

フレームグラバをファイバー入力にすれば、延長後CoaXPressに再変換する必要がなく 低コストで高性能なシステムが構築できます。



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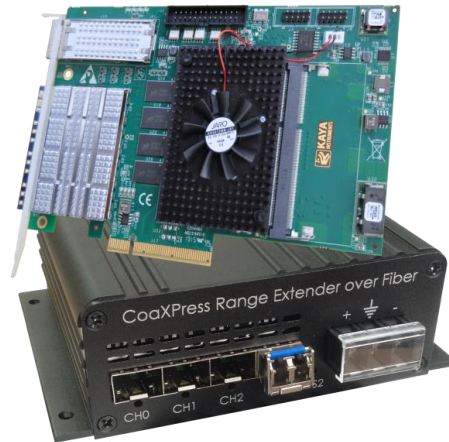
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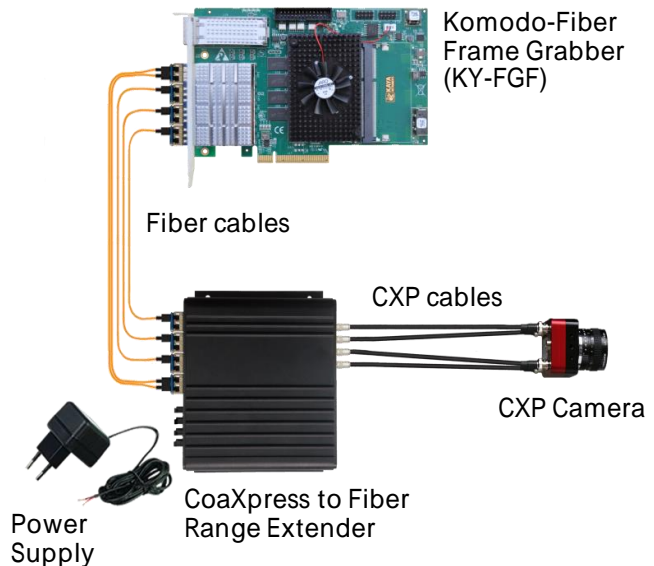
Komodo FXP - CoaXPress™ over Fiber acquisition system

Overview

Komodo FXP system is the industry first CoaXPress image acquisition system without range limitations. The system uses fiber optic cables to provide high resolution image acquisition interface for distances up to 10km in single-mode and up to 400m in multi-mode. The Komodo FXP system is capable of receiving video streams from up to 4 CoaXPress links in single, dual or quad modes. It is used for simultaneous capture from up to four cameras. Each link supports standard CoaXPress bitrates up to 6.25 Gbps. This system is ideally suited for industrial, defense and aerospace Machine Vision Systems and applications. The system consists of Komodo Fiber frame grabber and CoaXPress to Fiber device. The remote unit converts CoaXPress links to fiber optic interface. The Komodo Fiber FXP system uses a high performance flow through DMA to transmit video streams to computer memory through PCIe interface with minimal latency. This product also provides GPIO for machine control signals, such as triggers, shaft encoders, exposure control and general I/O, which can be control aside video stream acquisition. The Frame Grabber utilizes PCIe Gen3 x8 links for communication with Host PC for video uploading and configuration.



Komodo FXP system connection diagram



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

- Solves distance limitation of CoaXPress
 - Extension for distances up to 10km in single-mode and up to 400m in multi-mode
 - Plug and Play , no need to configure
 - 1 to 4 CoaXPress links support
 - PCIe Gen3 x8 Half-length card
 - Up to 144 Gb image buffer
 - Multi-stream support
 - Camera controls and triggers
 - Per-link LED indication on card bracket
 - Flexible machine I/O:
 - 4 TTL configurable I/Os
 - 4 LVCMOS configurable I/Os
 - 2 LVDS inputs
 - 2 LVDS outputs
 - 4 opto-isolated outputs
 - 4 opto-isolated inputs
 - 8 quadrature rotary encoders
 - Integrated strobe controller
 - CoaXPress V1.1 compliant
 - Power over CoaXPress with 13W per link
 - Multiple Camera synchronization
 - Multiple Frame Grabbers synchronization
 - DIN 1.0/2.3 connectors for CoaXPress links
 - GUI interface
 - Supporting Windows and Linux OS
 - API for developing custom applications
- Plug-ins modules for Matlab, HALCON and Labview
 - Gen<i>Cam compliant
 - GenTL support
 - Data rates up to 6.25 Gbps per link
 - Transfer Rate of up to 60 Gbps
 - 0°C to 50°C operating environment temperature

On board processing

- LUT operators with selectable bit depth
- RGB and Bayer with selectable bit depth
- Tap re-ordering
- H/V flipping
- Custom processing engines

Deliverables

- CoaXPress Komodo Fiber Frame Grabber
- CoaXPress to Fiber Device
- SFP+ modules
- Power supply
- Hardware user manual
- Software installation CD
- Coax cables (optional)
- Fiber Cables (optional)
- GPIO Extension Panel (optional)

Fiberインターフェースによるカメラインターフェースや、各種機器間インターフェースは、10Gbpsクラスでも実用的なコストになってきています。このKomodo-FXPで利用されているフレームグラバは量産時20万円を切る最新FPGAボード Komodo-FGF です。搭載しているFPGAは40万LEロジック、1092DSPブロック、28MbitRAMを内蔵。外部にDDR3メモリを採用。PCIeバスはGen3 x8(50Gbps)、Fiberソケット側はSFP+ 4個(10Gbpsx4) およびQSFP 1個(40Gbps:10Gbpsx4)。Komodo-FGFはFPGAボードとしても単体で販売しており、各種機器インターフェースや、高速画像処理のアプリケーションにご利用いただけます。Komodo-FXPは、光モジュール、ケーブルを含め 立野電脳(株)にご相談ください。

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