

End users need a standard for high-frequency EPC tags, and EPCglobal is close to delivering it.

By Mark Roberti

Jan. 22, 2007—Toward the end of this month, [EPCglobal's](#) Hardware Action Group (HAG), which helps develop Electronic Product Code (EPC) standards, will meet in Sydney to discuss, among other things, a consensus proposal for a high-frequency air-interface protocol. The goal is to have a ratified HF EPC standard by the middle of the year. I hope EPCglobal will move forward and meet this timeline, and that the vendor community will support the standard by creating tags and interrogators based on the protocol.

From what I hear, the HAG members have reached a consensus on the overall makeup of the standard and will soon get down to fleshing out the technical details. Generally, the standard aims to be backward-compatible with ISO15693, a well-established HF standard used by many companies today, but the read and write speeds will be much faster than current technology. The standard will also have some of the same features included in the Gen 2 UHF standard, such as secure memory modules and the ability to permanently kill the tag for privacy purposes.



The HAG considered including phase-jitter modulation (PJM), a method of changing the phase of a radio wave to communicate data more rapidly. PJM, developed by Australian HF RFID specialist [Magellan Technology](#), offers super-fast transmission rates. In the end, as a compromise, it looks like PJM will be included as an optional feature in the standard.

There's a lot for end users to like. The backward compatibility means companies that have invested in ISO15693-based tags and interrogators do not have to toss them out and buy entirely new hardware. The higher data transfer rates are ideal for item-level tagging. So if you had, say, 200 bottles of pills in a plastic transport container, you could read them all quickly, or if you were writing to tags on bottles coming off the production line, you could encode them without slowing down the line.

It's important to move quickly to ratify the standard because some end users are eager to move forward with item-level tagging. [Pfizer](#), for instance, is using ISO15693 HF tags to authenticate all bottles of Viagra shipped to the United States (see [Pfizer Using RFID to Fight Fake Viagra](#)), while [GlaxoSmithKline](#) is tagging bottles of its Trizivir HIV drug (see [GlaxoSmithKline Tests RFID on HIV Drug](#)). Many apparel retailers have also been tagging items with tags that use the ISO protocol.

There is no reason, of course, why companies can't go on using ISO15693-based tags for tracking unique items. But there are several reasons why an EPC standard would be a good thing for end users. First, the ISO protocol has been around for a long time, and the technology has evolved—HF tag performance is good, but it can be even better under the new standard.

Second, companies would like to have tags with the same basic features so interrogators can perform the same types of commands. HF and UHF interrogators would not be interoperable, but could perform the same basic functions. Therefore, if a company were to store expiration dates in the user-defined memory on UHF tags, then lock those memory modules, they could have the same process for HF tags.

And third, HF tags need greater security for information stored on them, as well as the ability to be deactivated permanently as they are used more and more on consumer products. The security means it will be easier to use the tags for authenticating goods. The kill command ensures privacy for those who don't want to walk out of a store with items that can be read without their knowledge.

Finally, I think an HF standard is good because it gives end users a choice. Up to this point, if you've wanted to use the EPCglobal Network to share RFID data with your business partners, you've been restricted to UHF EPC tags. There are some companies that want to use only UHF tags in their operations, but there are others that would like to use HF tags only, or a mix of the two. An HF EPC standard gives companies the option to use the technology if it is right for their needs.

I know there are some who argue that UHF can and should be used on items, and there are others who swear that HF is far superior on items. With an HF standard, each company that wants to use the EPCglobal Network to share data can decide which technology— HF EPC or UHF EPC — best fits its products, environment and business needs.

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