Himax and Emza Announce the World's First Human-Aware Intelligent Vision Solution for Notebooks

AI-based ultra-low power solution to be demonstrated at Computex 2019

TAINAN, TAIWAN AND GIV'ATAYIM, ISRAEL, May 22, 2019 – Himax Technologies, Inc. (NASDAQ:HIMX) a leading supplier and fabless manufacturer of display drivers and other semiconductor products, and its wholly-owned subsidiary, Emza Visual Sense, a pioneer in AI-based algorithm for intelligent ultra-low power image sensing, announced today the release of their WiseEye 2.0 NB, an intelligent vision solution for notebook computers. It is the industry's first ultra-low power, AI-based intelligent visual sensor that adds the advanced human presence awareness functionality for notebooks while supporting always-on operation. The solution has been tested and well received by the leading global chipmaker and Quanta Computer, the world's largest original design manufacturer (ODM) of notebook computers, for inclusion in their next-generation mainstream notebook platforms. The solution will be showcased by Quanta at the 2019 Computex trade show, May 28 - June 1, in Taipei.

In response to notebook users' demands for an always ready, adaptive and interactive device, notebook vendors can now provide always-on human presence sensing functionality using artificial intelligence as a key technology for enhancing the user experience.

"We are excited that the WiseEye 2.0 solution's coverage has expanded from IoT devices to notebook computers as it opens up new growth opportunities in the high-end notebook ecosystem. It's a real win-win situation for OEMs, ODMs and Himax/Emza. Our unique technology consists of Himax's CMOS image sensor and Emza's AI-based computer vision algorithm running on an Himax-designed ASIC, all catered for ultra-low power consumption to enable always-on operation of the end device. The partnership with the world's leading chipmaker and notebook ODM allows us to closely engage with multiple global notebook OEMs, targeting their next generation product launches for the 2020 back to school season," said Jordan Wu, President and Chief Executive Officer of Himax Technologies.

The Himax/Emza WiseEye 2.0 NB intelligent vision solution for notebooks is built on Emza's unique AI-based machine learning computer vision algorithms and Himax's proprietary processor as well as its ultra-low power CMOS image sensor – this enables seamless integration of sensing user context awareness for an improved notebook user experience. The always-on camera enables multiple computer vision applications such as device wake-up when user is present, screen lock when absent, screen dimming when disengaged, and privacy alerts when a second person is identified in the field of view.

"Quanta is proud to be at the forefront of notebook innovation with the inclusion of the Himax/Emza WiseEye 2.0 NB visual solution in its next generation devices," said Alan Chai, Senior Vice President of Quanta Computer, "the advanced sensing of human presence is sure to lower notebook's energy consumption and add to overall enhanced user experience."

The key features of the WiseEye 2.0 NB intelligent visual sensor for human presence detection include:

- Enhanced AI-enabled User Experience: Unique combination of ultra-low power image sensor and energy efficient CV image processing algorithm, augmented with AI-based machine learning, enable advanced intelligence for automatic wake up of the notebook from standby mode or locking the screen based on specific human behavior or movements. This is a significant improvement over the existing solutions that do not function when the notebook is in sleep mode.

- Extended Battery Life: AI-based always-on camera (AoS) can detect user engagement levels based on presence and face posing, enabling power management of the display and maximizing battery life.
- Improved Privacy and Security: WiseEye 2.0 NB can detect the presence of additional humans in the field of view and send an alert to the user.
- Expanded Field of View (FOV): Optimized for 60-90 degree horizontal FOV and flexible vertical FOV as opposed to currently used simple sensors which are sensitive to screen angles. Wider FOV can enable early detection and sensing of flexible movement even when users are close to the screen.
- Increased Distance Detection: High accuracy sensing of human presence from up to 5 meters away enables a quick response to user detection even when approaching the device at high speeds.
- Production Friendly Technology: Does not need strict tolerances in mounting versus solutions that require calibration due to limited FOV.
- Tiny Form Factor: The Himax 2-in-1 (AoS and RGB) CMOS image sensor is the first hybrid CMOS sensor specifically for notebook computers. The sensor combines high quality HD image capabilities with ultra-low-power visual sensing, for AI context awareness applications. The new CMOS sensor will be available at end of 2019
- Privacy Awareness: The sensor image is processed entirely on the dedicated WiseEye 2.0 processor, co-located with the CMOS image sensor, so that the image is never transmitted to the main platform. This architecture is specially designed to meet the highest privacy standards.

“Expanding our industry leading intelligent vision solutions into notebook computing is a great achievement,” said Yoram Zylberberg, CEO of Emza Visual Sense, “applying ultra low-power machine learning AI for notebooks is the key especially while device operation is suspended to extend the life of the battery. Leveraging the AI benefits that we developed for IoT and now applying it to notebook is a great demonstration of the agility of our solution and our readiness to adapt the technology for specific customer requirements.”

Emza and Himax will showcase the WiseEye 2.0 NB intelligent visual sensor for notebooks together with Quanta at the upcoming 2019 Computex trade show, May 28-June 1, in Taipei. To schedule a meeting, contact info@emza-vs.com.

About Emza Visual Sense

Emza Visual Sense develops sub-milliwatt, trainable, low-cost, autonomous, tiny computer-vision IoT sensors for automatic scene interpretation of the visual world around us. The low cost, ultra-low power consumption and high intelligence make our visual sensors applicable and affordable to a wide range of markets and applications – from accurate counting and tracking of people in smart buildings and connected homes to people awareness for home appliances. Emza’s visual sensors are smaller than a coin, consume less than 1mW and reduce cost by an order of magnitude. Our proprietary algorithms are embedded at the edge and are specially designed for extremely thin computing cores and a unique ultra-low power CMOS image sensor. Emza explores the limits of what can be achieved with minimal resolution, frame rate, processing power, memory size, power consumption - and cost. Visit us at www.emza-vs.com

About Himax Technologies, Inc.

Himax Technologies, Inc. (NASDAQ: HIMX) is a fabless semiconductor solution provider dedicated to display imaging processing technologies. Himax is a worldwide market leader in display driver ICs and timing controllers used in TVs, laptops, monitors, mobile phones, tablets, digital cameras, car navigation, virtual reality (VR) devices and many other consumer electronics devices. Additionally, Himax designs and provides controllers for touch sensor displays, in-cell Touch and Display Driver Integration (TDDI) single-chip solutions, LED driver ICs, power management ICs, scaler products for monitors and projectors, tailor-made video processing IC solutions, silicon IPs and LCOS micro-displays for augmented reality (AR) devices and heads-up displays (HUD) for automotive. The Company also offers digital camera solutions, including CMOS image sensors and wafer level optics for AR devices, 3D sensing and machine vision, which are used in a wide variety of applications such as mobile phone, tablet, laptop, TV, PC camera, automobile, security, medical devices, home appliance and Internet of Things. Founded in 2001 and headquartered in Tainan, Taiwan, Himax currently employs around 2,200 people from three Taiwan-based offices in Tainan, Hsinchu and Taipei and country offices in China, Korea, Japan, Israel, and the US. Himax has 2,965 patents granted and 517 patents pending approval worldwide

as of March 31st, 2019. Himax has retained its position as the leading display imaging processing semiconductor solution provider to consumer electronics brands worldwide.

http://www.himax.com.tw

Forward Looking Statements

Factors that could cause actual events or results to differ materially include, but not limited to, general business and economic conditions and the state of the semiconductor industry; market acceptance and competitiveness of the driver and non-driver products developed by the Company; demand for end-use applications products; reliance on a small group of principal customers; the uncertainty of continued success in technological innovations; our ability to develop and protect our intellectual property; pricing pressures including declines in average selling prices; changes in customer order patterns; changes in estimated full-year effective tax rate; shortages in supply of key components; changes in environmental laws and regulations; exchange rate fluctuations; regulatory approvals for further investments in our subsidiaries; our ability to collect accounts receivable and manage inventory and other risks described from time to time in the Company's SEC filings, including those risks identified in the section entitled "Risk Factors" in its Form 20-F for the year ended December 31, 2018 filed with the SEC, as may be amended.

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