IMAGING SUPPORT

# Karbon-CXP

*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.*



## 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**

BitFlow™

400 West Cummings Park, Suite 5050
Woburn, MA 01801 USA
tel 1-781-932-2900 | fax 1-781-933-9965
www.bitflow.com

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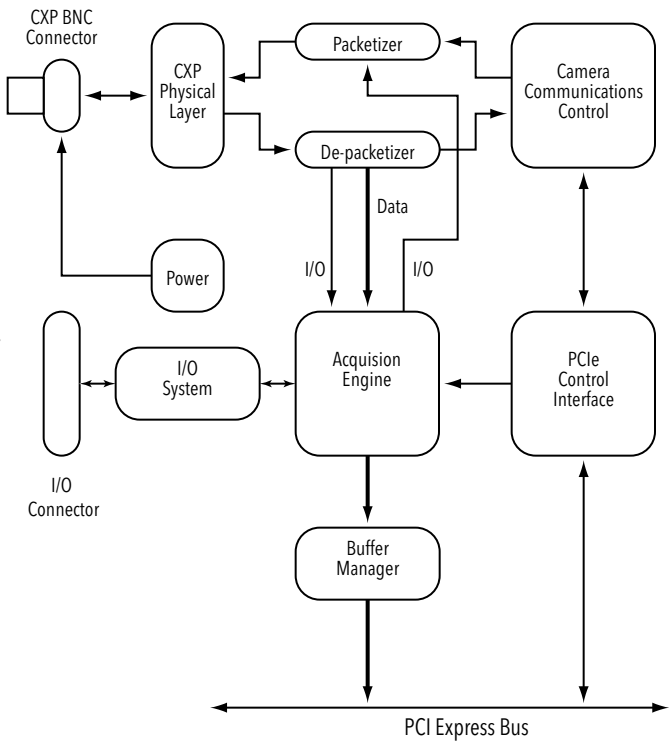
## The Karbon-CXP Features

- 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. HAL-CON, 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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