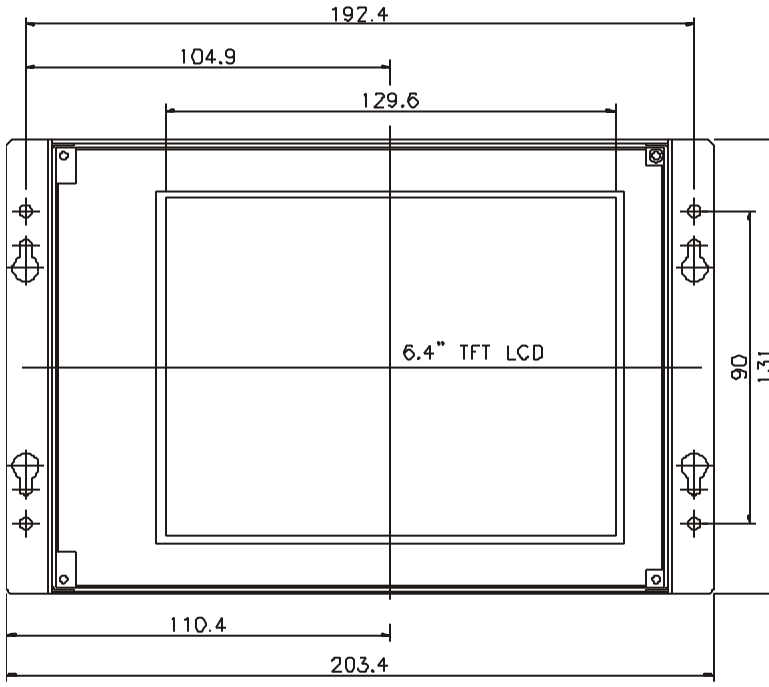
This chapter describes how to install the LCD-Kit01A and include all connections description such as jumpers, connectors and switches setting. The layout of LCD-Kit01A connectors are shown on the next chapter. The reference manual of AV-6721 control board are separated on attached booklet. The Unpacking Precautions are shown on appendix that you should be careful with are described on the following page.



## 2.1 LCD-Kit01A Connection Layout



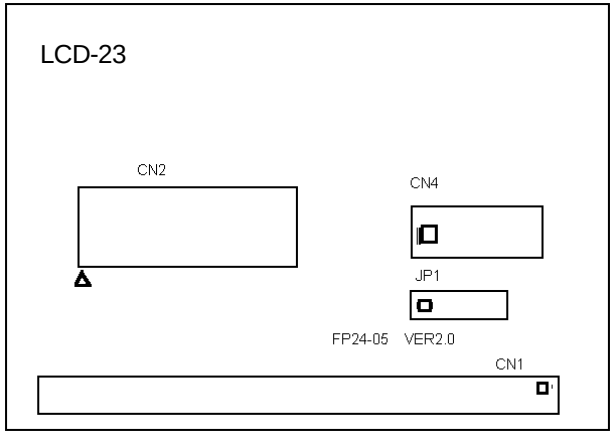
## 2.2 LCD-Kit01A Dimension Drawing



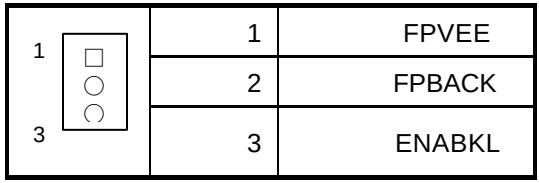
# 3

# LCD-Kit01A Connectors

## 3.1 LCD-23 Connection Board Layout



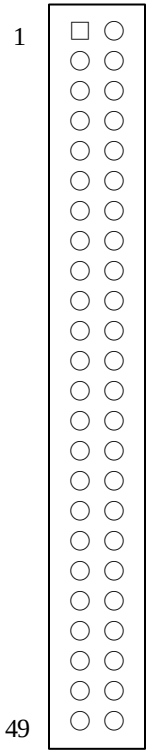

**JP1:**




| | |
|---|---|
| 1 | FPVEE |
| 2 | FPBACK |
| 3 | ENABKL |

1-2 short : Backlight control using FPVEE
2-3 short : Backlight control using ENBKL ( default )

**CN1: Panel Signal from CPU board (reference)**




| Signal Name | Pin # | Pin # | Signal Name |
|---|---|---|---|
| VPCLK | 1 | 2 | P33 |
| P34 | 3 | 4 | P31 |
| P35 | 5 | 6 | P32 |
| P30 | 7 | 8 | P28 |
| P29 | 9 | 10 | P27 |
| P25 | 11 | 12 | P26 |
| P24 | 13 | 14 | P21 |
| P23 | 15 | 16 | P22 |
| P16 | 17 | 18 | P20 |
| P17 | 19 | 20 | P18 |
| P19 | 21 | 22 | P14 |
| P13 | 23 | 24 | P12 |
| P15 | 25 | 26 | P11 |
| P7 | 27 | 28 | P10 |
| PLCD | 29 | 30 | PLCD |
| P9 | 31 | 32 | P8 |
| P4 | 33 | 34 | P6 |
| P3 | 35 | 36 | P5 |
| P2 | 37 | 38 | P1 |
| M | 39 | 40 | P0 |
| SHFCLK | 41 | 42 | ENABKL |
| FPVDD | 43 | 44 | FLM |
| FPVEE | 45 | 46 | LP |
| GND | 47 | 48 | GND |
| +12V | 49 | 50 | +12V |

**SHFCLK:** Shift Clock. Pixel clock for flat panel data.
**FLM:** First Line Marker.Flat Panel equivalent of VSYNC.
**LP:** Latch Pulse(may also be called CL1).
**M:** M signal for panel AC drive control (may also be called ACDCLK).
**ENABKL:** power sequencing control for enabling the backlight
**FPVEE:** Power sequencing control for panel bias voltage VEE. May also be configured as ENABKL

**CN2 : DF9-31P Panel interface**

| Pin# | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Signalname | GND | SHFCLK | LP | FLM | GND | P18 |

| Pin# | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|
| Signalname | P19 | P20 | P21 | P22 | P23 | GND |

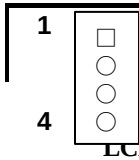
| Pin# | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|
| Signalname | P10 | P11 | P12 | P13 | P14 | P15 |

| Pin# | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|
| Signalname | GND | P2 | P3 | P4 | P5 | P6 |

| Pin# | 25 | 26 | 27 | 28 | 29 | 30 |
|---|---|---|---|---|---|---|
| Signalname | P7 | GND | M | PLCD | PLCD | N.C |

| Pin# | 31 |
|---|---|
| Signalname | N.C. |

**CN4 :Power Connector for backlight inverter**




| | |
|---|---|
| **1** | **+12V** |
| **2** | **FPBACK** |

| | |
|---|---|
| 3 | GND |
| 4 | VR |

## 3.2 AV-6721 Control Board

**The AV-6721 Control Board is worked for VGA control; all detail as feature and connection information please refer to "AV-6721 User Manual".**

# Appendix

## Unpacking Precautions

- ✓ Some components on LCD-Kit01A are very sensitive to static electric charges and can be damaged by a sudden rush of power. Ground yourself to remove any static charge before touching your LCD-Kit01A. You can do it by using a grounded wrist strap at all times or by frequently touching any conducting materials that is connected to the ground.
- ✓ Do not touch the inner side of LCD panel and the connector/cable of fluorescent lamp/backlight when the power is on. The inverter supplies HIGH VOLTAGE to these parts (~ 690Vrms).
- ✓ Disconnect power supply before handling and doing connection on LCD-Kit01A. Do not plug any connector or jumper while the power is on. It will cause fatal damage to your LCD panel.
- ✓ Make sure that every connector is connected in correct direction. Any incorrect connection may cause smoke or burn of electrical parts or fatal damage of your LCD panel.
- ✓ Be careful with the liquid crystal material. Do not swallow, inhale or have skin contact with this material in case that the LCD panel is broken and the liquid flow out. If you inhale the liquid material, rinse your mouth immediately with water then go to see a doctor. If you have skin contact with the liquid, wash it immediately with alcohol. Be careful, too, with the chips of glass if the panel is broken.
- ✓ For outdoor usage, an ultra-violet ray protect-lens is recommended

to apply onto LCD display. It will prevent your LCD from strong sunlight, scratches, dust and water invasion etc. which can cause damage to the LCD display.