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# Zebra **Concord PoE**  ≫

Multi-port Gigabit Ethernet adaptors with PoE for GigE Vision

# Overview

## GigE Vision interface cards for simplified cabling

Zebra® 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

Zebra 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.

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### Zebra Concord PoE at a glance

**Simplify cabling between cameras and vision computer** through PoE support

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

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

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

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**Deploy pre-licensed for GigE Vision support** in Aurora software, formerly Matrox Imaging Software

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**Avoid the need for a separate hardware key** through a license fingerprint for additional Aurora software features

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**Certified for use** with GigE Vision systems

# Software Environment

### Pairs with Aurora software

The Zebra Concord PoE board gives access to the GigE Vision support in Aurora 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 Aurora software, avoiding the need for a separate hardware key.

### Field-proven application development software

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

Aurora software 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 Aurora software datasheet for more information.

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

# Connectivity

## Zebra Concord PoE block diagram
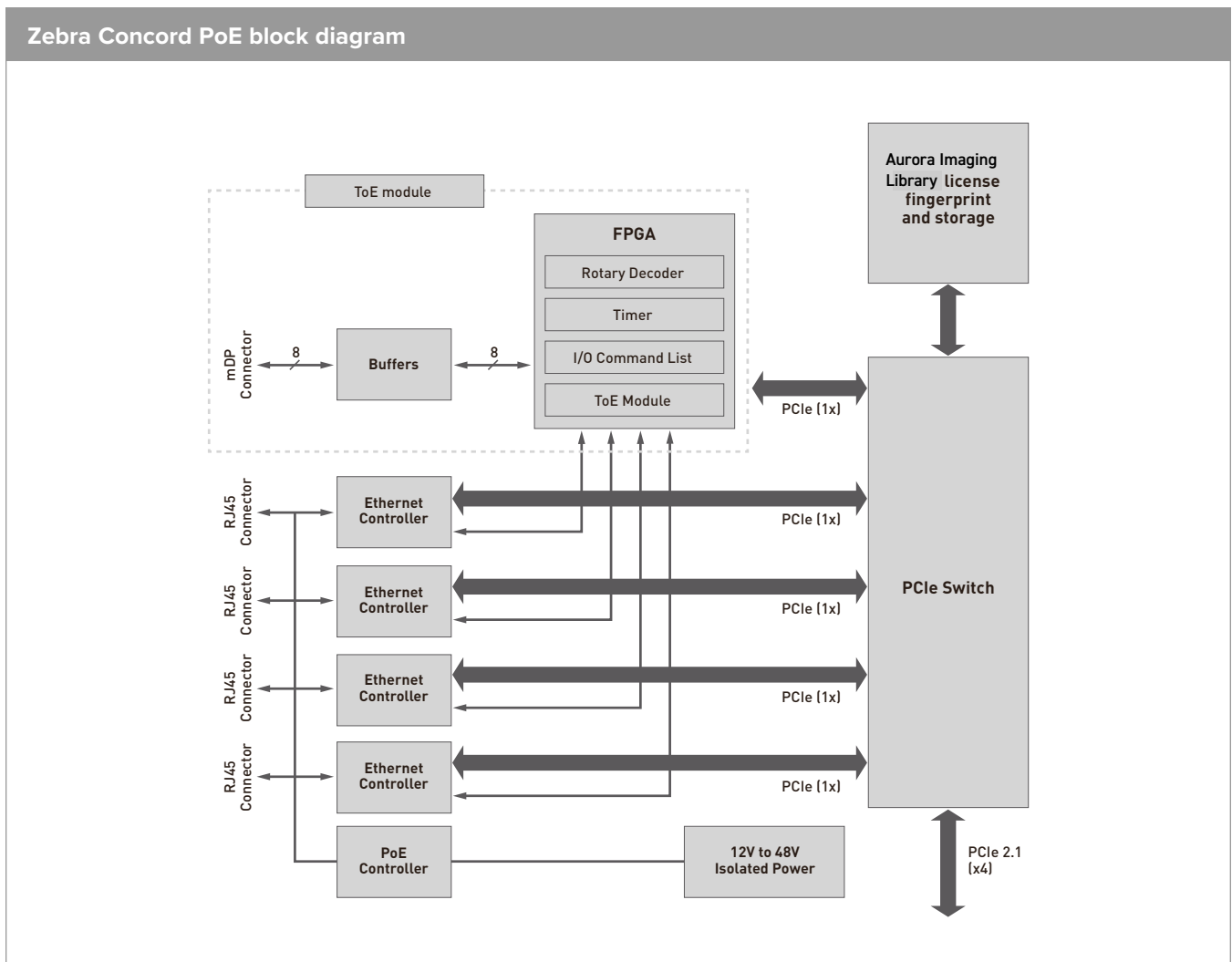
# Specifications

| Zebra 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 | Aurora Design Assistant |
| Operating system support | Windows 7 (32[5]-/64-bit) |
| | Windows 10 (32[5]-/64-bit) |
| | Linux[*6] |
| Licensing provisions | Aurora Design Assistant license fingerprint and storage |

# Ordering Information

| Part number | Description |
|---|---|
| **Hardware** | |
| CON P 2 | Zebra Concord PoE dual-port PCIe 2.1 x4 Gigabit Ethernet NIC with PoE. Partially licensed for Aurora Design Assistant. |
| CON P 4 | Zebra Concord PoE quad-port PCIe 2.1 x4 Gigabit Ethernet NIC with PoE. Partially licensed for Aurora Design Assistant. |
| CON P T 2 | Zebra Concord PoE dual-port PCIe 2.1 x4 Gigabit Ethernet NIC with PoE and hardware-assisted ToE. Partially licensed for Aurora Design Assistant.<br>Note: Includes a mDP-to-HD15 GPIO cable adaptor. |
| CON P T 4 | Zebra Concord PoE quad-port PCIe 2.1 x4 Gigabit Ethernet NIC with PoE and hardware-assisted ToE. Partially licensed for Aurora Design Assistant and Aurora Imaging Library.<br>Note: Includes a mDP-to-HD15 GPIO cable adaptor. |
| **Software** | |
| Included with CONP2, CONP4, CONPT2 and CONPT4 | Licensed for the Aurora Design Assistant Interface (GigE Vision) run-time package. See Aurora Design Assistant and Aurora Imaging Library datasheets for more information. Aurora Imaging Library-Lite software available for download |

Endnotes:
1. The software may be protected by one or more patents; see Patents for more information.
2. ToE support with Aurora Imaging Library 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. Aurora Imaging Library only.
6. Ask for availability.

ZEBRA

**NA and Corporate Headquarters**
+1 800 423 0442
inquiry4@zebra.com

**Asia-Pacific Headquarters**
+65 6858 0722
contact.apac@zebra.com

**EMEA Headquarters**
zebra.com/locations
contact.emea@zebra.com

**Latin America Headquarters**
zebra.com/locations
la.contactme@zebra.com