

- 1 and 2 CoaXPress links support
- 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
 - · 4 quadrature rotary encoders
 - Integrated strobe controller
 - 4 timers
- 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
- CoaXPress drivers for loopback function
- Supporting Windows and Linux OS
- API for developing custom applications
- Plug-ins modules for Matlab, HALCON and Labview
- Gen<i>Cam compliant
- GenTL support
- 4 Gb image buffer
- PCle Gen2 x4 Half-length Low profile PCle card
- Full or Half-height bracket
- Data rates up to 6.25 Gbps per link
- Transfer Rate of up to 12.5 Gbps
- 0°C to 50°C operating environment temperature

Predator Frame Grabber with 2 channels

Innovative Approach

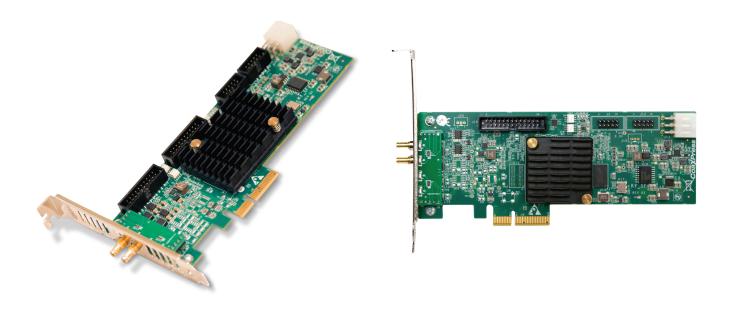
Predator is a low-cost Frame Grabber supporting CoaXPress standard. The Predator is capable of receiving video streams from up to 2 CoaXPress links in single or dual modes. Each link supports standard CoaXPress bitrates up to 6.25 Gbps including PoCXP. This CoaXPress frame grabber is ideally suited for industrial, defense and aerospace Machine Vision Systems and applications.

Intelligent Design

The Predator can easily receive video streams on the CoaXPress links and transmit them to computer memory through the PCIe interface. This product also provides GPIO for machine control signals such as triggers, shaft encoders, exposure control and general I/O, which can be controlled aside the video stream acquisition.

The Predator uses standard DIN connectors as a CoaXPress interface to the camera and standard 100 mil headers for general purpose I/O. The frame grabber utilizes PCIe Gen2 x4 links for communication with Host PC for video uploading and configuration.

Datasheet | Predator™ 2 Channel — CoaXPress Frame Grabber



Product Name	Predator™ 2 Channel — CoaXPress Frame Grabber
Form Factor	PCI Express card
Format	Low profile, half length, 4-lane PCI Express card
Cooling method	Air cooling, passive heatsink
Mounting	For insertion in a low profile, 4-lane or higher, PCI Express card slot
Connectors	Ports 0 through 1 on bracket 2x DIN 1.0/2.3 female connectors CoaXpress host interface Internal I/O conenctor 26-pin 2-row 0.1" pitch pin header with shrouding for I/O lines 6-pin PEG power socket 12 VDC power input for PoCXP camera(s)
Dimensions	L 167.65 mm x H 68.9 mm L 6.6 in x H 2.71 in
Weight	130gr
Host bus	
Standard	PCI Express 2.0
Link width	4 lanes 1 or 2 lanes with reduced performance
Link speed	5.0 GT/s (PCIe 2.0)
Maximum payload size	512 bytes
DMA	32- and 64-bitScatter gather supportPhisical address support (GPU transfers)
Peak delivery bandwidth	2,000 MB/s
Effective (sustained), delivery bandwidth	1,700 MB/s (Host PC motherboard dependent)
Power consumption	Typ. 7 W , excluding camera and I/O power output
Camera / video inputs	
Interface standard(s)	CoaXPress 1.0 and 1.1
Connectors	2x DIN1.0/2.3 CXP-6
Status LEDs	1 CoaXPress Host connection status per connector 4 System status LEDs

Number of cameras	Up to 2
Number of links, per single camera	Up to 2
Syncronisation between cameras	Yes
Line-scan cameras supported,	Yes
Maximum aggregated camera data transfer rate	12.5 Gbit/s
Supported CXP down-connection speeds	• 1.25 GT/s (CXP-1) • 2.5 GT/s (CXP-2) • 3.125 GT/s (CXP-3) • 5 GT/s (CXP-5) • 6.25 GT/s (CXP-6)
Supported CLHS speeds	
Number of data streams (per camera)	1 data stream per camera
Maximum stream packet size	8,192 bytes
PoCXP (Power over CoaXPress)	 PoCXP Safe Power: , 13 W of 24V DC regulated power per CoaXPress connector PoCXP Device detection and automatic power-on Overload and short-circuit protections On-board 12V to 24V DC/DC converter A +12V power source must be connected to the auxilary poewer input connector
Camera types	 Area-scan cameras: Gray-scale and color (RGB and Bayer CFA) Single-tap (1X-1Y) progressive-scan Line-scan cameras:, Gray-scale and color RGB
Camera pixel formats supported	Raw, Monochrome, Bayer, RGB, YUV, YCbCr and RGBA (PFNC names): • Raw • Mono8, Mono10, Mono12, Mono14, Mono16 • BayerXX8, BayerXX10, BayerXX12, BayerXX14, BayerXX16 where XX = GR, RG, GB, or BG • RGB8, RGB10, RGB12, RGB14, RGB16 • RGBA8, RGBA10, RGBA12, RGBA14, RGBA16 • YUV411_8, YUV411_10, YUV411_12, YUV411_14, YUV411_16 • YUV422_8, YUV422_10, YUV422_12, YUV422_14, YUV422_16 • YUV444_8, YUV444_10, YUV444_12, YUV444_14, YUV444_16 • YCbCr601_411_8, YCbCr601_411_10, YCbCr601_411_12, YCbCr601_411_14, YCbCr601_411_16 • YCbCr601_422_8, YCbCr601_422_10, YCbCr601_422_12, YCbCr601_422_14, YCbCr601_422_16 • YCbCr601_444_8, YCbCr601_444_10, YCbCr601_444_12, YCbCr601_444_14, YCbCr601_444_16
Area-scan camera control	
Trigger	Precise control of asynchronous reset cameras, with exposure control. Support of camera exposure/readout overlap. Support of triggering from encoder or timer Support of external hardware trigger, with optional delay, filtering and trigger decimation.
Strobe	Accurate control of the strobe position for strobe light sources. Support of early and late strobe pulses.
Line-scan camera control	
Scan/page trigger	Precise control of start-of-scan and end-of-scan triggers. Support of external hardware trigger, with optional delay and filtering. Support of trigerrring from encoder Support of infinite acquisition, without missing lines.
Line trigger	Support for quadrature motion encoders, with programmable filters, selection of acquisition direction and backward motion compensation.
Line strobe	Accurate control of the strobe position for strobe light sources.
On-board processing	
On-board memory	4 Gb
Decimation	Line skip
Additional features	Unpacking of 10-/12-/14-bit to 16-bit with justification to LSb
Frame Timestamp	64bit with 8ns precision

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Buffer management Circular buffer support Accomulation of several frames/lines to single buffer to reduce CPU load DMA Buffer filling directly to system memory Supported for Windows and Linux OS Multicamera display and configuration Flexible buffer queuing		
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GUI Supported for Windows and Linux OS Multicamera display and configuration Flexible buffer queuing	Buffer management	
GUI Supported for Windows and Linux OS Multicamera display and configuration Flexible buffer queuing		•
Multicamera display and configuration Flexible buffer queuing		DMA Buffer filling directly to system memory
Flexible buffer queuing	GUI	Supported for Windows and Linux OS
· · · ·		
Image/video recording		
		Image/video recording

Debuging capabilityes	Event logging Statistics counters
GeniCam	Support of genicam up to 2.4 Full camera and frame grabber parameters configuration
Environmental conditions	
Operating ambient air temperature	0°C to +50°C / +32°F to +122 °F
Operating ambient air humidity	10% to 90% RH non-condensing
Storage ambient air temperature	-20°C to +70°C / -4°F to +158°F
Storage ambient air humidity	10% to 90% RH non-condensing
Certifications	
Electromagnetic - EMC standards	The European Council EMC Directive 2004/108/EC The Unites States FCC rule 47 CFR 15
EMC - Emission	EN 55022:2010 Class B FCC 47 Part 15 Class B
EMC - Immunity	EN 55024:2010 Class B EN 61000-4-3 EN 61000-4-4 EN 61000-4-6
Flammability	PCB compliant with UL 94 V-0
RoHS	Compliant with the European Union Directive 2011/65/EU (ROHS2)
REACH	Compliant with the European Union Regulation No 1907/2006
WEEE	Must be disposed of separately from normal household waste and must be recycled according to local regulations
Ordering Information	KY-FGP-200
Optional accessories	GPIO Expansion bracket Low profile PCIe Bracket

Compatibility

Supported vision standart



Supported operating systems





Windows

Linux

Supported vision libraries





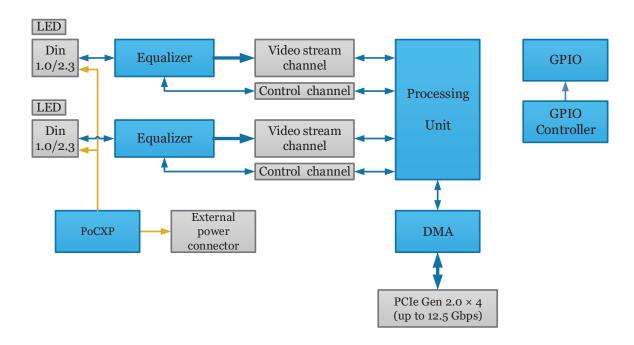




Compatible with more than 30 popular machine vision libraries

 $\label{thm:compatibility} \textbf{KAYA Instrument strives to create and maintain compatibility and interfaces for the most}$ common and advanced vision image-processing libraries and applications. Major support is available for MVTec Halcon, National Instruments LabVIEW and MathWorks MATLAB. Please check our KAYA website for an up-to-date list of other supported libraries and software packages.

Predator Frame Grabber HW Block Diagram



Contact

Please visit **www.kayainstruments.com** for complete product information. Get in touch with our teams at **sales@kayainstruments.com**. We will be glad to assist and consult you regarding our products.

Worldwide

KAYA Instruments

20 HaMesila St. Nesher 3688520 POB 25004, Haifa 3125001 Israel

info@kayainstruments.com

Tel. +972 72 272 3500 Fax. +972 72 272 3511

The information provided herein is subject to change without notice



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