

Matrox FPGA Development Kit (FDK)

For use with Impulse CoDeveloper and Altera® Quartus® II

Benefits

Build custom FPGA configurations for the Matrox RadientPro family of vision processor boards based on Altera Stratix® V devices

Code custom FPGA design components in C with the Impulse CoDeveloper software-to-FPGA tool

Accelerate the creation of custom FPGA configurations using the Matrox library of ready-made FPGA design components

Quickly assemble FPGA configurations using Altera's Qsys system integration tool

Simplify the creation of custom FPGA configurations with Matrox tools for key steps in the design process

Harness the full power and flexibility of FPGAs for image processing

The Matrox FPGA Development Kit (FDK) provides a component library and tools to enable the development of custom FPGA configurations for the Matrox RadientPro family of vision processor boards based on Altera Stratix V devices. The Matrox FDK is used in combination with Impulse CoDeveloper and Altera Quartus II to create FPGA configurations that offload and even accelerate image processing functions from the vision processor board's host system.

Focus on custom image processing functions

The Matrox FDK provides the underlying framework to simplify the development of custom image processing functions for the FPGA device found on the Matrox RadientPro. Developers with a software background can use Impulse CoDeveloper to write custom image processing functions as FPGA design components using the C language. With the Matrox FDK, developers focus on creating the custom FPGA design components vital to their application rather than the peripheral logic.

Quick assembly of FPGA design components

Custom and ready-made Matrox FPGA design components are graphically combined within the Altera Qsys system integration tool to easily create custom FPGA configurations. A resulting FPGA configuration consists of design components efficiently connected through the Altera Qsys interconnect. Overall integration is further simplified by the Matrox Constraints Generator tool, which effortlessly handles the details of arranging the FPGA configuration to work with the Matrox vision processor board.

Impulse CoDeveloper

The Impulse CoDeveloper tool is designed for software application developers and FPGA designers seeking a fast path to FPGA hardware. The Impulse C™ compiler is a high-level synthesis tool based on standard ANSI C that lets developers compile C-language algorithms directly into optimized logic ready for use with FPGA devices found on Matrox RadientPro. The Impulse tools enable highly iterative, software-oriented design methods for quick development of FPGA hardware modules from C code.

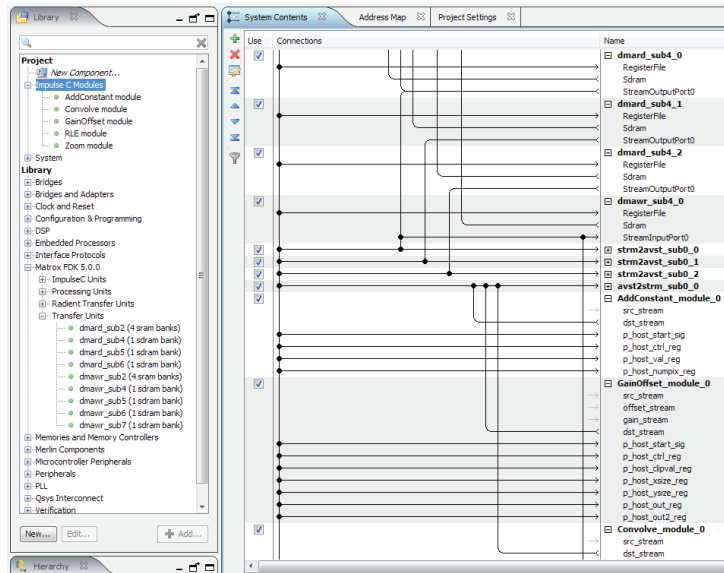


FDK tool set

Altera Quartus II with Qsys

The Altera Quartus II design software is used to put together and compile FPGA configurations. It includes the Qsys graphical interface for integrating design components into an FPGA configuration.

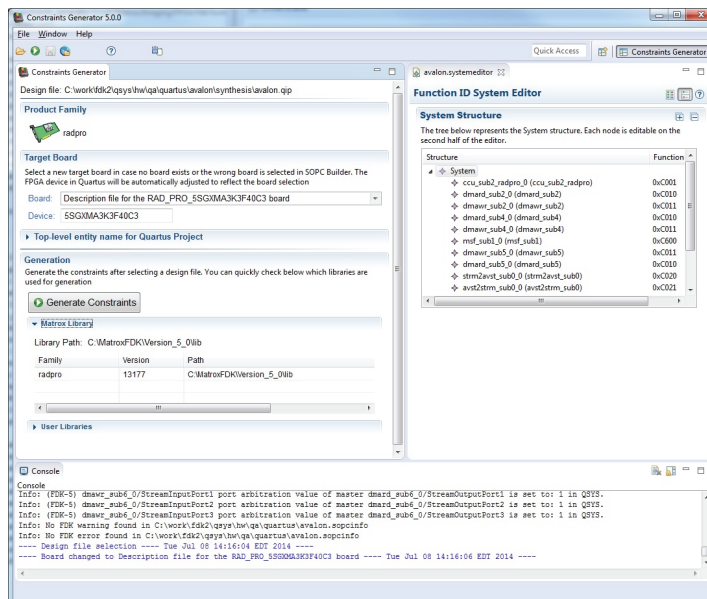
Altera Qsys



Matrox Constraints Generator

Matrox Constraints Generator is an interactive utility that automates the creation of glue logic, pin-outs and timing constraints necessary to generate FPGA configurations specifically for the Matrox RadientPro family of vision processors.

Matrox Constraints Generator



Ordering Information

Specifications

Supported environment

- 64-bit Microsoft® Windows® 7 / 8 / 8.1

Additional requirements (sold separately)

- Matrox Imaging Library (MIL) or MIL-Lite 10
- Matrox RadientPro vision processor board
- Impulse CoDeveloper version 3.70e.14 (or higher)¹
- Altera Quartus II version 14 (or higher)¹
- Microsoft Visual Studio® 2010
(for optional hosting of Impulse C compiler)

Hardware

Part number & Description

MTXFDK4ICAQ2	Matrox FPGA Development Kit (FDK) for Matrox RadientPro family. (Requires Impulse CoDeveloper and Altera Quartus II software.)
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Endnotes:

1. Can be purchased from Impulse Accelerated Technologies. Please contact your Matrox Imaging sales representative for more information.

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