

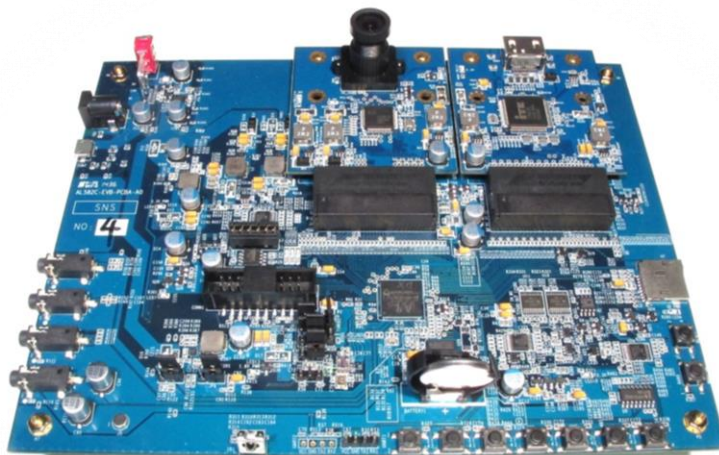


AL360A-EVB-A0

Evaluation Board

User Manual

Version 0.3



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1 Introduction

1.1 Product Description

The AL360 Video Format Converter EVB is an evaluation product that demonstrates a total solution for video format conversion applications. There are one main board and various video daughter boards in this EVB kit. You can select from those video daughter boards for evaluating various video functions.

The onboard software has supported video auto detection. You can insert the selected daughter boards before you turn on the main board.

Copious video interface is an advantage of this EVB. It can be used to evaluate various video inputs and outputs.



AL360 Main Board



Power Adapter & Power cable



HDMI cable



CVBS cable



VGA cable



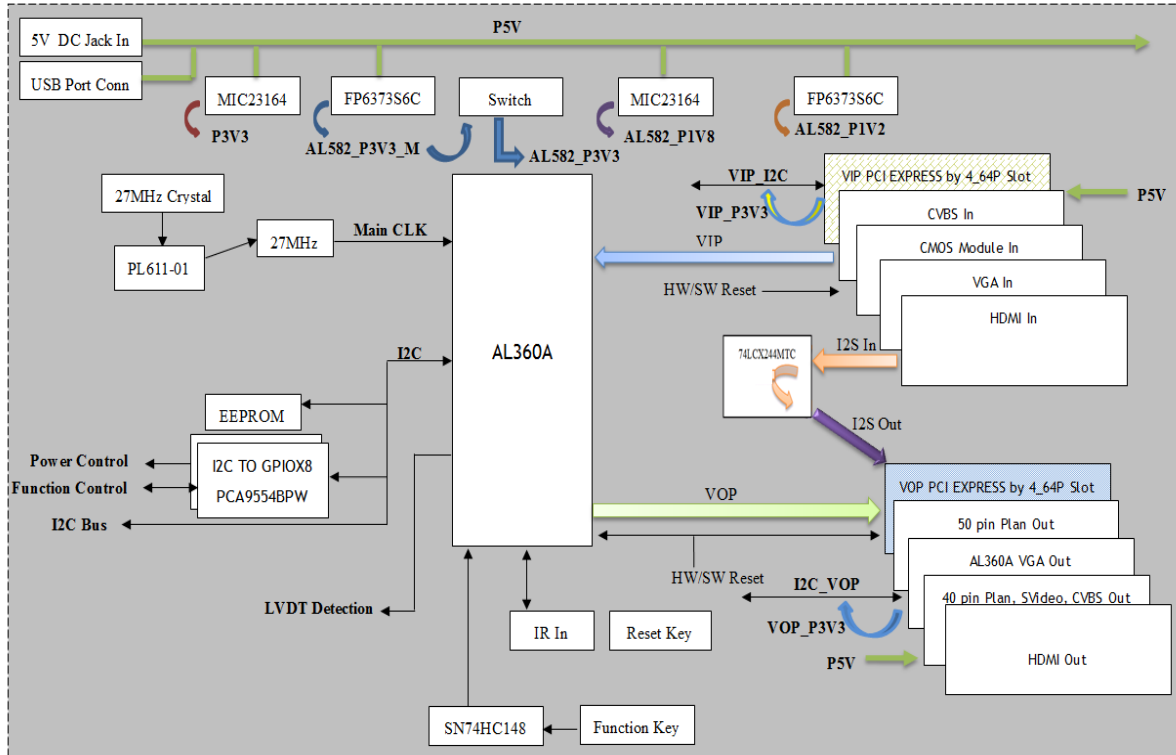
VIP Daughter Boards



5" Panel (optional)

VOP Daughter Boards

1.2 Block Diagram



1.3 Specifications

■ Video Inputs & Formats

CVBS	BT656	- NTSC/PAL
VGA	RGB888	- 720x480 60Hz, 1280x720 60Hz, 1920x1080 60Hz
HDMI	YCbCr 16bits	- 720x480 60p, 1280x720 60p, 1920x1080 60p
CMOS	YCbCr 8/16bits	- 640x480 60p, 1280x720 30p,

■ Video Outputs & Formats

CVBS	Composite	- NTSC/PAL
VGA	Analog RGB	- 720x480 60Hz, 1280x720 60Hz, 1920x1080 60Hz
HDMI	YCbCr 16its	- 720x480 60p, 1280x720 60p, 1920x1080 60p

EVB Function

- ✓ Supports various video inputs and outputs.
- ✓ Supports manual and automatic video standard selection to match various video standard interfaces.
- ✓ OSD and keypad function or display (CVBS output doesn't have OSD function).

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) or contact your Averlogic representative (see last page of this document) for more information.

2 Quick Setup

2.1 Attach Video input/output daughter boards to main board

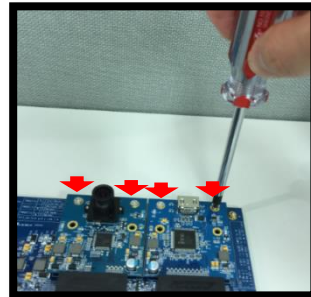
Attach video input and output daughter boards on the main board.

Video input daughter boards are boards with VGA, CMOS, HDMI or CVBS functions. Video output daughter boards are boards with VGA, HDMI, CVBS or Panel functions.



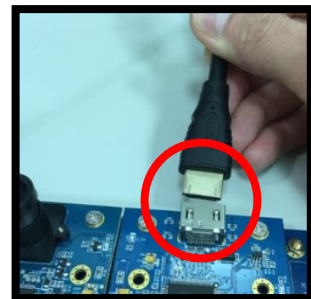
2.2 Tighten these screws

The daughter boards must be tightened on main board. Turn the screws to the right to tighten them.



2.3 Attach TV monitor (requires HDMI connector)

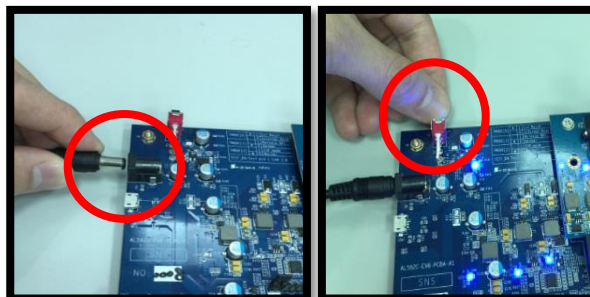
Attach your monitor to the video output daughter board (connect the HDMI cable to receiver site of the daughter board). Turn on your monitor.



2.4 Turn on the main board

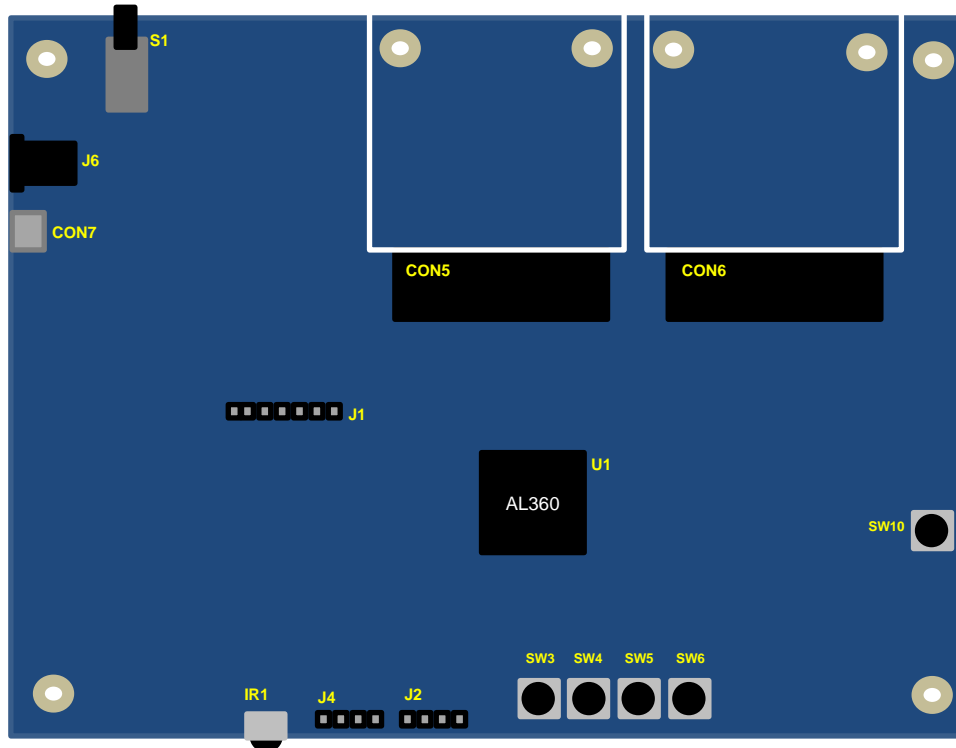
Attach the power adapter to the power connector.

After turning on your TV monitor, toggle the power switch, which is located on the main board and near the power adapter connector.



3 Hardware Section

3.1 Main Board Descriptions



Connector	Note	Label	Description
Power Jack	Power	J6	5V DC power input port (current greater than 2.5A recommended)
Power Jack		CON7	Micro USB connector for 5V/2.5A Power input
Power S/W		S1	Power switch
Reset Button	Reset	SW10	Reset button
Video Input Connector	Video I/O	CON5	Connect to video input daughter boards
Video Output Connector		CON6	Connect to video output daughter boards
Up	Keypad	SW3	Up key for function setting
Down		SW4	Down key for function setting
Enter		SW5	Function Selected key for function setting
Exit		SW6	Exit key for function setting
IR Receiver	IR	IR1	Receives IR signal from Remote controller
SPI Interface	Flash	J1	For burning code to Flash
UART 1	UART	J2	UART1 for ISP function
UART 2		J4	UART2 for debugging function

Note: There are other jumpers and connectors on this EVB board that are not described above. They are disabled or not meant for use.

3.2 Daughter Board

3.2.1 Video Input Daughter Board



CMOS Sensor
MT9M034 with IP2986



CVBS Decoder
AL244



VGA ADC
CAT9883



HDMI Receiver
IT6604

3.2.2 Video Output Daughter Board



HDMI Transmitter
ITE6613



VGA Output
From AL360



CVBS/S-Video/Panel Output
From AL360

Note: There are other jumpers and connectors on this EVB board that are not described above. They are disabled or not meant for use.

3.3 Keypad Function

The buttons are used to manipulate the screen display and configure options pertaining to information on the screen.



Keypad	Function	Description
SW3	Up	Arrow to the up (during menu configurations).
SW4	Down	Arrow to the Down (during menu configurations).
SW5	Enter	This button is used as the "Enter" key when using the Menu to configure display options.
SW6	Exit	This button is used to exit menu's configuration.

See the "System Menu" section for a complete description of all functions.

4 System Menu

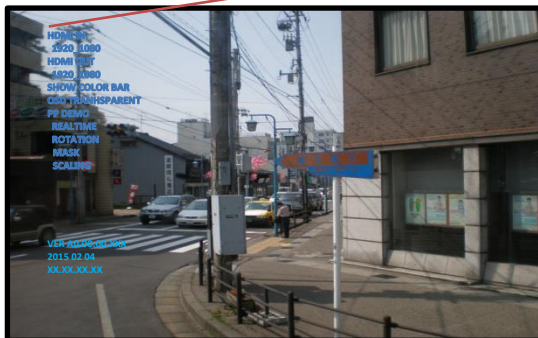
4.1 Welcome Picture

This “Welcome Picture” demonstrates the internal BMP OSD engine. The OSD is a 1280x720p 256-color bitmap picture and it is edited by Microsoft Paint. The DEMO OSD will show up on screen after power on and it will disappear after 3 seconds.



4.2 Main Menu

The menu function will be displayed on screen after welcome picture. The menu allows you to set video resolutions of video source and display device. Video devices can be detected by video daughter boards, so the device will show on screen automatically, and its resolution also can be adjusted.



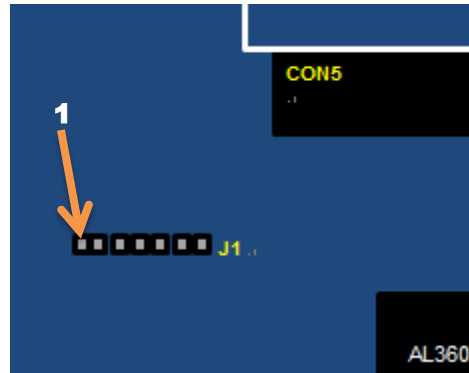
HDMI IN
1920_1080
HDMI OUT
1920_1080
SHOW COLOR BAR
OSD TRANSPARENT
PP DEMO
REALTIME
ROTATION
MASK
SCALING

5 Miscellaneous

5.1 SPI bus for SPI Flash

AverLogic provides windows AP for uploading Boot code or system code. You can connect PC and EVB through J1 connector.

- PIN 1 System power
- PIN 2 Flash power 3.3V
- PIN 3 Flash CS
- PIN 4 Flash SDO
- PIN 5 Flash SDI
- PIN 6 Flash SCLK
- PIN 7 Flash Ground

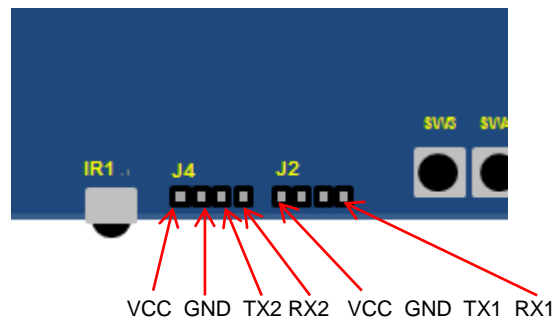


5.2 UART

UART 1 J2

UART 2 J4

The UART function is used to upload AL360 system code through ISP Tool.



5.3 CVBS Output or analog RGB output

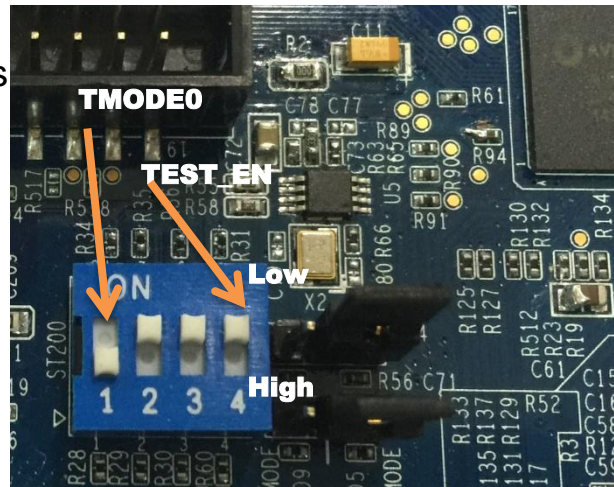
JP5 is used for a reference voltage to CVBS output or analog RGB output. When using analog RGB output, the JP5 should be set as PC mode. TV mode is for CVBS output.

Connecting PIN 1+2 is for CVBS output. Connecting PIN 3+2 is for VGA output.



5.4 TMOD

- TMODE0 Tie to High
- TMODE1 High=Release SPI Bus
Low=Normal
- TMODE2 High=ISP Mode
Low=Normal
- TEST_EN Tie to Low



CONTACT INFORMATION

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