

# Cleopatra

## FPGA Based Universal Visualisation and Video Processing System

**Cleopatra III is a very powerful and flexible single-board computer for advanced visualisation and video processing purposes independent from a host PC.**

Many applications require handling of several images and flexible output of one or more images on one or more displays. Common compact vision systems or PCs often are not able to do this. This lack is closed by Cleopatra in its third generation.

So this product is more as an alternative to PC-based systems with there known disadvantages like limited reliability and stability.

Typical tasks are e.g.

- display of several images on one display with variable image size
- zoom functions
- comparing a live image with previously taken reference image side by side or by overlay technology, also in spitscreen format
- measurement of distances in the image

This architecture opens a wide range of applications in industry, medicine, micro-scopy or quality assurance.

As video sources are supported standard PAL or NTSC cameras (color or monochrome), CameraLink cameras or smart *Sensor to Image* camera modules available with several ccd or cmos imagers.

Video Outputs are VGA or TFT displays. Additional IOs, serial ports allow communication to cameras or peripheral devices.

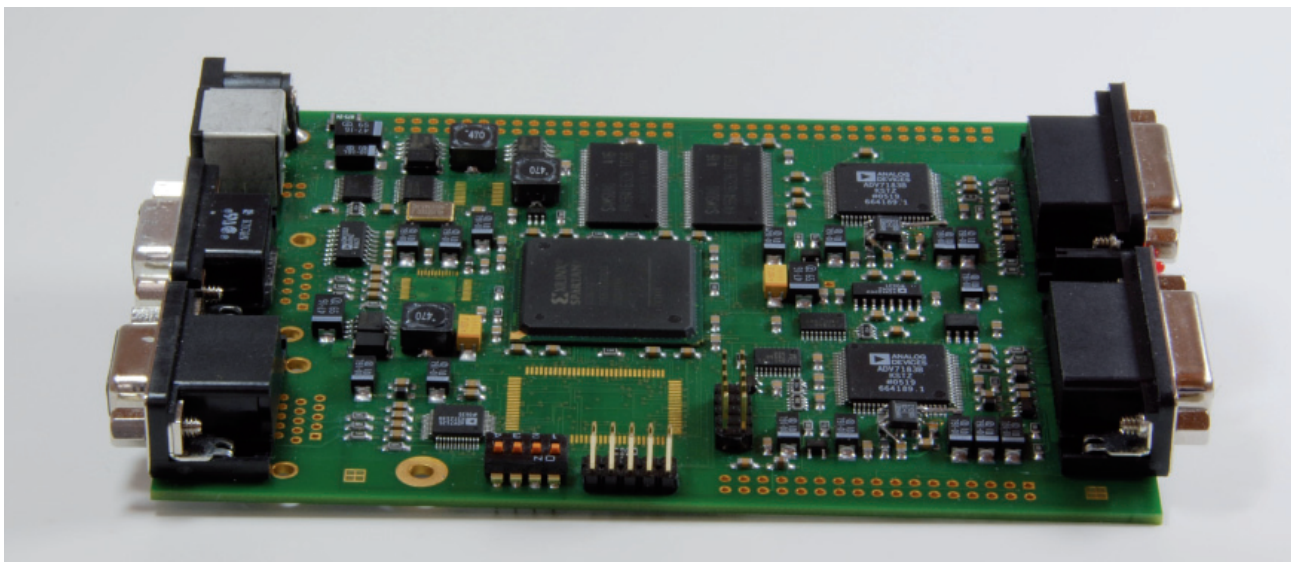
An additional video-overlay offers the possibility to display useful information e.g. a basic user interface, text information or a cursor.

An SDCard or USB interface enables digital image storage and exchange.

The raw image often should be preprocessed e.g. filtered. This can be done using the powerful FPGA technology. The user can modify a certain image-processing vhdl-module, which will be combined with the precompiled basic design to get the complete FPGA load. To make advanced functions possible, extra memory is provided, reserved only for user defined FPGA functionality.

If image processing in software is preferred, Cleopatra III is available with a BlackFin-based CPU addon board, which is running embedded Linux and is providing additional interfaces like ethernet and a USB host controller.

Like all vision components from *Sensor to Image*, this product can be adapted to your special needs, e.g. support of dedicated cameras, implementation of special video-effects, redesign to fulfill your economical and mechanical needs.

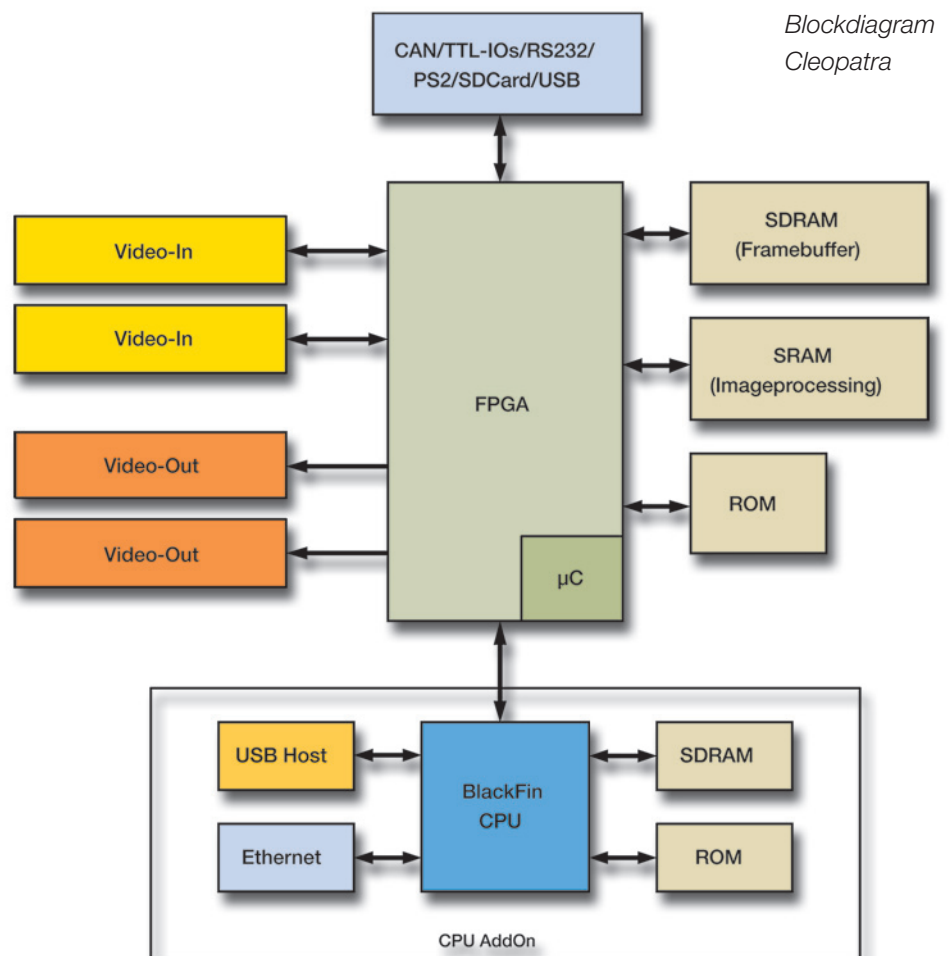


*Cleopatra III Visualisation System*

**SPECIFICATIONS**

**CLEOPATRA III**

Video Inputs	2 Channels
Cameras	2 standard PAL/NTSC cameras color or monochrome. 2 <i>Sensor to Image</i> camera module with camera interface addon, 1 CameraLink camera with CameraLink interface addon.
Displays	2 VGA or 1 VGA and 1 TFT (each max. 1280×1024 @60Hz)
CPU	8051 Softcore as command interpreter
ROM	4 MB
FPGA	Spartan3-700 or Spartan3-1400
Framebuffer	8 MB–64 MB SDRAM
Image Processing RAM	2 MB SRAM
Power Supply	8–24 V
Operating Conditions	temperature –10°C up to 50°C, humidity 20% to 80%
FPGA Development	Xilinx ISE, Xilinx WebPack
Serial Interface	1 for console, 1 for each camera-interface
TTL-I/Os	2 Inputs, 2 Outputs, 2 Inputs + 2 Outputs for each camera interface
Others	PS2 -interface (e.g. for keyboard) and SDCard-socket or USB 2.0 Slave
Extensions	camera interface addon to support <i>Sensor to Image</i> camera modules or CameraLink cameras, BlackFin CPU module running $\mu$ CLinux and providing Ethernet and USB host interface
Physical Dimensions	100mm×148 mm (PCB), 110mm×148mm×40mm



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