TEXAS INSTRUMENTS

TVP5146EVM

Quick Start Guide

User's Guide

2003

Video and Imaging

SLEU040

Preface

Read This First

About This Manual

This is a quick reference guide to get the TVP5146EVM up and running.

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Chapter 1

TVP5146EVM Quick Start Guide

1.1 Introduction

The TVP5146EVM is designed specifically for evaluating the TVP5146 high quality NTSC/PAL/SECAM video decoder. The EVM is powered by a 5-V, 3-A supply provided by a universal power supply functional in any country. This power supply is provided. Communication is emulated using a PC parallel port configured for bidirectional mode or extended capability port (ECP) mode. If communication with the EVM cannot be established, the parallel port mode can be changed using the PC BIOS setup, available typically during the reboot process.

1.2 Overview

The TVP5146EVM supports composite, S-video, and component analog video inputs and outputs. The analog outputs are all available simultaneously. The 5-V supply and the I^2C signals are shared across a common connector interface along with the necessary data and clocks.

1.3 Hardware Description

The TVP5146EVM supports the following analog inputs:

- 4 CVBS, 1 SV
- 1 CVBS, 1 SV, 1 YPbPr
- 1 SCART, 1 SV

These inputs were defined for convenience of testing all TVP5146 supported video types with the TVP5146EVM. The complete list of possible inputs for the TVP5146PFP is available in the data manual (SLES084). The user is able to provide composite, component, and S-video inputs and switch between them

with using the provided WinVCC4 software application to control the TVP5146.

All inputs have discrete anti-alias filters that can be used by shorting positions 1 to 3 and 2 to 4 on jumpers JP1, JP2, JP7, JP8, JP9, and JP10. The filters may be bypassed by shorting positions 1 to 2 and 3 to 4 on the aforementioned jumpers. The filters are in circuit by default.

By default, the digital data provided to the video encoder from the TVP5146 is 10-bit ITU–R BT.656 data. The video format and channel selection, along with other controls for both the video encoder and the TVP5146 are available using WinVCC4.

All analog video outputs of the encoder board have reconstruction filters.

1.4 Software Tools

WinVCC4 is a Windows application that uses the PC parallel port to emulate I^2C, providing access to all registers of each device. WinVCC4 makes use of CMD files that allow preset video setups to be programmed easily without reprogramming each register multiple times. These .CMD files are completely unrelated to the typical Windows .CMD files and may be edited using a text editor. This feature allows the user to easily set I^2C registers with the press of a button. WinVCC4 also has *Property Sheets* for the TVP5146, which allows the user to control the I^2C registers in an easy to understand and use format.

1.5 Software Installation

1) Insert the CD-ROM into the computer that emulates the I^2C bus via the parallel port.
2) Run the SETUP.EXE file to install WinVCC4 and documentation.
3) Click *Next* at all prompts and finally click *Finish* to complete the installation process.
4) A message may appear instructing you to install the DriverLINX port I/O driver (if it was not previously installed). This must be installed for WinVCC4 to run. To install the driver, run PORT95NT.EXE, which is located in the root directory of the installation CD-ROM.
5) At the root directory of the installation CD is a zip file named Application_Reports.zip, which contains several application documents.

1.6 Hardware Setup

1) Connect the TVP5146EVM and the video encoder board together.
2) Connect all necessary video input and output cables to both the TVP5146EVM and the video encoder board.

NOTE: The default register settings used by WinVCC4 use a CVBS input on CH4 of the TVP5146.

3) Connect a PC parallel port cable to the TVP5146 DB25 connector.

4) Provide the 5-V supply via the dc jack on the TVP5146 board using the provided power supply. Verify that the green LED on both boards is on.

5) Go to Start–>Programs–>TVP5146EVM Software to start WinVCC4.

6) Within WinVCC4, the TVP5146 should be set for base I^2C address 0xB8. The video encoder's device type should be set to encoder mode with 0X54 as the base I^2C address.

7) Provide a video pattern to the TVP5146EVM video input(s).

8) Load the provided CMD file into WinVCC4 by clicking on Tools–>System Initialization–>Browse.

9) Select the desired setup depending on the connected inputs, outputs, and video format of the pattern. Choose the setup by clicking once on its description. Clicking the Program… button once to program the TVP5146EVM.

NOTE: The register settings made to each device may be viewed by opening the CMD file in Notepad or another text editor.

10) Proper video should now be observed on the video display.

The TVP5146EVM is designed specifically for evaluating the TVP5146 low cost, low power NTSC/PAL/SECAM video decoder. The EVM is powered by a 5-V, 3-A supply provided by a universal power supply functional in any country. This power supply is provided.

Communication is emulated using a PC parallel port configured in bidirectional mode or extended capability port (ECP) mode. This configuration is available through the PC bios setup, available typically on a reboot.

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