

Four analog camera support on the PCI Express bus; take advantage of the affordability of analog with quality and performance of a BitFlow frame grabber.



[BitFlow](#) > [Frame Grabbers](#) > [Alta-AN](#)

The Alta Analog Frame Grabber Features

The Alta-AN is an affordable, versatile analog product family for Semiconductor and Industrial Vision OEMs. This family can acquire from almost any analog cameras on the market, from high speed asynchronous-reset monochrome cameras to super high resolution color HDTV cameras. The Alta frame grabbers are high-quality, flexible, PCI Express bus imaging products, well supported by an easy-to-use SDK, and drivers for most popular software imaging packages.

There are three main models in the Alta family: Alta-AN1, Alta-AN2 and Alta-AN4. The Alta-AN1 has one Virtual Frame Grabber (VFG) and can support one analog camera of any type. The Alta-AN2 has two VFGs and support two cameras, and the Alta-AN4 has four VFGs and support four cameras. Each VFG is a completely independent frame grabber. This means that each VFG can be configured for a different camera, different triggering mode, different destination buffer and can be in a different acquisition state than the other VFGs. But most importantly, all of the VFGs on one board can acquire simultaneously, at the cameras full frame rate and resolution. Each Alta model is a half size x4 PCI Express board (supporting total data rate up to 1.0 GB/S)

- x4 PCI Express "short" card
- Super high quality discrete Analog Front End
- Three A-to-Ds per VFG (maximum clock rate: 100 MHz)
- Per channel programmable Gain/offset
- Supports single tap and dual tap monochrome cameras
- Supports RGB cameras (24 bits/pixel)
- Supports component YPbPr cameras (YUV 4:4:4)
- Supports asynchronous reset cameras
- Supports partial scan cameras (high frame rates)
- Multiplex between two one-tap or two two-tap cameras
- Programmable Region of Interest (ROI) via sub-windowing acquisition
- External hardware or software trigger
- Acquire at any frame rate
- Supports cameras up to 16K x 16K
- Supports interlaced and progressive scan cameras
- HD/VD/Composite sync signals in/out
- Supports WEN input signal
- Strobe output (programmable timing)
- Provides power to camera (12 V @ 0.5 A)
- Flowthru technology, no on-board frame buffers, zero latency data access
- Efficient interrupt driven architecture, no software polling required
- RoHS compliant

Frame Grabbers

Machine Vision Software Support

Applications Development Software

The Axion is BitFlow's 6th generation Camera Link frame grabber. We have used our years of experience to engineer the best CL frame grabber in existence.



[BitFlow](#) > [Frame Grabbers](#) > [Axion-CL](#)

Introducing The Axion

BitFlow has been making Camera Link frame grabbers since the specification was first released in 1999. At the time nobody was sure that the CL specification was going to succeed. In the many years since then, Camera Link has proved itself to be low cost, high speed, robust and adaptable. For true machine vision applications, it has become the market leading interconnect standard.

BitFlow has continued to refine and improve its products, and is proud to introduce its 6th generation Camera Link frame grabber. Everything we have learned over the past years, including many refinements from the world of CoaXPress, has been rolled into the Axion.

Borrowing from the Cyton

The Cyton is BitFlow's latest line of CoaXPress frame grabbers, and this family was designed from scratch for the Machine Vision industry. Many of the new features introduced on the Cyton have been ported to the Axion. This includes a highly optimized DMA engine. The StreamSync acquisition engine and buffer manager have also been ported. The Timing Sequencer, I/O capabilities and Frame Sequencer have been moved over. This is an amazing amount of power at your finger tips, ready to solve your real world Machine Vision problems.

Camera Compatibility

The Axion-CL has been designed to work with all of the popular high speed Camera Link cameras. It's been design to handle all of the 80-bit cameras currently on the market. **In fact it can acquire from two 80-bit/85 MHz cameras simultaneously.** Of course, all base/medium/full Camera Link cameras are supported.

Application Support

Adding the Axion-CL 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 Axion-CL is software compatible with all the other current BitFlow frame grabbers. This makes migrating applications to/from Camera Link, analog, and CoaXPress simple and quick.

And of course...

Of course, the Axion-CL has all the encoders, triggers and generic I/O that you have come to expect from BitFlow. No Machine Vision challenge is too complicated for the Axion-CL.

Frame Grabbers

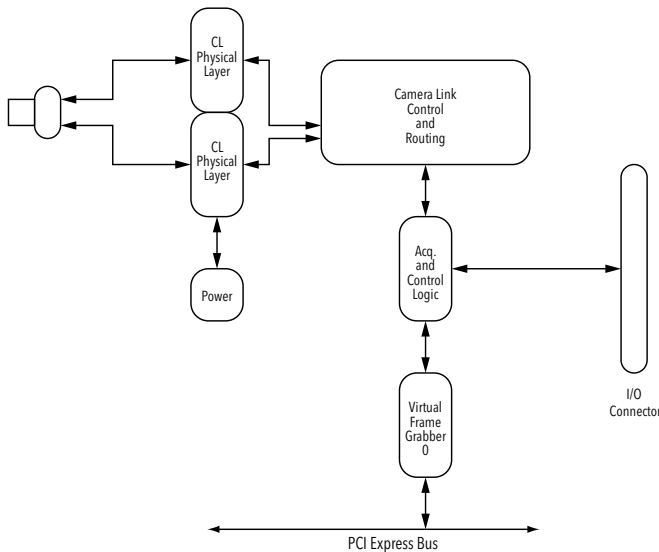
Machine Vision Software Support

Application Development Software

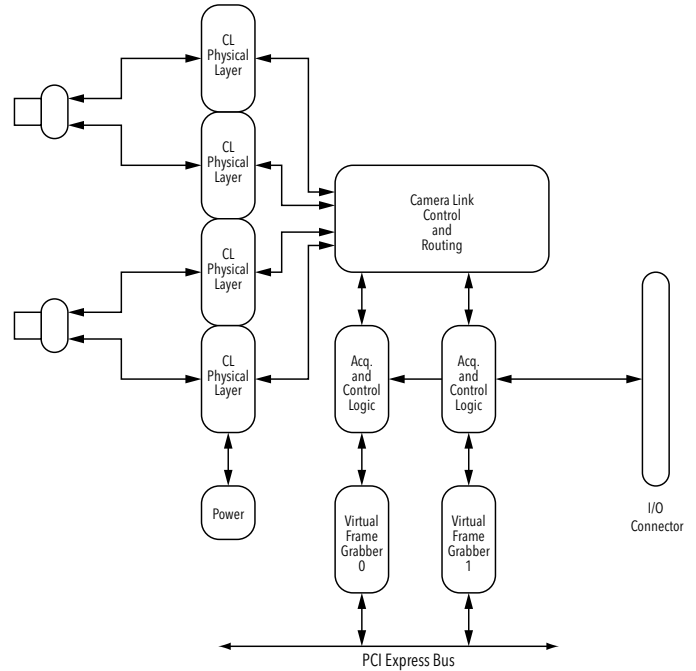
The Axion-CL Features

- Half-Size x2 PCI Express Gen 2.0 Board
- Camera Link 2.0 compliant
- Supports one or two CL cameras
- Supports base/medium/full/80-bit CL cameras
- Supports CL speeds up to 85 MHz
- Supports simultaneous capture from two 80-bit/85 MHz cameras
- Uses SDR Camera Link connectors
- Supports PoCL and non-PoCL cameras
- Supports medium/full PoCL cameras
- Provides Safe Power, full protection from all power line faults
- Each camera has its own separate communication channel which can be simultaneously with other channels
- Cameras can be accurately synchronized, or can be completely independent
- Compatible with all PCIe x4/x8/x16 slots Gen 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
- StreamSync technology maximizes data throughput while minimizing image latency
- Acquire variable length frames from line scan cameras

The Axion-CL-1xE Block diagram



The Axion-CL-2xE Block diagram



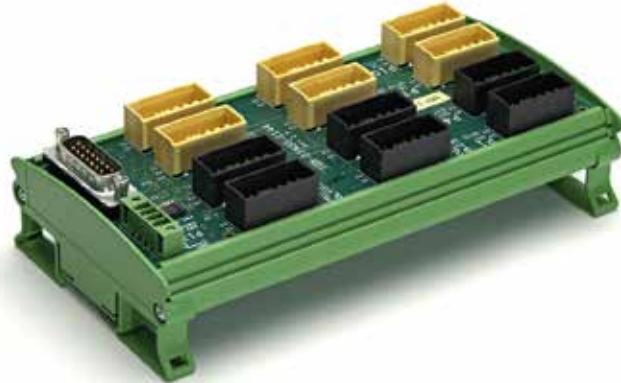
- Triggers and encoders for external control of acquisition
- Drivers, utilities and examples for Windows and Linux
- Windows "sees" a separate virtual frame grabber for each camera
- Supported on both 32-bit and 64-bit platforms
- Drivers for most 3rd party processing environments (e.g. HALCON, LabView,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

The Axion-CL Models

Model	Camera Type	Max Cams
AXN-PC2-CL-1xE	CL 80-bit	1
AXN-PC2-CL-2xE	CL 80-Bit	2

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The BitBox extends BitFlow's cutting edge technology out of the PC and into the machine of an industrial vision application.



BitFlow > Peripherals > BitBox

Introducing The BitBox

The BitBox is BitFlow's new solution for high density I/O applications. Many machine makers require a large number of computer managed I/O signals for continuous control of the system state. This means controlling devices such as strobes, solenoids, actuators, indicators etc. as well as gathering inputs from photo-detectors, switches, encoders and triggers. In general, BitFlow frame grabbers come with a fairly large number of inputs and outputs, but for some systems this is simply not enough. Most customers end up purchasing another device to manage the I/O, which adds expense, requires another slot, another driver and SDK, another manual, etc. The BitBox has been designed for just this situation. It is controlled completely from the frame grabber, uses the same API, driver and manuals as the frame grabber. This saves time, money, space, and learning curve.

The BitBox Concept

Traditional I/O cards put all of the transmitters and receivers on the actual board in the PC. This requires bringing all of the I/O wires from their sources to the PC, which is often located quite a distance from other equipment. With the BitBox, all the transmitters and receivers are located right in the BitBox, on the rail, close to the other equipment.

Control is facilitated by a small high speed cable which goes between the BitBox and the frame grabber. This cable can be up to 10 meters in length, providing maximum flexibility in positioning equipment inside the machine

Maximum Flexibility

BitFlow knows that the typical machine builder's design needs to interface with all kinds of equipment. The BitBox has been modeled with just this type of application in mind; TTL, LVDS, Open Collector, Opto-Isolated and 24 Volt signalling levels are all supported.

Another common issue is that there are never enough of any given type of I/O pins. Again, the BitBox has this problem covered by having 36 inputs and 36 outputs, all of which can operate simultaneously.

Locating

The BitBox can be located anywhere in your system. Only a small 15 wire cable goes between the frame grabber and the BitBox. BitFlow can provide these cables in various lengths or you can build your own. One advantage of this arrangement is that the high voltage signals are never brought into the PC. This isolation also adds electrical decoupling from noisy signals.

Frame Grabbers

Machine Vision Software Support

Application Development Software

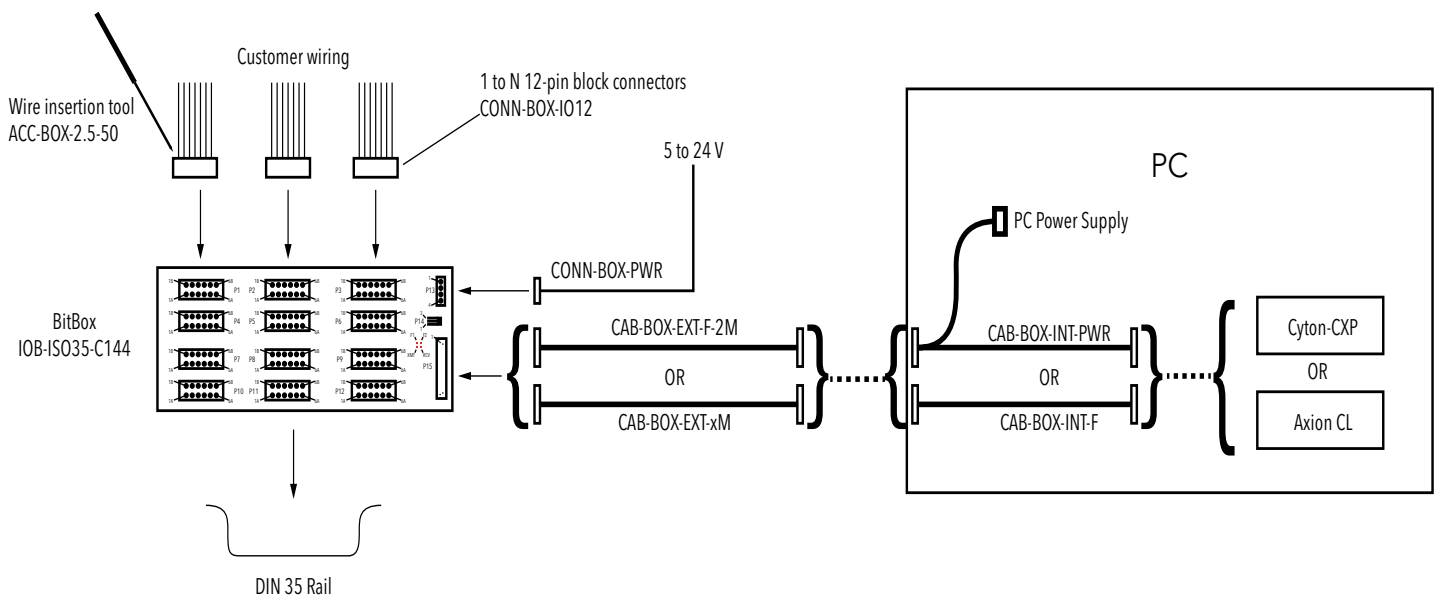
The BitBox Features

- 36 inputs, 36 outputs
- 12 TTL inputs, 12 TTL outputs
- 12 differential inputs, 12 differential outputs
- 8 Opto-isolated input, 8 Opto-isolated outputs
- 4 high voltage inputs (12 to 24 V), 4 high voltage outputs (Open Collector: 3.3 to 24V)
- Input levels can be read by software
- Inputs can be routed to the acquisition engine, Timing Sequencer trigger, camera, outputs
- Outputs can be static (software controlled), dynamic (from the Timing Sequencer) or sourced from other inputs
- DIN-35 Rail mountable
- LEDs indicate power, input activity, output activity
- Pins grouped in blocks of 12 signals, each block of 12 has its own connector
- Many different cabling options supported from frame grabber to BitBox
- Cables can be purchased from BitFlow or customer manufactured (simple connectors used throughout)
- Power requirements 5 to 24 VDC
- Support on the Axion and Cyton families
- The BitBox can be up to 10 meters away from the PC
- Supported under Windows and Linux

The BitBox in Action



The BitBox Cabling Options



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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

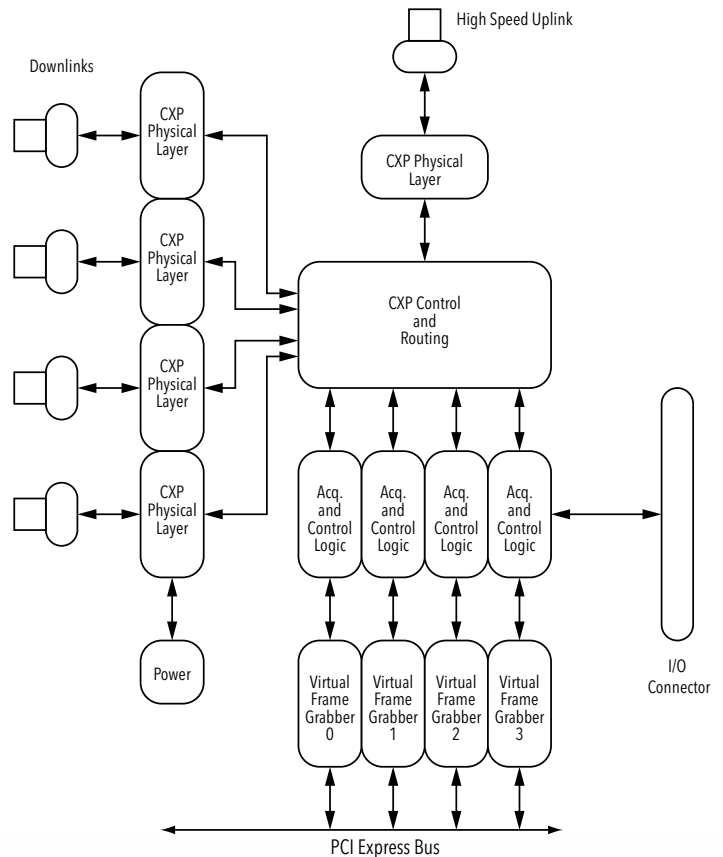
Machine Vision Software Support

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 through put 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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Karbon is the world's first four-camera PCI Express frame grabber. With an x8 PCI Express interface, the board can DMA at speeds of up to two gigabytes per second.



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The Karbon-CL

BitFlow is introducing the world's first four-camera PCI Express frame grabber, the Karbon-CL. It can acquire simultaneously from up to four Base CL cameras or two Full CL cameras (including 10-tap CL). Further, it is also built on top of BitFlow's FlowThru technology, which provides zero latency access to data, super low CPU usage, and unlimited DMA destination size. The Karbon-CL is the first member of BitFlow's Karbon family, which will provide a platform that can host an wide variety of virtual frame grabbers. These virtual frame grabbers can be customized to meet an OEM's specific needs.

The Karbon-CL has been designed with two main applications in mind. First, in situations where more than one camera is needed, the Karbon-CL can reduce both the system cost and the hardware footprint by its ability to acquire from up to four cameras. Second, in situations where extremely high data rates and/or frame rates are required, the Karbon-CL has been designed to handle up to 160 bits at 85 MHz pixel clock rate and can DMA at data rates up to 2.0 GB/S. For example, the Karbon-CL can handle two of the new 10-tap CL cameras.

Features

- Half-Size x8 PCI Express Board
- Up to 160 bits input at 85 MHz
- Acquire from 4 independent Base CL cameras
- Acquire from 2 independent Medium/Full CL cameras
- Compatible with 10 tap Full CL cameras
- FlowThru technology means that no on-board memory is needed, even with the fastest cameras
- Hardware Bayer matrix decoding (optional)
- Multi-tap cameras rasterized on the fly
- Highly customizable acquisition engine
- DMA at data rates up to 2.0 GB/S
- Supports images up to 256K x 128K (unlimited vertically for line scan)
- No frame rate limit
- Trigger, encoders and CC's for each camera
- General purpose I/O
- Support by the BitFlow SDK on 32 and 64-bit Windows
- Acquire image sequences well beyond the 4GB barrier
- RoHS and CE approved
- The Karbon-CL is the first member of the Karbon family
- The Karbon platform can host a wide variety of virtual frame grabbers

Frame Grabbers

Industrial & Scientific Software

Applications Development Software

With the Karbon-CXP Family, BitFlow combines the incredible speed and flexibility of CoaXPress with the legendary power of the Karbon family of frame grabbers.



[BitFlow](#) > [Frame Grabbers](#) > [Karbon-CXP](#)

Introducing CoaXPress

CoaXPress (CXP) is a simple, yet powerful, standard for moving high speed serial data from a camera to a frame grabber. Video is captured at speeds of up to 6 Gigabits/Second (Gb/S). On the same cable, control commands and triggers can be sent back at 20 Megabits /Second (Mb/S). Power is also supplied to the camera. **All this happens over a single piece of industry standard 75 Ohm coaxial cable.**

Multiple CXP links can be aggregated to support higher data rates (e.g. four links provide 25 Gb/S of data).

The CXP standard opens the door to applications where cable cost, routing requirements and long distances have prevented the move to high resolution, high speed digital cameras. In many cases, existing coaxial infrastructure can be repurposed for CXP with very low installation costs.

The Karbon Platform

The Karbon platform has been shipping with a Camera Link front-end for many years. The acquisition and DMA engines have been tested under harsh industrial conditions, running 24/7, and has proven to be robust and reliable.

Application Support

Adding the Karbon-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 Karbon models are software compatible with each other, as well as with all the other current BitFlow frame grabbers. This makes migrating applications from Camera Link or analog to CXP simple and quick.

The Karbon-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. GigE also uses low cost and long distance capable cabling, but introduces trigger latency and determinism issues that CXP does not have. The Karbon-CXP gives your application all of these advantages on an industry proven platform.

Frame Grabbers

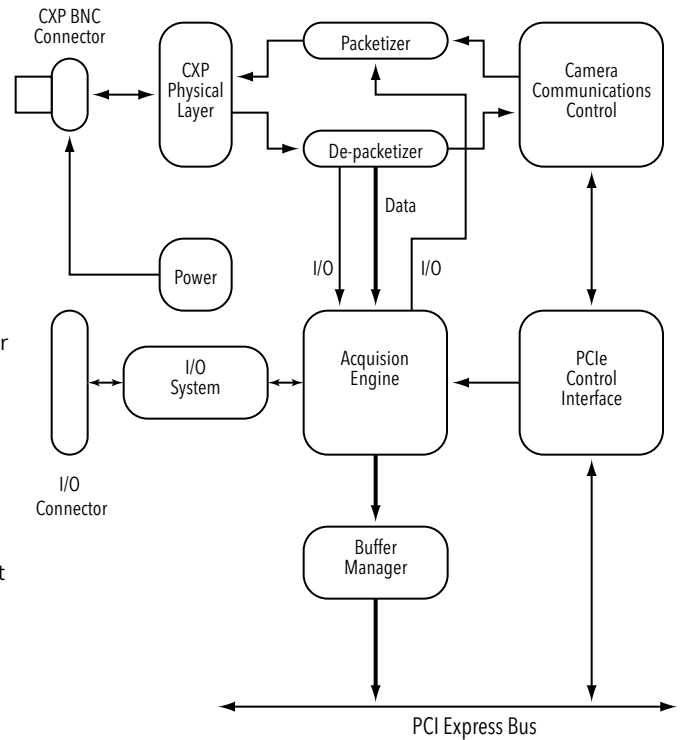
Machine Vision Software Support

Application Development Software

The Karbon-CXP Features

- CoaXPress 1.0/1.1 compliant
- Supports one to four CXP cameras
- Supports multi-link CXP cameras (up to four CXP links)
- Supports CXP speeds from 1.250 to 6.250 Gb/S
- Provides power for all cameras (up to 13 Watts per camera)
- 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 135 meters are supported
- Cameras can be accurately synchronized, or can be completely unsynchronized
- PCI Express x8 interface (also works in x16 slots)
- Separate I/O for each camera
- Highly deterministic, low latency frame grabber to camera trigger
- Supports simultaneous serial communications to all cameras
- Windows "sees" a separate frame grabber for each camera
- FlowThru technology means no on-board memory is needed
- Acquire variable length frames from line scan cameras
- Acquire image sequences well beyond the 4GB barrier
- No frame rate limit
- Triggers and encoders for external control of acquisition
- Programmable signal generator for camera control (independent for each camera)
- Quadrature encoder support including sophisticated triggering schemes
- Encoder divider/multiplier
- Drivers, utilities and examples for Windows XP/Vista/Windows 7
- Supports 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 control and capture
- All models are "half size" PCIe cards
- RoHS compliant

The Karbon-CXP1 Block diagram



The Karbon-CXP Models

Feature	KBN-PCE-CXP2	KBN-PCE-CXP4
Number of 3.125 Gb/S cameras	2	4
Number of 6.25 Gb/S cameras	2	2
Number of encoder inputs	2	4
Number of Windows devices	2	4
Number of BNC connectors	2	4
Maximum links per camera	2	4

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The Neon is priced to make you forget the competition, without sacrificing any of the quality you expect from BitFlow.



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The Neon-CLB

Simplify your industrial, medical, or semiconductor imaging application with BitFlow's Neon-CLB, the easiest to use and most reliable Base/PoCL Camera Link frame grabber available anywhere. The Neon-CLB captures images at up to the camera's highest frame/data rate, with precision image acquisition suitable for the most demanding applications.

The Neon-CLB is designed for the OEM that needs the performance of the PCI Express bus, BitFlow's famous industrial quality, and one of the lowest price points in the industry. The Neon-CLB can acquire from ALL Base CL cameras and has enough industrial I/O to handle even the most complicated synchronization tasks.

Adding the Neon-CLB to your application is simple with our SDK, which supports both 32-bit and 64-bit operating systems. The SDK provides high level APIs for sophisticated buffer management and low-level direct access to the board for speedy custom control.

If you need the simplest, most reliable, and best performing Base Camera Link and PoCL frame grabber, call BitFlow today to get our OEM-priced Neon-CLB, BitFlow's 4th generation of robust, industrial Camera Link imaging products.

Features

- Base Camera Link interface
- Power over Camera Link (PoCL)
- Supports both PoCL and non-PoCL cameras
- Provides Safe Power - full protection from all CL power line faults
- Half-Size x4 PCI Express Board
- Acquire up to 24 bits at 85 MHz
- Both CL and I/O connector on one bracket (only one slot needed)
- FlowThru technology means that no on-board memory is needed, even with the fastest cameras
- DMA at data rates up to 528 MB/S
- Supports images up to 256K x 128K
- No frame rate limit
- Triggers and encoders for external control of acquisition
- Programmable signal generator for camera control
- Sophisticated triggering modes for complex applications
- Acquire variable length frames with line scan cameras
- Quadrature encoder support including sophisticated triggering schemes
- Encoder divider/multiplier
- On-board timing generator supports high-resolution exposure control
- Drivers, utilities and examples for Windows XP/2003/Vista/Windows 7
- Supported on both 32-bit and 64-bit platforms

Frame Grabbers

Machine Vision Software Support

Applications Development Software

The Neon-CLD supports two independent Base Camera Link/PoCL cameras, at full speed, on a low cost PCIe platform.



[BitFlow](#) > [Frame Grabbers](#) > [Neon-CLD](#)

The Neon-CLD

The Neon family is growing. It started with the Neon-CLB, the world's first PoCL frame grabber that provided Base Camera Link acquisition on an OEM priced platform. Now comes the Neon-CLD which supports two cameras on the same low cost x4 PCIe platform. Both cameras can be completely independent with different resolutions, frame rates, triggering modes, etc. Or both cameras can be perfectly synchronized. The Neon-CLD is incredibly flexible and powerful, yet it can substantially lower your system cost. Not only is the Neon-CLD very aggressively priced, but there are additional savings from connecting two cameras to one frame grabber.

Adding the Neon-CLD to your application is simple with our SDK, which supports both 32-bit and 64-bit operating systems. Develop your application using our sophisticated buffer management APIs, or download our free drivers, available for most 3rd party machine vision packages. The Neon-CLD is software compatible with the single camera Neon-CLB, thus making the number of cameras in a system a manufacturing time decision.

If you need the simplest, most reliable, and best performing dual Base Camera Link/PoCL frame grabber, call BitFlow today to get our Neon-CLD, BitFlow's 4th generation of robust, industrial CL imaging products.

Features

- Supports two Base CL cameras
- Provides Power over Camera Link (PoCL) for both cameras
- Support both PoCL and non-PoCL cameras
- Provides Safe Power - full protection from all CL power line faults
- Both cameras can be completely independent or synchronized
- Separate I/O for each camera
- The Neon-CLD appears to Windows as two separate frame grabbers
- Fully backwards compatible with non-PoCL cameras and cables
- Half-Size x4 PCI Express Board
- Acquire up to 24 bits at 85 MHz
- FlowThru technology means that no on-board memory is needed
- Sustained DMA rates up to 350 MB/S for each camera (700 MB/S total)
- Supports images up to 256K x 128K
- No frame rate limit
- Triggers and encoders for external control of acquisition
- Programmable signal generator for camera control (independent for each camera)
- Quadrature encoder support including sophisticated triggering schemes
- Encoder divider/multiplier
- Drivers, utilities and examples for Windows XP/2003/Vista/Windows 7
- Supported on both 32-bit and 64-bit platforms

Frame Grabbers

Machine Vision Software Support

Applications Development Software

The R3-CL is BitFlow's entry level Base Camera Link frame grabber. Without compromising flexibility or performance, the R3-CL is BitFlow's most cost effective CL board to date.



BitFlow > Frame Grabbers > R3-CL

The R3-CL

The R3 frame grabber family has been designed to simplify the task of interfacing today's Camera Link cameras to a wide array of imaging applications. The R3-CL can acquire from almost every Base CL camera manufactured. Combining the power of a proven, sophisticated acquisition/DMA engine with a flexible camera interface and control architecture, the R3-CL is our most affordable Camera Link interface and is an excellent choice for end-users, system integrators and OEMs.

The R3-CL is the second generation of BitFlow frame grabbers that uses our FlowThru technology. The principle here is to do away with the frame buffer that traditional frame grabbers are built around, and instead optimize the data path so that the images flow through the board and into the host's memory with no latency and zero CPU usage. The only on-board storage is a FIFO to handle the asynchronous nature of the PCI bus. Finally, the entire system is interrupt based, so modern, multi-threaded, applications need not waste processing resources on controlling acquisition.

Features

- Half-size, 32-bit/33MHz PCI 2.2 compliant card
- Supports both 5 V and 3.3 V PCI slots
- Base Camera Link interface for a single area or line scan camera with 1, 2 or 3 channels of up to 24, 12 or 8 bits per channel respectively
- Flow-Thru architecture featuring a Scatter/Gather DMA engine that supports the direct transfer of data to memory in real-time
- Acquires image sizes up to 512K pixels by 32K lines (vertical size is unlimited for line scan cameras)
- Efficient packing of 24-bit pixels
- On-the-fly reformatting for multi-channel cameras
- 11 user-programmable I/O signals (4 in/7 out)
- Up to 50MHz acquisition
- Optional 16-bit in/16-bit out LUT
- Serial port communications
- Version 1.1 compliant serial DLL
- Drivers and DLLs for Windows NT, 2000, XP and Server 2003
- Supported by BitFlow SDK 3.00 or higher
- RoHS and CE approved

Frame Grabbers

Industrial & Scientific Software

Applications Development Software

The R3-CL-PMC is BitFlow's Camera Link answer for the PCI Mezzanine bus. All the power and performance of the R3-CL in a compact PMC package.



[BitFlow](#) > [Frame Grabbers](#) > [R3-CL-PMC](#)

The R3-CL-PMC

The R3 frame grabber family has been designed to simplify the task of interfacing today's Camera Link cameras to a wide array of imaging applications. The R3-CL-PMC can acquire from almost every Base CL camera manufactured. The addition of a PCI Mezzanine Card (PMC) version of the R3-CL adds even more flexibility to our product by allowing embedded application developers to take advantage of a proven camera interface product by installing this board onto an array processor or single-board computer.

The R3-CL family is the second generation of BitFlow frame grabbers that uses our FlowThru technology. The principle here is to do away with the frame buffer that traditional frame grabbers are built around, and instead optimize the data path so that the images flow through the board and into the host's memory with no latency and zero CPU usage. The only on-board storage is a FIFO to handle the asynchronous nature of the PCI bus. Finally, the entire system is interrupt based, so modern, multi-threaded, applications need not waste processing resources on controlling acquisition.

Features

- 32-bit/33MHz PCI 2.2 compliant card
- Single-size, PCI Mezzanine Card (PMC) interface board supporting both 5 V and 3.3 V PCI configurations
- Base Camera Link interface for a single area or line scan camera with 1, 2 or 3 channels of up to 24, 12 or 8 bits per channel respectively
- Flow-Thru architecture featuring a Scatter/Gather DMA engine that supports the direct transfer of data to memory in real-time
- Acquires image sizes up to 512K pixels by 32K lines (vertical size is unlimited for line scan cameras)
- Efficient packing of 24-bit pixels
- On-the-fly reformatting for multi-channel cameras
- 11 user-programmable I/O signals (4 in/7 out)
- Up to 50MHz acquisition
- Optional 16-bit in/16-bit out LUT
- Serial port communications
- Version 1.1 compliant serial DLL
- Drivers and DLLs for Windows NT, 2000, XP and Server 2003
- Supported by BitFlow SDK 3.00 or higher
- RoHS and CE approved

Frame Grabbers

Industrial & Scientific Software

Applications Development Software

The R3-Dif picks up where BitFlow's legendary Road Runner family left off, keeping all of the flexibility and performance, but reducing the cost.



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The R3-DIF

The R3 frame grabber family has been designed to simplify the task of interfacing today's digital cameras to a wide array of imaging applications. The R3-DIF can interface to almost every LVDS camera manufactured (up to 32 bits). Combining the power of a proven, sophisticated acquisition/DMA engine with a flexible camera interface and control architecture, our newest product is an excellent choice for end-users, system integrators and OEMs.

The R3-Dif is the second generation of BitFlow frame grabbers that uses our FlowThru technology. The principle here is to do away with the frame buffer that traditional frame grabbers are built around, and instead optimize the data path so that the images flow through the board and into the host's memory with no latency and zero CPU usage. The only on-board storage is a FIFO to handle the asynchronous nature of the PCI bus. Finally, the entire system is interrupt based, so modern, multi-threaded, applications need not waste processing resources on controlling acquisition.

Features

- Half-size, 32-bit/33MHz PCI 2.2 compliant card
- Supports both 5 V and 3.3 V PCI slots
- Flow-Thru architecture featuring a Scatter/Gather DMA engine that supports the direct transfer of data to memory in real-time with no latency or CPU usage
- Acquires image sizes up to 512K by 32K pixels (vertical size is unlimited for line scan cameras)
- LVDS/RS422 (32-bit) area or line scan camera interface supporting a single camera with up to four 8-bit channels, two synchronized cameras or two multiplexed asynchronous cameras
- 9 user-programmable I/O signals (4 in/5 out)
- Multiple trigger modes
- Up to 40MHz acquisition for LVDS and 30MHz for RS-422 (contact us for higher clock rates)
- On-the-fly reformatting for multi-tap cameras
- Optional 16-bit in/16-bit out LUT
- Cables and configuration files for more than 200 industrial cameras
- Drivers and DLLs for Windows NT, 2000, XP and Server 2003
- Supported by BitFlow SDK 3.00 or higher
- RoHS and CE approved

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