NEWS RELEASE

OPEN AI LAB and Ambiq Join Hands and Lead the Way to Ultra-Low Power AIoT Edge devices

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Intelligent voice plays an essential role in enabling the implementation and utilization of artificial intelligence (AI) for a connected world. The scope of the intelligent voice mainly encompasses speech recognition, speech synthesis, and natural language processing. All leading technology giants in China have been actively participating in cross-industry joint developments. Their shared goal is to implement voice technology into all consumer products and business scenarios that will further strengthen the expansion of the entire ecosystem.

Different from the traditional touch “wake-up,” the always-on voice “wake-up” has stricter requirements, including the power consumption of the device, the accuracy of the microphone pickup, and the quick recognition of the user’s wearing state. It also means more advanced technical support.

How VoxTrend-TWS & VoxTrend-AIC enable always-on voice command
Ambiq®, a global pioneer in ultra-low power semiconductors, focuses on the research and development of ultra-low power Apollo family of system on Chips (SoCs). Built on its proprietary SPOT® platform (sub-threshold power optimization technology), Apollo can significantly reduce energy consumption without compromising the device’s performance, quality, or functionality. Apollo chips can meet the growing algorithm processing demand with the increased number of audio sources while lowering energy consumption and eliminating additional battery requirements.

OPEN AI LAB works closely with Ambiq to launch the ultra-low-power wearable voice solution VoxTrend-TWS and the ultra-low-power full-stack Bluetooth far-field voice solution VoxTrend-AIC.

Based on either the Apollo2 Blue, Apollo3 Blue, or Apollo3 Blue Plus chips, VoxTrend-TWS can achieve “offline wakewords” and “always-on command words” under minimal resources of 12MIPS and 26K RAM overhead.

Voxtrend-AIC, based on the Apollo3 Blue or Apollo3 Blue Plus chip, leverages Bluetooth Low Energy voice transmission function to achieve long-distance voice transmission. Voxtrend-AIC takes into account both low-power consumption and mid/far-field voice interactions, meeting the dual requirements of each smart edge device on low power consumption, low latency, and high performance. At present, the solution supports the Alexa® Mobile Accessory protocol and Tencent’s small and micro protocol, with the 10-meter far-field recognition rate being higher than 95%. It also supports international multilingual applications and has been widely adopted by the industry after achieving multiple large-scale mass production and validation.

Leading The Ultra-low Power Consumption Future Together with Ambiq

Previously, the two companies had jointly participated in CES 2020 with the hard-core speech recognition product solution VoxTrend. VoxTrend is an embedded speech recognition software development kit (SDK) developed by OPEN AI LAB. It uses Tengine-Lite as the platform and can run smoothly on Arm® Cortex®-M4F. It is suitable for various voice interactive IoT scenarios. The algorithm model exhibited at CES run on Ambiq’s Apollo3 Blue SoC platform. It only required about 390μW* of power to wake up 11 Chinese voice command words accurately. VoxTrend provides concise, friendly, and universal APIs, which can be quickly deployed to the target hardware platform to accelerate the rapid productization of speech recognition edge products. At the same time, it supports multiple operating systems such as FreeRTOS™ and RT-Thread™ by default. VoxTrend was chosen as one of the highlights at past CES.

As more and more voice AI applications are in demand, the two companies will continue to work together to share their respective advantages, and create ultra-low power solutions, and lead the market to an ultra-low power consumption future.

Powered by Tengine, AI Anything

OPEN AI LAB is dedicated to providing complete voice AI solutions for applications from the cloud, edge, to edge devices. Our “Powered by Tengine” platform is intended to provide all up and downstream partners free and open opportunities to collaborate with their peers. We believe the only way to achieve an intelligent society is to have the entire industry cooperates to collectively address the fragmentation issues that are plaguing the AIoT industry. Together, we’ll enable intelligence everywhere.

About Ambiq

Founded in 2010, the company is headquartered in Austin, Texas. The company philosophy is “very low-power semiconductors are the key to the future of the electronics industry” and is committed to helping innovative

companies around the world develop differentiation with pioneering ultra-low power technologies solution. Ambiq's original breakthrough technology greatly reduces the total power consumption of semiconductors, making its low-power products an ideal solution for energy-sensitive applications such as wearable devices and the Internet of Things.

About OPEN AI LAB

Founded in 2016, the company focuses on edge intelligent computing and applications, and is committed to promoting the in-depth collaboration of the complete industrial chain of chip-level computing power, algorithms, product engineering, and industry applications, accelerating the deployment of artificial intelligence industrialization and the boundary expansion of scenarios, and It can quickly realize +AI in scene-based segmentation industries. To provide upstream and downstream partners in the AIoT industry with end, edge, and cloud integrated AI basic software and hardware development platforms and application-level solutions.

* Based on the algorithm's average consumption of about 12MIPS.