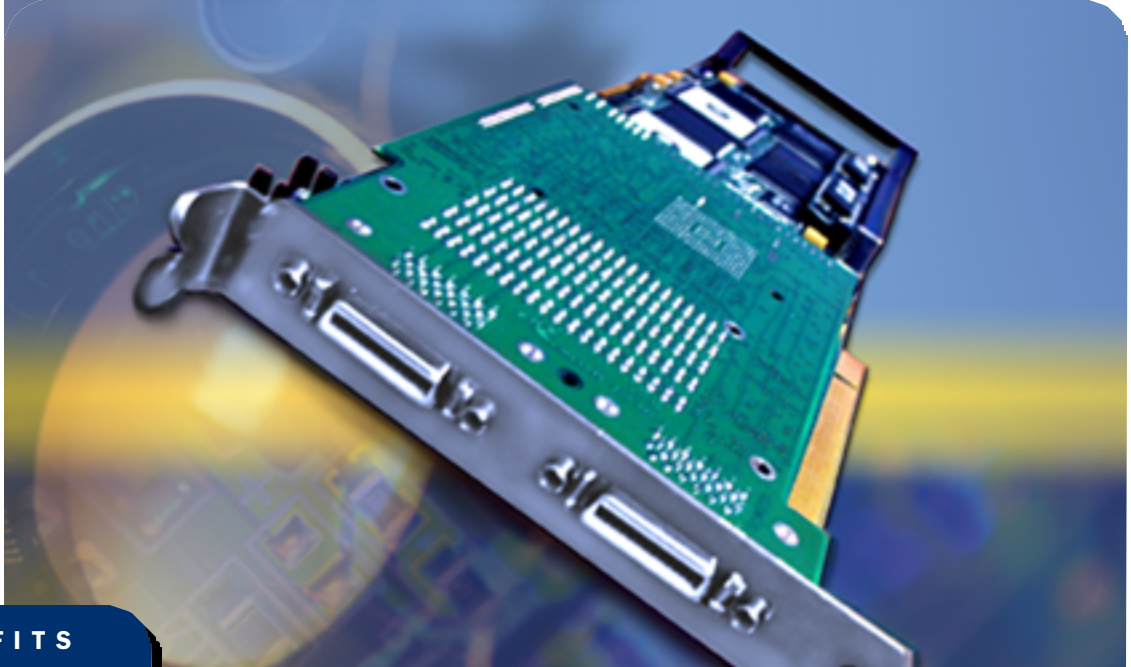


Viper-CamLink



KEY BENEFITS

Performance

- Supports wide range of digital area and line-scan multi-tap cameras

Embedded

- Enhances image transfer bandwidth beyond 132 Mbytes/sec using CAB

Expansion

- Dedicated hardware accelerator permits real-time image processing

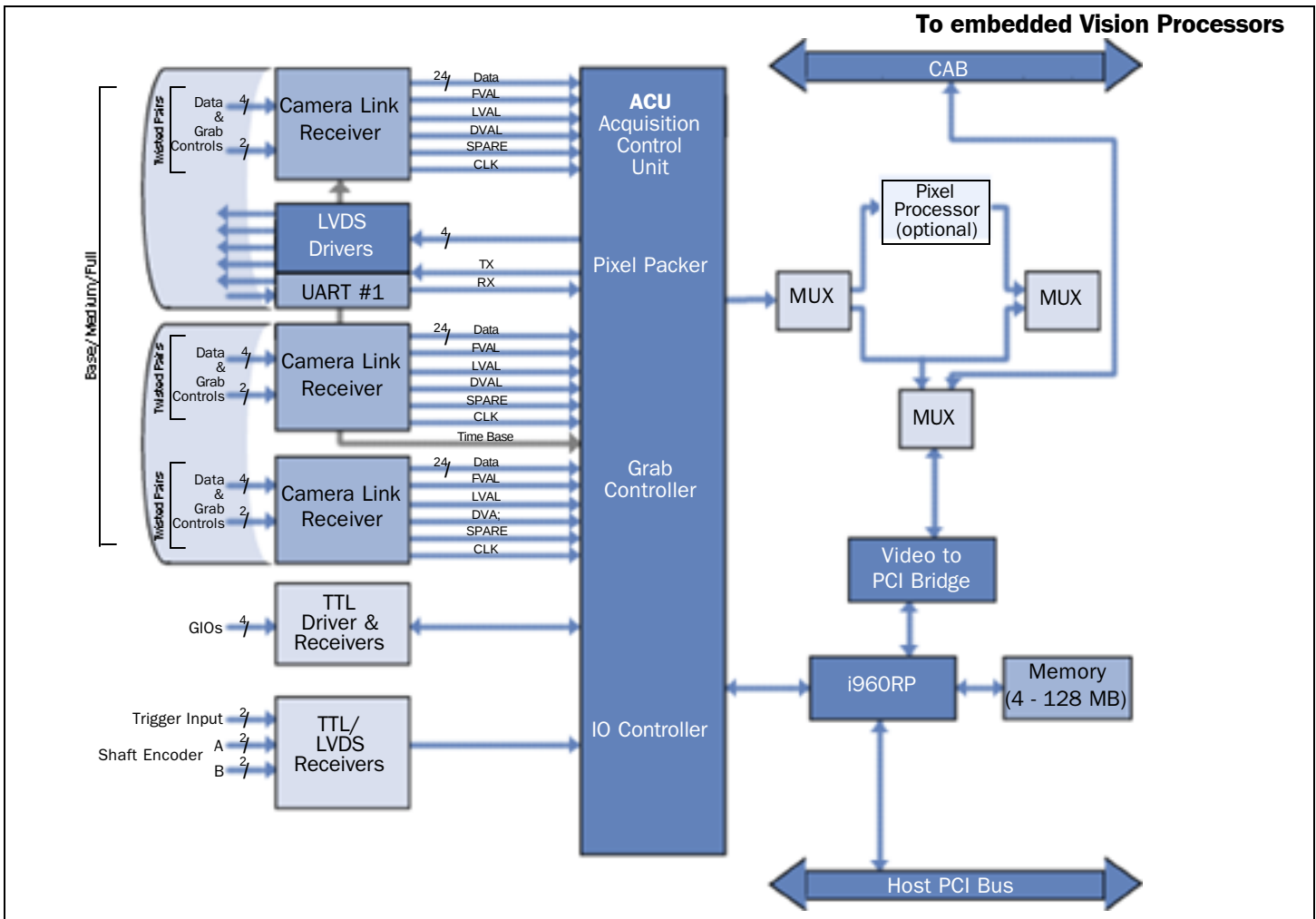
Compatibility

- On-board hardware based RLE, Flat-line Correction

OVERVIEW

Next generation of intelligent frame grabbers

The Viper-CamLink is a single PCI slot, high performance acquisition and pre-processing board that captures images from digital cameras utilizing the industry standard Camera Link interface. Viper-CamLink supports all three Camera Link modes of operation (Base, Medium, and Full) allowing it to acquire images from one, two, four or eight tap area and line-scan digital, monochrome or RGB cameras.



Viper-CamLink Functional Block Diagram

Viper-CamLink Specifications

Area or Line-Scan Camera

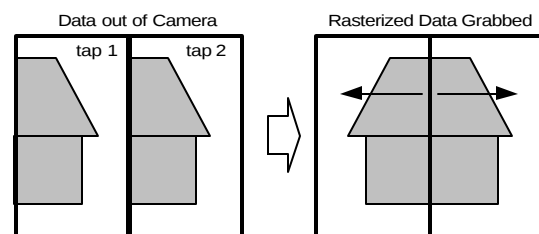
Capable of acquiring at rates up to 200 Mbytes/sec, the Viper-CamLink features two 32-bit wide input channels providing 8, 16, or 32 bit/pixel formats. Acquiring pixels at 500MHz, the Viper-CamLink can transfer images directly into host computer system memory or to the Mamba using the CAB. The Viper-CamLink supports input resolutions from 32x32 to 64k pixels x 256, lines.

The i960 - No RISC factor

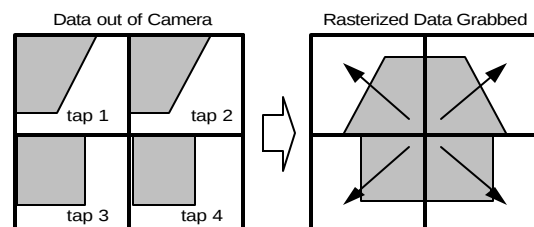
The Viper-CamLink utilizes the Intel i960 RISC embedded processor and PCI interface device. As an intelligent I/O controller, the i960 processor supports PCI bus master and scatter-gather for maximum PCI performance. Additionally, its on-board memory allows images to be buffered during busy cycles on the PCI bus, ensuring no image data is ever lost.

TAP Reversal

The Viper-CamLink supports tap reversal in the following ways:.



Rasterization of 2 output centre-tap format cameras



CAB Architecture

The Coreco Auxiliary Bus (CAB) is an independent high-speed 32 bit-wide transfer bus that allows connections to Coreco Imaging's embedded vision processor (Mamba-100) or dedicated hardware accelerator such as the Pixel Processor.

CAB System Topologies

The CAB system on the Viper-CamLink is designed to operate in two different configurations. These topologies allow developers to adapt their image processing algorithms to leverage multiple parallel processors or pipeline processing technique to gain a several fold increase in processing performance.

Multicast Mode

The CAB Multicast mode allows images to be sent for concurrent processing to several Mamba-100 boards simultaneously. Multicast mode can also be used to perform pipeline processing.

Round Robin Mode

The CAB Round-robin mode allows successive images to be sent from a Viper-CamLink to different Mamba-100 boards in the system for concurrent processing. For example, the Viper-CamLink, while grabbing continuously, can transfer the first image (WAN). The Mamba-100's LAN and WAN connectivity permits remote monitoring and maintenance of the system. Additionally, the Mamba-100 features two host-independent serial ports to control and communicate with external devices.

Mamba System Description

A corner stone of Coreco Imaging's embedded vision processing architecture, the Viper-CamLink integrates seamlessly with the Mamba-100. The Mamba-100 is a PIII based embedded vision processor board capable of operating at CPU clock rates of up to 1 GHz. As shown in the system architecture diagram on the previous page, images captured via the Viper series of embedded frame grabbers can be treated in advance by the Pixel Processor before being transferred to the Mamba-100. Alternatively, raw image data can be directly transferred to the Mamba.

Shaft encoder

The Viper-CamLink features quadrature-shaft encoder inputs facilitating accurate image grabs using linescan cameras. Web inspection applications often require use of quadrature-shaft encoder signals to synchronize incoming lines to the web speed.

General purpose I/Os

The Viper-CamLink provides general-purpose I/Os for external process control and synchronization. These I/Os are available as TTL or LVDS.

Pixel Processor

The Pixel Processor is an optional daughter card optimized for powerful image processing using the Viper series. The board features an input port, output port, up to 64 MB of memory and a programmable processor core to pre-process (filter, average, compress) image data acquired by the Viper before images are transferred to the host or the Mamba-100 for final processing and analysis.

Software Support

Viper-CamLink applications are developed under Windows NT, Windows® 2000, and Windows NT™ Embedded using Coreco Imaging's Sopera software development libraries. Coreco Imaging software development tools allow users to develop applications with C language DLLs, C++® classes, or ActiveX® controls on Microsoft® Visual® C/C++ 6.0 or higher or Visual Basic® 6.0 or higher development platforms.

Specifications

- Full length PCI 2.1 compliant board
- Supports Base, Medium and Full Camera Link implementation
- Supports 8, 16, or 32-bit monochrome or 24-bit RGB digital cameras
- Sampling clock up to 50 MHz
- Up to 8-taps 8-bit/tap
- Versatile support for horizontal, vertical and diagonal (corner fold) taps
- Supports Pixel-Processor
- TTL or LVDS I/O signals
- CAB interface for maximum 32 bits @ 50 MHz bandwidth when transferring images
- Supports Coreco Imaging's Sopera and SMART series of image processing libraries
- Software development toolkits support Microsoft® Visual C/C++® 6.0 or higher under Windows NT 4.0 and Windows® 2000



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