

Ramses III

PCI-Express Framegrabber

Ramses III is a PCI-Express framegrabber with onboard processing capabilities for demanding image processing in industry, medicine, research and security.

Although smart cameras and cameras with the possibility of a direct connection to a PC, reduce importance of framegrabbers in certain fields of imaging applications, framegrabbers still belong to the essential parts of many vision applications. Ramses III is a very powerful framegrabber, to upgrade a customary in trade personal computer with PCI-Express interface to a workstation for image processing. This product is the youngest member in the successful Ramses framegrabber family.

Main features are:

Support of PCI-Express

PCI-Express is the newest standard for communication of peripheral devices in a personal computer. Advantage of this bus is its serial manner, which allows higher clocking and therefore throughput than the standard PCI interface. In addition it is scalable: PCI-Express interfaces consist of one or more lanes, whereas the number of lanes determines the maximal data rate. Up to now common motherboards only have single lane interfaces available for custom add-on-cards, what is the reason why Ramses III supports only one PCI-Express lane. This interface allows data rates up to 256 MByte/s, which is about twice as fast as the standard PCI-bus. When motherboards with more lanes for

*Ramses III
Framegrabber
Board*



custom usage are available, this framegrabber will be extended to use this additional bandwidth.

Modular Camera interface

To support many types of cameras, a modular camera interface is used. This allows grabbing of standard PAL/NTSC cameras, high quality analog progressive scan cameras or the usage of CameraLink Base or Medium cameras. In addition cost-effective *Sensor to Image* camera modules can be used.

Open FPGA programming interface

FPGAs are a core component in nearly every vision component of

Sensor to Image. This allows flexible interfacing to different sensors or other hardware components. In addition it provides the possibility to realize image preprocessing tasks in hardware, what is usually faster than in software. The Ramses III FPGA design has an interface for custom usage, so it is possible to enhance the performance of the whole system by programming the FPGA.

This combined with the common features like framebuffer, IOs or serial interfaces make Ramses III to an ideal platform for vision applications, as well in the OEM market as for system integraters.

*Interface for
Sensor to Image
camera modules*

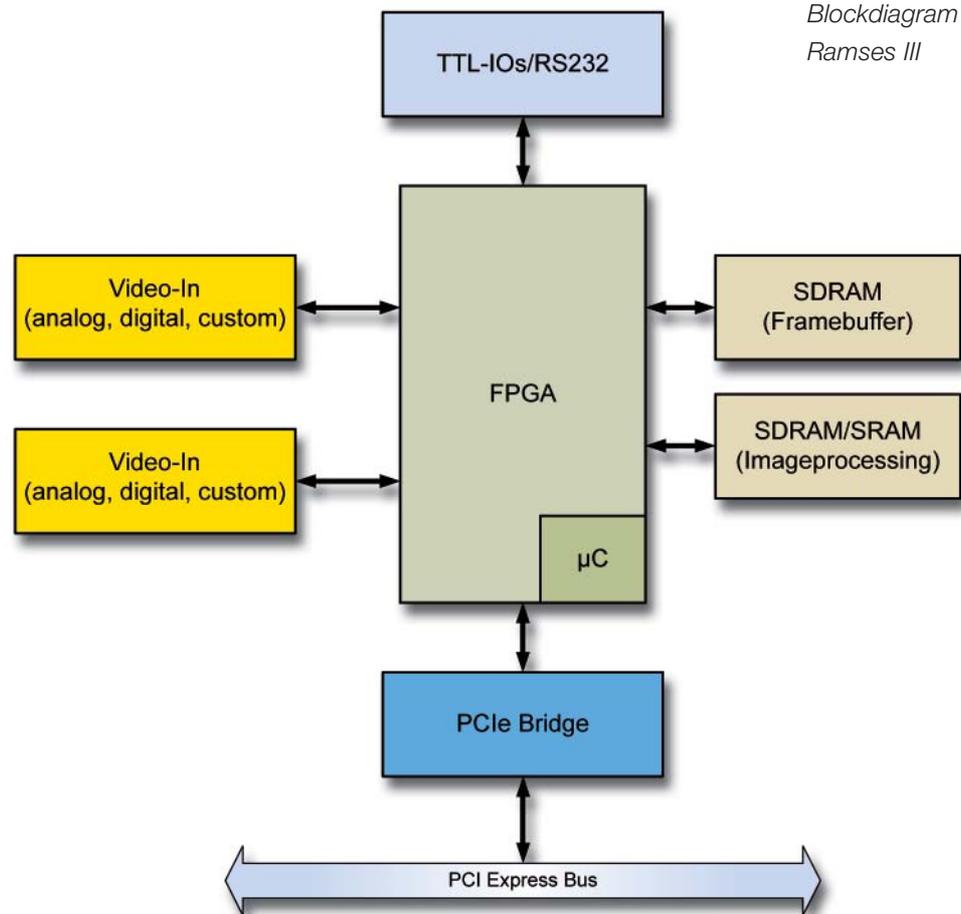


SPECIFICATIONS

RAMSES III

Video Inputs	2 Channels
Cameras	standard PAL/NTSC cameras color or monochrome. <i>Sensor to Image</i> camera modules. CameraLink cameras (2 base or 1 medium configuration)
CPU	8051 Softcore as command interpreter
FPGA	Spartan3A-700 or Spartan3A-1400
Framebuffer	8 MB – 64 MB SDRAM
Image Processing RAM	8–32 MB SDRAM or 256 kB SRAM
FPGA Development	Xilinx ISE, Xilinx WebPack
Image Processing Library	SAC Coake
Data Interface	PCI Express, 1 Lane
Data rate	up to 256 MB/s
Serial Interface	2 (1 for each camera-interface)
TTL-I/Os	2 Inputs, 2 Outputs (1 Input + 1 Output for each camera interface)
Extensions	camera interface add-on to support <i>Sensor to Image</i> camera modules or analog cameras
Operation Conditions	temperature –10°C up to 50°C, humidity up to 80%
Physical Dimensions	155 mm × 115 mm (PCB)

Blockdiagram
Ramses III



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