ADVANTECH BitFlow

Frame grabbers for machine vision

CYTON CXP4

The Cyton Platform

To develop the Cyton platform we first started with a clean slate and asked ourselves, “What does a next generation frame grabber need?”. For sure, For sure, it needs a high speed back end for the ultimate high speed access to host memory. It also needs a sophisticated DMA engine to handle the demands of new camera

interface standards. New standards demand flexibility. CXP cameras will soon be able to put out streams of random sized ROIs, something our previous generation DMA engine was not capable of. Finally, we know based on years of experience of making frame grabbers that it needs flexible and powerful I/O, triggering, and routing. The CoaXPress front end is based on our Karbon-CXP, but upgraded and ready for the coming changes in the CXP standards. The Cyton platform is the foundation for today and tomorrow's frame grabbers, whether it's CoaXPress, Camera Link, or whatever new standards emerge from the Machine Vision industry.

Specifications

- Half-Size x8 PCI Gen 2.0 Express Board
- CoaXPress 1.1 compliant (supports 1.0 and 1.1. cameras)
- 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 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 40 meters are supported

- Cameras can be accurately synchronized, or can be completely independent
- PCI Express x8 Gen 2.0 interface (also works in x16 slots)
- Compatible with PCI Express Gen 1.0 slots
- Separate I/O for each camera
- Highly deterministic, low latency frame grabber to camera trigger
- Supports simultaneous communications to all cameras
- Windows “sees” a separate frame grabber for each camera
- FlowThru technology means no on-board memory is needed
- StreamSync acquisition engine optimizes synchronization between acquisition and DMA
- StreamSync buffer manager maximize DMA channel efficiency
- 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 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 control and capture
- All models are “half size” PCIe cards
- RoHS compliant