



Ambarella and INVO Tech Deliver Driver and Occupant Monitoring System for Mass Production of GAC Motor SUVs

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INVO Tech's Cockpit Super Sensory Interactive System, based on Ambarella's CV25AQ AI Perception System-on-Chip, has been mass-produced and delivered on GAC Motor SUVs

SANTA CLARA, Calif., and SUZHOU CITY, China, Nov. 09, 2022 (GLOBE NEWSWIRE) -- [Ambarella, Inc.](#) (NASDAQ: AMBA), an edge AI semiconductor company, and [Suzhou INVO Automotive Electronics Co., Ltd.](#) (hereafter referred to as "INVO Tech"), a progressive intelligent driving customized system supplier, today announced that INVO Tech's Cockpit Super Sensory Interactive System based on the Ambarella CV25AQ AI perception system-on-chip (SoC), has been mass-produced and delivered on the GAC Motor SUVs. This cooperation makes driving safer by bringing multi-sensor perception technology to vehicle smart cockpits.



As GAC's first self-developed hybrid SUV model, the Emkoo is equipped with the GAC Mega Wave Power Hybrid GMC 2.0. The maximum range of the Emkoo is 1,711 kilometers, and the fuel consumption for 100 kilometers is only 3.2L. With its youthful fashion and intelligent technology, this SUV targets young customers such as Generation Z. This model has a trendy design that looks sci-fi and avant-garde, with a variety of trims to choose from, and is favored by young customers.

The Emkoo SUV's smart hardware configuration is based on GAC Motor's in-house, full-stack smart driving technology platform. Based on years of experience in computer vision and image perception, INVO Tech, together with GAC Motor and Ambarella, have developed the Super Sensory Cockpit Interactive System. This system uses a single CV25AQ AI SoC from Ambarella, and integrates one 2 megapixel (MP) driver monitoring system (DMS) camera, one front occupant monitoring system (OMS) camera, two rear OMS cameras, and one "life monitoring" radar, along with a comprehensive layout of other integrated sensing technologies. The DMS camera uses OMNIVISION's IR sensor to sense the driver's behavior and status in all directions and scenarios. The OMS camera uses OMNIVISION's RGB-IR sensors, which are deployed in the ceiling lights and left and right B-pillars to ensure there are no blind spots in the cabin. The combined DMS and OMS cameras can not only track the driver's status and provide fatigue alerts, but can also track rear passengers to help make driving safer and easier.

Through this hardware configuration, INVO Tech, in conjunction with upstream and downstream ecosystem partners, has developed functions such as Face ID, along with the detection of driver fatigue, smoking, phone calls, gender and age, as well as the recognition of moods, gestures, signs, and other indicators to provide a super-sensory interactive experience. Examples of the functions this system provides include driver fatigue warnings,

music volume reduction during phone calls, automatic window roll down when smoking, infotainment gesture control, auto-generated mood-based music playlists, and child monitoring. INVO Tech plans to continue increasing its partner investments and collaborations to create diversified products that promote the development of autonomous driving technologies. The advanced algorithms in this project are powered by Ambarella's CVflow® AI engine inside its CV25AQ SoC.

INVO Tech's cockpit visual perception system based on Ambarella's CV25AQ SoC and related products have been mass-produced on GAC vehicle models. The CV25AQ is an automotive grade AI perception SoC from Ambarella that uses advanced 10nm process technology. It provides high AI performance and low power consumption, and is a proven technology that is mature and stable. It is popular in a wide variety of AI computer vision applications, and has industry-leading performance advantages and very low power consumption.

In addition to its AI capabilities, Ambarella's CV25AQ SoC integrates an industry-leading ISP with excellent image quality. It supports a wide variety of different CMOS image sensors (e.g., monochrome, RGBIR, RGGB), and includes features such as accurate CMOS image sensor synchronization and exposure control to avoid interference from the multi-camera infrared lights in DMS/OMS systems. These image quality advantages also help visual perception algorithms achieve greater accuracy using the CV25AQ's AI engine.

INVO Tech's Cockpit Super Sensory Interactive System complies with Euro NCAP 2025 standards. This means that it can perform reliable visual processing in complex lighting conditions to ensure the safety of the driver and the passengers. The CV25AQ's software also includes fault tolerance for unexpected interruptions in the camera signal and general fault handling, which meets the system's ASIL functional safety requirements.

The collaboration between Ambarella and INVO Tech in the Cockpit Super Sensory Interactive System has made smart vehicles safer and better. In particular, the companies have further improved the safety of smart cockpits. They plan to continue their collaborations, in support of making vehicles safer.

About INVO Tech

INVO Tech (Full name: Suzhou INVO Automotive Electronics Co., Ltd.), founded in 2012, is a supplier of progressive intelligent driving customization systems and is a fully independent R&D intelligent driving enterprise cultivated by Tsinghua University. The company has advanced intelligent driving integrated sensing and regulation algorithm capabilities. It has design, development and innovation capabilities of customized intelligent driving systems and smart sensors, as well as leading automotive-grade manufacturing capabilities. The company focuses on three smart driving scenarios: smart driving, smart parking, and smart cockpit, providing advanced, safe and reliable intelligent driving system products for the global automotive industry. Learn more at www.invo.cn.

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 perception, fusion and central processing systems to extract valuable data from high-resolution video and radar streams. For more information, please visit www.ambarella.com.

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