

ISCO INTERNATIONAL INC  
Form 10-K  
March 31, 2005  
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## SECURITIES AND EXCHANGE COMMISSION

Washington, DC 20549

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### Form 10-K

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(Mark On)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2004

or

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission File Number 0-22302

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## ISCO INTERNATIONAL, INC.

(Exact name of registrant as specified in its charter)

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**Delaware**  
(State or other jurisdiction  
of incorporation)

**36-3688459**  
(I.R.S. Employer  
Identification No.)

**1001 Cambridge Drive**  
**Elk Grove Village, Illinois 60007**  
**(847) 391-9400**

(Address and telephone number of principal executive offices)

**Securities registered pursuant to Section 12(b) of the Act:**

<u>Title of Class</u>	<u>Name of Exchange on Which Registered</u>
<b>Common Stock, Par Value \$0.001 Per Share and associated Preferred Stock Purchase Rights</b>	<b>American Stock Exchange</b>

**Securities registered pursuant to Section 12(g) of the Act: None**

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes  No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is an accelerated filer (as defined in Rule 12b-2 of the Act). Yes  No

On June 30, 2004, 160,496,203 shares of the registrant's Common Stock, par value \$0.001 per share (the Common Stock) were outstanding. The aggregate market value on June 30, 2004 of the registrant's Common Stock held by non-affiliates of the registrant was \$33.7 million, based on the closing price per share of the registrant's common stock as quoted on the American Stock Exchange. This amount excludes more than 67 million shares of common stock held by affiliates. Exclusion of shares held by any person should not be construed to indicate that such person possesses the power, direct or indirect, to direct or cause the direction of the management or policies of the registrant, or that such person is controlled by or under common control with, the registrant.

**DOCUMENTS INCORPORATED BY REFERENCE**

None.

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### PART I

#### **Business**

The Company develops and sells solutions designed to optimize the RF (Radio Frequency) link within wireless networks, particularly, but not exclusively, on the reverse link. RF link, or Radio link, is the signal between the mobile device (e.g., mobile phone) and the base station ( Link ). Reverse link is the signal from the mobile device to the base station. Forward link is the signal from the base station to the mobile device. The Company's array of solutions includes its ANF product line (adaptive notch filter, ANF), the RF<sup>2</sup> product family (radio link radio frequency fidelity, RF<sup>2</sup>), services and other solutions, all focused on optimizing RF handling.

The benefits of using the Company's solutions include: allowing carriers (channels) to carry traffic in certain circumstances where they otherwise could not, increased cell site capacity and utilization, reduced mobile transmit power and thus improved battery life, improved voice quality and substantial reduction in dropped calls and failed attempts, culminating in more satisfied customers and increased revenues for wireless operators. These benefits have been documented in field trials and commercial deployments with wireless operators involving existing wireless systems.

In addition, the Company believes that current and near-term upgrades of existing wireless networks to allow for data throughput ( 2.5G systems) and further, by the rollout of the next generation of wireless systems ( 3G or 3rd Generation ), operators will need to manage the RF signal and eliminate interference more effectively in order to meet their performance objectives. The Company believes that with the increased data bit rates required of these systems and the increased usage of these systems with the adoption of wireless internet services, that interference levels will increase substantially while tolerance to interference will decrease substantially, thereby requiring an improved RF signal handling and filtering system in the cell site. Additionally, the difficulty in enabling multiple network standards will require enhancements to the operator's infrastructure. The Company believes that its products can be an effective element of solutions in these areas.

#### *ANF Technology*

One of the difficult tasks facing any wireless operator is the need to resolve interference that is from multiple sources, sporadic or quickly moving. Often, sources of interference prove difficult to locate due to their sporadic nature, and other times are beyond the operator's control (such as in the case of border sites). Regardless, in-band interference is a fast-growing problem, one that can substantially reduce the ability of the network to carry traffic.

With the acquisition of the ANF division of Lockheed Martin Canada Corporation during 2000 and subsequent development efforts, the Company owns proprietary technologies that monitor RF spectrum and block spontaneous interference occurring within that spectrum. This allows the Company to offer what it believes to be the only product in the world that locates and suppresses in-band interference in a CDMA carrier dynamically.

The Company has announced the expansion of the ANF platform to support network-wide deployment in metropolitan service areas. The more flexible platform now has the capability to scan and protect any combination of CDMA carriers in either A-band or B-band cellular networks, along with a web-based network management software package to allow operators to remotely monitor and manage large numbers of sites equipped with ANF technology. This web-based reporting feature provides customers a valuable tool for their use in managing their networks, and thus provides a strong competitive advantage to the ANF product line.

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Based on customer feedback, the Company has further added to its ANF product line to include an ANF on Wheels . This is a rapidly deployable solution to combat immediate problems that also serves as a state-of-the-art reporting tool. Operators can utilize the reporting features of this product to gain critical information of interference events within their networks.

The Company plans to expand this product family beyond the traditional cellular bands (850 MHz), and into PCS (1900 MHz) and 3G bands. It also plans to significantly improve its platforms to allow for more ubiquitous deployments.

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### *RF<sup>2</sup> Technology*

The Company launched its RF<sup>2</sup> product line during September 2003, and received commercial orders during the fourth quarter 2003. New products were added to this family during 2004, with purchase orders for those products received during 2004. The Company entered 2005 with more than \$2 million in customer purchase orders for first quarter delivery related to data network requirements.

Designed for network-wide deployment, the RF<sup>2</sup> drastically reduces the noise figure in a base station, improving the ability of a base station to optimally process wireless signals. The impact of RF<sup>2</sup> is also felt on handsets in the form of reduced mobile transmit power and increased talk time while improving base station coverage. As a result, operators have fewer dropped calls, fewer connection failures, and most importantly, more satisfied customers. Higher-priced, more exotic solutions exist, such as HTS units (High Temperature Superconductor filters), yet the RF<sup>2</sup> has been shown to deliver performance generally comparable to HTS-based solutions.

The wireless telecommunications industry is undergoing significant transformation as it attempts to integrate existing technology with new equipment. Additionally, the Company believes that the recent increase in merger activity will force merged companies to integrate disparate technology platforms. The Company's products, particularly its RF<sup>2</sup> products, are modularly designed to assist in that requirement.

The Company also has the technology and experience in a number of HTS solutions that can be made available for the proper application, but has focused on the RF<sup>2</sup> as the value leader in the industry.

### *Professional Services*

Over time, the Company has developed expertise in the area of radio link issues, including interference mitigation. This expertise is available to customers in the form of interference audits and analytical tools, thus allowing customers to focus their resources on running their networks instead of focusing on understanding interference problems.

## **HISTORY**

The Company was founded in 1989 by ARCH Development Corporation, an affiliate of the University of Chicago, to commercialize superconductor technologies initially developed by Argonne National Laboratory. The Company was incorporated as Illinois Superconductor Corporation in Illinois on October 18, 1989 and reincorporated in Delaware on September 24, 1993. The Company shifted its focus from that of a superconductive filter provider to a customer-driven interference management company during 2001, changing its name to ISCO International, Inc. More recently, the Company has broadened its view to the optimization of the radio link of wireless networks. The Company's facilities and principal executive offices are located at 1001 Cambridge Drive, Elk Grove Village, Illinois 60007 and its telephone number is (847) 391-9400. The Company maintains a website at <http://www.iscointl.com>. The information contained therein is not incorporated into this annual report.

## **BUSINESS STRATEGY**

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The Company's strategic goal is to become the leading supplier of RF management and radio link optimization solutions to wireless operators. ISCO is seeking to accomplish its goal by:

Marketing its products aggressively to leading wireless operators;

Providing customers comprehensive radio link management infrastructure-based solutions for wireless networks;

Continuing to build on its strong intellectual property position and assert its rights therein; and

Outsourcing product manufacturing and reducing product cost.



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The Company is focusing its continuous efforts on winning the support of the world's leading wireless operators for its radio link optimization solutions. The Company believes that its ANF and RF<sup>2</sup> product families, as well as its professional service support and other products, make it a preeminent radio link management specialist in the market.

The Company currently outsources production for its products. Management believes that it can maintain or achieve targeted product gross margins and minimize capital needs while reducing product costs. Management further believes that offering the lowest product cost will further strengthen the Company's ability to achieve its strategic objectives.

### **LINK ISSUES, INCLUDING INTERFERENCE, AND WIRELESS SYSTEMS**

Link issues are a growing problem limiting cell site coverage, capacity and range, as well as mobile transmit power and related battery-life issues. Link problems cause dropped calls, poor call quality, and other service problems that lead to subscriber dissatisfaction and turnover (churn). Interference enters a carrier's operating frequencies from such sources as: home electronic devices such as portable phones, two-way radios used by commercial enterprises and governmental agencies, air-to-ground radio, police, fire and emergency services radio, military radio, wireless data networking systems, television and radio broadcasts, radar and other cellular networks. Interference is also created by electrical sources used to power cellular base station equipment. Interference may begin within a particular frequency or migrate from another frequency. Increased usage of co-location (multiple providers using the same towers), increased sensitivity of non-voice applications, and the continued surge in wireless traffic result in increasing the impact of interference on wireless networks.

The Company believes the proliferation of wireless devices and high data rate services will exacerbate the amount of interference bombarding carriers' operating frequencies. Conventional cellular base station equipment does not effectively cope with interference issues.

In the face of expanding subscriber bases, increased minutes of cell phone use, demand for high data rate services, the ease of customer churn due to number portability, restricted capital budgets and intense competition, the provisioning and optimization of wireless system infrastructure is a major challenge for operators. As a result of these industry conditions, wireless equipment manufacturers, including independent wireless technology companies and large original equipment manufacturers (OEMs) are working intensely to develop technologies that provide operators the tools necessary to monetize the growing demand for wireless services.

Using the Company's solutions to optimize the radio link and other RF aspects of the wireless network, including the mitigation of interference, the Company believes that operators can capture additional capacity and utilization, expand cell site range and coverage as well as reduce dropped calls to a fraction of what they were prior to the addition of the Company's equipment and to drastically improve overall call quality. Further, the addition of data has placed a tremendous strain on wireless networks, and the Company has encountered cases where its products enabled carriers (channels) to carry traffic where they could not do so without the Company's solutions. These issues, capacity and quality, have been presented as critical wireless operator issues in today's environment.

The Company estimates the economic payback to operators as a result of the use of the Company's solutions should occur in less than one year, depending on cell site traffic levels and dynamics. The Company believes that the short economic payback of its equipment compare favorably with other solutions and that the relatively low capital cost of the Company's products make its products the best value of all alternatives to system operators.

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The higher data rates of 2.5G systems and 3G systems that are currently coming online (up to 10 to 100 times faster than current 2G networks), will require much cleaner signals to support data transfers and IP protocols (error rates typically 1,000 to 10,000 times better than current 2G specifications). As a result, management believes that system operators will eventually utilize the Company's solutions in a large number of their base stations.

The wireless telecommunications industry is undergoing significant transformation as it attempts to integrate existing technology with new equipment. Additionally, the recent increase in merger activity will force merged companies to integrate disparate technology platforms. The Company's products are designed to assist in that requirement.

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### **Target Market**

The Company believes demand for its products will be primarily driven by the following factors:

1. Existing 2G networks are straining under heavy traffic. According to the Cellular Telecommunications & Internet Association, minutes per user per month increased from 136 minutes in 1998 to 403 minutes in 2002. The same source indicates that total cell phones in use in the United States increased from 4 million in 1990 to 168 million during 2004. According to industry sources, the worldwide number of subscribers using mobile wireless networks is increased from 308 million in 1998 to 1 billion in 2004, representing an annual compound growth rate of 21%. Regardless of the timing of the introduction of high data rate 2.5G and 3G systems, these trends will drive demand for infrastructure enhancements.

2. As wireless operators install their data-oriented 2.5G overlay networks on top of their existing 2G network, the Company believes data-networks will further strain systems resulting in the need for enhanced infrastructure-based solutions to optimize the radio link in order to achieve data and error rates specified.

3. Interference and coverage issues are primary causes of poor call quality, dropped and lost calls. The Company believes that as a result of increasing use of devices such as cellular phones, wireless data networking equipment, wireless consumer appliances and radar, wireless network operators are coming to view interference and coverage management technologies as necessary to protect against their customer bases migrating to other carriers (churn), an especially sensitive topic since number portability (the ability to retain one's phone number when changing wireless operators historically a barrier to changing providers) went into effect.

4. The Company believes that 3G wireless networks will require smaller operating cells and more base stations than existing cellular networks in order to cover the same geographic area. This is based on the requirement for high data rate transmission capability and cleaner error code criterion for 3G networks as well as the fact that transmissions at higher frequencies utilized by 3G networks (expected to operate in the 2100 MHz range) have shorter transmission waves as compared to lower frequency transmissions. Shorter transmission waves tend to limit the distance transmissions can travel without significant degradation.

5. The wireless telecommunications industry is undergoing significant transformation as it attempts to integrate existing technology with new equipment. Additionally, the Company believes that the recent increase in merger activity will force merged companies to integrate disparate technology platforms. The Company's products are modularly designed to assist in that requirement.

### **The 3G Opportunity: A True Wireless Internet**

Existing wireless networks are based on technical architectures that were standardized in the late 1980s and early 1990s, and are highly optimized for processing voice signals. The guiding principle of 2G systems (including TDMA, GSM, and CDMA) is signal compression to achieve spectrum efficiency. The basic user data-rate in these networks is typically around 10 kb/s, which is adequate for telephony voice traffic.

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3G standards are being developed to meet the needs for a true wireless Internet service. There are several competing versions of the 3G standard, including W-CDMA and cdma2000. These standards are broadly similar. They are based on wideband CDMA architecture, and will require the same general ultra-clean interference suppression solutions to achieve optimal performance. These new standards will allow for user data-rates of 500 kb/s and up to 2 MB/s *nearly two hundred times faster than previous 2G networks*. Moreover, 3G networks will have to support traffic patterns characteristic of Internet connectivity ( always on service that may generate several hours of connect time per user per day) rather than today's short voice telephony patterns.

The Company believes itself to be a highly competent in differentiated technologies in radio link management and optimization. The Company's goal is to position itself to lead the industry in radio link optimization applications within wireless systems.

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### **TECHNOLOGY OVERVIEW**

A wireless base station is roughly divided into two halves: the digital portion and the so-called RF portion.

The core expertise of ISCO is the application of technology and experience to wireless RF systems. The components in the receiver front-end are designed to acquire the desired information-bearing signal and pass it through to the digital portion of the system, where it is processed digitally and the user information is extracted. Typically, much of the signal is lost as it passes through the RF components. Further, undesired electromagnetic interference (inband and out of band) also leaks into the system due to imperfections in the characteristics of the RF devices.

The use of ISCO solutions for wireless RF systems is based on creating RF components which block or mitigate the impact of interference, optimize signal processing within the radio path while introducing very little signal loss or degradation, and help operators identify and resolve issues impacting performance.

#### **RF<sup>2</sup> (Radio link Radio Frequency Fidelity)**

The RF<sup>2</sup> product is a radio link low noise RF solution developed out of ISCO's years of experience with radio frequency and wireless base station performance needs. The RF<sup>2</sup> product is designed and priced for network wide deployment, improving base station coverage integrity and eliminating dead zones. The impact of RF<sup>2</sup> is also felt on the handset in the form of reduced mobile transmit power and increased talk time while improving base station coverage. As a result, operators have fewer dropped calls, fewer connection failures, and most importantly, more satisfied customers.

The wireless telecommunications industry is undergoing significant transformation as it attempts to integrate existing technology with new equipment. Additionally, the recent increase in merger activity will force merged companies to integrate disparate technology platforms. The Company's products are designed to assist in that requirement.

The RF<sup>2</sup> is easy to install, maintenance-free, and a fraction of the cost of more exotic solutions such as HTS. Additionally, it has been shown to deliver results generally comparable to HTS-based solutions without a cryogenic cooler or other moving parts that may degrade reliability. The Company believes that the ease of integration and value compete strongly with these and other solutions.

#### **RF<sup>2</sup> Competition**

OEM competition includes solutions such as adding a carrier to the CDMA cell sites (to increase capacity), cell splitting, or even adding an entirely new base station so as to add capacity and coverage. After-market competition includes repeaters, TMA's, and HTS receiver front ends, as well as duplexers and other non-integrated solutions. As with the OEM-based solutions, these products may generally improve the coverage of the network, but don't offer the value of the Company's fully integrated link management solutions.

**Adaptive Notch Filters**

The Company offers ANF product solutions that continually scan a segment of RF spectrum for interference and block that interference within milliseconds per carrier (channel). The blocking feature is in place as long as needed for noise suppression. These products are especially useful in dealing with sporadic in-band interference as they adapt the Company's interference-management technology to the dynamic environment. The complementary nature of these products with the Company's RF<sup>2</sup> solutions offers complete radio link optimization solutions to its customers, rather than force customers to try to isolate the primary cause of problems prior to looking for an effective solution.

ISCO's ANF solutions substantially reduce or eliminate altogether the effects of such in-band interference. Each ANF unit continuously monitors up to all seven available CDMA carriers (or seven 1.25MHz channels) being

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utilized for service, identifying and eliminating narrow-band interferers within the channel whenever and wherever they occur. By dynamically notching out this in-band interference, the coverage integrity and supportable capacity of the cell site are maintained as designed during the network build out. As a direct consequence, the ANF product thereby recovers lost minutes of use, reduces the number of dropped calls and failed call attempts. An entire network of ANF hardware can be managed via the web-based management software that supports the hardware.

The current product is focused on CDMA networks. A product evolution path is planned to extend the range of applications to wide-band CDMA systems (W-CDMA). During 2004, the Company launched an outdoor application of this product. This has expanded the Company's addressable market, as certain base stations are located in outdoor configurations.

ISCO's ANF solution dynamically identifies and eliminates direct in-band interference in the radio link of a wide-band system such as CDMA. When such interference is present without being eliminated, the radio link of such a system will be significantly reduced, often to the point of not allowing any calls on the entire CDMA channel. The ANF unit continuously monitors the power spectral density across the CDMA carriers in use and identifies narrow-band interference in the band of interest. The severity of multiple in-band interferers is prioritized, and the ANF unit dynamically inserts a highly selective notch to eliminate multiple interferers with minimal impact on the desired broadband signal. A single ANF unit supports both the main and diversity paths of a single sector within the cell sites.

ISCO has also developed a network-wide, web-based network management tool (web monitor), allowing its customers to perform management functions for all ANF units throughout the system. This tool with a graphical user interface allows the service provider to control, configure, and monitor the ANF units remotely from the network management center. This includes:

Remote configuration of parameters within all ANF units

Remote monitoring of alarm status for all ANF units

Observe interference and notch activity from all units

View on-line event data and reports based on measured performance data

ISCO has industry leading expertise in the optimization of CDMA networks. To facilitate rapid penetration of ANF, ISCO is offering professional services to the service providers engineering team to identify and quantify interference, and, its effects on network performance. ISCO has already developed the following custom software and hardware tools to perform interference analysis and interference audit. iSMART (Interference from System Metric Analysis Rules Tool): This software tool enables a service provider to identify potential ANF candidate sectors/cell sites by analyzing the system performance metrics data generated in their CDMA network. Automated Test Equipment, ANF-on-wheels and ANF Web Monitor: This software/hardware combination allows the Company to perform interference audit at cell sites of service providers regardless of the frequency band of operation. This service helps quantify interference and identify new markets (frequency bands) with high interference.

*ANF competition*

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ISCO holds proprietary technology on ANF but there are alternative solutions that can be categorized as either direct or indirect competition. Direct competition is defined as products that directly address the problem of the issue at hand, namely in-band interference. Indirect competition is categorized as other wireless communication products that do not directly solve the problem of in-band interference, but may be perceived as an alternate solution by service providers. Base-station manufacturers are referred to as the OEMs, whereas manufacturers of auxiliary equipment to augment the base station are referred to as After-Market Vendors.

### *Direct Competition After-Market Vendors*

Fixed-frequency notch filters are the main form of direct competition. However, these will only work in a static interference environment, and hence do not satisfy the need of dynamic interference detection and elimination as observed in a vast majority of in-band interference scenarios. Smart antennas were also developed with the intent



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of in-band interference mitigation. However, the Company believes these solutions have limited applicability and effectiveness in eliminating in-band interference, particularly in a CDMA-based network, and are typically substantially more expensive (in addition to being less effective) than ISCO's ANF solution.

### *Direct Competition - OEMs*

Digital-signal-processing based solutions may be under development by the various OEMs. Even if the manufacturers do develop such a solution for in-band interference, the Company believes that they would have limited dynamic range and hence would only be able to mitigate low-power interference.

### *Indirect Competition - OEMs*

Indirect competition does not directly address the problem of in-band interference, but could be viewed as a method for circumventing the problem without addressing the issues at hand. Some of these are based solely on OEM-based hardware, such as adding a carrier to the CDMA cell sites (to increase capacity), cell splitting, or even adding an entirely new base station so as to add capacity and higher signal-to-noise in a particularly problematic location. However, the Company believes these solutions to be very costly, and, while providing more absolute network capacity, do not guarantee increased performance due to the limiting effects of in-band interference.

### *Indirect Competition - After-Market Vendors*

Other forms of indirect competition include repeaters, TMA's, and HTS receiver front ends. As with the OEM-based solutions, the Company does not believe these to directly address the problem of in-band interference, but may generally improve the coverage of the network.

## **Product Benefits**

The Company's products are designed to address the high performance RF needs of domestic and international commercial wireless telecommunication systems by providing the following advantages:

**Enable Launch of Data Networks.** Beginning in 2005, The Company's solutions are being utilized with data network deployments. These launches require upgrades and changes to existing infrastructure. The Company's products have proven effective in helping customers in this area. It is expected that data networks will be widely deployed, in the United States and elsewhere, during 2005 and beyond.

**Technology Integration due to Expansion or Consolidation.** The wireless telecommunications industry is undergoing significant transformation as it attempts to integrate existing technology with new equipment. Additionally, the Company believes that the recent increase in merger activity will force merged companies to integrate disparate technology platforms. The Company's products are modularly designed to

assist in that requirement.

**Greater Network Capacity and Utilization.** The Company's solutions can increase capacity and utilization by up to 70% or more. In some cases, capacity increases because channels which were previously unusable due to interference are recovered. In other cases, system utilization increases because of lower levels of blocked or dropped calls, and increases in the ability of the system to permit weak signals to be processed with acceptable call quality. In CDMA systems, increased capacity frequently results from lowering the system's noise floor.

**Improved Base Station Range.** The Company's RF systems can extend the radio link range of a wireless system by up to 30% or more. Greater range can reduce a service operator's capital expenditure per customer in lower density areas by filling in coverage gaps in existing systems or by reducing the number of required cell sites for new system deployments.

**Improved Flexibility in Locating Base Stations.** The Company's RF products can allow wireless telecommunications service providers to co-locate base stations near other RF transmitters. The Company's products allow the cell site radio to better tolerate RF interference while reducing out-of-band signals that could interfere with other nearby wireless telecommunication operators.

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**Improved Call Quality Fewer Dropped Calls and Failed Connection Attempts.** The Company's products improve call quality by reducing dropped and blocked calls. During commercial installations, the Company's RF products have demonstrated drastic reduction in dropped calls, by as much as 50% or more. The Company's products similarly reduce the number of ineffective connection attempts and dead zones within networks.

**Reduced Mobile Transmit Power.** By improving the radio link, reducing the system's noise floor and mitigating the destructive impact of interference, the Company's solutions greatly reduce required mobile transmit power. This improves battery life, among other benefits.

## **COMPANY HIGHLIGHTS**

### **Sales and Marketing**

Until recently, the Company had historically focused its sales and marketing effort on U.S. wireless service providers for retrofit applications. To date, the Company has sold its products to many of the largest cellular operators in the United States as well as to mid-size and smaller U.S. wireless operators.

Recently, the Company has started targeting certain international customers, marketing both its existing products and presenting the benefits of its interference-management technology in the design and early stages of new systems for 2.5G and 3G Systems.

### **Manufacturing**

The Company emphasizes the outsourcing of its manufacturing processes in order to provide predictable product yields and easy expansion to meet increased customer demand. Toward that end, the Company currently produces all of its ANF and RF<sup>2</sup> products through third party manufacturers. The Company believes there are multiple sources available for manufacturing and foresees no problem continuing to apply its outsourcing strategy. The Company's internal manufacturing capability can be found in Elk Grove Village, IL.

### **Research and Development**

The Company's R&D efforts have been focused on developing and improving RF products for wireless telecommunications systems. As a result of such efforts, product performance has been improved, product size has been reduced, production costs have been lowered, product functionality has been increased, and product packaging has been streamlined. While the Company expects to continue to invest in R&D to further improve and adapt its products to meet and exceed market expectations, and will continue to develop new technology-based solutions, this is expected to require significantly less capital than in the past (prior to 2002) as the combination of application development and technology development is expected to be more efficient than the initial development of products and technologies. The Company also intends to develop related products that are synergistic with its core offerings and which utilize the Company's core technical competencies in the radio link management arena.

The Company's total R&D expenses during 2002, 2003 and 2004 were approximately \$2,737,000, \$988,000, and \$1,119,000, respectively.

### **Intellectual Property and Patents**

The Company regards certain elements of its product design, fabrication technology and manufacturing process as proprietary and protects its rights in them through a combination of patents, trade secrets and non-disclosure agreements. The Company also has obtained exclusive and non-exclusive licenses for technology developed with or by its research partners, Argonne National Laboratory ( Argonne ) and Northwestern University, and expects to continue to obtain licenses from such research partners and others. The Company believes that its success will depend in part upon the protection of its proprietary information, its patents and licenses of key technologies from third parties, and its ability to operate without infringing on the proprietary rights of others.

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### **HTS Technology**

The Company spent many years developing HTS applications, resulting in a number of products, processes and materials related to HTS. This experience has helped the Company offer its current set of state of the art solid-state solutions, and the underlying technology is being utilized in the marketplace today and may be more fully utilized in the future.

There are two ways of designing an HTS component – thin-film and thick-film techniques. The Company has technologies in both aspects that may have application to specific, but currently limited markets. The Company is prepared to address those segments should the opportunity present itself, but currently has chosen to focus on higher value-added, solid state solutions appropriate for the wireless telecommunications application.

### **Patents**

The Company has internally applied for patents and acquired patents, through assignment of a license from the Canadian government, in connection with the purchase of the Adaptive Notch Filtering business unit of Lockheed Martin Canada. One of the Company's patents is jointly owned with Lucent Technologies, Inc. Furthermore, the Company expects to pursue foreign patent rights on certain of its inventions and technologies critical to its products. Please refer to Note 2 of our Financial Statements for a discussion of patent useful lives and amortization.

### **Government Regulations**

Although the Company believes that its wireless telecommunications products themselves are not licensed or governed by approval requirements of the Federal Communications Commission ( FCC ), the operation of base stations is subject to FCC licensing and the radio equipment into which the Company's products would be incorporated is subject to FCC approval. Base stations and the equipment marketed for use therein must meet specified technical standards. The Company's ability to sell its RF products is dependent on the ability of wireless base station equipment manufacturers and of wireless base station operators to obtain and retain the necessary FCC approvals and licenses. In order to be acceptable to base station equipment manufacturers and to base station operators, the characteristics, quality, and reliability of the Company's base station products must enable them to meet FCC technical standards.

The Company may use certain hazardous materials in its research, development and any manufacturing operations. As a result, the Company may be subject to stringent federal, state and local regulations governing the storage, use and disposal of such materials. It is possible that current or future laws and regulations could require the Company to make substantial expenditures for preventive or remedial action, reduction of chemical exposure, or waste treatment or disposal. The Company believes it is in material compliance with all environmental regulations and to date the Company has not had to incur significant expenditures for preventive or remedial action with respect to the use of hazardous materials.

### **Employees**

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As of January 15, 2005, the Company had a total of 23 employees, 6 of whom hold advanced degrees. Of the employees, 2 are engaged in manufacturing and production, 8 are engaged in research, development and engineering, and 7 are engaged in marketing and sales, and 6 are engaged in finance and administration. Additionally, a former employee provides consulting services within the marketing/sales function. The Company also periodically employs other consultants and independent contractors on an as-needed basis. None of the Company's employees are covered by a collective bargaining agreement. The Company believes its relationship with its employees is good.

### **FORWARD-LOOKING STATEMENTS**

Because ISCO International, Inc. ( ISCO or ISCO International or Company ) wants to provide investors with more meaningful and useful information, this Annual Report on Form 10-K ( Form 10-K ) contains, and incorporates by reference, certain forward-looking statements that reflect the Company's current expectations regarding its future results of operations, performance and achievements. The Company has tried, wherever

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possible, to identify these forward-looking statements by using words such as anticipates, believes, estimates, expects, designs, plans, and similar expressions. These statements reflect the Company's current beliefs and are based on information currently available to the Company. Accordingly, these statements are subject to certain risks, uncertainties and contingencies, including the factors set forth under the caption Risk Factors, which could cause the Company's actual results, performance or achievements for 2005 and beyond to differ materially from those expressed in, or implied by, any of these statements. You should not place undue reliance on any forward-looking statements. Except as otherwise required by federal securities laws, the Company undertakes no obligation to release publicly the results of any revisions to any such forward-looking statements that may be made to reflect events or circumstances after the date of this prospectus or to reflect the occurrence of unanticipated events.

## **RISK FACTORS**

The following factors, in addition to other information contained herein, should be considered carefully in evaluating the Company and its business.

### **RISKS RELATED TO THE OPERATIONS AND FINANCING OF THE COMPANY**

#### **History of Losses Raises Doubts About Ability to Continue as a Going Concern**

The Company was founded in October 1989 and through 1996 was engaged principally in research and development, product testing, manufacturing, marketing and sales activities. It has incurred net losses since inception. As of December 31, 2004, the accumulated deficit was approximately \$157 million. The Company has only recently begun to generate revenues from the sale of its ANF and RF<sup>2</sup> products. Accordingly, although management has announced the expectation of improvement during 2005, it is nonetheless possible that the Company may continue to experience net losses and cannot be certain if or when the Company will become profitable.

These conditions raise substantial doubt about the Company's ability to continue as a going concern. The accompanying consolidated financial statements have been prepared assuming the Company will continue as a going concern and do not include any adjustments relating to the recoverability of reported assets or liabilities should the Company be unable to continue as a going concern.

#### **Future Capital Needs**

To date, the Company has financed its operations primarily through public and private equity and debt financings, and most recently through financings with affiliates of its two largest shareholders. The Company believes that it has sufficient funds to operate its business as identified herein into the third quarter 2005, and very possibly longer, subject to working capital or other needs. The Company intends to look into augmenting its existing capital position by continuing to evaluate potential short-term and long-term sources of capital whether from debt, equity, hybrid, or other methods.

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The Company's continued existence is therefore dependent upon its continued ability to raise funds through the issuance of its securities or borrowings, and its ability to acquire assets or satisfy liabilities by the issuance of stock. Management's plans in this regard are to obtain other debt and equity financing until such time as the Company's profitable operation and positive cash flow are achieved and maintained.

Although management believes, based on the fact that it has raised funds through sales of common stock and from borrowings over the past several years, that it will be able to secure suitable additional financing for the Company's operations, there can be no guarantee that such financing will continue to be available on reasonable terms, or at all. As a result, there is no assurance that the Company will be able to continue as a going concern.

The actual amount of future funding requirements will depend on many factors, including: the amount and timing of future revenues, the level of product marketing and sales efforts to support the Company's commercialization plans, the magnitude of research and product development programs, the ability to improve or maintain product margins, and the costs involved in protecting patents or other intellectual property.



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### **Limited Experience in Manufacturing, Sales and Marketing and Dependence on Third Party Manufacturers**

For the Company to be financially successful, it must either manufacture its products in substantial quantities, at acceptable costs and on a timely basis or enter into an outsourcing arrangement with a qualified manufacturer that will allow it the same. Currently, the Company's manufacturing requirements are met by third party contract manufacturers. The efficient operation of the Company's business will depend, in part, on its ability to have these and other companies manufacture its products in a timely manner, cost effectively and in sufficient volumes while maintaining the required quality. Any manufacturing disruption could impair the Company's ability to fulfill orders and could cause us to lose customers.

In the event that it is unable to enter into a manufacturing arrangement on acceptable terms with a qualified manufacturer, the Company would have to produce the products in commercial quantities in its own facilities. Although to date the Company has produced limited quantities of its products for commercial installations and for use in development and customer field trial programs, production of large quantities of its products at competitive costs presents a number of technological and engineering challenges. The Company may be unable to manufacture such products in sufficient volume. The Company has limited experience in manufacturing, and substantial costs and expenses may be incurred in connection with attempts to manufacture larger quantities of the Company's products. The Company may be unable to make the transition to large-scale commercial production successfully.

The Company's sales and marketing experience to date is very limited. The Company may be required to further develop its marketing and sales force in order to effectively demonstrate the advantages of its products over other products. The Company also may elect to enter into arrangements with third parties regarding the commercialization and marketing of its products. If the Company enters into such agreements or relationships, it will be substantially dependent upon the efforts of others in deriving commercial benefits from its products. The Company may be unable to establish adequate sales and distribution capabilities, it may be unable to enter into marketing arrangements or relationships with third parties on financially acceptable terms, and any such third party may not be successful in marketing the Company's products. There is no guarantee that its sales and marketing effort will be successful.

### **Management of Growth**

Growth may cause a significant strain on the Company's management, operational, financial and other resources. The ability to manage growth effectively may require the Company to implement and improve its operational, financial, manufacturing and management information systems and expand, train, manage and motivate employees. These demands may require the addition of new management personnel and the development of additional expertise by management. Any increase in resources devoted to product development and marketing and sales efforts could have an adverse effect on financial performance in future fiscal quarters. If the Company were to receive substantial orders, it may have to expand current facilities, which could cause an additional strain on the Company's management personnel and development resources. The failure of the management team to effectively manage growth could have a material adverse effect on the Company's business, operating results and financial condition.

## **RISKS RELATED TO THE COMPANY'S COMMON STOCK AND CHARTER PROVISIONS**

### **Volatility of Common Stock Price**

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The market price of the Company's common stock, like that of many other high-technology companies, has fluctuated significantly and is likely to continue to fluctuate in the future. Since January 1, 1999 and through December 31, 2004, the closing price of its common stock has ranged from a low of \$0.10 per share to a high of \$39.00 per share, but its common stock has not traded above \$1.07 per share during 2004. Announcements by us or others regarding the receipt of customer orders, quarterly variations in operating results, acquisitions or divestitures, additional equity or debt financings, results of customer field trials, scientific discoveries, technological innovations, litigation, product developments, patent or proprietary rights, government regulation and general market conditions may have a significant impact on the market price of the common stock. In addition, fluctuations in the price of the Company's common stock could affect the Company's ability to maintain the listing of its common stock on the American Stock Exchange.

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### **Risk of Dilution**

As of December 31, 2004, the Company had outstanding options to purchase 9.1 million shares of common stock at a weighted average exercise price of \$0.40 per share (2.7 million of which have not yet vested) issued to employees, directors and consultants pursuant to the 2003 Equity Incentive Plan and its predecessor 1993 Stock Option Plan, as amended, the merger agreement with Spectral Solutions, and individual agreements with management and directors. In order to attract and retain key personnel, the Company may issue additional securities, including stock options, in connection with or outside the Company's employee benefit plans, or may lower the price of existing stock options.

The exercise of options and warrants for common stock and the issuance of additional shares of common stock and/or rights to purchase common stock at prices below market value would be dilutive to existing stockholders and may have an adverse effect on the market value of the common stock.

### **Concentration of the Company's Stock Ownership**

At the time of this filing, officers, directors and principal stockholders (holding greater than 5% of outstanding shares) together control approximately 40% of the outstanding voting power. Consequently, these stockholders, if they act together, would be able to exert significant influence over all matters requiring stockholder approval, including the election of directors and approval of significant corporate transactions. In addition, this concentration of ownership may delay or prevent a change of control of the Company, even if a change may be in the best interests of the Company's stockholders. The interests of these stockholders may not always coincide with the interests of the Company's or the interests of other stockholders. Accordingly, these stockholders could cause the Company to enter into transactions or agreements that it would not otherwise consider.

### **Anti-Takeover Provisions**

There exist certain arrangements which may be deemed to have a potential anti-takeover effect in that such provisions may delay, defer or prevent a change of control of the Company. In February 1996, the Board of Directors adopted a stockholders rights plan. In addition, the Company's Certificate of Incorporation and By-Laws provide that (i) the Board of Directors has authority to issue series of the Company's preferred stock with such voting rights and other powers as the Board of Directors may determine and (ii) prior specified notice must be given by a stockholder making nominations to the Board of Directors or raising business matters at stockholders meetings. The effect of the rights plan and the anti-takeover provisions in charter documents may be to deter business combination transactions not approved by the Company's Board of Directors, including acquisitions that may offer a premium over market price to some or all stockholders. The Company's Board of Directors has expressed the intent to allow this plan to expire by its terms during February 2006.

The Board of Directors also recommended to the shareholders that staggered director terms be eliminated, such that all directors are to be elected annually. The Company's shareholders approved this amendment to the Company's Certificate of Incorporation during the annual meeting of shareholders held during December 2004.

## **TECHNOLOGY AND MARKET RISKS**

**The Company is dependent on wireless telecommunications.**

The principal target market for the Company's products is wireless telecommunications. The devotion of substantial resources to the wireless telecommunications market creates vulnerability to adverse changes in this market. Adverse developments in the wireless telecommunications market, which could come from a variety of sources, including future competition, new technologies or regulatory decisions, could affect the competitive position of wireless systems. Any adverse developments in the wireless telecommunications market may have a material adverse effect on the Company's business, operating results and financial condition.

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### **The Company is dependent on the enhancement of existing 2G and 2.5G networks and the build-out of 3G networks, and the capital spending patterns of wireless network operators.**

Increased sales of products is dependent on a number of factors, one of which is the build-out of third generation, or 3G, enabled wireless communications networks as well as enhancements of existing infrastructure. Building wireless networks is capital intensive, as is the process of upgrading existing second generation, 2G, equipment. Further, the capital spending patterns of wireless network operators is beyond management's control and depends on a variety of factors, including access to financing, the status of federal, local and foreign government regulation and deregulation, changing standards for wireless technology, the overall demand for wireless services, competitive pressures and general economic conditions. The build-out of 2.5G and 3G enabled networks may take years to complete. The magnitude and timing of capital spending by these operators for constructing, rebuilding or upgrading their systems significantly impacts the demand for the Company's products. Any decrease or delay in capital spending patterns in the wireless communication industry, whether because of a general business slowdown or a reevaluation of the prospective demand for 2.5G and 3G services, would delay the build-out of these networks and may significantly harm business prospects.

### **The Company's success depends on the market's acceptance of its products.**

The Company's RF products, including its ANF and RF<sup>2</sup> products, have not been sold in very large quantities and a sufficient market may not develop for these products. Customers establish demanding specifications for performance, and although the Company believes it has met or exceeded these specifications to date, there is no guarantee that the wireless service providers will elect to use these solutions to solve their wireless network problems. Although the Company has received several orders from wireless operators for the Company's products over the past year, including a record backlog entering 2005, there is no assurance that it will continue to receive orders from these customers.

### **Rapid technological change and future competitive technologies could negatively affect operations.**

The field of telecommunications is characterized by rapidly advancing technology. The Company's success will depend in large part upon its ability to keep pace with advancing its high performance RF technology and efficient, readily available low cost materials technologies. Rapid changes have occurred, and are likely to continue to occur, in the development of wireless telecommunications. Development efforts may be rendered obsolete by the adoption of alternative solutions to current wireless operator problems or by technological advances made by others.

## **BUSINESS RISKS**

### **Dependence on a Limited Number of Customers**

Sales to three of the Company's customers accounted for 94% and 98% of the Company's total revenues for 2004 and 2003, respectively. During 2004 the top three customers were Verizon Wireless, U.S. Cellular Corporation, and Pelephone Communications Ltd., respectively. In addition, a significant amount of the Company's technical and managerial resources have been focused on working with these and a limited number of other operators and OEMs.

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The Company expects that if its products achieve market acceptance, a limited number of wireless service providers and OEMs will account for a substantial portion of revenue during any period. Sales of many of the Company's products depend in significant part upon the decision of prospective customers and current customers to adopt and expand their use of these products. Wireless service providers, wireless equipment OEMs and the Company's other customers are significantly larger than, and are able to exert a high degree of influence over the Company. Customers' orders are affected by a variety of factors such as new product introductions, regulatory approvals, end user demand for wireless services, customer budgeting cycles, inventory levels, customer integration requirements, competitive conditions and general economic conditions. The failure to attract new customers would have a material adverse effect on the Company's business, operating results and financial condition.

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### **Lengthy Sales Cycles**

Prior to selling products to customers, the Company may be required to undergo lengthy approval and purchase processes. Technical and business evaluation by potential customers can take up to a year or more for products based on new technologies. The length of the approval process is affected by a number of factors, including, among others, the complexity of the product involved, priorities of the customers, budgets and regulatory issues affecting customers. The Company may not obtain the necessary approvals or ensuing sales of such products may not occur. The length of customers' approval process or delays could make the Company's quarterly revenues and earnings inconsistent and difficult to trend.

### **Dependence on Limited Sources of Supply**

Certain parts and components used in the Company's RF products are only available from a limited number of sources. The Company's reliance on these limited source suppliers exposes it to certain risks and uncertainties, including the possibility of a shortage or discontinuation of certain key components and reduced control over delivery schedules, manufacturing capabilities, quality and costs. Any reduced availability of such parts or components when required could materially impair the ability to manufacture and deliver products on a timely basis and result in the cancellation of orders, which could have a material adverse effect on the business, operating results and financial condition.

In addition, the purchase of certain key components involves long lead times and, in the event of unanticipated increases in demand for its products, the Company may be unable to manufacture products in quantities sufficient to meet customers' demand in any particular period. The Company has few guaranteed supply arrangements with its limited source suppliers, does not maintain an extensive inventory of parts or components, and customarily purchases parts and components pursuant to actual or anticipated purchase orders placed from time to time in the ordinary course of business.

Related to this topic, the Company produces substantially all of its products through third-party contract manufacturers. Like raw materials, the elimination of any of these entities or delays in the fulfillment process, for whatever reason, may impact the Company's ability to fulfill customer orders on a timely basis and may have a material adverse effect on the Company's business, operating results, or financial condition.

To satisfy customer requirements, the Company may be required to stock certain long lead-time parts and/or finished product in anticipation of future orders, or otherwise commit funds toward future purchase. The failure of such orders to materialize as forecasted could limit resources available for other important purposes or accelerate the requirement for additional funds. In addition, such excess inventory could become obsolete, which would adversely affect financial performance. Business disruption, production shortfalls or financial difficulties of a limited source supplier could materially and adversely affect the Company by increasing product costs or reducing or eliminating the availability of such parts or components. In such events, the inability to develop alternative sources of supply quickly and on a cost-effective basis could materially impair the ability to manufacture and deliver products on a timely basis and could have a material adverse effect on the Company's business, operating results and financial condition.

### **Dependence on Key Personnel**

The Company's success will depend in large part upon its ability to attract and retain highly qualified management, engineering, manufacturing, marketing, sales and R&D personnel. Due to the specialized nature of the Company's business, it may be difficult to locate and hire qualified

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personnel. The loss of services of one of the Company's executive officers or other key personnel, or the failure to attract and retain other executive officers or key personnel, could have a material adverse effect on the Company's business, operating results and financial condition.

### **Failure of products to perform properly might result in significant warranty expenses.**

In general, the Company's products carry a warranty of one or two years, limited to replacement of the product or refund of the cost of the product. In addition, the Company offers its customers extended warranties. Repeated or widespread quality problems could result in significant warranty expenses and/or the loss of customer confidence. The occurrence of such quality problems could have a material adverse effect on the Company's business, operating results and financial condition.



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**Intense competition, and increasing consolidation in the Company's industry, could create stronger competitors and harm the business.**

The wireless telecommunications equipment market is very competitive. Many of these companies have substantially greater financial resources, larger research and development staffs and greater manufacturing and marketing capabilities than the Company. Its products compete directly with products which embody existing and future competing commercial technologies. Other emerging wireless technologies, may also provide protection from RF interference and offer enhanced range to wireless communication service providers, potentially at lower prices and/or superior performance, and may therefore compete with the Company's products. High performance RF solutions may not become a preferred technology to address the needs of wireless communication service providers. Failure of its products to improve performance sufficiently, reliably, or at an acceptable price or to achieve commercial acceptance or otherwise compete with existing and new technologies, would have a material adverse effect on the Company's business, operating results and financial condition.

## **LEGAL RISKS**

### **Intellectual Property and Patents**

The Company's success will depend in part on its ability to obtain patent protection for its products and processes, to preserve trade secrets and to operate without infringing upon the patent or other proprietary rights of others and without breaching or otherwise losing rights in the technology licenses upon which any of the Company's products are based. The Company has internally applied for patents and acquired patent rights in connection with the purchase of the Adaptive Notch Filtering business unit of Lockheed Martin Canada. One of the patents is jointly owned with Lucent Technologies, Inc. The Company believes there are a large number of patents and patent applications covering RF products and other products and technologies that it is pursuing. Accordingly, the patent positions of companies using RF technologies, including the Company, are uncertain and involve complex legal and factual questions. The patent applications filed by the Company or others may not result in issued patents or the scope and breadth of any claims allowed in any patents issued to the Company or others may not exclude competitors or provide competitive advantages. In addition, patents issued to the Company, its subsidiaries or others may not be held valid if subsequently challenged or others may claim rights in the patents and other proprietary technologies owned or licensed by the Company. Others may have developed or may in the future develop similar products or technologies without violating any of the Company's proprietary rights. Furthermore, the loss of any license to technology that the Company might acquire in the future may have a material adverse effect on the Company's business, operating results and financial condition.

Some of the patents and patent applications owned by us are subject to non-exclusive, royalty-free licenses held by various U.S. governmental units. These licenses permit these U.S. government units to select vendors other than us to produce products for the U.S. Government, which would otherwise infringe the Company's patent rights that are subject to the royalty-free licenses. In addition, the U.S. Government has the right to require us to grant licenses (including exclusive licenses) under such patents and patent applications or other inventions to third parties in certain instances.

Older patent applications in the U.S. are currently maintained in secrecy until patents are issued. In foreign countries and for newer U.S. patent applications, this secrecy is maintained for a period of time after filing. Accordingly, publication of discoveries in the scientific literature or of patents themselves or laying open of patent applications in foreign countries or for newer U.S. patent applications tends to lag behind actual discoveries and filing of related patent applications. Due to this factor and the large number of patents and patent applications related to RF materials and technologies, and other products and technologies that the Company is pursuing, comprehensive patent searches and analyses associated with RF technologies and other products and technologies that the Company is pursuing are often impractical or not cost-effective. As a result, patent and literature searches cannot fully evaluate the patentability of the claims in its patent applications or whether materials or processes used by the Company for its planned products infringe or will infringe upon existing technologies described in U.S. patents or may infringe



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upon claims in patent applications made available in the future. Because of the volume of patents issued and patent applications filed relating to RF technologies and other products and technologies that it is pursuing, the Company believes there is a significant risk that current and potential competitors and other third-parties have filed or will file patent applications for, or have obtained or will obtain, patents or other proprietary rights relating to materials, products or processes used or proposed to be used by the Company. In any such case, to avoid infringement, it would have to either license such technologies or design around any such patents. The Company may be unable to obtain licenses to such technologies or, if obtainable, such licenses may not be available on terms acceptable to the Company or the Company may be unable to successfully design around these third-party patents.

Participation in litigation or patent office proceedings in the U.S. or other countries, which could result in substantial cost to and diversion of effort by the Company, may be necessary to enforce patents issued or licensed to it, to defend itself against infringement claims made by others or to determine the ownership, scope or validity of the proprietary rights of the Company and others. The parties to such litigation may be larger, better capitalized than the Company and better able to support the cost of litigation. An adverse outcome in any such proceedings could subject the Company to significant liabilities to third parties, require it to seek licenses from third parties and/or require it to cease using certain technologies, any of which could have a material adverse effect on the Company's business, operating results and financial condition.

## **Litigation**

The Company has been subject to a number of lawsuits in the past, though none are active as of the date of this filing (March 2005). If the Company is not successful in defending itself against whatever claims and charges may be made against it in the future there may be a material and adverse effect on the Company's business, operating results and financial condition.

## **Government Regulations**

Although the Company believes that its wireless telecommunications products themselves would not be subject to licensing by, or approval requirements of, the FCC, the operation of base stations is subject to FCC licensing and the radio equipment into which the Company's products would be incorporated is subject to FCC approval. Base stations and the equipment marketed for use therein must meet specified technical standards. The ability to sell the Company's wireless telecommunications products is dependent on the ability of wireless base station equipment manufacturers and wireless base station operators to obtain and retain the necessary FCC approvals and licenses. In order for them to be acceptable to base station equipment manufacturers and to base station operators, the characteristics, quality and reliability of the Company's base station products must enable them to meet FCC technical standards. The Company may be subject to similar regulations of the Canadian federal and provincial governments. Any failure to meet such standards or delays by base station equipment manufacturers and wireless base station operators in obtaining the necessary approvals or licenses could have a material adverse effect on the Company's business, operating results and financial condition. In addition, certain RF filters are on the U.S. Department of Commerce's export regulation list. Therefore, exportation of such RF filters to certain countries may be restricted or subject to export licenses.

The Company is subject to governmental labor, safety and discrimination laws and regulations with substantial penalties for violations. In addition, employees and others may bring suit against it for perceived violations of such laws and regulations. Defense against such complaints could result in significant legal costs for us. Although the Company endeavors to comply with all applicable laws and regulations, it may be the subject of complaints in the future, which could have a material adverse effect on the Company's business, operating results and financial condition.

## **Environmental Liability**

Certain hazardous materials may be in research, development and to the extent of any manufacturing operations. As a result, the Company is subject to stringent federal, state and local regulations governing the storage, use and disposal of such materials. It is possible that current or future laws and regulations could require it to make substantial expenditures for preventive or remedial action, reduction of chemical exposure, or waste treatment or disposal. The Company believes it is in material compliance with all environmental regulations and to date has not had to incur significant expenditures for preventive or remedial action with respect to the use of hazardous materials.

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However, the Company's operations, business or assets could be materially and adversely affected by the interpretation and enforcement of current or future environmental laws and regulations. In addition, although the Company believes that its safety procedures for handling and disposing of such materials comply with the standards prescribed by state and federal regulations, there is the risk of accidental contamination or injury from these materials. In the event of an accident, the Company could be held liable for any damages that result. Furthermore, the use and disposal of hazardous materials involves the risk that the Company could incur substantial expenditures for such preventive or remedial actions. The liability in the event of an accident or the costs of such actions could exceed available resources or otherwise have a material adverse effect on the business, results of operations and financial condition. The Company carries property and worker's compensation insurances in full force and effect through nationally known carriers which include pollution cleanup or removal and medical claims for industrial incidents.

## **RISKS RELATED TO ACQUISITIONS AND BUSINESS EXPANSION**

### **Risks of Future Acquisitions**

In the future, the Company may pursue acquisitions to obtain products, services and technologies that it believes will complement or enhance its current product or services offerings. At present, no agreements or other arrangements exist with respect to any such acquisition. An acquisition may not produce the revenue, earnings or business synergies as anticipated and may attach significant unforeseen liabilities, and an acquired product, service or technology might not perform as expected. If an acquisition is pursued, the Company's management could spend a significant amount of time and effort in identifying and completing the acquisition and may be distracted from the operations of the business. In addition, management would probably have to devote a significant amount of resources toward integrating the acquired business with the existing business, and that integration may not be successful.

### **International Operations**

The Company is in discussions and has agreements in place with companies in non-U.S. markets to form manufacturing, product development joint ventures and other marketing, distribution or consulting arrangements. For example, the Company has a relationship with a Canadian manufacturing firm for the production of its ANF product. The Company does not believe that the loss of this manufacturing partner would significantly affect its operations. There are many such entities that exist domestically, and the Company's products were designed to be produced by any such entity, and not tied to one in particular.

The Company believes that non-U.S. markets could provide a substantial source of revenue in the future. However, there are certain risks applicable to doing business in foreign markets that are not applicable to companies doing business solely in the U.S. For example, the Company may be subject to risks related to fluctuations in the exchange rate between the U.S. dollar and foreign currencies in countries in which it does business. In addition, it may be subject to the additional laws and regulations of these foreign jurisdictions, some of which might be substantially more restrictive than similar U.S. ones. Foreign jurisdictions may also provide less patent protection than is available in the U.S., and the Company may be less able to protect its intellectual property from misappropriation and infringement in these foreign markets.

### **Item 2. Properties**

The Company maintains its corporate headquarters in a 15,000 square foot building located in Elk Grove Village, Illinois under a lease which expires in October 2014. This facility houses the Company's manufacturing, research, development, engineering and marketing activities. The

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Company believes that this facility is adequate and suitable for its current needs and that additional space would be available on commercial terms as necessary to meet any future needs.

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### **Item 3. Legal Proceedings**

#### **Patent Litigation**

In July 2001, the Company filed suit in the United States District Court for the District of Delaware against Conductus, Inc. and Superconductor Technologies, Inc. alleging infringement of U.S. Patent No. 6,263,215, entitled "Cryoelectronically Cooled Receiver Front End for Mobile Radio Systems" (the "215 patent"). This suit alleged that Conductus and Superconductor Technologies' base station front-end systems containing cryogenically cooled superconducting filters infringe this patent. The Company sought a permanent injunction enjoining Conductus and Superconductor Technologies from marketing, selling or manufacturing these products, as well as triple damages and attorneys fees. Conductus and Superconductor Technologies denied these allegations and asked the court to enter a judgment that the patent is invalid and not infringed. Conductus and Superconductor Technologies also asserted the defense of inequitable conduct and a counterclaim for a declaration that the patent is unenforceable as well as federal and state law counterclaims, including claims of unfair competition. Conductus and Superconductor Technologies sought both compensatory and punitive damages as well as attorneys' fees and costs.

On March 26, 2002, the Company replied to Conductus and Superconductor Technologies' Second Amended Answer and Counterclaims and filed counterclaims alleging that Conductus and Superconductor Technologies also infringe U.S. Patent No. 6,104,934 entitled "Cryoelectronic Receiver Front End" and U.S. Patent No. 6,205,340 B1 entitled "Cryoelectronic Receiver Front End For Mobile Radio Systems". On April 17, 2002, the court dismissed these (the Company's) counterclaims without prejudice to the Company's right to assert these counterclaims in a separate action.

On February 10, 2003, the court disposed of various motions for summary judgment filed by each party. The court denied Superconductor Technologies' motion for summary judgment of invalidity of the 215 patent as well as Conductus' motion for summary judgment limiting computation of damages to a reasonable royalty for sales to Dobson Communications, Inc. On Superconductor Technologies' motion for summary judgment of non-infringement, the court granted the motion with respect to claim 13 of the 215 patent and otherwise denied the motion with respect to each of the other asserted claims. With regard to Conductus' motion for summary judgment of non-infringement, the court granted the motion with respect to claim 13 of the 215 patent and otherwise denied the motion with respect to each of the other asserted claims. In addition, the court denied Conductus' motion for summary judgment of invalidity of all asserted claims for causes of action existing prior to the date of issuance of the certificate of correction and of invalidity of claim 13. The court also denied the Company's motions for summary judgment that Superconductor Technologies' internal projects are not prior art to the 215 patent and to dismiss the defendants' counterclaims alleging unfair competition and interference with business relations.

On April 3, 2003, the jury returned with its verdict. The jury rejected the Company's positions and determined its patent to be invalid. Additionally, the jury determined that inequitable conduct had occurred and subsequently awarded defendants \$3.87 million in damages from the Company. The Company was severely disappointed by this verdict and it engaged in the post-trial motion process to overturn it. On August 21, 2003, the court issued its ruling on the post-trial motions. The court overturned the jury's determination of unfair competition on the part of the Company and denied all requests for damages, including the \$3.87 million jury award cited above. The court did not, however, overturn the jury determinations of patent invalidity and unenforceability based on inequitable conduct and denied the Company's motion for a new trial.

During September 2003, the Company filed an appeal of this verdict requesting the reinstatement of its patent and the rights inherent within that patent, and Superconductor Technologies, Inc. filed a cross-appeal requesting reinstatement of the jury award and attorney's fees. Each side filed various legal briefs during 2004, and ultimately participated in an in-person hearing on December 6, 2004.

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On February 3, 2005, the Appellate Court issued its ruling. It did not find adequate grounds for reversal of the Trial Court decision, and thus maintained the verdict in favor of the defendant in allowing the patent to remain invalid and unenforceable and in favor of the Company in denying counterclaims for damages raised by the defendant. The Appellate Court's ruling concludes this matter.

In November 2001, the Company filed suit against Dobson Communications, Inc. for allegedly infringing this patent. The action was stayed, per agreement between the parties, until resolution of the matter between the



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Company and Conductus and Superconductor Technologies. The parties agreed that Dobson Communications will be bound by any and all final, non-appealable determinations, holdings or findings with respect to all liability issues in the Company's case against Conductus. The Appellate Court's ruling concludes the Dobson matter as well.

**Item 4. Submission of Matters to a Vote of Security Holders**

At our annual meeting of shareholders held on December 14, 2004, the following proposals were approved by the margins indicated:

	<u>Voted For</u>	<u>Number of Shares</u>	<u>Withheld</u>
1. To elect two (2) Class II Directors, serve for three years subject to the term limitations inherent in proposal #2, and until a successor is elected and qualified:			
Dr. Amr Abdelmonem	151,742,260		1,842,694
Mr. Tom Powers	151,701,168		1,883,786
		Number of Shares	
	<u>Voted For</u>	<u>Against</u>	<u>Withheld</u>
2. To approve an amendment to the Company's Certificate of Incorporation to eliminate the classification of directors	151,675,952	1,310,212	598,790
3. To ratify the appointment of Grant Thornton LLP as the independent auditors of the Company's financial statements for the fiscal year ending December 31, 2004.	152,334,218	686,478	564,258

**Table of Contents****PART II****Item 5. Market for Registrant's Common Equity, Related Stockholder Matters, and Issuer Purchases of Equity Securities**

The Common Stock has been quoted since June 2002 on the American Stock Exchange under the symbol ISO. Prior to that, and until April 1999, the stock had been quoted on the OTC Bulletin Board under the symbol ISCO. From 1993 until April 1999, the Common Stock was quoted on the NASDAQ National Market. The following table shows, for the periods indicated, the reported high and low sale prices for the Common Stock. Such prices reflect prices between dealers, without retail mark up, mark down, or commissions and may or may not reflect actual transactions.

	<u>High</u>	<u>Low</u>
<b>FISCAL YEAR ENDING DECEMBER 31, 2003</b>		
First Quarter	\$ 0.46	\$ 0.30
Second Quarter	\$ 0.43	\$ 0.11
Third Quarter	\$ 0.62	\$ 0.22
Fourth Quarter	\$ 0.68	\$ 0.18
<b>FISCAL YEAR ENDING DECEMBER 31, 2004</b>		
First Quarter	\$ 1.07	\$ 0.41
Second Quarter	\$ 0.68	\$ 0.25
Third Quarter	\$ 0.40	\$ 0.21
Fourth Quarter	\$ 0.50	\$ 0.23

On December 31, 2004, there were approximately 300 holders of record of the Common Stock. On such date the closing bid price for the Company's common stock as reported on the American Stock Exchange was \$0.36.

Information regarding the Company's equity compensation plans is incorporated by reference to Item 12 of this Form 10K, which incorporates by reference the information set forth in the section entitled "Equity Compensation Plan Information" which is included in this document.

The Company has never paid cash dividends on the Common Stock and the Company does not expect to pay any dividends on its Common Stock in the foreseeable future.

**There were no Recent Sales of Unregistered Securities****Item 6. Selected Financial Data**

The following table presents selected consolidated financial data with respect to the Company as of and for the years ended December 31, 2000, 2001, 2002, 2003 and 2004. The selected consolidated financial data for each of the years in the five-year period ended December 31, 2004 have

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been derived from the audited consolidated financial statements of the Company. The information set forth below should be read in conjunction with Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations and Item 8. Financial Statements and Supplementary Data.

	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>
<b>CONSOLIDATED STATEMENT OF OPERATIONS DATA:</b>					
Net sales	\$ 495,885	\$ 1,981,001	\$ 3,662,805	\$ 3,238,402	\$ 2,621,933
<b>Costs and expenses:</b>					
Cost of sales	2,672,578	3,978,368	3,565,140	1,639,540	1,527,554
Research and development	3,187,768	7,131,654	2,737,084	988,425	1,119,406

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Selling and marketing	1,239,959	3,263,813	2,201,195	959,798	1,164,830
General and administrative	5,967,631	7,738,458	7,972,948	5,614,492	4,757,935
Goodwill amortization	704,165	2,009,974			
Operating loss	(13,276,216)	(22,141,266)	(12,813,562)	(5,963,853)	(5,947,792)
Other income (expense):					
Interest income	174,919	138,696	62,954	5,087	8,660
Interest expense	(5,650,572)	(229,568)	(327,224)	(1,197,309)	(1,028,169)
Other income (expense), net	(16,017)	(5,957,465)			
	(5,491,670)	(6,048,337)	(264,270)	(1,192,222)	(1,019,509)
Loss before extraordinary item	(18,767,886)	(28,189,603)	(13,077,832)	(7,156,075)	(6,967,301)
Extraordinary item-debt extinguishment	(28,297)				
Net loss	\$ (18,796,183)	\$ (28,189,603)	\$ (13,077,832)	\$ (7,156,075)	\$ (6,967,301)
Basic and diluted loss per common share	\$ (0.57)	\$ (0.26)	\$ (0.09)	\$ (0.05)	\$ (0.04)
Weighted average number of common shares outstanding	33,037,106	107,829,453	142,884,921	148,080,749	158,977,249
<b>CONSOLIDATED BALANCE SHEET DATA:</b>					
Cash and cash equivalents	\$ 2,453,845	\$ 1,720,697	\$ 216,119	\$ 346,409	\$ 402,391
Working capital	3,096,173	658,661	1,333,827	735,840	992,925
Total assets	23,750,073	20,927,095	19,183,000	17,723,035	16,986,004
Long-term debt/capital lease obligations, less current portion	198	9,425,000	2,000,000	5,000,000	7,500,000
Stockholders' equity (net capital deficiency)	21,644,211	7,975,219	15,380,306	10,943,247	7,247,635

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The Company settled the Siegler litigation during 2001 for a charge to Other Expense of \$4.9 million. During 2000 the Company merged with two entities: Spectral Solutions, Inc. and the ANF division of Lockheed Martin Canada. Those mergers primarily increased the intellectual property of the Company, and generated financial results including the goodwill amortization shown during 2000 and 2001, as well as a majority of the approximately \$1 million in restructuring costs shown in Other Expense during 2001. Beyond the integration of intellectual property and related matters, these mergers had a substantial impact on operating cost and total loss attributable through 2001, but little impact on the comparability of 2002, 2003 and 2004.

## **Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations**

### **A NOTE CONCERNING FORWARD-LOOKING STATEMENTS**

The discussion below contains certain forward-looking statements that reflect our current expectations regarding the Company's future results of operations, performance and achievements. Please see the discussion of such forward-looking statements under Forward Looking Statements in Item 1 above.

#### **Overview**

The Company has shifted from manufacturing in-house to an outsourced manufacturing model wherein the Company supplies raw materials to external parties and products are then completed. This system allows for the Company to outsource procurement in the future if it chooses to do so. Manufacturing partners then produce to specification with Company personnel on hand to assist with quality control. The Company's products are designed for efficient production in this manner, emphasizing solid-state electronics over mechanical devices with moving parts. The decrease in cost associated with these developments, coupled with enhanced product functionality, has allowed the Company to realize improved margins and significantly reduced overhead costs. Extensions of developed technology, based on substantial input from customers, have allowed the Company to launch the RF<sup>2</sup> product family and consider additional solutions while controlling total R&D cost.

The Company has announced several significant recent events, both during 2004 and early 2005, such as the resolution of the patent litigation, increased sales order quantities entering 2005, and the extension of its credit line debt maturity date from April 2005 to April 2006. Despite these improvements, the wireless telecommunications industry is subject to risks beyond the Company's control that can negatively impact customer capital spending budgets (as occurred during 2003) and/or spending patterns (as occurred during 2004). For these and other reasons, the Company's financial statements have been prepared assuming the Company will continue as a going concern.

As an after-market vendor, the Company's revenue has been sporadic, consistent with buying patterns of planning processes within wireless telecommunications carriers. In the past there has been a fourth quarter effect, wherein operators were forced to spend remaining budget or lose it going forward. With the advent of significant projects such as data networks, funds are often reallocated between periods and thus diminish the pool of funds available for normal activities. The Company's objective is to be included in these projects, and thus realize a higher, more stable revenue stream.

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### **Results of Operations**

*Years Ended December 31, 2004 and 2003*

The Company's net sales decreased \$616,000, or 19%, from \$3,238,000 in 2003 to \$2,622,000 in 2004, as a result of an industry-wide reduction in capital expenditures, particularly during the first half of 2004, in favor of next generation systems generally to be deployed during 2005 and beyond. Consistent with this event, the Company announced more than \$2 million in orders received during 2004 that are scheduled for delivery during the first quarter 2005. The Company anticipates its net sales to increase during 2005, as compared to 2004, based on existing and/or anticipated customer orders. The Company announced the receipt of more customer orders for 2005 delivery by February 2005 than for all of 2004.

Cost of products sold decreased \$112,000, or 7% from \$1,640,000 in 2003 to \$1,528,000 in 2004. This decrease is less than the decrease in revenue during the period, reflecting inefficiencies realized due to lower unit volumes. The cost of products sold for 2004 and 2003 consisted of direct material, labor and overhead costs associated with the products that were shipped during the period, as well as other costs consisting primarily of allocated overhead costs. The Company expects the cost of products sold as a percentage of revenue to decrease during 2005 due to anticipated revenue increases and related efficiencies, certain cost control initiatives including supply chain management, and primarily due to the continued emphasis on outsourcing the manufacture of its products. In absolute terms, the Company expects the total cost of products sold expense to increase during 2005 due to the expectation of higher revenues.

The Company's internally funded research and development expenses increased by \$131,000, or 13%, from \$988,000 in 2003 to \$1,119,000 during 2004. This increase was due to the need to deploy resources in order to launch new products, particularly within the RF<sup>2</sup> product family, and broadly to support new product and next generation development for future release. The Company expects these costs to increase slightly during 2005 in connection with the development of new products.

Selling and marketing expenses increased \$205,000, or 21%, from \$960,000 during 2003 to \$1,165,000 during 2004. This increase was due to the addition of additional resources in this area, as well as the expansion of marketing programs. The Company expects these costs to increase during 2005, consistent with expected increases in revenue.

General and administrative expenses decreased \$856,000, or 15%, from \$5,614,000 in 2003 to \$4,758,000 during 2004. This decrease was due to the reduction in expenses in the patent litigation as described elsewhere in this report, as well as the classification of \$350,000 in legal settlement expenses during 2003 that did not exist during 2004. The Company expects general and administrative expenses to decrease further during 2005 due to reduced litigation expenses.

Interest income increased \$4,000, or 80%, from \$5,000 in 2003 to \$9,000 during 2004. This increase was due to the timing of payments and funding from the credit line. While operating under its uncommitted line of credit from October 2002 and beyond, the Company has not maintained, and does not expect to maintain, significant amounts of cash on which interest may be earned.

Interest and warrant expense decreased \$169,000, or 14%, from \$1,197,000 in 2003 to \$1,028,000 during 2004. The Company borrowed \$2 million during the fourth quarter of 2002 under an uncommitted line of credit with entities affiliated with its two largest shareholders. The Company borrowed additional monies under this line and related supplements during 2003 and 2004. As a result of the borrowings on this line

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during 2002, 10 million warrants were issued. These warrants were ultimately converted into 10 million shares of the Company's common stock during February 2004. The interest expense recorded during 2004 includes \$250,000 of non-cash expense related to these warrants.

The Company has reclassified into General and Administrative costs a previously reported "Other Expense" item of \$350,000 that was accrued as of December 31, 2003 as a contingent liability for the Laves litigation settlement. This settlement was negotiated and entered into during February 2004.

### *Years Ended December 31, 2003 and 2002*

The Company's net sales decreased \$425,000, or 12%, from \$3,663,000 in 2002 to \$3,238,000 in 2003, as a result of a focus on more profitable business and due to an industry-wide reduction in capital expenditures during the first half of 2003. Sales of the Company's HTS products were substantially reduced, while revenues from its ANF products increased and revenues began to be realized on its RF<sup>2</sup> products during the fourth quarter 2003, shortly after the September 2003 product launch.

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Cost of products sold decreased \$1,925,000, or 54% from \$3,565,000 in 2002 to \$1,640,000 in 2003. This occurred despite only a 12% decrease in revenue, as a result of various cost control measures adopted during the preceding two years, including the continued emphasis on outsourcing manufacturing processes and the focus on profitable business, and the nature and value of products sold (i.e., the reduced sales of HTS products and increased sales of ANF and RF<sup>2</sup> products). The cost of products sold for 2003 and 2002 consisted of direct material, labor and overhead costs associated with the products that were shipped during the period, as well as other costs consisting primarily of allocated overhead costs.

The Company's internally funded research and development expenses decreased by \$1,749,000, or 64%, from \$2,737,000 in 2002 to \$988,000 during 2003. These reductions were primarily due to the shift from initial development to product improvement and related product expansion as the focus of development efforts. The emphasis on new products with a greater probability of profitable near-term commercial sales also was significant in this reduction.

Selling and marketing expenses decreased \$1,241,000, or 56%, from \$2,201,000 during 2002 to \$960,000 during 2003. This decrease was due to cost reductions implemented during the past year, including the reduction of certain personnel and the redeployment of resources into more targeted, direct marketing and selling campaigns.

General and administrative expenses decreased \$2,359,000, or 30%, from \$7,973,000 in 2002 to \$5,614,000 during 2003. This decrease was due to the reduction in expenses in the patent litigation as described elsewhere in this report, which more than offset an increase in non-cash employee compensation and the settlement of the Laves litigation during 2003.

Interest income decreased \$58,000, or 92%, from \$63,000 in 2002 to \$5,000 during 2003. This decrease was due to the timing of the credit line (October 2002). The Company became infused with cash during February 2002 after its Shareholder Rights Offering, increasing interest income during 2002. While operating under its uncommitted line of credit from October 2002 and beyond, the Company has not maintained, and does not expect to maintain, significant amounts of cash on which interest may be earned.

Interest and warrant expense increased \$870,000, or 266%, from \$327,000 in 2002 to \$1,197,000 during 2003. During February 2002, shareholder notes of \$9,425,000, plus accrued interest, were repaid following the Shareholder Rights Offering, both of which are described elsewhere in this document. The Company borrowed \$2 million during the fourth quarter of 2002 under an uncommitted line of credit with entities affiliated with its two largest shareholders. The Company borrowed an additional \$3 million under this line and a related supplement during 2003. As a result of the borrowings on this line, 10 million warrants were issued. The interest expense recorded during 2003 includes \$862,000 of non-cash expense related to these warrants.

### **Other Comparative Results:**

During 2001 the Company recorded \$6 million of Other Expense. This amount was comprised of a litigation settlement in the Siegler case of \$4.9 million as well as approximately \$1 million from certain restructuring costs from the consolidation of facilities.

### **Liquidity and Capital Resources**



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The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 3 to the financial statements, the Company incurred a net loss of \$7 million during the year ended December 31, 2004, and, as of that date, the Company's accumulated deficit is \$157 million. In addition, the Company has consistently used, rather than provided, cash in its operations. These factors, among others, as discussed in Note 3 to the financial statements, raise substantial doubt about the Company's ability to continue as a going concern. The Company has been engaged in developing new solutions, and toward that end development spending has preceded sales revenues. Management's plans in regard to these matters include the focusing of development efforts on products with a greater probability of commercial sales, reducing professional fees and discretionary expenditures and increased efficiencies and reduced overhead costs associated with its outsourced production model, all of which are also described in Note 3. The financial statements do not include any adjustments, including any adjustments relating to the recoverability and classification of recorded asset amounts or amounts and classification of liabilities that might result from the outcome of this uncertainty. Significant uses of cash during 2004 include personnel costs, the cost to produce inventory, legal costs primarily related to the patent appeal, facility related costs, and other uses. Significant sources of cash during 2004 include sales and the resulting realization of customer receivables, the draw of \$2.5 million on the credit line, and the exercise of \$2 million in warrants.

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In view of the matters described in the preceding paragraph, recoverability of a major portion of the recorded asset amounts shown in the accompanying balance sheet is dependent upon continued operations of the Company, which in turn is dependent upon the Company's ability to meet its financing requirements on a continuing basis, to maintain present financing, and to succeed in its future operations.

At December 31, 2004, the Company's cash and cash equivalents, excluding restricted certificates of deposit, were \$402,000, an increase of \$56,000 from the December 31, 2003 balance of \$346,000.

The continuing development of, and expansion in, sales of the Company's RF product lines, as well as the continued defense of its intellectual property, may require a commitment of funds to undertake product line development and to market and sell its RF front-end products. The actual amount of the Company's future funding requirements will depend on many factors, including: the amount and timing of future revenues, the level of product marketing and sales efforts to support the Company's commercialization plans, the magnitude of its research and product development programs, the ability of the Company to improve or maintain product margins, and the costs involved in protecting the Company's patents or other intellectual property.

As of the date of this filing, the Company believes that it has sufficient funds to operate its business as identified herein without the need for substantial future capital sources into the third quarter 2005, and very possibly longer, subject to working capital and other requirements. The Company intends to look into augmenting its existing capital position potentially through other sources of capital. For example, the Company regularly reviews the capital markets for appropriate debt, equity and hybrid instruments in search of both adequate operating capital and the best available capital structure.

## **Uncommitted Line of Credit**

As of the reporting date, the Company had drawn \$7.5 million of debt financing under a credit line, as described below. Subsequent to the reporting date, during January 2005, the Company drew the remaining \$1 million on the line for a total debt of \$8.5 million. During October 2002, the Company entered into an Uncommitted Line of Credit with its two largest shareholders, an affiliate of Elliott Associates, L.P. (Manchester Securities Corporation) and Alexander Finance, L.P. This line provided up to \$4 million to the Company. This line was uncommitted, such that each new borrowing under the facility would be subject to the approval of the lenders. Borrowings on this line bore an interest rate of 9.5% and collateralized by all the assets of the Company. Outstanding loans under this agreement would be required to be repaid on a priority basis should the Company receive new funding from other sources. Additionally, the lenders were entitled to receive warrants to the extent funds were drawn down on the line. The warrants bore a strike price of \$0.20 per share of common stock and were to expire on April 15, 2004. The credit line was to mature and be due, including accrued interest thereon, on March 31, 2004. Due to an agreement between the parties that did not provide warrants with respect to the more recent \$2 million in borrowings, thus 10 million warrants were issued as a result of this transaction. During February 2004, the warrant holders exercised all of their warrants, contributing \$2 million to the Company in exchange for 10 million shares of common stock.

According to existing accounting pronouncements and SEC guidelines, the Company allocated the proceeds of these borrowings between their debt and equity components. As a result of these borrowings during 2002, the Company recorded a non-cash charge of \$1.2 million through the outstanding term of the warrants (April, 2004). The final \$250,000 of that amount was recorded during 2004.

During October 2003 the Company entered into an agreement with its lenders to supplement the credit line with an additional \$2 million, \$1 million of which was drawn immediately and \$1 million available to be drawn upon the Company's request and subject to the approval of the lenders. This supplemental facility bore a 14% rate of interest and was due October 31, 2004. Unlike the previous credit line, the supplemental

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facility did not include any stock warrants. The term of the previous credit line were not affected by this supplement, and as such the \$4 million borrowed under that line, plus accrued interest, remained due March 31, 2004.

During February 2004, these credit lines were extended to a due date of April 2005, with interest after the initial periods to be charged at 14%. No warrants or other inducements were issued with respect to these extensions. Additionally, lenders exercised their 10 million warrants during February 2004, agreeing to let the Company use the funds for general purposes as opposed to repaying debt.

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During July 2004, the Company and its lenders agreed to increase the aggregate loan commitments under the credit line from \$6,000,000 to \$6,500,000. Simultaneously, the Company drew the remaining \$1,500,000 of the financing.

During November 2004, the Company and its lenders agreed to increase the line of credit to up to an additional \$2 million to an aggregate loan commitment of \$8,500,000, \$1 million of which was drawn immediately by the Company with the remaining \$1 million available to be drawn upon the Company's request and subject to the approval of the lenders. The remaining \$1 million was subsequently drawn down in January 2005.

During February 2005, the consolidated credit line was extended to a due date of April 2006, with interest for the extension period set at 9%. No warrants or other inducements were issued with respect to this extension.

## **Critical Accounting Policies**

The discussion and analysis of the Company's financial condition and results of operations are based upon the Company's consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America. The preparation of these financial statements requires the Company to make estimates and judgments that affect the reported amount of assets and liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities at the date of the Company's financial statements. Actual results may differ from these estimates under different assumptions or conditions.

Critical accounting policies are defined as those that are reflective of significant judgments and uncertainties, and potentially result in materially different results under different assumptions and conditions. The Company believes that its critical accounting policies are limited to those described below. For a detailed discussion on the application of these and other accounting policies, see Note 2 in the notes to the consolidated financial statements.

## **Revenue Recognition**

Revenues from product sales are generally recognized at the time of shipment and are recorded net of estimated returns and allowances. Revenues from services are generally recognized upon substantial completion of the service and acceptance by the customer. The Company has, under certain conditions, granted customers the right to return product during a specified period of time after shipment. In these situations, the Company establishes a liability for estimated returns and allowances at the time of shipment and makes the appropriate adjustment in revenue recognized for accounting purposes. During 2004, no revenue was recognized on products that included a right to return or otherwise required customer acceptance after December 31, 2004. The Company has established a program which, in certain situations, allows customers or prospective customers to field test the Company's products for a specified period of time. Revenues from field test arrangements are recognized upon customer acceptance of the products.

The Company warrants its products against defects in materials and workmanship typically for a 1-2 year period from the date of shipment, though these terms may be negotiated on a case by case basis. A provision for estimated future costs related to warranty expenses is recorded when revenues are recognized. At December 31, 2004 and 2003, respectively, the Company accrued \$34,000 and \$100,000 for warranty costs. This warranty reserve is based on the cost to replace a percentage of products in the field at a given point, adjusted by actual experience. Returns and allowances were not significant in any period reported, and form a data point in establishing the reserve. Should this warranty reserve estimate be deemed insufficient, by new information, experience, or otherwise, an increase to warranty expense would be required.

**Goodwill and Intangible Assets**

During October of 2004, the Company completed the process of evaluating goodwill and other intangible assets for impairment under SFAS No. 142. As the fair value of the enterprise, using quoted market prices for the Company's common stock, exceeded the carrying amount, the goodwill was determined to be not impaired. We assess the potential for impairment of the identifiable intangible assets and goodwill annually, or more frequently if events or changes in circumstances indicate that the asset might be impaired. If we determine that the value of the intangible assets and goodwill may not be recoverable from future cash flows or otherwise, a write-down of the value of the assets may be required. We estimate the useful lives of our intangible assets and amortize the value over the estimated life. If the actual useful life is shorter than our estimated useful life, we will amortize the remaining book value over the remaining useful life or the asset may be deemed to be impaired and, accordingly, a write-down of the value of the asset may be required.

**Table of Contents****Allowance for Doubtful Receivables**

An allowance for doubtful receivables may be maintained for potential credit losses. Management specifically analyzes accounts receivable, on a client by client basis, when evaluating the adequacy of our allowance for doubtful receivables including customer credit worthiness and current economic trends and records any necessary bad debt expense based on the best estimate of the facts known to date. Alternatives to this approach include applying a fixed and/or empirical rate of bad debts to receivables. As bad debts have historically been very low (less than 1% of revenue), such an empirical approach would have little impact on the reserve at December 31, 2004. Further, the Company believes its current method to be less arbitrary and more reliable than the alternatives as described. Should the facts regarding the collectability of receivables change, the resulting change in the allowance would be charged or credited to income in the period such determination is made. Such a change could materially impact our financial position and results of operations.

**Stock-Based Compensation**

The Company accounts for stock-based compensation using the intrinsic value method prescribed in Accounting Principles Board ( APB ) Opinion No. 25, Accounting for Stock Issued to Employees, and related interpretations. Compensation costs for employee stock options is measured as the excess, if any, of the quoted market price of the Company's common stock at the date of grant over the amount an employee must pay to acquire the stock.

**Off Balance Sheet Arrangements**

No such arrangements existed as of December 31, 2004, except for leases as described and the minimum lease payments as detailed in this document.

<u>Contractual Obligations</u>	<u>Payments Due by Period</u>					
	<u>Year</u>	<u>Total</u>	<u>Less than 1 Year</u>	<u>1-3 Years</u>	<u>3-5 Years</u>	<u>More than 5 Years</u>
Long Term Debt Obligations						
Capital Lease Obligations						
Operating Lease Obligations		\$ 1,739,000	\$ 156,000	\$ 330,000	\$ 360,000	\$ 893,000
Purchase Obligations						
Other Long Term Liabilities Reflect on the Registrant's Balance Sheet under GAAP						
Total		\$ 1,739,000	\$ 156,000	\$ 330,000	\$ 360,000	\$ 893,000

**Item 7A. Quantitative and Qualitative Disclosures About Market Risk**

The Company does not have any material market risk sensitive instruments.



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**Item 8. Financial Statements and Supplementary Data**

**REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

Board of Directors

ISCO International, Inc.

We have audited the accompanying consolidated balance sheets of ISCO International, Inc. (a Delaware corporation) and subsidiaries, as of December 31, 2004 and 2003, and the related consolidated statements of operations, shareholders' equity, and cash flows for each of the three years ended December 31, 2004. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform an audit of its internal control over financial reporting. Our audit included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of ISCO International, Inc. and subsidiaries as of December 31, 2004 and 2003, and the consolidated results of their operations and their cash flows for each of the three years ended December 31, 2004, in conformity with accounting principles generally accepted in the United States of America.

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 3, the Company incurred a net loss of \$6,967,301 during the year ended December 31, 2004, and, as of that date, the Company's accumulated deficit is \$157,063,406. In addition, the Company has consistently used, rather than provided, cash in its operations. These factors, among others, as discussed in Note 3 to the financial statements, raise substantial doubt about the Company's ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 3. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Grant Thornton LLP

Chicago, Illinois

January 30, 2005



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(except Notes 8 and 12 for which the date is February 24, 2005)

**Table of Contents****ISCO INTERNATIONAL****CONSOLIDATED BALANCE SHEETS**

	<b>December 31,</b>	
	<b>2004</b>	<b>2003</b>
<b>ASSETS</b>		
Current assets:		
Cash and cash equivalents	\$ 402,391	\$ 346,409
Inventories	969,048	678,361
Accounts receivable, net of allowance for doubtful accounts of none and \$4,000 at December 31, 2004 and 2003, respectively	122,460	1,169,711
Prepaid expenses and other	594,488	321,147
	<u>2,088,387</u>	<u>2,515,628</u>
Property and equipment:		
Property and Equipment	824,238	8,957,866
Less: Accumulated depreciation	638,968	8,256,489
	<u>185,270</u>	<u>701,377</u>
Restricted certificates of deposit	291,027	40,527
Goodwill	13,370,000	13,370,000
Intangible assets, net	1,051,320	1,095,503
	<u>16,986,004</u>	<u>17,723,035</u>
<b>Total assets</b>	<b>\$ 16,986,004</b>	<b>\$ 17,723,035</b>

	<b>December 31,</b>	
	<b>2004</b>	<b>2003</b>
<b>LIABILITIES AND STOCKHOLDERS EQUITY</b>		
Current liabilities:		
Accounts payable	\$ 202,613	\$ 243,647
Employee-related accrued liabilities	112,393	84,157
Accrued professional services	431,491	448,725
Other Accrued liabilities	372,965	638,259
Total current liabilities	1,119,462	1,414,788
Notes and related accrued interest with related parties	8,642,908	5,365,000
Stockholders' equity:		
Preferred Stock; 300,000 shares authorized; No shares issued and outstanding at December 31, 2004 and 2003, respectively		
Common stock (\$.001 par value); 250,000,000 and 250,000,000 shares authorized and 161,213,703 and 150,149,927 shares issued and outstanding at December 31, 2004 and 2003, respectively	161,214	150,150
Additional paid-in capital (net of unearned comp.)	164,149,827	160,889,202
Accumulated deficit	(157,063,406)	(150,096,105)
	<u>7,247,635</u>	<u>10,943,247</u>
<b>Total stockholders' equity</b>	<b>7,247,635</b>	<b>10,943,247</b>

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Total liabilities and stockholders equity	<u>\$ 16,986,004</u>	<u>\$ 17,723,035</u>
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See the accompanying Notes which are an integral part of the financial statements.

**Table of Contents****ISCO INTERNATIONAL****CONSOLIDATED STATEMENTS OF OPERATIONS**

	Year Ended December 31,		
	2004	2003	2002
Net sales	\$ 2,621,933	\$ 3,238,402	\$ 3,662,805
Costs and expenses:			
Cost of sales	1,527,554	1,639,540	3,565,140
Research and development	1,119,406	988,425	2,737,084
Selling and marketing	1,164,830	959,798	2,201,195
General and administrative	4,757,935	5,614,492	7,972,948
Total costs and expenses	8,569,725	9,202,255	16,476,367
Operating loss	(5,947,792)	(5,963,853)	(12,813,562)
Other income and (expense):			
Interest income	8,660	5,087	62,954
Non-cash warrant expense	(250,297)	(861,871)	(128,423)
Other interest expense	(777,872)	(335,438)	(198,801)
	(1,019,509)	(1,192,222)	(264,270)
Net loss	\$ (6,967,301)	\$ (7,156,075)	\$ (13,077,832)
Basic and diluted loss per common share	\$ (0.04)	\$ (0.05)	\$ (0.09)
Weighted average number of common shares outstanding	158,977,249	148,080,749	142,884,921

See the accompanying Notes which are an integral part of the financial statements.

**Table of Contents****ISCO INTERNATIONAL****CONSOLIDATED STATEMENTS OF STOCKHOLDERS EQUITY****Years Ended December 31, 2002, 2003, and 2004**

	<b>Common Stock Shares</b>	<b>Common Stock Amount</b>	<b>Additional Paid-In Capital</b>	<b>Accumulated Deficit</b>	<b>Unearned Compensation</b>	<b>Total</b>
Balance as of December 31, 2001	107,905,231	\$ 107,905	\$ 138,612,160	\$ (129,862,198)	\$ (882,648)	\$ 7,975,219
Exercise of stock options and vested DSU s; \$0.00 to \$0.18 per share	109,725	110	201			311
Rights Offering proceeds received, net	39,929,971	39,930	19,725,055			19,764,985
Deferred Stock Unit Amortization					382,800	382,800
Compensation Expense for Non- Employee Options			26,400			26,400
Compensation Expense for Discount on Employee Options			180,000			180,000
Issuance of Warrants, net			128,423			128,423
Net Loss				(13,077,832)		(13,077,832)
Balance as of December 31, 2002	147,944,927	\$ 147,945	\$ 158,672,239	\$ (142,940,030)	\$ (499,848)	\$ 15,380,306
Exercise of stock options and vested DSU s; \$0.00 to \$0.11 per share	1,205,000	1,205	128,045			129,250
Shares Issued in vendor resolution	1,000,000	1,000	499,000			500,000
Deferred Stock Unit Amortization			(308,448)		499,848	191,400
Compensation Expense for Employee Options			1,036,495			1,036,495
Issuance of Warrants, net			861,871			861,871
Net Loss				(7,156,075)		(7,156,075)
Balance as of December 31, 2003	150,149,927	\$ 150,150	\$ 160,889,202	\$ (150,096,105)		10,943,247
Exercise of Stock Options	1,063,776	1,064	140,676			141,740
Exercise of Warrants	10,000,000	10,000	1,990,000			2,000,000
Compensation Expense for Discount on Employee Stock Options/Variable Accounting for Stock Options			879,652			879,652
Non-cash Warrant Expense			250,297			250,297
Net Loss				(6,967,301)		(6,967,301)
Balance as of December 31, 2004	161,213,703	161,214	164,149,827	(157,063,406)		7,247,635

See the accompanying Notes which are an integral part of the financial statements.

**Table of Contents****ISCO INTERNATIONAL****CONSOLIDATED STATEMENTS OF CASH FLOWS**

	Years Ended December 31,		
	2004	2003	2002
<b>OPERATING ACTIVITIES</b>			
Net loss	\$ (6,967,301)	\$ (7,156,075)	\$ (13,077,832)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation	633,794	793,200	744,188
Amortization	50,325	38,368	83,656
Issuance of common stock in connection with vendor settlement		500,000	
Non-cash compensation charges	879,651	1,227,895	589,200
Non-cash warrant issuance-related expense	250,297	861,871	128,423
Disposition of fixed assets		33,646	
Disposition of fixed assets	32,564		
Changes in operating assets and liabilities:			
Accounts receivable	1,047,251	382,201	(1,317,062)
Inventories	(290,687)	218,211	786,097
Prepaid expenses and other	(273,341)	150,771	66,330
Accounts payable	(41,034)	50,189	(344,180)
Accrued liabilities	499,616	(73,095)	(1,289,432)
Net cash used in operating activities	(4,178,865)	(2,972,818)	(13,630,612)
<b>INVESTING ACTIVITIES</b>			
(Increase)/decrease in restricted certificates of deposit	(250,500)	73,981	148,586
Payments of patent costs	(38,707)	(77,343)	(236,892)
Acquisitions of property and equipment, net	(117,687)	(22,780)	(125,956)
Net cash used in investing activities	(406,894)	(26,142)	(214,262)
<b>FINANCING ACTIVITIES</b>			
Proceeds from warrants	2,000,000		
Proceeds from Rights Offering, net			19,764,985
Exercise of stock options	141,740	129,250	311
Proceeds from issuance of notes	2,500,000	3,000,000	2,000,000
Payment of notes			(9,425,000)
Payments on other long-term lease obligations			
Net cash provided by financing activities	4,641,740	3,129,250	12,340,296
Increase/(decrease) in cash and cash equivalents	55,982	130,290	(1,504,578)
Cash and cash equivalents at beginning of period	346,409	216,119	1,720,697
Cash and cash equivalents at end of period	\$ 402,391	\$ 346,409	\$ 216,119
Supplemental cash flow information:			
Cash paid for interest	\$	\$	\$ 208,000

See the accompanying Notes which are an integral part of the financial statements

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### **Notes to the Financial Statements**

#### **1. Description of Business**

ISCO International and its subsidiaries, Spectral Solutions, Inc., and Illinois Superconductor Canada Corporation, (the Company) address RF (Radio Frequency) and radio link optimization issues, including interference issues, within wireless communications. The Company uses unique products, including ANF, RF<sup>2</sup>, and other solutions, as well as service expertise, in improving the RF handling of a wireless system, particularly the radio link (the signal between the mobile device and the base station). A subset of this function is mitigating the impact of interference on wireless communications systems. These solutions are designed to enhance the quality, capacity, coverage and flexibility of wireless telecommunications services. The Company has historically marketed its products to cellular, PCS and wireless telecommunications service providers and OEMs located both in the United States and in international markets.

#### **2. Summary of Significant Accounting Policies**

##### **Principles of Consolidation**

The consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries. All intercompany balances and transactions have been eliminated.

##### **Cash and Cash Equivalents**

Cash and cash equivalents consist of demand deposits, time deposits, money market funds, and commercial paper which have original maturities of three months or less from the date of purchase. Management believes that the financial institutions in which it maintains such deposits are financially sound and, accordingly, minimal credit risk exists with respect to these deposits.

##### **Accounts receivable**

The majority of the Company's accounts receivable are due from companies in the telecommunications industry. Credit is extended based on evaluation of a customer's financial condition and, generally, collateral is not required. Accounts receivable are due within 30 days and are stated at amounts due from customers, net of an allowance for doubtful accounts. Accounts outstanding longer than the contractual payment terms are considered past due. The Company determines its allowance by considering a number of factors, including the length of time trade accounts receivable are past due, the Company's previous loss history, the customer's current ability to pay its obligation to the Company, and the condition of the general economy and the industry as a whole. The Company writes-off accounts receivable when they become uncollectible, and payments subsequently received on such receivables are credited to the allowance for doubtful accounts. The allowance could be materially different if economic conditions change or actual results deviate from historical trends.

##### **Inventories**



Inventories are stated at the lower of cost (determined on a first in, first out basis) or market.

### Property and Equipment

Property and equipment are stated at cost, less accumulated depreciation, and are depreciated over the estimated useful lives of the assets using both straight line and accelerated methods. The accelerated method used is the double declining balance method. Software is typically amortized over 3 years utilizing the straight-line method. Leasehold improvements are amortized using the straight-line method over the shorter of the useful life of the asset or the term of the lease. Amortization of leasehold improvements is included in depreciation expense. The useful lives assigned to property and equipment for the purpose of computing book depreciation follow:

Lab equipment	5 years
Manufacturing equipment	3 to 5 years
Office equipment	3 to 5 years
Furniture and fixtures	5 years
Leasehold improvements	Life of lease

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### **Income Taxes**

Deferred tax assets and liabilities are determined based on differences between financial reporting and tax bases of assets and liabilities and are measured using the enacted tax rates and laws that will be in effect when the differences are expected to reverse. The Company uses a valuation allowance when it determines the amount of deferred tax asset to include in its financial statement for the current period. This valuation allowance is based on historical patterns of taxable income, recognized deferred tax liabilities, and other factors that could impact the current view of future tax asset utilization.

### **Revenue Recognition and Product Warranty**

Revenues from product sales are generally recognized at the time of shipment and are recorded net of estimated returns and allowances. Revenues from services are generally recognized upon substantial completion of the service and acceptance by the customer. The Company has, under certain conditions, granted customers the right to return product during a specified period of time after shipment. In these situations, the Company establishes a liability for estimated returns and allowances at the time of shipment and makes the appropriate adjustment in revenue recognized for accounting purposes. During 2004, no revenue was recognized on products that included a right to return or otherwise required customer acceptance after December 31, 2004. The Company has established a program which, in certain situations, allows customers or prospective customers to field test the Company's products for a specified period of time. Revenues from field test arrangements are recognized upon customer acceptance of the products.

The Company warrants its products against defects in materials and workmanship typically for a 1-2 year period from the date of shipment, though these terms may be negotiated on a case by case basis. A provision for estimated future costs related to warranty expenses is recorded when revenues are recognized. At December 31, 2004 and 2003, respectively, the Company accrued \$34,000 and \$100,000 for warranty costs. This warranty reserve is based on the cost to replace a percentage of products in the field at a given point, adjusted by actual experience. Returns and allowances were not significant in any period reported, and form a data point in establishing the reserve. Should this warranty reserve estimate be deemed insufficient, by new information, experience, or otherwise, an increase to warranty expense would be required.

Sales to three of the Company's customers accounted for 94% and 98% of the Company's total revenues for 2004 and 2003, respectively. During 2004 the top three customers were Verizon Wireless, U.S. Cellular Corporation, and Pelephone Communications Ltd., respectively.

### **Advertising Costs**

Advertising costs are charged to expense in the period incurred.

### **Research and Development Costs**

Research and development costs related to both present and future products are charged to expense in the period incurred.

**Net Loss Per Common Share**

Basic and diluted net loss per common share are computed based upon the weighted average number of common shares outstanding. Approximately 9.1 million common shares issuable as of December 31, 2004 upon the exercise of options and warrants are not included in the per share calculations since the effect of their inclusion would be antidilutive.

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### **Use of Estimates**

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

### **Description of Certain Concentrations and Risks**

The Company operates in a highly competitive and rapidly changing industry. Product revenues are currently concentrated with a limited number of customers, and the supply of certain materials is concentrated among a few providers. The development and commercialization of new technologies by any competitor could adversely affect the Company's results of operations.

### **Goodwill and Intangible Assets**

Patents and trademarks represent costs, primarily legal fees and expenses, incurred in order to prepare and file patent applications related to various aspects of the Company's technology and to its current and proposed products. Patents and trademarks are recorded at cost and are amortized using the straight-line method over the shorter of their estimated useful lives or 17 years. The recoverability of the carrying values of patents and trademarks is evaluated on an ongoing basis by Company management. Factors involved in this evaluation include whether the item is in force, whether it has been directly threatened or challenged in litigation or administrative process, continued usefulness of item in current and/or expected utilization by the Company in its solution offerings, perceived value of such material or invention in the marketplace, availability and utilization of alternative or other technologies, the perceived protective value of the item, and other factors.

During 2004 and 2003, the Company wrote off \$32,564 and none, respectively, in patent-related costs. Total capitalized patent and trademark costs were \$1,051,000 and \$1,096,000 at December 31, 2004 and 2003, respectively. Capitalized patent costs related to pending patents were \$524,000 and \$669,000 at December 31, 2004 and 2003, respectively. Patents and trademarks were reported net of accumulated amortization of \$217,000 and \$172,000 at December 31, 2004 and 2003, respectively.

As of the reporting date, the Company had recorded goodwill resulting from the acquisitions of Spectral Solutions, Inc. and the Adaptive Notch Filter division of Lockheed Martin Canada, Inc., both during 2000. Beginning January 1, 2002, goodwill is no longer to be amortized but rather to be tested for impairment on an annual basis and between annual tests whenever there is an indication of potential impairment. Impairment losses would be recognized whenever the implied fair value of goodwill is determined to be less than its carrying value. SFAS 142 prescribes a two-step impairment test to determine whether the carrying value of the Company's goodwill is impaired. The first step of the goodwill impairment test is used to identify potential impairment, while the second step measures the amount of the impairment loss. Step one to this test requires the comparison of the fair value of each reporting unit with its carrying amount, including goodwill. As the Company is comprised of a single reporting unit, the question of fair value is centered upon whether the market value, as measured by market capitalization, of the Company exceeds shareholders' equity. The excess of the Company's market capitalization over its reported shareholders' equity indicates that the goodwill of the Company's sole reporting unit was not impaired as of December 31, 2004.

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The Company's balances of Goodwill and Intangible Assets were as follows:

	As of December 31,	
	2004	2003
	(in thousands of dollars)	
Patents, gross	\$ 1,268	\$ 1,268
Accumulated amortization	(217)	(172)
Other amortizable intangibles, net	\$ 1,051	\$ 1,096
Goodwill	\$ 13,370	\$ 13,370

The following table summarizes the estimated annual pretax amortization expense for the intangible assets with definitive lives:

2005	43
2006	43
2007	43
2008	43
2009	43
Thereafter	836
	<u>\$1,051</u>

**Fair Value of Financial Instruments**

The carrying values of financial instruments approximates fair value.

**Long Lived Assets**

The Company adopted SFAS No. 144, Accounting for the Impairment or Disposal of Long-Lived Assets effective January 1, 2002. SFAS No. 144 addresses financial accounting and reporting for the impairment or disposal of long-lived assets. This statement supersedes SFAS No. 121,

Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to Be Disposed Of, and the accounting and reporting provisions of Accounting Principles Board Opinion No. 30, Reporting the Results of Operations Reporting the Effects of Disposal of a Segment of a Business, and Extraordinary, Unusual and Infrequently Occurring Events and Transactions, for the disposal of a segment of a business. This adoption did not have a material effect on its results of operations or financial position.

**Stock-Based Employee Compensation**

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In December 2002, the FASB issued SFAS No. 148, Accounting for Stock-Based Compensation Transition and Disclosure an amendment of FASB Statement No. 123. This Statement amends SFAS No. 123, Accounting for Stock-based Compensation, to provide alternative methods of transition for a voluntary change to the fair value method of accounting for stock-based employee compensation. In addition, this Statement amends the disclosure requirements of SFAS No. 123 to require more prominent disclosures in both the annual and interim financial statements about the method of accounting for stock-based employee compensation and the effect of the method on reported amounts. The amendments to SFAS 123 in paragraphs 2(a)-2(e) of this Statement are effective for financial statements for fiscal years ending after December 15, 2002. The amendment to SFAS 123 in paragraph

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2(f) of this Statement and the amendment to Opinion 28 in paragraph 3 are effective for financial reports containing condensed financial statements for interim periods beginning after December 15, 2002. The Company does not expect that adoption of this Statement will have a material effect on its results of operations or financial position.

The Company has a stock-based employee compensation plan, which is more fully described in note 6. The Company applies APB Opinion 25, Accounting for Stock Issued to Employees, and related Interpretations in accounting for its plans. Stock expense for the twelve-month periods of 2004 and 2003, respectively, is the result of options issued with an exercise price below the underlying stock's market price. The following table illustrates the effect on net income and earnings per share if the Company had applied the fair value recognition provisions of FASB Statement 123, Accounting for Stock-Based Compensation, using the assumptions described in Note 6, to its stock-based employee plans:

	<b>Year Ended December 31,</b>	
	<b>2004</b>	<b>2003</b>
	<b>(in thousands of dollars)</b>	
Net loss, as reported	\$ 6,967	\$ 7,156
Add: Stock-based employee compensation expense included in reported net loss, net of related tax effects	891	1,228
Less: Total stock-based employee compensation expense determined under fair value based method for awards granted, modified, or settled, net of related tax effects	1,297	2,124
<b>Pro forma net loss</b>	<b>\$ 7,373</b>	<b>\$ 8,052</b>
<b>Earnings per share:</b>		
Basic as reported	\$ 0.04	\$ 0.05
Basic pro forma	\$ 0.05	\$ 0.05
Diluted as reported	\$ 0.04	\$ 0.05
Diluted pro forma	\$ 0.05	\$ 0.05

**New Accounting Standards**

In November 2004, the FASB issued SFAS No. 151, Inventory Costs—an amendment of ARB No. 43, Chapter 4. This statement amends the guidance in Accounting Research Bulletin (ARB) No. 43, Chapter 4, Inventory Pricing, to clarify the accounting for abnormal amounts of idle facility expense, freight, handling costs and wasted material (spoilage) and requires that those items be recognized as current-period charges regardless of whether they meet the criterion of so abnormal. The statement also requires that allocation of fixed production overheads to the costs of conversion be based on the normal capacity of the production facilities. The provisions of this statement are effective for inventory costs incurred during fiscal years beginning after June 15, 2005 (as of January 1, 2006 for the Company) and are to be applied prospectively. The Company does not expect adoption of SFAS No. 151 to have a material effect on its results of operations or financial position.

In December 2004, the FASB issued SFAS No. 123 (revised 2004), Share-Based Payment (SFAS No. 123R). This statement requires that the compensation cost relating to share-based payment transactions be recognized in the financial statements. Compensation cost is to be measured based on the estimated fair value of the equity-based compensation awards issued as of the grant date. The related compensation expense will be based on the estimated number of awards expected to vest and will be recognized over the requisite service period (often the vesting period) for each grant. The statement requires the use of assumptions and judgments about future events and some of the inputs to the valuation models will require considerable judgment by management. SFAS No. 123R replaces FASB Statement No. 123 (SFAS No. 123), Accounting for Share-Based Compensation, and supersedes APB Opinion No. 25, Accounting for Stock Issued to Employees. The provisions of SFAS No.

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123R are required to be applied by public companies as of the first interim or annual reporting period that begins after June 15, 2005 (as of July 1, 2005 for the Company). The Company intends to continue applying APB Opinion No. 25 to equity-based



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compensation awards until the effective date of SFAS No. 123R. At the effective date of SFAS No. 123R, the Company expects to use the modified prospective application transition method without restatement of prior interim periods in the year of adoption. This will result in the Company recognizing compensation cost based on the requirements of SFAS No. 123R for all equity-based compensation awards issued after July 1, 2005. For all equity-based compensation awards that are unvested as of July 1, 2005, compensation cost will be recognized for the unamortized portion of compensation cost not previously included in the SFAS No. 123 pro forma footnote disclosure. The Company is currently evaluating the impact that adoption of SFAS No. 123R may have on its results of operations or financial position and expects that the adoption may or may not have a material effect on the Company's results of operations depending on the level and form of future equity-based compensation awards issued.

## **Reclassifications**

Certain amounts reported in prior years have been reclassified from what was previously reported to conform to the current year's presentation.

## **3. Realization of Assets**

The accompanying financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America, which contemplate continuation of the Company as a going concern. However, the Company has sustained substantial losses from operations in recent years, and such losses have continued through the year ended December 31, 2004. In addition, the Company has used, rather than provided, cash in its operations. Consistent with these facts, the accompanying report from Grant Thornton, LLP, the Company's independent registered public accounting firm, includes the comment that there is substantial doubt about the Company's ability to continue as a going concern.

In view of the matters described in the preceding paragraph, recoverability of a major portion of the recorded asset amounts shown in the accompanying balance sheet is dependent upon continued operations of the Company, which in turn is dependent upon the Company's ability to meet its financing requirements on a continuing basis, to maintain present financing, and to succeed in its future operations. The financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or amounts and classification of liabilities that might be necessary should the Company be unable to continue in existence.

The Company has incurred, and continues to incur, losses from operations. For the years ended December 31, 2004, 2003, and 2002, the Company incurred net losses of \$7 million, \$7.2 million, and \$13 million, respectively. During those years the Company implemented strategies to reduce its cash used in operating activities. The Company's strategy included the consolidation of its manufacturing and research and development facilities and a targeted reduction of the employee workforce, increasing the efficiency of the Company's processes, focusing development efforts on products with a greater probability of commercial sales, reducing professional fees and discretionary expenditures, and negotiating favorable payment arrangements with suppliers and service providers. More importantly, the Company configured itself along an outsourcing model, thus allowing for relatively large, efficient production without the associated overhead. The combination of these factors has been highly effective in bringing the Company closer to profitability (from a net loss as high as \$28 million during 2001) while enabling it to deliver significant quantities of solutions.

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To date, the Company has financed its operations primarily through public and private equity and debt financings. Subject to the uncommitted nature of the credit line, the Company believes that it has sufficient funds to operate its business as identified herein and to meet its obligations into the third quarter 2005, and quite possibly beyond, depending on working capital and other requirements. The Company intends to continue to review available alternatives in the marketplace as it seeks to augment and/or replace its existing capital position through other sources of capital, whether debt, equity, or hybrid.

**4. Inventories**

Inventories consist of the following:

	December 31,	
	2004	2003
Raw materials	\$ 267,682	\$ 356,815
Work-in-process	149,877	66,861
Finished product	551,489	254,685
	<u>\$ 969,048</u>	<u>\$ 678,361</u>

Cost of product sales for the years ending December 31, 2004 and 2003 includes approximately \$57,000 and \$130,000, respectively, of costs in excess of the net realizable value of inventory (including obsolete materials).

**5. Allowance for Doubtful Accounts**

	For the Years Ended December 31,		
	2004	2003	2002
	(in thousands of dollars)		
Beginning Balance	\$ 4	\$ 54	\$ 0
Bad Debt Expense		3	54
Accounts Written Off		53	
Recoveries	4		
Ending Balance	<u>\$ 0</u>	<u>\$ 4</u>	<u>\$ 54</u>

**6. Capital Stock**

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The Company has an authorized class of undesignated preferred stock consisting of 300,000 shares. Preferred stock may be issued in series from time to time with such designations, relative rights, priorities, preferences, qualifications, limitations and restrictions thereof, to the extent that such are not fixed in the Company's certificate of incorporation, as the Board of Directors determines.

On February 9, 1996, the Board of Directors adopted a shareholder rights plan (the Rights Plan). In conjunction with the adoption of the Rights Plan, the Company created one series of preferred stock, consisting of 10,000 shares of Series A Junior Participating Preferred Stock (Series A Preferred). Each share of Series A Preferred would entitle the holder to receive dividends equal to 1,000 times the dividends per share declared with respect to the Company's common stock and, in the event of liquidation, such holders would receive a preference of 1,000 times the aggregate amount to be distributed per share to the holders of the Company's common stock. Pursuant to the Rights Plan, a Series A Right is associated with, and trades with, each share of common stock outstanding. The record date for distribution of such Series A Rights was February 22, 1996, and for so long as the Series A Rights are associated with the common stock, each new share of common stock issued by the Company will include a Series A Right. Each Series A Right will entitle its holder to purchase one one-thousandth of a share of Series A Preferred for \$200, subject to adjustment as defined in the Rights Plan. The Series A Rights are not exercisable until the earlier of (i) 10 days after any person or group becomes the beneficial owner of 15% or more of the Company's outstanding common stock, or (ii) 10 business days (unless extended by the Board of Directors) after the commencement of a tender offer or exchange offer that would result in a person or group beneficially owning 15% or more of the Company's outstanding common stock. The Company's Board of Directors has indicated that it intends to allow this Rights Plan to expire during February 2006.

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If any person or group ( Acquiring Party ) acquires 15% or more of the Company s outstanding common stock ( Shares Acquisition Date ), each holder of a Series A Right, except the Acquiring Party, has the right to receive upon exercise (i) shares of the Company s common stock having a market value equal to two times the exercise price of the Series A Right, and (ii) one Series B Right (Series A Rights and Series B Rights are hereinafter collectively referred to as the Rights ). The Board of Directors has the option, after the Shares Acquisition Date but before there has been a 50% acquisition of the Company, to exchange one share of common stock (or one one-thousandth of a share of preferred stock) and one Series B Right for each Series A Right (other than Series A Rights held by the Acquiring Party).

If, after the Series A Rights become exercisable, the Company is involved in a merger or other business combination, or if the Company sells or transfers more than 50% of its assets or earning power, or if an acquiring party engages in certain self-dealing transactions with the Company, as defined in the Rights Plan, each Right then outstanding (other than Rights held by the Acquiring Party) will be exercisable for common stock of the other party to such transaction having a market value of two times the exercise price of the Right. The Company has the right to redeem each Series A Right for \$0.01 prior to the Shares Acquisition Date. The Series B Rights, once issued, are not redeemable. The Rights expire on February 9, 2006.

On February 13, 2002, the Company executed an amendment to the Rights Agreement to provide that neither Elliott Associates, L.P. and Elliott International, L.P. (collectively referred to herein as Elliott and with their affiliates, the Elliott Entities ) nor Alexander Finance, LP ( Alexander ) shall be an acquiring person under the Rights Agreement (i) on account of any acquisition of additional common shares purchased directly from ISCO which has been approved in advance by its Board of Directors, or (ii) so long as the acquisition of any additional shares not purchased directly from ISCO, in the aggregate, does not exceed one (1%) percent of the total issued and outstanding ISCO common stock. Additionally, none of the Elliott Entities nor Alexander will be an acquiring person by reason of direct transfers between any of the Elliott Entities or from Alexander to any of its affiliates.

During December 2003, the Company and Morgan and Finnegan L.L.P. ( M&F. ) entered into a Settlement Agreement and Release. The agreement reflected the resolution of a dispute between the Company and M&F, the Company s former patent counsel. The Company had reserved a two million dollar (\$2,000,000) accrued liability related to the dispute. This accrued liability was resolved and no longer necessary due to the resolution of the dispute pursuant to which the Company has issued 1,000,000 shares of common stock to M&F. The stock provided was valued at \$500,000, the number of shares multiplied by the market price of the Company s common stock at the time of the transaction. Both the expense that created the accounting reserve and the reversal of that expense upon termination of the reserve occurred during the fiscal year 2003.

At December 31, 2004, authorized but unissued shares of common stock have been reserved for future issuance as follows:

Options outstanding (Note 7)	9,059,000
	<u>9,059,000</u>

**7. Stock Options and Warrants**

On August 19, 1993, the Board of Directors adopted the 1993 Stock Option Plan for employees, consultants, and directors who are not also employees of the Company (outside directors). This plan reached its ten-year expiration during 2003. During the 2003 annual meeting of shareholders, the Company s shareholders approved a new 2003 Equity Incentive Plan to take the place of the expiring 1993 plan. Unissued options from the 1993 plan were used to fund the 2003 plan. The maximum number of shares issuable under these plans was 14,011,468. These Plans are collectively referred to as the Plan .

For employees and consultants, the Plan provides for granting of Incentive Stock Options (ISOs) and Nonstatutory Stock Options (NSOs). In the case of ISOs, the exercise price shall not be less than 100% (110% in certain cases) of the fair value of the Company's common stock, as determined by the Compensation Committee or full Board as appropriate (the Committee), on the date of grant. In the case of NSOs, the exercise price shall be determined by the Committee, on the date of grant. The term of options granted to employees and consultants will

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be for a period not to exceed 10 years (five years in certain cases). Options granted under the Plan default to vest over a four-year period (one-fourth of options granted vest after one year from the grant date and the remaining options vest ratably each month thereafter), but the vesting period is determined by the Committee and may differ from the default period. In addition, the Committee may authorize option grants with vesting provisions that are not based solely on employees' rendering of additional service to the Company.

For outside directors, the Plan provides that each outside director will be automatically granted NSOs on the date of their initial election to the Board of Directors. On the date of the annual meeting of the stockholders of the Company, each outside director who is elected, reelected, or continues to serve as a director, shall be granted additional NSOs, except for those outside directors who are first elected to the Board of Directors at the meeting or three months prior. The options granted vest ratably over one or two years, based on the date of grant, and expire after ten years from the grant date.

On May 10, 1999, the Board of Directors granted to each employee of the Company (other than the executive officers of the Company) (collectively, the Non-Executive Employees) the option to (i) reduce the exercise prices of up to a maximum of 15,000 of the unexercised stock options previously granted to such Non-Executive Employee under the Plan to \$.5625 per share (the closing price of the Company's Common Stock on May 10, 1999) and (ii) cause all of such stock options not otherwise scheduled to become fully vested on or before May 10, 2000 to become fully vested on such date. As a result thereof, an aggregate of 279,550 stock options previously granted under the Plan were amended as described in the preceding sentence. In addition, on May 10, 1999 the Board of Directors granted to the executive officers and certain Non-Executive Employees of the Company additional non-statutory stock options to purchase an aggregate of 343,575 shares of the Company's Common Stock under the Plan. Such stock options became fully vested on the first anniversary of the date of grant, with exercise prices of \$.5625 per share and expire 10 years from the date of grant.

On July 1, 2000, Financial Accounting Standards Board Interpretation No. 44, Accounting for Certain Transactions Involving Stock Compensation, an interpretation of APB Opinion No. 25 (FIN 44) was adopted by the Company. FIN 44 requires that stock options that have been modified to reduce the exercise price be subject to variable accounting. The Company accounts for employee stock options under APB Opinion No. 25 and non-employee stock options under Statement of Financial Accounting Standards No. 123, Accounting for Stock Based Compensation (SFAS No. 123).

On May 10, 1999, as described above, the Company re-priced certain stock options granted to employees and in accordance with US GAAP, at that time, the Company accounted for the re-priced stock options as fixed. As a result of adopting FIN 44, the Company is required to apply variable accounting to these options. If the market price of the Company's common stock increases above the July 1, 2000 market price, the Company will have to recognize additional compensation expense equal to the increase in stock price multiplied by the number of re-priced options. No additional expense will be recognized if the stock does not exceed the July 1, 2000 value. However, the impact cannot be determined as it is dependent on the change in the market price of the common stock from July 1, 2000 until the stock options are exercised, forfeited, or expire unexercised. Because the stock price on December 31, 2004 was below that of July 1, 2000, no expense has been recognized during the period.

On February 5, 2001, the Company's Board of Directors authorized the re-pricing of certain out of the money stock options granted to employees during the calendar year of 2000 to the closing share price on such date, or \$1.9375 per share. This re-pricing causes these options to be subject to variable accounting as described in FIN 44. Because the stock price on December 31, 2004, was lower than the re-priced strike price no gain or loss was recognized during the period.

On April 1, 2002, the Company's Board of Directors authorized the re-pricing of certain out of the money stock options granted to employees. A new strike price of \$0.81 per share was established, provided the respective employees remain with the Company for at least six months following the re-pricing date. In addition, certain stock options granted to directors were repriced, with a new strike price of \$1.00 per share. As

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the stock price on December 31, 2004, was lower than the re-priced strike price no gain or loss was recognized during the period.

On July 17, 2000, the Company granted an option to a non-Company advisor in connection with the establishment of a sales office in Japan to purchase 200,000 shares of common stock at \$4.9375 per share, the price

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of the common stock on the date of the grant. According to the Black-Scholes valuation model, the value of the option was \$4.53 per share. The option vested 25% immediately, with the balance vesting pro-rata over a three-year period. \$906,000 of non-cash compensation expense was to be amortized during the life of the options. This arrangement was terminated during December 2001, as a result of a change in the structure of the Japanese sales office. The cumulative compensation expense charged for these services through termination was \$545,000.

On February 15, 2000, the Company's Board of Directors granted to certain executive level employees an aggregate of 440,000 deferred stock units ( DSUs ) under the Plan. The DSU s represented the right to receive an equivalent number of restricted shares of the Company's common stock. On the date of the grant, the DSU s were set to vest at the rate of 10% on the first anniversary of the date of the grant, with the balance vesting at a rate of 20%, 30%, and 40% at the second, third, and fourth anniversary dates, respectively. The executive level employees had the right to elect to defer receipt of the common stock subject to the DSU s to a later date. In the third quarter of 2000, the Company began to recognize compensation expense for the DSU s over the vesting period (4 years) based on their intrinsic value of \$1,925,000, which was the number of DSU s multiplied by the closing price of the Company's common stock on July 18, 2000, the measurement date (\$4.38 per share). As of July 3, 2003, all DSU s granted under this plan had been either received or cancelled. As a result of these transactions, unamortized deferred charges of \$308,448 were eliminated. No additional expense is expected for this purpose.

On February 15, 2002, the Company completed a Shareholder Rights Offering. Approximately \$20 million was raised from existing shareholders as of the recording date in exchange for the issuance of approximately 40 million shares of the Company's common stock. A portion of the proceeds were then used to repay in full \$9.8 million of debt and related accrued interest, as well as the payment of various other accrued expenses.

On October 31, 2003, the Company's Board of Directors authorized the re-pricing of certain out of the money stock options granted to directors. A new strike price of \$0.24 per share was established. A non-cash charge of \$33,000 and (\$94,000) was recognized during the fourth quarter and full year ended December 31, 2004, and a net charge of \$50,000 recognized since October 31, 2003, to account for the difference between the re-priced strike price and the \$0.36 closing price of the Company's common stock on December 31, 2004.

On January 2, 2003, the Company's Board of Directors granted 2,800,000 new stock options to six of the Company's employees, including officers. 950,000 of these options vested immediately, while the remaining 1,850,000 vested monthly in 12 installments. All of the options granted on January 2, 2003 were granted at a discount based on 25% of the average closing price of the Company's common stock as reported on the American Stock Exchange over ten trading days and ultimately valued at a \$0.22 discount to the closing price of the Company's common stock as of the date of the grant. During July 2003, the Board of Directors cancelled approximately 2.8 million outstanding options held by certain Company employees, including officers. During January 2004 a total of 3.7 million options were granted to the employees of the Company, including officers, at a similar 25% discount. Such options vested for 1 or 2 years.

A charge of \$323,000 and \$1.2 million were recognized during the fourth quarter and full year 2004, respectively, to recognize the value of the discounts above. Additionally, certain of these 2003 options were deemed to be properly accounted for using variable accounting. Despite the period of time involved, the Company determined that the lesser of those options granted or cancelled should receive variable accounting treatment as if the former option terms were adjusted prospectively. As such, charges of \$16,000 and (\$256,000) were recognized during the fourth quarter and full year 2004, respectively, to reflect the \$0.36 closing price of the Company's common stock as of December 31, 2004.

During 2004, in addition to the disclosure above, the Company's Board of Directors granted 854,000 stock options to the Company's employees and non-employee Board members. These grants were issued at the closing market price on the date of grant.



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Pro forma information regarding net income and earnings per share is required under FASB 123, and has been determined as if the Company had accounted for its stock options granted subsequent to December 31, 1994 under the fair value method of that Statement. The fair value for these options was estimated at the date of grant using a Black-Scholes option pricing model with the following weighted-average assumptions for the years ended December 31, 2004, 2003 and 2002: risk-free interest rate of 2.7%, 2.3%, and 2.9%, respectively; a dividend yield

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of 0%; volatility factor of the expected market price of the Company's common stock of 0.10, 0.10, and 0.15, respectively; and expected life of the options of 4.0 years.

The Black-Scholes option valuation model was developed for use in estimating the fair value of traded options which have no vesting restrictions and are fully transferable. In addition, option valuation models require the input of highly subjective assumptions, including the expected stock price volatility. Because the Company's employee stock options have characteristics significantly different from those of traded options, and because changes in the subjective input assumptions can materially affect the fair value estimate, in management's opinion, the existing models do not necessarily provide a reliable single measure of the fair value of its employee stock options.

The table below summarizes all option activity during the three year period ended December 31, 2004:

	Options		
	Outstanding	Exercise Price Per Share	
Outstanding at December 31, 2001	9,639,313	\$ .00	26.50
Granted	2,171,757	.11	1.45
Exercised	(109,725)	.00	0.18
Forfeited	(3,816,482)	.18	26.50
Outstanding at December 31, 2002	7,884,863	\$ .00	21.50
Granted	3,570,000	.11	.38
Exercised	(1,283,000)	.00	0.11
Forfeited	(3,512,306)	.00	19.25
Outstanding at December 31, 2003	6,659,557	\$ .11	21.50
Granted	4,540,000	0.14	0.89
Exercised	(1,045,833)	0.11	0.49
Forfeited	(1,094,288)	0.11	21.50
Outstanding at December 31, 2004	9,059,436	\$ .11	18.25

The weighted-average exercise price of options outstanding at December 31, 2004, 2003 and 2002, was \$0.40, \$0.55, and 0.96, respectively. The weighted-average exercise price of options granted, exercised, and forfeited during 2004 was \$0.18, \$0.13 and \$1.28, respectively. The weighted-average fair value of options granted during 2004, 2003 and 2002 was \$0.18, \$0.16, and \$0.18, respectively.

Following is additional information with respect to options outstanding at December 31, 2004:

Exercise Exercise Exercise Exercise

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	Price from	Price from	Price from	Price from
	\$0.11 to	\$0.24 to	\$0.48 to	\$1.00 to
	\$0.22	\$0.45	\$0.91	\$18.25
	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>

**OUTSTANDING AT DECEMBER 31, 2004:**

Number of options	5,462,500	1,856,000	499,167	1,241,769
Weighted-average exercise price	\$ 0.14	\$ 0.33	\$ 0.65	\$ 1.54
Weighted-average remaining contractual life in years	8	8	6	6

**EXERCISABLE AT DECEMBER 31, 2004:**

Number of options	3,388,177	1,238,188	444,458	1,241,769
Weighted-average exercise price	\$ 0.13	\$ 0.30	\$ 0.65	\$ 1.54

The total number of unvested options outstanding at December 31, 2004 was 2,747,000, which will vest based on employees' continued service to the Company.

During the fourth quarter of 2002, in accordance with the terms of the credit line provided by the Company's two largest shareholders, 10 million warrants were issued to purchase common stock of the Company at an exercise price of \$0.20 per share and an expiration date of April 15, 2004. Pursuant to an agreement between the

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parties during 2003, no additional warrants were issued related to borrowings on either the \$4 million credit line or \$2 million supplement. During February 2004, all 10 million warrants were exercised, resulting in the Company receiving the \$2 million aggregate strike price and issuing 10 million shares of common stock.

**8. Long-Term Debt**

As of the reporting date, the Company had drawn \$7.5 million of debt financing under a credit line, as described below. Subsequent to the reporting date, the Company drew the remaining \$1 million under this credit line, for a total debt of \$8.5 million. During October 2002, the Company entered into an Uncommitted Line of Credit with its two largest shareholders, an affiliate of Elliott Associates, L.P. (Manchester Securities Corporation) and Alexander Finance, L.P. This line provided up to \$4 million to the Company. This line was uncommitted, such that each new borrowing under the facility would be subject to the approval of the lenders. Borrowings on this line bore an interest rate of 9.5% and collateralized by all the assets of the Company. Outstanding loans under this agreement would be required to be repaid on a priority basis should the Company receive new funding from other sources. Additionally, the lenders were entitled to receive warrants to the extent funds were drawn down on the line. The warrants bore a strike price of \$0.20 per share of common stock and were to expire on April 15, 2004. The credit line was to mature and be due, including accrued interest thereon, on March 31, 2004. Due to an agreement between the parties no warrants were issued with subsequent borrowings. During February 2004, the warrant holders exercised all of their warrants, contributing \$2 million to the Company in exchange for 10 million shares of common stock.

According to existing accounting pronouncements and SEC guidelines, the Company allocated the proceeds of these borrowings between their debt and equity components. As a result of these borrowings during 2002, the Company recorded a non-cash charge of \$1.2 million through the outstanding term of the warrants (April, 2004). \$250,000 and \$862,000 of that amount were recorded during 2004 and 2003, respectively. These warrants were valued at \$1.2 million of the \$2 million debt instrument based on a Black-Scholes valuation that included the difference between the value of the Company's common stock and the exercise price of the warrants on the date of each warrant issuance and a 30% discounted face value of the notes, leaving the remaining \$0.8 million as the underlying value of the debt. This \$1.2 million was amortized over the vesting period of the warrants (six quarters from the fourth quarter 2002 through the first quarter 2004).

As announced during October 2003, the Company entered into an agreement with its lenders to supplement the credit line with an additional \$2 million, \$1 million of which was drawn immediately and \$1 million subsequently drawn upon the Company's request and subject to the approval of the lenders. This supplemental facility bore a 14% rate of interest and was due October 31, 2004. The term of the previous credit line were not affected by this supplement, and as such the \$4 million borrowed under that line, plus accrued interest, remained due March 31, 2004.

During February 2004, these credit lines were extended to a due date of April 2005, with interest after the initial periods to be charged at 14%. No warrants or other inducements were issued with respect to these extensions. Additionally, lenders exercised their 10 million warrants during February 2004, agreeing to let the Company use the funds for general purposes as opposed to repaying debt.

During July 2004, the Company and its lenders agreed to increase the aggregate loan commitments under the credit line from \$6,000,000 to \$6,500,000. Simultaneously, the Company drew the remaining \$1,500,000 of the financing.

During November 2004, the Company and its lenders agreed to increase the line of credit to up to an additional \$2 million to an aggregate loan commitment of \$8,500,000, \$1 million of which was drawn immediately by the Company with the remaining \$1 million available to be drawn upon the Company's request and subject to the approval of the lenders. The remaining \$1 million was subsequently drawn down in January 2005.

During February 2005, the consolidated credit line was extended until April 1, 2006. Interest during the extension period is to be charged at 9%.

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The Company has net operating loss carryforwards for tax purposes of approximately \$129,565,000 at December 31, 2004. The net operating loss carryforwards expire in the following years:

<u>Year</u>	<u>Amount</u>
2005	\$ 7,000
2006	638,000
2007	974,000
2008	1,658,000
2009	3,973,000
2010	8,199,000
2011	11,953,000
2012	11,922,000
2018	11,146,000
2019	10,726,000
2020	15,501,000
2021	24,904,000
2022	13,982,000
2023	5,284,000
2024	8,698,000
	<u>\$ 129,565,000</u>

Significant components of the Company's deferred tax assets and liabilities are as follows:

	<u>December 31,</u>	
	<u>2004</u>	<u>2003</u>
Deferred tax assets:		
Net operating loss carryforward	\$ 49,236,000	\$ 46,436,000
Accrued liabilities	491,000	388,000
Inventories	83,000	326,000
Property and Equipment	958,000	606,000
	<u>50,768,000</u>	<u>47,756,000</u>
Total deferred tax assets	50,768,000	47,756,000
Deferred tax liabilities:		
Patent costs	(400,000)	(416,000)
	<u>(400,000)</u>	<u>(416,000)</u>
Net deferred tax assets	50,368,000	47,340,000
Valuation allowance	(50,368,000)	(47,340,000)
	<u>\$</u>	<u>\$</u>
Net deferred tax assets	\$	\$

The valuation allowance increased during 2004 and 2003 by \$3,028,000 and \$3,164,000, respectively, due primarily to the increase in the net operating loss carryforward. Based on the Internal Revenue Code and changes in the ownership of the Company, utilization of the net operating loss carryforwards will be subject to annual limitations.

**10. Leases**

The Company leases its manufacturing and office space. Under the terms of the lease in Elk Grove Village, IL, which expires October 2014, the Company is responsible for all real estate taxes and operating expenses.

Future minimum payments under the operating leases consist of the following at December 31, 2004:

<u>Year</u>	<u>Amount</u>
2005	\$ 156,000
2006	163,000
2007	167,000
2008	175,000
2009	184,000

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Rent expense totaled \$260,000, \$302,000, and \$450,000 for the years ended December 31, 2004, 2003, and 2002, respectively.

### **11. 401(k) Plan**

The Company has a 401(k) plan covering all employees who meet prescribed service requirements. The plan provides for deferred salary contributions by the plan participants and a Company contribution. Company contributions, if any, are at the discretion of the Board of Directors and are not to exceed the amount deductible under applicable income tax laws. No Company contribution was made for the years ended December 31, 2004, 2003, and 2002.

### **12. Litigation**

#### **Patent Litigation**

In July 2001, the Company filed suit in the United States District Court for the District of Delaware against Conductus, Inc. and Superconductor Technologies, Inc. alleging infringement of U.S. Patent No. 6,263,215, entitled Cryoelectronically Cooled Receiver Front End for Mobile Radio Systems (the 215 patent). This suit alleged that Conductus and Superconductor Technologies base station front-end systems containing cryogenically cooled superconducting filters infringe this patent. The Company sought a permanent injunction enjoining Conductus and Superconductor Technologies from marketing, selling or manufacturing these products, as well as triple damages and attorneys fees. Conductus and Superconductor Technologies denied these allegations and asked the court to enter a judgment that the patent is invalid and not infringed. Conductus and Superconductor Technologies also asserted the defense of inequitable conduct and a counterclaim for a declaration that the patent is unenforceable as well as federal and state law counterclaims, including claims of unfair competition. Conductus and Superconductor Technologies sought both compensatory and punitive damages as well as attorneys fees and costs.

On March 26, 2002, the Company replied to Conductus and Superconductor Technologies Second Amended Answer and Counterclaims and filed counterclaims alleging that Conductus and Superconductor Technologies also infringe U.S. Patent No. 6,104,934 entitled Cryoelectronic Receiver Front End and U.S. Patent No. 6,205,340 B1 entitled Cryoelectronic Receiver Front End For Mobile Radio Systems. On April 17, 2002, the court dismissed these (the Company's) counterclaims without prejudice to the Company's right to assert these counterclaims in a separate action.

On February 10, 2003, the court disposed of various motions for summary judgment filed by each party. The court denied Superconductor Technologies motion for summary judgment of invalidity of the 215 patent as well as Conductus motion for summary judgment limiting computation of damages to a reasonable royalty for sales to Dobson Communications, Inc. On Superconductor Technologies motion for summary judgment of non-infringement, the court granted the motion with respect to claim 13 of the 215 patent and otherwise denied the motion with respect to each of the other asserted claims. With regard to Conductus motion for summary judgment of non-infringement, the court granted the motion with respect to claim 13 of the 215 patent and otherwise denied the motion with respect to each of the other asserted claims. In addition, the court denied Conductus motion for summary judgment of invalidity of all asserted claims for causes of action existing prior to the date of issuance of the certificate of correction and of invalidity of claim 13. The court also denied the Company's motions for summary judgment that Superconductor Technologies internal projects are not prior art to the 215 patent and to dismiss the defendants counterclaims alleging unfair competition and interference with business relations.

On April 3, 2003, the jury returned with its verdict. The jury rejected the Company's positions and determined its patent to be invalid. Additionally, the jury determined that inequitable conduct had occurred and subsequently awarded defendants \$3.87 million in damages from



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the Company. The Company was severely disappointed by this verdict and it engaged in the post-trial motion process to overturn it. On August 21, 2003, the court issued its ruling on the post-trial motions. The court overturned the jury's determination of unfair competition on the part of the Company and denied all requests for damages, including the \$3.87 million jury award cited above. The court did not, however, overturn the jury determinations of patent invalidity and unenforceability based on inequitable conduct and denied the Company's motion for a new trial.

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During September 2003, the Company filed an appeal of this verdict requesting the reinstatement of its patent and the rights inherent within that patent, and Superconductor Technologies, Inc. filed a cross-appeal requesting reinstatement of the jury award and attorney's fees.

On February 3, 2005, the Appellate Court issued its ruling. It did not find adequate grounds for reversal of the Trial Court decision, and thus maintained the verdict in favor of the defendant in allowing the patent to remain invalid and unenforceable and in favor of the Company in denying counterclaims for damages raised by the defendant. The Appellate Court's ruling concludes this matter.

In November 2001, the Company filed suit against Dobson Communications, Inc. for allegedly infringing this patent. The action was stayed, per agreement between the parties, until resolution of the matter between the Company and Conductus and Superconductor Technologies. The parties agreed that Dobson Communications will be bound by any and all final, non-appealable determinations, holdings or findings with respect to all liability issues in the Company's case against Conductus. The Appellate Court's ruling concludes the Dobson matter as well.

## **Laves Litigation**

On July 17, 2000 former President and CEO Edward W. Laves filed a two-count complaint (the Complaint) in the Law Division of the Circuit Court of Cook County, Illinois. Laves named as defendants the Company and three directors and sued for breach of contract (Count I) and for violation of the Illinois Wage Payment and Collection Act (Wage Act) (Count II). Laves claimed the defendants constructively terminated him and then failed to pay severance benefits under his employment agreement. On April 8, 2002, Laves was given leave to amend his Complaint and add Count III against the individual director defendants for tortious interference with contractual obligations. According to the Complaint, Laves sought damages against the Company in an amount estimated to exceed \$12 million, plus attorney's fees under the Wage Act and pre-and post-judgment interest. He sought the same damages against the individual director defendants, plus \$5,000,000 for punitive damages.

During February 2004, the parties reached settlement. Laves was paid \$700,000, half of which from the Company and the remainder from the Company's insurance carrier, and all parties agreed to terminate proceedings, with prejudice.

## **13. Segment Reporting**

The Company adopted SFAS No. 131, Disclosures about Segments of an Enterprise and Related Information. SFAS No. 131 requires a business enterprise, based upon a management approach, to disclose financial and descriptive information about its operating segments. Operating segments are components of an enterprise about which separate financial information is available and regularly evaluated by the chief operating decision maker(s) of an enterprise. Under this definition, the Company operated as a single segment for all periods presented.

## **14. Selected Quarterly Financial Data (Unaudited)**

A summary of selected quarterly information for 2004 and 2003 is as follows:

2004 Quarter Ended

	<u>March 31</u>	<u>June 30</u>	<u>Sep. 30</u>	<u>Dec. 31</u>
	(in thousands of U.S. dollars except per share amounts)			
Net Sales	\$ 422	\$ 843	\$ 707	\$ 650
Gross Profit	113	385	242	354
Net Earnings	(1,958)	(1,287)	(1,714)	(2,009)
Earnings per Share	\$ (0.01)	\$ (0.01)	\$ (0.01)	\$ (0.01)

**2003 Quarter Ended**

	<u>March 31</u>	<u>June 30</u>	<u>Sep. 30</u>	<u>Dec. 31</u>
	(in thousands of U.S. dollars except per share amounts)			
Net Sales	\$ 1,235	\$ 336	\$ 378	\$ 1,289
Gross Profit	606	4	80	910
Net Earnings	(3,151)	(2,113)	(1,573)	(319)
Earnings per Share	\$ (0.02)	\$ (0.02)	\$ (0.01)	\$ (0.00)

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As an after-market vendor, the Company's revenue has fluctuated from quarter to quarter, consistent with buying patterns of planning processes within wireless telecommunications carriers. In the past there has been a fourth quarter effect, wherein operators were forced to spend remaining budget or lose it going forward. With the advent of significant projects such as data networks, funds are often reallocated between periods and thus diminish the pool of funds available for normal activities. The Company's objective is to be included in these projects, and thus realize a higher, more stable revenue stream.

### **Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure.**

Not applicable.

### **Item 9A. Controls and Procedures**

(a) An evaluation was performed under the supervision and with the participation of the Company's management, including its Chief Executive Officer, or CEO, and Chief Financial Officer, or CFO, of the effectiveness of the Company's disclosure controls and procedures, as such term is defined under Rule 13a-15(e) promulgated under the Securities Exchange Act of 1934, as amended (the Exchange Act) as of December 31, 2004. Based on that evaluation, the Company's management, including the CEO and CFO, concluded that the Company's disclosure controls and procedures are effective to ensure that information required to be disclosed by the Company in reports that it files or submits under the Exchange Act, is recorded, processed, summarized and reported as specified in Securities and Exchange Commission rules and forms.

(b) There were no significant changes in the Company's internal control over financial reporting identified in connection with the evaluation of such controls that occurred during the Company's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

### **Item 9B. Other Items**

None.

## **PART III**

### **Item 10. Directors and Executive Officers of the Registrant**

The Company's Board of Directors currently consists of eight directors. In the interest of effective governance, the board now consists of a single class of directors, with each director serving a one-year term. Each year the full class of directors is subject to stockholder vote. At the Company's 2005 annual meeting, stockholders will vote on the election of eight directors. Each director elected at the annual meeting will serve until the 2006 annual meeting of stockholders and until such director's successor has been elected and qualified, except if the director resigns, is

removed or dies before such time.

The board members include employee directors Mr. John Thode and Dr. Amr Abdelmonem, and non-employee directors Dr. George Calhoun, Mr. Michael Fenger, Mr. Jim Fuentes, Mr. Tom Powers, Mr. Ralph Pini, and Mr. Stuart Chase Van Wagenen.

Described below is certain information concerning each director. Each of the members of the Board of Directors is independent as defined by the AMEX corporate governance listing standards other than Mr. Thode, Dr. Abdelmonem and Dr. Calhoun.

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<u>Name</u>	<u>Age</u>	<u>Position with the Company</u>	<u>Served as Director Since</u>	<u>Term Expires</u>
John Thode	47	Director, Chief Executive Officer	2005	2005
Stuart Chase Van Wagenen	49	Chairman of the Board of Directors	2001	2005
Amr Abdelmonem	39	Director, Chief Technology Officer	2002	2005
George Calhoun	52	Director	1999	2005
Michael Fenger	37	Director	2004	2005
James Fuentes	49	Director	2003	2005
Ralph Pini	52	Director	2004	2005
Tom Powers	68	Director	1996	2005

Mr. Thode received his BSEE from the University of Illinois, his MSEE from Illinois Institute of Technology, and his Master of Management from J.L. Kellogg School of Management at Northwestern University. He joined Motorola in 1979, and for the next 25 years held numerous titles throughout its wireless industry businesses, including the Wireless Network Systems Group and the CDMA Systems Group. He has broad experience in wireless network infrastructure and handsets. He has led large product development and engineering teams. He has also negotiated substantial supplier and customer contracts and structured numerous strategic relationships. Most recently he served as Vice President & General Manager, 3G Consumer Products, Personal Communications Sector, where he created Motorola's UMTS product lines. Before that, he was Senior Director & General Manager, Wireless Access Systems Division.

Mr. Van Wagenen was elected to the Board in August 2001 and became Chairman of the Board in September 2002. Mr. Van Wagenen is president and founder of Stuart Chase Properties, Inc., in Cleveland, Ohio, a wealth management and trust advisory services firm. Mr. Van Wagenen has extensive investment and operating experiences, including the formation of Spectral Solutions, Inc. and its subsequent sale to the Company in June 1999. His firm's client portfolios include diverse investments in finance, real estate, technology, oil and gas, fast food restaurants, private equity, managed funds, publicly-traded securities, and other industries. He is a trustee of the Western Reserve Historical Society and Ronald McDonald House of Cleveland, Inc. Mr. Van Wagenen received his J.D. from Case Western Reserve University in 1981 and his B.A. from The Ohio State University. Mr. Van Wagenen is the Chair of the Audit Committee and Chair of the Governance Committee and serves on the Compensation Committee.

Dr. Abdelmonem joined the Company in January 1995 and was promoted to Director of Engineering in August 1998, to Vice President of Development Engineering in March 1999, to Chief Technology Officer in December 1999 and additionally served as Chief Executive Officer from June 2002 through January 2005. Dr. Abdelmonem joined the Board of directors in July 2002. Before joining the Company, Dr. Abdelmonem was an engineer with Exxon Corporation in Egypt. Subsequently, he was affiliated with the University of Maryland in a number of research and teaching positions where much of his research focused on semi-conductor laser and advanced filter design. Dr. Abdelmonem earned his B.S. and M.S. degrees in Electrical Engineering from Ain-Shams University in Cairo, Egypt, and his Ph.D. from the University of Maryland. Much of his research focused on semi-conductor laser design, superconducting technology and advanced filter design. Dr. Abdelmonem is a Senior Member of the IEEE and has published numerous documents for industry conferences and trade journals. He holds five patents and has ten patent applications pending. Dr. Abdelmonem holds an M.B.A. from the University of Chicago.

Dr. Calhoun has served as a director since November 1999 and served as the Chief Executive Officer of the Company from November 1999 to June 2002 and as Chairman of the Board from November 2000 to September 2002. Dr. Calhoun joined the Stevens Institute of Technology in July 2003 as Executive-in-Residence, where he teaches in the Undergraduate Program for Business & Technology, at the Howe School of Technology Management. Dr. Calhoun has spent 25 years in the high-tech segment of the wireless communications industry. He previously worked for InterDigital Communications Corporation (NASDAQ: IDCC), where he was involved for twelve years in the pioneering development of digital cellular technology. Subsequently, he was Vice-Chairman of Geotek

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Communications, and was Chairman of an engineering joint venture based in Israel, to develop a spread spectrum frequency-hopping radio system for fleet radio communications. He is also Chairman of both the Board and Audit Committee for Airnet Communications (NASDAQ: ANCC), a smart antenna and software-defined radio technology company. He is also a member of the Board of Insci Corporation (NASDAQ: INSS.OB), a company in the business of electronic content management and digital archiving software. Dr. Calhoun holds one patent (on wireless system architectures), and has published several books on wireless communications, including the best-selling Digital Cellular Radio (Artech, 1988). His most recent book is Third Generation Wireless Systems: Post-Shannon Signal Architectures (Artech, 2003). He is also a Visiting Professor at the Leiden University School of Management in the Netherlands. Dr. Calhoun has a BA degree from the University of Pennsylvania, and a Ph.D. from the Wharton School.

Mr. Fenger was elected to the Board in 2004. Since 2002, he has been Corporate Vice President and Chief Quality Officer of Motorola, Inc. In this capacity he has helped Motorola in its effort to focus on the most promising initiatives and improve the return of those projects. Previously, he served twelve years at General Electric with GE Capital and the Lighting Business Group, where he most recently served as general manager of global supply chain operations for GE Lighting. He holds one patent and a degree in economics from Miami University in Ohio. Mr. Fenger serves on the Governance Committee.

Mr. Fuentes was elected to the Board in November 2003. He is Founder, President and CEO of Clarity Communication Systems, Inc., an Aurora, IL wireless software and systems development company formed in 1998. Previously, Mr. Fuentes served at Lucent Technologies (formerly AT&T Bell Labs) for ten years in various positions, most recently as a senior manager in software development. Prior to joining Bell Labs, Mr. Fuentes served four years at Northrop Defense Systems and six years in Advanced Development Projects at Lockheed Aircraft Company. Mr. Fuentes' engineering experiences involve design and development of electronic counter-measures and stability of flight controls systems. He has six patents in the wireless telecommunications field and also received the Hispanic Engineer National Achievement Award for Technical Achievement in Industry in 1995. Currently Mr. Fuentes sits on the WESTEC Advisory Board. He received a B.S. degree majoring in Aeronautical Engineering with a second major in Computer Science from Embry-Riddle Aeronautical University. Mr. Fuentes is a member of the Audit Committee and the Compensation Committee.

Mr. Pini was elected to the Board in 2004 having served as Senior Vice President and Chief Technology Officer, Personal Communications Sector, Motorola, Inc. He has spent twenty-eight years in the global wireless industry. During this period he has been with Motorola's Personal Communications Group, where he managed the global R&D organization of 4000 engineers and served as General Manager of Europe, Middle East and Africa. He has broad experiences across GSM, CDMA, and UMTS platforms. He received his MBA from Lake Forest Graduate School of Management, and both his MS in Electrical Engineering and his BS in Electrical and Computer Science from the University of Illinois, Chicago. Mr. Pini serves on the Governance Committee.

Mr. Powers has served as a director of the Company since October 1996. From 1993 to 1999, he was an Associate Director of the Advanced Manufacturing Center at New Mexico State University in Las Cruces, New Mexico. He is on the board of directors of Material Recovery of North America, a start up company in New Mexico, and is a consultant to a number of companies in the telecommunications industry. From 1989 to 1991, Mr. Powers was President of the cellular systems business unit of AT&T Network Systems Group, now known as Lucent Technologies, Inc. Under his leadership, the business unit became the market leader in wireless infrastructure equipment in the United States, opened markets internationally and introduced the industry's first digital cellular system. In 1983, he became Vice President of a joint venture between AT&T and Philips Telecommunications B.V. located in the Netherlands. He joined AT&T in 1958 as a member of the technical staff of Bell Laboratories and went on to management positions in consumer products, customer switching systems engineering and network planning. Mr. Powers holds a M.E.E. degree in Electrical Engineering for New York University and a B.S. degree in Electrical Engineering from the University of Arkansas, a diploma in Advanced Marketing from Wharton and is a graduate of the Stanford Executive Program. Mr. Powers is a member of both the Audit Committee and the Compensation Committee, the latter of which he serves as its Chairman.

**Table of Contents***Audit Committee*

The Audit Committee consists of three directors, Stuart Chase Van Wagenen (Chairman), James Fuentes and Tom Powers, all of whom are independent as defined by the rules of the Securities and Exchange Commission and American Stock Exchange. The Board of Directors has determined that Mr. Van Wagenen is an Audit Committee financial expert as defined in regulations of the Securities and Exchange Commission under the Sarbanes-Oxley Act of 2002.

*Code of Conduct*

The Company has a Code of Business Conduct and Ethics, which was attached as an exhibit to the 2003 annual report. The Company requires all employees, officers and directors to adhere to this Code in addressing the legal and ethical issues encountered in conducting their work. The Code of Business Conduct and Ethics requires that the Company's employees avoid conflicts of interest, comply with all laws and other legal requirements, conduct business in an honest and ethical manner, and otherwise act with integrity and in the Company's best interest. The Company's Code of Business Conduct and Ethics is intended to comply with Item 406 of the SEC's Regulation S-K and the rules of the American Stock Exchange.

The Code of Business Conduct and Ethics includes procedures for reporting violations of the Code, which are applicable to all employees. The Sarbanes-Oxley Act of 2002 requires companies to have procedures to receive, retain and treat complaints received regarding accounting, internal accounting controls or auditing matters and to allow for the confidential and anonymous submission by employees of concerns regarding questionable accounting or auditing matters. The Code of Business Conduct and Ethics also includes these required procedures.

**Compensation Committee Interlocks and Insider Participation**

During 2004, Tom Powers served as Chairman of the Compensation Committee of the Board of Directors. Mr. Powers does not currently serve as an officer of the Company. There are no compensation committee interlocks between the Company and any other entity involving the Company's or such entity's executive officers or board members. Neither Mr. Van Wagenen nor Mr. Fuentes, who joined the Compensation Committee during 2004, are officers of the Company or have similar interlocks.

**Executive Officers**

Set forth below is a table identifying executive officers of the Company who are not identified in the tables entitled Directors. Biographical information for Mr. Thode and Dr. Abdelmonem are set forth above under Directors.

<u>Name</u>	<u>Age</u>	<u>Position with Company</u>
Frank Cesario	35	Chief Financial Officer



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Mr. Cesario joined the Company during August 2000 as Controller and has served as Acting Chief Financial Officer since April 2002 and Chief Financial Officer since December 2002. Previously, Mr. Cesario was Group Controller for copper and brass producer Outokumpu Copper, Inc. and subsidiaries, a U.S. group with approximately \$500 million in annual revenue and owned by Helsinki-based Outokumpu Oyj. Mr. Cesario has an MBA (Finance) from DePaul University in Chicago, a B.S. in Accountancy from the University of Illinois, and began his career at KPMG Peat Marwick.

The Board of Directors elects officers annually and such officers, subject to the terms of certain employment agreements, serve at the discretion of the board. See Executive Compensation . The Company has entered into employment agreements with Mr. Thode and Dr. Abdelmonem. There are no family relationships among any of the directors or executive officers of the Company.

### **Section 16(a) Beneficial Ownership Reporting Compliance**

Section 16(a) of the Securities Exchange Act of 1934, as amended, requires the Company's officers (as defined under Section 16(a) of the Securities Exchange Act), directors and persons who own greater than 10% of a

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registered class of the Company's equity securities to file reports of ownership and changes in ownership with the Securities and Exchange Commission. Based solely on a review of the forms it has received and on written representations from certain reporting persons that no such forms were required for them, the Company believes that during 2004, except for an option grant to Mr. Pini that was subsequently reported on Form 4 by Mr. Pini, all of the Section 16(a) filing requirements applicable to its officers, directors and 10% beneficial owners were complied with by such persons.

**Item 11. Executive Compensation**

The following table provides information concerning the annual and long-term compensation for services in all capacities to the Company for the years ended December 31, 2004, 2003 and 2002 of (i) each person who served as the Company's chief executive officer and (ii) the four most highly compensated executive officers whose salary and bonus for services rendered in all capacities to the Company for the fiscal year ended December 31, 2003 exceeded \$100,000 (collectively, the Named Executive Officers).

**Summary Compensation Table**

<u>Name and Principal Position</u>	<u>Annual Compensation</u>			<u>Long-Term Compensation Awards</u>		
	<u>Year</u>	<u>Salary</u>	<u>Bonus</u>	<u>Restricted Stock Awards</u>	<u>Securities Underlying Options</u>	<u>All Other Compensation</u>
Amr Abdelmonem (1)	2004	200,000			1,800,000	
	2003	200,000			900,000	
Chief Executive Officer	2002	207,194			1,050,000	
Frank Cesario (2)	2004	120,000			400,000	
	2003	120,000			250,000	
Chief Financial Officer	2002	102,000			30,000	

(1) Dr. Abdelmonem was named Chief Technology Officer during 1999 and has continued to serve in this capacity through the filing date in 2005, and also served as Chief Executive Officer from June 2002 through January 2005.

(2) Mr. Cesario was named Chief Financial Officer during 2002.

Note: Mr. John Thode joined the Company as Chief Executive Officer during January 2005 with an annual salary of \$225,000.

**Option Grants In 2004**

The following table contains information concerning the grant of stock options by the Company to the Named Executive Officers during 2004. There were no stock appreciation rights granted in 2004. Information provided in this table is as of December 31, 2004.

<i>Name</i>	<i>Number of Securities Underlying Options Granted</i>	<i>Percent of Total Options Granted to Employees in Fiscal Year</i>	<i>Exercise Price Per Share</i>	<i>Expiration Date</i>	<i>Potential Realizable Value at Assumed Annual Rates of Stock Price Appreciation for Option Term (1)</i>	
					<i>5%</i>	<i>10%</i>
					Amr Abdelmonem	1,800,000
Frank Cesario	400,000	8.8%	\$ 0.14	Jan 2014	\$ 458,731	\$ 763,623

- (1) Potential realizable value is presented net of the option exercise price but before any federal or state income taxes associated with exercise. The assumed stock price appreciation rates used to determine the potential realize value are prescribed by the Securities and Exchange Commission rules for illustrative purposes only and are not intended to forecast or predict future stock prices. Actual gains are dependent on the future performance of the Common Stock and the option holder's continued employment throughout the vesting period.

**Table of Contents****Aggregated Option Exercises in Last Fiscal Year and Fiscal Year-End Option Values**

The following table provides information concerning the Named Executive Officers' unexercised options at December 31, 2004. None of the Named Executive Officers held or exercised any stock appreciation rights, during 2004.

Name	Shares		Number of Securities		Value of Unexercised	
	Acquired	Value	Underlying Unexercised		In-The-Money Options at	
			Options at December 31, 2004		December 31, 2004	
	Exercise (#)	(\$)(1)	Exercisable	Unexercisable	Exercisable	Unexercisable
Amr Abdelmonem	512,500	133,250	1,662,500	975,000	\$ 365,750	\$ 214,500
Frank Cesario	200,000	28,000	233,333	216,667	\$ 51,333	\$ 47,667

- (1) The value per option is calculated by subtracting the exercise price from the closing price of the Common Stock on the American Stock Exchange on the transaction date(s).

**Employment Agreements.**

The Company has an employment agreement with John Thode to be President and Chief Executive Officer dated as of January 6, 2005. Under the agreement, Mr. Thode's annual base salary will be \$225,000. Mr. Thode's employment may be terminated at any time. If Mr. Thode is terminated by the Company without cause, as defined in the agreement, Mr. Thode will receive six months of his annual base salary and six months' continuation of his group health benefits. If Mr. Thode is terminated by the Company for cause, he will be entitled only to the payment of accrued and unpaid salary through the date of such termination. Mr. Thode's agreement also contains customary restrictive covenants, including a covenant not to compete with the Company for a period of twelve months following any cessation of his employment.

Mr. Thode was also granted non-qualified options to purchase up to 1,550,000 shares of the Company's common stock. The options were issued outside of the Company's 2003 Equity Incentive Plan, but were nonetheless subject to terms substantially identical to the 2003 Equity Incentive Plan. The option will vest with respect to 62,500 shares on the last day of each of the 12 calendar months ending after the grant date (or, if sooner, upon a change in control of the Company), provided that Mr. Thode is still employed by the Company through the applicable vesting date. The option will vest with respect to 400,000 of the remaining 800,000 shares if the Company achieves certain quarterly and annual revenue objectives and 400,000 of the remaining 800,000 shares if the Company achieves certain quarterly and annual cash flow objectives during the 2005 fiscal year and Mr. Thode remains employed by the Company through the applicable vesting date. The option will have an exercise price equal to \$0.43 per share, which was the closing price of the Company's common stock on the date of grant, which was January 11, 2005. The option expires ten years from the date of grant, unless earlier terminated.

If Mr. Thode's employment is terminated: (1) by Mr. Thode's death or disability, Mr. Thode or his estate or personal representative will be entitled to exercise the option, the extent vested at the time of his termination, for up to a year after his death or termination due to disability; (2) by the Company for cause, any portion of the option not already exercised will be immediately and automatically forfeited; or (3) for any other reason, the option may be exercised, to the extent vested at the time of his termination, for up to 90 days following his termination.

The Company has an employment agreement with Amr Abdelmonem dated as of January 1, 2001 to be Chief Technology Officer of the Company. Dr. Abdelmonem subsequently became the Chief Executive Officer of

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the Company from June 2002 through January 2005. The agreement is for a term of three years, with one-year renewal options. Dr. Abdelmonem is paid an annual salary of \$200,000 and is paid a severance of one year's salary if (i) the Company terminates his employment without Cause (as defined in the agreement) or (ii) Dr. Abdelmonem terminates his employment for Good Reason (as defined in the agreement), which such severance is offset by any income received by Dr. Abdelmonem during the severance period. His severance is increased to two years salary in the case of a change in control (as defined in the agreement) of the Company and a termination as described previously. Dr. Abdelmonem also receives a severance of six months salary if his employment contract expires without renewal. Dr. Abdelmonem's agreement includes a provision for a bonus to be paid at the discretion of the Board of Directors and certain non-competition, non-solicitation, assignment of invention and confidentiality provisions.

In December 2002, the Board of Directors authorized a bonus pool of up to \$300,000 in which all officers, including Mr. Thode, Dr. Abdelmonem and Mr. Cesario, shall be eligible to participate in the event that the Company achieves two consecutive quarters of positive cash flow results after taking into account the payment of such bonuses. In the event the condition is achieved, the amount Mr. Thode, Dr. Abdelmonem and Mr. Cesario may receive from such pool shall be determined in the discretion of the Board.

### **Director Compensation.**

Each non-employee director receives a monthly retention fee of \$1,000. In addition, the Chairman of the Board and the Chairman of the Audit Committee each receives a \$5,000 retention fee and the Chairman of the Compensation Committee and Chairman of the Governance Committee each receives a \$2,000 retention fee.

In addition, the Board has established a compensation policy to provide that each Non-Employee Director who is re-elected or continues to serve as a director because his or her term had not expired shall be granted an option to purchase 50,000 shares of common stock at the reported closing price of the common stock on the date of each annual meeting of the stockholders of the Company, provided that no such automatic grant shall be made to a Non-Employee Director who was first elected to the Board of Directors at the first such meeting or was first elected to the Board of Directors within three months prior to such annual meeting. Such options vest monthly over a one-year period from the date of grant.

In addition, the current policy provides for the grant of Non-Qualified Stock Options ( NQSOs ) to purchase 25,000 shares of common stock to each Non-Employee Director who is appointed or continues to serve on the Audit Committee of the Board of Directors and the Chairman of the Audit Committee receives a grant of NQSOs to purchase 50,000 shares of common stock. Each Non-Employee Director who is appointed or continues to serve on the compensation committee and the governance committee of the Board of Directors receives a grant of NQSOs to purchase 10,000 shares of common stock and the Chairman of the compensation committee and the Chairman of the governance committee each receives a grant of NQSOs to purchase 25,000 shares of common stock. The Chairman of the Board receives a grant of NQSOs to purchase 50,000 shares of common stock. These options are granted in consideration of such director's service on a committee or as chairman. Each of the options are granted at the reported closing price of the common stock on the date of each annual meeting of the stockholders of the Company or on the date such director joins a committee or is named chairman of such committee, provided that annual grants are not made to a Non-Employee Director who was first appointed to the committee or as chairman within three months prior to such annual meeting. These stock options vest monthly over a one-year period from the date of grant and expire ten years from the date of grant.

All Non-Employee Directors are reimbursed for their reasonable out-of-pocket expenses incurred in attending board and committee meetings.

**Table of Contents****Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters****Equity Compensation Plan Information**

The following table gives information about the Company's common stock that may be issued upon the exercise of options, warrants and rights under the Company's 1993 Plan and under the 2003 Equity Incentive Plan as of December 31, 2004.

Plan Category	Number of Securities to be issued upon exercise of outstanding Options, warrants and rights	Weighted-average exercise price of outstanding options, warrants and rights	Number of Securities remaining available for future issuance under equity compensation plans (excluding securities reflected in second column)
Equity compensation plans approved by security holders	9,059,436	\$ 0.40	1,877,324(1)
Equity compensation plans not approved by security holders			
<b>Total</b>	<b>9,059,436</b>	<b>\$ 0.40</b>	<b>1,877,324(1)</b>

(1) The 1993 Plan terminated in August 2003 and was replaced by the 2003 Equity Incentive Plan.

The following table sets forth information regarding the beneficial ownership of Common Stock as of March 23, 2005, except as otherwise indicated in the relevant footnote, by (1) each person or group that the Company knows beneficially owns more than 5% of Common Stock, (2) each of the Company's directors and director nominees, (3) the Named Executive Officers, and (4) all current executive officers and directors as a group. Unless otherwise indicated, the address of each person identified below is c/o the Company at its principal executive offices.

The percentages of beneficial ownership shown below are based on 161,218,703 shares of Common Stock outstanding as of March 23, 2005, unless otherwise stated. Beneficial ownership is determined in accordance with the rules of the Securities and Exchange Commission and generally includes those securities over which a person may exercise voting or investment power. In addition, shares of Common Stock which a person has the right to acquire upon the exercise of stock options and/or warrants within 60 days of the date of this table are deemed outstanding for the purpose of computing the percentage ownership of that person, but are not deemed outstanding for computing the percentage ownership of any other person. Except as indicated in the footnotes to this table or as affected by applicable community property laws, the persons named in the table have sole voting and investment power with respect to all shares of Common Stock beneficially owned.

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	<b>Number of Shares of Common Stock Beneficially Owned</b>	<b>Percent of Class</b>
<b>5% Stockholders</b>		
Alexander Finance, LP.	32,898,179(1)	20.4%
Elliott Associates, L.P.	14,861,168(2)	9.2%
Elliott International, L.P.	10,404,159(2)	6.5%
<b>Directors and Named Executive Officers</b>		
Amr Abdelmonem	2,069,500(3)	1.27%
Stuart Chase Van Wagenen	352,500(4)	*
George Calhoun	955,666(5)	*
James Fuentes	110,417(6)	*
Tom Powers	440,855(7)	*
Michael Fenger	58,333(8)	*
Ralph Pini	46,500(9)	*
John Thode	300,000(10)	*
Frank Cesario	518,036(11)	*
All directors and executive officers as a group (9 persons)	4,851,807(12)	2.93%

\* Less than 1%.

- (1) As reflected in a Form 4 dated March 2, 2005. The address for Alexander Finance, L.P. is 1560 Sherman Avenue Evanston, IL 60201.
- (2) As reflected in a Form 4 dated February 28, 2005 for Elliott Associates, L.P. and a Form 4 dated February 28, 2005 for Elliott International, L.P. The address of Elliott Associates, L.P. is 712 Fifth Avenue, New York, New York 10019 and the address of Elliott International, L.P. is c/o Elliot International Capital Advisors, Inc. 712 Fifth Avenue New York, New York 10019.
- (3) Includes outstanding options to purchase 2,037,500 shares which were exercisable as of March 31, 2005, or within 60 days from such date.
- (4) Includes outstanding options to purchase 302,500 shares which were exercisable as of March 31, 2005, or within 60 days from such date.
- (5) Includes outstanding options to purchase 891,666 shares which were exercisable as of March 31, 2005, or within 60 days from such date.
- (6) Represents outstanding options to purchase shares which were exercisable as of March 31, 2005, or within 60 days from such date.
- (7) Includes outstanding options to purchase 437,667 shares, which were exercisable as of March 31, 2005, or within 60 days from such date.
- (8) Represents outstanding options to purchase shares, which were exercisable as of March 31, 2005, or within 60 days from such date.
- (9) Includes outstanding options to purchase 37,500 shares, which were exercisable as of March 31, 2005, or within 60 days from such date.
- (10) Represents outstanding options to purchase shares, which were exercisable as of March 31, 2005, or within 60 days from such date.
- (11) Includes outstanding options to purchase 316,666 shares, which were exercisable as of March 31, 2005, or within 60 days from such date.
- (12) Includes outstanding options to purchase 4,492,249 shares, which were exercisable as of March 31, 2005, or within 60 days from such date.

**Item 13. Certain Relationships and Related Transactions**

During October 2002, the Company entered into an Uncommitted Line of Credit with its two largest shareholders, an affiliate of Elliott Associates, L.P. (Manchester Securities Corporation and Alexander Finance, L.P.). This line provided that up to \$4 million to be borrowed by the Company, with \$1 million borrowed during October 2002 upon completion of the transaction. \$1 million was borrowed during November 2002 and a third borrowing of \$1 million occurred in March 2003. This line is uncommitted, such that each new borrowing under the facility would be subject to the approval of the lenders. If approved by the lenders, the Company could borrow up to an additional \$1 million.



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Borrowings on this line bore an interest rate of 9.5% and collateralized by all the assets of the Company. Outstanding loans under this agreement would be required to be repaid on a priority basis should the Company receive new funding from other sources. Additionally, the lenders are entitled to receive warrants to the extent funds are drawn down on the line. The warrants bore a strike price of \$0.20 per share of common stock and expire on April 15, 2004. The credit line was to mature and be due, including accrued interest thereon, on March 31, 2004. Warrants to purchase 10 million shares of common stock were issued in connection with the borrowings under the line of credit during the year ended December 31, 2002. No warrants were issued in connection with March 2003 borrowing under the line of credit. Up to 5 million warrants may be issued in the event the Company is authorized to borrow the \$1 million remaining under the facility. Therefore, a maximum of 15 million warrants may be issued as a result of this transaction, presuming certain antidilutive features are not triggered.

On October 24, 2003, the Company and the lenders amended the terms of their loan agreement to reflect: (i) an increase in the aggregate commitment of the lenders to from \$4,000,000 to \$6,000,000; (ii) the elimination of warrant issuances from future drawdowns; (iii) interest on future loans will bear interest at the rate of 14% per annum; (iv) that future loans mature on October 31, 2004; (v) and that future loans be subject to the discretion of the Lenders. The Company borrowed \$1,000,000 from the line of credit agreement upon execution of the amendment. During February 2004, the lenders exercised warrants to purchase 10,000,000 shares of common stock. The Company received the \$2,000,000 aggregate strike price for the exercise of these warrants.

During July 2004, the Company and its lenders agreed to increase the aggregate loan commitments under the credit line from \$6,000,000 to \$6,500,000. Simultaneously, the Company drew the remaining \$1,500,000 of the financing.

During November 2004, the Company and its lenders agreed to increase the line of credit to up to an additional \$2 million to an aggregate loan commitment of \$8,500,000, \$1 million of which was drawn immediately by the Company with the remaining \$1 million available to be drawn upon the Company's request and subject to the approval of the lenders. The remaining \$1 million was subsequently drawn down in January 2005.

During February 2005, the consolidated credit line was extended until April 1, 2006. Interest during the extension period is to be charged at 9%.

**Item 14. Principal Accounting Fee and Services**

Grant Thornton LLP has served as the Company's independent registered public accountants since December 2000. Grant Thornton LLP has been selected to continue as the Company's independent registered public accountants for the current year.

During the fiscal years ended December 31, 2004 and 2003, fees in connection with services rendered by Grant Thornton LLP, the Company's independent registered accounting firm, were as set forth below:

<u>Fee Category</u>	<u>Fiscal 2004</u>	<u>Fiscal 2003</u>
Audit Fees	\$ 111,566	\$ 114,683
Audit-Related Fees		
Tax Fees	31,171	34,739
All Other Fees		

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TOTAL	\$ 142,737	\$ 149,422
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Audit fees consisted of fees for the audit of the Company's annual financial statements and review of quarterly financial statements as well as services normally provided in connection with statutory and regulatory filings or engagements, consents and assistance with and review of the Company's documents filed with the SEC.

Tax fees consisted primarily of fees for tax compliance, tax advice and tax planning services.

The Company made no other payments to Grant Thornton LLP during 2004 which constituted other fees.

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**Policy for Pre-Approval of Audit and Non-Audit Services**

The Audit Committee's policy is to pre-approve all audit services and all non-audit services that the Company's independent auditor is permitted to perform for us under applicable federal securities regulations. As permitted by the applicable regulations, the Committee's policy utilizes a combination of specific pre-approval on a case-by-case basis of individual engagements of the independent auditor and pre-approval of certain engagements up to predetermined dollar thresholds that are reviewed annually by the Committee. Specific pre-approval is mandatory for the annual financial statement audit engagement, among others.

All engagements of the independent auditor to perform any audit services and non-audit services have been pre-approved by the Committee in accordance with the pre-approval policy. The policy has not been waived in any instance.

The Audit Committee may delegate pre-approval authority to the Chairman of the Audit Committee. The Chairman of the Audit Committee must report any decisions to the Audit Committee at the next scheduled meeting.

**PART IV**

**Item 15. Exhibits and Financial Statement Schedules**

(a) The following documents are filed as part of this Form 10-K:

1. The following financial statements of the Company, with the report of independent auditors, are filed as part of this Form 10-K:

Reports of Independent Registered Public Accounting Firm

Consolidated Balance Sheets as of December 31, 2004 and 2003

Consolidated Statements of Operations for the Years Ended December 31, 2004, 2003, and 2002

Consolidated Statements of Stockholders' Equity (Net Capital Deficiency) for the Years Ended December 31, 2004, 2003 and 2002

Consolidated Statements of Cash Flows for the Years Ended December 31, 2004, 2003, and 2002

Notes to Consolidated Financial Statements

2. The following financial statement schedules of the Company are filed as part of this Form 10-K:

All financial schedules are omitted because such schedules are not required or the information required has been presented in the aforementioned financial statements.

3. Exhibits are listed in the Exhibit Index to this Form 10-K.



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/s/ RALPH PINI

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Ralph Pini

Director

/s/ TOM POWERS

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Tom Powers

Director

**Table of Contents****ISCO INTERNATIONAL****EXHIBIT INDEX**

<b>Exhibit Number</b>	<b>Description of Exhibits</b>
3.1	Certificate of Incorporation of the Company, incorporated by reference to Exhibit 3.1 to the Company's Registration Statement on Form S-3/A, filed with the Securities and Exchange Commission (SEC) on August 13, 1998, Registration No. 333-56601 (the August 1998 S-3).
3.2	By-Laws of the Company, incorporated by reference to Exhibit 3.2 to Amendment No. 3 to the Company's Registration Statement on Form S-1, filed with the SEC on October 26, 1993, Registration No. 33-67756 (the IPO Registration Statement).
3.3	Certificate of Amendment of Certificate of Incorporation of the Company, incorporated by reference to Exhibit 3.3 to the IPO Registration Statement.
3.4	Certificate of Amendment of Certificate of Incorporation of the Company, incorporated by reference to Exhibit 4.3 to the Company's Registration Statement on Form S-3/A, filed with the SEC on July 1, 1999, Registration No. 333-77337.
3.5	Certificate of Amendment of Certificate of Incorporation of the Company filed July 18, 2000, incorporated by reference to the Company's registration statement on Form S-8 filed August 7, 2000 (the August 2000 S-8).
3.6	Certificate of Amendment to Certificate of Incorporation filed with the Secretary of State of the State of Delaware on June 25, 2001, incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed on June 27, 2001.
3.7**	Certificate of Amendment to Certificate of Incorporation filed with the Secretary of State of the State of Delaware on December 16, 2004.
4.1	Specimen stock certificate representing Common Stock, incorporated by reference to Exhibit 4.1 to the IPO Registration Statement.
4.2	Rights Agreement dated as of February 9, 1996 between the Company and LaSalle National Trust, N.A., incorporated by reference to the Exhibit to the Company's Registration Statement on Form 8-A, filed with the SEC on February 12, 1996.
4.3	The SSI Replacement Nonqualified Stock Option Plan, incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-8, filed with the SEC on November 3, 2000, Registration No. 333-49268.*
4.4	Amendment No. 1 to the Rights Agreement between ISCO International, Inc. (formerly Illinois Superconductor Corporation) and LaSalle National Trust Association (formerly known as LaSalle National Trust Company) dated as of February 9, 1996, incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed with the SEC on February 22, 2002.
10.1*	Form of Amended and Restated Director Indemnification Agreement, incorporated by reference to Exhibit 10 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 1998.
10.2	Public Law Agreement dated February 2, 1990 between Illinois Department of Commerce and Community Affairs and the Company, incorporated by reference to Exhibit 10.5 to the IPO Registration Statement.
10.3	Public Law Agreement dated December 30, 1991 between Illinois Department of Commerce and Community Affairs and the Company, amended as of June 30, 1992, incorporated by reference to Exhibit 10.6 to the IPO Registration Statement.
10.4	Subcontract and Cooperative Development Agreement dated as of June 1, 1993 between American Telephone and Telegraph Company and the Company, incorporated by reference to Exhibit 10.9 to the IPO Registration Statement.
10.5	Intellectual Property Agreement dated as of June 1, 1993 between American Telephone and Telegraph Company and the Company, incorporated by reference to Exhibit 10.10 to the IPO Registration Statement.
10.6	License Agreement dated January 31, 1990 between the Company and Northwestern University, incorporated by reference to Exhibit 10.13 to the IPO Registration Statement.

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- 10.7 License Agreement dated February 2, 1990 between the Company and ARCH Development Corporation, incorporated by reference to Exhibit 10.14 to the IPO Registration Statement.
- 10.8 License Agreement dated August 9, 1991 between the Company and ARCH Development Corporation, incorporated by reference to Exhibit 10.15 to the IPO Registration Statement.
- 10.9 License Agreement dated October 11, 1991 between the Company and ARCH Development Corporation, incorporated by reference to Exhibit 10.16 to the IPO Registration Statement.



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- 10.10 Public Law Agreement dated August 18, 1993 between Illinois Department of Commerce and Community Affairs and the Company, incorporated by reference to Exhibit 10.17 to the IPO Registration Statement.
- 10.11\* Form of Officer Indemnification Agreement incorporated by reference to Exhibit 10.17 to the Company's Annual Report on Form 10-K for the year ended December 31, 1998.
- 10.12 Escrow Agreement dated August 8, 2000 among the Company, Russell Scott, III, as stockholder representative, and American National Bank and Trust Company, as escrow agent, incorporated by reference to Exhibit 10.25 to the Company's registration statement on Form S-2 filed September 7, 2000, Registration No. 333-45406 (the September S-2).
- 10.13\* Employment Agreement with Amr Abdelmonem dated January 1, 2001, incorporated by reference to Exhibit 10.5 to the Company's Registration Statement on Form S-3 filed on April 20, 2001.
- 10.14 ISCO International, Inc. Amended and Restated 1993 Stock Option Plan, incorporated by reference to Appendix C and D of the Company's Definitive Proxy materials filed on May 22, 2001.
- 10.15 Secured 9½% Grid Note dated October 23, 2002 between ISCO International, Inc. and Alexander Finance L.P. in the principal amount of \$1,752,400, incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on October 24, 2002.
- 10.16 Secured 9½% Grid Note dated October 23, 2002 between ISCO International, Inc. and Manchester Securities Corporation in the principal amount of \$2,247,600, incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K filed on October 24, 2002.
- 10.17 Registration Rights Agreement dated October 23, 2002 between ISCO International, Inc. Manchester Securities Corporation, and Alexander Finance L.P., incorporated by reference to Exhibit 10.7 to the Company's Current Report on Form 8-K filed on October 24, 2002.
- 10.18 ISCO International, Inc. 2003 Equity Incentive Plan incorporated by reference to the Appendix A to the Company's Proxy Statement filed on November 14, 2003.
- 10.19 Secured 14% Grid Note dated October 24, 2003 between ISCO International, Inc. and Alexander Finance, L.P. in the principal amount of \$876,200, incorporated by reference to Exhibit 10.10 to the Company's Current Report on Form 8-K filed on October 27, 2003.
- 10.20 Secured 14% Grid Note dated October 24, 2003 between ISCO International, Inc. and Manchester Securities Corporation in the principal amount of \$1,123,800, incorporated by reference to Exhibit 10.11 to the Company's Current Report on Form 8-K filed on October 27, 2003.
- 10.21 Secured 14% Grid Note dated July 23, 2004 between ISCO International, Inc. and Alexander Finance, L.P. in the principal amount of \$386,900, incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on July 28, 2004.
- 10.22 Secured 14% Grid Note dated July 23, 2004 between ISCO International, Inc. and Manchester Securities Corporation in the principal amount of \$113,100, incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K filed on July 28, 2004.
- 10.23 Stock Purchase Agreement dated December 15, 2003 between ISCO International, Inc. and Morgan & Finnegan, L.L.P., incorporated by reference to Exhibit 10.1 to the Company's Current Report of Form 8-K filed on December 16, 2003.
- 10.24\*\* Office/Service Center Lease Agreement dated July 20, 2004 between ISCO International, Inc. and D&K Elk Grove Industrial II, LLC.
- 10.25 Third Amended and Restated Loan Agreement dated November 10, 2004 between ISCO International, Inc., Manchester Securities Corporation, and Alexander Finance L.P., incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on November 12, 2004.
- 10.26 Third Amended and Restated Security Agreement dated November 10, 2004 between ISCO International, Inc., Spectral Solutions, Inc., Illinois Superconductor Canada Corporation, Manchester Securities Corporation, and Alexander Finance L.P., incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on November 12, 2004.
- 10.27 Secured 14% Grid Note dated November 10, 2004 between ISCO International, Inc. and Alexander Finance, L.P. in the principal amount of \$1,100,000, incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on November 12, 2004.
- 10.28 Secured 14% Grid Note dated November 10, 2004 between ISCO International, Inc. and Manchester Securities Corporation in the principal amount of \$900,000, incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K filed on

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November 12, 2004.

- 10.29 Third Amended and Restated Guaranty of Spectral Solutions, Inc. dated November 10, 2004, incorporated by reference to Exhibit 10.5 to the Company's Current Report on Form 8-K filed on November 12, 2004.
- 10.30 Third Amended and Restated Guaranty of Illinois Superconductor Canada Corporation dated November 10, 2004, incorporated by reference to Exhibit 10.6 to the Company's Current Report on Form 8-K filed on November 12, 2004.

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10.31	Letter Agreement dated January 6, 2005 between ISCO International, Inc. and John Thode (including Non-Qualified Stock Option Agreement) incorporated by reference to Exhibit 10.1 of the Company's Current Report on Form 8-K filed on January 12, 2005.
10.32	Amendment to Loan Documents dated February 10, 2005 between ISCO International, Inc., Manchester Securities Corporation, Alexander Finance, L.P., Spectral Solutions, Inc. and Illinois Superconductor Corporation, incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on February 15, 2005.
14	Code of Ethics incorporated by reference to Exhibit 14 to the Company's Annual Report on Form 10-K filed on March 30, 2004.
23.1**	Consent of Grant Thornton LLP
31.1**	Certification by Chief Executive Officer pursuant to Rule 13a-14(a) and 15d-14(a) as adapted pursuant to Section 302 of the Sarbanes Oxley Act of 2002.
31.2**	Certification by Chief Financial Officer pursuant to Rule 13a-14(a) and 15d-14(a) as adapted pursuant to Section 302 of the Sarbanes Oxley Act of 2002.
32**	Certification Pursuant To 18 U.S.C Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

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\* Management contract or compensatory plan or arrangement required to be filed as an exhibit on this Form 10-K.

\*\* Filed herewith