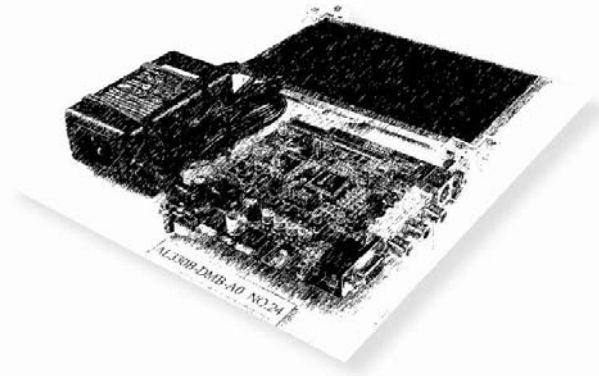




**AL330B-DMB-A0**  
**Digital LCD Display SOC**  
**Demo Board**  
**User Manual**

**Version 1.2**



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## Amendments

2009.05.14	Version 1.0	
2009.11.06	Version 1.1	Add 480i/576i input (YPbPr)
2010.02.05	Version 1.2	P3: Remove 320*240, 640*480, 800*600, 1024*768 mode P7: Change the description from "burn-in" mode to "programming Mode"

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## 1. Introduction

The AL330B demo board is an evaluation product that demonstrates a total solution for Small to Medium digital LCD Display applications using Averlogic IC chips. This DMB product can accept multiple video signal inputs such as Composite video, S-video, Components Video-, which can then be displayed on an LCD Screen in high quality video.

The main component is the AL330B chip, a highly integrated Display SOC, containing a 3-Ch + 10-bit ADC, 2D Video Decoder, Deinterlacer, Scaler, Microcontroller, OSD, and TCON. The AL330B can support small to medium Digital TFT-LCD Panels and small to medium AMOLED Display Devices. This product contains 1 Mbit of serial flash for customizable boot and code storage.

The AL330B is a multi-channel analog preprocessing circuit, which includes Source Selection; anti-aliasing filter; ADC, ACC (Auto-Clamp Control) and AGC (Auto-Gain Control); CGC (Clock Generation Circuit); digital multi-standard decoder containing chrominance and luminance separation from an adaptive 2D comb filter; brightness, contrast, hue and saturation control circuit; programmable horizontal and vertical scaler; image and sharpness enhancement processing; On-Screen-Display; programmable TCON; and a digital RGB signal output and more.

## 2. Package Contents

The AL330B-DMB-A0 package contains the following components:

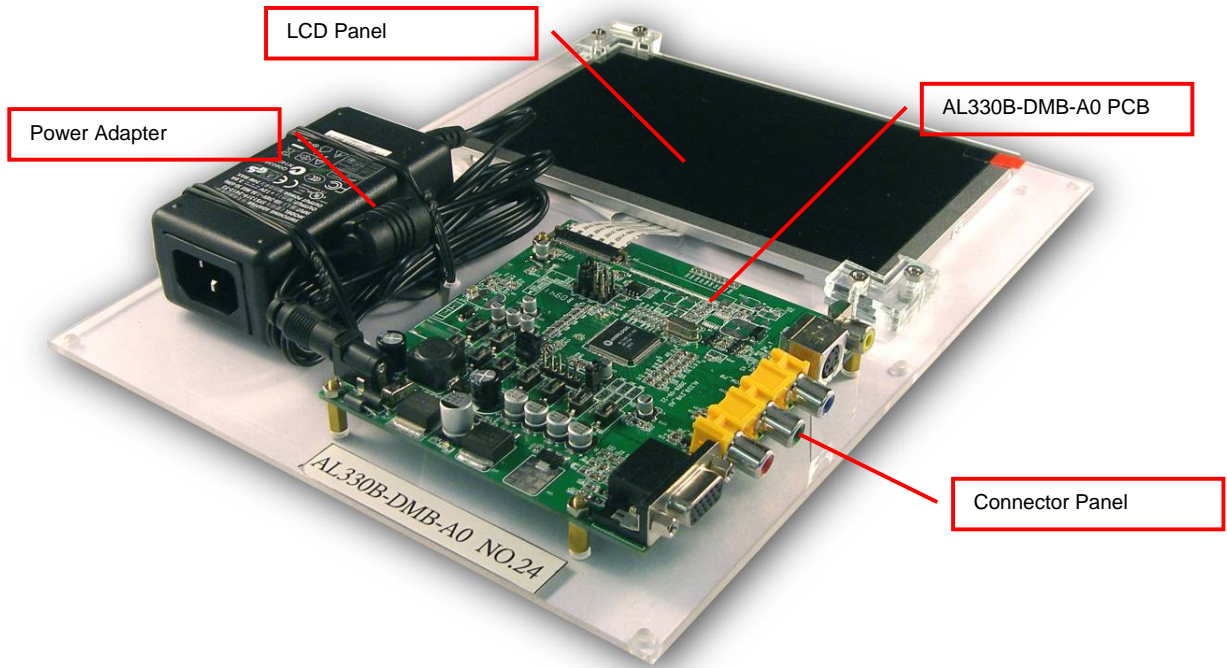
- AL330B-DMB-A0
- Power Cord
- Video Cable
- S-Video Cable
- User Manual (not shown)

If any components are missing or damaged, please contact your representative.

**Note:** To test this product, you will need to provide a Video source with S-Video, YPbPr or CVBS connector (e.g. camera, DVD player).



### 3. Product Description



## 4. Specifications

- **Video standard support**

  - NTSC

  - PAL

- **Video Input Formats**

  - Composite

  - S-Video

  - Components

  - CCIR BT656

- **Output Formats**

  - 24-bit RGB signal

  - 18-bit RGB signal

- **Output resolution supports:**

  - 800\*480

- **DMB Function**

  - Supports multiple video inputs

  - Supports PAL/NTSC auto detection

  - Supports manual adjustment of hue, brightness, contrast and saturation

  - Internal OSD overlay with programmable font for OSD display

**Note:** Please be aware that this is an Evaluation product only and not all functional capabilities of AverLogic components are fully demonstrated by this product. Please refer to the AverLogic website ([www.averlogic.com](http://www.averlogic.com)) or contact your AverLogic representative (see last page of this document) for more information

## 5. Quick Setup

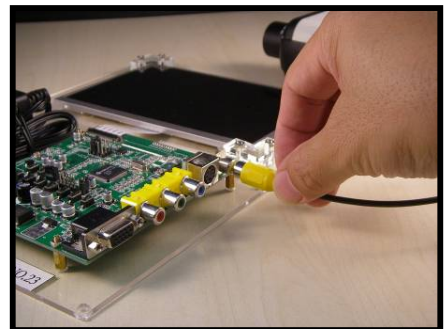
This quick setup section will guide you through the AL330B-DMB-A0 setup. You will need to provide a video source with a CVBS, YPbPr(480i/576i), or S-Video connection. In this quick guide we will using a Standard Definition video camera.

**Step 1:** Attach Power Cable to the board. Attach the other end of the cable to an electrical outlet.



**Step 2:** Attach Video Source

Attach a video cable to the Video Source (e.g. camera) and one of the panel connectors on the the AL330B-DMB-A0 board (e.g. CVBS connector).

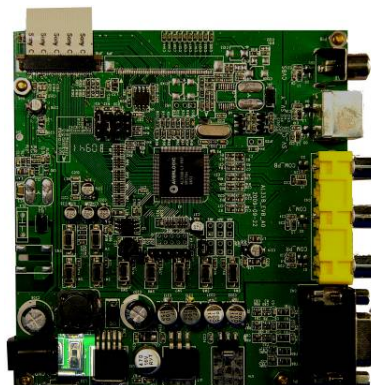
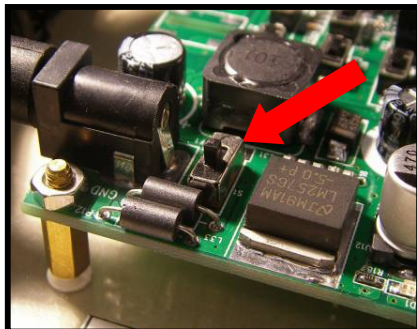


**Step 3:** Supply Power to your Video Source and turn it on.

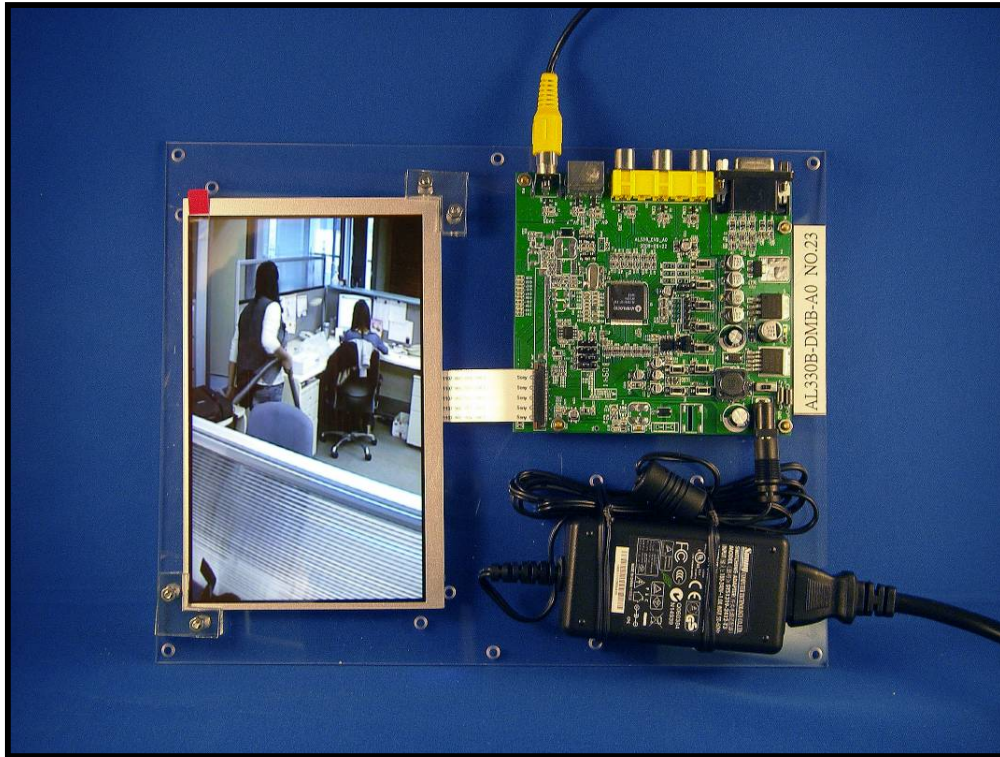
Your setup should appear as below.



**Step 4:** Toggle the power-on switch on the board (located near Power Adapter). The ON position faces away from the edge of the board.



The video image from the Video Source should almost immediately show up on the LCD display.

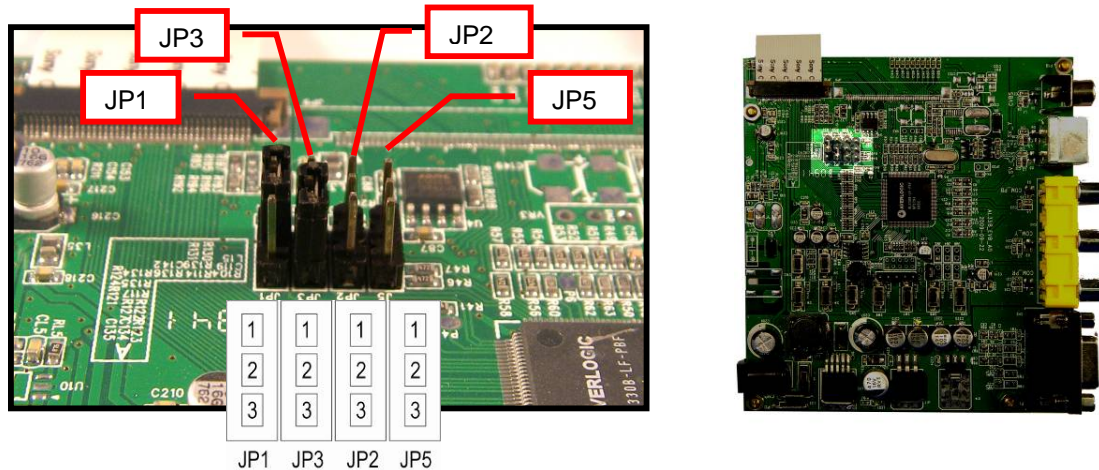


If no video displays, double check all of the video connectors, power connectors and make sure that the Video Source is, in fact, delivering video through the cable

## 6. Hardware Section

This section describes hardware components not previously mentioned.

### 6.1 JP1, JP2, JP3, J5 Jumper Descriptions

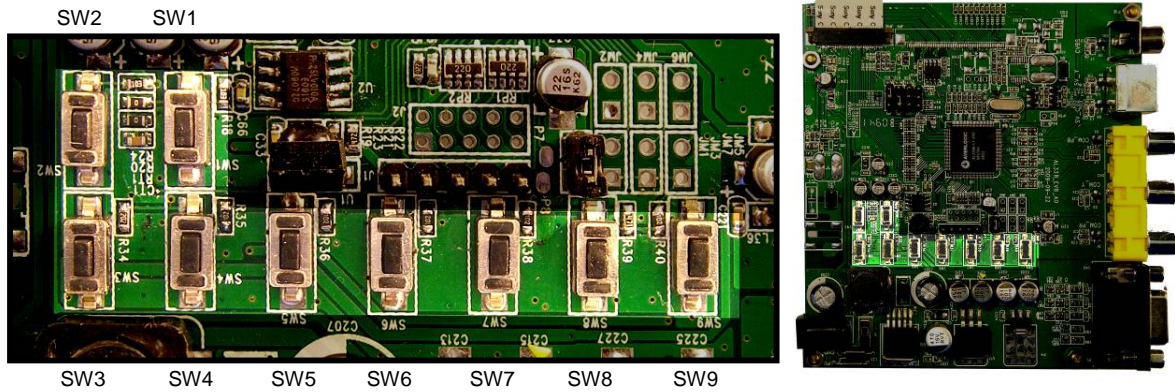


Connector	Label	Description
SSEL2	JP1	Keep pins 1-2 jumpered always
SSEL1	JP3	Jumper pins 1-2 for programming mode Jumper pins 2-3 for normal operations
SSEL0	JP2	Do not use
IIC Port	J5	For IIC debug mode/slave address:0x38

Note: There are other jumpers and connectors on this DMB board are not described and are either disabled or not meant for use.

## 6.2 Switch Buttons Descriptions

The Switch Buttons are a group of buttons located on the board and are used for various functions including OSD menu navigation, board reset and debugging.

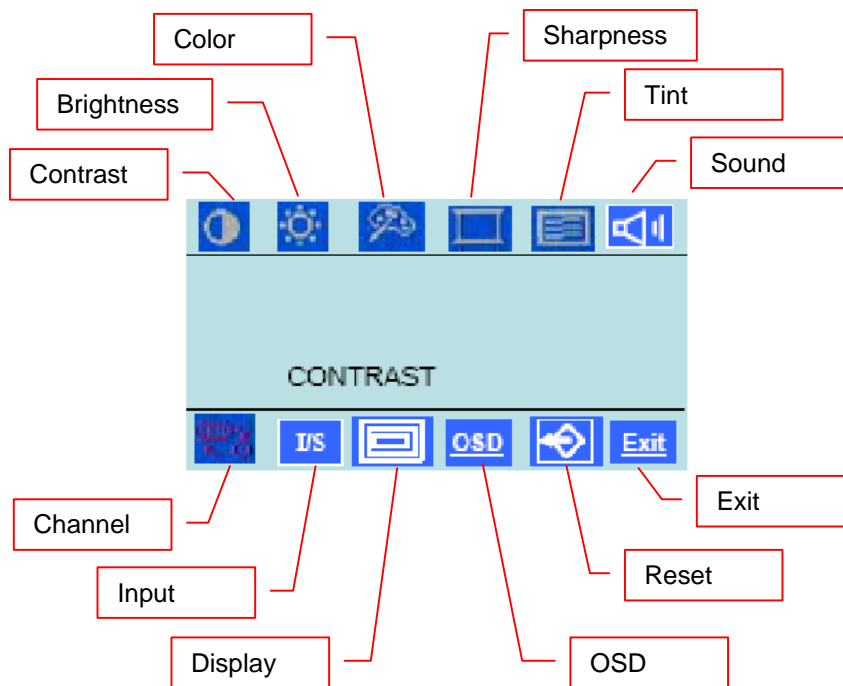


Key Label	Key Function	Description
SW9	Right	Moves menu cursor from left to right on main menu. Also used to increase values during option settings.
SW8	Left	Move menu cursor from right to left on main menu. Also used to decrease the values during option settings
SW7	MENU/Select	Used to enter the configuration menu mode. Also used to enter a submenu from main menu. Also used as an enter/select key.
SW6	EXIT	Returns to the previous menu or exits from the main menu.
SW5	N/A	
SW4	Debug	Use this key to enter "Debug" mode
SW3	N/A	Not used
SW2	Reset	Use this key to reset the AL330B.
SW1	Reset	Use this key to reset the AL330B.

## 7. Menu Descriptions

This product comes with an On Screen Display (OSD) that allows you to adjust and set various video options. To bring up the main menu, press the SW7 switch (as described earlier).

### 7.1 Menu Item Descriptions



Key Label	Description
Contrast	Adjusts the display contrast.
Brightness	Adjusts the display brightness
Color	Adjusts from color to b&w
Sharpness	Adjusts image sharpness
Tint	Adjusts image Tint
Sound	Not available on this DMB board
Channel	Selects current input video source – CVBS, S-Video, Component (YPbPr)
Input	Input standard – NTSC, PAL, Auto Detect

Display	N/A
OSD	Move OSD window Position Horizontally or vertically
Reset	Demo mode no use, default mode is turn back to the status when power on
Exit	Leaves the OSD menu

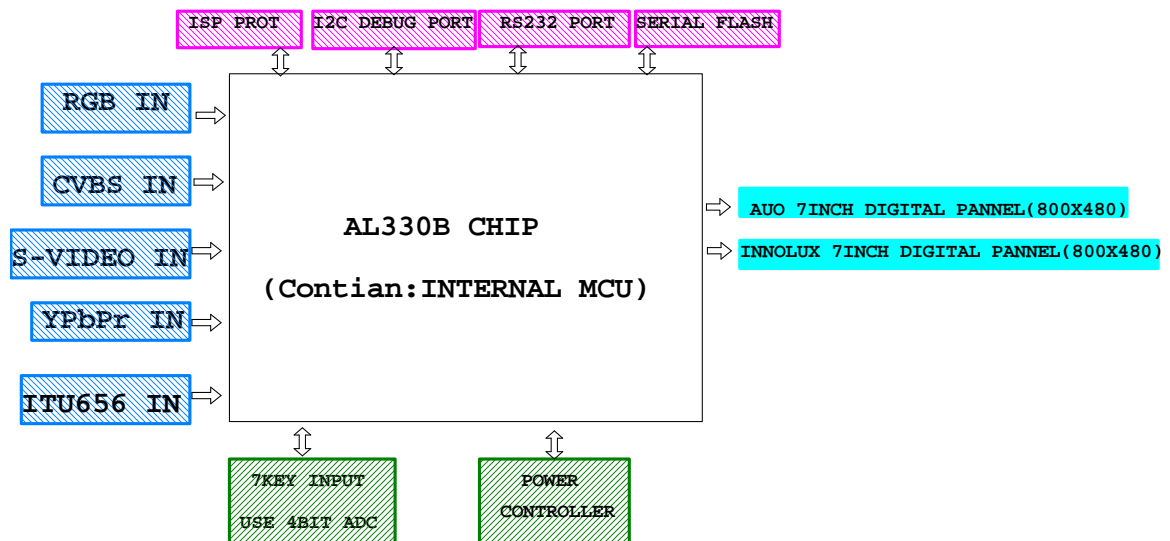
## 8. Miscellaneous

### 8.1 Debug Mode

This board can burn-in code or operate in debug mode. Please refer to the ISP Tool Debug User Manual for more information.

### 8.2 Block Diagram for the AL330B-DMB-A0

- AL330B-DMB-A0 BOARD ARCHITECTURE
- 



## CONTACT INFORMATION

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