

Omron Adds Secure RFID Protocol to EPC Gen 2 Reader

The company says the interrogator is the first on the market to include support for the data-protecting protocol, developed in Japan and expected to be available on tags made with Hitachi's μ -chip Hibiki.

By Mary Catherine O'Connor

June 10, 2008—Tokyo-based RFID hardware provider [Omron](#) has added support for the Secure RFID protocol, developed by [Japan's Ministry of Economy, Trade and Industry](#) (METI), to its Omron V750 series of ultrahigh-frequency (UHF) interrogators compliant with the ISO 18000-6C and EPC Gen 2 standards. METI developed the protocol in collaboration with electronics firm [Hitachi](#), to enable users of passive UHF EPC Gen 2 tags to protect data stored in tag memory.

Hitachi's μ -chip (pronounced mu-chip) Hibiki IC for UHF ISO 18000-6C and EPC Gen 2 tags supports the Secure RFID protocol, and other chipmakers are reportedly developing chips that will support that protocol as well. Omron is the first reader manufacturer to announce support for the security protocol, though there are not yet any tags on the market that do so. The protocol is available openly and royalty-free to anyone who will use it in a reasonable manner, says Gary Andrechak, product manager with [Hitachi America](#).

According to Andrechak, there are other reader makers currently developing products that support the Secure RFID protocol, though he says he can not name them. In September 2007, [NEC](#) announced its plans to offer a multiprotocol interrogator that would read and write to the μ -chip Hibiki tags and support the protocol (see [NEC Announces Development of Tri-frequency RFID Interrogator](#)). According to Joseph Jasper, an NEC corporate communications representative, this model should be available by the end of 2008.

In 2003, METI brought together representatives from Hitachi, [Dai Nippon Printing](#), [Toppan Printing](#) and NEC, in order to develop low-cost RFID chips that could be widely employed in the supply chain. The group, dubbed the Hibiki consortium, attended a 2005 meeting of the ISO 18000-6C standardization committee to propose that an alternative to that standard—one that would remove one of the data-encoding methods included in the ISO 18000-6C specification (see [Japan Offers ISO a Gen 2 Alternative](#)).

Doing this, the group said, would allow chipmakers to build an IC 40 percent smaller than that used for a conventional ISO 18000-6C tag, and this would lower tag costs. (The group estimated it could drop the cost of an ISO 18000-6C chip down to 5 yen, based on production of 100 million per month, by using its proposed chip design.) However, the [International Organization for Standardization](#) (ISO) ratified the 18000-6C standard without including the Hibiki consortium's proposal.

But the Hibiki consortium continued its work under METI and, in response to a survey of RFID end users, decided to convene the Secure Electronic Tag Project to create a means of securing data encoded to ISO 18000-6C and EPC Gen 2 tags. The two tag standards, which are essentially identical, already support a password function that can be employed to prohibit an unauthorized party from writing to or altering data

encoded to a tag. The Secure RFID protocol, however, also enables users to prohibit unauthorized parties from reading the data encoded to the tag, while allowing them to control the tag's read range so that it can be shortened or increased dynamically. Andrechak says Hitachi plans to establish the commercial use of tags with the Secure RFID protocol before making any efforts toward introducing the protocol as a candidate ISO standard.

The μ -chip Hibiki IC has 256 bits of memory dedicated to storing a kill password, an access password and five custom passwords, which the tag's user can generate to protect data written to any of five blocks of user memory stored within the chip's 1,356 bits of user memory. The μ -chip Hibiki IC is available now, and Hitachi is working to find inlay makers that will bring the tags to market.

In April, tag maker [Alien Technology](#) introduced the Higgs 3, the third iteration of its chip compliant with the EPC Gen 2 standard. The Higgs 3 supports a password function allowing users to make tag data unreadable, and this function can be utilized with any standard ISO 18000-6C or EPC Gen 2 interrogator (see [Alien Technology Announces New EPC Gen 2 Chip](#)). The Alien chip does not offer variable read range settings, however.

RELATED_ARTICLES Hitachi also manufactures a 2.45 GHz RFID tag called the μ -chip, which is read-only, has an integrated antenna and is designed for product authentication applications. This, Andrechak explains, is a completely different product than the μ -chip Hibiki.

According to Omron, its V750 readers with RFID Security protocol support will be available in July 2008.

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