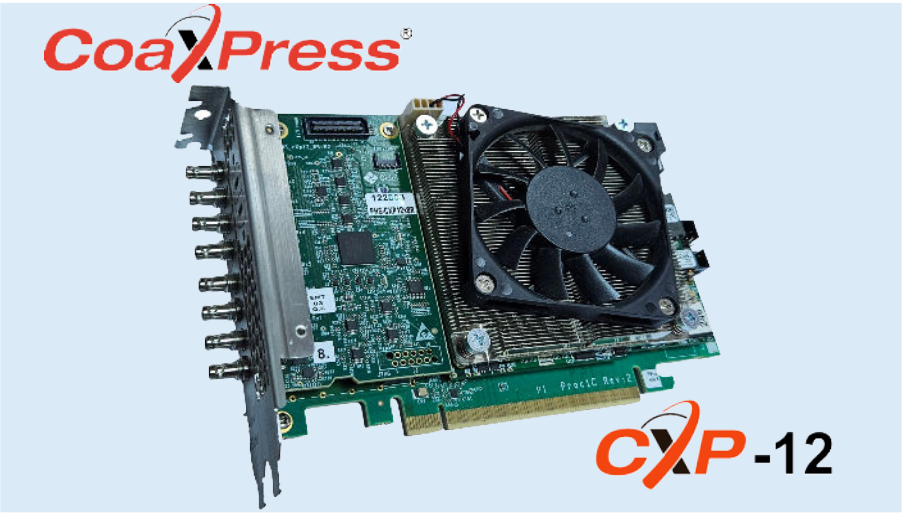
Proc1C10N-CXP12

CoaXPress Frame Grabbing and AI Processing System

October 2025



Key Features

- Grabbing from up to 8 cXp cameras via 8x cXp-12/6 links
- Aggregate bandwidth of up to 90 Gb/s
- Pixel formats supported: Mono, Bayer, RGBA and RGB
- Infrastructure for full Vision/Imaging system solution including image acquisition, real-time image processing and post-processing on host
- Huge frame buffers of up to 8 GB @ 512 GB/s enabling high-acquisition capacity and enhanced image processing capabilities
- Ultra-high CPU-free data offload capability via PCIe Gen. 3 x16 enabling high-resolution post processing on host computer
- Support for area and line cameras
- Inline processing: HDR, dynamic white balance, gamma correction and compression (Quality+, JPEG, losseless,) + dyanmic ROI
- Powerful ecosystem:
  - ✓ ProcVision Kit for customization of Vision flow.
  - ✓ Image compression IPs
  - ✓ Tools for efficient development of both software and FPGA code
  - ✓ InfiniVision software for multi-camera acquisition and synchronization
  - ✓ Supports GenICam's GenTL API and **Halcon**™ machine vision software

Target Application Examples

- High-end Machine Vision
- Industrial Inspection/Automation
- Broadcast
- Medical Imaging
- Traffic & Transportation

The Proc1C10N-CXP12 is a high-performance **Octo CXP-12** Frame Grabber designed for real-time image acquisition, preprocessing, and compression in demanding multi-camera AI vision environments. Powered by Gidel's Proc10N FPGA module featuring **Intel® Stratix® 10 NX** with **embedded Tensor blocks** and **HBM2** memory, it delivers up to **143 INT8 TOPS / FP16 TFLOPS** for edge AI acceleration.

Supporting **8 × CXP-12 links (96 Gb/s total)**, the Proc1C10N-CXP12 enables deterministic, synchronized acquisition from **100+ cameras** via Gidel's InfiniVision architecture. A PCIe Gen3 ×16 interface and on-board DDR4/HBM2 ensure sustained throughput under extreme loads.

Integrated real-time features include **HDR, Dynamic White Balance, and Gamma Correction** for enhanced image quality. **Real-time compression** with dynamic ROI option extends recording duration, reduces bandwidth, and accelerates post-processing.

The Proc1C10N-CXP12 is supported by **Gidel's SDK**, featuring intuitive GUIs and APIs for easy integration. Moreover, the **ProcVision Suite** adds advanced FPGA programming, debugging, and validation tools, enabling rapid customization of data pipelines, real-time processing, and compression workflows—so teams can deploy optimized, application-specific solutions faster and with reduced risk.

Gidel
Committed to Your Innovation

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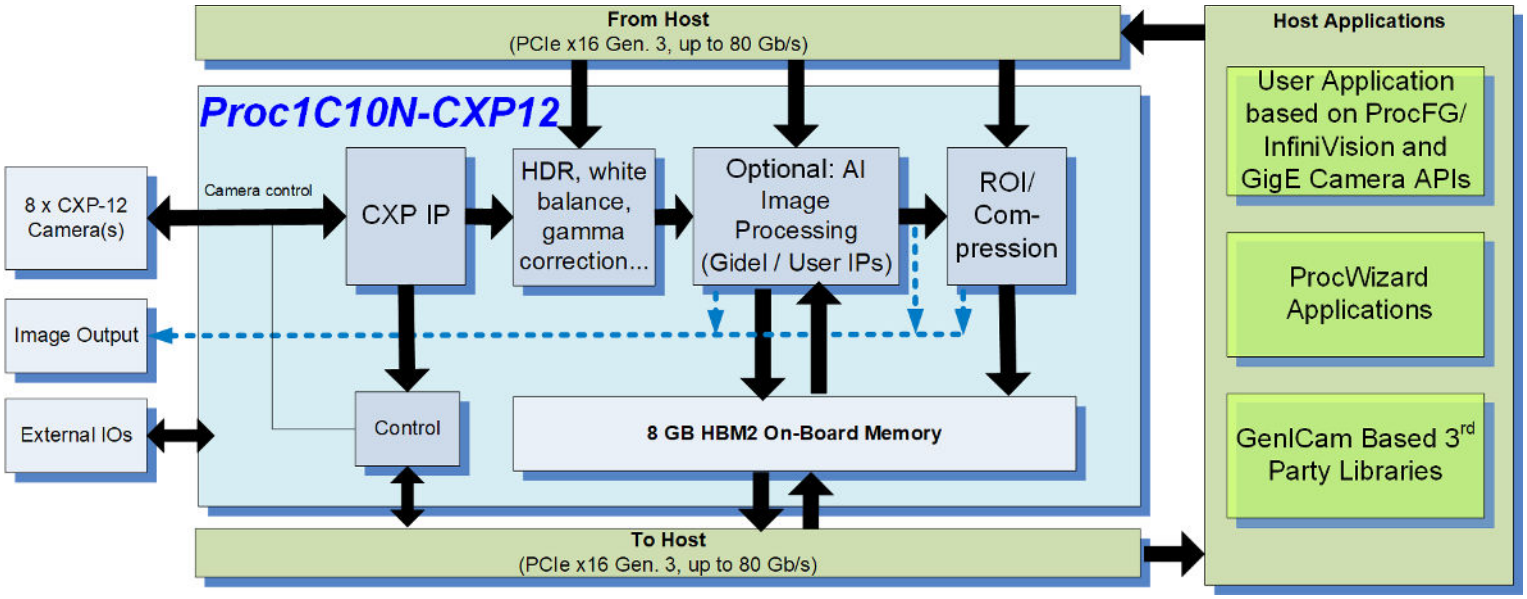
Proc1C10N-CXP12 CoaXPress Frame Grabbing and AI Processing System

FEATURE	SPECIFICATIONS
Camera Interface	8x CoaXPress (cXp -12), PoCXP
Connectors	• 4 or 8 x HD-BNC • GPIO
Image Formats	Mono, Bayer, RGBA (8, 10, 12, 14 and 16 bits/color) and RGB (8, 10 and 12 bits/color).
Max Resolution	Horizontal: 16 K pixels (64-bit) Vertical: 65 K lines
Acquisition Rate	Up to 96 Gb/s aggregate
Host Bus	PCIe x16 Gen. 3
On-board memory	HBM2(8GB @ 300 GB/s), eSRAM(94.5 Mb @ 90 GB/s) + option for DDR4 (128 GB @ 15 GB/s)
Image Processing	For open FPGA grabber version, option for adding image processing code on Altera Arria 10 FPGA
Camera Types	Area and Line
FPGA	Altera Startix10N with 3,960 Tensor blocks @ 143 INT8 TOPS / 286 INT4 TOPS
Ambient temperature	0 – 55° C, relative humidity up to 90%

FEATURE	SPECIFICATIONS
Software Support	ProcFG and InfiniVision GUI, API and examples.
Ecosystem Support	• *Option for embedded HDR, white balace, histogram, compression and other ISPs* • *ProcVision Suite* for Vision flow and processing customization • *Proc Dev Kit* for automatic generation of Application Support Package and efficient development on FPGA • *InfiniVision* software for multi-camera aquisition and synchronization • Supports *GenICam GenTL* API • support for third-party software, including as *MVTec Halcon*™ machine vision software
OS Support	• Win 10/11 and Server 2016/2019/2022 (64-bit) • Linux (kernel 2.6.x- 6.12) • Linux version doesn't include the ProcFG/InfiniVision GUI and the ProcWizard application



Typical Proc1C10N-CXP12 acquisition and processing system implementation

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