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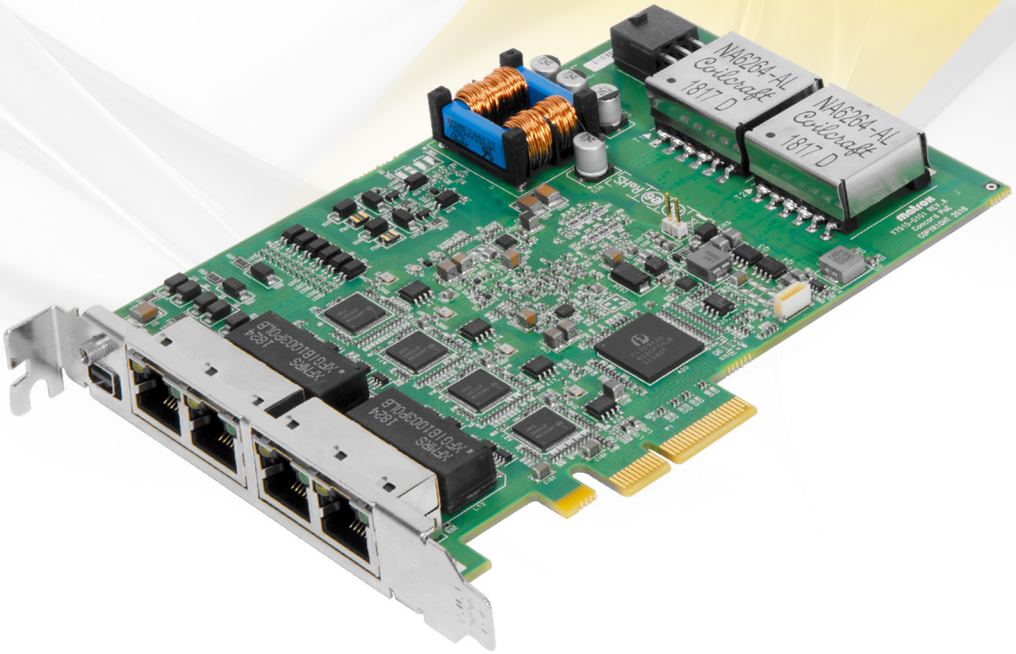
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Matrox **Concord PoE**

Multi-port Gigabit Ethernet adaptors with PoE for GigE Vision

ZEBRA | MATROX IMAGING

Overview

GigE Vision interface cards for simplified cabling

Matrox® Concord PoE is a new generation of Gigabit Ethernet adaptors for interfacing one or more GigE Vision® cameras supporting power-over-Ethernet (PoE). Available with two or four Gigabit Ethernet ports, these network interface cards (NICs) simplify system configuration, not only by handling command and streaming protocols but also providing power over a single standard Cat 5e/6 cable per camera connection. An isolated PoE implementation protects cameras, board, and host computer from damage due to electrical faults and stray current that adversely affects camera detection.

ToE

Matrox Concord PoE also provides—as an option—a useful ToE capability for multiple cameras working together. The hardware-assisted ToE capability allows the sending of a software trigger or an action-command to one or more cameras based on an external input event. The ToE applies to camera(s) on the same or multiple Ethernet ports for a given trigger event. Moreover, this ToE feature helps reduce trigger latency and remove jitter brought on by a non-deterministic host environment.

Real-time I/Os

The ToE option includes digital I/Os that are managed by a dedicated hardware-assisted mechanism for real-time performance. The mechanism enables output events to occur at precise moments in time, based on elapsed time, or for specific input events. An input event can come directly from a discrete input—including from a rotary encoder—or be count-derived from a discrete input. Programmed output events are stored in a hardware list, which is traversed based on a clock or an input event. The carrying out of an output event results in a state transition, pulse, or pulse train on a specific discrete output. Multiple cascadable hardware timers are available to count or generate specific events.

Matrox Concord PoE at a glance

Simplify cabling between cameras and vision computer through PoE support

Facilitate multi-camera configurations with two or four Gigabit Ethernet ports

Trigger multiple cameras simultaneously and reliably using hardware-assisted trigger-over-Ethernet (ToE)

Synchronize to automation devices in real-time through digital I/Os with hardware-assisted management

Deploy pre-licensed for GigE Vision support in Matrox Imaging software

Avoid the need for a separate hardware key through a license fingerprint for additional Matrox Imaging software features

Certified for use with GigE Vision systems

Software Environment

Pairs with Matrox Imaging software

The Matrox Concord PoE board gives access to the GigE Vision support in Matrox Imaging software, thus removing the need for an additional feature license. The card also acts as a license fingerprint and can store a supplemental license for Matrox Imaging software, avoiding the need for a separate hardware key.

Field-proven application development software

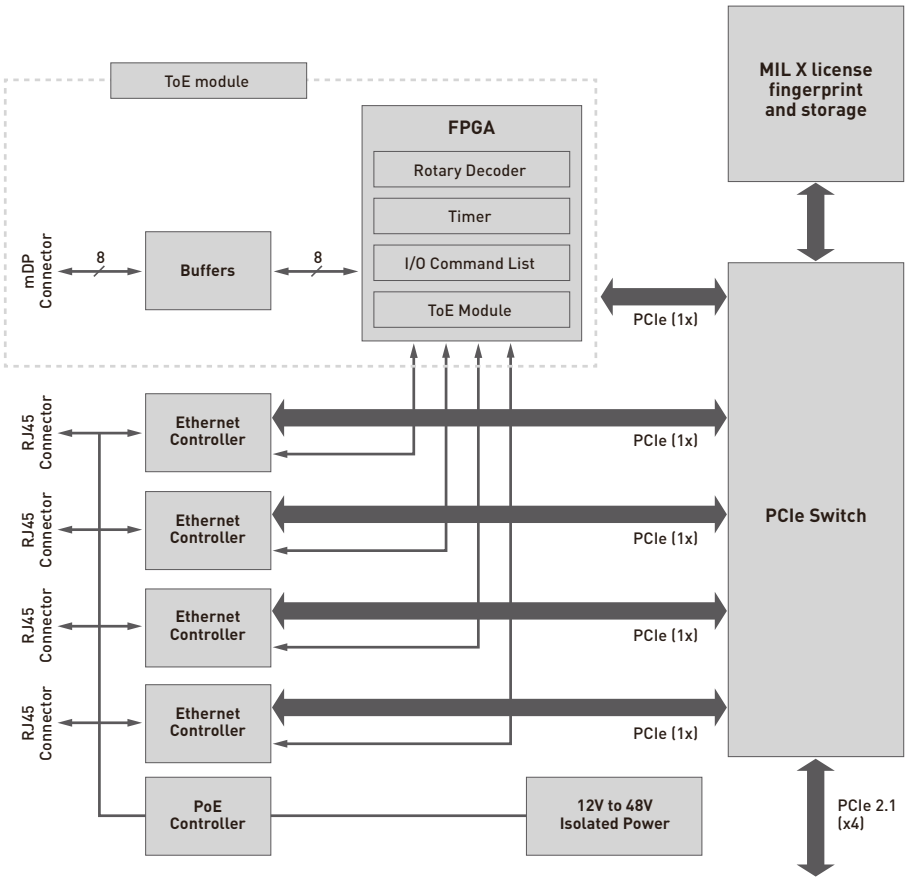
Matrox Concord PoE is supported by both Matrox Imaging Library (MIL) X and Matrox Design Assistant X software[1,2]. Each software offers developers a different environment with the same underlying vision tools.

MIL X is a comprehensive software development kit (SDK) with a 25-plus-year history of reliable performance. This toolkit features interactive software and programming functions for image capture, processing, analysis, annotation, display, and archiving operations, with the accuracy and robustness needed to tackle the most demanding applications. Refer to the MIL X datasheet for more information.

Matrox Design Assistant X is an integrated development environment (IDE) for Windows® where vision applications are created by constructing an intuitive flowchart instead of writing traditional program code. Matrox Design Assistant X's IDE also enables users to design a graphical web-based operator interface for the application. Refer to the Matrox Design Assistant X datasheet for more information.

Connectivity

Matrox Concord PoE block diagram



Specifications

Matrox Concord PoE	
Hardware	
Host interface	
Interconnect	PCIe® 2.1 x4
Camera/video interface	
Standard	GigE Vision
Configuration	Two (2) or four (4) ports
Speeds	10 / 100 / 1,000 Mbps
Controllers	Intel® Ethernet Controller I210-IT
Connectors	RJ-45
Power output	PoE
	15.4 W maximum per port
	Electrically isolated
	Source power from PCIe + 12 V rail or optionally from PC power supply via 6-pin connector
General purpose I/Os	
Types	Six (6) isolated inputs
	Two (2) isolated outputs
Connector	One (1) mDP connector accessed through a mDP-to-HD15 adaptor
Physical	
Form factor	Half-length, full-height, PCIe add-in card
Product dimensions	167.65 x 111.15 x 18.7 mm (6.6 x 4.38 x 0.74 in)[2]
Power consumption	4.6 W typical (excluding PoE)
	37.5 W maximum (from PCIe +12 V rail)
	68.5 W maximum (from auxiliary 6-pin connector)
Environmental	
Operating temperature	0°C to 55°C (32°F to 131°F)
Operating relative humidity	Up to 95% (non-condensing)
Certifications	
	FCC Class A
	CE Class A (EN55011, EN61326-1 industrial environment, EN61010-1, EN61010-2-201)
	ICES-003 / NMB-003 Class A
	RCM Class A
	KC Class A
	CSA certified
Software	
Compatible software	MIL X[4]
	Matrox Design Assistant X[4]
Operating system support	Windows 7 (32[5]-/64-bit)
	Windows 10 (32[5]-/64-bit)
	Linux®[6]
Licensing provisions	MIL X and Matrox Design Assistant X license fingerprint and storage

Ordering Information

Part number	Description
Hardware	
CON P 2	Matrox Concord PoE dual-port PCIe 2.1 x4 Gigabit Ethernet NIC with PoE. Partially licensed for Matrox Design Assistant X and MIL X.
CON P 4	Matrox Concord PoE quad-port PCIe 2.1 x4 Gigabit Ethernet NIC with PoE. Partially licensed for Matrox Design Assistant X and MIL X.
CON P T 2	Matrox Concord PoE dual-port PCIe 2.1 x4 Gigabit Ethernet NIC with PoE and hardware-assisted ToE. Partially licensed for Matrox Design Assistant X and MIL X. Note: Includes a mDP-to-HD15 GPIO cable adaptor.
CON P T 4	Matrox Concord PoE quad-port PCIe 2.1 x4 Gigabit Ethernet NIC with PoE and hardware-assisted ToE. Partially licensed for Matrox Design Assistant X and MIL X. Note: Includes a mDP-to-HD15 GPIO cable adaptor.
Software	
Included with CONP2, CONP4, CONPT2 and CONPT4	Licensed for the Matrox Design Assistant X / MIL X Interface (GigE Vision) run-time package. See Matrox Design Assistant X and Matrox Imaging Library (MIL) X datasheets for more information. MIL-Lite software available for download from www.matrox.com/imaging →Support →MIL-LITE X DOWNLOAD.

Endnotes:
1. The software may be protected by one or more patents; see www.matrox.com/patents for more information.
2. ToE support with MIL X only.
3. Dimensions (length x width x height) are taken from bottom edge of goldfinger to top edge of board. These measurements do not include mounting bracket.
4. Through an update.
5. MIL X only.
6. Ask for availability.

The Matrox Imaging advantage

Assured quality & longevity
Adhering to industry best practices in all hardware manufacturing and software development, product designs pay careful attention to component selection to secure consistent long-term availability. Matrox Imaging is able to meet Copy Exact and Revision Change Control procurement requirements in particular circumstances, backed by a dedicated team of QA specialists.

Trusted industry standards
Matrox Imaging champions industry standards in its design and production. Leveraging these standards to deliver quality compatible products, Matrox Imaging protects its customers' best interests by ensuring hardware and software components work with as many third-party products as possible.

Comprehensive customer support
Devoted front-line support and applications teams are on call to offer timely product installation, usage, and integration assistance. Matrox Professional Services delivers deep technical assistance to help customers develop their particular applications in a timely fashion. Services include personalized training and device interfacing as well as application feasibility, prototyping, troubleshooting, and debugging.

Tailored customer training
Matrox Vision Academy comprises online and on-premises training for Matrox Imaging vision software tools. On-premises intensive training courses are regularly held at Matrox headquarters, and can also be customized for onsite delivery. The Matrox Vision Academy online training platform hosts a comprehensive set of on-demand videos available when and where needed.

Long-standing global network
Matrox Imaging customers benefit from a global network of distributors who offer complementary products and support, and integrators who build customized vision systems. These relationships are built on years of mutual trust and span the globe, ensuring customer access to only the best assistance in the industry.

ABOUT MATROX IMAGING

Matrox Imaging, now a part of Zebra Technologies, is an established and trusted supplier to top OEMs and integrators involved in machine vision, image analysis, and medical imaging industries. The components consist of smart cameras, 3D sensors, vision controllers, I/O cards, and frame grabbers, all designed to provide optimum price-performance within a common software environment. For more information, visit https://www.matrox.com/imaging/en/

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