

# **TVP5160EVM Quick Start Guide**

---

*Digital Video Department*

## **1 Introduction**

The TVP5160EVM refers to the TVP5160 board and the ADV7311 board when they are connected together. Throughout this document this combination of boards is referred to as the TVP5160EVM. This Quick Start Guide steps through the necessary hardware and software setups required to use the TVP5160EVM.

## **2 Overview**

The TVP5160EVM is designed for the purpose of evaluating the TVP5160 video decoder. The EVM is powered by a 5-V, 3-A universal supply. I<sup>2</sup>C communication is emulated using a PC parallel port configured for ECP (extended capability port) or bi-directional mode. The parallel port mode can be changed using the PC BIOS setup, available during the reboot process.

## **3 Required Hardware and Equipment**

The following lists the required hardware and equipment necessary to use the TVP5160EVM:

- TVP5160EVM (provided)
- Universal 5-V, 3-A, power supply (provided)
- Parallel cable (provided)
- Windows based PC
- 1 composite RCA video cable
- 1 YPbPr component RCA video cable
- Video source (pattern generator, DVD player, etc)
- TV or display monitor that supports YPbPr component video inputs

## 4 Hardware Setup

The following describes how to set up the hardware for the TVP5160EVM.

1. Connect the TVP5160EVM boards together using the 120-pin board connector on each board.
2. Connect a CVBS input to the TVP5160 board and a component cable to the YPbPr outputs of the ADV7311 board.

**NOTE:** For evaluation it is recommended that YPbPr component video outputs are used in order to bypass the internal video decoder of the TV or video display.

3. Connect the parallel port cable from the TVP5160EVM to the PC.

**NOTE:** There are footprints for a dc jack and a DB25 connector on the ADV7311 board, but the default power and I<sup>2</sup>C is provided by the TVP5160 board via the 120-pin connector, P2.

4. Connect the 5-V power supply to the dc jack on the TVP5160 board. A green LED on each board should now be lit.

## 5 Software Installation

WinVCC4 is a Windows application that uses the PC parallel port to emulate I<sup>2</sup>C, providing access to each device on the I<sup>2</sup>C bus. WinVCC4 makes use of CMD files, a text editable file that allows preset video setups to be programmed easily.

This feature allows the user to easily set multiple I<sup>2</sup>C registers with the press of a button. WinVCC4 also has “Property Sheets” for the TVP5160 which allows the user to control the I<sup>2</sup>C registers with a GUI.

The following provides the steps required to install WinVCC4:

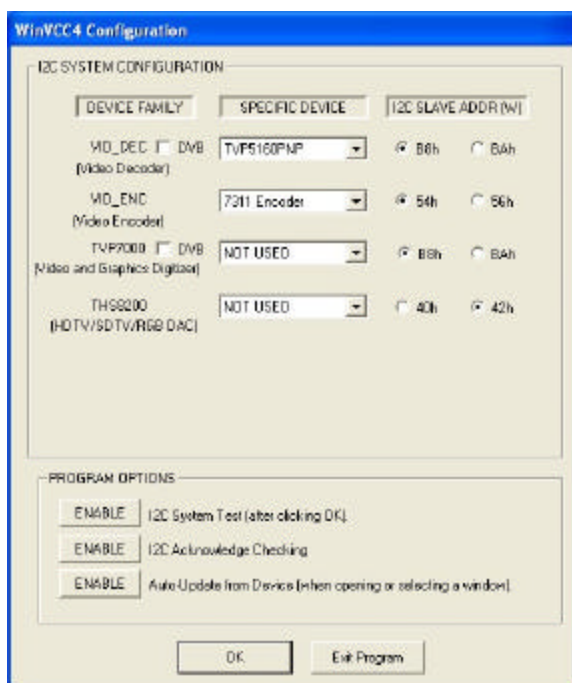
1. Explore the provided TVP5160EVM Software CD.
2. Install Port95NT.exe. This is the parallel port driver used by WinVCC4. This driver must be installed and the PC must be rebooted before WinVCC4 will operate correctly.
3. Install Setup.exe. This will install WinVCC4 onto the PC. No reboot is required.
4. Run WinVCC4.exe.

## 6 Using WinVCC4

The following describes the steps to take within WinVCC4 in order to get video out of the TVP5160EVM.

1. Once WinVCC4 is executed, the WinVCC4 Configuration screen appears. This dialog box is used to configure the I<sup>2</sup>C bus. Next to VID\_DEC, select the TVP5160 and ensure the I<sup>2</sup>C address is set to 0xB8. This should match the I2C ADDR jumper on the TVP5160 board.

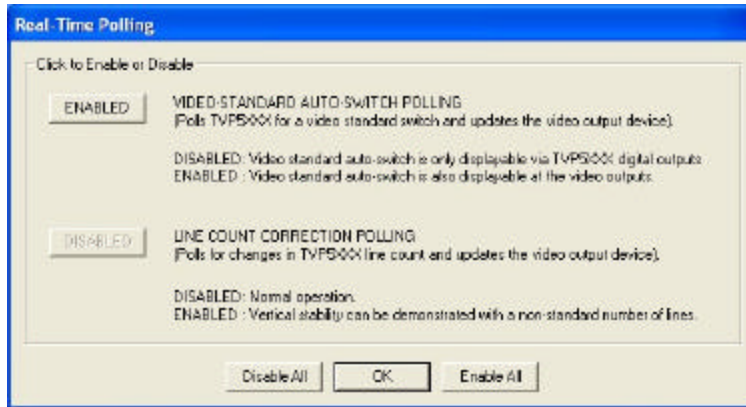
**NOTE:** If WinVCC4 is running and the TVP5160 board I<sup>2</sup>C address is changed, then Reset must be pressed on the EVM.



**Figure 1. WinVCC4 – I<sup>2</sup>C Configuration Screen**

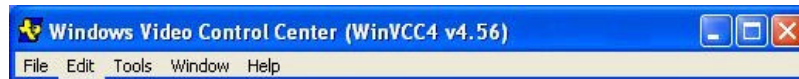
2. Next to VID\_ENC, select the ADV7311 and ensure the I<sup>2</sup>C address is set to 0x54. This should match the I2C ADDR jumper on the ADV7311 board.
3. Ensure that all other boxes are selected as Not Used and that all “Program Options” buttons are set to Enabled. Click OK.
4. If there are no I<sup>2</sup>C communication issues, then the Real-Time Polling window will display next. If there are I<sup>2</sup>C issues, then an I<sup>2</sup>C Test Report box will display. Completely exit out of WinVCC4, double check the parallel port cable connections, cycle power on the TVP5160EVM, and re-run WinVCC4.

- At the Real-Time Polling window, ensure that VIDEO-STANDARD AUTO\_SWITCH POLLING is enabled and click OK.



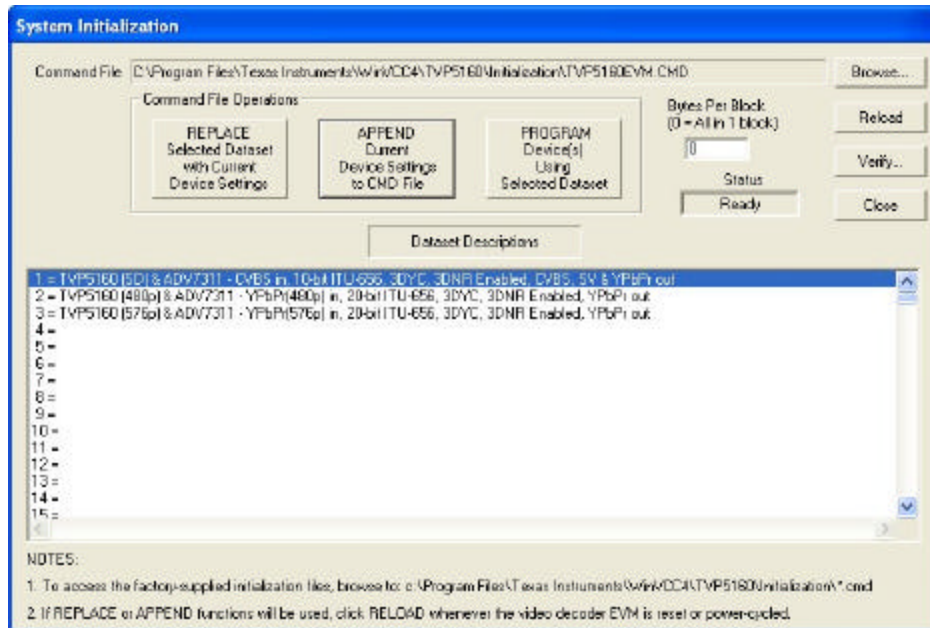
**Figure 2. WinVCC4 – Real Time Polling Screen**

- Load the provided Initialize.cmd file into WinVCC4 by clicking on Tools -> System Initialization -> Browse. The default directory is c:\TIVideo\TVP5160EVM.



**Figure 3. WinVCC4 – Main Screen**

- Click the “TVP5160 (SD) + ADV7311” dataset in the window and then click the Program Dataset button to initialize the TVP5160EVM.



**Figure 4. WinVCC4 – System Initialization**

8. With a video source provided at the composite video input, video should be viewable on the TV/display monitor. All ADV7311 outputs are enabled simultaneously.

**NOTE:** To ensure the TVP5160 is working properly, go to Video Status and check the H/V/C lock status and the video standard. This is only a check on the TVP5160 board and not the ADV7311 board or the TV/display monitor.

## IMPORTANT NOTICE

Texas Instruments Incorporated and its subsidiaries (TI) reserve the right to make corrections, modifications, enhancements, improvements, and other changes to its products and services at any time and to discontinue any product or service without notice. Customers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All products are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its hardware products to the specifications applicable at the time of sale in accordance with TI's standard warranty. Testing and other quality control techniques are used to the extent TI deems necessary to support this warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

TI assumes no liability for applications assistance or customer product design. Customers are responsible for their products and applications using TI components. To minimize the risks associated with customer products and applications, customers should provide adequate design and operating safeguards.

TI does not warrant or represent that any license, either express or implied, is granted under any TI patent right, copyright, mask work right, or other TI intellectual property right relating to any combination, machine, or process in which TI products or services are used. Information published by TI regarding third-party products or services does not constitute a license from TI to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

Reproduction of information in TI data books or data sheets is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. Reproduction of this information with alteration is an unfair and deceptive business practice. TI is not responsible or liable for such altered documentation.

Resale of TI products or services with statements different from or beyond the parameters stated by TI for that product or service voids all express and any implied warranties for the associated TI product or service and is an unfair and deceptive business practice. TI is not responsible or liable for any such statements.

Following are URLs where you can obtain information on other Texas Instruments products and application solutions:

| <b>Products</b>  |  | <b>Applications</b> |  |
|------------------|--|---------------------|--|
| Amplifiers       | <a href="http://amplifier.ti.com">amplifier.ti.com</a>             | Audio               | <a href="http://www.ti.com/audio">www.ti.com/audio</a>                   |
| Data Converters  | <a href="http://dataconverter.ti.com">dataconverter.ti.com</a>     | Automotive          | <a href="http://www.ti.com/automotive">www.ti.com/automotive</a>         |
| DSP              | <a href="http://dsp.ti.com">dsp.ti.com</a>                         | Broadband           | <a href="http://www.ti.com/broadband">www.ti.com/broadband</a>           |
| Interface        | <a href="http://interface.ti.com">interface.ti.com</a>             | Digital Control     | <a href="http://www.ti.com/digitalcontrol">www.ti.com/digitalcontrol</a> |
| Logic            | <a href="http://logic.ti.com">logic.ti.com</a>                     | Military            | <a href="http://www.ti.com/military">www.ti.com/military</a>             |
| Power Mgmt       | <a href="http://power.ti.com">power.ti.com</a>                     | Optical Networking  | <a href="http://www.ti.com/opticalnetwork">www.ti.com/opticalnetwork</a> |
| Microcontrollers | <a href="http://microcontroller.ti.com">microcontroller.ti.com</a> | Security            | <a href="http://www.ti.com/security">www.ti.com/security</a>             |
|                  |  | Telephony           | <a href="http://www.ti.com/telephony">www.ti.com/telephony</a>           |
|                  |  | Video & Imaging     | <a href="http://www.ti.com/video">www.ti.com/video</a>                   |
|                  |  | Wireless            | <a href="http://www.ti.com/wireless">www.ti.com/wireless</a>             |

Mailing Address: Texas Instruments  
Post Office Box 655303 Dallas, Texas 75265