TECHNICAL SPECS

PC-CamLink

PCI frame grabber with CameraLink™ interface

Benefits

- 120MB/s sustained bus master transfer to host with no host CPU burden
- CameraLink interface for line and area scan digital cameras simplifies camera integration
- Ability to provide camera power
- First in the industry with the ability to map the CameraLink serial port control directly into standard windows Com port
- Single PCI slot solution for data and I/O. One CameraLink connector and one I/O connector allows all needed signals for data and I/O to be available on a single plate. No extra PCI slot needed to access I/O

Overview

PC-CamLink is an industrial PCI frame grabber that utilizes the CameraLink digital camera interface. It combines a half-slot PCI-bus frame grabber featuring Coreco Imaging's high-speed image transfer architecture which provides high performance, cost-effective interface to cameras conforming to the CameraLink specification. Building upon Coreco Imaging's experience in providing digital camera interfaces for the machine vision market, PC-CamLink provides the user with a flexible interface for high speed, high resolution, CameraLink cameras with clock rates up to 62.5 MHz.

Unique to the PC-Camlink is 16MB of on-board memory which maintains the required high data transfer rates while minimizing CPU utilization and risk of data loss. On-board real-time image re-sequencing for multi-tap digital cameras significantly reduces host CPU burden, giving the host more time to process and analyze image data. PC-CamLink is capable of bus mastering image data directly to the host PC memory as lines become available. PC-CamLink's ability to provide data in 4:2:2 image format means it is able to deliver non-destructive overlay on live images with almost no load on the host CPU - a first and only in the industry!

The scatter gather feature enables automated image transfers. This further reduces CPU overhead and maximizes the sustained transfer speed, leaving much needed processing cycles for demanding continuous inspection applications.

PC-CamLink provides one 8,10,12,16, or 24-bit Camera Link input. A data rate of up to 187.5MB/s can support cameras with resolutions to 64K pixels wide by N lines. Camera control can be accomplished via the Camera Link serial interface.

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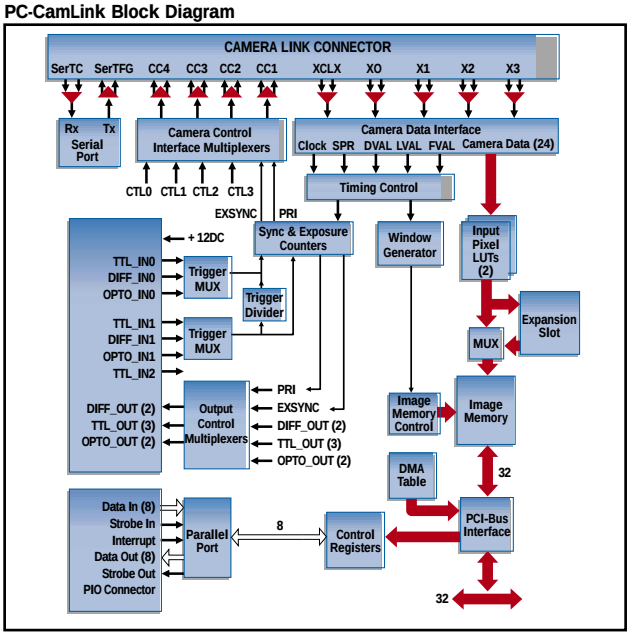
PC-CamLink Block Diagram



Specifications

Image Buffering and Output

- 16MB of high bandwidth SDRAM supports acquisition rates up to 187.5MB/s (24-bits @ 62.5 MHz)
- Provides ROI (cropped) transfer to reduce data volume
- On-the-fly re-sequencing of image data for multi-tap cameras
- Data re-formatting to allow non-destructive overlays
- Color plane separation during transfer

Programmable Window Generator

- Enables acquisition of subset of camera image
- Maximum Window - 64K x 64K
- Horizontal Resolution - 1 pixel
- Vertical Resolution - 1 line
- Programmable independent X/Y decimation (2, 4, 8, 16) performed during image acquisition
- Color images stored using packed 24-bit or 16-bit formats, or sequential color planes

Camera Timing I/O

- CameraLink timing inputs: Clock (PCLK), Line Valid (LVAL), Frame Valid (FVAL), Data Valid (DVAL), and a Spare input (SPR)
- Camera Pixel Clock to 62.5 MHz
- Camera Timing Outputs: sync, programmable integration

Camera Power

- Fused 12 volt power (1A) is supplied on the 26pin DSUB

External Triggers

- Advanced multi-trigger acquisition modes
- Dual external triggers available as differential, TTL or Opto-coupled
- Software triggering for host controlled acquisition
- Trigger divider allows precise control over incoming trigger events

Multi-Tap Data Re-sequencing

- Reformats multi-tap data on the fly
- Provides line/row re-sequencing to output most any multi-tap image in normal scan format
- Color plane separation during transfer

PCI Interface

- Scatter gather feature for highly efficient image transfers
- Bus master of image data at 120MB/s sustained
- Target access (random R/W) to on-board registers, image memory and LUTs
- Multiple interrupt sources

Bus Requirements

- 32-bit PCI slot
- 1.3 A @ +5 Volts
- 1/2 length PCI card

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

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