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## **California Smart Grid Center Completes Successful Demonstration Test of Wireless Pneumatic Thermostat Retrofit Solution**

*Test confirms game-changing reduction in cost, time and disruption to retrofit existing buildings for Smart Grid connectivity*

SAN JOSE, Calif., June 1, 2010 — Cypress EnviroSystems, a subsidiary of Cypress Semiconductor Corp. (Nasdaq: CY), announced today that the California Smart Grid Center (CSGC), has successfully completed the demonstration testing of Cypress EnviroSystems' Wireless Pneumatic Thermostat (WPT) solution. The CSGC is funded by the California Energy Commission and is the unbiased proving ground for Smart Grid technologies in California.

The test confirmed the WPT's significant reduction in cost, time and disruption to retrofit legacy buildings, and enable them for Smart Grid Auto-Demand Response connectivity. The patent-pending hybrid pneumatic and digital technology employed by the WPT opens up the potential for millions of legacy buildings to participate in peak load reduction and energy efficiency strategies which was previously impractical due to long investment payback and disruption to building occupants.

Approximately 6,000 sq-ft of office space at Sacramento State University was selected for the demonstration test. Prior to the retrofit, the offices used non-communicating pneumatic thermostats for control of heating and cooling. These legacy thermostats were not capable of remote temperature setpoint control and could not interface with the Smart Grid for Auto-Demand Response. Retrofitting them to modern communicating digital thermostats using conventional technology would be extremely costly, with a payback period of five years or longer. It would also require opening up walls and ceilings, with significant disruption to building occupants.

For the demonstration test, the CSGC used the innovative Wireless Pneumatic Thermostat system, which costs approximately 80% less than conventional technology. The installation at Sacramento State University was completed in about two hours during working hours, with

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virtually no disruption to occupants. If conventional technology were used, it would have taken several days and required clean-up of asbestos and other hazardous materials exposed during the work.

Once installed, the thermostats enabled remote control and monitoring of zone setpoint, temperature, and branch pressure (heating or cooling demand) via an operator station. The system can also interface with existing automation systems using BACnet, and has a built-in interface compliant with the OpenADR protocol developed by the U.S. Department of Energy's Lawrence Berkeley Laboratory, which allows communication with utilities for Auto-Demand Response. This interface allows buildings to automatically curtail electricity use during periods of high demand (by increasing the setpoint temperature for thermostats, for example).

“For the Smart Grid to reach its full potential, we will need *smart buildings* to talk to it. Developing low cost and non-disruptive ways to make existing buildings ‘smart’ is a very important problem to address,” said Emir Jose Macari, Dean of the College of Engineering and founding Director of the California Smart Grid Center at Sacramento State. “The Cypress Envirosystems’ WPT system was installed in record time and has performed flawlessly for the three months of the demonstration test. I am impressed with the system’s performance but above all because of the non-invasive nature of the devices and the installation.”

Similar large-scale retrofits using the WPT, involving over one-million sq-ft, have confirmed each WPT can shed up to 1kW of peak load, and reduce 15-30% of HVAC energy use. The low installed cost enables very attractive payback periods of 18 months or less. To further reduce the upfront cost, the WPT also qualifies for utility incentives in many states, including PG&E, Southern California Edison, and San Diego Gas and Electric in California.

“Most commercial buildings built before 1995 uses pneumatic control systems. This equates to about 70% of the existing commercial building space, or over 60 billion sq-ft, which cannot be easily connected to the Smart Grid. We designed the WPT specifically to address this problem and also to deliver energy savings.” said Harry Sim, CEO of Cypress Envirosystems. “The validation and endorsement from the California Smart Grid Center is a major milestone for the WPT, will significantly enhance our ability to bid and win Smart Grid projects, especially involving stimulus funding participants. We sincerely thank the CSGC for the valuable service they provide to the community.”

### **About the Cypress Envirosystems Wireless Pneumatic Thermostat**

Cypress Envirosystems' patent pending WPT solution retrofits existing pneumatic thermostats to deliver direct digital control (DDC) functionality in minutes. Compared with the cost to implement conventional DDC retrofit, the WPT costs 80% less, pays back in 18 months or shorter, and can be installed in under 20 minutes with minimal disruption of occupants. It enables remote temperature sensing and control of setpoints, programmable zone control and night setback, automatic self-calibration, BACnet integration with existing automation systems, and communication with utility Demand Response programs. Sensor data gathered by the WPT is used for retro and ongoing commissioning to save energy and reduce maintenance costs. The WPT was first introduced in 2008, and is now used in over 100 sites across North America including Fortune 500 office buildings, hospitals, universities, K-12 schools, and government buildings. Kaiser Permanente, Santa Clara County Government, Western Michigan University, and the LA Chamber of Commerce are among the many customers.

### **About Cypress Envirosystems, Inc.**

Cypress Envirosystems is a subsidiary of Cypress Semiconductor (NASDAQ: CY). Its mission is to save energy and improve productivity in older plants and buildings, using state-of-the-art non-invasive and wireless technologies to minimize disruption and cost, delivering payback of 18 months or less. Visit Cypress Envirosystems at [www.CypressEnvirosystems.com](http://www.CypressEnvirosystems.com).

### **About Cypress**

Cypress delivers high-performance, mixed-signal, programmable solutions that provide customers with rapid time-to-market and exceptional system value. Cypress offerings include the flagship PSoC® programmable system-on-chip families and derivatives such as PowerPSoC® solutions for high-voltage and LED lighting applications, CapSense® touch sensing and TrueTouch™ solutions for touchscreens. Cypress is the world leader in USB controllers, including the high-performance West Bridge® solution that enhances connectivity and performance in multimedia handsets. Cypress is also a leader in high-performance memories and programmable timing devices. Cypress serves numerous markets including consumer, mobile handsets, computation, data communications, automotive, industrial and military. Cypress trades on the NASDAQ Global Select Market under the ticker symbol CY. Visit Cypress online at [www.cypress.com](http://www.cypress.com).

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