

Photo of the entire system



Overview

Virtex-II Pro based video processing card with PCI interface offers a cost-effective platform for developing video and multimedia based applications. With on board high speed video ADC, DAC the board supports real time video processing of component video signals of NTSC or PAL standards. The on board SRAM and Flash memories may be used as data/code store for PowerPC or as video coefficient/data buffer(s).

The board supports three different modes of FPGA configuration, configuration through PROM, JTAG Port and PCI. Flash PROM memory can be programmed with code for PowerPC through PCI interface.

This board can also be used as standalone video processing board. In that case RS232 port provided on board will be used to program flash PROM.

Further this platform is optimized for experimentation with 32-bit IBM PowerPC™ RISC processor core integrated into the FPGA fabric.

Target Applications

1. Image Processing.
2. Digital Video Processing.
3. Digital TV.
4. Video Capture.
5. Video Editing.
6. Multimedia.
7. Direct Digital synthesis.
8. I-Q Modulation.
9. Embedded systems.
10. Embedded microprocessor.
11. ASIC prototyping.
12. Data Storage.

Features

The project has been divided into 2 parts, viz. Hardware and Software.

Hardware:

1. Xilinx Virtex-II Pro XC2VP30 / XC2VP40 / XC2VP50 device in FF1152 package.
2. On chip Memory Controllers and Interfaces.
3. Three 512 K X 16 Flash PROMs.
4. Five 1M X 16 SRAMs.
5. RS 232 Port.
6. Video Input and Output.
7. Analog Input.
8. PCI Interface.

Software:

1. Contain the drivers for Windows 98, Windows 2000 (depending on the type of interface) and the application programs.

PCB Specifications

1. Eight layer board: Six signal planes and two power planes
2. Special routing for PCI signals.
3. Termination Resistors for signal integrity issue.
4. Length matching of tracks.
5. PCI clock with single load.
6. Special routing for critical signals.