

Lake Image Systems' customers are using RFID technology, including Feig-based reader hardware, to build RFID solutions into direct-mail advertising, product packaging and high-volume label printing.

By Claire Swedberg

Tags: [Labeling](#), [Operations](#)

Jun 01, 2017—For the past two decades, imaging and scanning solutions company [Lake Image Systems](#) has been providing the technology that printing, labeling and mailing companies use in high-volume production. More recently, it has been offering RFID technology as well, so that businesses can build passive RFID tags into their mass-produced packaging or labels at high speed. This year, Lake Image partnered with [Feig Electronics](#) to make the deployment of RFID easier for its customers. Lake Image offers Feig readers and antennas with its own high-speed RFID encoding system that can be built into its customers' label-converter and printing equipment.

For 23 years, Lake Image—a New York company with offices in the United Kingdom, France and Singapore—has provided technology for printing and tracking systems for document and mail-piece integrity. It also offers pin-number verification, print-quality inspection and process-control solutions. Its customers include companies that print direct mail for advertisers, or that print labels or brand packaging. They use Lake Image technology on bindery, print finishing, polywrapping, and continuous and sheet printing, as well as on rewinder, narrow-web, plastic-card and postal-automation equipment.



Lake Image's Scott Stevens

About three years ago, Lake Image began offering RFID encoding, printing and read-verification technology for customers that build RFID into their products, says Scott Stevens, Lake Image's president. These companies often mass-produce labels at low cost, and thus require verification of the integrity of RFID tags that go into, for instance, direct mailings that can be shipped to hundreds of thousands of homes. Each piece of mail comes with a built-in ultrahigh-frequency (UHF) passive RFID tag (or a tag of another frequency), so that the mail can then be tracked. In that way, the direct-mailing company can be sure that targeted advertising is sent to the addresses or regions for which they are intended.

Lake Image's customers have asked not to be named for this story.

RFID tags are being built into more than just direct mail advertising. They also appear in packaging for products such as cigarettes, in which case users need to be sure that the tags are printed, encoded and read properly as the packaging is created, in high volume and at high speed.

The challenge for Lake Image, and for its customers that make the labels or packaging, is the need for a variety of technologies, depending on customer demand. Some brands, advertisers or other companies require Near Field Communication (NFC) tags, or high-frequency (HF) RFID tags compliant with the ISO 15693 standard. Others may require UHF EPC RFID tags. In addition, the tag chips that a customer requires can come from a variety of vendors.

Many of the label and packaging companies are already using label-converter and printing equipment valued at a million dollars or more, and need to incorporate one or more RFID-based systems to verify the integrity of RFID tags at the time of printing. So during the past two months, Lake Image has been partnering with Feig to build its UHF or HF RFID reader hardware into its customers' existing printer systems.

With the Feig readers, Stevens says, the company can accomplish 1,200 label reads per minute, while encoding can take place at approximately half that speed. However, he adds, Lake Image can also install additional antennas to increase encoding speed. The advantage to the Feig solution, Steven explains, is that his customers can use the technology without being locked into a single RFID chip technology or a license fee for the use of that technology.

The nature of Lake Image's service is flexibility, Stevens says. "There is never a 'typical' deployment," he states. "This is a technology that demands clever solutions and efficient production methods."

The RFID technology can be used not only to ensure accurate mailings, Stevens reports, but also to automate processes, such as the printing of addresses. In the case of a direct-mail application, he notes, a business can personalize a piece of advertising for a specific consumer, while hiding all external reference to that personalization.

For instance, a special offer or promotion can be sent to a consumer based on his or her shopping or buying history. When the item is being inserted into an envelope, Lake Image technology can read the RFID chip, Stevens says, "which tells us who it is personalized for, from which we can inkjet the proper name and address on the envelope."

In the label industry, the goal is often to simply produce labels that include RFID tags, and to encode the tag and inkjet with a matching number on the label's face. The RFID data can be used as well to prompt the production of specific sized rolls of labels, based on RFID tag reads, and to store data indicating which tags are on which labels. Such labels are being used not only in packaging, but for luggage and automobile windshield identification labels.

In addition, the technology can be employed in the production processes for products or packaging. In such a scenario, a tag is encoded and interrogated, then is used to track the label itself, or the packaging to which it is attached, as it moves through the company's production line. The RFID tag, in some cases, is being utilized not only to prompt controlled inkjet printing, but to collect camera images for verification. Additionally, some of Lake Image's customers are using the RFID tag reads to trigger other machine functions, such as diverting specific tagged products or labels, roll-cutting, matching or stacking.

With the new partnership, Lake Image says it is providing Feig's CPR74 for HF ISO 15693 labels, as well as Feig LRU1002 UHF readers. Thus far, four customers are using the technology with Feig hardware, each with multiple production lines. In the meantime, Stevens says, "We are providing quotes on new systems almost weekly."