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Zebra **4Sight EV7** »

Fanless industrial imaging computer

Overview

Built for the factory floor

Zebra® 4Sight EV7 is an industrial computer built for multi-camera machine vision applications on the factory floor. Part of a long and solid history, the Zebra 4Sight EV7 is an evolution of its immediate predecessor, integrating a twelfth-generation twelve-core Intel® Core™ processor that includes acceleration for deep learning inference or prediction. A fanless design with multiple ports for GigE Vision® and USB3 Vision® cameras makes the Zebra 4Sight EV7 right at home in any production facility, keeping an eye on a single line or many production lines.

Zebra 4Sight EV7 vision controllers are supported by two comprehensive software platforms: Aurora Design Assistant®, formerly Matrox Design Assistant (DA), is a flowchart-based integrated development environment (IDE), whereas Aurora Imaging Library, formerly Matrox Imaging Library (MIL), is a software development kit (SDK) for more traditional programmers. Engineers and technicians can quickly configure and deploy machine vision applications to Zebra 4Sight EV7 vision controllers using the range of included software tools for video capture, analysis, classification, location, measurement, reading, verification, communication, and I/O operations.

Serve multi-camera installations with simplicity

With four 2.5 Gigabit Ethernet and four SuperSpeed USB ports, Zebra 4Sight EV7 vision controllers connect to the full range of available GigE Vision and USB3 Vision cameras. The 2.5 Gigabit Ethernet ports support PoE to further simplify cabling and thus reduce costs when opting for suitable GigE Vision cameras. Powered by a mobile-class embedded processor, Zebra 4Sight EV7 is ideal to handle typical multi-camera inspections.

Connect to factory and enterprise equipment

Interfacing to other industrial equipment and communicating with enterprise systems is easy with Zebra 4Sight EV7 vision controllers. RS-232/RS-485 ports support connections to legacy automation devices, while two additional Gigabit Ethernet ports provide independent connections to industrial and enterprise networks. One of these networking ports includes a hardware-assisted mechanism for PROFINET® communication. This mechanism ensures timely response when the automation controller is set up for a short cycle-time or when the processor is too busy performing other tasks.

Count on an industrial-strength design

Designed to reduce upkeep, the fanless Zebra 4Sight EV7 eliminates the need to clean or replace an air filter or a worn-out fan. A small footprint, rugged casing, and wide ambient operational temperature range allows the Zebra 4Sight EV7 to be mounted either horizontally or vertically in hostile, space-limited locations. Carefully selected components ensure consistent long-term availability of Zebra 4Sight EV7 vision controllers, thus maximizing return on the original investment.

Zebra 4Sight EV7 at a glance

Reduce service stoppages with a fanless design

Inspect multiple sites through the support for four GigE Vision and four USB3 Vision cameras

Simplify cabling for GigE Vision installations using Power-over-Ethernet (PoE)-enabled ports

Tackle deep learning and traditional machine vision applications with a mobile-class embedded twelfth-generation Intel Core processor

Connect separately to the factory floor and enterprise networks via two more Gigabit Ethernet ports

Synchronize with other equipment using the integrated real-time digital I/Os with rotary encoder support and RS-232/RS-485 ports

Streamline application development using the Aurora Design Assistant flowchart-based IDE or the Aurora Imaging Library SDK

Tackle machine vision applications with utmost confidence using field-proven tools for analyzing, locating, classifying, measuring, reading, and verifying

Manage discrete I/Os in real time

A dedicated hardware-assisted mechanism on the Zebra 4Sight EV7 supports discrete I/O management, enabling 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. Carrying out 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. The Zebra 4Sight EV7 has what it takes to effectively synchronize a typical vision application with a manufacturing line.

Software Environment

Microsoft Windows 10 IoT Enterprise

Zebra 4Sight EV7 comes pre-installed with Microsoft® Windows® 10 IoT Enterprise 2019 (64-bit), which provides the familiarity, performance, and reliability of Windows 10—including the Unified Write Filter (UWF) to prevent corruptions caused by unanticipated power-downs—and multi-language support.

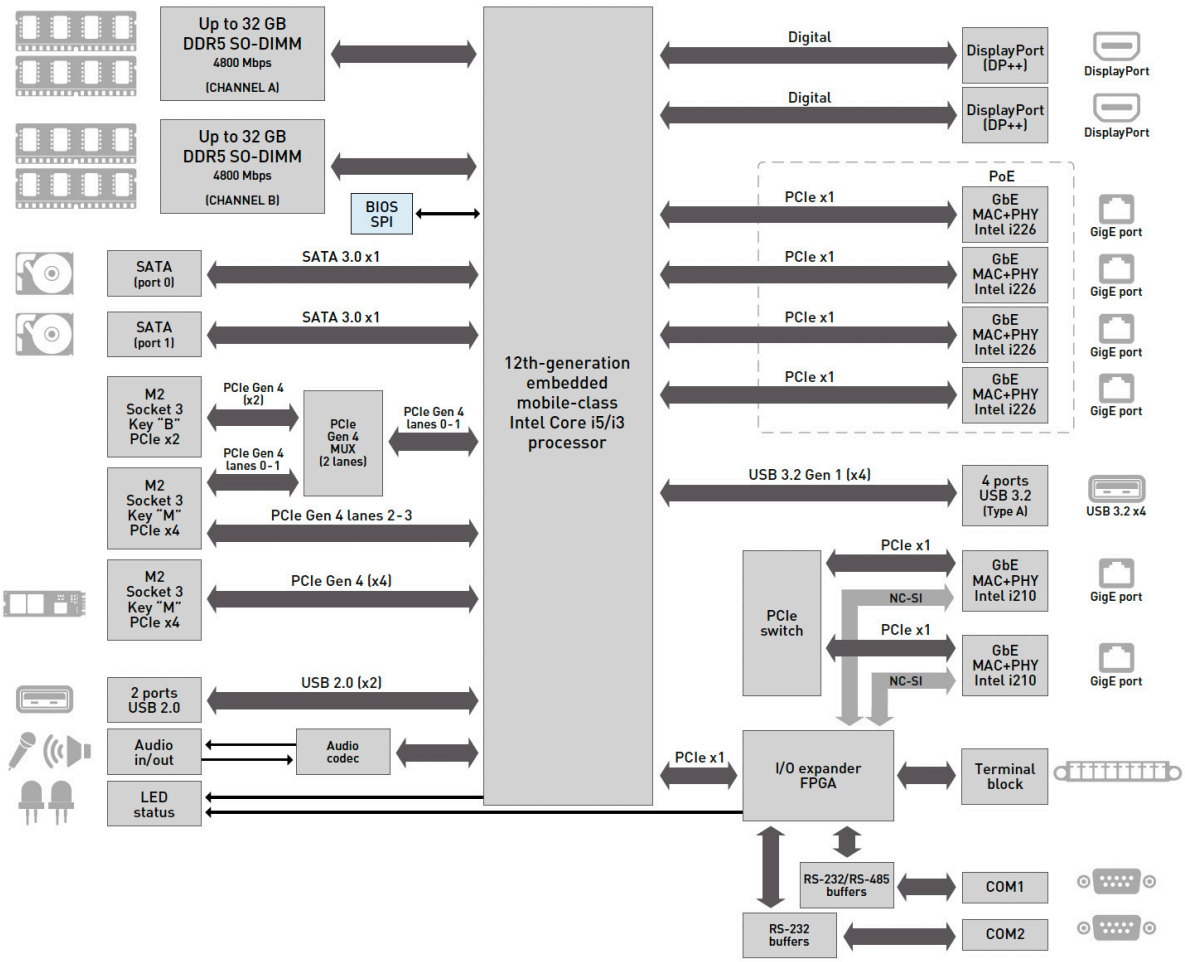
Field-proven application development software

Zebra 4Sight EV7 is supported by Aurora Imaging Library[1] software—a comprehensive 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 machine vision applications. Refer to the Aurora Imaging Library datasheet for more information.

Zebra 4Sight EV7 is also available with, and licensed for, Aurora Design Assistant[1] software, a versatile and extendable IDE. Vision applications are created by constructing an intuitive flowchart instead of writing traditional programming code. A custom, web-based operator interface to the application is created through an integrated HTML visual editor. Refer to the Aurora Design Assistant datasheet for more information.

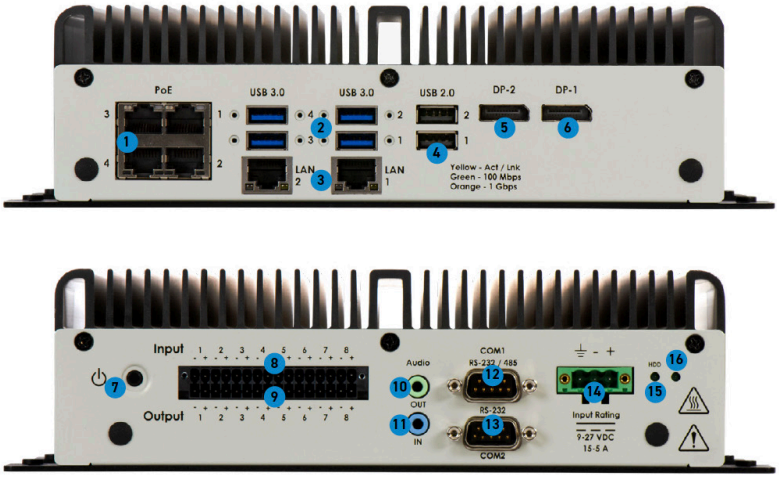
Connectivity

Zebra 4Sight EV7 block diagram



Connectivity (cont.)

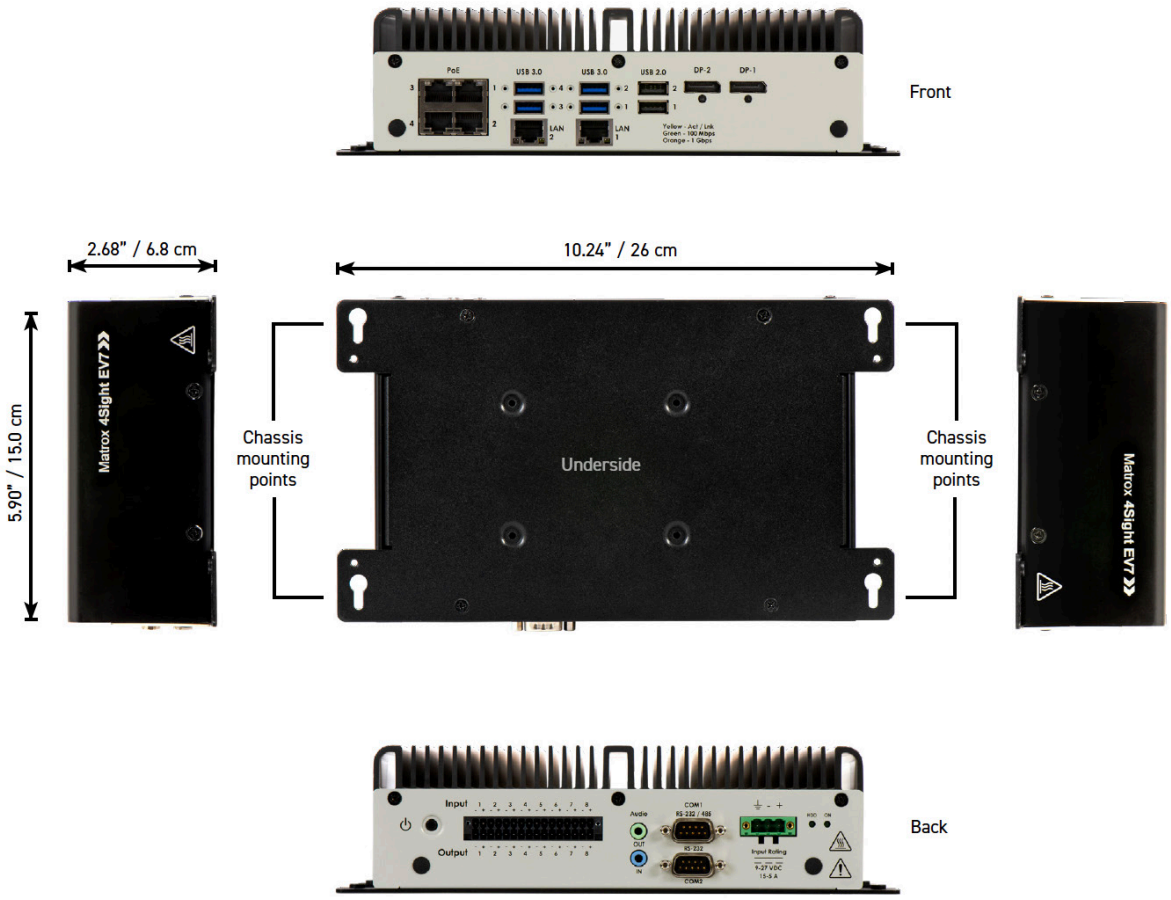
Zebra 4Sight EV7 front and back views



1. Gigabit Ethernet ports with PoE
2. USB 3.2 ports
3. Gigabit Ethernet ports
4. USB 2.0 ports
5. DisplayPort
6. DisplayPort
7. Power button
8. Digital inputs
9. Digital outputs
10. Audio out
11. Audio in
12. RS-232/RS-485 port
13. RS-232 port
14. Power input
15. HDD LED
16. Power-on LED

Connectivity (cont.)

Zebra 4Sight EV7 chassis



Specifications

Zebra 4Sight EV7
System
Intel Core i5-1250PE / Intel Core i3-1220PE
Two (2) DDR5-4800 SODIMM slots
Dual-head graphics support
Two (2) DisplayPort Dual-Mode (DP++) outputs
Up to 4096x2304 @ 60 Hz
Six (6) Ethernet ports
Four (4) 2.5 Gigabit Ethernet ports with PoE (up to 15.4 W per port)
Two (2) standard Gigabit Ethernet ports
Four (4) USB 3.2 ports
Two (2) USB 2.0 ports
Two (2) SATA 3.0 ports (internal)
One (1) M.2 connector socket 3 Key ‘M’ (used by supplied 256GB MVMe M.2 2280 SSD)
One (1) M.2 connector socket 3 Key ‘M’ 2280
One (1) M.2 connector socket 2 Key ‘B’ 3052
One (1) 24-bit stereo audio input and 24-bit stereo output
One (1) RS-232 port
One (1) RS-232/RS-485 port
Sixteen (16) digital I/Os
Eight (8) inputs
Up to 24 V
Eight (8) outputs (open collector)
100 mA maximum @ 24 VDC
256 GB MVMe M.2 2280 SSD
Power input: 9–27 VDC (nominal 24 VDC @ 6.3 A)
Chassis
Dimensions (L x W x H): 22.5 x 15.0 x 6.8 cm (8.86 x 5.90 x 2.68 in)
Four (4) mounting slots
Fanless enclosure
Power switch
Power and HDD notification LEDs
Mounting
Horizontal or vertical mounting
Certifications
FCC Class A
ICES-003 Class A
CE Class A
RCM Class A
KC Class A
CSA 61010-1-12

Specifications (cont.)

Zebra 4Sight EV7
Environmental
Operating temperature: 0°C to 45°C (32°F to 113°F)
Storage temperature: -40°C to 85°C (-40°F to 185°F)
Relative humidity: Up to 90% (non-condensing)
Software
Pre-loaded with Microsoft Windows 10 IoT Enterprise 2019 (64-bit)
Pre-loaded with Aurora Imaging Library and Aurora Design Assistant run-time environments
Optionally pre-loaded with Aurora Design Assistant development and run-time environments

Ordering Information

Part number	Description
Hardware	
EV7I3M8	Zebra 4Sight EV7 integrated unit with Intel Core i3-1220PE, 8 GB DDR5 RAM, 256 GB M.2 MLC SSD, and Microsoft Windows 10 IoTEnterprise 2021 (64-bit). Pre-loaded with Aurora Imaging Library and Aurora Design Assistant run-time environments. Partially licensed for Aurora Design Assistant and Aurora Imaging Library. Note: The use of this product is governed by Microsoft Software License Terms, among others.
EV7I5M16	Zebra 4Sight EV7 integrated unit with Intel Core i5-1250PE, 16 GB DDR5 RAM, 256 GB M.2 MLC SSD, and Microsoft Windows 10 IoTEnterprise 2021 (64-bit). Pre-loaded with Aurora Imaging Library and Aurora Imaging Library and Aurora Design Assistantrun-time environments. Partially licensed for Aurora Design Assistant and Aurora Imaging Library. Note: The use of this product is governed by Microsoft Software License Terms, among others.
EV7I5M16DA	Zebra 4Sight EV7 integrated unit with Intel Core i5-1250PE, 16 GB DDR5 RAM, 256 GB M.2 MLC SSD, and Microsoft Windows 10 IoT Enterprise 2021 (64-bit). Pre-loaded with Aurora Design Assistant design-time and run-time environments. Partially licensed for Aurora Design Assistant and Aurora Imaging Library. Note: The use of this product is governed by Microsoft Software License Terms, among others.
EV7I5M16DAP	Zebra 4Sight EV7 integrated unit with Intel Core i5-1250PE, 16 GB DDR5 RAM, 256 GB M.2 MLC SSD, and Microsoft Windows 10 IoTEnterprise 2021 (64-bit). Pre-loaded with Aurora Design Assistant design-time and run-time environments. Fully licensed for Aurora Design Assistant and Aurora Imaging Library. Note: The use of this product is governed by Microsoft Software License Terms, among others.
EVPS	150 W AC/DC power adapter (100–240 VAC input/24 VDC output) for Zebra 4Sight EV7.
Software	
Included with EV7I3M8 and EV7I5M16	Licensed for the Aurora Design Assistant / Aurora Imaging Library Interface, Distributed Aurora Imaging Library and Industrial and Robot Communications run-time packages. See Aurora Design Assistant and Aurora Imaging Library datasheets for more information.
Included with EV7I5M16DA and EV7I5M16DAP	Separate installation media with the Aurora Design Assistant IDE and on-line documentation as well as a Aurora Design Assistant Maintenance registration number. Pre-loaded with the Aurora Design Assistant design-time and run-time environment. Allow the Aurora Design Assistant IDE to run when it is connected to them. EV715M16DA is licensed for the Aurora Design Assistant / Aurora Imaging Library Machine Vision, Identification, Image Compression, Interface, Distributed Aurora Imaging Library, Metrology, Color Analysis, and Industrial and Robot Communications run-time packages. The String Reader and SureDotOCR®, Geometric Model Finder, Registration, 3D Calibration and Supplemental and Classification packages need to be licensed separately. See Aurora Design Assistant and Aurora Imaging Library datasheets for more information. EV715M16DA+ is licensed for all Aurora Design Assistant and Aurora Imaging Library run-time packages.

Endnotes:
1. The software may be protected by one or more patents; see www.matrox.com/patents for more information.

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