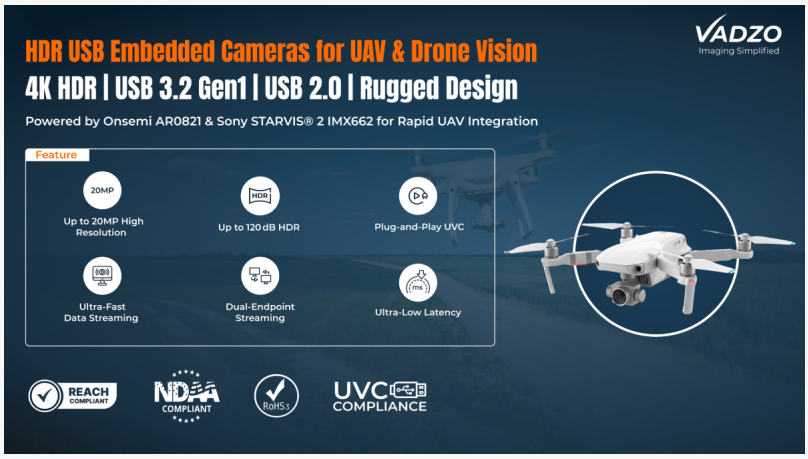
Vadzo Imaging Introduces HDR USB Embedded Cameras Recommended for Drone and UAV Applications

High dynamic range USB cameras delivering up to 120+ dB HDR, and ultra-low light imaging, engineered for embedded vision platforms and UAV applications



Vadzo's Embedded USB Drone Camera

HAMBURG, GERMANY, May 29, 2026 /EINPresswire.com/ -- Vadzo Imaging, a global leader in embedded vision, announces the availability of its HDR USB embedded camera lineup, the Falcon-821CRS and Merlin-662CRS, now recommended for drone and UAV applications alongside their established use in robotics, industrial automation, and edge AI systems.

Powered by the Onsemi AR0821 and Sony IMX662 STARVIS® 2 sensors, these cameras deliver up to 120+ dB high dynamic range, plug-and-play UVC compliance, and ultra-low light sensitivity across USB 3.0 and USB 2.0 interfaces. For UAV deployments, Vadzo offers locking ruggedized connector variants and board-level customization to address the mechanical and environmental demands of aerial operation, ensuring reliable imaging through vibration, shock, and repeated field handling.

Highlights:

Falcon-821CRS, 8MP USB Camera delivers 8MP 4K imaging at up to 120+ dB HDR over USB 3.0 with full UVC compliance.

Merlin-662CRS pairs Sony IMX662 STARVIS® 2 low-light and NIR sensitivity with onboard storage and dual-endpoint streaming.

Locking ruggedized USB connector variants available for UAV deployments requiring vibration and shock resistance

Board-level customization including form factor redesign, firmware modification, and connector re-engineering available.

Compatible with NVIDIA Jetson, Raspberry Pi 4/Pi 5, and standard USB hosts for rapid development and production deployment.

USB Cameras in UAV Applications: The Vadzo Advantage and How Vadzo Addresses Real Deployment Concerns

USB cameras offer a compelling set of advantages for UAV developers: plug-and-play UVC operation across operating systems without custom driver bring-up, broad compatibility with NVIDIA Jetson, Raspberry Pi, and general-purpose embedded Linux hosts, and a straightforward single-cable integration model that reduces development time significantly compared to MIPI CSI-2 board bring-up. For mid-size UAVs, rapid prototyping platforms, and drone builds where the compute unit and camera are in close proximity, USB delivers capable HDR imaging with the lowest integration friction of any interface in the embedded camera ecosystem.

That said, USB cameras present specific engineering challenges in UAV deployments that must be addressed for reliable aerial operation.

Connector Vulnerability Under Vibration and Shock: Standard USB-C and Micro-B connectors can work loose under continuous motor vibration and hard landing shock loads, causing signal dropout or camera disconnection mid-flight. Vadzo offers locking ruggedized USB connector variants for both cameras to maintain secure contact under UAV operating conditions. For OEM integrators needing deeper integration, Vadzo's board customization program supports connector re-engineering and form factor redesign to match specific airframe mounting requirements.

Falcon-821CRS - Onsemi AR0821 8MP HDR USB 3.2 Gen 1 UVC Camera

Built on the Onsemi AR0821 sensor with a 1/1.8" optical format and 2.9 µm pixel size, the Falcon-821CRS delivers 8MP (3848×2168) imaging at up to 30fps with up to 120+ dB dynamic range, and onboard auto-exposure over USB 3.2 Gen 1 Type-C. Full UVC compliance means zero-driver operation on Linux, Windows and Android. For UAV developers, its 120+ dB HDR ensures usable imagery across the full luminance contrast of aerial scenes such as bright sky against dark terrain, sun-lit rooftops adjacent to shadowed alleyways, or coastal surveys with water glare. Supported by VISPA ARC SDK with APIs in C, C++, C#, and Python, and available with locking ruggedized connector and board customization for production drone integration.

Key specs: 8MP (3848×2168) | Onsemi AR0821 | 1/2" | 2.9 µm | USB 3.0 Gen 1 | UVC | 120 dB HDR | LED Flicker Mitigation | Windows / Linux / Android | Locking connector variant available | Compatible: NVIDIA Jetson, Raspberry Pi 4/Pi 5, NXP i.MX8

Merlin-662CRS - Sony IMX662 STARVIS® 2 Compact 2MP HDR USB 2.0 UVC Camera

The Merlin-662CRS, 2MP USB UVC camera deploys the Sony IMX662 STARVIS® 2 sensor in a USB 2.0 form factor, delivering 2MP (1920×1080) at up to 60fps with Clear HDR, ultra-low light and NIR sensitivity, onboard storage, and dual-endpoint streaming. Onboard storage ensures flight footage is retained locally even during RF link dropout over extended missions. Dual-endpoint streaming simultaneously delivers a live downlink feed alongside the local recording without a secondary capture device. Its sub-12g weight makes it viable on sub-250g commercial drones and micro-UAV frames, while Sony STARVIS® 2 sensitivity extends operational capability into low-light, dusk, and NIR-illuminated scenarios. Available with locking ruggedized connector variant and board customization for OEM drone integration.

Key specs: 2MP (1920×1080) | Sony IMX662 STARVIS® 2 | 1/2.8" | 2.9 µm | USB 2.0 | Clear HDR | NIR | Onboard storage | Dual-endpoint streaming | <12g | Locking connector variant available | Compatible: NVIDIA Jetson Nano, Raspberry Pi Zero 2W

Frequently Asked Questions

Q: Are these cameras only for drones?

No. The Falcon-821CRS and Merlin-662CRS are general-purpose embedded cameras actively deployed in robotics, industrial inspection, medical imaging, smart retail, and edge AI platforms. UAV and drone deployment is a recommended use case given their SWaP efficiency, HDR performance, and plug-and-play host compatibility.

Q: Standard USB connectors are not designed for vibration. How does Vadzo address this for drone use?

This is a real and important concern. Standard USB-C and Micro-B connectors can work loose under the continuous vibration and shock loads of UAV operation, causing dropout or disconnection mid-flight. Vadzo offers locking ruggedized USB connector variants for both the Falcon-821CRS and Merlin-662CRS that maintain secure mechanical and electrical contact under vibration and shock conditions representative of drone operation. For OEM integrators and UAV developers, requiring deeper mechanical integration, alternative retention schemes, custom board form factors, or connector re-engineering to match specific airframe mounting, Vadzo's customization program supports these modifications. Contact Vadzo's engineering team at support@vadzoimaging.com to discuss your specific airframe and mounting requirements.

Q: What board and hardware customization options does Vadzo offer for drone manufacturers and integrators?

Vadzo's customization program supports form factor and board redesign to match specific

airframe constraints, firmware modifications to incorporate custom features or optimize re-enumeration behavior, integration of onboard power regulation and filtering for stable operation under variable bus power conditions, connector re-engineering for ruggedized retention, and design and integration of additional sensors including IMU, ToF, and mmWave radar. Enclosure design for IP-rated and non-IP-rated configurations is also available. Reach Vadzo's engineering team at vadzoimaging.com/contact-us for customization scope and lead time.

Q: What SDK is available, and which platforms are supported?

Both cameras are supported by Vadzo's VISPA ARC SDK, providing APIs in C, C++, C#, and Python for ROI control, auto-exposure management, trigger and flash synchronization, binning, windowing, and firmware management. Compatible platforms include NVIDIA Jetson (all variants), Raspberry Pi 4/Pi 5, and any Linux, Windows, or Android host with a standard USB controller.

Availability

The Falcon-821CRS and Merlin-662CRS are available now for evaluation and production orders. Contact Vadzo at +1 817-678-2139 or www.vadzoimaging.com to request an evaluation kit or discuss customization requirements.

About Vadzo Imaging

Vadzo Imaging is a global leader in embedded vision solutions, providing developers and OEMs with high-performance cameras and imaging platforms for UAVs, robotics, edge AI, industrial automation, and medical devices. Products are optimized for NVIDIA Jetson, Raspberry Pi, Qualcomm RB series, and NXP i.MX platforms. Vadzo supports customers with hardware customization, firmware development, and VISPA ARC SDK to accelerate vision product development. Learn more at www.vadzoimaging.com.

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