

Xylon d.o.o.

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Features

- Daughter card compatible with the Xilinx® Spartan®-6 FPGA based Xylon's platforms:
 - logiCRAFT-CC Companion Chip Platform
 - logiCRAFT6 Multimedia Development Platform
- Supports Analog & HDMI & DVI video inputs into Xylon's platforms or custom designed systems
- Analog/HDMI dual interface:
 - Supports high bandwidth digital content protection
 - RGB-to-YCbCr 2-way color conversion
 - Automated clamping level adjustment
 - RGB and YCbCr output formats
- Analog interface:
 - 8-bit triple ADC / 100 MSPS maximum conversion rate
 - Macrovision® detection
 - Full sync processing
 - Sync detect for hot plugging
 - Midscale clamping
- Digital video interface:
 - HDMI 1.1, DVI 1.0
 - Supports HDCP 1.1
- Supported resolutions:
 - All HDTV formats with pixel clock frequency up to 135MHz,
 - Display resolutions up to SXGA (1280x1024@75Hz)
- Digital audio interface:
 - HDMI 1.1-compatible audio interface
 - S/PDIF (IEC90658-compatible) digital audio output
 - I2S audio output
- Board Outputs:
 - Serialized video output (5 LVDS pairs – 4 data + 1 clock)
 - S/PDIF and I2S audio outputs

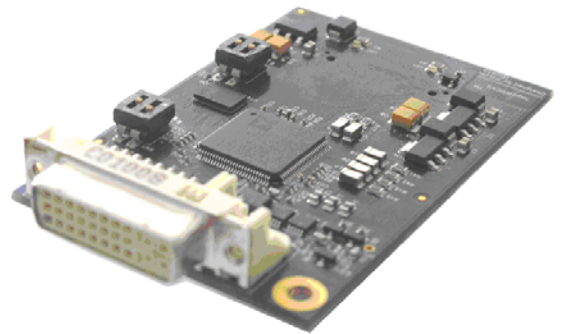


Figure 1: The logic-VI Analog & HDMI & DVI Video Input Daughter Card

Applications

- Frame grabbers
- LCD display panel drivers

General Description

The logiCC-VI Analog & HDMI & DVI Video Input daughter card is Xylon's add-on board (card) compatible with the Xilinx Spartan-6 FPGA based logiCRAFT6 Multimedia Development Platform and the logiCRAFT-CC Companion Chip Platform development systems.

The daughter card expands video input capabilities of Xylon's platforms. It enables connection of one Analog RGB, HDMI or DVI video input to FPGA chip on development platforms through 5-pairs LVDS (4 data pairs + 1 clock pair) interface. The LVDS interface saves the FPGA pin count and makes the prototyping easier.

The Analog & HDMI & DVI Video Input daughter card utilizes powerful dual-display interface controller for processing of the selected video input. The input video controller's 28 outputs are serialized into the LVDS interface.

This daughter card supports display resolutions up to SXGA (1280 x 1024 @ 75Hz), and all HDTV formats with pixel clock frequency up to 135 MHz. The lowest supported pixel clock frequency is 12 MHz. In addition to the video input, the daughter card extracts the audio from the HDMI video stream and provides S/PDIF and I2S outputs towards the logiCRAFT platform.

The daughter card can be plugged in 40-pin connectors (SAMTEC ERM8-020-09.0-S-DV-TR) available on the logiCRAFT6 and the logiCRAFT-CC FPGA development platforms.

Functional Description

The Figure 2 presents card's internal structure. The main functional blocks are:

- MOLEX DVI connector
- AD9380 Analog/HDMI interface,
- Info EEPROM,
- SN75LVDS83B serializer
- Power supply,
- Main board connector

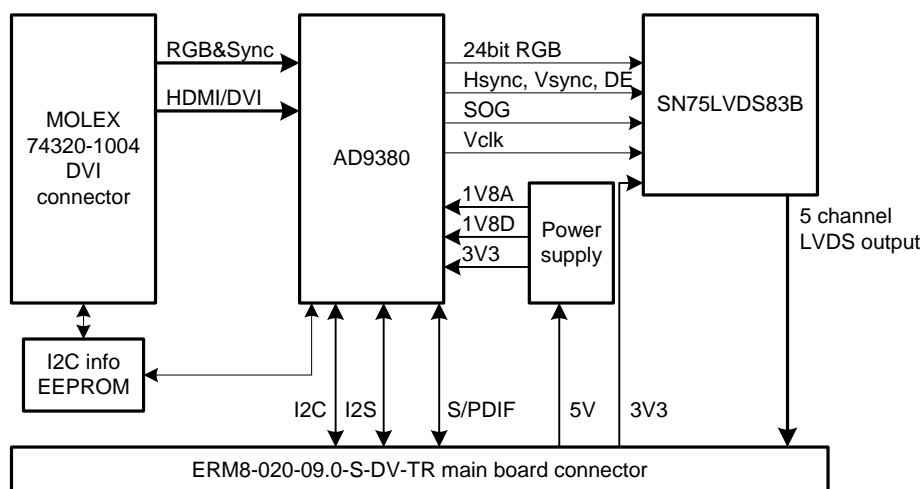


Figure 2: The Analog & HDMI & DVI Daughter Card's Block Diagram

MOLEX DVI connector

Standard DVI connector used for connecting Analog and DVI video inputs to the daughter card.

AD9830 Analog/HDMI interface

The dual-display interface controller processes input Analog/DVI/HDMI signals. The controller's video output is user-selectable.

Info EEPROM

The info EEPROM contains board identification data used by video sources connected to the Analog & HDMI & DVI Input daughter card. The video sources adjust their outputs accordingly to the EEPROM stored parameters (resolution, refresh rate, etc.).

SN75LVDS83B serializer

The serializer converts parallel RGB video data into the 5-pairs LVDS interface.

Power supply

Provides requested voltage levels for on-board circuitry.

Related Xylon Products

The Analog & HDMI & DVI Video Input Daughter Card can be used with two development platforms currently available from Xylon:

The logiCRAFT-CC Companion Chip Platform:

URL: www.logicbricks.com/Products/logiCRAFT-CC.aspx

The logiCRAFT6 Multimedia Evaluation/Development Platform:

URL: <http://www.logicbricks.com/Products/logiCRAFT6.aspx>

To learn more about the Xylon boards and development platforms, contact Xylon or visit the web:

Email: support@logicbricks.com

URL: www.logicbricks.com

Ordering Information

This product is available directly from Xylon. Please visit our web shop or contact Xylon for pricing and additional information:

Email: sales@logicbricks.com

URL: <http://www.logicbricks.com/Products/logiCC-VI.aspx>

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Related Information

Xilinx Programmable Logic

For information on Xilinx programmable logic or development system software, contact your local Xilinx sales office, or:

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Revision History

Version	Date	Note
1.00.	22.10.2010.	Initial Xylon release