TECHNICAL SPECS

PCVision*plus*®

PCI frame grabber for analog, progressive scan & variable scan cameras

Benefits

- 133MB/s bus master bandwidth eliminates the need for on-board processing
- 53 MHz digitization rate supports standard, progressive scan or partial-scan cameras
- 12-bit ADC maximizes gray-scale resolution
- Supports all asynchronous and synchronous trigger modes for maximum capture flexibility

Overview

PCVision*plus*® is Coreco Imaging's high-performance analog frame grabber. It digitizes monochrome analog video to 8 or 12 bits, at sample frequencies up to 53 MHz. The PCVision*plus* supports standard, progressive scan and non-standard (variable scan) cameras.

The high data transfer rate of the PCI-bus eliminates the need for on-board processing or display circuitry, so image display and processing is handled by the host computer resources. The linear format image memory allows acquisition of a variety of image sizes. The image memory behaves as a temporary buffer between the camera interface and the host PCI-bus system. The PCVision*plus* incorporates a hardware "scatter gather" table for highly efficient, fully automated image transfers from the image memory. This frees the host CPU to perform processing during bus master transfers rather than controlling the transfer operation. In addition to the hardware scatter gather function, the bus master controller has multiple frame ping-pong source and destination capabilities that allow the application to program the PCVision*plus* to establish the needed amount of processing time.

Comprehensive Vision Software Tools

Four levels of software support exist for Coreco Imaging's machine vision frame grabbers. At the highest level is Sherlock, a Windows based point-and-click click software environment, enabling rapid configuration of alignment & registration, on-line gauging, inspection, assembly verification, automatic ID and machine guidance tasks without the need for structured language programming. MVTools/SMART software provides technical professionals with a complete C/C++ run-time library (DLL) of highly robust gray-scale vision tools including Search, Blob (connectivity), Caliper, Histogram, Morphology, Image Processing and more. MVTools is intended for OEMs and system integrators deploying machine vision in automated machines.

For developers who require maximum control of the frame grabber hardware, the IFC software (Imaging Foundation Class) library is available for controlling all functions of the frame grabber hardware. Included in the Imaging Studio software development kit, this software includes a set of high level APIs for making complex board functions more straightforward and easier to use.

Also included in Imaging Studio is Coreco Imaging's Camera Configurator® software utility. A first in the industry, it automatically searches for which frame grabber is installed and generates the appropriate interface parameters required to run the camera/frame grabber combination.

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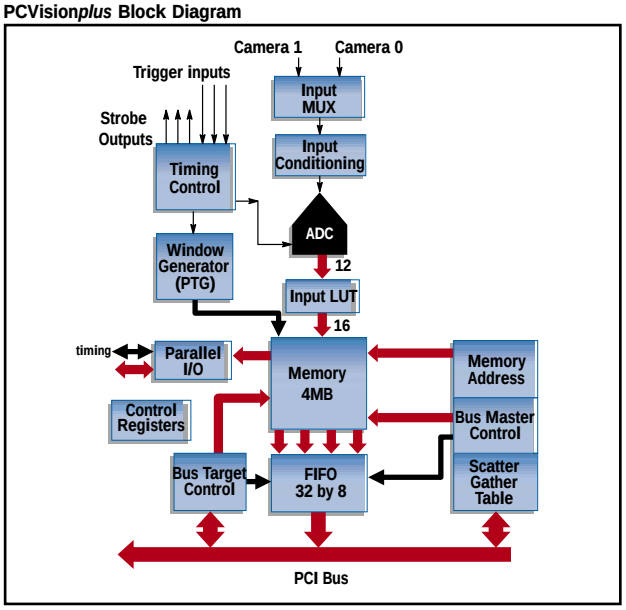
PCVision*plus* Block Diagram



Specifications

Video Inputs

- Standard RS-170 or CCIR (monochrome)
- Progressive scan and non-standard (variable scan) up to 53 MHz (VCR and VTR not supported)
- Two AC-coupled differential video inputs
- Programmable 12-bit 53 MHz ADC Timing Inputs
- Composite analog sync on video from CAM0 or CAM1
- Programmable Sync Stripper line rate: 15 KHz to 66.5 KHz supports non-standard line rates in PLL mode

Trigger Inputs

- Two Opto-isolator Trigger Inputs: HP HPCL-0631 dual-channel isolator
- Two TTL Inputs, with Schmitt filters
- Two differential input, RS-422 and RS-423 compatible

Timing Outputs

- Strobe
- Frame Reset
- Programmable Timing Generator (PTG) - up to 2K x 2K (2048 x 2048)

Variable Scan Inputs

- Area scan cameras up to 4K pixels x 4K lines
- Variable Scan inputs LEN, FEN, CLK
- CLK, Pixel Clock Input: single-ended TTL, programmable polarity, Frequency 10 KHz to 53 MHz
- LEN, Line Enable Input: single-ended TTL, programmable polarity.
- FEN, Frame Enable Input: single-ended TTL, programmable polarity

Image Memory

- 4MB linear mapped SGRAM
- Programmable “valid video window” timing - 1 to 4K pixels per line, 1 to 4K lines per frame

Output Scatter Gather Table

- “DMA Table” performs “destination scatter gather” for bus master transfer from image memory to PCI-bus host

Host Access

- Registers, LUT and Image Memory are mapped into PCI-bus 32-bit memory address space

Transfer Rates

- Up to 133MB/s theoretical limit of PCI-bus

Parallel I/O Ports

- One parallel port: 8-bit TTL input, 8-bit TTL/CMOS output

Bus Requirements

- Board Size - PCI-bus short card: 6.88 by 4.205 inches, 17.73 by 10.65 mm
- Operating Temperature - 10-60 degrees Celsius.
- Relative Humidity - 0-90% non-condensing
- Power Requirements (typical) - 1 Ampere at +5 Volts, 5 Volt to 3.3 Volt conversion performed on the PCVision*plus* board

To learn more about the PCVision*plus*, read the complete data sheet on our website at **www.imaging.com/pc-series**