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Dear Executive:

Israel is becoming a formidable force in the new fiber optics marketplace. With strong governmental support, low overhead and expenses, and brilliant engineers, Israeli companies are increasingly coming onto the next gen optical networking radar screen.

One such Tel Aviv-based concern is RED-C Optical Networking, which specializes in optical amplification, offering both EDFA- and Raman-based products.

Begun in 2000, the company has been profitable since 2004, according to Yossi Boker, one of RED-C's two founders. Boker currently serves as CEO, CFO and president. His insights as a former attorney also are helpful to the company. *fibertoday.com* met with Boker; Arik Hertz, chief sales and marketing officer; and Stuart Cohen, sales and marketing director; on Friday.

The company hopes to go public in the near future, Boker said, possibly in the next 18-24 months. It has managed its funding wisely, still operating off the \$17 million investment that got the company started seven years ago. RED-C has a payroll of some 100 employees, including 35 engineers.

How has RED-C been able to be successful making EDFAs and Raman amplification while others have struggled with poor margins and losing revenues? Boker cites "economies," a clear reference to the low cost of doing business in Israel, and innovation, which he says systems vendors and major carriers still prize in optical amplification equipment.

Innovation the company has developed includes its software. Boker says it does not make its components. Even though its business costs in Israel are low, RED-C also is beginning to outsource some of its manufacturing.

The company's main markets are North America and Europe, although it also serves a small, but thriving effort in Israel. Customers include "the usual suspects" of system providers. RED-C believes it will double revenues in 2007 from what they were in 2006, Arik Hertz told us.

Regarding its success to this point, Boker also cites a willingness on the part of RED-C personnel to help companies resolve whatever problems they have. "We become their R&D departments," he says. "We are not satisfied until they are happy."

As we have chronicled in these pages, there is an opportunity for next gen optical componentry, especially for newer companies, as carriers go to IP architectures and wavelength selective and ROADM/tunable/pluggable-based networking. RED-C and others are attempting to exploit that opportunity.

For example, RED-C is making a self-managed EDFA largely to work with ROADMs, which it correctly identifies as a differentiator for next gen optical networking. The company's Senior 3000 Self Managed EDFA, which has an integrated optical channel monitor, provides provisioning for up to 15 dB mid-stage loss, as well as full east west separation of the amplification stages.

A "self-managed" EDFA includes two completely independent, variable gain amplification stages, and a fully functional OCM that monitors the output of each stage. The units must be fast, able to keep up with the rapid optical switching occurring.

The company has had success with east-west separation. The thinking is that if ROADM modules are placed at the mid-stage of a dual stage amplifier, then failure of either of the two amplifiers will result in failure of the entire system. To avoid such a situation, the company reasons that it is necessary to implement full east west separation in each direction. Such an architecture ensures that failure of one of the amplifier units will not shut down the entire unit.

The company believes it can play in all types of optical amplification, although to this point its units are terrestrially based only. It has not gotten itself into non-amplification product sectors, although Boker would not dismiss that possibility after its IPO.

RED-C clearly is mainly focused on EDFAs, which is where the market continues to be driven. Its Raman products are “complementary,” and stress the importance of safety in use due to the human eye danger of Raman pumping. The product line is known as the ISAFE Raman amplifier.

The company has been developing Raman amplification since 2003 and brought its first products to market in 2004 in pizza box format. Raman amplification is popular in applications where longer signal boosting is helpful, such as in island hopping or transmitting through inaccessible areas. It is unclear whether the only major optical networking system based on Raman, Lucent’s lambda extreme, will continue on as the result of the Alcatel merger.

RED-C says it has “invested significant resources” in Raman amplification, calling it a “key technology for modern optical networks.” It has received patent rights in the United States for technology related to it.

RED-C’s Raman amps contain either two or three pump laser diodes. Using two pumps, the pumps have different wavelengths chosen for optimized flat gain over the transmission band, providing a maximum combined output power of 490 mW, the company says. Three-pump models feature two of the pumps with the same wavelength but different polarization, thereby decreasing polarization dependent gain, or PDG.

Because the company recognizes the importance of innovation to its survival, it will be introducing two new products at OFC 2007, units that will address more output power, clearer imaging of the line and the capability to support higher data rates.

NOTES: Leviton continues to develop its telecom presence. The company says it is introducing a national support team comprised of commercial cabling, design and installation personnel. The “S3 team” has the capability of helping with installs related to 10 Gigabit Ethernet over fiber, FTTx and multiple dwelling units, as well as deploying over wireless and copper architectures. The company says it also is introducing Power over Ethernet Midspans, which it says provide safe power over standard Ethernet cabling to both existing 10/100 baseT network devices and emerging Gigabit devices.

Sincerely,

C. David Chaffee

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