



KAYA
INSTRUMENTS

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Chameleon SA – Stand Alone CoaXPress™ Camera Simulator

Overview

The Chameleon SA is the industry's first stand-alone Camera Simulator supporting CoaXPress standard. This simulator is capable of generating video streams and test patterns of up to 4 CoaXPress links in single, dual and quad modes. Each link supports standard CoaXPress bitrates up to 6.25 Gbps. This product is ideally suited for development of industrial, defense and aerospace Machine Vision Systems and applications. The Chameleon can easily transmit generic test patterns, customer's specific pre-processed data or custom video streams on the CoaXPress links. It also provides GPIO for machine control signals, such as triggers, shaft encoders, exposure control and general I/O, which can be simulated together with the video streams. The simulator enables transmitting the video streams from onboard memory as well as run time uploading the streams from computer memory.

The Chameleon uses standard DIN connectors as an interface to the Frame Grabber board and standard headers for general purpose I/O. The Simulator utilizes PCIe Gen2 x4 links for communication with Host PC for video uploading and configuration.



Applications

- ✓ Vision system testing
- ✓ CoaXPress systems deployment
- ✓ Vision systems development
- ✓ Vision algorithm development
- ✓ Vision systems integration
- ✓ Reliability system testing

About CoaXPress



CoaXPress is a new digital transmission standard that allows high speed data from a device, such as a camera, to be transferred to a host, such as a frame grabber. Each CoaXPress link supports up to 6.25 Gbps data rates, along with device power up to 13W and device control at 20 Mbps – all on a single coax cable. For very fast devices, the links can be aggregated to provide multiples of the single coax bandwidth. Long cable lengths are supported – up to 40 meters at 6.25 Gbps and over 100 meters at 3.125 Gbps.

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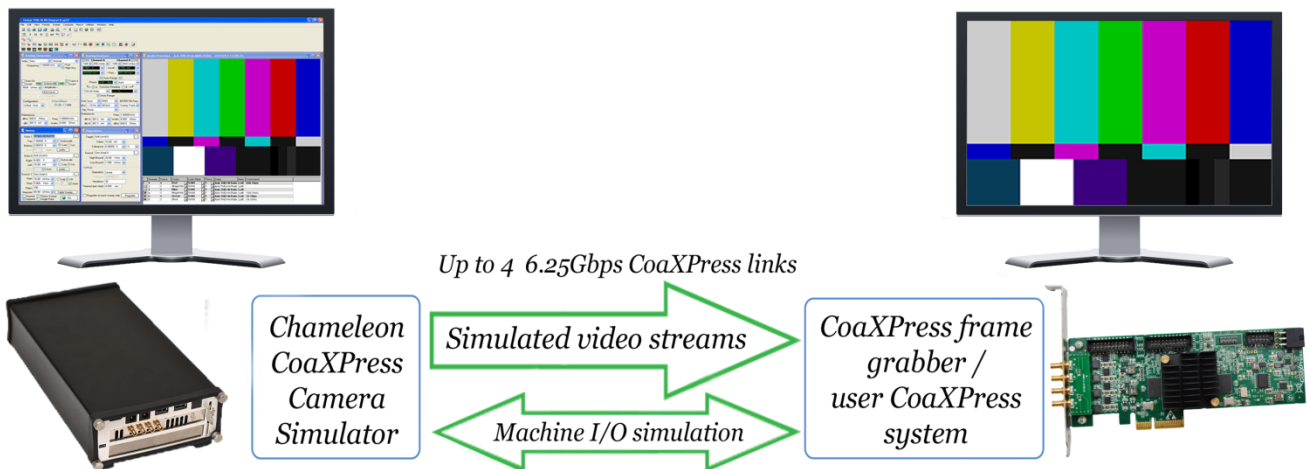
Features

- Video output modes:
 - Static and dynamic test patterns
 - BMP/RAW/TIFF/PNG image files
 - RAW video files
 - Streaming video (up to 5 Gbps)
 - Multiple pre-recorded video in sequential or loop modes
 - Fully programmable image timing
 - Fully programmable configuration parameters
 - Optional Multi-stream support
 - Emulation of Camera controls and triggers
 - Up to 4 CoaXPress device links
 - Frame and line scan formats support
- Flexible machine I/O:
 - 8 TTL configurable I/Os
 - 4 LVTTTL configurable I/Os
 - 4 LVDS inputs
 - 4 LVDS outputs
 - 4 opto-isolated outputs
 - 4 opto-isolated inputs
 - 4 quadrature rotary encoder simulators
- CoaXPress compliant
- GUI interface
- Supporting Windows and Linux OS
- API for developing custom applications
- Plug-ins modules for Matlab
- GenCam compliant
- Up to 32Gb image buffer
- 4 DIN connectors for CoaXPress links
- Data rates up to 6.25Gbps per link
- 0°C to 50°C operating environment temperature

Deliverables

- CoaXPress Camera Simulator
- PCIe extension box
- Hardware user manual
- Software installation CD
- Coax cables (optional)

System Block Diagram



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