New Unit for Active Smart Labels

Power Paper plans to design battery-powered labels for specific applications.

Oct. 29, 2002 – One problem with RFID has always been its performance in the real world. When a forklift zooms through a dock door, the reader isn't always able to read a passive tag. Power Paper, a five-year-old company based in Tel-Aviv, Israel, hopes to change that by using its thin, flexible batteries to power smart labels that actively broadcast information.

The company has created a new division called PowerID. Baruch Levanon, Power Paper's founder and executive director, will head the division. The unit will focus on developing battery-powered smart label solutions for a variety of applications in access control, supply chain management, security, transportation, and ticketing.

Power Paper's battery is printed and can be made to almost any shape. It is just 0.5 mm thick, provides 1.5 volts of power and is guaranteed to last up to two and a half years. Increasing the battery size can extend the shelf life.

Levanon says Power Paper's battery has greater storage capacity than the thin-film battery recently unveiled by Cymbet Corp. (see Thin-Film Battery May Energize RFID). Unlike Cymbet's product, however, Power Paper's battery is not rechargeable. But Levanon says the company is working to develop a rechargeable version.

Thin-film batteries are ideal for certain RFID applications because they can be used in labels, just like passive tags. KSW-Microtec, a Dresden, Germany, company that focuses on low-cost smart packaging technologies, used Power Paper's battery technology in its TempSens RFID smart label, which has an integrated temperature sensor.

Power Paper's batteries are currently used in a variety of products, including toys, novelties, functional packaging and health care products. The company decided to launch PowerID because it believes RFID could spur demand for its batteries.

"We have fantastic technology, but right now there is no market," says Levanon. "We need to develop the market for thin and flexible microelectronics by creating applications. We have no choice, we have to create a full system – a smart active label and a reader or communicator."

The company is building a demo system, which it plans to take on the road in February. Power Paper plans to visit potential customers and demonstrate active smart labels for tracking assets, monitoring the temperature of goods in transit, preventing tampering and other applications. It wants to do this in the environment in which the labels and readers would actually be used.

"We don't want to delude the market," says Levanon. "We want to show customers, at their own site, the performance we can deliver. We should be able to demonstrate a variety of applications with reliable, long-range, two-way communication."

After getting feedback from potential users, the company will design a microchip for specific applications. It is currently looking for a semiconductor company and application providers to work with. Levanon says Power Paper should have an active smart label on the market by the end of 2004. He adds that the battery will add only two cents to the cost of the label, when manufacturing billions per year.

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