



Micro-mirrors from STMicroelectronics Provide Precision in Perceptual Computing

Adoption of micro-mirrors helps fundamentally change human-computer interaction

Geneva, March 2, 2015 – STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronics applications, the world's top MEMS (Micro-Electro-Mechanical Systems) manufacturer and the leading supplier of MEMS for consumer and mobile applications¹ today announced that ST was providing micro-mirrors and control devices for Perceptual Computing initiatives at Intel.

In addition to the ASIC control devices, ST supplies a tiny MEMS mirror that moves thousands of times per second to scan an infrared light beam, painting an invisible grid on objects in front of it. The light reflected back from the object is captured and analyzed for 3D imaging and gesture applications. The use of MEMS technology to realize the mirror enables small and robust systems with high-performance and lowenergy characteristics ideally suited to a wide variety of consumer devices, creating new dimensions in the natural interaction of people with technology.

MEMS meld mechanical and electrical principles in tiny machines that can sense motion, the environment or actuate and move liquids--as in an ink-jet thermal print head--or objects such as mirrors in projection systems. Here the "machine" is a very small mirror that is actuated using the same electro-static principle that makes our hair stand on end.

ST's MEMS expertise enabled the development of the industry's smallest and slimmest projection engine², which fits into the screen of a laptop or tablet computer and offers an ultra-wide field of view³. Moreover, manufactured using ST's state-of-the-art smart-power technology, the micro-mirror packs exceptional electro-static actuation, extremely low power consumption, and hardware safety mechanisms that provide protection from hacking and malfunctions, onto the silicon.

"The natural user-interface revolution with Perceptual Computing is upon us, and the mirror technology that ST has developed is an important contribution," said Sagi Ben Moshe, Director Depth Camera Engineering, Intel Corporation. "Intel and its partners

¹ Source: IHS Consumer and Mobile MEMS Market Tracker H1 2014

² At DIMENSION, it is thinner than a Las-Vegas gambling chip

³ Almost 90 degrees

are redefining how people interact with their devices for gaming, entertainment, and content creation through a best-in-class depth sensor that delivers PCs and tablets 3D vision for new, immersive experiences."

"Through its far-reaching MEMS technologies, ST has for years contributed to significant advances in user interfaces via motion, touch, and sound and the inevitable adoption of Perceptual Computing is an exciting leap that adds 3D vision," said Benedetto Vigna, Executive Vice President and General Manager Analog, MEMS, and Sensors Group, STMicroelectronics. "Only a company with the full range of expertise that ST owns could overcome the significant power, actuation, inertial, and jitter issues to build the right micro-mirror and integrate the analog front end and digital logic onto a single low-power die to achieve the form-factors necessary for mainstream device integration."

About STMicroelectronics

ST is a global leader in the semiconductor market serving customers across the spectrum of sense and power and automotive products and embedded processing solutions. From energy management and savings to trust and data security, from healthcare and wellness to smart consumer devices, in the home, car and office, at work and at play, ST is found everywhere microelectronics make a positive and innovative contribution to people's life. By getting more from technology to get more from life, ST stands for life.augmented.

In 2014, the Company's net revenues were \$7.40 billion. Further information on ST can be found at <u>www.st.com</u>.

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