



Ambarella Expands Security AI Vision SoC Portfolio With Two New Families; Doubles Resolution to 32MP30 for 4K Multi-Imager Cameras With Advanced AI

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New CV5S and CV52S Families Provide Industry-Leading Combination of 4K Encoding, Advanced AI Performance and Extremely Low Power Consumption

SANTA CLARA, Calif.--(BUSINESS WIRE)--Jun. 21, 2021-- Ambarella, Inc. (NASDAQ: AMBA), an AI vision silicon company, today announced the expansion of its AI vision SoC portfolio with the new CV5S and CV52S security families. Based on the CVflow[®] architecture and advanced 5nm process technology, the new SoCs support simultaneous 4K encoding and advanced AI processing in a single low-power design, which provides industry-leading edge AI SoC performance per watt. The CV5S family is ideal for security camera applications that require multiple sensors for 360-degree coverage, over a wide area and with a long range, such as outdoor city environments or large buildings. The CV52S family is designed for single-sensor security cameras with advanced AI performance that need to more clearly identify individuals or objects in a scene, including faces and license plate numbers over long distances, such as ITS traffic cameras.

This press release features multimedia. View the full release here: <https://www.businesswire.com/news/home/20210621005178/en/>



“Security system designers desire higher resolutions, increasing channel counts, and ever faster and more ubiquitous AI capabilities,” explained John Lorenz, senior technology & market analyst, computing at Yole Développement (Yole). “Ambarella’s newest AI vision SoCs for security, the CV5S and CV52S, are competitive solutions for meeting the growing demands of the security IC sector, which we forecast to exceed \$4 billion by 2025, with two-thirds of that being chips with AI capabilities.” (1)

The new CV5S SoC family supports multi-imager camera designs and can simultaneously process and encode four imager channels of up to 8MP, or 4K resolution, each at 30 frames per second (fps), while performing advanced AI on each 4K imager. These SoCs double the encoding resolution and memory bandwidth while consuming 30% less power than Ambarella’s prior generation.

The new CV52S SoC family targets single-sensor security cameras and supports 4K resolution at 60fps, while providing 4x the

Ambarella announces the CV5S and CV52S edge AI vision SoC families for next-generation multi-imager and single-imager video security, smart city, smart building, smart retail and smart traffic AIoT camera applications. (Photo: Business Wire)

AI computer vision performance, 2x the CPU performance and 50% more memory bandwidth than its predecessors. This increase in neural network (NN) performance enables more AI processing to be performed at the edge, instead of in the cloud.

“The global security industry is rapidly moving to higher 4K resolutions while increasing AI algorithm capabilities, to achieve better recognition of people and objects, along with multiple imagers for a wider field of view and longer range,” said Jerome Gigot, senior director of marketing, Ambarella. “Our new CV5S and CV52S security AI vision SoC families respectively support 4K multi-imager or high-frame-rate 4K single-imager designs with high performance edge AI processing, allowing the development of cameras that do not need to compromise between image resolution and AI processing accuracy.”

In addition to security, there are many other AIoT applications that can take advantage of the high resolution and advanced AI processing provided by these new SoC families. For example, smart cities can leverage high edge AI performance and image resolution for improved traffic management, accident detection and automated speed control, as well as the rapid location of missing and stolen vehicles. Likewise, smart retail operations can use this resolution and advanced AI to better manage product placement, adjust cashier staffing for real-time line management, enhance warehouse product tracking, and provide more actionable intelligence at both the store and corporate levels.

Additional features of the new CV5S and CV52S families include:

- Robust SDK created specifically for the security camera market
- CVflow tools that are compatible across all security families
- Dual Arm® A76 1.6GHz CPUs with 1MB of L3 memory; a 2x performance gain over the prior generation for faster customer applications
- Enhanced ISP with excellent HDR, ISO low-light, dewarping and rotation performance
- On-chip privacy masking to block out a portion of the captured scene
- New PCIe and USB 3.2 interfaces, enabling more complex, multi-chip security system designs than prior generation
- Strong on-chip cybersecurity hardware to ensure secure IP cameras, including secure boot, OTP and Arm TrustZone technology
- Multiple video inputs, with support for up to 14 cameras using MIPI virtual channels
- SLVS-EC interface on the CV5S for reduced system design complexity
- Support for LPDDR4x, LPDDR5 and LPDDR5x DRAM

Availability

The CV5S and CV52S SoC families are expected to be available for sampling in October. For more information, contact Ambarella: <https://www.ambarella.com/contact-us/>.

About Ambarella

Ambarella's products are used in a wide variety of human and computer vision applications, including video security, advanced driver assistance systems (ADAS), electronic mirror, drive recorder, driver/cabin monitoring, autonomous driving and robotics applications. Ambarella's low-power systems on chip (SoCs) offer high-resolution video compression, advanced image processing and powerful deep neural network processing to enable intelligent cameras to extract valuable data from high-resolution video streams. For more information, please visit www.ambarella.com

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1. Source: [Cameras and computing for surveillance and security report](#), Yole Développement, 2020

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