PoE

3 1
4 2

USB 3.0
4
3

USB 3.0
2
1

LAN
2

LAN
1

USB 2.0
2
1

DVI-I

DP

Yellow - Act / Lnk
Green - 100 Mbps
Orange - 1 Gbps

Matrox 4Sight EV6

Matrox **4Sight EV6** »»

Fanless industrial imaging computer

MATROX
IMAGING

Overview

Machine vision for the factory floor

Matrox® 4Sight EV6 is an industrial computer built for machine vision on the factory floor. Part of a long and solid history, the Matrox 4Sight EV6 is an evolution of its immediate predecessor, integrating a seventh-generation quad-core Intel® Core™ processor for ever more demanding multi-camera applications.

A fanless design with multiple ports for GigE Vision® and USB3 Vision® cameras make the Matrox 4Sight EV6 right at home in any production facility, keeping an eye on a single line or many lines. The Matrox 4Sight EV6 is backed by a vendor with a proven track record, delivering optimized machine vision hardware and a software toolkit with a 25-year history of reliable performance.

Multiple ports with power for cameras

Matrox 4Sight EV6 is equipped with four Gigabit Ethernet and four SuperSpeed USB ports for connecting to the full range of available GigE Vision and USB3 Vision cameras. The Gigabit Ethernet ports support Power-over-Ethernet (PoE) to further simplify cabling and thus reduce costs when opting for suitable GigE Vision cameras. Powered by a mobile-class embedded processor, Matrox 4Sight EV6 has what it takes to cost-effectively handle typical multi-camera inspections.

Factory and enterprise connectivity

Matrox 4Sight EV6 provides the necessary connectivity for interfacing to other industrial equipment and communicating with enterprise systems. 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. These networking ports include a hardware-assisted mechanism for PROFINET®[1] 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.

Industrial-strength design and longevity

The fanless design of the Matrox 4Sight EV6 reduces physical maintenance, eliminating the need to clean or replace an air filter or a worn-out fan. A small, rugged footprint casing and wide ambient operational temperature range allows the Matrox 4Sight EV6 to be mounted either horizontally or vertically in hostile, space-limited locations. Moreover, careful component selections secure the long-term availability of the Matrox 4Sight EV6.

Matrox 4Sight EV6 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 PoE-enabled ports

Tackle typical vision workloads with a mobile-class embedded seventh-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

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Real-time discrete I/Os

Discrete I/O management is achieved through a dedicated hardware-assisted mechanism on the Matrox 4Sight EV6. 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. The Matrox 4Sight EV6 has what it takes to effectively synchronize a typical vision application with a manufacturing line.

Software Environment

Microsoft Windows 10 IoT Enterprise

Matrox 4Sight EV6 comes 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.

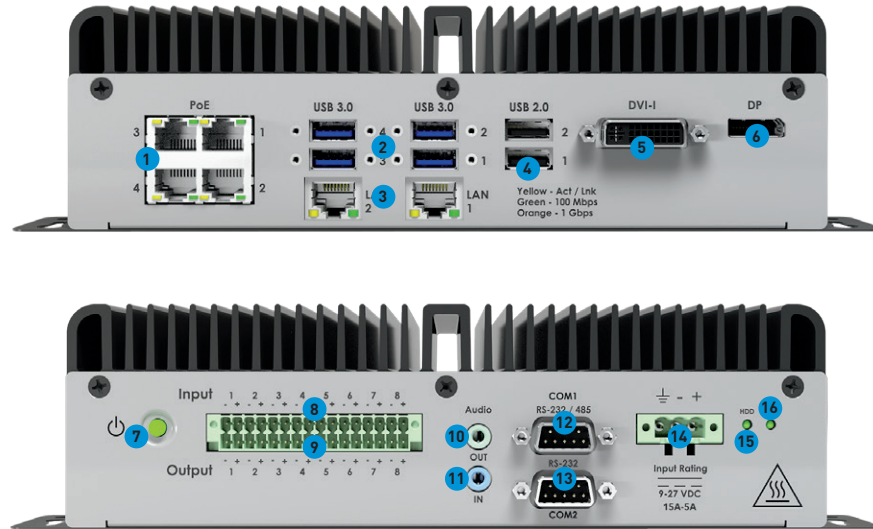## Field-proven application development software

Matrox 4Sight EV6 is supported by Matrox Imaging Library (MIL) X[2,3] software—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 machine vision applications. Refer to the MIL X datasheet for more information.
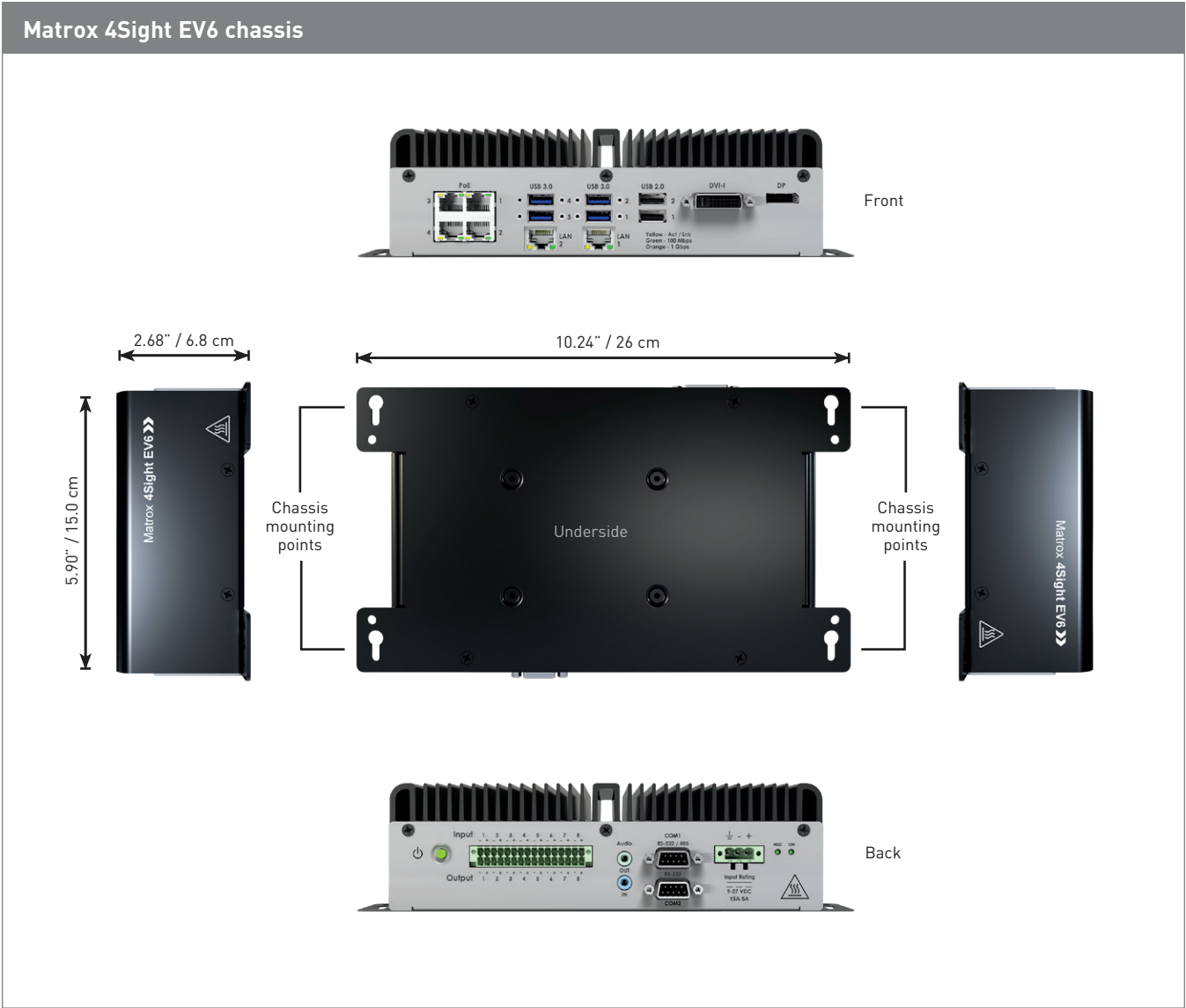
Connectivity

Matrox 4Sight EV6 block diagram
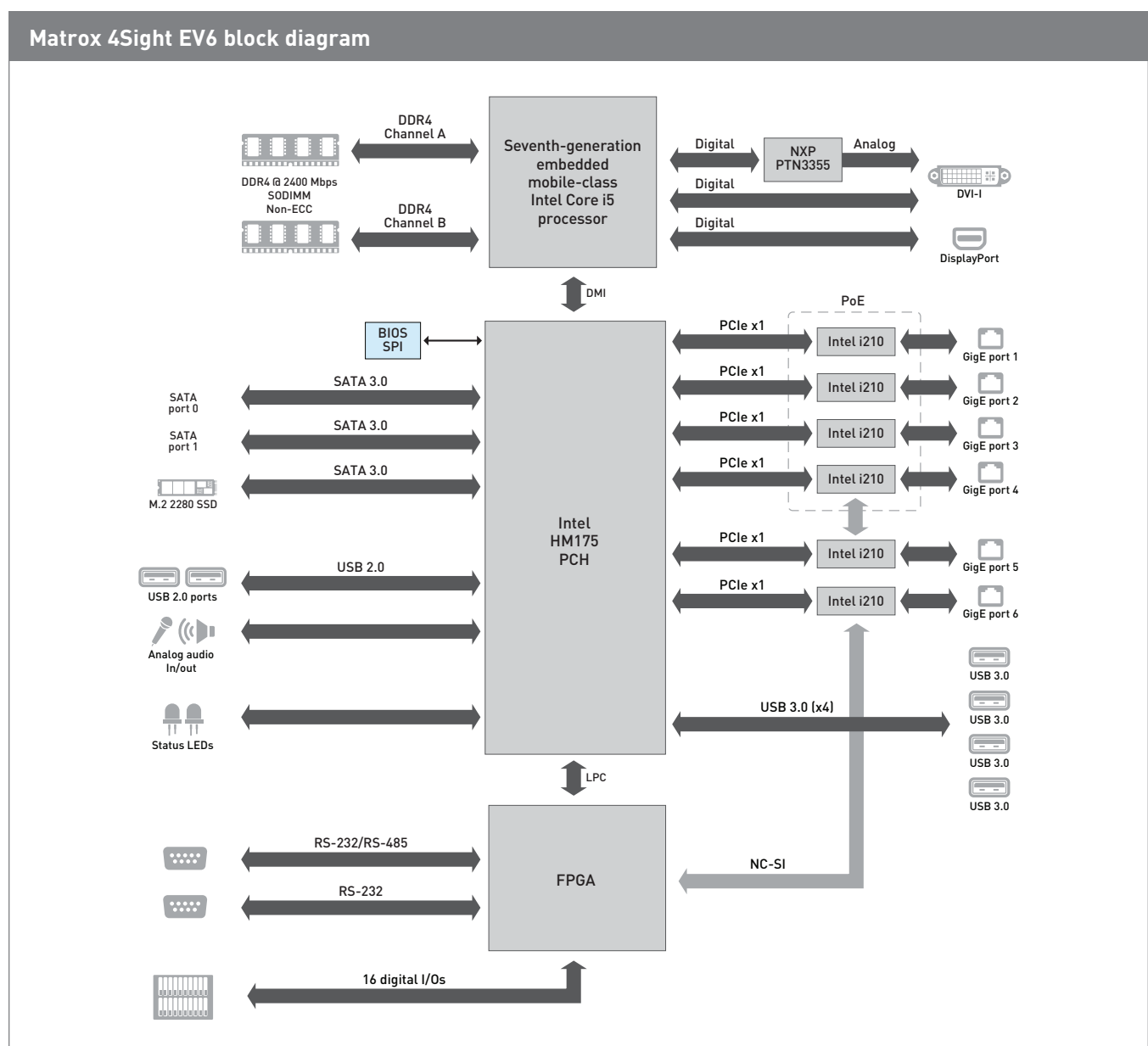
Connectivity (cont.)

Matrox 4Sight EV6 front and back views

1. Gigabit Ethernet ports with PoE
2. USB 3.0 ports
3. Gigabit Ethernet ports
4. USB 2.0 ports
5. DVI-I output
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.)

Matrox 4Sight EV6 chassis

Front

2.68" / 6.8 cm

10.24" / 26 cm

5.90" / 15.0 cm

Chassis mounting points

Underside

Chassis mounting points

Back

Specifications

Matrox 4Sight EV6
System
Intel Core i5-7442EQ
Intel HM175 Platform Controller Hub (PCH)
Two (2) 260-pin DDR4-2133/2400 SODIMM slots
Dual-head graphics support
One (1) DisplayPort output
Up to 4096x2304 @ 60 Hz
One (1) DVI-I display output
Up to 1920x1200 @ 60 Hz digital
Up to 2048x1536 @ 75 Hz analog
Six (6) Gigabit Ethernet ports (10/100/1,000)
Four (4) Gigabit Ethernet ports with PoE (up to 15.4 W per port)
Two (2) standard Gigabit Ethernet ports
Four (4) USB 3.0 ports
Two (2) USB 2.0 ports
Two (2) SATA 3.0 ports (internal)
One (1) M.2 connector (used by supplied 64 GB M.2 2280 SSD)
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
64 GB M.2 2280 SATA 3.0 SSD
Power input: 9–27 VDC (nominal 24 VDC @ 4.2 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
Certifications
FCC Class A
ICES-003 Class A
CE Class A
RCM Class A
Environmental
Operating temperature: 0°C to 50°C (32°F to 122°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 MIL X (run-time)

Ordering Information

Part number	Description
Hardware	
EV6I5M16	Matrox 4Sight EV6 integrated unit with Intel Core i5-7442EQ, 16 GB DDR4 RAM, 64 GB M.2 MLC SSD, Microsoft Windows 10 IoT Enterprise 2019 (64-bit). Note: The use of this product is governed by Microsoft Software License Terms, among others.
EV6PS*	150 W AC/DC power adapter (100–240 VAC input/24 VDC output) for Matrox 4Sight EV6.
Software	
Refer to MIL X datasheet. Note: MIL X sold separately.	

Endnotes:
1. PROFINET availability and certification pending.
2. Matrox 4Sight EV6 is licensed for the MIL X interface (GenTL Consumer, GigE Vision, and USB3 Vision), DMIL, and industrial/robot communication run-time packages. All other MIL X run-time packages require adding a separate license.
3. The software may be protected by one or more patents; see www.matrox.com/patents for more information.

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

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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