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INTRODUCTION TO THE ADV7280 INSTALLATION GUIDE

The ADV7280 Installation Guide describes the ADV7280 evaluation board; and provides instructions for setting up the ADV7280 evaluation board, installing the required ADV7280 software, and running the scripts needed to operate the ADV7280 evaluation board.

AUDIENCE

The ADV7280 Installation Guide is intended for the use of the person installing an ADV7280 evaluation board.

DISCLAIMER

The information contained in this document is proprietary of Analog Devices Inc. (ADI). This document must not be made available to anybody other than the intended recipient without the written permission of ADI.

The content of this document is believed to be correct. If any errors are found within this document, or if clarification is needed, contact the local FAE.

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1. DESCRIPTION OF THE ADV7280 EVALUATION BOARD

The ADV7280 evaluation board consists of an ADV7280 video decoder and an ADV7391 video encoder. Analog video is fed into the analog inputs (Ain1 to Ain4). The ADV7280 evaluation board can be configured to receive many different analog video formats (refer to Table 1). The analog video from analog inputs is fed into the ADV7280 which converts it into an ITU656 digital stream.

Table 1. Acceptable Analog Video Input Formats to ADV7280 Evaluation Board

<table>
<thead>
<tr>
<th></th>
<th>Ain1</th>
<th>Ain2</th>
<th>Ain3</th>
<th>Ain4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-ended CVBS (NTSC, PAL, SECAM)</td>
<td>SE CVBS 1</td>
<td>SE CVBS 2</td>
<td>SE CVBS 3</td>
<td>SE CVBS 4</td>
</tr>
<tr>
<td>Differential CVBS</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>S-Video (YC)</td>
<td>S-Video 1 (Y)</td>
<td>S-Video 1 (C)</td>
<td>S-Video 2 (Y)</td>
<td>S-Video 2 (C)</td>
</tr>
<tr>
<td>Component (YPbPr)</td>
<td>Component (Y)</td>
<td>Component (Pb)</td>
<td>Component (Pr)</td>
<td>No</td>
</tr>
</tbody>
</table>

The digital output stream of the ADV7280 is fed to headers and into the ADV7391 video encoder (refer to Figure 1). The ADV7391 converts this digital stream into an analog YPbPr output. The analog YPbPr output from the ADV7391 is fed to the Video Output header of the evaluation board.
Figure 1. ADV7280 Evaluation Board
2. SETTING UP THE ADV7280 EVALUATION BOARD

The Analog Devices (ADI) DVP Eval program and ADV7280 script files are needed to operate the ADV7280 evaluation board. The DVP Eval program and ADV7280 script files are available on an ADI File Transfer Protocol (FTP) site.

The following setup process is recommended, and is described in detail in Section 2.1 to Section 2.6.

1. Download and install an FTP client.
2. Download the DVP Eval program and ADV7280 script files from the ADI FTP site.
3. Install the DVP Eval program.
4. Load the ADV7280 script files.
5. Power up the ADV7280 evaluation board.
6. Program the ADV7280 evaluation board.

2.1. DOWNLOAD AND INSTALL AN FTP CLIENT

Download and install an FTP client such as FileZilla in order to access the ADI FTP site.

3. When the download is completed, run the .exe installation file and follow the onscreen instructions.

2.2. DOWNLOAD ADV7280 FILES FROM ADI FTP SITE

Download and install an FTP client such as FileZilla in order to access the ADI FTP site.

1. Open the FTP client, for example, FileZilla.
2. A quick connect bar appears near the top of the FileZilla client window. Enter the following information. (Note that the boxes are case sensitive.)
   a. In the Host box, enter ftp.analog.com.
   b. In the Username box, enter adv728x.
   c. In the Password box enter 1dN62jy.
   d. Leave the Port box blank.
3. Press the Quickconnect button.
   FileZilla then shows two panes (refer to Figure 2). The left pane displays the Local Site Pane (that is, your computer). The right pane displays the Remote Site Pane (that is, the ADI FTP site).
4. On the Local Site Pane, navigate to where you want to drop the ADV7280 files.

5. On the Remote Site Pane, select the ADV7280 folder.

   **Note**: Do not select the ADV7280-M folder.

6. Drag the ADV7280 folder to the desired location in the Local Site Pane.

   The files and folders on the ADI FTP site then copy to your computer.

   **Note**: The Transfer Queue Pane shows the progress of this copying.

7. On the Remote Site Pane, select the Install DVP Eval Latest Source 10-14-11.exe and drag it to the desired location in the Local Site Pane.
2.3. INSTALL THE DVP EVAL PROGRAM

1. When the transfer from the FTP site is complete (as described in Section 2.2), double click on the Install DVP Eval Latest Source 10-14-11.exe file.
2. A window appears showing a software license agreement. After you have read the agreement, press the I Agree button.
3. A new window appears asking if you want to add Desktop and Start Menu shortcuts. Press the Next button.
4. A new window (refer to Figure 3) appears, prompting to select the installation destination folder. Press the Install button. 
   Note: It is strongly recommended to use the default destination folder. Selecting a different folder can cause the DVP Eval program to not install correctly in some versions of Windows.

![Figure 3. Installation Destination for DVP Eval Program](image)

5. Restart your computer after the DVP Eval program is installed.

2.4. LOAD THE ADV7280 SCRIPT FILES

This section describes how to load the ADV7280 script files to the DVP Eval program.
1. Open the ADV7280 folder that you downloaded from the ADI FTP site.
2. Open the Software folder in the ADV7280 folder.
3. Copy the folder called ADV7280_CUST to the following directory: 
   C:\Documents and Settings\USER_NAME\My Documents\Analog Devices\DVP Eval Latest Source 10-14-11\xml\New Boards.
   Note: This directory may be slightly different depending on where you installed the DVP Eval program.
4. To open the DVP Eval program, select Start -> Analog Devices -> DVP Eval Latest Source 10-14-11.
5. Select File -> Update Boards.

![Figure 4. Update Board Files on DVP Eval Program](image)
A number of black command prompt windows appear and then disappear. Finally, a window appears with the message "update boards successful". Press the OK button.
The ADV7280 script files have been added to the DVP Eval program.

6. Exit the DVP Eval program.

2.5. POWER UP THE ADV7280 EVALUATION BOARD

1. Connect a mains cable to the 7.5 V supply cable included in the ADV7280 evaluation kit.
2. Connect the 7.5 V supply cable to Jumper J8 on the ADV7280 evaluation board. When this is done correctly, LED D6 turns on (refer to Figure 1).
3. Connect the USB cable included in the ADV7280 evaluation kit to the computer where you installed the DVP Eval program and ADV7280 script files. This cable is used to send commands from your computer to the ADV7280 evaluation board.
4. Connect the other end of the USB cable to Jumper J7 of the ADV7280 evaluation board. When this is done correctly, LED D7 turns on (refer to Figure 1).
5. Connect the analog video input(s) to the Ain inputs of the ADV7280 evaluation board. Refer to Table 1 on how to connect these inputs.
6. Connect a YPbPr cable to the Video Output connector, J1, of the evaluation board. Connect the other end of this YPbPr cable to a television or other sink device.

Notes:
- The digital output of the ADV7280 can be probed with an oscilloscope or a digital grabbing device. The 8-bit pixel data is output to header J5. There are also headers for the LLC pin, HS pin and VS/Field/SFL pin. Refer to Figure 1.
- Even after the ADV7280 evaluation board is powered up, the 28.63636 MHz crystal (Y1) will not oscillate until the ADV7280 is programmed (refer to Section 2.6).

2.6. PROGRAM THE ADV7280 EVALUATION BOARD

1. To run the DVP Eval Latest Source application, select Start-> All Programs -> Analog Devices -> DVP Eval Latest Source 10-14-11.
2. Press the Choose Board button on the top left of the DVP Eval program window and the Board Selector window appears (refer to Figure 5).

3. Select ADV7280_CUST in the Rx section of the Board Selector window.
4. Select None in the MotherBoard section.
5. Select None in the Tx section.
6. Press the Load button. A window similar to that shown in Figure 6 appears.
7. Select Scripts-> ADV7280_CUST to select the script you wish to run (refer to Figure 7).

ALS8 pin of ADV7280 tied high on evaluation board. Therefore, I²C device address of ADV7280 set to 0x42.
Figure 7. Running ADV7280 Script on DVP Eval Software
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REVISION HISTORY

March 2013 – Rev. A
Initial version.