SILICON**SOFTWARE**
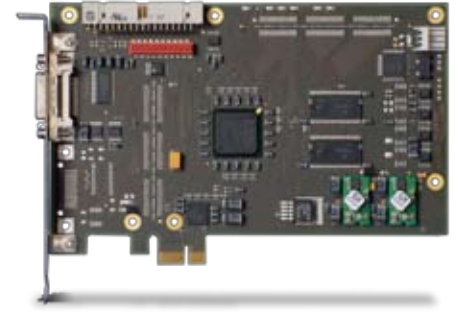
A-Series Camera Link

microEnable IV AS1-PoCL

Single channel PCIe frame grabber for Camera Link with PoCL support

The microEnable IV AS1-PoCL is a one-port frame grabber for a Base configuration Camera Link camera. Besides powerful acquiring functions it additionally possesses a high-precision trigger system for especially fulfilling requirements of line-scan camera applications. In addition it is shipped with valuable image pre-processing functions that can be run in real time without loading of the host CPU.

The microEnable IV AS1-PoCL uses the long-time tested and reliable technology of high-performance processing boards and possesses a comparable capacity and functional range.

With supporting the Power over Camera Link technology you can realize price-effective and low-maintenance systems with this product. microEnable IV AS1-PoCL is delievered with a powerful but intuitively to handle software development kit (SDK) and a wide range of drivers for 32bit and 64bit operation systems. A similar code base for software, drivers and even hardware applets and more over an common interface concept for hardware extensions and features guarantees highest compatibility between all frame grabber series.

microEnable AS1-PoCL is the ideal entry level for image acquisition systems with moderate requirements to data bandwidth. The concept of the product series easily allows to adapt the system to higher requirements.

Camera Interface
- ✓ Camera Link
- ✓ Power over Camera Link
- GigE Vision

Camera Link Standards
- ✓ BASE Configuration
- Dual BASE Configuration
- MEDIUM Configuration
- FULL Configuration
- 10taps FULL Configuration

Camera Interface
- ✓ Camera Link Connectors
  - 1 MDR26
  - SDR26
- GigabitEthernet Connectors
  - RJ45

PC Interface
- PCI 32/64bit
- ✓ PCI Express
  - ▶ PCIe x1 (single lane)
  - PCIe x4 (quad lanes)

Connectivity Features
- ✓ GPIO/Trigger Connector
- PixelPlant Connector
- CLIO Connector

Acquisition Features
- ✓ Camera Pixel Clock Support
  - ▶ 85 MHz
- ✓ Area Scan Cameras
  - ▶ 16k * 64k max. image size
- ✓ Line Scan Cameras
  - ▶ 16k max. image width
- ✓ Grayscale Cameras
  - ▶ 8bit resolution
  - 16bit resolution
- ✓ Color Cameras
  - ▶ 24bit resolution (RGB)
  - ▶ 48bit resolution (RGB)
  - 24bit resolution (Bayer CFA)
  - 36bit resolution (Bayer CFA)
- Mixed Mode (requires VisualApplets)
  - Area Scan + Line Scan Cameras
  - Grayscale + Color Cameras
  - Arbitrary Combinations

AddOn Products
- ✓ GPIO/Trigger Boards
- ✓ GPIO/Trigger Boards, opto-isolated
- CLIO (Camera Link Replicator)
- PixelPlant (Processing Extension)

Physical Board Properties
- ▶ 168 mm length x 111 mm height
- ▶ Operating temperature 0°C - 50°C

Product Features
- ✓ Acquisition Buffer
  - ▶ 128 MB DDR-RAM
- ✓ FPGA System Processor
- FPGA Vision Processor
  - Xilinx Spartan 2
  - Xilinx Spartan 3
- ✓ Sustainable Transfer Rate (max.)
  - ▶ 200 MBytes/sec.

Any information without obligation. Technical specifications and scope of delivery are liability-free and valid until revocation. Mistakes are excepted.

Image Acquisition Features

- Sensor Tap Sorting
- Knee Lookup Table
- Basic Image Processing, e. g. Brightness, Contrast and Gamma Correction
- Internal 16bit Processing
- Regions of Interest (ROI)
- Minimal Latency of a Single Line
- Hardware Generated Image Number
- Camera Detection Abilities
- No Need of Camera Configuration Files
- Support of Camera Link RS232 Interface clser
- Highly Customizable Trigger System
- DigI/O and CC Signals
- ... and further ones

Special Features

- Shaft Encoder A/B Support (Revolving Direction Detection and Compensation)
- Software Trigger Control
- Support for Non-Standard Formats
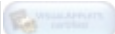- ... and further ones

Software Products

- ✓ Device Drivers
- ✓ Firmware Flasher
- ✓ microDisplay
- ✓ microDiagnostics
-   GigE Explorer
- ✓ microEnable SDK

Processing Libraries

incl.	AcquisitionApplets
	SmartApplets Base
	SmartApplets Extended
	VisualApplets Base
	VisualApplets Blob
	VisualApplets Compression

Processing Licenses (Base version)

- SmartApplets enabled
- VisualApplets enabled

Operation Systems

✓	Windows XP	32bit	64bit
✓	Windows Vista	32bit	64bit
✓	Windows 7	32bit	64bit
✓	Linux (Kernel 2.6.23+)	32bit	64bit

## Hardware/Software Compatibility

new product line

Power-Over-Camera Link

The microEnable IV AS1-PoCL frame grabber supports Power over Camera Link (PoCL) cameras. The implementation is backward compatible to the standard Camera Link, so both PoCL and standard Camera Link cameras can be used.
To prevent any damage from the camera and grabber, a PoCL SafePower system is implemented. It automatically detects the presence of a PoCL cable and camera to allow safe switching of the camera power. Both ports of the grabber are autonomous and will be tested and supplied independently. The state of the power system will be visually indicated.

Scematic layout of microEnable IV AS1-PoCL
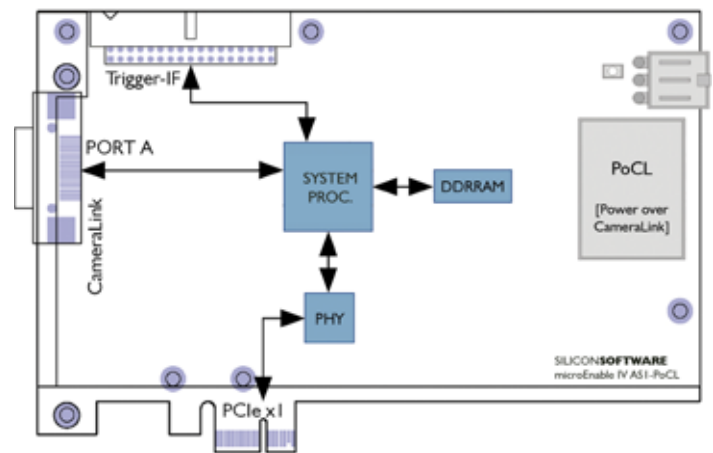
Supported Features
Sorted by Hardware Applets for

microEnable IV AS1-PoCL

		Single Area Gray 16	Single Area RGB 48	Single Line Gray 16	Single Line RGB 48
CameraLink	BASE Configuration	■	■	■	■
Camera Type	Area Scan / Line Scan	A	A	L	L
	GrayScale / RGB / Bayer	G	RGB	G	RGB
	1- / 2-Camera Operation	1	1	1	1
Color Processing	White Balancing		■		■
Image Enhancement	Knee-LUT Table	■	■	■	■
	Image Processing (Offset, Gain, Gamma, Invert)	■	■	■	■
Image Correction	Sensor Readout Correction (Tap Sorting)	■		■	
Acquisition Modes	Image Selector	■	■	■	■
	Area Trigger	■	■		
	Line Trigger			■	■
	Shaft Encoding			■	■
Performances	Max. width (in k pixels)	16	8	16	8
	Max. height (in k lines)	64	∞	64	∞
	Image frequency (in k fps)	20	20	10	10
Image Formats	Gray8 or RGB24	■	■	■	■
	Gray16 or RGB 48	■	■	■	■

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