TECHNICAL SPECS

PCVision™

High speed frame grabber exclusively for machine vision

Benefits

- Captures full resolution images at high speeds for demanding machine vision applications
- On board 2MB frame buffer and DMA bus master help eliminate unnecessary processor overhead
- Non-destructive overlay on live images improves visualization attributes
- Hardware circuitry automatically de-interlaces images during DMA
- On-board 16-bit digital I/O allows for easy communication of results

Overview

PCVision™ is a half-size PCI-bus image capture board designed specifically for price sensitive OEMs developing machine vision applications. It is ideal for a large variety of industrial inspection, identification and gauging type applications. PCVision makes interfacing with cameras easy by offering fully programmable timing, trigger, strobe and asynchronous reset capabilities, coupled with practical cabling solutions.

Featuring 2MB of on-board memory, with automatic hardware "ping-pong" and de-interlacing capabilities, PCVision assures data integrity and greatly reduces the CPU overhead associated with PCI-bus transfers. Its 32-bit PCI interface can easily sustain transfer rates in excess of 100MB/s. As a result, images can be transferred to the destination memory in a fraction of the time that they were acquired, leaving valuable bandwidth available for other system functions.

Comprehensive Vision Software Tools

Imaging Studio is Coreco Imaging's machine vision software development environment that provides comprehensive support for Coreco Imaging's PC, IC and Bandit-II Series frame grabbers. Imaging Studio brings together a powerful set of software libraries which include Camera Configurator, ITEX Library and IFC, Imaging Foundation Classes.

To simplify and speed set-up time, Camera Configurator provides a Windows point-and-click utility for set-up of all camera and interface board parameters.

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 need to develop most machine vision algorithms. Most image processing and analysis techniques needed to build a robust application are included.

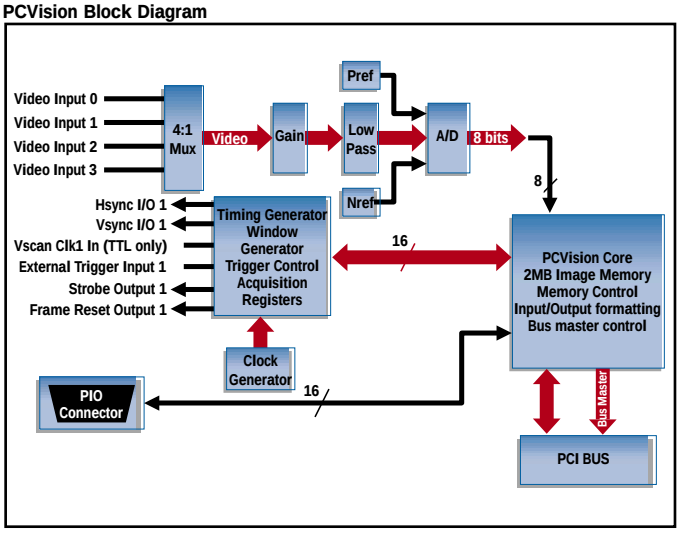
ISO9001 Certificate No. 10163
CE
ISO9001 Certificate No. 8287

www.imaging.com

CORECO IMAGING

EXCELLENCE IN MACHINE VISION

PCVision Block Diagram



Specifications

Acquisition

- 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, pixel clock and PLL
- Programmable PLL (Phase-Locked Loop)
- 20 MHz Monotonic 8-bit flash ADC

Memory

- 2MB linear mapped VRAM

On-Board Digital I/O

- 16 bits: 8 bits in (direct or latched); 8 bits out

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) 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

- 1 External Trigger input per camera; synchronizes acquisition to external events.
- Frame Reset Mode: external trigger initiates camera frame reset, strobe, and image acquisition for immediate capture of moving objects
- Support for frame reset cameras
- 1 strobe output per camera with programmable polarity; 120 ms nominal duration
- Acquire on next field
- Field acquisition supported

Video Window Generator

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

Interrupts

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

Hardware Data Conditioning

- Image data can be “clipped” during bus master to a Windows display device to eliminate any conflicts with Windows reserved colors
- Auto convert to 16-Bit 4:2:2 for hardware overlay

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/0 port

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