ZEBRA
CAPTURE YOUR EDGE

Zebra **Indio**

Industrial I/O and communication card

Overview

Turn any PC into a Zebra vision controller

Zebra® Indio provides the industrial I/O and communication capabilities to turn any PC running Aurora Vision software into a genuine vision controller. It provides discrete inputs and outputs managed in hardware for the real-time synchronization of a vision application with automation devices. It also provides Gigabit Ethernet connectivity for interfacing with programmable logic/automation controllers or GigE Vision® cameras equipped for Power-over-Ethernet (PoE).

Discrete I/Os

Zebra Indio offers eight discrete inputs and eight discrete outputs that are jumper-selectable for 24 V or TTL-level signaling, supporting both factory-floor and lab use. The I/Os are optically isolated while the outputs are also protected by resettable fuses, all to prevent damage from unintended use. The I/Os can be hooked up in either sinking or sourcing configurations and are accessible from a standard 37-pin D-Sub connector.

Real-time synchronization

Zebra Indio delivers real-time I/O management through a dedicated hardware-assisted mechanism. The mechanism enables output events to occur at precise moments in time, based on elapsed time, or specific input events. An input event can come directly from a discrete input—including from a rotary encoder—or a 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.

Industrial Ethernet or GigE Vision

Zebra Indio also makes available a Gigabit Ethernet port through a standard RJ45 connector for industrial networking using the EtherNet/IP™, Modbus®, and PROFINET® protocols. PROFINET communication is hardware-assisted to ensure timely response. The Gigabit Ethernet port can alternatively connect to a GigE Vision camera and power it by way of PoE support.

Zebra Indio at a glance

Facilitate computer integration with a PCIe® x1 interface

Benefit from real-time synchronization with 16 discrete digital I/Os

Get straightforward access to I/Os via standard D-Sub connector

Support factory-floor and lab use with 24 V and TTL-compatible signaling

Protect against unintended use with optical isolation and resettable fuses

Track moving production lines with support for two rotary incremental encoders

Use status indicator LED for each I/O to assist with integration troubleshooting

Leverage Gigabit Ethernet port for industrial communication or video capture using GigE Vision

Use with Zebra Aurora Design Assistant (formerly Matrox Design Assistant) and Zebra Aurora Imaging Library (formerly Matrox Imaging Library), vision software

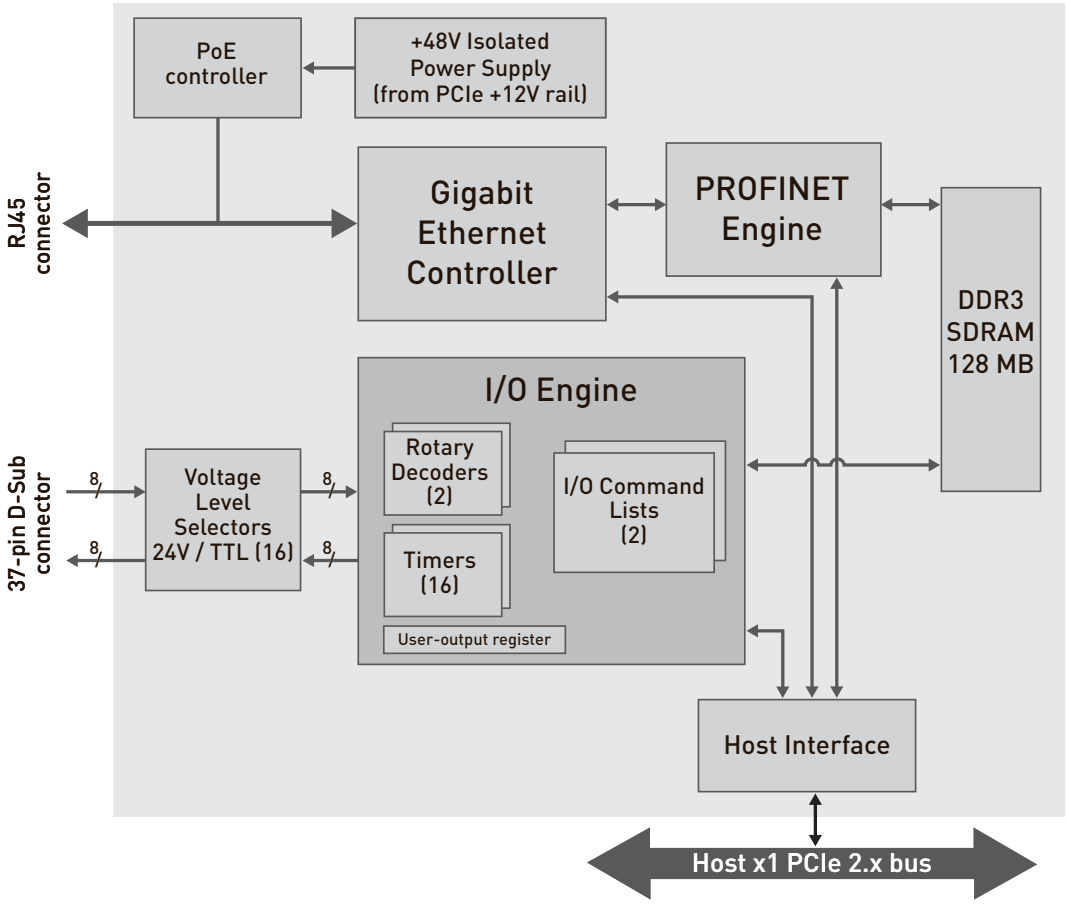
Software Environment

Vision software support

Aurora Design Assistant and Aurora Imaging Library vision software include support for the Zebra Indio. The card automatically provides access to the software's industrial communication and GigE Vision functionality.

Connectivity

Zebra Indio block diagram



Specifications

Zebra Indio
Board
Eight (8) independent inputs
Opto-isolated
Jumper selectable for 24 V or TTL operation
Logic low level
0 V to 5 V (default) or 0 V to 0.8 V (TTL mode)
Logic high level
11 V to 24 V (default) or 2 V to 5 V (TTL mode)
Sink or source acting at up to 100 mA
Configurable for two rotary incremental encoders
Generate system interrupt
With status indicator LED
Eight (8) independent outputs
Opto-isolated
Jumper selectable for 24 V or TTL operation
Logic low level
0 V to 3 V (default) or 0 V to 0.1 V (TTL mode)
Logic high level
Up to 24 V (default) or up to 5 V (TTL mode)
Sink or source acting at up to 100 mA
Protected by resettable fuse
With status indicator LED
Gigabit Ethernet port
Hardware-assist for PROFINET protocol (1 ms minute I/O cycle time)
Isolated PoE support up to 15.4 W
Connectors
37-pin D-Sub for I/Os
RJ45 for Gigabit Ethernet port
Power requirements
+3.3 V @ 1.6 A maximum
+12 V @ 2 A maximum (when 15.4 W is drawn for PoE)
Dimensions (L x W x H)
16.76 x 1.87 x 10.67 cm (6.6 x 0.737 x 4.2 in)
Certifications
FCC Part 15 Class B, CE mark
EN55011 Class B
EN61326-1 Industrial Environment
ICES-003/NMB-003 Class B
RCM Class B

Specifications (cont.)

Zebra Indio
Environmental
Operating temperature: 0°C to 55°C (32°F to 131°F)
Storage temperature: -40°C to 85°C (-40°F to 185°F)
Relative humidity: 10% to 90% (non-condensing)

Ordering Information

Part number	Description
Hardware	
INDIO	Zebra Indio PCIe x1 card with 16 real-time discrete digital I/Os and Gigabit Ethernet port with PoE. Partially licensed for Aurora Design Assistant and Aurora Imaging Library.
Software	
Included with INDIO	Licensed for the Aurora Design Assistant / Aurora Imaging Library Interface and Industrial and Robot Communications run-time packages. See Aurora Design Assistant and Aurora Imaging Library datasheets for more information. Aurora Imaging Library-Lite available for download

Endnotes:
1. As of Aurora Design Assistant 5.
2. As of Aurora Imaging Library 10 with Update 53.

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