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## **HLMC and Cypress Announce Initial Production Milestone of Embedded Flash Using 55-Nanometer Low Power Process Technology with SONOS Flash**

### **Enables Lower Power Consumption for Internet of Things Applications; Cost-Effective SONOS Nonvolatile Memory Delivers High-Yield, Scalable Process**

SAN JOSE, Calif., April 12, 2017 /PRNewswire/ -- Shanghai Huali Microelectronics Corporation (HLMC), one of the most advanced pure play wafer foundries in China, and Cypress Semiconductor Corp. (NASDAQ: CY), a leading provider of embedded nonvolatile memory solutions, today announced a new milestone for the combination of HLMC's 55-nanometer low-power (LP) process technology and Cypress' SONOS (Silicon Oxide Nitride Oxide Silicon) embedded Flash memory intellectual property (IP). HLMC's customers have started early production of low-power embedded Flash aimed at Bluetooth Low Energy and Internet of Things applications using the technology. Cypress' high-endurance, scalable SONOS embedded Flash memory is optimized for low power, making it ideal for microcontroller and IoT applications. The technology and design IP will be available for full production by HLMC customers in the second half of 2017.



Cypress' SONOS embedded nonvolatile memory (NVM) offers significant advantages over other embedded NVM technologies. SONOS provides a competitive cell size with lower manufacturing costs, as it requires only 3 mask layers to insert it into a standard CMOS process compared with the 9 to 12 additional masks generally needed for other embedded Flash technologies. SONOS delivers intrinsically high yields and best-in-class reliability, 10 years of data retention, 200,000 program/erase endurance cycles, and robust resistance to soft errors. Cypress has demonstrated the ability to scale SONOS to 40-nm and 28-nm nodes, expediting future IP development.

"With the escalating demand for low-cost and low-power embedded Flash for IoT applications, we are excited to reach this milestone and look forward to a fast production ramp to meet our customers' demand," said Jack Qi Shu, Vice President at HLMC. "Cypress' SONOS is a cost-effective embedded nonvolatile memory that delivers proven high yields. Its reliability and efficiency are ideal to enable high-volume production for low-power embedded Flash products."

"The combination of HLMC's robust 55-nm LP process technology and manufacturing expertise along with the high-performance and leading reliability of our SONOS Flash memory enabled a smooth path to achieve risk production of these low power embedded Flash products," said Sam Geha, Senior Vice President of the Memory Products Division at Cypress. "Our collaboration with HLMC is another example of how Cypress is working with the world's leading foundries to establish SONOS as the industry's top choice for an embedded nonvolatile memory platform. It also demonstrates Cypress' focus on solving the power-consumption problem facing emerging IoT applications."

#### **About Shanghai Huali Microelectronics**

Founded in January, 2010 at Shanghai Zhangjiang Hi-tech Park, Shanghai Huali Microelectronics Corporation ("HLMC") is one of the most advanced pure-play wafer foundries in mainland China. HLMC owns a 300mm fab with maximum full capacity of 35000 wafers per month. HLMC's process technologies start from 55nm technology node and mainly cover 55nm LP, 40nm LP, 55nm HV, 55nm e-Flash and specialty technologies for a wide range of applications. HLMC is devoted to providing domestic and overseas customers with comprehensive foundry solutions and value-added services. Learn more about HLMC online at [www.hlmc.cn](http://www.hlmc.cn).

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## **About Cypress**

Founded in 1982, Cypress is the leader in advanced embedded system solutions for the world's most innovative automotive, industrial, home automation and appliances, consumer electronics and medical products. Cypress' programmable systems-on-chip, general-purpose microcontrollers, analog ICs, wireless and USB-based connectivity solutions and reliable, high-performance memories help engineers design differentiated products and get them to market first. Cypress is committed to providing customers with the best support and engineering resources on the planet enabling innovators and out-of-the-box thinkers to disrupt markets and create new product categories in record time. To learn more, go to [www.cypress.com](http://www.cypress.com).

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