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HP Unveils RFID's Future Competitor

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By [Natali T. Del Conte](#)

Hewlett-Packard unveiled a memory chip the size of a tomato seed on Monday in its Palo Alto laboratories. The tiny chip, called the Memory Spot, can be attached unobtrusively to any object and carry media or data.

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The Memory Spot will rival RFID tags in carrying information on movable physical objects, but HP calls it the smarter alternative.

"It has some of the characteristics of RFID but it's very different because it's orders of magnitude different in bandwidth," said Howard Taub, vice president and associate director of HP Laboratories. "It's like comparing a monkey and a human. There are some similarities but the capabilities are very different."

The Memory Spot has a 10 megabits-per-second data-transfer rate and can store up to 4 megabits of data, although the demonstration chips stored only 256 kilobits. The chip has an integrated antenna, which is why it is so much smaller than an RFID chip, which gets most of its size from the separately attached antennae. It receives power through

inductive coupling from a special read-write device that extracts data from the memory on the chip.

HP says that the chip will "bridge the digital and physical worlds." Taub demonstrated picture albums with the nearly-invisible chip attached to the borders. When a reader touched the chip, audio from the picture was played. Taub next waved the reader over the chip on a medicine bottle and the attached computer received the dosage, direction, and all other pertinent information from the prescription.

Other proposed applications include sending digital postcards with movies and sounds like the moving pictures in a Harry Potter movie. The chip can also be used to attach catalogs to merchandise, resumes to business cards, and digital information to a document in order to photocopy it without scanning.

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The reading devices have yet to be developed, but Taub has hopes that mobile phone companies and PDA manufacturers will want in.

"A PDA is a good reader because it's got a screen and audio and video capabilities, but cell phones are the perfect readers," Taub said. "Everybody has one with them at all times and they can play video and audio. But cell phones are not designed for this yet, so the cell phone companies would have to decide if they want to be part of the ecosystem."

Information transfer requires actual physical connection to the Memory Spot and Taub says they designed it that way. "We don't want to increase the range of contact," he said. "We think it's just right."

Memory Spot technology works independently of Internet connection. It is meant for physical data transmission, much like RFID, although another fundamental difference is that the data on Memory Spot is rewritable whereas the majority of RFID chips are read-only.

"In a world with infinite connection and infinite bandwidth, you probably wouldn't need this, but I still don't have cell phone connection here in the basement," Taub said.

HP's business divisions have not put a price approximation on Memory Spot, particularly because they do not have a manufacturer lined up yet. Taub estimates that the chips could cost consumers \$1 each, but emphasized that this price point is pure speculation. Because this Memory Spot is in such early phases, consumers will not actually see or use it for at least another two to five years.

"We're just announcing the technology right now," Taub said. "The hard part is building the ecosystem. You have to get your readers and writers, and I don't know how long it will take me to convince the cell phone companies to do this. How long has RFID been around and it's still not completely built out?"

An integral part of building the ecosystem will also involve building new standards for Memory Spot. Taub says that they have applied to some standards boards, although he would not say which ones, as well as complied with FCC regulations. He said that HP will announce the new standard in the "near future."

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