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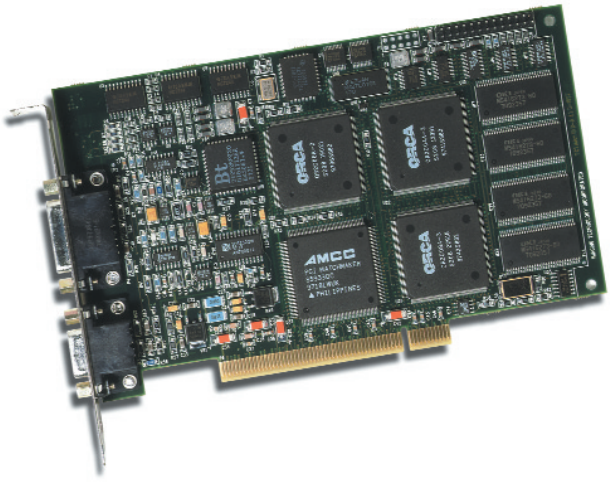
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Find the *Teledyne Dalsa / Coreco Imaging PCVision* at our website: ***Click HERE***

CORECO IMAGING

PCVision™

High-Performance, Economical Frame Grabber
Exclusively for Machine Vision



VIDEO FORMATS

- Up to 4 monochrome RS-170 or CCIR cameras
- Supports non-standard area scan cameras up to 2K x 1K; interlaced or progressive scan

FEATURES & BENEFITS

- Half-size PCI-bus card moves images to the host PC in less than 4 ms, providing an additional 29 ms of free processing time
- On-board 2MB frame buffer and DMA bus master contribute to industry's fastest sustained image transfer times over the PCI-bus, eliminating unnecessary processor overhead
- Hardware circuitry automatically de-interlaces images during DMA
- Supports trigger, strobe, and frame reset for developers with "real world" applications and demanding cycle times
- DMA of Areas of Interest (AOIs) minimize transfer times
- Video window allows selection of number of pixels per line and number of lines per image
- On-board 16-bit digital I/O allows for easy communication of results to the outside world
- Non-destructive overlay support

SOFTWARE

- Camera Configurator®—Windows application for easy board and camera set-up
- ITEX/IFC – C/C++ Driver and Board Function Libraries
- MVTools® – Image Processing and Analysis Libraries in C and C++
- SMART Series – A family of highly robust, geometric-based pattern recognition tools
- Sherlock™ – Complete machine vision application environment for Windows™
- Common Vision Blox—Image Processing and Analysis Libraries in Visual Basic OCX

OVERVIEW

PCVision is a half-size PCI-bus image capture board designed specifically for price sensitive OEMs developing machine vision applications. Able to handle inputs from a large variety of industrial inspection, identification, and gauging applications, the PCVision board can interface with standard interlaced (RS-170, CCIR) or progressive scan (VGA) cameras.

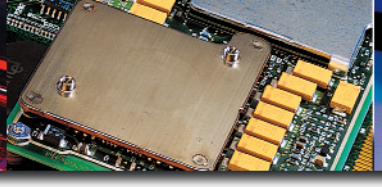
Unique to PCVision is 2MB of on-board VRAM memory for buffering image data between the camera and host PC system. This feature, something you won't find in other low-cost machine vision boards, allows image transfers over the PCI-bus that are 10 times faster than competitors. This allows for simultaneous acquisition and processing of data. The on-board memory also assures that image information will not be lost during transfer to system memory. PCVision supports external trigger, strobes and frame reset capabilities. A 16-bit digital I/O interface for communicating results to control devices is built on-board.

VIDEO INPUT FEATURES

PCVision provides four analog video inputs that can digitize 8-bit monochrome images from RS-170, CCIR, and non-interlaced (progressive scan) video cameras with resolutions up to 2K by 1K. In addition, when interfacing to standard video, PCVision can accept composite video or drive external timing. This allows the frame grabber to interface to asynchronous reset cameras, a mainstay in machine vision applications. Other frame grabbers

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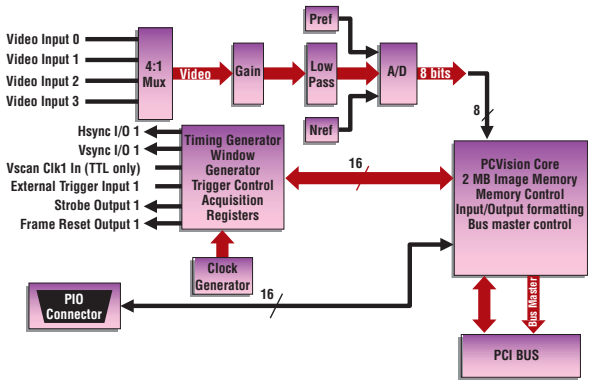




in this price range usually only accept composite video inputs. PCVision makes interfacing with cameras easy by offering fully programmable timing, coupled with efficient cabling and a variety of trigger, strobe, and asynchronous reset options.

HIGH SPEED DATA TRANSFERS

PCVision provides a very powerful 32-bit PCI-bus interface which can be configured as a DMA bus master or slave. In bus master mode, special circuitry automatically de-interlaces images on the fly, allowing data to be DMA'd a frame at a time directly to a destination in memory within the system (i.e. system memory or another PCI-bus target, such as VGA). This way, while other frame grabbers constantly use the host CPU, PCVision reduces CPU overhead and sustains transfer rates in excess of 100MB/s to the PCI-bus. As a result, images can be transferred to host memory in a fraction of the time that they were acquired. By minimizing PCI-bus transfer time, more bandwidth is available for other system functions.

PCVision Block Diagram



COMPREHENSIVE VISION SOFTWARE TOOLS

To speed set-up and make getting started easier, Coreco Imaging's Camera Configurator® provides a Windows point-and-click utility for set-up of all camera and interface board parameters. Binaries specific to the hardware are automatically generated.

For users wanting maximum board control when developing their own applications, ITEX/IFC libraries contain optimized board level C/C++ code functions. ITEX/IFC libraries make full use of available Coreco Imaging hardware resources and eliminate the need to develop any board control functions.

MVTools®/SMART is a set of high level C/C++ code libraries that eliminates the develop most machine vision algorithms. Most image processing and analysis techniques needed to build a robust application are included.

SPECIFICATIONS

SENSOR INTERFACE:
- Four analog video inputs, AC coupled and terminated to 75 Ohms Monochrome "standard" video camera and sources: RS-170, CCIR, VGA etc,. that provide composite video or timing (HS, VS, PCLK); or can be driven with external timing (HSYNC, VSYNC, VRESET)
- Programmable Timebase Generator and pixel clock; programmable resolution to 2048 x 1024 interlaced or non-interlaced. Outputs horizontal, vertical and reset timing to camera
- Programmable PLL (Phase-Locked Loop)

VIDEO DIGITIZER
- 20 MHz Monotonic 8-bit flash ADC; Input pixel rates to 20 MHz
- Pixel jitter less than 5 ns

VIDEO MEMORY
- 2MB linear mapped VRAM

ON-BOARD DIGITAL I/O
- 16 bits: 8 bits in; 8 bits out
- Input Latching

VIDEO SIGNAL CONDITIONING
- Programmable gain adjust - positive ADC reference (full-scale) from 0 Volts to +2 Volts in 64 steps
- Programmable offset - negative ADC reference (zero) software programmable from 0 to +1.2 Volts in 64 steps
- Look-Up Table - 8 in - 8 out following ADC
- DC Restoration - programmable clamp pulse
- Input gain - software selectable: 1.0x or 1.5x
- Low-pass filter - software selectable: 6.0 MHz or bypass

EXTERNAL TRIGGER, STROBE CONTROL, AND FRAME RESET
- External Trigger input per camera; synchronizes acquisition to external events. Falling edge trigger - minimum input pulse width 50 ns
- Frame Reset Mode: external trigger initiates camera frame reset, strobe, and image acquisition for immediate capture of moving objects
- Support for E-Donpisha cameras
- Trigger on Frame Mode: strobing and image acquisition are synchronized with the video signal
- Strobe outputs per camera with programmable polarity; 120 ms nominal duration
- Programmable position of strobe relative to camera timing
- Programmable frame reset delay from 1 to 255 lines (increments of one line)
- Acquire on next field

VIDEO WINDOW GENERATOR
- Allows selection of video window within video signal
- Horizontal offset programmable 0 to1023 pixels (one increments)
- Horizontal size programmable from 4 to 2048 pixels (increments of four)
- Vertical offset programmable 0 to 1023 lines (one increments)
- Vertical size programmable 1 to 1024 lines (one increments)

INTERRUPTS
- Host interrupt on occurrence of strobe, trigger, VB or acquisition

HARDWARE COLOR DOT CLIPPING
- Image data can be "clipped" during bus master to a Windows display device to eliminate any conflicts with Windows reserved colors.

ON BOARD DECIMATION
- Image reduction on acquisition by factors of 2, 4, or 8 in X and/or Y-axis

DISPLAY - WINDOWS:
- Display resolution as per installed VGA device driver
- A DirectX compatible SVGA adapter required for real-time display

AUTOMATIC DOUBLE BUFFERED FULL FRAME ACQUISITION
- Hardware controlled "ping-pong" acquisition into image memory, provides most efficient acquisition and bus-master synchronization possible

BUS REQUIREMENTS:
- 32-bit PCI slot
- 1.3 A @ +5 Volts
- 0.2 A @ + 12 Volts
- 1/2 slot PCI card

POWER OUTPUT
- 500 mA @ +12 Volts per camera (2 A total)
- 500 mA @ +5 Volts to digital I/O port

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