

## STMicroelectronics Introduces Lowest-Power-Consumption Touch Sensor for Portable and Cost-Sensitive Applications

Tiny chips extend ST's touch-sense portfolio with fastest response times and no need for extra components on sensor lines



Geneva, June 26, 2007 - STMicroelectronics (NYSE: STM) today announced a new family of ultra-low-power touch-sensor chips, following the signing of a technology-licensing agreement with the Korean company ATLab, Inc. The sensors are intended for portable applications such as mobile phones, PDAs, notebook PCs and media players, as well as for the cost-sensitive white-goods market. The new 'S-Touch' family uses ATLab's capacitive touch-sensing technology, which is based on a fully-digital architecture that needs no on-chip MCU, memory or firmware to implement control interfaces responsive to their users' touch. The first products in the family are 8-channel and 12-channel devices.

This new hardwired touch-sensor family complements ST's recently-announced MCU-based 'QST' series, which enables intelligent touch-sensitive control interfaces for more complex applications and – at the other end of the scale – in simpler products where the sensor's MCU can also control multiple secondary functions. The combined sensor portfolio positions ST as the only semiconductor supplier to provide a full range of touch-sensor solutions, meeting a wide spread of requirements and conditions across different industries.

ST has implemented the hardwired finite state machine, at the core of the S-Touch family, in optimized silicon, which requires very little power: consumption is around five to ten times lower than conventional touch-sensor solutions, with a sleep-mode consumption of just 1 microamp. The sensor lines from the device to the application's touch pads do not need the external RC (resistor-capacitor) networks that are typically required in other solutions, and the sensors themselves are tiny – the 8-input device uses a 2.6 x 1.8mm QFN16 package – ensuring a very compact solution that is some 80% smaller than existing equivalent solutions, and highly cost-competitive. The sampling time of the sensor, at 2 milliseconds, is also among the fastest in the industry

Future products in this family will integrate proprietary technology from ST's new Xpander Logic family, which helps to overcome limitations in the number of Input/Output (I/O) ports in MCU-based embedded systems by reassigning I/O-intensive tasks to an ultra-low-power Xpander Logic IC. The technology allows an existing system processor to use a wide range of additional intelligent functions through a fast I2C interface, including a keypad controller capable of supporting up to 96 keys, with ghost key, multiple key and hot-key handling; and LED brightness control through a PWM (Pulse-Width Modulation) controller.

By combining ST and ATLab IP (Intellectual Property) in this way, S-Touch will be able to realize a true one-chip solution for a full user-interface controller, handling a full-size keypad with LED-backlighting control, and with capacitive touch-key and resistive touch-screen features. ST also plans to explore the possibility of extending the collaboration with ATLab, especially in advanced digital IP design services in specific areas. The technology provides an alternative to ST's MCU-based QST series, the two families ensuring the widest range of touch-sensing design options to meet styling, material and functional requirements.

Samples of the 12-channel [STMPE1208](#) will be available within the first half of 2007, with volume production planned for September. The 8-channel [STMPE821](#) will be sampling in September 2007 and in volume production in January 2008. The devices are priced at \$1.60 and \$1.40, respectively, in quantities of 100,000 pieces.

### About the technology

S-Touch will utilize ATLab's patented Impedance Change-Detection Engine (ICDE), which is capable of detecting changes in capacitance as small as 60fF (femto Farad, one thousandth of a pico Farad). The sensor has a dynamic range of 6pF, divided into 100 steps of 60fF. The ICDE will detect a change in capacitance which causes a time delay, and is the only solution in the market that requires only one pin for each sensor and which eliminates the need for RC networks on the sensor lines – a requirement in most conventional industry solutions. Its unique automatic calibration technology allows S-Touch to be highly tolerant to assembly and PCB variations, EMC interference and water film effects.

### About ATLab

ATLab, Inc. ('@Lab'), which was founded in July 2000, is a fabless semiconductor company specializing in mixed-signal System-on-Chip (SoC) fields. With a professional group of more than 350 man-years of combined experience in areas such as design, production, sales and services, ATLab concentrates on Application Specific Standard Product (ASSP) business in Optical Navigation Sensors, Digital Contact Controllers (DCC), and in Gigabit Multimedia Data eXpress (GMDX). In addition, ATLab also has Intellectual Property (IP) business and Shared R&D Services. Further information can be found at [www.atlab.co.kr](http://www.atlab.co.kr)

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### About STMicroelectronics

STMicroelectronics is a global leader in developing and delivering semiconductor solutions across the spectrum of microelectronics applications. An unrivalled combination of silicon and system expertise, manufacturing strength, Intellectual Property (IP) portfolio and strategic partners positions the Company at the forefront of System-on-Chip (SoC) technology and its products play a key role in enabling today's convergence markets. The Company's shares are traded on the New York Stock Exchange, on Euronext Paris and on the Milan Stock Exchange. In 2006, the Company's net revenues were \$9.85 billion and net earnings were \$782 million. Further information on ST can be found at [www.st.com](http://www.st.com).  
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