

ams advanced optical sensor family integrates touchless gesture detection and e-commerce functionality

TMG399x intelligent sensor modules offer a flexible, highly-integrated implementation of touchless user interface and display management features for smartphones, tablets and many other consumer devices

Unterpremstaetten, Austria (11 November, 2014), ams AG (SIX:AMS), a leading provider of high performance sensors and analog ICs, today released a new family of intelligent sensors that integrate six key sensing functions including gesture detection and Mobeam barcode emulation. The TMG399x product family is ideally suited for touchless gesture control and display management in smartphones, tablets and many other consumer electronics on the market today.

Advanced gesture-recognition software developed by ams supports a wide range of gestures, enabling touchless control for consumer devices. Gesture detection utilizes four directional photodiodes to sense reflected IR energy, then converts this data into physical motion information including: velocity, direction and distance. As sensors continue to proliferate in today's mobile devices, support for sensor hub architectures has become an important requirement to enable optimum system performance.

The TMG399x gesture software currently supports optimized Android drivers, and a fully-qualified gesture library is available for the Qualcomm ADSP sensor core on the Snapdragon 6xx and 8xx processor family for four-direction gesture, plus ALS, proximity, and all the other standard features. The ams gesture software offers expanded capability to include support for eight-direction gesture, push button and taps, and work is in-progress to support other industry-leading third-party sensor hub devices.

The gesture engine features automatic ambient light subtraction, crosstalk cancelation, dual 8-bit data converters, power saving inter-conversion delay, 32-dataset FIFO, and interrupt driven I2C communication. It accommodates a wide range of gesture-detection requirements, from simple North-South-East-West gestures to more complex gestures, including simulated button pushing and taps. Power consumption and noise are minimized with adjustable IR LED timing and optimized gesture algorithms.

The TMG399x product family also integrates industry-leading color sensors from ams. Accurate color management and light intensity measurements are critical parameters for display management in portable devices operating under a wide range of light sources, including fluorescent, incandescent and sunlight. Proximity detection, composed of the IR LED and sensor, is optimized for object detection within 100mm and can be used to simplify a product's user interface, such as intelligent on/off control of



smartphone touchscreens. The proximity detection is factory-calibrated to a distance of 100mm, eliminating the need for OEMs to perform production-line calibration, and simplifying the end-product manufacturing.

ams is making it easy for systems designers to integrate e-commerce functionality into smartphones and portable electronics. The TMG399x Mobeam barcode emulation enhances the e-commerce capabilities of any mobile device by enabling smartphones to transmit barcodes to any one-dimensional scanner at retail points-of-sale (POS) terminals. IRBeam functionality allows the device to emulate other optical transmitters or provide advanced signaling using the internal IR LED. A versatile state machine along with 128 bytes of RAM allows for a variety of optical protocols to be generated.

“The TMG399x’s family of IR touchless gesture sensors provides for an enhanced user experience. As consumer electronics - from smartphones and wearables to home automation and control - offer greater functionality, the ability to interact with these systems will be greatly enhanced as these space-constrained devices are able to recognize and respond to the user without the need to handle or touch them,” said Russell Jordan, Senior Marketing Manager at the optical sensor business unit of ams. “This tiny but highly integrated and powerful sensor family truly introduces a new dimension in man-machine communications. Technology continues to advance where the interaction between man and machine will rely on the fusion of multiple and complementary interfaces such as touch, visual, audio, and touchless gesture recognition to provide a seamless and intuitive interface between technology and the user.”

Price & Availability

The TMG3993 and TMG3992 are in volume production now, and priced at \$2.50 for 1,000 pieces. We offer an evaluation kit for the TMG399x family for qualified opportunities. For further information please contact our sales team to request samples, please visit www.ams.com/Advanced-Optical-Solutions.

About ams

ams is a global leader in both the design and manufacture of advanced analog sensor solutions. Our mission is to shape the world with sensor solutions and take sensing to the next level by providing a seamless interface between humans and technology. ams’ high-performance analog products fuel applications requiring extreme precision, dynamic range, sensitivity, and ultra-low power consumption. Products include sensors, sensor interfaces, power management and wireless ICs for computer, consumer, communications, industrial, medical, and automotive markets.

With headquarters in Austria, ams employs over 1,600 people globally and serves more than 7,800 customers worldwide. ams is listed on the SIX Swiss stock exchange (ticker symbol: AMS). More information about ams can be found at www.ams.com.



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