



Ambarella Launches Powerful Edge AI 8K Vision SoC With Industry-Leading AI and Multi-Sensor Perception Performance

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New 4nm CV7 System-on-Chip Provides Ideal Combination of Simultaneous Multi-Stream Video and Advanced On-Device Edge AI Processing With Very Low Power Consumption

SANTA CLARA, Calif., Jan. 05, 2026 (GLOBE NEWSWIRE) -- [Ambarella, Inc.](#) (NASDAQ: AMBA), an edge AI semiconductor company, today announced during CES the CV7 edge AI vision system-on-chip (SoC), which is optimized for a wide range of AI perception applications. Examples include advanced, AI-based 8K consumer products (e.g., action and 360-degree cameras), multi-imager enterprise security cameras, robotics (e.g. aerial drones), industrial automation and high-performance video conferencing devices. The CV7 is also ideal for multi-stream automotive designs—especially those running CNNs and transformer-based networks at the edge—such as AI vision gateways and hubs in fleet video telematics, 360-degree surround-view and video-recording applications, and passive driver assistance systems (ADAS). These applications can all leverage the CV7 for its simultaneous processing of multiple video streams up to 8Kp60 and exceptional image quality, in combination with high-performance edge AI and low power consumption.



“Joining our wide portfolio of edge AI SoCs, with more than 39 million shipped to date, the CV7 enables consumer and enterprise security camera developers to deliver the most advanced imaging features and the highest edge AI performance, for improved video analytics and higher image quality in their next-generation products,” said Fermi Wang, President and CEO of Ambarella. “Additionally, this new SoC’s extremely low power consumption reduces thermal-management requirements for smaller form factors and longer battery life across a broad range of AIoT applications, thanks to its 4nm process technology and Ambarella’s proprietary AI SoC architecture, which is purpose built for the edge.”

Compared to its predecessor, the CV7 consumes 20% less power, thanks in part to Samsung’s 4nm process technology, which is Ambarella’s first on this node. The CV7 is also architected using Ambarella’s algorithm-first design philosophy to efficiently run all processing tasks simultaneously, with extremely high performance and low power consumption—continuing the company’s leadership position for the industry’s best AI performance per watt.

In contrast to competing multi-chip solutions, the CV7 is a highly integrated SoC with multiple functional blocks, resulting in superior performance,

smaller form factors, improved time-to-market and reduced bills-of-material. The CV7 incorporates Ambarella's proprietary AI accelerator, image signal processor (ISP), and video encoding, together with Arm® cores, I/Os and other functions, to provide customers with the most powerful and efficient AI vision SoC in its class.

That high AI performance is powered by Ambarella's proprietary, third-generation CVflow® AI accelerator, with more than 2.5x AI performance over the previous-generation CV5 SoC. This allows the CV7 to support a combination of CNNs and transformer networks, running in tandem.

The CV7 also continues Ambarella's track record of providing industry-leading image signal processing, including high dynamic range (HDR), dewarping for fisheye cameras, and 3D motion-compensated temporal filtering (MCTF)—all with higher performance and better image quality than its predecessor—using a combination of traditional ISP techniques and AI enhancements. The result is that the CV7 provides impressive image quality in low light, down to 0.01 Lux, as well as improved HDR for video and images with more vivid details in scenes with starkly contrasting bright and dark areas.

Also contributing to the CV7's advancements is its hardware-accelerated video encoding (H.264, H.265, MJPEG), which boosts encode performance by 2x over the CV5. This improvement enables a max video encode of a single 4Kp240 stream, or dual 8Kp30. Additionally, for the next generation of multi-imager enterprise security cameras, the CV7 can easily support, running concurrently, over 4x 4Kp30 with multiple streams, as well as the latest transformer-based AI networks and vision-language models (VLMs).

The CV7's on-chip general-purpose processing was also upgraded to a quad-core Arm Cortex-A73, offering 2x higher CPU performance over the previous SoC. Additionally, its 64-bit DRAM interface provides a significant improvement in available DRAM bandwidth compared to the CV5.

CV7 SoC samples are available now, and it is being demonstrated at Ambarella's invitation-only exhibition during CES in Las Vegas this week. For more information or to schedule a demo during the show, please contact your Ambarella representative or visit www.ambarella.com/products/aiot-industrial-robotics.

About Ambarella

Ambarella's products are used in a wide variety of edge AI and human vision applications, including video security, advanced driver assistance systems (ADAS), electronic mirrors, telematics, driver/cabin monitoring, autonomous driving, edge infrastructure, drones and other robotics applications. Ambarella's low-power systems-on-chip (SoCs) offer high-resolution video compression, advanced image and radar processing, and powerful deep neural network processing to enable intelligent perception, sensor fusion and planning. For more information, please visit www.ambarella.com.

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Ambarella CV7 Edge AI 8K Vision SoC featuring industry-leading AI and multi-sensor perception performance.



Ambarella announces their latest CV7 Edge AI 8K Vision SoC featuring industry-leading AI and multi-sensor perception performance. Built on Ambarella's algorithm-first design philosophy, it runs all processing tasks simultaneously with exceptional performance and ultra-low power consumption—extending Ambarella's leadership with best-in-class high-resolution video processing and AI performance per watt.