

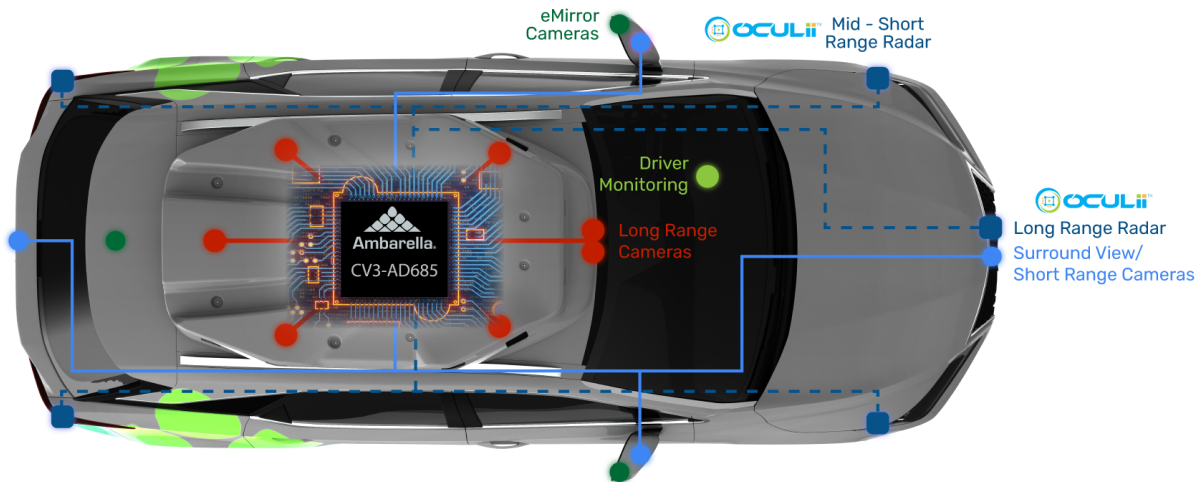


Ambarella Expands CV3 Family of Automotive AI Domain Controllers With New CV3-AD685

January 5, 2023

CV3-AD685 Provides Single-Chip Solution for Multi-Sensor Perception, Fusion and Path Planning

SANTA CLARA, Calif., Jan. 05, 2023 (GLOBE NEWSWIRE) -- [Ambarella, Inc.](#) (NASDAQ: AMBA), an edge AI semiconductor company, today announced at CES the introduction of the CV3-AD685, the first production version of the CV3 family of automotive AI domain controllers, targeting L2+ to L4 autonomous vehicles. Its next-generation CVflow[®] AI engine includes neural network processing that is 20x faster than the previous generation of CV2 SoCs, along with additional general vector processing capabilities to provide the overall performance required for full autonomous driving (AD) stack processing, including computer vision, HD radar, deep fusion and planning. It also integrates advanced image processing, a dense stereo and optical flow engine, Arm[®] Cortex[®] A78AE and R52 CPUs, an automotive GPU for visualizations, and a hardware security module (HSM). The CV3-AD685 is an "algorithm first" architecture that provides support for the entire AD software stack.



"Following the recent endorsements from major tier-1 suppliers, our CV3-AD domain controller family is transforming the automotive AD and ADAS market, through its unique combination of highly efficient AI processing, advanced image processing and ultra-low power consumption," said Fermi Wang, CEO of Ambarella. "The new CV3-AD685 delivers new mass-production price and performance options for our customers. It extends our lead in AI performance-per-watt and introduces new radar processing capabilities that uniquely enable the single-chip centralized processing of raw video and 4D imaging radar data."

The CV3-AD685's highly-efficient CVflow AI neural vector processor (NVP) engine enables high performance, low latency, and low-power NN processing. The NVP is enhanced to efficiently enable the latest advancements in NN inference, including support for transformer networks. Additionally, the CVflow's general vector processor (GVP) provides traditional computer vision processing while including specific optimization enhancements for HD radar. Twelve Arm Cortex A78AE CPUs and 3 dual-core, lockstep pairs of Cortex-R52 CPUs are included. CV3-AD685 is targeting ASIL-B on the chip level, with an ASIL-D safety island.

The on-chip image signal processor (ISP) provides outstanding imaging in low-light conditions, including high dynamic range (HDR) processing to extract maximum image detail in high-contrast scenes, enhancing the AI and computer vision capabilities of the chip and delivering clear video for viewing. CV3-AD685 also provides high-resolution video recording and streaming at very low bit rates with efficient encoding in the H.265 and H.264 video formats.

The hardware security module (HSM) provides isolation of different domains and secure software provisioning, as well as a suite of advanced cybersecurity features, such as asymmetric/symmetric crypto acceleration, secure storage and key provisioning, encrypted CVflow tasks, true random number generator (TRNG), one-time programmable (OTP) memory, DRAM scrambling and DRAM virtualization.

Fabricated in Samsung's advanced 5nm automotive process technology, the low power consumption CV3-AD685 SoC is an ideal platform for efficiently implementing assisted and autonomous driving for L2+ to L4 vehicles, multi-sensor ADAS, DMS and OMS in-cabin monitoring systems, multi-channel electronic mirrors with BSD, and intelligent parking assistance and automated parking systems.

During CES 2023, Ambarella will demonstrate the latest generation of its R&D vehicles running on CV3 central domain controllers.

About Ambarella

Ambarella's products are used in a wide variety of human vision and edge AI 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 and radar processing, and powerful deep neural network processing to enable intelligent perception, fusion and planning. For more information, please visit www.ambarella.com.

Ambarella Contacts

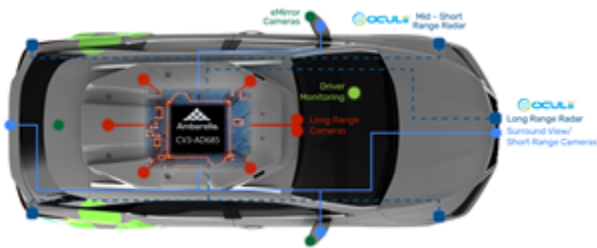
- Media contact: Eric Lawson, elawson@ambarella.com, +1 480-276-9572
- Investor contact: Louis Gerhardy, lgerhardy@ambarella.com, +1 408-636-2310
- Sales contact: <https://www.ambarella.com/contact-us/>

All brand names, product names, or trademarks belong to their respective holders. Ambarella reserves the right to alter product and service offerings, specifications, and pricing at any time without notice. © 2023 Ambarella. All rights reserved.

A photo accompanying this announcement is available at <https://www.globenewswire.com/NewsRoom/AttachmentNg/4096f215-71b9-403a-876b-df9e2decf245>



CV3-AD685 Provides Single-Chip Solution for Multi-Sensor Perception, Fusion and Path Planning



The CV3-AD685's next-generation CVflow® AI engine includes neural network processing that is 20x faster than the previous generation of CV2 SoCs, along with additional general vector processing capabilities to provide the overall performance required for full autonomous driving (AD) stack processing, including computer vision, HD radar, deep fusion and planning.