New IoT Eval Kit from CAP-XX, e-peas, PowerFilm Enables Battery-free Edge Devices with Solar Harvesting, Supercaps, PMIC

The companies will host a free webinar May 10 to demonstrate how to design functionality-rich IoT devices without batteries using solar micro energy harvesting

SYDNEY, AUSTRALIA, May 4, 2022 /EINPresswire.com/ -- CAP-XX Limited (LSE:CPX), e-peas and PowerFilm have teamed up to develop the new Micro Energy Harvesting Solar Development Kit which enables design engineers and IoT professionals to create solar-powered, battery-free IoT edge devices without compromising on performance. This solar energy harvesting solution features the PowerFilm flexible photovoltaic (PV) cell, e-peas smart power management integrated circuit (PMIC), and CAP-XX ultra-thin supercapacitors to provide a range of power options to design IoT devices either with no batteries, or with smaller, less expensive, long-life batteries. The kit is designed to be a plug and play, intuitive and efficient decision-making tool for designing a highly-efficient power subsystem in IoT applications such as e-health monitoring, geolocation, home automation, industrial monitoring and wireless sensor nodes.

> “Supercaps are an excellent alternative to batteries in many electronic applications. They're charge efficient, pairing well with micro energy harvesting like solar.”
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> *Jeff Colton, EVP CAP-XX Americas*

The three companies will host a free webinar to demonstrate how solar energy harvesting can be used in IoT devices on May 10 at 11:00 am EDT. Register for the free webinar here.

The new Micro Energy Harvesting Solar Development Kit is an ambient energy manager that extracts power from PV harvesters to simultaneously store energy in the rechargeable supercapacitor, and supply an application with two independent on-chip LDOs (Low Drop-out regulators). The included evaluation board allows users to test the components and analyze performance in a laboratory-like setting. It allows easy connections to the supercapacitor and low-voltage and high-voltage loads. The user can configure and test multiple operating modes including secondary battery selection, primary battery backup, and custom charge schemes. The control and status signals are available on standard pin headers, allowing users to configure it for any usage scenario and evaluate the relevant performances.

The kit includes all hardware options to evaluate many energy harvesting and spending scenarios. The included user's manual makes it easy to configure and evaluate expected outcomes.

The kit will be available from PowerFilm's website following the May 10 webinar, with greater volumes expected to be available from Digi-Key and Mouser later this summer.

Webinar attendees will learn how to pair CAP-XX supercapacitors with PowerFilm solar energy harvesting using the e-peas smart PMIC to:

- Operate battery free, or extend battery life and reduce battery size, using CAP-XX supercaps
- Expand device functionality by increasing power budget
- Expand ROI by increasing QoS and Edge devices service time
- Recover from unexpected high-power events, such as connection losses or unplanned firmware updates, which can quickly reduce the estimated lifetime of a traditional battery solution

The three companies will host a free webinar May 10, 11:00am EDT to demonstrate how solar energy harvesting can be used in IoT devices.

The webinar will demonstrate how to replace a disposable CR1225 battery with the companies' combined clean energy harvesting solution using a real-world use case with actual measurements.

Speakers are Jeff Colton, EVP CAP-XX Americas, Bruno Damien, Ecosystem Marketing Director at e-peas, and Sam Jones, R&D Engineer at PowerFilm.

"Supercaps are an excellent alternative to batteries in many electronic applications," said Jeff Colton, CAP-XX. "Supercaps are extremely charge efficient, making micro energy harvesting technologies like solar very efficient. Supercaps also offer 10-plus years life, or 1,000,000 charge discharge cycles, and operate in -40 to 85° C environments."

"We design optimized photovoltaic solutions based on customer requirements," said Sam Jones, PowerFilm. "An efficient energy-harvesting PMIC paired with a supercapacitor and solar cell combine to provide industry-leading tools for solving IoT edge device power needs."

"Our AEM PMIC delivers energy to applications and storage elements using micro energy harvesting with the very best budget management and lowest hardware cost," said Bruno

Damien, Ecosystem Marketing Director at e-peas. “It is fully autonomous thanks to embedded state-machine, and offers over-charging protection to the supercap. We made the EVK very flexible to allow developers to tune the hardware to the functional requirements of their application.”

About CAP-XX
CAP-XX (LSE:CPX) is a world leader in the design and manufacture of ultra-thin prismatic and compact cylindrical supercapacitors. Its prismatic supercapacitors are manufactured in Australia and Malaysia and its cylindrical supercapacitors are manufactured in China. The company’s strong intellectual property (IP) portfolio includes 21 patents worldwide. CAP-XX’s ultra-thin prismatic supercapacitors are ideal for space-constrained electronics applications where small energy storage device size and thickness are important. The unique feature of CAP-XX supercapacitors is their very high-power density and high-energy storage capacity in space-efficient thin prismatic and compact cylindrical packages. For more information, visit https://www.cap-xx.com/ or email sales@cap-xx.com.

About e-peas
E-peas has revolutionized the IoT industry by offering the best performing ambient energy harvesting, processing and sensing solutions that make the batteries of wireless devices live forever. The company is a leader in PMIC solutions for energy harvesting based power supplies. Visit https://e-peas.com to learn more.

About PowerFilm
PowerFilm designs, manufactures and delivers custom solar energy harvesting solutions specific to each customer's use case and requirements. The company offers solutions across many IoT segments, including retail, agriculture, telematics and industrial automation. Solutions are built by choosing the PV technology that best meets customer needs, then adding any energy harvesting or charge controller circuitry required. Visit https://www.powerfilmsolar.com/markets/iot/ to learn more.

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