IMAGING SUPPORT

Cyton-CXP4

With the Cyton, BitFlow doubles the speed of its frame grabbers by moving to PCIe Gen 2.0. Further efficiencies are achieved with a brand new DMA engine.

Introducing The Cyton Platform

BitFlow started from scratch when we designed the Cyton. First we gave it a Gen 2.0 PCIe bus, **effectively doubling the speed**. Second, for even more efficiency, we redesigned our DMA engine from the ground up to handle the increasing demands of modern machine vision applications. The new engine squeezes every ounce of DMA bandwidth out a busy PC platform, while using zero CPU resources.

The Virtual Frame Grabber

The Cyton-CXP4 can be configured in many different ways. It can acquire from one quad link CXP-6 camera (total data rate: 25 Gb/S) , or four single link CXP-6 cameras, or anything in between. When acquiring from multiple cameras, each camera is attached to its own virtual frame grabber. This allows independent control of each camera.

CoaXPress High Speed Uplink

The Cyton-CXP contains a fifth CXP connector that can run the full 6.25 Gb/S from the frame grabber to the camera. The CoaXPress standard is still evolving, but the need for this high speed uplink has already become apparent. The demands for bulk uploads to the camera, and precise trigger accuracy have already outstripped the current uplink's capabilities.

Application Support

Adding the Cyton-CXP4 to your application is simple with our SDK, which supports both 32-bit and 64-bit operating systems. Applications can be developed using C/C++/.NET and our sophisticated buffer management APIs. In addition, free drivers can be download from our web site for most 3rd party machine vision packages. The Cyton-CXP4 is software compatible with all the other current BitFlow frame grabbers. This makes migrating applications from Camera Link or analog to CXP simple and quick.

The Cyton-CXP4 Advantages

CoaXPress solves many of the problems of previous machine vision standards. It eliminates the cost and distance restrictions of Camera Link cables. It provides a huge increase in quality, resolution and speed over analog, while maintaining its simple and flexible cabling. Other "mainstream" camera standards advertise low cost and long distance cabling. Not mentioned are the latency problems and determinism issues that these solutions introduce, problems that CXP does not have. The Cyton-CXP4 gives your application all of the advantages CXP on an industry proven platform.

Frame Grabbers

Machine Vision Software Support

Application Development Software

BitFlow™

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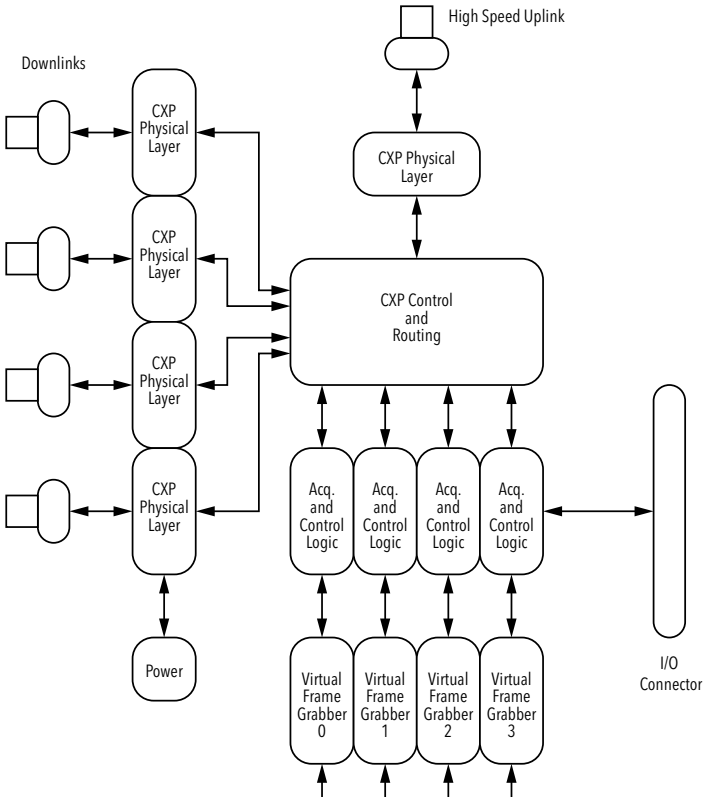
The Cytton-CXP4 Features

- Half-Size x8 PCI Express Gen 2.0 Board
- CoaXPress 1.0/1.1 compliant
- Supports one to four CXP-6 cameras
- Supports multi-link CXP-6 cameras (up to four CXP links)
- Supports CXP speeds from 1.250 to 6.250 Gb/S
- Supports simultaneous capture from four 6.250 Gb/S CXP links
- Provides one CXP-6 uplink to the camera (bulk data uploads, zero latency triggers)
- Low speed uplink also supported on all links
- Uses DIN 1.0/2.3 connectors
- Uses CXP standard 4+1 connector spacing
- Provides power for all cameras (up to 13 Watts per link)
- Provides Safe Power, full protection from all power line faults
- Cameras are Plug and Play with automatic link speed detection
- Cable lengths of up to 100 meters are supported
- Cameras can be accurately synchronized, or can be completely independent
- Comptible with all PCIe x8/x16 slots Gen 1.0 /Gen 2.0
- Separate I/O for each camera
- Highly deterministic, low latency frame grabber to camera trigger
- Supports simultaneous command and control to all cameras
- Windows "sees" a separate virtual frame grabber for each camera
- FlowThru technology means no on-board memory is needed
- Acquire variable length frames from line scan cameras

The Cyton-CXP4 Block diagram



- Triggers and encoders for external control of acquisition
- Drivers, utilities and examples for Windows and Linux
- Supported on both 32-bit and 64-bit platforms
- Drivers for most 3rd party processing environments (e.g. HALCON, LabView, VisionPro, MATLAB, etc.)
- Full GenICam support for camera control and capture
- Programmable signal generator for camera control (independent for each camera)
- Quadrature encoder support including sophisticated triggering schemes
- Encoder divider/multiplier
- RoHS compliant

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