Matrox **Concord PoE** »

Multi-port Gigabit Ethernet adaptors with PoE for
GigE Vision

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 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

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.

Trigger-over-Ethernet

Matrox Concord PoE also provides, as an option, a useful trigger-over-Ethernet (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.

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.
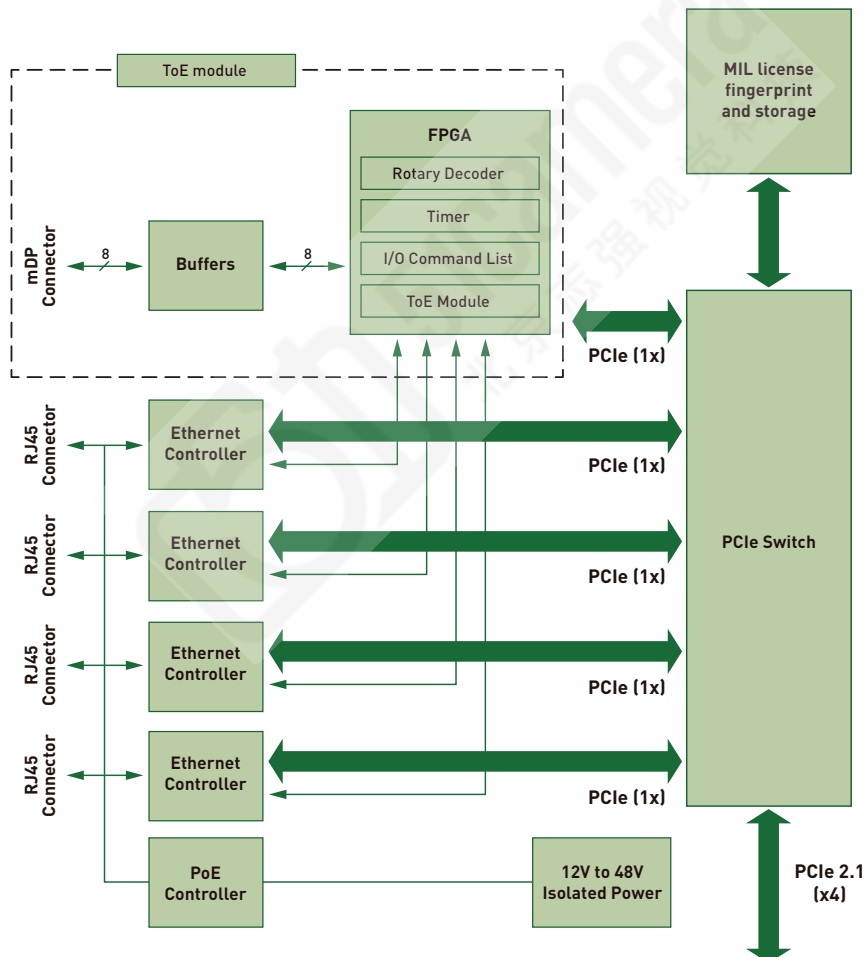
MATROX IMAGING

Field-proven development software

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

MIL is a comprehensive software development kit (SDK) with a 25-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 datasheet for more information.

Matrox Design Assistant 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's IDE also enables users to design a graphical web-based operator interface for the application. Refer to the Matrox Design Assistant datasheet for more information.

Matrox Concord PoE

The Matrox Imaging Advantage

Assured Quality & Longevity
We adhere 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 our dedicated team of QA specialists.

Trusted Industry Standards
Matrox Imaging champions industry standards in our design and production. We leverage these standards to deliver quality compatible products, protecting our customers' best interests by ensuring our hardware and software components work with as many third-party products as possible.

Comprehensive Customer Support
Our 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 our vision software tools. On-premises intensive training courses are regularly held at Matrox headquarters, and can also be customized for onsite delivery. 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.

Specifications

Matrox Concord PoE

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 15.4W maximum per port Electrically isolated Source power from PCIe + 12V rail or optionally from PC power supply via 6-pin connector

General purpose I/Os	
Types	Six (6) isolated inputs Two (2) isolated outputs
Connectors	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 +12V rail) 68.5 W maximum (from aux. 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	Matrox Imaging Library (MIL) 10[4] Matrox Design Assistant 5.1[4]
Operating system support	Windows 7 (32[5]- / 64-bit) Windows 10 (32[5]- / 64-bit) Linux®[6]
Licensing provisions	MIL and Matrox Design Assistant license fingerprint and storage

Ordering Information

Hardware

Part number	Description
CON P 2	Matrox Concord PoE dual-port PCIe 2.1 x4 Gigabit Ethernet NIC with PoE, pre-licensed for MIL Interface package (GigE Vision driver).
CON P 4	Matrox Concord PoE quad-port PCIe 2.1 x4 Gigabit Ethernet NIC with PoE, pre-licensed for MIL Interface package (GigE Vision driver).
CON P T 2	Matrox Concord PoE dual-port PCIe 2.1 x4 Gigabit Ethernet NIC with PoE and hardware-assisted ToE, pre-licensed for MIL Interface package (GigE Vision driver). 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, pre-licensed for MIL Interface package (GigE Vision driver). Note: Includes a mDP-to-HD15 GPIO cable adaptor.

Software

Refer to MIL datasheet.

Refer to Matrox Design Assistant datasheet.

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 only.
2. 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.
3. Through an update.
4. MIL 10 only.
5. Ask for availability.

About Matrox Imaging

Founded in 1976, Matrox is a privately held company based in Montreal, Canada. Imaging, Graphics, and Video divisions provide leading component-level solutions, leveraging the others' expertise and industry relations to provide innovative, timely products.

Matrox Imaging 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, vision controllers, I/O cards, and frame grabbers, all designed to provide optimum price-performance within a common software environment.

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