

# Alien Extends Gen 2 Product Line, Expands Manufacturing

The company is making its own Gen 2 chip and celebrating the opening of a manufacturing facility capable of producing 2 billion chips and 500 million inlays per year.

By Mary Catherine O'Connor

Oct. 10, 2006—It was a cruel summer for [Alien Technology](#). The Morgan Hill, Calif., manufacturer of RFID tags and interrogators delayed—and then cancelled—its bid for an initial public offering. It also took cost-cutting measures, including layoffs (see [Alien Cancels IPO Plans](#)).

Monday, however, the company reported good news: the opening of a new factory that it says will boost its manufacturing capabilities. In addition, Alien debuted new Gen 2 inlay designs and revealed contracts with label converters, and it also announced something it believes will put the firm in a position to improve its balance sheet and establish better financial footing: its own Gen 2 silicon.

Since last fall, Alien has been buying Monza UHF EPC Gen 2 chips from [Impinj](#) for its Gen 2 inlays. Yesterday, the company announced that it is now also using chips fabricated at its facility in Fargo, N.D. By March of next year, Alien plans to use its own chips exclusively. This, says Bob Eulau, acting CEO, executive VP and CFO, will "cut our costs by more than in half," compared with sourcing the chips from a third party. In mid-September, Eulau replaced Stav Prodromou, Alien's CEO of four years, who stepped down to become the company's executive advisor on business development and government affairs.

Journalists and analysts touring Alien's new 48,000-square-foot manufacturing facility in Fargo on Monday saw a demonstration of the new Alien Gen 2 chip, which [EPCglobal](#) has already awarded its Gen 2 conformance certificate. During that demonstration, an M-tag, Alien inlay made with the chip, was read from 110 feet, three times the distance specified in the Gen 2 protocol. The system then read the tag from a distance of 3 feet, while it was inside a water bottle.

The M-tag features a large antenna and is designed for application to pallets and cases of products containing liquid or other RF-unfriendly materials. A large antenna boosts a tag's read distance. But Alien CTO Steve Smith explains that the Alien chip is also more power-efficient than other Gen 2 chips on the market, and that improved ability to convert the RF signal it receives into an electric current also contributes to the demonstrated M-tag's long read range (Gen 2 tags generally have only a 30-foot read range).

While end users in the supply chain may be impressed to see a fully passive tag read from a distance of more than 100 feet, they care more about the readability of tags affixed to cases stacked onto a pallet. Still, Smith predicts, tags made with the new Alien chip will "lead the pack" in terms of readability.

In July, [Texas Instruments](#) (TI) announced it was set to release its Gen 2 chip. This chip, the company claimed, offered increased power efficiency over existing chips on the market (see [Texas Instruments Rolling](#)

Out Its Gen 2 Chips).

Alien says end users have memory and format options for its EPC Gen 2 chip. It comes available with either 64 bits, 96 bits or 128 bits of user memory, and it can be factory-programmed with a serial number for use in anticounterfeiting measures.

In the past year, STMicroelectronics (see STMicro Ramps Up Production of Its XRAG2 Chip and Impinj (see Impinj Introduces Two New Gen 2 Chips) have announced new Gen 2 chips.

Alien also introduced additions to its inlay portfolio, which includes five EPC Gen 2 tags optimized for reading across the UHF spectrum, from 860 to 960 MHz. The "World Tag" consists of the 2x2 (apparel and baggage tag), Squiggle (general purpose), Omni-Squiggle (pallet tag), Castle tag (general purpose) and M-tag (for use near liquids and metals). In addition, Alien announced the Mini-Squiggle, designed for item-level tagging, and the 1x1 tag for use on pharmaceutical product labeling.

According to Eulau, Alien's new Fargo manufacturing facility will initially be used for chip-making and final inlay manufacturing. The chips will then be sent to the Morgan Hill facility, where they will be joined to straps using the company's patented Fluidic Self-Assembly (FSA) process before being shipped back to Fargo. There, the straps will be joined to antennas to create inlays.

Once market demand exceeds the Morgan Hill plant's capacity of 2 billion straps per year, Alien says it will add two FSA strap-attachment lines at the Fargo site. "Because we have made improvements in our FSA process that will enable us to increase the output of a single line from 2 billion to 5 billion, the Fargo facility will be able to produce 10 billion straps a year," says Keith McDonald, Alien's senior vice president of sales and marketing.

Currently, the Fargo plant is capable of producing up to 2 billion chips and up to 500 million inlays per year. Alien has contracted with RFID label converters that allow for a total annual production of 840 million RFID smart labels. The company says the introduction of its own chip will not change its inlay pricing, which should remain consistent until market demand enables it to lower prices.

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