

Fractal Antenna licensing deal signals new beginning

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Nathan "Chip" Cohen founded Fractal Antenna Systems Inc. in the classic startup way: tinkering in his basement while working a day job.

In 1987 Cohen was a Boston University astronomy professor when he attended a conference where Benoit Mandelbrot, the famed founder of fractal geometry, was speaking. Cohen was inspired by his lecture on fractals -- geometric shapes that can be subdivided into parts, each of which looks like the whole.

"I thought, 'Wouldn't it be unusual to shape some antennas like that?' " said Cohen.

So he went home and went to work. His tinkering moved from his apartment to the changing table in his first house. He officially launched his business in 1995 with his father, Hyman Cohen. In the business's early days, Cohen shopped at MIT flea markets and in 1996 won an SBIR Army grant, which gave the company its real start.

Last week the 15-person, Bedford-based company, which holds more than a dozen patents, scored an exclusive licensing deal with label manufacturer and marketer Nashua Corp. (Nasdaq: NSHA), which has agreed to manufacture and distribute passive RFID labels and tags using antennas developed by Fractal Antenna. Fractal hopes the deal, which was years in the making, will signal the beginning of the company's transition from making mainly custom antennas to producing more off-the-shelf offerings.

Fractal Antenna says it is profitable, with revenue in the "low millions." To achieve its new goal, the company says it will need more capital. To that end Fractal Antenna is seeking capital to scale the business, although it will not give a specific amount or time frame.

"We're not in a hurry, we're looking for smart money," said Fractal Antenna CEO David Moschella.

The zigzag fractal design of the antennas enables them to be between 50 to 75 percent smaller than traditional antennas. Although they are compact, the antennas have a wider frequency range, according to the company. Because the company works with the military, many of the antenna designs are kept under wraps.

The company is focusing on several markets, including electronic warfare, in-building wireless and infrastructure antennas, which can include antennas for space stations or mobile phones. The company's competitors include Motorola Inc. (NYSE: MOT) and Cushcraft Corp.

One of Fractal's main challenges has been to figure out which markets to focus on, given the horizontal nature of the technology.

"Antennas are used in so many different markets, the key thing for any company is to find where you're really strong and go compete there," said Moschella. "We've been working hard on that."

As the RFID market heats up, the Nashua relationship could prove profitable for Fractal Antennas.

"(Fractal Antenna is) different in that they have a different approach to antenna design," said Mark Roberti, founder and editor of the RFID Journal LLC in Melville, N.Y. "On the reader antenna side, fractal antennas appear to outperform other RFID antennas. At this stage the market is small and not very competitive. There has not been much innovation around reader antennas. If fractal antennas prove significantly superior, that could change very quickly."

Bob Pernice, director of RFID at Nashua, points to Fractal Antenna's innovation as a selling point.

"They have a strong patent portfolio," said Pernice. "They've proven that their antenna designs work in very critical applications."

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