

ADV7281-M

Installation Guide

Rev. A

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INTRODUCTION TO THE ADV7281-M INSTALLATION GUIDE

The ADV7281-M Installation Guide describes the ADV7281-M evaluation board; and provides instructions for setting up the ADV7281-M evaluation board, installing the required ADV7281-M software, and running the scripts needed to operate the ADV7281-M evaluation board.

AUDIENCE

The ADV7281-M Installation Guide is intended for the use of the person installing an ADV7281-M 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 ADV7281-M EVALUATION BOARD

Analog video is fed into the analog inputs (Ain1 to Ain6) of the ADV7281-M evaluation board. The ADV7281-M 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 ADV7281-M video decoder which converts it into a MIPI CSI-2 output stream.

The MIPI CSI-2 output of the ADV7281-M consists of one differential data lane (D0+ and D0-) and one differential clock lane (Clk+ and Clk-). These are output to the SMA connectors on the evaluation board.

Table 1. Acceptable Analog Video Input Formats to ADV7281-M Evaluation Board

	Ain1	Ain2	Ain3	Ain4	Ain5	Ain6
Single-ended CVBS (NTSC, PAL, SECAM)	SE CVBS1	SE CVBS2	[1]	[1]	[1]	[1]
Differential CVBS	[2]	[2]	DIFF CVBS1+	DIFF CVBS1-	DIFF CVBS2+	DIFF CVBS2-
S-Video (YC)	S_Video1(Y)	S_Video1(C)	[3]	[3]	[3]	[3]
YPbPr	[4]	[4]	[4]	No	No	No

Note: The shaded areas in [Table 1](#) indicate that modifications need to be made to the ADV7281-M evaluation board before that particular video input standard can be input to that particular analog input pin.

[1] These inputs can be configured to receive single-ended CVBS, but the user needs to change some resistor values on the ADV7281-M evaluation board.

[2] Ain1 and Ain2 can be configured to receive differential CVBS, but the user needs to change some resistor values on the ADV7281-M evaluation board.

[3] These inputs can be configured to receive YC (S-video), but the user needs to change some resistor values on the ADV7281-M evaluation board.

[4] These inputs can be configured to receive component (YPbPr), but the user needs to change some resistor values on the ADV7281-M evaluation board.

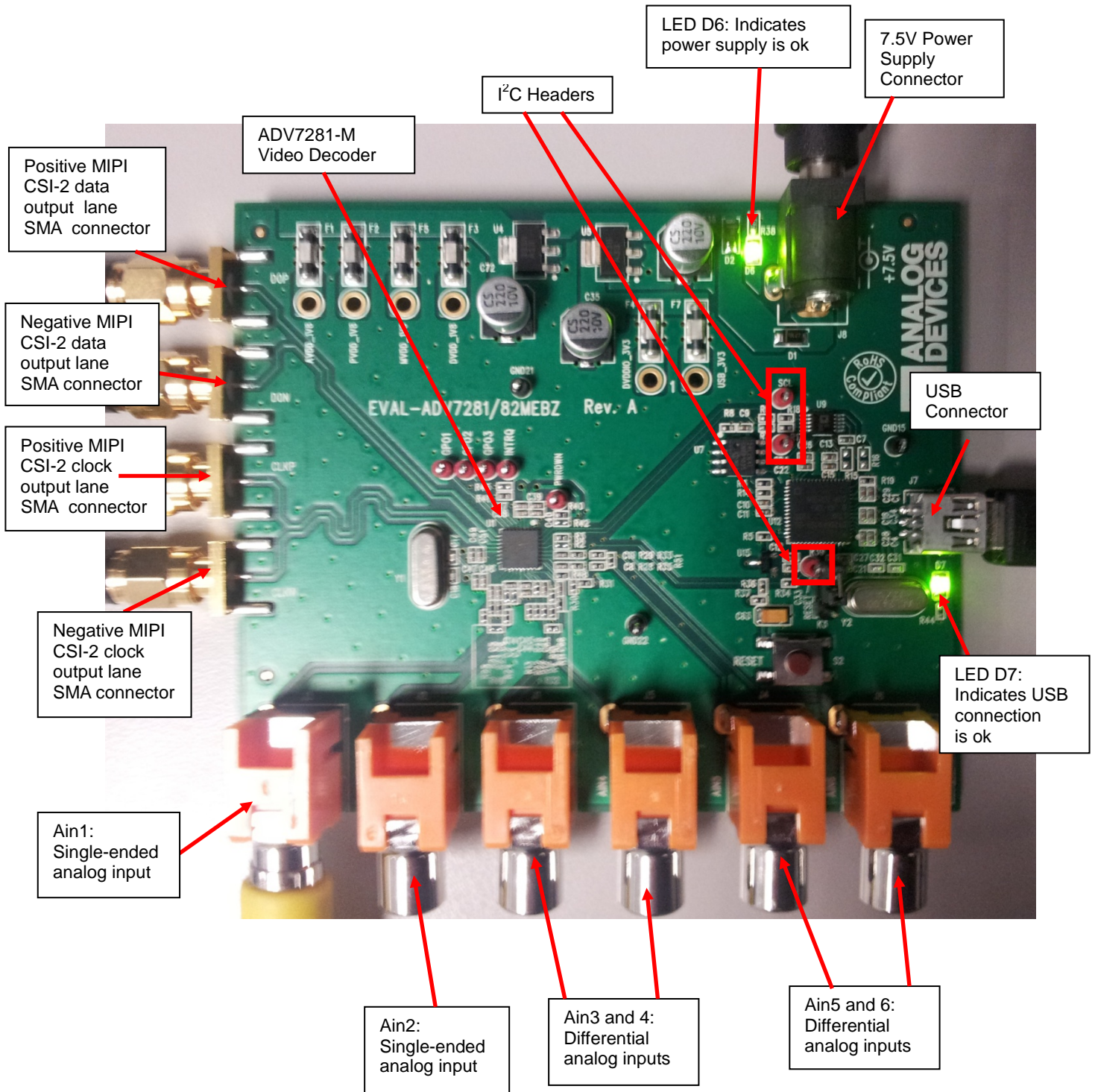


Figure 1. ADV7281-M Evaluation Board

2. SETTING UP THE ADV7281-M EVALUATION BOARD

The Analog Devices (ADI) DVP Eval program and ADV7281-M script files are needed to operate the ADV7281-M evaluation board. The DVP Eval program and ADV7281-M 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 ADV7281-M script files from the ADI FTP site.
3. Install the DVP Eval program.
4. Load the ADV7281-M script files.
5. Power up the ADV7281-M evaluation board.
6. Program the ADV7281-M 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.

1. Go to the <http://filezilla-project.org/download.php?type=client> website.
2. Download the FileZilla FTP client .exe installation file.
3. When the download is completed, run the .exe installation file and follow the onscreen instructions.

2.2. DOWNLOAD ADV7281-M FILES FROM ADI FTP SITE

The DVP Eval program and ADV7281-M script files are available on 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).

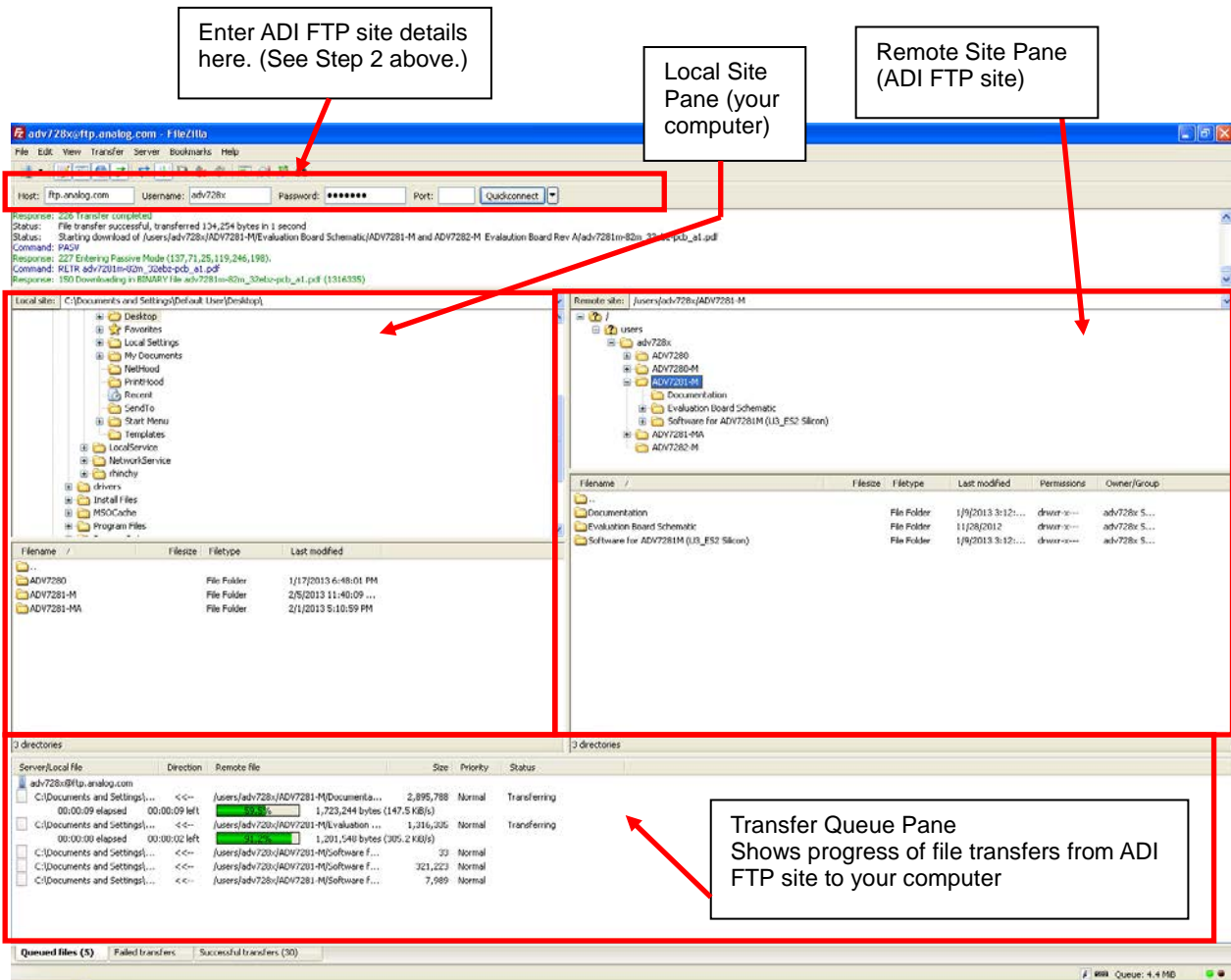


Figure 2. Image of ADI ADV7281-M FTP Site

- On the Local Site Pane, navigate to where you want to drop the ADV7281-M files.
- On the Remote Site Pane, select the ADV7281-M folder.
Note: Do not select the ADV7281-MA folder.
- Drag the ADV7281-M folder to the desired location in the Local Site Pane.
- Drag the Install DVP Eval Latest Source 10-14-11.exe installation file 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.

2.3. INSTALL THE DVP EVAL PROGRAM

- 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.
- A window appears showing a software license agreement. After you have read the agreement, press the **I Agree** button.
- A new window appears asking if you want to add Desktop and Start Menu shortcuts. Press the **Next** button.
- A new window appears (refer to Figure 3), prompting you 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.

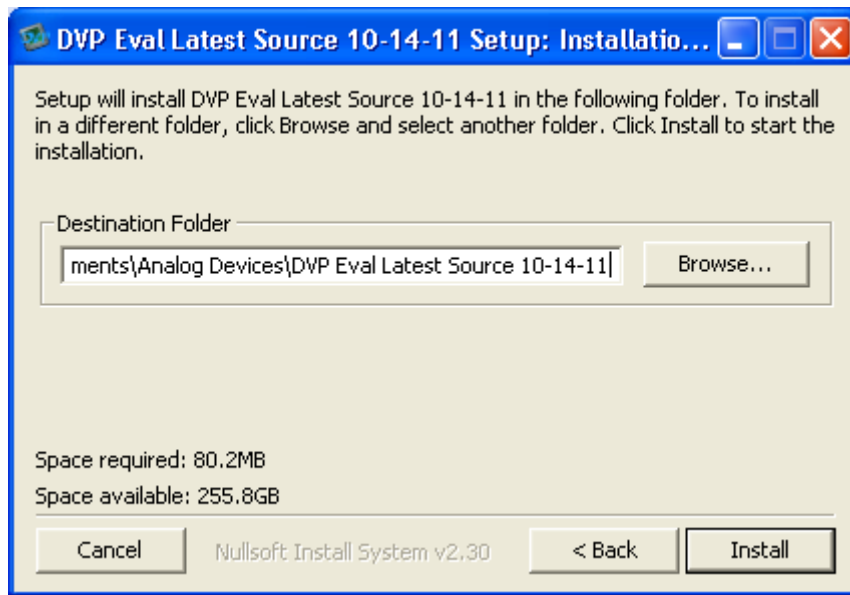


Figure 3. Installation Destination for DVP Eval Program

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

2.4. LOAD THE ADV7281-M SCRIPT FILES

This section describes how to load the ADV7281-M script files to the DVP Eval program.

- Open the ADV7281-M folder that you downloaded from the ADI FTP site.
- Open the Software for ADV7281M (U3_ES2 Silicon) folder in the ADV7281-M folder.
- Copy the folder called ADV7281M_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.
- To open the DVP Eval program, select Start -> Analog Devices -> DVP Eval Latest Source 10-14-11.
- Select File -> Update Boards.

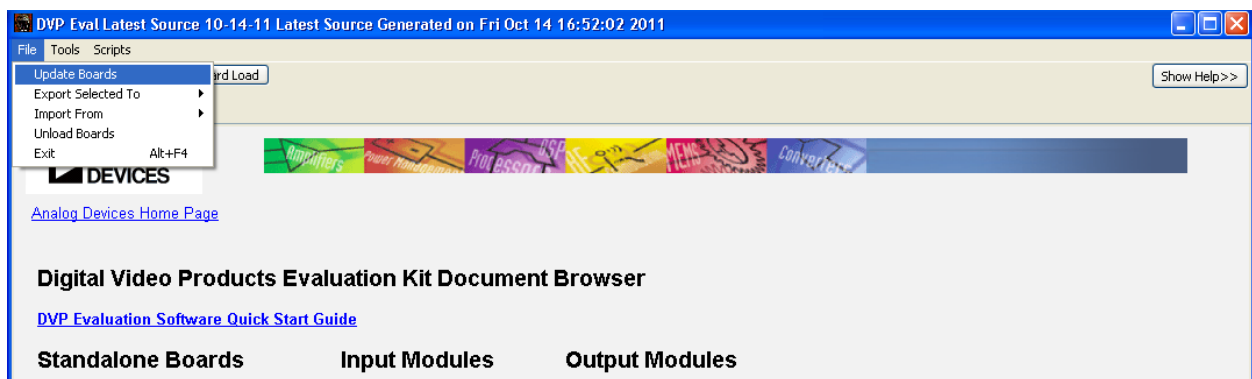


Figure 4. Update Board Files on DVP Eval Program

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 ADV7281-M script files have been added to the DVP Eval program.

- Exit the DVP Eval program.

2.5. POWER UP THE ADV7281-M EVALUATION BOARD

1. Connect a mains cable to the 7.5 V supply cable included in the ADV7281-M evaluation kit.
2. Connect the 7.5 V supply cable to Jumper J8 on the ADV7281-M evaluation board. When this is done correctly, LED D6 turns on (refer to [Figure 1](#)).
3. Connect the USB cable included in the ADV7281-M evaluation kit to the computer where you installed the DVP Eval program and ADV7281-M script files. This cable is used to send commands from your computer to the ADV7281-M evaluation board.
4. Connect the other end of the USB cable to Jumper J7 of the ADV7281-M evaluation board. When this is done correctly, LED D7 turns on (refer to refer to [Figure 1](#)).
5. Connect the analog video input(s) to the Ain inputs of the ADV7281-M evaluation board. Refer to [Table 1](#) for information on how to connect these inputs.
6. Connect SMA cables to the MIPI CSI-2 output connectors and feed these to a sink device.

Notes:

- The I²C lines to the ADV7281-M can be accessed via test points on the evaluation board. Refer to [Figure 1](#).
- Even after the ADV7281-M evaluation board is powered up, the 28.63636 MHz crystal (Y1) will not oscillate until the ADV7281-M is programmed (refer to [Section 2.6](#)).

2.6. PROGRAM THE ADV7281-M 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](#)).

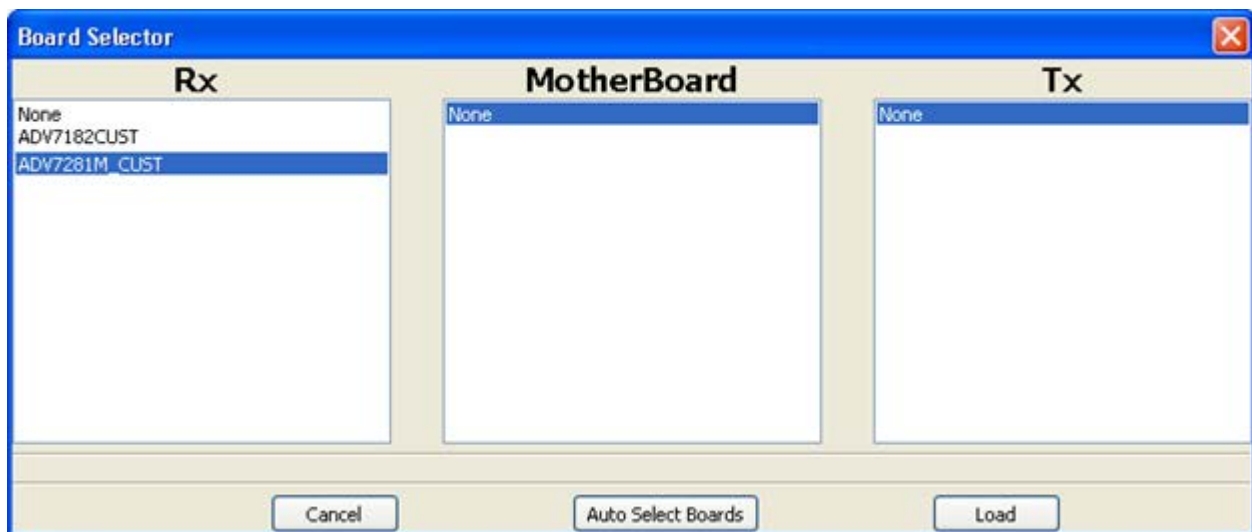


Figure 5. Board Selector Window of DVP Eval Program

3. Select ADV7281M_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.

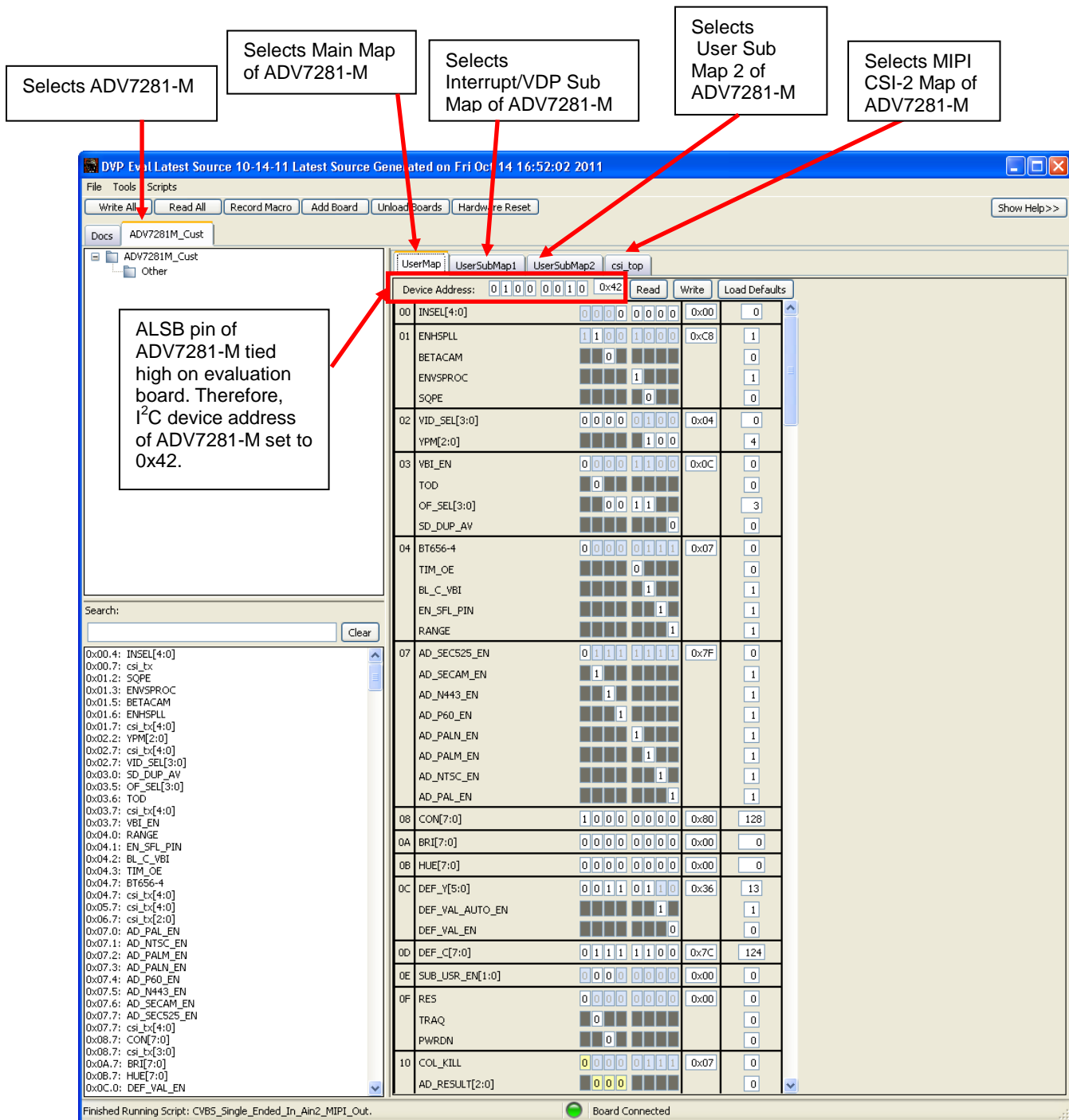


Figure 6. DVP Eval Program After Loading ADV7281-M Board

Note: A warning message similar to that shown in Figure 7 appears. This is expected as the I²C slave address of the CSI_Top map has not yet been programmed. This warning will disappear after any script is run (see step 7).

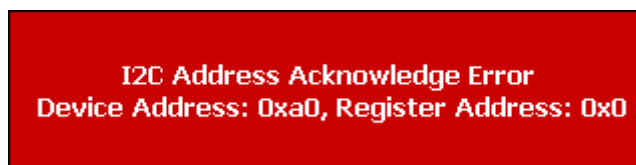


Figure 7. Warning Message That Appears After Loading ADV7281-M Board

7. Select Scripts-> ADV7281-MCUST to select the script you wish to run (refer to Figure 8).

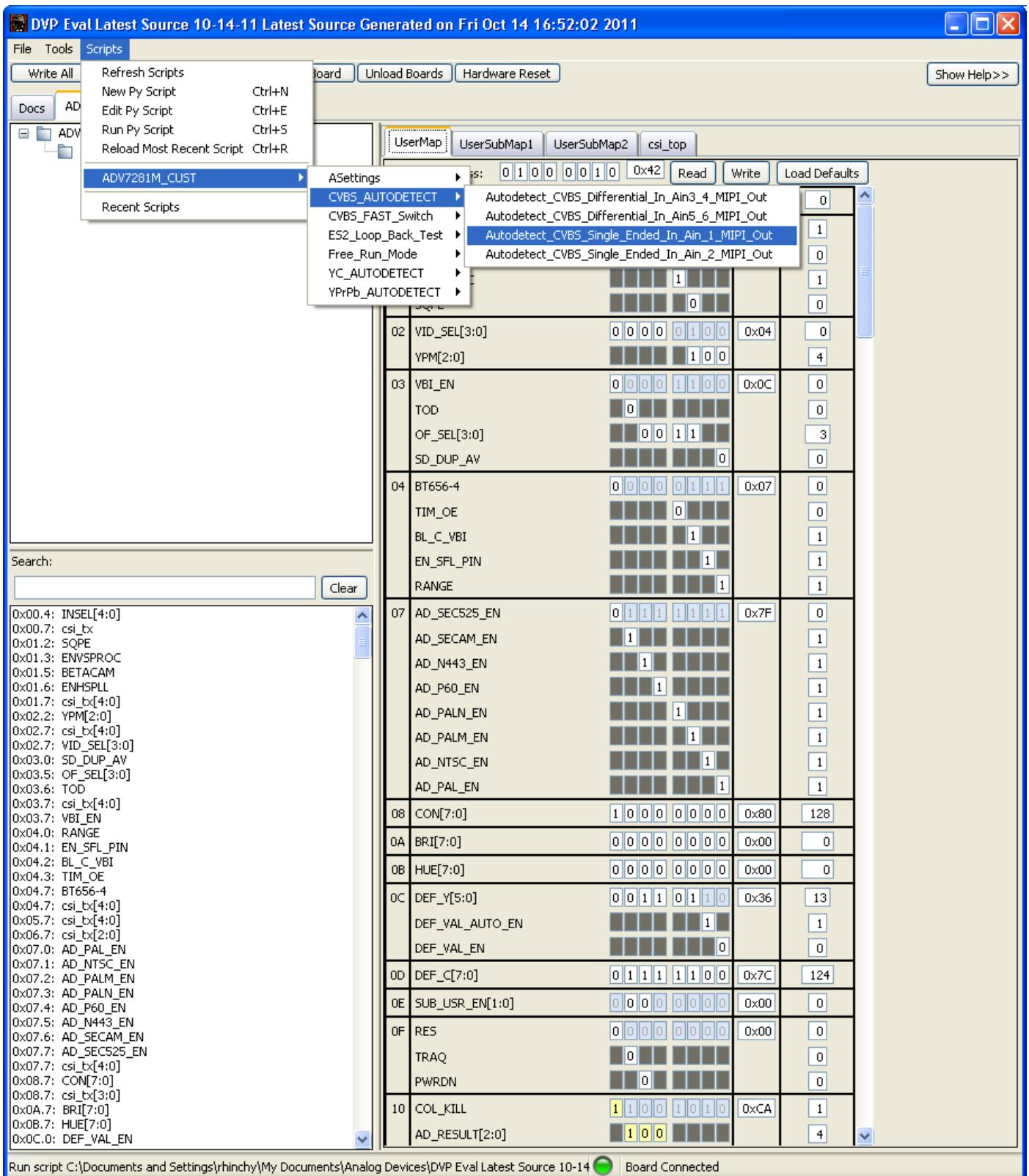


Figure 8. Running ADV7281-M Script on DVP Eval Program

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REVISION HISTORY

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