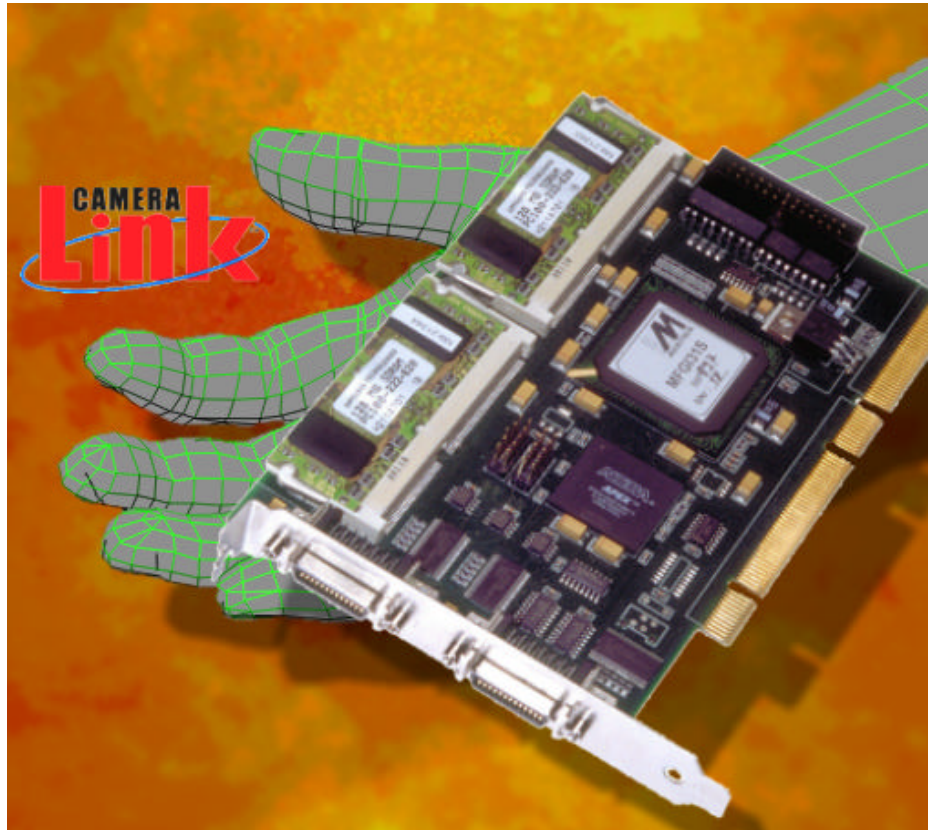# PCI – X High Performance Frame Grabber for Machine Vision
INSPECTA-SERIES

INSPECTA-5
High Performance Camera Link® Frame Grabber

...for High-Speed Image Processing and Machine Vision Applications

Machine Vision · Industrial Inspection · Image Analysis

- Frame grabber for digital matrix- or linescancameras with "Base", "Medium" or "Full" Camera Link® interface.

- Two 26-pin. connectors with full support of the Camera Link® -"Base", "Medium" and "Full" specification for videodata, cameracontrol and – configuration with build in serial interface.

- Videodatarate of up to 660 MB/sec.

- Up to 2 GB onboard memory for fast videostreams.

- Parallel grab to internal memory and to PC–memory.

- PCI–X businterface for 64/32 Bit datawidth and 66/33 MHz clock frequency.

- 528 MB/sec. maximum datarate on the PCI–X Bus.

- Eight optocoupled input- output ports for external trigger and encoder signals.

- SDK for Windows® 2000/XP and drivers for HALCON

MIKROTRON

Camera Link® is a new industrial high-speed data transmission and cable standard

So far, manufacturers of frame grabbers and cameras have developed products with dissimilar formats for data transmission and different types cables and connectors. This made the production of cables very difficult for the manufacturers, and was confusing for the customer. Camera Link® was defined for standardized, simple connections between frame grabbers and high performance digital cameras. The connection consists of one or two 26-pin cables for up to 64 bits video data plus camera control and configuration signals.

The high performance frame grabber

The INSPECTA-5 is a new member of the well known INSPECTA-family of high performance frame grabber for machine vision applications. It supports the most demanding "Base", "Medium" or "Full" Camera Link® compatible digital area- or linescan cameras with up to eight taps and a total datarate of up to 660MB/sec.

Flexible camera interface

A powerful FPGA of whichconfiguration data can be loaded at runtime provides the necessary flexibility for very specific video sources. Even simple image pre-processing algorithms can be done in real time and INSPECTA-5 hardware.

Image memory for extremely fast and high resolution cameras

Up to date CMOS cameras output datarates of more than 600MB/sec. Even the most powerful PC hosts are hardly able to process or even write to memory this amount of data in real – time.

The integrated image memory with up to 2 GB capacity can store lengthy videostreams even if NSPECTA-5 is used in a conventional 32-Bit/33MHz standard PCI Bus system with not enough power for such datarates.

Flexible datapaths for simultaneous real time video access

The datapaths A and C or B and C can run simultaneously. Datapath C can transfer videodata from a seperate, smaller region of interest. The datarate can therefore be adjusted to the actual capacity of a slower system, while all the images with full resolution and speed are stored in INSPECTA-5 image memory.
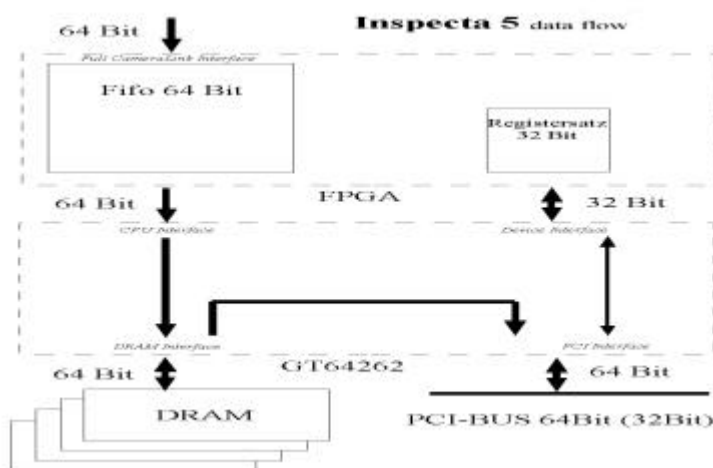
Technical Specification

	INSPECTA-5
Videoinput	Up to 64-Bit with any mapping of video data to memory data
Videodataformat	"Base", "Medium" or "Full" Camera Link® - compatible
Videobandwidth	Up to 660 MB/sec.
Videogeometry	Arbitrary image size
Onboard memory	Up to 2 GB
Hosttransfer	64 – Bit, 66MHz Bus Master Burst DMA transfer with scatter-gather capability
Host - transferrate	Up to 528 MB/sec.
Cameracontrol-output	4 programmable outputs for e.g. asynchronous shutter, read out timing or camerasynchronisation
Additional control-inputs/outputs	4 inputs, optocoupled 4 outputs, optocoupled (for ext. camera triggering)
Powersupply	+3.3VDC / 2 A
Ambient temperature	0 -50 Degree C
Software	SDK for Windows® 2000/XP and HALCON driver

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