



Zebra 4Sight XV7 industrial vision controller

Powering next-generation AI and edge vision systems

The Zebra XV7 industrial vision controller is a high-performance, scalable computing platform engineered to meet the rigorous demands of advanced, multi-camera machine vision in industrial environments. Purpose-built to power edge vision systems for real-time processing and analysis of complex, AI-driven imaging applications, the XV7 delivers exceptional compute performance, broad I/O flexibility, and rugged reliability for precision-critical inspection, guidance, and measurement tasks.

Building on the success of Zebra's field-proven 4Sight Series, the XV7 introduces expanded processing capabilities, enhanced AI acceleration, and greater system scalability—all within a compact, industrial-grade form factor. It enables faster deployment, simplified system integration, and long-term adaptability for evolving automation and analytics needs.



All-in-one solution

Stay ahead of next-generation demands

In high-speed, high-stakes production environments where precision and uptime are paramount, vision systems must evolve to handle increasingly data-intensive and AI-enabled workloads at the edge. Zebra's XV7 industrial vision controller delivers the flexibility, scalability, and intelligence manufacturers need to stay ahead of the next generation of smart manufacturing demands.

No need to manage multiple vendors

Integrated with Zebra's ecosystem of cameras, lighting, and software, the XV7 Industrial Vision Controller delivers an industrial-grade solution that eliminates compatibility headaches, supports high-performance imaging tasks, and scales easily as operational needs grow.

A single, reliable source

With the XV7, Zebra delivers what many industrial operations have long sought: a single-source solution for machine vision. Every component—from the controller itself to the accompanying cameras, lighting, and software—is tested, validated, and supported by Zebra. That means fewer variables in the system, faster deployment times, and one point of contact for technical support and service. This approach significantly reduces integration risk and simplifies long-term maintenance.

Streamlined operation and system management

The controller supports a variety of Zebra frame grabbers and I/O cards, enabling tailored configurations to meet a broad range of machine vision challenges—from high-speed inspections to precise part verification. Its embedded Intel Core processor delivers the power and performance to handle both traditional rule-based vision and compute-intensive deep learning tasks, all while supporting multi-camera installations.

Meet the next-generation demands of industrial edge and AI-driven machine vision.

For more information, please visit www.zebra.com/4sight-xv7

Validated and supported by Zebra

Purpose-built for vision

The XV7 is an expandable industrial vision controller built to meet the rigorous demands of multi-camera, resource-intensive machine vision applications. It draws on the success of Zebra's proven 4Sight Series, adding more processing power, greater flexibility, and enhanced ruggedness in a compact footprint designed for industrial environments.

Engineered for vision workloads

Unlike generic computing solutions, the XV7 is engineered from the ground up for processing and analysis of complex, AI-intensive vision applications. It supports the synchronized capture and processing of data from multiple cameras, making it ideal for applications such as product inspection, quality assurance, optical character recognition (OCR), barcode reading, and assembly verification.

Powerful and scalable

Built to grow with you

One of the standout features of the XV7 is its expandability. The system is equipped with a powerful processor, a large-capacity power supply, and four expansion slots, all within a compact, rugged enclosure. As your inspection needs grow—whether you're adding more cameras, implementing advanced analytics, or integrating with higher-level control systems—the XV7 is ready.

Wide range of add-on capabilities

Powered by the latest Intel Core processors and equipped with four full-height, 3/4-length PCIe expansion slots, the XV7 can host a wide range of add-on cards, such as frame grabbers, GPUs, and additional I/O modules. Its robust power architecture includes both 420 W VDC and 600 W VAC power supply options to support high-performance upgrades.

Expandability for today and the future

With four Ethernet ports, eight USB ports, and quad-display connectivity, the XV7 enables seamless integration of multi-camera setups and advanced processing capabilities. Whether deploying for today's demanding inspections or preparing for future workloads, the XV7 delivers the expandability and performance required to adapt to evolving production requirements.

Built to last

Rugged and reliable

In industrial settings, dust, vibration, temperature fluctuations, and mechanical shock are everyday realities. The XV7 is built to thrive in these environments. Its durable, industrial-strength casing shields sensitive components from damage, while its wide operational temperature range ensures reliable performance, even under harsh conditions.

Where standard computing platforms might fail, the XV7 delivers consistent uptime—minimizing costly disruptions and helping maintain high production efficiency.

A strategic upgrade

The XV7 is built on the trusted legacy of Zebra's 4Sight Series, with advancements that reflect real-world customer feedback and needs. It provides the performance headroom needed for next-gen imaging, the industrial reliability demanded by production lines, and the expandability that makes it a long-term solution rather than a short-term patch.

Ready-to-deploy software

Enterprise-wide compatibility

The XV7 comes pre-loaded with Microsoft® Windows® 11 IoT Enterprise, offering a stable, secure and industrial-grade operating system designed for long-term deployment in demanding environments. This streamlined platform ensures compatibility with a wide array of machine vision tools and enterprise systems.

Minimize setup time

To accelerate development and reduce integration time, the XV7 also comes pre-installed with a choice of Zebra's powerful vision software: either Aurora Design Assistant™ or Aurora Vision Studio™. These intuitive, graphical development environments empower users to quickly design, test, and deploy machine vision applications—whether they're building custom inspection workflows or implementing advanced deep learning algorithms.

Specifications

Device characteristics	
Dimensions	10.3 inches L x 13.7 inches W x 6.1 inches H 26.2 cm L x 34.9 cm W x 15.5 cm H
Material	Heavy-duty steel
Mounting	Horizontal or vertical
Cooling fan	120 mm 224 CFM
Interface ports and connectivity	Four (4) PCIe full-height, ¾-length expansion slots Two (2) USB 2.0 ports in the front
User indicators	Power LEDs, HDD notification LEDs
Motherboard	Micro-ATX form factor (9.6 x 9.6 inches or 24.4 x 24.4 cm) Intel R680E Platform Controller Hub (PCH) Four (4) 288-pin UDIMM sockets Up to 192 GB (ECC/Non-ECC) dual-channel DDR5 up to 4400 MHz
Display connections	One (1) VGA output, up to 1920 x 1200 @ 60 Hz Two (2) display ports output, up to 4096 x 2304 @ 60 Hz One (1) HDMI 2.0a output, up to 4096 x 2160 @ 24 Hz
2.5 Gigabit Ethernet ports	One (1) Intel Ethernet connection I226-LM Three (3) Intel Ethernet connection I226-V
USB ports	Four (4) USB 3.2 Gen 2 ports (rear I/O) Four (4) USB 3.2 Gen 1 ports (rear I/O) Two (2) USB 3.2 Gen 1 ports (internal) Three (3) USB 2.0 ports (1 internal, 2 front panel)
Serial ports	One (1) RS-232/RS-422/RS-485 port (RS-232 w/power; rear I/O) One (1) RS-232/RS-422/RS-485 port (RS-232 w/power; internal) Two (2) RS-232 ports (internal)
Other ports and connectors	Four (4) SATA 3.0 ports up to 6 Gb/s (internal), support for RAID 0, 1, 5, and 10 One (1) M.2 Key M (2242/2260/2280) PCIe x4 Gen4 connector, support for NVMe/SATA One (1) M.2 Key M (2242/2260/2280) PCIe x4 Gen4 connector, support for NVMe (used by 256 GB SSD) One (1) M.2 Key E (2230) connector Audio (stereo) line-out Mic-in One (1) PS/2 port (internal)
PCIe Gen4 slots	Slot 1: PCIe x16 (x8 if slot 3 used in x8) Slot 2: PCIe x4 (open edge socket) Slot 3: PCIe x8 (mechanically x16) Slot 4: PCIe x4 (open edge socket)

Performance characteristics	
CPU	Intel® Core™ i5 processors 14501E Six (6) cores 3.3–5.2 GHz 24 MB cache Intel® UHD Graphics 770 300 MHz–1.55 GHz 32 execution units
Memory	32 GB DDR5-2800 MHz (5600 MT/s)
Storage	256 GB M.2 2280 NVME SSD
Power	
Integrated 600 W power supply	AC input 100–240 VAC 50–60 Hz 80 Plus Platinum rated Supplemental power connectors: Two (2) SATA power (12 and 5 VDC) Four (4) 6-pin + 2-pin PCIe power
Optional integrated 24 VDC power supply (420 W)	DC input 18–36 VDC 80% efficiency Supplemental power connectors: Two (2) SATA power (12 and 5 VDC) Four (4) 6-pin + 2-pin PCIe power
User environment	
Operating temperature	32°F to 113°F (0°C to 45°C)
Storage temperature	-40°F to 158°F (-40°C to 70°C)
Relative humidity (non-condensing)	AC PSU up to 85%, 24 VDC PSU up to 80%
Certifications	
FCC Class A CE Class A RoHS-compliant	
Software	
Pre-loaded with Microsoft Windows 11 IoT Enterprise (64-bit) Optionally pre-loaded with Aurora Design Assistant development and run-time environments Optionally pre-loaded with Aurora Vision Studio development and run-time environments	

Markets and Applications

Warehousing/ manufacturing

- Multi-camera imaging
- 3D inspection
- Edge AI inspection