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Cyton-CXP

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.



BitFlow > Frame Grabbers > **Cyton-CXP4**

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 of 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. The Cyton-CXP2 supports on dual link CXP-6 camera or to single link CXP-6 cameras. 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 offers an optional high speed connector that can run the full 6.25 Gb/S from the frame grabber to the camera. The can be used in situations that demand for bulk uploads to the camera or high precision trigger accuracy beyond the current 20 MHz uplink's capabilities.

Application Support

Adding the Cyton-CXP 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-CXP 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-CXP 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-CXP gives your application all of the advantages CXP on an industry proven platform.

Frame Grabbers

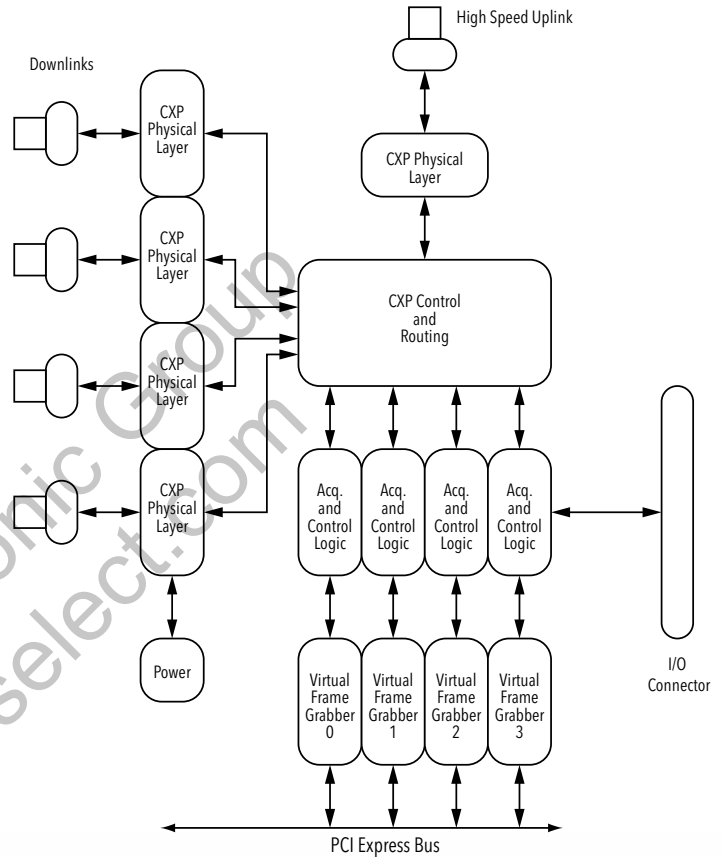
Machine Vision Software Support

Application Development Software

The Cyton-CXP 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 (optional)
- 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
- Compatible with all PCIe x8/x16 slots Gen 1.0/2.0/3.0
- 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
- StreamSync technology maximizes data throughput while minimizing image latency
- Acquire variable length frames from line scan cameras
- 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

The Cyton-CXP4 Block diagram



The Cyton-CXP2



	Cyton-CXP4	Cyton-CXP2
Quad Link Cameras	1	0
Dual Link Cameras	2	1
Single Link Cameras	4	2
Maximum Speed	CXP-6	CXP-6

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