IMAGE SENSING SYSTEMS INC
Form 10-K
March 14, 2019
UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10 K

(Mark one)

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

For the fiscal year ended December 31, 2018

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 26056

Image Sensing Systems, Inc.

(Exact name of registrant as specified in its charter)

Minnesota	**41-1519168**
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)
500 Spruce Tree Centre, 1600 University Avenue West	
St. Paul, MN	55104
(Address of Principal Executive Offices)	(Zip Code)

(651) 603 7700

(Registrant’s telephone number, including area code)

Not applicable.

(Former name, former address and former fiscal year, if changed since last report)

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

Title of each class	Name of each exchange on which registered

Common Stock, $0.01 par value	The NASDAQ Capital Market
Preferred Stock Purchase Rights	The NASDAQ Capital Market

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

Indicate by check mark if the registrant is a well known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or Section 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 whether the registrant has submitted electronically every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S T during the preceding 12 months (or for such shorter period that the registrant was required to submit). 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 a large accelerated filer, an accelerated filer, a non accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b 2 of the Exchange Act. (Check one):

Large accelerated filer
Non-accelerated filer
Accelerated filer
Smaller reporting company
Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b 2 of the Act). Yes No

As of June 30, 2018, the aggregate market value of the registrant's common stock held by non affiliates of the registrant was $15,979,542 based on the closing sale price as reported on The NASDAQ Capital Market. The number of shares outstanding of the registrant's $0.01 par value common stock as of February 28, 2019 was 5,279,485 shares.

DOCUMENTS INCORPORATED BY REFERENCE

Document	Parts Into Which Incorporated
Proxy Statement for the 2018 Annual Meeting of Shareholders (Proxy Statement)	Part III

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PART I

Item 1. Business

General

Image Sensing Systems, Inc. (referred to in this Annual Report on Form 10-K as “we,” “us,” “our” and the “Company”) develops and markets video and radar processing products for use in traffic applications such as intersection control, highway, bridge and tunnel traffic management and traffic data collection.

We are a leading provider of above-ground detection products and solutions for the intelligent transportation systems (“ITS”) industry. Our family of products, which we market as Autoscope® video or video products (“Autoscope”), RTMS® radar or radar products (“RTMS”), and IntellitraffiQ® or iQ products provides end users with the tools needed to optimize traffic flow and enhance driver safety. Our technology analyzes signals from sophisticated sensors and transmits the information to management systems and controllers or directly to users. Our products provide end users with complete solutions for the intersection and transportation markets.

Our technology is a process in which software, rather than humans, examines outputs from various types of sophisticated sensors to determine what is happening in a field of view. In the ITS industry, this process is a critical component of managing congestion and traffic flow. In many cities, it is not possible to build roads, bridges and highways quickly enough to accommodate the increasing congestion levels. On average, United States commuters lose 97 hours a year in congestion, which costs motorists $87 billion a year in time, an average of $1,348 per driver. We believe this growing use of vehicles will make our ITS solutions increasingly necessary to complement existing and new roadway infrastructure to manage traffic flow and optimize throughput.

We believe our solutions are technically superior to those of our competitors because they have a higher level of accuracy, limit the occurrence of false detection, are generally easier to install with lower costs of ownership, work effectively in a multitude of light and weather conditions, and provide end users the ability to manage inputs from a variety of sensors for a number of tasks. It is our view that the technical advantages of our products make our solutions well suited for use in ITS markets.

We believe the strength of our distribution channels positions us to increase the penetration of our technology driven solutions in the marketplace. We market our Autoscope video products in the United States, Mexico, Canada and the Caribbean through exclusive agreements with Econolite Control Products, Inc. (“Econolite”), which we believe is the leading distributor of ITS intersection control products in these markets.

We market the RTMS radar systems to a network of distributors globally. On a limited basis, we may sell directly to the end user. We market our Autoscope video products outside the United States, Mexico, Canada and the Caribbean through a combination of distribution and direct sales channels, through our office in Spain. Our end users primarily include governmental agencies and municipalities.

Industry Overview

The Intelligent Transportation Systems Market. ITS encompasses a broad range of information processing and control electronics technologies that, when integrated into roadway infrastructure, help monitor and manage traffic flow, reduce congestion and enhance driver safety. The ITS market has been built around the detection of conditions that impact the proper operation of roadway infrastructure. ITS applications include a wide array of traffic management systems, such as traffic signal control, tolling and variable messaging signs. ITS technologies include video vehicle detection, inductive loop detection, sensing technologies (such as radar), floating cellular data, computational technologies and wireless communications.

In traffic management applications, vehicle detection products are used for automated vehicle detection and are a primary data source upon which ITS solutions are built. Traditionally, automated vehicle detection is performed using inductive wire loops buried in the pavement. However, in pavement loop detectors are costly to install, difficult to maintain, expensive to repair and not capable of either wide area vehicle detection without installations of multiple loops.

Above ground detection solutions for ITS offer several advantages to in pavement loop detectors. Above ground detection solutions tend to have a lower total cost of ownership than in pavement loop detectors because above ground solutions are non destructive to road surfaces, do not require closing roadways to install or repair, and are capable of wide area vehicle detection with a single device, thus enabling one input device to do the work of many in pavement loops. Due to their location above-ground, these solutions have no exposure to the wear and tear associated with expanding and contracting pavement and generally less exposure to the vibration and compaction caused by traffic. Furthermore, in the event of malfunction or product failure, above ground detection solutions can be serviced and repaired without shutting down the roadway. Each of these factors results in greater up time and increased reliability of above ground detection solutions compared to in pavement loop detectors. These technology solutions also offer a broader set of detection capabilities and a wider field of view than in pavement loop detectors. In addition, a single unit video or radar based system can detect and measure a variety of parameters, including vehicle presence, counts, speed, length, time occupancy, headway and flow rate as well as environmental factors and obstructions to the roadway. An equivalent installation using loops would require many installations per lane.

We believe that several trends are driving the growth in ITS and adjacent market segments:

Proliferation of Traffic. In many countries, there has been a surge in the number of vehicles on roadways. Due to the growth of emerging economies and elevated standards of living, more people desire and are able to afford automobiles. The number of vehicles utilizing the world's roadway infrastructure is growing at a quicker pace than new roads, bridges and highways are being constructed. According to the Federal Highway Administration, American drivers put a record 3.22 trillion miles on public roads and highways in 2017, an increase of 1.6% from 3.17 trillion miles in 2016. Overall, the growth in roadway infrastructure is failing to match the surge in the number of vehicles using it. Above-ground detection-based traffic management and control systems address the problem by monitoring high traffic areas and analyzing data that can be used to mitigate traffic problems.

The Demographics of Urbanization. Accelerated worldwide urbanization drives the creation and expansion of middle classes and produces heightened demand for automobiles. By 2018, there were 548 cities around the world with over 1 million inhabitants, and by 2030, a projected 706 cities will have at least 1 million residents. Because automobiles can be introduced to a metropolitan area faster than roadway infrastructure can be constructed, the result is continuously worsening traffic. Expanding the roadway infrastructure is slow and costly to implement, and often environmentally undesirable, so government agencies are increasingly turning to technology based congestion solutions that optimize performance and throughput of existing and new roadway infrastructure. Detection is the requisite common denominator for any technology based solution.

The Melding of Large City Service Domains. Large cities require a wide range of service domains, including traffic. These cities are increasingly turning to centralized management of these service domains, employing a command and control model that requires sharing and integrating data across service domains to operate effectively and lower total cost. For example, data collected for the traffic management service domain is relevant to all of the other service domains. This means that each sensor can supply information to multiple domain services. In turn, the sharing of detection information across service domains should increase the level of sophistication required to process and interpret that information. Additionally, above-ground detection products are more capable of performing certain complicated tasks than humans. This makes the concepts of "rich sensing" and "instrumenting the city" through above-ground detection solutions cost effective, which we believe will result in the extensive proliferation of sophisticated sensors and detection devices.

Solutions for Adjacent Markets. We believe that the adjacent markets of ITS, connected vehicles and security/surveillance are converging, and that this convergence will accelerate as above-ground detection systems become more cost effective now that a single sensor can be used for multiple purposes. Because the technologies involved are closely related, our sensor technology can be adapted to or is already capable of addressing these adjacent markets.

Our Competitive Strengths

We are a leading provider of above-ground detection products and solutions for the ITS industry. We have the following competitive strengths that we expect will continue to enhance our leadership position:

Leading Proprietary Technologies. Over the last two decades, we have developed or acquired a proprietary portfolio of complex software algorithms and applications that we have continuously enhanced and refined. These algorithms, which include our advanced signal processing technologies, allow our video and radar products to capture and analyze objects in diverse weather and lighting conditions and to balance the accuracy of positive detection and the avoidance of false detections. Due to the strength of our proprietary technologies, we believe we command premium pricing. Above-ground detection technologies similar to ours are also difficult to develop and refine in a commercially viable manner. We are therefore well positioned to quickly introduce innovative next generation products to market.

Proven Ability to Develop, Enhance and Market New Products. We are continually developing and enhancing our product offerings. Over the last two decades, we have demonstrated our ability to lead the market with new products and product enhancements. For example, the Autoscope Solo system was the first fully integrated color camera, zoom lens and machine vision processor in the above-ground detection market. Our RTMS Radar business unit was one of the first to introduce radar based technology solutions for ITS applications, and we continue to lead the market with technology enhancements and new products. Furthermore, Autoscope Vision is an example of development driven by our customers. We have developed a high definition video detection solution with increased accuracy, performance, and ease of use. We have successfully collaborated with our long term channel partners to market these products. We believe that developing, enhancing and marketing new products with our partners can translate into strong organic revenue growth and higher levels of profitability.

Leading Distribution Channel. Since 1991, we have maintained a relationship with Econolite, which has the exclusive right to manufacture, market and distribute our Autoscope video products in the United States, Mexico, Canada and the Caribbean. We believe that Econolite is the leading distributor of ITS control products in North America and the Caribbean. This relationship enhances our ability to commercialize and market new products and allows us to focus more resources on developing advanced signal processing software algorithms.

Broad Product Portfolio. Our product portfolio leverages our core software based algorithms to enable end users to detect and monitor objects in a designated field of view. We believe that our family of Autoscope video, RTMS radar, and IntellitraffiQ software products allows us to offer a broad product portfolio that meets the needs of our end users.

Experienced Management Team and Engineering Staff. Our management team and engineering staff are highly experienced in the ITS and software industries. Additionally, the continuity of our engineering staff should allow the uninterrupted development of new or improved products.

Our Growth Strategy

As part of our growth strategy, we seek to:

Enhance and Extend Our Technology Leadership in ITS. We believe we have established ourselves as a leading provider of technology in the ITS market segment. We believe that we continue to have an opportunity to accelerate our growth. We plan to do this by improving the accuracy and functionality of our products and opportunistically expanding our product offering into adjacent markets, as well as expanding our portfolio and channels through licensing. Having developed and introduced our next-generation video product, we expect to take advantage of our technical leadership in ITS and further differentiate us from our competitors.

Expand into Adjacent Markets. Our core skill is the implementation of above-ground detection products and solutions. Over the past two decades, we have been developing and refining our complex signal processing software algorithms. We should be able to effectively utilize our core software skills more broadly as markets converge. We believe that a driver of this convergence is that above-ground detection systems will become more cost effective when a single sensor can be used for multiple purposes. As a result, our objective is to become the leading supplier of critical detection components to third party management systems, particularly those that exploit the convergence of traffic. To do this, we are integrating this concept into our long range engineering development road map and will evaluate the use of technology licensing and channel strategies that support this vision.

Increase the Scope of Our Distribution and Direct Sales. We have made substantial investments in product adjustments to tailor our solutions to the differing needs of our international end users and in new product acquisitions for both domestic and international markets. We have also invested in sales and marketing expansion, with a focus on our European subsidiaries. Markets in Eastern Europe, the Asia/Pacific region, the Middle East, Africa and South America, which have historically lagged North America and Western Europe in their use of above-ground detection, have begun to increase the adoption of detection technology in their traffic systems. We intend to take advantage of the accelerated pace of the adoption of above-ground detection throughout the developing world by increasing end user awareness of our products and applications as well as improve user aptitude.

Our Products and Solutions

Our vehicle and traffic detection products are critical components of many ITS applications. Our Autoscope video systems and RTMS radar systems convert sensory input collected by video cameras and radar units into vehicle detection and traffic data used to operate, monitor and improve the efficiency of roadway infrastructure. At the core of each product line are proprietary digital signal processing algorithms and sophisticated embedded software that analyze sensory input and deliver actionable data to integrated applications. We invested approximately $3.6 million and $4.1 million on research and development in 2018 and 2017, respectively, to develop and enhance our product technology. Our digital signal processing software algorithms represent a foundation on which to support additional product development into the automatic incident detection (AID) market. A diagram displaying our fundamental product architecture is shown below.

The Image Sensing Product Architecture

Autoscope Video. Our Autoscope video system processes video input from a traffic scene in real time and extracts the required traffic data, including vehicle presence, bicycle presence/differentiation, counts, speed, length, time occupancy (percent of time the detection zone is occupied), turning movements (quantifying the movement of vehicles) and flow rate (vehicles per hour per lane). Autoscope supports a variety of standard video cameras or can be purchased with an integrated high-definition video camera. For intersections, the system communicates with the intersection signal controller, which changes the traffic lights based on the data provided. In highway applications, the system gathers vehicle count and flow rates. In any application, the data may also be transmitted to a traffic management center via the internet or other standard communication means and processed in real time to assist in traffic management and stored for later analysis for traffic planning purposes.

The Autoscope system comes in two varieties. Autoscope Vision is our flagship integrated product that includes a color high-definition, zoom camera and a machine vision processing computer contained in a compact housing that is our leading offering in the North American market. Autoscope Pn-520 is our card only machine vision processing-computer that is located in an intersection signal controller, control hub, incident management center or traffic management center that receives video from a separate camera. The Pn-520 and its variants are our top selling Autoscope products in international markets. Autoscope rack-based products offer digital MPEG 4 video streaming, high speed Ethernet interface, web browser maintenance and data and video over power line communications. The Autoscope Vision product offers digital streaming video, built-in WiFi for quick and easy setup, cost-effective three-wire cable and full screen object detection and motion tracking algorithm technology for best in class detection accuracy.

RTMS Radar. Our RTMS radar systems use radar to measure vehicle presence, volume, occupancy, speed and classification information for roadway monitoring applications. Data is transmitted to a central computer at a traffic management center via standard communication means, including wireless. Data can be processed in real time to assist in traffic management and stored for later analysis for traffic planning purposes.

RTMS radar is an integrated radar transmitter/receiver and embedded processor contained in a compact, self contained unit. The unit is typically situated on roadway poles and side fired, making it especially well-suited for highway detection applications.

The RTMS radar system is available in different varieties. RTMS Sx-300 is our base, non-intrusive radar for the detection and measurement of traffic on roadways and is our leading offering in both North America and the Middle East. The RTMS Sx-300 HDCAM has a high-definition camera that provides the user with visual setup confirmation, data capture and real-time traffic surveillance. The Sx-300 HDCAM has been widely deployed in North America for various applications such as ramp metering and wrong way driver detection. We also offer a wrong way module that interfaces with the Sx-300 HDCAM digital video stream and leverages our video detection algorithms to detect occurrences of vehicles driving the incorrect direction. The event is captured and sent to the end users via short message service (SMS) and email in parallel with actuation or roadside or in-pavement warning systems.

Distribution, Sales and Marketing

We market and sell our products globally. Together with our partners, we offer a combination of high performance detection technology and experienced local support. Our end users primarily consist of federal, state, city and county departments of transportation, port, highway, tunnel and other transportation authorities. The decision makers within these entities typically are traffic planners and engineers, who in turn often rely on consulting firms that perform planning and feasibility studies. Our products sometimes are sold directly to system integrators or other suppliers of systems and services who are operating under subcontracts in connection with major road construction contracts.

Sales of Autoscope Video in the United States, Mexico, Canada and the Caribbean. We have granted Econolite an exclusive right to manufacture, market and distribute the Autoscope video system in the United States, Mexico, Canada and the Caribbean. The agreement with Econolite grants it a first refusal right that arises when we make a proposal to Econolite to extend the license to additional products in the United States, Mexico, Canada and the Caribbean and a first negotiation right that arises when we make a proposal to Econolite to include rights corresponding to Econolite's rights under our current agreements in countries not in these territories. Econolite provides the marketing and technical support needed for its sales in these territories. Econolite pays us a royalty on the revenue derived from its sales of the Autoscope system. We cooperate in marketing Autoscope video products with Econolite for the United States, Mexico, Canada and the Caribbean and provide second tier technical support. We have the right to terminate our agreements with Econolite if it does not meet minimum annual sales levels or if Econolite fails to make payments as required by the agreements. In 2008, the term of the original agreement with Econolite, as amended, was extended to 2031. The agreement can be terminated by either party upon three years' notice.

Sales of RTMS Radar in North America, the Caribbean and Latin America. We market the RTMS radar systems to a network of distributors covering countries in North America, the Caribbean and Latin America. On a limited basis, we sell directly to the end user. We provide technical support to these distributors from our various North American locations.

Sales in Europe, Asia, the Middle East and Africa. We market our Autoscope video and RTMS radar product lines of products to a network of distributors covering countries in Europe, the Middle East, Africa and Asia through our wholly owned subsidiaries that have offices in Europe. On a limited basis, we sell directly to the end user. Technical support to these distributors is provided by our wholly owned subsidiaries in Europe, with second tier support provided by our engineering groups. From time to time, we may grant exclusive rights to Econolite for markets outside of our significant markets for certain jurisdictions or product sales based on facts and circumstances related to the opportunities.

Competition

We compete with companies that develop, manufacture and sell traffic management devices using video and radar sensing technologies as well as other above ground detection technologies based on laser, infrared and acoustic sensors. For ITS applications, we also compete with providers of in pavement loop detectors and estimate that more than 60% of the traffic management systems currently in use in the U.S. use in pavement loop detectors. For competition with other above ground detection products, we typically compete on performance and functionality, and to a lesser extent on price. When competing against providers of loop detectors, we compete principally on ease of installation and the total cost of ownership over a multi year period, and to a lesser extent on functionality.

Among the companies that provide direct competition to Autoscope video worldwide are Iteris, Inc., Wavetronix, LLC, FLIR Systems, Inc., GridSmart, Signal Group Inc. (Peek), Citilog S.A., Sensys Inc., and Smartmicro Inc. Among the companies that provide direct competition to RTMS radar worldwide are Wavetronix, LLC, Houston Radar, LLC, MS Sedco Inc., Smartmicro Sensors GmbH, and TraffiCast. To our knowledge, Autoscope video and RTMS radar have the largest number of installations as compared to their direct competitors. In addition, there are smaller local companies providing direct competition in specific markets throughout the world. We are aware that these and other companies will continue to develop technologies for use in traffic management applications. One or more of these technologies could in the future provide increased competition for our systems.

Other potential competitors of which we are aware include Siemens AG, Cognex Corp., Augusta Technologie AG, Matsushita Electric Industrial Co., Ltd. (Panasonic), Sumitomo Corporation and Omron Electronics LLC. These companies have machine vision or radar capabilities and have substantially more financial, technological, marketing, personnel and research and development resources than we have.

Manufacturing

Autoscope video products for sale under the Econolite license agreement are manufactured through agreements with Econolite. Econolite is responsible for setting warranty terms and must provide all service required under this warranty. In Europe and Asia, we engage contract manufacturers to manufacture the Autoscope family of products.

We engage E.I. Microcircuits, Inc. ("E.I. Micro") to manufacture our radar products and perform warranty and post-warranty repairs for all radar units sold.

We typically provide a two- to five-year warranty on our products.

Most of the hardware components used to manufacture our products are standard electronics components that are available from multiple sources. Although some of the components used in our products are obtained from single source suppliers, we believe other component vendors are available should the necessity arise. The European Parliament has enacted a directive for the restriction of the use of certain hazardous substances in electrical and electronic equipment (“RoHS”). To our knowledge, our contract manufacturing and component vendors in Europe and Asia comply with the European directive on RoHS.

Intellectual Property

To protect our rights to our proprietary know how, technology and other intellectual property, it is our policy to require all employees and consultants to sign confidentiality agreements that prohibit the disclosure of confidential information to any third parties. These agreements also require disclosure and assignment to us of any discoveries and inventions made by employees and consultants while they are devoted to our business activities. We also rely on trade secret, copyright and trademark laws to protect our intellectual property. We have also entered into exclusive and non exclusive license and confidentiality agreements relating to our own and third party technologies. We aggressively protect our processes, products, and strategies as proprietary trade secrets. Our efforts to protect intellectual property and avoid disputes over proprietary rights include ongoing review of third party patents and patent applications.

Environmental Matters

We believe our operations are in compliance with all applicable environmental regulations within the jurisdictions in which we operate.

Employees

As of December 31, 2018, we had 53 employees, consisting of 50 employees in North America and three employees in Europe. None of our employees are represented by a union.

Item 1A. Risk Factors

Information Regarding Forward Looking Statements

This Annual Report on Form 10 K contains forward looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange of 1934, as amended. Forward looking statements represent our expectations or beliefs concerning future events and can be identified by the use of forward looking words such as “believes,” “may,” “will,” “should,” “intends,” “plans,” “estimates,” or “anticipates” or comparable terminology. Forward looking statements are subject to risks and uncertainties that may cause our actual results to differ materially from the results discussed in the forward looking statements. Some factors that might cause these differences include the factors listed below. Although we have attempted to list these factors comprehensively, we wish to caution investors that other factors may prove to be important in the future and may affect our operating results. New factors may emerge from time to time, and it is not possible to predict all of these factors, nor can we assess the effect each factor or combination of factors may have on our business.

We further caution you not to unduly rely on any forward looking statements because they reflect our views only as of the date the statements were made. We undertake no obligation to publicly update or revise any forward looking statements whether as a result of new information, future events or otherwise.

If governmental entities elect not to use our products due to budgetary constraints, project delays or other reasons, our revenue may fluctuate severely or be substantially diminished.

Our products are sold primarily to governmental entities. We expect that we will continue to rely substantially on revenue and royalties from sales of our systems to governmental entities. In addition to normal business risks, it often takes considerable time before governmental initiated projects are developed to the point at which a purchase of our systems would be made, and a purchase of our products also may be subject to a time consuming approval process. Additionally, governmental budgets and plans may change without warning. Other risks of selling to governmental entities include dependence on appropriations and administrative allocation of funds, changes in governmental procurement legislation and regulations and other policies that may reflect political developments, significant changes in contract scheduling, competitive bidding and qualification requirements, performance bond requirements, government shutdowns intense competition for government business and termination of purchase decisions for the convenience of the governmental entity. Substantial delays in purchase decisions by governmental entities, or governmental budgetary constraints, could cause our revenue and income to drop substantially or to fluctuate significantly between fiscal periods.

A majority of our gross profit has been generated from sales of our Autoscope family of products, and if we do not maintain the market for these products, our business will be harmed.

Historically, a majority of our gross profit has been generated from sales of, or royalties from the sales of, our Autoscope products. Gross profit from Autoscope sales accounted for approximately 78% of our gross profit in 2018 and 74% in 2017. We anticipate that gross profit from the sale of Autoscope systems will continue to account for a substantial portion of our gross profit for the foreseeable future. As such, any significant decline in sales of our Autoscope system would have a material adverse impact on our business, financial condition and results of operations.

If Econolite's sales volume decreases or if it fails to pay royalties to us in a timely manner or at all, our financial results will suffer.

We have agreements with Econolite under which Econolite is the exclusive distributor of the Autoscope video system in the United States, Mexico, Canada and the Caribbean. Our current agreements grant Econolite a first refusal right that arises when we make a proposal to Econolite to extend the license to additional products in the United States, Mexico, Canada and the Caribbean. In addition, the agreements grant Econolite a first negotiation right that arises when we make a proposal to Econolite to include rights corresponding to Econolite's rights under our current agreements in countries not in these territories. In exchange for its rights under the agreements, Econolite pays us royalties for sales of the Autoscope video system. Since 2002, a substantial portion of our revenue has consisted of royalties resulting from sales made by Econolite, including 61% in 2018 and 59% in 2017. Econolite's account receivable represented 42% of our accounts receivable at December 31, 2018 and 77% of our accounts receivable at December 31, 2017. We expect that Econolite will continue to account for a significant portion of our revenue for the foreseeable future. Any decrease in Econolite's sales volume could significantly reduce our royalty revenue and adversely impact earnings. A failure by Econolite to make royalty payments to us in a timely manner or at all will harm our financial condition. In addition, we believe sales of our products are a material part of Econolite's business, and any significant decrease in Econolite's sales of the other products it sells could harm Econolite, which could have a material adverse effect on our business and prospects.

As a result of our continuing review of our business, we may have to undertake further restructuring plans that would require additional charges, including incurring facility exit and restructuring charges.

We continue to evaluate our business, which may result in restructuring activities. We may choose to divest certain business operations based on management's assessment of their strategic value to our business, consolidate or close certain facilities or outsource certain functions. Decisions to eliminate or limit certain business operations in the future could involve the expenditure of capital, consumption of management resources, realization of losses, transition and wind-up expenses, reduction in workforce, impairment of assets, facility consolidation and the elimination of revenues along with associated costs, any of which could cause our operating results to decline and may fail to yield the expected benefits. For more information regarding our restructuring and divestiture activities in 2018 and 2017, see the discussion in Note 13 of our Notes to Consolidated Financial Statements included elsewhere in this Annual Report on Form 10-K.

The features and functions in our products have not been as widely utilized as traditional products offered by our competitors, and the failure of our end users to accept the features and functions in our products could adversely affect our business and growth prospects.

Video and radar technologies have not been utilized in the traffic management industry as extensively as other more traditional technologies, mainly in pavement loop detectors. Our financial success and growth prospects depend on the continued development of the market for advanced technology solutions for traffic detection and management and the acceptance of our current Autoscope video and RTMS radar systems and also future systems we may develop as reliable, cost effective alternatives to traditional vehicle detection systems. We cannot assure you that we will be able to utilize our technology profitably in other products or markets. If our end users do not continue to increase their acceptance of the features and functions provided by our current systems or other systems we may develop in the future, our business and growth prospects could be adversely affected.

Our operating costs tend to be fixed, while our revenue tends to be seasonal, thereby resulting in operating results that fluctuate from quarter to quarter.

Our expense levels are based in part on our product development efforts and our expectations regarding future revenues and, in the short term, are generally fixed. Our quarterly revenues, however, have varied significantly in the past, with our first quarter historically being the weakest due to weather conditions in parts of North America, Europe and Asia that make roadway construction more difficult. Additionally, our international revenues have a significant large project component, resulting in a varying revenue stream. We expect the seasonality of our revenue and the fixed nature of our operating costs to continue in the foreseeable future. Therefore, we may be unable to adjust our spending in a timely manner to compensate for any unexpected revenue shortfall. As a result, if anticipated revenues in any quarter do not occur or are delayed, our operating results for the quarter would be disproportionately affected. Operating results also may fluctuate due to factors such as the demand for our products; product life cycle; the development, introduction and acceptance of new products and product enhancements by us or our competitors; changes in the mix of distribution channels through which our products are offered; changes in the level of operating expenses; end user order deferrals in anticipation of new products; competitive conditions in the industry; and economic conditions generally. No assurance can be given that we will be able to achieve or maintain profitability on a quarterly or annual basis in the future.

Increased competition may make it difficult for us to acquire and retain end users. If we are unsuccessful in developing new applications and product enhancements, our products may become noncompetitive or obsolete.

Competition in ITS is continuing to grow. Some of the companies that may compete with us in the business of developing and implementing traffic control, related security systems and connected vehicles have substantially more financial, technological, marketing, personnel and research and development resources than we have. Therefore, they may be able to respond more quickly than we can to new or changing opportunities, technologies, standards or end user requirements. If we are unable to compete successfully with these companies, the market share for our products will decrease, and competitive pressures may seriously harm our business.

Additionally, the market for vehicle detection is continuously seeking more advanced technological solutions to problems. Technologies such as embedded loop detectors, pressure plates, pneumatic tubes, radars, lasers, magnetometers, acoustics and microwaves that have been used as traffic sensing devices in the past are being enhanced for use in the traffic management industry, and new technologies may be developed. We are aware of several companies that are developing traffic management devices using machine vision technology or other advanced technology. Floating vehicle and/or radio frequency identification (RFID) tagged license plate initiatives are under consideration and may be implemented. We expect to face increasingly competitive product developments, applications and enhancements. New technologies or applications in traffic control systems from other companies or the development of new and emerging technologies and applications, including vehicle-to-vehicle (VTV) communications, mobile applications, and new algorithms or sensor technologies, may provide our end users with alternatives to our products and could render our solutions noncompetitive or obsolete. If we are unable to increase the number of our applications and develop and commercialize product enhancements and applications in a timely and cost-effective manner that respond to changing technology and satisfy the needs of our end users, our business and financial results will suffer.

We may not achieve our growth plans for the expansion of our business.

In addition to market penetration, our long term success depends on our ability to expand our business through new product development, mergers and acquisitions, and/or geographic expansion.

New product development would require that we maintain our ability to improve existing products, continue to bring innovative products to market in a timely fashion, and adapt products to the needs and standards of current and potential customers. Our products and services may become less competitive or eclipsed by technologies to which we do not have access or which render our solutions obsolete.

Geographic expansion would be primarily outside of the U.S. and hence will be disproportionately subject to the risks of international operations discussed in this Annual Report on Form 10-K.

Mergers and acquisitions would be accompanied by risks which may include:

- difficulties identifying suitable acquisition candidates at acceptable costs;
- unavailability of capital to conduct acquisitions;
- failure to achieve the financial and strategic goals for the acquired and combined businesses;
- difficulty assimilating the operations and personnel of the acquired businesses;

disruption of ongoing business and distraction of management from the ongoing business;

dilution of existing shareholders and earnings per share;

unanticipated, undisclosed or inaccurately assessed liabilities, legal risks and costs; and

difficulties retaining our key vendors, customers or employees or those of the acquired business.

In addition, acquisitions of businesses having a significant presence outside the U.S. will increase our exposure to the risks of international operations discussed in this Annual Report on Form 10-K.

Our dependence on third parties for manufacturing and marketing our products may prevent us from meeting customers' needs in a timely manner.

We do not have, and do not intend to develop in the near future, internal capabilities to manufacture our products. We have entered into agreements with Econolite and E.I. Micro to manufacture the Autoscope system, the RTMS radar products and related products for sales in the United States, Mexico, Canada and the Caribbean. We work with suppliers, most of whom are overseas, to manufacture the rest of our products. We also need to comply with the European Union's regulatory RoHS directive restricting the use of certain hazardous substances in electrical and electronic equipment. If Econolite, E.I. Micro, or our other suppliers are unable to manufacture our products in the future, we may be unable to identify other manufacturers able to meet product and quality demands in a timely manner or at all. Our inability to find suitable manufacturers for our products could result in delays or reductions in product shipments, which in turn may harm our business reputation and results of operations. In addition, we have granted Econolite the exclusive right to market the Autoscope video system and related products in the United States, Mexico, Canada and the Caribbean. Consequently, our revenue depends to a significant extent on Econolite's marketing efforts. Econolite's inability to effectively market the Autoscope video system, or the disruption or termination of that relationship, could result in reduced revenue and market share for our products.

We and our third-party manufacturers may experience difficulty obtaining materials or components for our products, or the cost of materials or components may increase, either of which may prevent us from meeting customers' needs in a timely manner and could therefore reduce our sales.

Although substantially all of the hardware components incorporated into our products are standard electronics components that are available from multiple sources, we and our third-party manufacturers obtain some of the components from a single source. Some materials or components may become scarce or difficult to obtain in the market or they may increase in price. This could force us or our manufacturers to identify new suppliers, which could increase our costs, affect the quality of materials, reduce our sales and profitability, or harm our customer relations by delaying product deliveries due to increased lead times.

Regulations related to the use of conflict free minerals may increase our costs and cause us to incur additional expenses.

The Dodd Frank Wall Street Reform and Consumer Protection Act contains provisions to improve the transparency and accountability of the use by public companies in their products of minerals mined in certain countries and to prevent the sourcing of such "conflict" minerals. As a result, the Securities and Exchange Commission enacted annual disclosure and reporting requirements for public companies who use these minerals in their products, which apply to us. Under the final rules, we are required to conduct due diligence to determine the source of any conflict minerals used in our products. Although we expect to file the required report on a timely basis, our supply chain is broad based and complex, and we may not be able to easily verify the origins for all minerals used in our products. To the extent that any information furnished to us by our suppliers is inaccurate or inadequate, we could face reputational and enforcement risks. In addition, the conflict mineral rules could reduce the number of suppliers who provide components and products containing conflict free minerals and thus could disrupt our supply chain or that of our manufacturers and increase the cost of the components used in manufacturing our products and the costs of our products to us. Any increased costs and expenses could have a material adverse impact on our financial condition and results of operations.

Some of our products are covered by our warranties and, if the cost of fulfilling these warranties exceeds our warranty allowance, it could adversely affect our financial condition and results of operations.

Unanticipated warranty and other costs for defective products could adversely affect our financial condition and results of operations and our reputation. We generally provide a two- to five-year warranty on our product sales. These warranties require us to repair or replace faulty products, among other customary warranty provisions. Although we monitor our warranty claims and provide an allowance for estimated warranty costs, unanticipated claims in excess of the allowance could have a material adverse impact on our financial condition and results of operations. Additionally, we rely on our third-party manufacturers to fulfill our warranty repair obligations to our customers. Adverse changes in these parties' abilities to perform these repairs could cause a delay in repairs or require us to source other parties to perform the repairs and could adversely affect impact our financial condition and results of operations. In addition, the need to repair or replace products with design or manufacturing defects could adversely affect our reputation.

We may face increased competition if we fail to adequately protect our intellectual property rights, and any efforts to protect our intellectual property rights may result in costly litigation.

Our success depends in large measure on the protection of our proprietary technology rights. We rely on trade secret, copyright and trademark laws, confidentiality agreements with employees and third parties, and patents, all of which offer only limited protection. We cannot assure you that the scope of these protective measures will exclude competitors or provide competitive advantages to us. We also cannot assure you that we will become aware of all instances in which others develop similar products, duplicate any of our products, or reverse engineer or misappropriate our proprietary technology. If our proprietary technology is misappropriated, our business and financial results could be adversely affected. Litigation may be necessary in the future to enforce our intellectual property rights, to protect our trade secrets or to determine the validity and scope of the proprietary rights of others. In addition, we may be the subject of lawsuits by others who claim we violate their intellectual property rights.

Intellectual property litigation is very costly and could result in substantial expense and diversions of our resources, either of which could adversely affect our business and financial condition and results of operations. In addition, there may be no effective legal recourse against infringement of our intellectual property by third parties, whether due to limitations on enforcement of rights in foreign jurisdictions or as a result of other factors.

We have not applied for patent protection in all countries in which we market and sell our products. Consequently, our proprietary rights in the technology underlying our systems in countries other than the U.S. will be protected only to the extent that trade secret, copyright or other non patent protection is available and to the extent we are able to enforce our rights. The laws of other countries in which we market our products may afford little or no effective protection of our proprietary technology, which could harm our business.

We plan to continue introducing new products and technologies and may not realize the degree or timing of benefits we initially anticipated, which could adversely affect our business and results of operations.

We regularly invest substantial amounts in research and development efforts that pursue advancements in a range of technologies, products and services. Our ability to realize the anticipated benefits of these advancements depends on a variety of factors, including meeting development, production, certification and regulatory approval schedules; the execution of internal and external performance plans; the availability of supplier produced parts and materials; the performance of suppliers and vendors; achieving cost efficiencies; the validation of innovative technologies; and the level of end user interest in new technologies and products. These factors involve significant risks and uncertainties. We may encounter difficulties in developing and producing these new products and may not realize the degree or timing of benefits initially anticipated. In particular, we cannot predict with certainty whether, when or in what quantities our current or potential end users will have a demand for products currently in development or pending release. Moreover, as new products are announced, sales of current products may decrease as end users delay making purchases until such new products are available. Any of the foregoing could adversely affect our business and results of operations.

Our business could be adversely affected by product liability and commercial litigation.

Our products or services may be claimed to cause or contribute to personal injury or property damage to our customers' employees or facilities. Additionally, we are, at times, involved in commercial disputes with third parties, such as customers, distributors, vendors and others. See Item 3 and Note 15 of our Notes to Consolidated Financial Statements included elsewhere in this Annual Report on Form 10-K. The ensuing claims may arise singularly, in groups of related claims, or in class actions involving multiple claimants. Such claims and litigation are frequently expensive and time consuming to resolve and may result in substantial liability to us, which liability and related costs and expenses may not be recoverable through insurance or any other forms of reimbursement.

Our business could be affected by various legal and regulatory compliance risks, including those involving antitrust, environmental, anti-bribery or anti-corruption laws and regulations.

We are subject to various legal and regulatory requirements and risks in the U.S. and other countries in which we have facilities or sell our products involving compliance with antitrust, environmental, anti-bribery and anti-corruption laws and regulations, including the U.S. Foreign Corrupt Practices Act and the U.K. Anti-Bribery Act. Although we have internal policies and procedures with the intention of assuring compliance with these laws and regulations, our employees, contractors, agents and licensees involved in our international sales may take actions in violation of such policies. Any future adverse development, ruling or settlement could result in charges that could have an adverse effect on our results of operations or cash flows.

We price a segment of our product portfolio at a premium compared to other technologies. As such, we may not be able to quickly respond to emerging low cost competitors, and our inability to do so could adversely affect revenue and profitability.

We price a segment of our product portfolio at a premium as compared to products using less sophisticated technologies. As the technological sophistication of our competitors and the size of the market increase, competing low cost developers of machine vision products for traffic are likely to emerge and grow stronger. If end users prefer low cost alternatives over our products, our revenue and profitability could be adversely affected.

Our revenue could be adversely affected by the emergence of local competitors and local biases in international markets.

Our experience indicates that local officials that purchase traffic management products in the international markets we serve favor products that are developed and manufactured locally. As local competitors to our products emerge, local biases could erode our revenue in Europe and Asia and adversely affect our sales and revenue in those markets.

Our failure to predict technological convergence could harm our business and could reduce our sales.

Within our product families, we currently utilize only certain detection technologies available in the ITS field. If we fail to predict convergence of technology preferences in the market for ITS, or fail to identify and acquire complementary businesses or products that broaden our current product offerings, we may not capture certain segments of the market, which could harm our business and reduce our sales.

We sell our products internationally and are subject to various risks relating to such international activities, which could harm our international sales and profitability.

Sales outside of the United States, including export sales from our U.S. business locations, accounted for approximately 20% of our total revenue in 2018 and 17% of our total revenue in 2017. By doing business in international markets, we are exposed to risks separate and distinct from those we face in our U.S. operations. Our international business may be adversely affected by changing political and economic conditions in foreign countries. Additionally, fluctuations in currency exchange rates could affect demand for our products or otherwise negatively affect profitability. Engaging in international business inherently involves a number of other difficulties and risks, including:

- export restrictions and controls relating to technology;
- pricing pressure that we may experience internationally;
- exposure to the risk of currency value fluctuations where payment for products is denominated in a currency other than U.S. dollars;
- variability in the U.S. dollar value of foreign currency denominated assets, earnings and cash flows;
- required compliance with existing and new foreign regulatory requirements and laws;
- laws and business practices favoring local companies;
- longer payment cycles;
- difficulty of enforcing agreements, including patent and trademarks, and collecting receivables through foreign legal systems;
- disputes with parties outside of the U.S., which may be more difficult, expensive and time-consuming to resolve than disputes with parties located in the U.S.;
- political and economic instability, including volatility in the economic environment of the European Union caused by the ongoing sovereign debt crisis in Europe;

- tax rates in certain foreign countries that exceed those in the U.S. and the imposition of withholding requirements on foreign earnings;
- higher danger of terrorist activity, war or civil unrest compared to domestic operations;
- difficulties and costs of staffing and managing foreign operations; and
- difficulties in enforcing intellectual property rights.

Our exposure to each of these risks may increase our costs, lengthen our sales cycle and require significant management attention. One or more of these factors may harm our business.

The United Kingdom's withdrawal from the European Union could harm our business and financial results.

In June 2016, voters in the United Kingdom approved the withdrawal of the United Kingdom from the European Union (commonly referred to as "Brexit"). In March 2017, the United Kingdom government initiated the exit process under Article 50 of the Treaty of the European Union, commencing a period of up to two years for the United Kingdom and the other European Union member states to negotiate the terms of the withdrawal. The British government and the European Union have now negotiated a withdrawal agreement, and the European Union has approved that agreement, but the British Parliament has not yet approved it. As a result, there remains considerable uncertainty around the withdrawal. Failure to obtain parliamentary approval of the negotiated withdrawal agreement would mean that the United Kingdom would leave the European Union on March 29, 2019, probably with no agreement (a so-called "hard Brexit"). The consequences for the economies of the European Union members and of the United Kingdom exiting the European Union are unknown and unpredictable, especially in the case of a hard Brexit. Depending on the final terms of Brexit, we could face new regulatory costs and challenges and greater volatility in the Pound Sterling and the euro. Any adjustments we make to our business and operations because of Brexit could result in significant time and expense to complete. Any of the foregoing factors could have a material adverse effect on our business, results of operations or financial condition.

Changes in U.S. trade policies may adversely impact our business and financial results.

The Company's operations and performance depend significantly on global, regional and U.S. economic and geopolitical conditions. In recent years, there has been discussion and dialogue regarding potential significant changes to U.S. trade policies, legislation, treaties and tariffs, as well as trade policies and tariffs affecting China. Changes to current policies by the U.S. government could affect our business, including potentially through increased import tariffs and other influences on U.S. trade relations with China and other countries. The imposition of tariffs or other trade barriers could increase our costs in certain markets and may cause our customers to find alternative sourcing. In addition, other countries may change their own policies on business and foreign investment in companies in their respective countries. Additionally, it is possible that U.S. policy changes and uncertainty about such changes could increase market volatility and currency exchange rate fluctuations. Market volatility and currency exchange rate fluctuations could have a material adverse effect on our business, financial condition, results of operations or cash flows.

Our inability to comply with European and Asian regulatory restrictions over hazardous substances and electronic waste could restrict product sales in those markets and reduce profitability in the future.

The European Union's Waste Electrical and Electronic Equipment ("WEEE") directive makes producers of electrical goods financially responsible for specified collection, recycling, treatment and disposal of past and future covered products. This directive must be enacted and implemented by individual European Union governments, and certain producers will be financially responsible under the WEEE legislation. This may impose requirements on us, which, if we are unable to meet them, could adversely affect our ability to market our products in European Union countries, and our sales revenues and profitability would suffer as a consequence. In addition, the European Parliament has enacted a directive for the restriction of the use of certain hazardous substances in electrical and electronic equipment. This RoHS legislation restricts the use of substances such as mercury, lead, cadmium and hexavalent cadmium. If we are unable to have our products manufactured in compliance with the RoHS directive, we would be unable to market our products in European Union countries, and our revenues and profitability would suffer. In addition, various Asian governments could adopt their own versions of environment friendly electronic regulations similar to the European directives, RoHS and WEEE. This could require new and unanticipated manufacturing changes, product testing and certification requirements, thereby increasing cost, delaying sales and lowering revenue and profitability.

Our inability to manage growth effectively could seriously harm our business.

Growth and expansion of our business could significantly strain our capital resources as well as the time and abilities of our management personnel. Our ability to manage growth effectively will require continued improvement of our operational, financial and management systems and the successful training, motivation and management of our employees. If we are unable to manage growth successfully, our business and operating results will suffer.

Our business operations will be severely disrupted if we lose key personnel or if we fail to attract and retain qualified personnel.

Our technology depends upon the knowledge, experience and skills of our key management and scientific and technical personnel. Additionally, our ability to continue technological developments and to market our products, and thereby develop a competitive edge in the marketplace, depends in large part on our ability to attract and retain qualified scientific and technical personnel. Competition for qualified personnel is intense, and we cannot assure you that we will be able to attract and retain the individuals we need, especially if our business expands and requires us to employ additional personnel. In addition, the loss of personnel or our failure to hire additional personnel could materially and adversely affect our business, operating results and ability to expand. The loss of key personnel, or our inability to hire and retain qualified personnel, would harm our business.

We may not be successful in integrating any acquired companies into our business, which could materially and adversely affect our financial condition and operating results.

Part of our business strategy has been to acquire or invest in companies, products or technologies that complement our current products, enhance our market coverage or technical capabilities or offer growth opportunities. For any acquisition, a significant amount of management's time and financial resources may be required to complete the acquisition and integrate the acquired business into our existing operations. Even with this investment of management time and financial resources, an acquisition may not produce the revenue, earnings or business synergies anticipated. Acquisitions involve numerous other risks, including the assumption of unanticipated operating problems or legal liabilities; problems integrating the purchased operations, technologies or products; the diversion of management's attention from our core businesses; restrictions on the manner in which we may use purchased companies or assets imposed by acquisition agreements; adverse effects on existing business relationships with suppliers and customers; incorrect estimates made in the accounting for acquisitions and amortization of acquired intangible assets that would reduce future reported earnings (such as goodwill impairments); ensuring acquired companies' compliance with the requirements of the U.S. federal securities laws and accounting rules; and the potential loss of customers or key employees of acquired businesses. We cannot assure you that any acquisitions, investments, strategic alliances or joint ventures will be completed or integrated in a timely manner or achieve anticipated synergies, will be structured or financed in a way that will enhance our business or creditworthiness, or will meet our strategic objectives or otherwise be successful.

We may be required to recognize impairment charges for long lived assets.

As of December 31, 2018, the net carrying value of our long lived assets (property and equipment, deferred tax assets and other intangible assets) totaled approximately $3.7 million. In accordance with U.S. generally accepted accounting principles (GAAP), we periodically assess these assets to determine if they are impaired. Significant negative industry or economic trends, a significant and sustained decline in our stock price, disruptions to our businesses, significant unexpected or planned changes in our use of assets, divestitures and market capitalization declines may result in impairments to our goodwill and other long lived assets. Future impairment charges could significantly affect our results of operations in the periods recognized.

Our stock is thinly traded and our stock price is volatile.

Our common stock is thinly traded, with 3,813,485 shares of our 5,279,485 outstanding shares held by non affiliates as of February 28, 2019. Based on the trading history of our common stock and the nature of the market for publicly traded securities of companies in evolving high tech industries, we believe there are several factors that have caused and are likely to continue to cause the market price of our common stock to fluctuate substantially. The fluctuations may occur on a day to day basis or over a longer period of time. Factors that may cause fluctuations in our stock price include announcements of large orders obtained by us or our competitors, substantial cutbacks in government funding of highway projects or of the potential availability of alternative technologies for use in traffic control and safety, quarterly fluctuations in our financial results or the financial results of our competitors, consolidation among our competitors, fluctuations in stock market prices and volumes, and the volatility of the stock market.

Rising interest rates may affect our ability to obtain financing and may cause us to suffer competitive disadvantages.

The Company's exposure to changes in interest rates relates primarily to the Company's ability to obtain financing in the future. If obtaining financing is adversely affected by rising interest rates or other factors, it could make it more difficult or expensive for us to obtain financing, which in turn would adversely affect our ability to take advantage of significant business opportunities and to react to changes in market or industry conditions.

The transition away from LIBOR may adversely affect our cost to obtain financing.

Central banks around the world, including the Board of Governors of the Federal Reserve, have commissioned working groups of market participants and official sector representatives with the goal of finding suitable replacements for the London Interbank Offered Rate ("LIBOR") based on observable market transactions. It is expected that a transition away from the widespread use of LIBOR to alternative rates will occur over the course of the next few years. The U.K. Financial Conduct Authority (FCA), which regulates LIBOR, has announced that it has commitments from panel banks to continue to contribute to LIBOR through the end of 2021, but that it will not use its powers to compel contributions beyond such date. Accordingly, there is considerable uncertainty regarding the publication of such rates beyond 2021. The Federal Reserve Bank of New York and various other authorities have commenced the publication of reforms and actions relating to alternatives to U.S. dollar LIBOR. Although the full impact of such reforms and actions, together with any transition away from LIBOR, including the potential or actual discontinuance of LIBOR publication, remains unclear, these changes may have a material adverse impact on the availability of financing, including LIBOR-based loans, and on our financing costs.

Difficult and volatile conditions in the capital, credit and commodities markets and in the overall economy could continue to adversely affect our financial position, results of operations and cash flows, and we do not know if these conditions will improve in the near future.

Our financial position, results of operations and cash flows could continue to be adversely affected by difficult conditions and significant volatility in the capital, credit and commodities markets and in the overall worldwide economy. Although certain economic conditions in the United States have improved, economic growth has been slow and uneven and may not be sustained. During economic downturns, governmental entities in particular, which constitute most of our end users, reduce or delay their purchase of our products, which has had and may continue to have an adverse effect on our business. Any uncertainty about the federal budget in the U.S. could have a negative effect on the U.S. and global economy. The continuing impact that these factors might have on us and our business is uncertain and cannot be estimated at this time. Current economic conditions have accentuated each of these risks and magnified their potential effect on us and our business. The difficult conditions in these markets and the overall economy affect our business in a number of ways. For example:

- Although we believe we have sufficient liquidity to run our business, under extreme market conditions, there can be no assurance that financing, if needed, would be available or sufficient, and, in such a case, we may not be able to successfully obtain financing on favorable terms, or at all.

- Continuing market volatility has exerted downward pressure on our stock price, which could make it more difficult or unfavorable for us to raise additional capital in the future.

- Economic conditions could result in customers in our markets continuing to experience financial difficulties, including limited liquidity and their inability to obtain financing or electing to limit spending because of the economy which may result, for example, in customers' inability to pay us at all or on a timely basis and in declining tax revenue for our customers that are governmental entities, which in turn could result in decreased sales and earnings for us.

We do not know if market conditions or the state of the overall economy will improve in the near future, when improvement will occur or if any improvement will benefit our market segment.

Our articles of incorporation and bylaws, Minnesota law and our shareholder rights plan may inhibit a takeover that shareholders consider favorable.

Provisions of our articles of incorporation and bylaws and applicable provisions of Minnesota law may delay or discourage transactions involving an actual or potential change in our control or change in our management, including transactions in which shareholders might otherwise receive a premium for their shares or transactions that our shareholders might otherwise deem to be in their best interests. These provisions:

- permit our board of directors to issue up to 5,000,000 shares of preferred stock with any rights, preferences and privileges as it may designate, including the right to approve an acquisition or other change in our control;
- provide that the authorized number of directors may be increased by resolution of the board of directors;
- provide that all vacancies, including newly created directorships, may, except as otherwise required by law, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum; and
- eliminate cumulative voting rights, therefore allowing the holders of a majority of the shares of common stock entitled to vote in any election of directors to elect all of the directors standing for election, if they should so choose.

Section 302A.671 of the Minnesota Business Corporation Act ("MBCA") generally limits the voting rights of a shareholder acquiring a substantial percentage of our voting shares in an attempted takeover or otherwise becoming a substantial shareholder of our company unless holders of a majority of the voting power of all outstanding shares and the disinterested shares approve full voting rights for the substantial shareholder. Section 302A.673 of the MBCA generally limits our ability to engage in any business combination with certain persons who own 10% or more of our outstanding voting stock or any of our associates or affiliates who at any time in the past four years have owned 10% or more of our outstanding voting stock. These provisions of the MBCA may have the effect of entrenching our management team and may deprive shareholders of the opportunity to sell their shares to potential acquirers at a premium over prevailing market prices. This potential inability to obtain a control premium could reduce the price of our common stock.

In addition, in June 2013, we adopted a shareholder rights plan and declared a dividend to our shareholders of one preferred share purchase right for each outstanding share of common stock. In August 2016, our Board of Directors amended the shareholder rights plan to preserve the value of certain deferred tax benefits to the Company, including those generated by net operating losses. Generally, the shareholder rights plan, as amended, provides that if a person or group acquires 4.99% or more of our outstanding shares of common stock, subject to certain exceptions and under certain circumstances, the rights may be exchanged by us for common stock or the holders of the rights, other than the acquiring person or group, could acquire additional shares of our capital stock at a discount of the then current market price. Such exchanges or exercise of rights could cause substantial dilution to a particular acquirer and discourage the acquirer from pursuing the Company. The mere existence of a shareholder rights plan often delays or makes a merger, tender offer or other acquisition more difficult to complete. In March 2018, our Board of Directors recommended amending the shareholder rights plan to extending the term of the shareholder rights plan from June 6, 2018 to June 5, 2020, subject to shareholder approval, to continue to preserve the value of certain deferred tax assets. Our shareholders approved the amendment at the Company's annual meeting of shareholders held in May 2018.

We can issue shares of preferred stock without shareholder approval, which could adversely affect the rights of common shareholders.

Our articles of incorporation permit our board of directors to establish the rights, privileges, preferences and restrictions, including voting rights, of future series of our preferred stock and to issue such stock without approval from our shareholders. The rights of holders of our common stock may suffer as a result of the rights granted to holders of preferred stock that may be issued in the future. In addition, we could issue preferred stock to prevent a change in control of our Company, depriving common shareholders of an opportunity to sell their stock at a price in excess of the prevailing market price.

We do not intend to declare cash dividends on our stock in the foreseeable future.

We currently intend to retain any and all future earnings for the operation and expansion of our business and, therefore, do not anticipate declaring or paying cash dividends on our common stock in the foreseeable future. Any payment of cash dividends on our common stock will be at the discretion of our board of directors and will depend upon our operating results, earnings, current and anticipated cash needs, capital requirements, financial condition, future prospects, any contractual restrictions and any other factors deemed relevant by our board of directors. Therefore, shareholders should not expect to receive dividend income from shares of our common stock.

Our operations may be adversely affected by cybersecurity risks and we may incur increasing costs in an effort to minimize those risks.

Although we take steps to secure our management information systems, the security measures we have implemented may not be effective, and our systems may be vulnerable to theft, loss, damage and interruption from a number of potential sources and events, including unauthorized access or security breaches, natural or man-made disasters, cyberattacks, computer viruses, power loss, or other disruptive events. We may not have the resources or technical sophistication to anticipate or prevent rapidly evolving types of cyberattacks. Attacks may be targeted at us, our customers and suppliers, or others who have entrusted us with information.

Actual or anticipated attacks may cause us to incur increasing costs, including costs to deploy additional personnel and protection technologies, train employees and engage third-party experts and consultants, or in connection with the notifications to employees, suppliers or the general public as part of our notification obligations to the various governmental agencies that govern our business. Advances in computer capabilities, new technological discoveries, or other developments may result in the breach or compromise of technology used by us to protect transaction or other data. Our reputation, brand and financial condition could be adversely affected if, as a result of a significant cyber event or other security issues: our operations are disrupted or shut down; our confidential, proprietary information is stolen or disclosed; we must dedicate significant resources to system repairs or increase cyber security protection; or we otherwise incur significant litigation or other costs.

Item 1B. Unresolved Staff Comments
None.

Item 2. Properties
We currently lease and occupy approximately 26,775 square feet in St. Paul, Minnesota for our headquarters. In February 2014, we entered into an amendment to the lease for our headquarters which expanded the leased space from approximately 20,000 square feet to approximately 26,775 square feet, extended the term of the lease to July 2020, and gave us the right to further extend the term of the lease for one additional five-year term. We also lease smaller facilities in Canada and Spain.

We believe that our current space is generally adequate to meet our current expected needs, and we do not intend to lease significantly more space in 2019.

Item 3. Legal Proceedings
We are involved from time to time in various legal proceedings arising in the ordinary course of our business, including primarily commercial, product liability, employment and intellectual property claims. In accordance with United States generally accepted accounting principles, we record a liability in our Consolidated Financial Statements with respect to any of these matters when it is both probable that a liability has been incurred and the amount of the liability can be reasonably estimated. With respect to any currently pending legal proceedings, we have not established an estimated range of reasonably possible additional losses either because we believe that we have valid defenses to claims asserted against us or the proceeding has not advanced to a stage of discovery that would enable us to establish an estimate. We currently do not expect the outcome of these matters to have a material effect on our consolidated results of operations, financial position or cash flows. Litigation, however, is inherently unpredictable, and it is possible that the ultimate outcome of one or more claims asserted against us could adversely impact our results of operations, financial position or cash flows. We expense legal costs as incurred.

Item 4. Mine Safety Disclosures
Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

Our common stock is traded on The NASDAQ Capital Market under the symbol "ISNS."

Shareholders

As of February 28, 2019, there were 21 holders of record of our common stock. The number of holders of record is based upon the actual number of holders registered at such date and does not include holders of shares in "street names" or persons, partnerships, associates, corporations, or other entities identified in security position listings maintained by depositories.

Dividends

We have never declared or paid a cash dividend on our common stock. We currently intend to retain earnings for use in the operation and expansion of our business, and, consequently, we do not anticipate paying any dividends in the foreseeable future.

Debt Covenants

Our credit agreement included certain financial covenants, including minimum debt service ratios, minimum cash flow coverage ratios, and other financial measures. These financial covenants would have restricted our ability to pay dividends and purchase outstanding shares of common stock. At December 31, 2018 and December 31, 2017, we were no longer subject to any debt covenants. Information on our debt agreements is included in Item 7 of this Annual Report on Form 10 K.

Item 6. Selected Financial Data

The following statement of income data for the years ended and as of December 31, 2018 and 2017 are derived from our audited Consolidated Financial Statements. The following information should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and with our Consolidated Financial Statements and the related notes thereto included elsewhere in this Annual Report on Form 10-K.

	2018	2017
	(in thousands, except per share data)	
Consolidated Statements of Operations Data:		
Revenue:		
Product sales	$5,644	$5,919
Royalties	8,917	8,605
	14,561	14,524
Cost of revenue:		
Product sales	2,419	2,563
Royalties	367	362
	2,786	2,925
Gross profit	11,775	11,599
Operating expenses:		
Selling, marketing and product support	2,817	2,486
General and administrative	3,678	3,981
Research and development	3,284	3,010
Restructuring	144	—
	9,923	9,477
Income from operations	1,852	2,122
Other, net	—	41
Income from operations before income taxes	1,852	2,163
Income tax expense (benefit)	(10)	85
Net income	$1,862	$2,078
Net income per share:		
Basic	$0.36	$0.41
Diluted	$0.36	$0.40
Weighted average number of common shares outstanding:		
Basic	5,204	5,128
Diluted	5,221	5,136

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the Selected Financial Data and our Consolidated Financial Statements and the accompanying Notes to Consolidated Financial Statements included elsewhere in this Annual Report on Form 10-K. Our actual results could differ materially from those anticipated in the forward looking statements included in this discussion as a result of certain factors, including, but not limited to, those discussed in "Risk Factors" included elsewhere in this Annual Report on Form 10-K.

General. We are a leading provider of above-ground detection products and solutions for the intelligent transportation systems ("ITS") industry. Our family of products, which we market as Autoscope video or video products ("Autoscope"), and RTMS radar or radar products ("RTMS"), provides end users with the tools needed to optimize traffic flow and enhance driver safety. Our technology analyzes signals from sophisticated sensors and transmits the information to management systems and controllers or directly to users. Our products provide users with complete solutions for the intersection and transportation markets.

Our technology is a process in which software, rather than humans, examines outputs from various types of sophisticated sensors to determine what is happening in a field of view. In the ITS industry, this process is a critical component of managing congestion and traffic flow. In many cities, it is not possible to build roads, bridges and highways quickly enough to accommodate the increasing congestion levels. On average, United States commuters lose 97 hours a year in congestion, which costs motorists $87 billion a year in time, an average of $1,348 per driver. We believe this growing use of vehicles will make our ITS solutions increasingly necessary to complement existing and new roadway infrastructure to manage traffic flow and optimize throughput.

We believe our solutions are technically superior to those of our competitors because they have a higher level of accuracy, limit the occurrence of false detection, are generally easier to install with lower costs of ownership, work effectively in a multitude of light and weather conditions, and provide end users the ability to manage inputs from a variety of sensors for a number of tasks. It is our view that the technical advantages of our products make our solutions well suited for use in ITS markets.

We believe the strength of our distribution channels positions us to increase the penetration of our technology driven solutions in the marketplace. We market our Autoscope video products in the United States, Mexico, Canada and the Caribbean through an exclusive agreement with Econolite Control Products, Inc. ("Econolite"), which we believe is the leading distributor of ITS intersection control products in these markets.

We market the RTMS radar systems to a network of distributors in North America, the Caribbean and Latin America. On a limited basis, we sell directly to the end user in these geographic areas. We market our Autoscope video and RTMS radar products outside of the United States, Mexico, Canada and the Caribbean through a combination of distribution and direct sales channels, through our office in Spain. Our end users primarily include governmental agencies and municipalities.

The following discussion of year-to-year trends in financial statement results under "Management's Discussion and Analysis of Financial Condition and Results of Operations" aligns with the financial statement presentation described above.

Trends and Challenges in Our Business

We believe the expected growth in our business can be attributed primarily to the following global trends:

• worsening traffic caused by increased numbers of vehicles in metropolitan areas without corresponding expansions of road infrastructure and the need to automate safety, security and access applications for automobiles and trucks, which has increased demand for our products;

- advances in information technology, which have made our products easier to market and implement;

- the continued funding allocations for centralized traffic management services and automated enforcement schemes, which have increased the ability of our primary end users to implement our products; and

- general increases in the cost effectiveness of electronics, which make our products more affordable for end users.

We believe our continued growth primarily depends upon:

• continued adoption and governmental funding of ITS and other automated applications for traffic control, safety and enforcement in developed countries;

• a propensity by traffic engineers to implement lower cost technology based solutions rather than civil engineering solutions such as widening roadways;

• countries in the developing world adopting above ground detection technology, such as video or radar, instead of in pavement loop technology to manage traffic; and

• our ability to develop new products that provide increasingly accurate information and enhance the end users' ability to cost effectively manage traffic and environmental issues.

Because the majority of our end users are governmental entities, we are faced with challenges related to potential delays in purchase decisions by those entities and changes in budgetary constraints. These contingencies could result in significant fluctuations in our revenue between periods. The ongoing economic environment in Europe and the United States is further adding to the unpredictability of purchase decisions, creating more delays than usual and decreasing governmental budgets, and it is likely to continue to affect our revenue.

Key Financial Terms and Metrics

Revenue. We derive revenue from two sources: (1) royalties received from Econolite for sales of the Autoscope video systems in the United States, Mexico, Canada and the Caribbean and (2) revenue received from the direct sales of our RTMS radar systems and our Autoscope video systems in Europe and Asia. Autoscope video royalties are calculated using a profit sharing model where the gross profits on sales of product made through Econolite are shared equally with Econolite. This royalty arrangement has the benefit of decreasing our cost of revenues and our selling, marketing and product support expenses because these costs and expenses are borne primarily by Econolite. Although this royalty model has a positive impact on our gross margin, it also negatively impacts our total revenue, which would be higher if all the sales made by Econolite were made directly by us. The royalty arrangement is exclusive under a long term agreement.

Cost of Revenue. Software amortization is the sole cost of revenue related to royalties, as virtually all manufacturing, warranty and related costs are incurred by Econolite. Cost of revenue related to product sales consists primarily of the amount charged by our third party contractors to manufacture hardware platforms, which is influenced mainly by the cost of electronic components. The cost of revenue also includes logistics costs, estimated expenses for product warranties, restructuring costs and inventory reserves. The key metric that we follow is achieving certain gross margin percentages on product sales by geographic region and to a lesser extent by product line.

Operating Expenses. Our operating expenses fall into three categories: (1) selling, marketing and product support; (2) general and administrative; and (3) research and development. Selling, marketing and product support expenses consist of various costs related to sales and support of our products, including salaries, benefits and commissions paid to our personnel; commissions paid to third parties; travel, trade show and advertising costs; second tier technical support for Econolite; and general product support, where applicable. General and administrative expenses consist of certain corporate and administrative functions that support the development and sales of our products and provide an infrastructure to support future growth. These expenses include management, supervisory and staff salaries and benefits, legal and auditing fees, travel, rent and costs associated with being a public company, such as board of director fees, listing fees and annual reporting expenses. Research and development expenses consist mainly of salaries and benefits for our engineers and third party costs for consulting and prototyping. We measure all operating expenses against our annually approved budget, which is developed with achieving a certain operating margin as a key focus. Also included in operating expenses are any restructuring costs.

Non GAAP Operating Measure. We provide certain non-GAAP financial information as supplemental information to financial measures calculated and presented in accordance with GAAP (Generally Accepted Accounting Principles in the United States). This non-GAAP information excludes the impact of depreciating fixed assets and amortizing intangible assets and may exclude other non-recurring items. Management believes that this presentation facilitates the comparison of our current operating results to historical operating results. Management uses this non-GAAP information to evaluate short-term and long-term operating trends in our core operations. Non-GAAP information is not prepared in accordance with GAAP and should not be considered a substitute for or an alternative to GAAP financial measures and may not be computed the same as similarly titled measures used by other companies.

The table below reconciles non-GAAP income from income from operations, which is a non-GAAP financial measure, to comparable GAAP financial measures (in thousands):

	Years Ended December 31,	
	2018	**2017**
Income from operations	$ 1,852	$ 2,122
Adjustments to reconcile to non-GAAP income		
Amortization of intangible assets	530	362
Arbitration	—	303
Depreciation	244	218
Restructuring	144	—
Non-GAAP operating income	$ 2,770	$ 3,005

Seasonality. Our quarterly revenues and operating results have varied significantly in the past due to the seasonality of our business. Our first quarter generally is the weakest due to weather conditions that make roadway construction more difficult in parts of North America, Europe and northern Asia. We expect such seasonality to continue for the foreseeable future. Additionally, our international revenues regularly contain individually significant sales. This can result in significant variations of revenue between periods. Accordingly, we believe that quarter to quarter comparisons of our financial results should not be relied upon as an indication of our future performance. No assurance can be given that we will be able to achieve or maintain profitability on a quarterly or annual basis in the future.

Segments. We currently operate in two reportable segments: Intersection and Highway. Autoscope video is our machine vision product line, and revenue consists of royalties (all of which are received from Econolite), as well as a portion of international product sales. Video products are normally sold in the Intersection segment. The RTMS radar is our radar product line, and revenue consists of sales to external customers. Radar products are normally sold in the Highway segment. As a result of business model changes and modifications in how we manage our business, we may reevaluate our segment definitions in the future.

The following tables set forth selected financial information for each of our reportable segments (in thousands):

	For the year ended December 31, 2018		
	Intersection	**Highway**	**Total**
Revenue	$ 10,052	$ 4,509	$ 14,561
Gross profit	9,168	2,607	11,775
Amortization of intangible assets	367	163	530
Intangible assets	2,110	1,207	3,317

	For the year ended December 31, 2017		
	Intersection	**Highway**	**Total**
Revenue	$ 10,109	$ 4,415	$ 14,524
Gross profit	9,048	2,551	11,599
Amortization of intangible assets	362	—	362
Intangible assets	2,477	1,008	3,485

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Results of Operations

The following table sets forth, for the periods indicated, certain consolidated statements of operations data as a percent of total revenue and gross profit on product sales and royalties as a percentage of international sales and royalties, respectively.

	Years Ended December 31,	
	2018	2017
Product sales	38.8 %	40.8%
Royalties	61.2	59.2
Total revenue	100.0	100.0
Gross profit - product sales	57.1	56.7
Gross profit - royalties	95.9	95.8
Selling, marketing and product support	19.3	17.1
General and administrative	25.3	27.4
Research and development	22.6	20.7
Restructuring	1.0	—
Income from operations	12.7	14.6
Income tax expense (benefit)	(0.1)	0.6
Net income	12.8	14.3

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017. Total revenue increased to $14.6 million in 2018 from $14.5 million in 2017, an increase of 0.3%. Royalty income increased to $8.9 million in 2018 from $8.6 million in 2017, an increase of 3.6%. The increase in royalties was primarily due to higher volume of sales related to our Autoscope Vision compared to the prior year. Included in 2017 were royalties related to the Miami-Dade County sale through Econolite. Product sales decreased to $5.6 million in 2018 from $5.9 million in 2017, a decrease of 4.6%. The decrease in product sales was a result of reduced sales into the Middle East, offset in part by increased sales in Europe and North America.

Revenue for the Intersection segment was $10.1 million in 2018, remaining consistent with out $10.1 million of revenue in 2017.

Revenue for the Highway segment increased to $4.5 million in 2018 from $4.4 million in 2017, an increase of 2.1%. The increase of revenue in the Highway segment is mainly attributable to increased volume in North America.

Gross profit for product sales increased to 57.1% in 2018 from 56.7% in 2017. Product sales gross profit decreased $131,000 or 3.9% compared to the prior year. The decrease in product sales gross profit is primarily the result of amortization costs related to products released for sale in 2018. Product sales gross profit for the Intersection product lines has historically been lower than gross profit for the Highway product lines and therefore the mix of the product lines sold in any given period can result in varying gross profit. Additionally, the geographic sales mix of our product sales can influence margins, as products sold in some jurisdictions have lower margins.

Gross profit for royalty sales increased to 95.9% in 2018 from 95.8% in 2017. Gross profit for royalties increased $307,000 or 3.7% compared to the prior year.

Selling, marketing and product support expense increased to $2.8 million, or 19.3% of total revenue, in 2018 compared to $2.5 million, or 17.1% of total revenue, in 2017.

General and administrative expense decreased to $3.7 million, or 25.3% of total revenue, in 2018 compared to $4.0 million, or 27.4% of total revenue, in 2017. General and administrative expense decreased in 2018 due to approximately $303,000 of cost incurred related to the Econolite arbitration decision in 2017.

Research and development expense increased to $3.3 million, or 22.6% of total revenue, in 2018, from $3.0 million, or 20.7% of total revenue, in 2017. The increase is partially due to decreased capitalized software development costs in 2018 of $362,000 compared to capitalized software costs of $1.1 million in 2017. After normalizing for software development costs, overall research and development expenditures decreased in 2018 compared to 2017. This decrease is a result of less variable costs associated with development projects.

In the third quarter of 2018, the Company implemented restructuring plans for our office in Romania. Because of these actions, restructuring charges of approximately $144,000 were recorded in 2018. There were no restructuring charges recorded in 2017.

Income tax benefit of $10,000 or 0.5% of our pretax income was recorded for the year ended December 31, 2018, compared to income tax expense of $85,000 or 4.0% of pretax income for the year ended December 31, 2017.

Consolidated net income was $1.9 million, or $0.36 per basic and diluted share, in 2018 compared to $2.1 million, or $0.41 per basic and $0.40 per diluted share, in 2017.

Liquidity and Capital Resources

At December 31, 2018, we had $4.2 million in cash and cash equivalents compared to $3.2 million at December 31, 2017.

Net cash provided by operating activities was $1.7 million in 2018 compared to $3.0 million in 2017. The decrease in net cash provided by operating activities in 2018 compared to the prior year can be primarily attributed to the timing of collections for outstanding receivable balances and an increase in inventory purchases in 2018 compared to the prior year. Inventory increased due to our transition to a new contract manufacturer in 2018.

Net cash used for investing activities was $556,000 in 2018, compared to net cash used for investing activities of $1.4 million in 2017. The decrease in the amount of net cash used for investing activities in 2018 compared to the prior year is primarily the result of capitalized internal software development costs decreasing when compared to 2017.

Net cash used for financing activities was $10,000 in 2018 compared to no net cash used for financing activities in 2017.

In May 2014, the Company entered into a credit agreement and related documents with Alliance Bank which provided for a revolving line of credit for the Company. The credit agreement and related documents with Alliance Bank (collectively, the "Alliance Credit Agreement") provided up to a $5.0 million revolving line of credit bearing interest at a fixed annual rate of 3.95%. Any advances would have been secured by the Company's inventories, accounts receivable, cash, marketable securities, and equipment. We were subject to certain covenants under the Alliance Credit Agreement. In April 2016, we entered into an agreement with Alliance Bank amending the Alliance Credit Agreement to extend the maturity date from April 1, 2016 to May 12, 2017. We chose not to renew the Alliance Credit Agreement.

We believe that cash and cash equivalents on hand at December 31, 2018, along with the cash provided by operating activities, will satisfy our projected working capital needs, investing activities, and other cash requirements for the foreseeable future.

Off Balance Sheet Arrangements

We do not participate in transactions or have relationships or other arrangements with an unconsolidated entity, including special purpose and similar entities or other off balance sheet arrangements.

Critical Accounting Policies

Our Consolidated Financial Statements included elsewhere in this Annual Report on Form 10-K are prepared in accordance with U.S. generally accepted accounting principles ("GAAP"), which require us to make estimates and assumptions in certain circumstances that affect amounts reported. In preparing these financial statements, management has made its best estimates and judgments of certain amounts, giving due consideration to materiality. We believe that of our significant accounting policies, the following are particularly important to the portrayal of our results of operations and financial position, may require the application of a higher level of judgment by our management, and as a result, are subject to an inherent degree of uncertainty. For further information, see Note 1 of our Notes to the Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10 K.

Revenue Recognition and Allowance for Doubtful Accounts. We are required to comply with a variety of technical accounting requirements in order to achieve consistent and accurate revenue recognition. Royalty income is recognized based on sales shipped or delivered to our customers as reported to us by Econolite. Revenue is recognized when both product ownership and the risk of loss have transferred to the customer and we have no remaining obligations. Allowances for doubtful accounts are estimated by management based on an evaluation of potential losses related to customer receivable balances. We determine the allowance based on historical write off experience in the industry, regional economic data, and an evaluation of specific customer accounts for risk of loss. We review our allowance for doubtful accounts monthly. Account balances are charged off against the allowance when we believe it is probable the receivable will not be recovered. We do not have any off balance sheet credit exposure related to our customers. The establishment of this allowance requires the use of judgment and assumptions regarding the potential for losses on receivable balances. Although management considers these balances adequate and proper, changes in economic conditions in specific markets in which we operate could have an effect on reserve balances required.

Warranty Liabilities. The estimated cost to service warranty and customer service claims is included in cost of sales. This estimate is based on historical trends of warranty claims. We regularly assess and adjust the estimate of accrued warranty claims by updating claims rates for actual trends and projected claim costs. Our warranty liability contains uncertainties because our warranty obligations cover an extended period of time. While these liability levels are based on historical warranty experience, they may not reflect the actual claims that will occur over the upcoming warranty period, and additional warranty reserves may be required. A revision of estimated claim rates or the projected cost of materials and freight associated with sending replacement parts to customers could have a material adverse effect on future results of operations.

Software Development Costs. We incur costs associated with the development of software to be sold, leased, or otherwise marketed. Software development costs are expensed as incurred until technological feasibility has been established, at which time future costs incurred are capitalized until the product is available for general release to the public. A significant amount of judgment and estimation is required to assess when technological feasibility is established as well as in the ongoing assessment of the recoverability of capitalized costs. In evaluating the recoverability of capitalized software costs, we compare expected product performance, utilizing forecasted revenue amounts, to the total costs incurred to date and estimates of additional costs to be incurred. If revised forecasted product revenue is less than, and/or revised forecasted costs are greater than, the previously forecasted amounts, the net realizable value may be lower than previously estimated, which could result in recognition of an impairment charge in the period in which such a determination is made.

Impairment of Long Lived Assets. We review the carrying value of long lived assets or asset groups, such as property and equipment and intangibles subject to amortization, when events or changes in circumstances such as asset utilization, physical change, legal factors, or other matters indicate that the carrying value may not be recoverable. When this review indicates the carrying value of an asset or asset group exceeds the sum of the undiscounted cash flows expected to result from the use and eventual disposition of the asset or asset group, we recognize an asset impairment charge against operations. The amount of the impairment loss recorded is the amount by which the carrying value of the impaired asset or asset group exceeds its fair value.

Our impairment loss calculations contain uncertainties because they require management to make assumptions and to apply judgment to identify events or changes in circumstances indicating the carrying value of assets may not be recoverable, estimate future cash flows, estimate asset fair values, and select a discount rate that reflects the risk inherent in future cash flows. Expected cash flows may not be realized, which could cause long lived assets to become impaired in future periods and could have a material adverse effect on future results of operations.

Income Taxes. We record a tax provision for the anticipated tax consequences of the reported results of operations. Deferred tax assets and liabilities are measured using the currently enacted tax rates that apply to taxable income in effect for the years in which those deferred tax assets and liabilities are expected to be realized or settled. We record a valuation allowance to reduce deferred tax assets to the amount that is believed more likely than not to be realized. We believe it is more likely than not that forecasted income, including income that may be generated as a result of certain tax planning strategies, together with the tax effects of the deferred tax liabilities, will be sufficient to fully recover the remaining net realizable value of our deferred tax assets. If all or part of the net deferred tax assets are determined not to be realizable in the future, an adjustment to the valuation allowance would be charged to earnings in the period such determination is made. In addition, the calculation of tax liabilities involves significant judgment in estimating the impact of uncertainties in the application of complex tax laws. Resolution of these uncertainties in a manner inconsistent with management’s expectations could have a material impact on our financial condition and operating results.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Foreign Currency Exchange Risk

Approximately 20% of our revenue has historically been derived from shipments to customers outside of the United States, and a large portion of this revenue is denominated in currencies other than the U.S. dollar. Our international subsidiaries have functional currencies other than our U.S. dollar reporting currency and, occasionally, transact business in currencies other than their functional currencies. These non functional currency transactions expose us to market risk on assets, liabilities and cash flows recognized on these transactions.

The strengthening of the U.S. dollar relative to foreign currencies decreases the value of foreign currency denominated revenue and earnings when translated into U.S. dollars. Conversely, a weakening of the U.S. dollar increases the value of foreign currency denominated revenue and earnings. A 10% adverse change in foreign currency rates, if we have not properly hedged, could have a material effect on our results of operations or financial position.

Item 8. Financial Statements and Supplementary Data

IMAGE SENSING SYSTEMS, INC.
CONSOLIDATED BALANCE SHEETS
(in thousands, except share data)

	December 31, 2018	2017
ASSETS		
Current assets:		
Cash and cash equivalents	$ 4,236	$ 3,190
Accounts receivable, net of allowance for doubtful accounts of $72 and $20, respectively	3,830	3,339
Inventories	1,289	335
Prepaid expenses and other current assets	410	255
Total current assets	9,765	7,119
Property and equipment:		
Furniture and fixtures	162	164
Leasehold improvements	8	26
Equipment	1,058	998
	1,228	1,188
Accumulated depreciation	882	702
	346	486
Intangible assets, net	3,317	3,485
Deferred income taxes	56	38
TOTAL ASSETS	$ 13,484	$ 11,128
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 878	$ 563
Deferred revenue	716	45
Warranty	656	858
Accrued compensation	224	288
Other current liabilities	373	733
Total current liabilities	2,847	2,487
TOTAL LIABILITIES	2,847	2,487
Shareholders' equity		
Preferred stock, $.01 par value; 5,000,000 shares authorized, none issued or outstanding	—	—
Common stock, $.01 par value; 20,000,000 shares authorized, 5,278,485 and 5,210,448 issued and outstanding, respectively	52	51
Additional paid-in capital	24,550	24,355
Accumulated other comprehensive loss	(372)	(310)
Accumulated deficit	(13,593)	(15,455)
Total shareholders' equity	10,637	8,641
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	$ 13,484	$ 11,128

See accompanying notes to the consolidated financial statements.

IMAGE SENSING SYSTEMS, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share data)

	Years ended December 31, 2018	2017
Revenue:		
Product sales	$ 5,644	$ 5,919
Royalties	8,917	8,605
	14,561	14,524
Cost of revenue:		
Product sales	2,419	2,563
Royalties	367	362
	2,786	2,925
Gross profit	11,775	11,599
Operating expenses:		
Selling, marketing and product support	2,817	2,486
General and administrative	3,678	3,981
Research and development	3,284	3,010
Restructuring	144	—
	9,923	9,477
Operating income from operations	1,852	2,122
Other, net	—	41
Income from operations before income taxes	1,852	2,163
Income tax expense (benefit)	(10)	85
Net income	$ 1,862	$ 2,078
Net income per share:		
Basic	$ 0.36	$ 0.41
Diluted	$ 0.36	$ 0.40
Weighted average number of common shares outstanding:		
Basic	5,204	5,128
Diluted	5,221	5,136

See accompanying notes to the consolidated financial statements.

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IMAGE SENSING SYSTEMS, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(in thousands)

	Years ended December 31,	
	2018	2017
Net income	$ 1,862	$ 2,078
Other comprehensive income (loss):		
Foreign currency translation adjustment	(62)	53
Comprehensive income	$ 1,800	$ 2,131

See accompanying notes to the consolidated financial statements.

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IMAGE SENSING SYSTEMS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOW
(in thousands)

	Years ended December 31,	
	2018	2017
Operating activities:		
Net income	$ 1,862	$ 2,078
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation	244	218
Software amortization	530	362
Stock-based compensation	206	301
Deferred income tax expense (benefit)	(21)	20
Loss on disposal of assets	36	2
Changes in operating assets and liabilities:		
Accounts receivable, net	(491)	(328)
Inventories	(954)	(194)
Prepaid expenses and other current assets	(132)	26
Accounts payable	337	280
Accrued expenses and other current liabilities	45	185
Net cash provided by operating activities	1,662	2,950
Investing activities:		
Capitalized software development costs	(362)	(1,052)
Purchases of property and equipment	(194)	(300)
Net cash used for investing activities	(556)	(1,352)
Financing activities:		
Stock for tax withholding	(10)	—
Net cash used for financing activities	(10)	—
Effect of exchange rate changes on cash	(50)	45
Increase in cash and cash equivalents	1,046	1,643
Cash and cash equivalents at beginning of period	3,190	1,547
Cash and cash equivalents at end of period	$ 4,236	$ 3,190
Non-Cash investing and financing activities:		
Purchase of property and equipment in accounts payable	$ 5	$ 27

See accompanying notes to the consolidated financial statements.

IMAGE SENSING SYSTEMS, INC.
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY
(in thousands, except share data)

	Shares Issued	Common Stock	Additional Paid-In Capital	Accumulated Other Comprehensive Loss	Accumulated deficit	Total
Balance, December 31, 2016	5,094,473	$ 50	$ 24,055	$ (363)	$ (17,533)	$ 6,209
Stock-based compensation	115,975	1	300	—	—	301
Comprehensive income:						
Foreign currency translation adjustment	—	—	—	53	—	53
Net income	—	—	—	—	2,078	2,078
Balance, December 31, 2017	5,210,448	$ 51	$ 24,355	$ (310)	$ (15,455)	$ 8,641
Stock-based compensation	70,285	1	205	—	—	206
Stock for tax withholding	(2,248)	—	(10)	—	—	(10)
Comprehensive income:						
Foreign currency translation adjustment	—	—	—	(62)	—	(62)
Net income	—	—	—	—	1,862	1,862
Balance, December 31, 2018	5,278,485	$ 52	$ 24,550	$ (372)	$ (13,593)	$ 10,637

See accompanying notes to the consolidated financial statements.

Image Sensing Systems, Inc.

Notes to Consolidated Financial Statements

December 31, 2018

1. DESCRIPTION OF BUSINESS AND SIGNIFICANT ACCOUNTING POLICIES

DESCRIPTION OF BUSINESS

Image Sensing Systems, Inc. (referred to herein as “we,” the “Company,” “us” and “our”) develops and markets video and radar processing products for use in applications such as intersection control, highway, bridge and tunnel traffic management and traffic data collection. We sell our products primarily to distributors and also receive royalties under a license agreement with a manufacturer/distributor for certain of our products. Our products are used primarily by governmental entities.

CONSOLIDATION

The Consolidated Financial Statements include the accounts of Image Sensing Systems, Inc. and its wholly owned subsidiaries: Image Sensing Systems HK Limited (ISS HK) located in Hong Kong; Image Sensing Systems (Shenzhen) Limited (ISS WOFE) located in China; Image Sensing Systems Holdings Limited (ISS Holdings), Image Sensing Systems Europe Limited (ISS Europe), and Image Sensing Systems EMEA Limited (ISS UK) located in the United Kingdom; Image Sensing Systems Europe Limited SP.Z.O.O. (ISS Poland) located in Poland; Image Sensing Systems Spain SLU (ISS Spain) located in Spain; Image Sensing Systems Germany, GmbH (ISS Germany) located in Germany; and ISS Image Sensing Systems Canada Limited (ISS Canada) located in Canada. All significant inter company transactions and balances have been eliminated.

REVENUE RECOGNITION

On January 1, 2018, we adopted Accounting Standards Update ("ASU") No. 2014-09, *Revenue from Contracts with Customers (Topic 606),* using the full retrospective transition method. The Company's adoption of ASU 2014-09 did not have a material impact on the amount and timing of revenue recognized in its consolidated financial statements.

Under ASU 2014-09, we recognize revenue when control of the promised goods or services is transferred to customers, in an amount that reflects the consideration we expect to be entitled to in exchange for those goods or services.

We determine revenue recognition through the following steps:

- Identification of a contract, or contracts, with a customer;
- Identification of performance obligations in the contract;
- Determination of the transaction price;
- Allocation of the transaction price to the performance obligations in the contract; and
- Recognition of revenue when, or as, we satisfy a performance obligation.

Revenue disaggregated by revenue source for the years ended December 31, 2018 and 2017 consists of the following (in thousands). Revenue excludes sales and usage-based taxes where it has been determined that we are acting as a pass-through agent.

	Years Ended December 31,	
	2018	**2017**
Product sales	$ 5,644	$ 5,919
Royalties	8,917	8,605
Total revenue	$ 14,561	$ 14,524

Product Sales:

Product revenue is generated from the direct sales of our RTMS radar systems worldwide and our Autoscope video systems in Europe and Asia. Revenue is recognized when control of the promised goods or services is transferred to our customers in an amount that reflects the consideration we expect to be entitled to in exchange for those goods or services.

Certain product sales may contain multiple performance obligations for revenue recognition purposes. Multiple performance obligations may include the hardware, software, installation services, training, and support. In arrangements where we have multiple performance obligations, the transaction price is allocated to each performance obligation using the relative stand-alone selling price. We generally determine stand-alone selling prices based on the observable stand-alone prices charged to customers. For performance obligations without observable stand-alone prices charged to customers, we evaluate the adjusted market assessment approach, the expected cost plus margin approach, and stand-alone sales to estimate the stand-alone selling prices.

Revenue from arrangements for services such as maintenance, repair, consulting and technical support are recognized either as the service is performed or ratably over the defined contractual period for service maintenance contracts. Our payment terms may vary by the type and location of our customer and the products or services offered.

We record deferred revenues when cash payments are received or due in advance of our performance, including amounts which are refundable. The term between invoicing and when payment is due is not significant. For certain products or services and customer types, we require payment before the products or services are delivered to the customer.

We record provisions against sales revenue for estimated returns and allowances in the period when the related revenue is recorded based on historical sales returns and changes in end user demand.

Royalties:

Econolite Control Products, Inc. (“Econolite”) is our licensee that sells our Autoscope video system products in the United States, Mexico, Canada and the Caribbean. The royalty of approximately 50% of the gross profit on licensed products is recognized when the products are shipped or delivered by Econolite to its customers.

Practical Expedients and Exemptions:

We generally expense sales commissions when incurred because the amortization periods would have been one year or less. These costs are recorded within sales and marketing expense.

We do not disclose the value of unsatisfied performance obligations for (i) contracts with an original expected length of one year or less and (ii) contracts for which we recognize revenue at the amount to which we have the right to invoice for services performed.

SHIPPING AND HANDLING

Freight revenue billed to customers is reported within revenue on the Consolidated Statements of Operations, and expenses incurred for shipping products to customers are reported within cost of revenue on the Consolidated Statements of Operations.

CASH AND CASH EQUIVALENTS

We consider all highly liquid investments with an original maturity of three months or less when purchased to be cash equivalents. Cash equivalents, both inside and outside the United States, are invested in money market funds and bank deposits in local currency denominations. Cash located in foreign banks was $226,000 and $677,000 at December 31, 2018 and 2017, respectively. We hold our cash and cash equivalents with financial institutions and, at times, the amounts of our balances may be in excess of deposit insurance limits.

ACCOUNTS RECEIVABLE

We grant credit to customers in the normal course of business and generally do not require collateral from domestic customers. When deemed appropriate, receivables from customers outside the United States are supported by letters of credit from financial institutions. Management performs on going credit evaluations of customers. The allowance for doubtful accounts is based on management's assessment of the collectability of specific customer accounts and includes consideration of the credit worthiness and financial condition of those specific customers. We record an allowance to reduce receivables to the amount that is reasonably believed to be collectible and consider factors such as the financial condition of the customer and the aging of the receivables. If there is a deterioration of a customer's financial condition, if we become aware of additional information related to the credit worthiness of a customer, or if future actual default rates on trade receivables in general differ from those currently anticipated, we may have to adjust our allowance for doubtful accounts, which would affect earnings in the period the adjustments were made.

INVENTORIES

Inventories are primarily electronic components and finished goods and are valued at the lower of cost or net realizable value determined under the first in, first out accounting method.

PROPERTY AND EQUIPMENT

Property and equipment is stated at cost. Additions, replacements, and improvements are capitalized at cost, while maintenance and repairs are charged to operations as incurred. Depreciation is recorded using the straight line method over the estimated useful lives of the assets and by accelerated methods for income tax purposes. Leasehold improvements are depreciated over the shorter of the estimated useful lives of the assets or the contractual term of the lease, with consideration of lease renewal options if renewal appears probable. Depreciation is recorded over a three- to seven year period for financial reporting purposes.

INCOME TAXES

We record a tax provision for the anticipated tax consequences of the reported results of operations. Deferred tax assets and liabilities are measured using the currently enacted tax rates that apply to taxable income in effect for the years in which those deferred tax assets and liabilities are expected to be realized or settled. We record a valuation allowance to reduce deferred tax assets to the amount that is believed more likely than not to be realized. We believe it is more likely than not that forecasted income, including income that may be generated as a result of certain tax planning strategies, together with the tax effects of the deferred tax liabilities, will be sufficient to fully recover the remaining net realizable value of deferred tax assets. If all or part of the net deferred tax assets are determined not to be realizable in the future, an adjustment to the valuation allowance would be charged to earnings in the period such determination is made. In addition, the calculation of tax liabilities involves significant judgment in estimating the impact of uncertainties in the application of complex tax laws. Resolution of these uncertainties in a manner inconsistent with management’s expectations could have a material impact on our financial condition and operating results. We recognize penalties and interest expense related to unrecognized tax benefits in income tax expense.

INTANGIBLE ASSETS

We capitalize certain software development costs related to software to be sold, leased, or otherwise marketed. Capitalized software development costs include purchased materials, services, internal labor and other costs associated with the development of new products and services. Software development costs are expensed as incurred until technological feasibility has been established, at which time future costs incurred are capitalized until the product is available for general release to the public. Based on our product development process, technological feasibility is generally established once product and detailed program designs have been completed, uncertainties related to high-risk development issues have been resolved through coding and testing, and we have established that the necessary skills, hardware, and software technology are available for production of the product. Once a software product is available for general release to the public, capitalized development costs associated with that product will begin to be amortized to cost of sales over the product’s estimated economic selling life, using the greater of straight-line or a method that results in cost recognition in future periods that is consistent with the anticipated timing of product revenue recognition.

Capitalized software development costs are subject to an ongoing assessment of recoverability, which is impacted by estimates and assumptions of future revenues and expenses for these software products, as well as other factors such as changes in product technologies. Any portion of unamortized capitalized software development costs that are determined to be in excess of net realizable value have been expensed in the period in which such a determination is made. Subsequent to reaching technological feasibility for certain software products, we capitalized approximately $362,000 and $1.1 million of software development costs during the years ended December 31, 2018 and 2017, respectively.

Intangible assets with finite lives are amortized on a straight line basis over the expected period to be benefited by future cash flows and reviewed for impairment. At both December 31, 2018 and 2017, there were no indefinite lived intangible assets.

IMPAIRMENT OF LONG LIVED ASSETS

We review the carrying value of long lived assets or asset groups, such as property and equipment and intangibles subject to amortization, when events or changes in circumstances such as asset utilization, physical change, legal factors, or other matters indicate that the carrying value may not be recoverable. When this review indicates the carrying value of an asset or asset group exceeds the sum of the undiscounted cash flows expected to result from the use and eventual disposition of the asset or asset group, we recognize an asset impairment charge against operations. The amount of the impairment loss recorded is the amount by which the carrying value of the impaired asset or asset group exceeds its fair value. No such impairment losses were recorded during the years ended December 31, 2018 and 2017.

RESEARCH AND DEVELOPMENT

Research and development costs associated with new products are charged to operations in the period incurred.

WARRANTIES

We generally provide a two- to five-year warranty on product sales. We record estimated warranty costs at the time of sale and accrue for specific items at the time that their existence is known and the amounts are determinable. We estimate warranty costs using standard quantitative measures based on historical warranty claim experience and an evaluation of specific customer warranty issues. In addition, warranty provisions are recognized for certain nonrecurring product claims that are individually significant.

FOREIGN CURRENCY

The financial position and results of operations of our foreign subsidiaries are measured using local currency as the functional currency. Assets and liabilities are translated using fiscal period end exchange rates, and statements of operations are translated using average exchange rates applicable to each period, with the resulting translation adjustments recorded as a separate component of shareholders' equity under "Accumulated other comprehensive loss." Gains and losses from foreign currency transactions are recognized in the Consolidated Statements of Operations.

NET INCOME PER SHARE

Basic income per share excludes dilution and is computed by dividing net income attributable to common shareholders by the weighted average number of common shares outstanding during the period. Diluted income per share includes potentially dilutive common shares consisting of stock options and restricted stock using the treasury stock method. Under the treasury stock method, shares associated with certain stock options have been excluded from the diluted weighted average shares outstanding calculation because the exercise of those options would lead to a net reduction in common shares outstanding. As a result, stock options to acquire 37,058 and 103,681 weighted common shares have been excluded from the diluted weighted shares outstanding calculation for the years ended December 31, 2018 and 2017, respectively, because the exercise prices were greater than the average market price of the common shares during the period and were excluded from the calculation of diluted net income per share.

LOSS CONTINGENCIES

We establish an accrual for loss contingencies when it is both probable that an asset has been impaired or a liability has been incurred and the amount of the loss can be reasonably estimated. When loss contingencies are not probable and cannot be reasonably estimated, we do not establish an accrual. However, when there is at least a reasonable possibility that a loss has been incurred, but it is not probable or reasonably estimated, we disclose the nature of the loss contingency and an estimate of the possible loss or range of loss as applicable. Any adjustment made to a loss contingency accrual during an accounting period affects the earnings of the period.

USE OF ESTIMATES

The preparation of financial statements in accordance with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities as of the date of the financial statements, and reported amounts of revenue and expense during the reporting period. Predicting future events is inherently an imprecise activity and, as such, requires the use of judgment. Ultimate results could differ from those estimates. Changes in these estimates will be reflected in the financial statements in future periods.

STOCK BASED COMPENSATION

We measure the cost of employee services received in exchange for the award of equity instruments based on the fair value of the award at the date of grant and recognize the cost over the period during which an employee is required to provide services in exchange for the award. Stock options or awards are granted at exercise prices equal to the closing market price of our stock on the day before the date of grant.

For purposes of determining the estimated fair value of stock options, we utilize a Black Scholes option pricing model, which requires the input of certain assumptions requiring management judgment. Because our employee stock option awards have characteristics significantly different from those of traded options, and because changes in the input assumptions can materially affect fair value estimates, existing models may not provide a reliable single measure of the fair value of employee stock options. Management will continue to assess the assumptions and methodologies used to calculate estimated fair value of stock based compensation. Circumstances may change and additional data may become available over time that could result in changes to these assumptions and methodologies and thereby materially impact the fair value determination of future grants of stock based payment awards. If factors change and we employ different assumptions in future periods, the compensation expense recorded may differ significantly from the stock based compensation expense recorded in the current period.

RECENT ACCOUNTING PRONOUNCEMENTS

Accounting pronouncement recently adopted

In May 2014, the Financial Accounting Standards Board (the "FASB") issued ASU 2014-09, which supersedes the revenue recognition requirements in Accounting Standards Codification ("ASC") Topic 605, Revenue Recognition (Topic 605). We adopted Topic 606 as of January 1, 2018 using the full retrospective transition method. See *Revenue Recognition* above for further details.

Accounting pronouncements not yet adopted

In February 2016, the FASB issued ASU No. 2016-02, “Leases (Topic 842).” ASU 2016-02 provides guidance on how an entity should account for leases and recognize associated lease assets and liabilities. This guidance is effective for the Company in the first quarter of 2019. The Company will apply the modified retrospective method of adoption as of January 1, 2019. We are currently assessing the impact of ASU 2016-02 on the consolidated financial statements.

In June 2018, the FASB issued ASU No. 2018-07, "Compensation-Stock Compensation (Topic 718)". ASU 2018-07 largely aligns the accounting for share-based payment awards issued to employees and nonemployees by expanding the scope of ASC 718 to apply to nonemployee share-based transactions, as long as the transaction is not effectively a form of financing. The new guidance will be effective on January 1, 2019. We are currently evaluating the potential impact that ASU No. 2018-07 may have on the consolidated financial statements.

In August 2018, the Securities and Exchange Commissions (the "SEC") adopted the final rule under SEC Release No. 33-10532, "Disclosure Update and Simplification," amending certain disclosure requirements that were redundant, duplicative, overlapping, outdated or superseded. In addition, the amendments expanded the disclosure requirements for the analysis of stockholders' equity for interim financial statements. Under the amendments, an analysis of changes in each caption of stockholders' equity presented in the balance sheet must be provided in a note or separate statement. The analysis must present a reconciliation of the beginning balance to the ending balance for each period for which a statement of comprehensive income is required to be filed. We anticipate the first presentation of changes in consolidated stockholders' equity will be included in our Quarterly Report on Form 10-Q for the quarter ended March 31, 2019.

2. FAIR VALUE MEASUREMENTS

The guidance for fair value measurements establishes the authoritative definition of fair value, sets out a framework for measuring fair value and outlines the required disclosures regarding fair value measurements. Fair value is the price that would be received to sell an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants at the measurement date. We use a three tier fair value hierarchy based upon observable and non observable inputs as follows:

- Level 1 – observable inputs such as quoted prices in active markets;
- Level 2 – inputs, other than the quoted prices in active markets, that are observable either directly or indirectly; and
- Level 3 – unobservable inputs in which there is little or no market data, which require the reporting entity to develop its own assumptions.

Assets and Liabilities that are Measured at Fair Value on a Recurring Basis

The fair value hierarchy requires the use of observable market data when available. In instances in which the inputs used to measure fair value fall into different levels of the fair value hierarchy, the fair value measurement has been determined based on the lowest level input that is significant to the fair value measurement in its entirety. Our assessment of the significance of a particular item to the fair value measurement in its entirety requires judgment, including the consideration of inputs specific to the asset or liability.

Nonfinancial Assets Measured at Fair Value on a Nonrecurring Basis

Our intangible assets and other long lived assets are nonfinancial assets that were acquired either as part of a business combination, individually or with a group of other assets. These nonfinancial assets were initially, and have historically been, measured and recognized at amounts equal to the fair value determined as of the date of acquisition.

Periodically, these nonfinancial assets are tested for impairment by comparing their respective carrying values to the estimated fair value of the reporting unit or asset group in which they reside.

Financial Instruments not Measured at Fair Value

Certain of our financial instruments are not measured at fair value and are recorded at carrying amounts approximating fair value, based on their short term nature or variable interest rate. These financial instruments include cash and cash equivalents, accounts receivable, accounts payable and other current financial assets and liabilities.

3. INVENTORIES

Inventories consisted of the following (in thousands):

	December 31,	
	2018	**2017**
Finished goods	$ 949	$ 288
Components	340	47
Total	$ 1,289	$ 335

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4. INTANGIBLE ASSETS

Intangible assets consisted of the following (dollars in thousands):

	December 31, 2018			
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Value	Weighted Average Useful Life (in Years)
Developed technology	$ 3,900	$ (3,900)	$ —	—
Vision development costs	2,929	(819)	2,110	8.0
Software development in process costs	674	—	674	—
IntellitraffiQ development costs	468	(59)	409	4.0
Wrong Way development costs	228	(104)	124	2.0
	$ 8,199	$ (4,882)	$ 3,317	7.1

	December 31, 2017			
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Value	Weighted Average Useful Life (in Years)
Developed technology	$ 3,900	$ (3,900)	$ —	—
Vision development costs	2,929	(452)	2,477	8.0
Software development in process costs	1,008	—	1,008	—
	$ 7,837	$ (4,352)	$ 3,485	8.0

The estimated future amortization expense related to other intangible assets for the next five fiscal years is as follows (dollars in thousands):

	Amortization Expense
2019	$ 598
2020	493
2021	484
2022	426
2023	367

The above amortization expense relates to various capitalized costs related to software development. Future amortization amounts presented above are estimates. Actual future amortization expense may be different due to future acquisitions, impairments, changes in amortization periods, or other factors.

In accordance with United States generally accepted accounting principles ("GAAP"), we performed an assessment of recoverability on our software development costs, which is impacted by estimates and assumptions of future revenue and expenses for these products, as well as other factors such as changes in product technologies. We determined that the estimated undiscounted cash flows is greater than the asset carrying value, and there were no impairment triggers as of December 31, 2018.

5. CREDIT FACILITIES

In May 2014, the Company entered into a credit agreement and related documents with Alliance Bank which provided for a revolving line of credit for the Company. The credit agreement and related documents with Alliance Bank (collectively, the “Alliance Credit Agreement”) provided up to a $5.0 million revolving line of credit bearing interest at a fixed annual rate of 3.95%. Any advances would have been secured by the Company’s inventories, accounts receivable, cash, marketable securities, and equipment. We were subject to certain covenants under the Alliance Credit Agreement. In April 2016, we entered into an agreement with Alliance Bank amending the Alliance Credit Agreement to extend the maturity date from April 1, 2016 to May 12, 2017. We chose not to renew the Alliance Credit Agreement.

6. WARRANTIES

Warranty liability and related activity consisted of the following (in thousands):

	Years ended December 31, 2018	2017
Beginning balance	$ 858	$ 1,223
Warranty provisions	123	47
Warranty claims	(74)	(126)
Adjustments to preexisting warranties	(251)	(286)
Ending balance	$ 656	$ 858

7. INCOME TAXES

The components of income before income taxes were as follows (in thousands):

	Years ended December 31, 2018	2017
Income from operations before income taxes		
Domestic	$ 2,455	$ 2,364
Foreign	(603)	(201)
Total	$ 1,852	$ 2,163

The components of income tax expense (benefit) were as follows (in thousands):

	Years ended December 31, 2018	2017
Current:		
Federal	$ —	$ —
State	(2)	5
Foreign	13	60
	$ 11	$ 65
Deferred:		
Federal	$ —	$ (3)
State	—	—
Foreign	(21)	23
	(21)	20
Total income tax expense (benefit)	$ (10)	$ 85

A reconciliation from the federal statutory income tax provision to our effective tax expense (benefit) is as follows (in thousands):

	Years ended December 31, 2018	2017
United States federal tax statutory rate	$ 390	$ 735
State taxes, net of federal benefit	(54)	(237)
Valuation allowances against deferred tax assets	(251)	(4,798)
Research and development tax credits	(90)	22
Foreign provision different than U.S. tax rate	6	(11)
Stock option expense	—	6
Adjustment of prior year tax credits and refunds	(24)	1,231
Change in deferred tax rate from 35% to 21%	—	3,146
Other	13	(9)
Total	$ (10)	$ 85

A summary of the deferred tax assets and liabilities is as follows (in thousands):

	Years ended December 31, 2018	2017
Deferred tax assets:		
Accrued compensation and benefits	$ 32	$ 49
Inventory reserves	17	1
Allowance for doubtful accounts	1	4
Warranty reserves	124	165
Intangible and other assets	535	994
Net operating loss carryforwards	3,980	3,897
Property, equipment and other	65	44
Research and development credit	2,357	2,230
Total deferred tax asset:	7,111	7,384
Less: valuation allowance	(7,013)	(7,319)
Net deferred tax assets:	98	65
Deferred tax liabilities:		
Prepaid expenses and other	(42)	(27)
Total deferred tax liability:	(42)	(27)
Total net deferred tax asset	$ 56	$ 38

As of December 31, 2018, the Company had sustained a significant accumulated tax loss. The net operating loss (“NOL”) carry forward in the United States, the United Kingdom, Hong Kong, Canada and China as of December 31, 2018 was $16 million, $678,000, $1.6 million, $199,000 and $89,000, respectively. The Company’s management believes that it is not more likely than not the net operating losses will be utilized. Accordingly, as of December 31, 2018, a full valuation allowance is provided, except for the Canadian NOL.

In accordance with ASC 740 30, we have not recognized a deferred tax liability for the undistributed earnings of certain of our foreign operations because those subsidiaries have invested or will invest the undistributed earnings indefinitely. It is impractical for us to determine the amount of unrecognized deferred tax liabilities on these indefinitely reinvested earnings. Deferred taxes are recorded for earnings of foreign operations when we determine that such earnings are no longer indefinitely reinvested.

The Company has recognized no material uncertain tax positions as of December 31, 2018. The Company files income tax returns in the U.S federal jurisdiction and various state and foreign jurisdictions. With few exceptions, the Company is no longer subject to U.S federal or state and local income tax examinations by tax authorities for years before 2014. It is difficult to predict the final timing and resolution of any particular uncertain tax position. Based on the Company's assessment of many factors, including past experience and complex judgments about future events, the Company does not currently anticipate significant changes in its uncertain tax positions over the next 12 months.

New Tax Legislation

On December 22, 2017, the President of the United States signed into law the Tax Cuts and Jobs Act tax reform legislation (the "Tax Act"). The Tax Act makes significant changes in U.S. tax law, including a reduction in the U.S. federal corporate income tax rate, changes to net operating loss carryforwards and carrybacks, and a repeal of the corporate alternative minimum tax. The Tax Act reduced the U.S. corporate tax rate from 35% to 21%. As a result of the enacted law, the Company was required to revalue deferred tax assets and liabilities at the enacted rate. This revaluation did not have any income tax expense impact on the Company due to the full valuation allowance. The other provisions of the Tax Act did not have a material impact on the Company's 2017 consolidated financial statements. During 2018, the Company finalized its accounting for this matter and concluded that no material adjustments were required.

8. LICENSING

We have licensed the exclusive right to manufacture and market the Autoscope video technology in the United States, Mexico, Canada and the Caribbean to Econolite, and we receive royalties from Econolite on sales of systems in those territories as well as in non exclusive territories as allowed from time to time. We may terminate our agreement with Econolite if a minimum annual sales level is not met or if Econolite fails to make royalty payments as required by the agreement. The agreement’s term runs to 2031, unless terminated by either party upon three years’ notice.

We recognized royalty income from this agreement of $8.9 million and $8.6 million in 2018 and 2017, respectively.

9. SIGNIFICANT CUSTOMERS AND CONCENTRATION OF CREDIT RISK

Royalty revenue from Econolite comprised 61% and 59% of revenue in the years ended December 31, 2018 and 2017, respectively. Accounts receivable from Econolite were $1.6 million and $2.5 million at December 31, 2018 and 2017, respectively. Major disruptions in the manufacturing and distribution of our products by Econolite or the inability of Econolite to make payments on its accounts receivable with us could have a material adverse effect on our business, financial condition and results of operations. At December 31, 2018, Econolite comprised 42% of our accounts receivable compared to 77% at December 31, 2017.

Product revenue from four of the Company's major customers other than Econolite comprised 17% and 9% of revenue in the years ended December 31, 2018 and 2017, respectively. Accounts receivable from these customers were $797,000 and $167,000 at December 31, 2018 and 2017, respectively. Major disruptions in the distribution of our products by these customers or the inability to make payments on their accounts receivable with us could have a material adverse effect on our business, financial condition and results of operations. At December 31, 2018, they comprised more than 20% of accounts receivable.

10. RETIREMENT SAVINGS PLANS

Substantially all of our employees in the United States are eligible to participate in a qualified defined contribution 401(k) plan. Participants may elect to have a specified portion of their salary contributed to the plan, and we may make discretionary contributions to the plan. We made contributions totaling $49,000 and $81,000 to the plans for 2018 and 2017, respectively.

11. STOCK-BASED COMPENSATION

We compensate officers, directors, key employees and consultants with stock-based compensation under the Image Sensing Systems, Inc. 2005 Stock Incentive Plan (the "2005 Plan") and the Image Sensing Systems, Inc. 2014 Stock Option and Incentive Plan (the "2014 Plan"), both of which were approved by our shareholders and are administered under the supervision of our Board of Directors. Although stock options granted under the 2005 Plan are still outstanding, the 2005 Plan expired, and the Company can no longer grant options or other awards under the 2005 Plan. Stock option awards are granted at exercise prices equal to the closing price of our stock on the day before the date of grant. Generally, options vest proportionally over periods of 3 to 5 years from the dates of the grant, beginning one year from the date of grant, and have a contractual term of 9 to 10 years.

Compensation expense, net of estimated forfeitures, is recognized ratably over the vesting period. Stock-based compensation expense included in general and administrative expense for the years ended December 31, 2018 and 2017 was $206,000 and $301,000, respectively. At December 31, 2018, 122,876 shares were available for grant under the Company's stock option and incentive plan.

Stock Options

The following tables summarize stock option activity:

	For the year ended December 31, 2018			
	Number of Shares	**Weighted Average Exercise Price per Share**	**Weighted Average Remaining Contractual Term (in years)**	**Aggregate Intrinsic Value**
Options outstanding at December 31, 2017	85,750	$ 5.78	4.00	$ —
Granted	—	$ —	—	$ —
Exercised	—	$ —	—	$ —
Expired	(12,000)	$ 5.76	—	$ —
Forfeited	(34,750)	$ 5.26	—	$ 363
Options outstanding at December 31, 2018	39,000	$ 6.26	2.80	$ 4,480
Options exercisable at December 31, 2018	39,000	$ 6.26	2.80	$ 4,480

	For the year ended December 31, 2017			
	Number of Shares	**Weighted Average Exercise Price per Share**	**Weighted Average Remaining Contractual Term (in years)**	**Aggregate Intrinsic Value**
Options outstanding at December 31, 2016	132,500	$ 6.15	4.50	$ —
Granted	—	$ —	—	$ —

Exercised	—	$	—	—	$ —
Expired	(22,000)	$	8.26	—	$ —
Forfeited	(24,750)	$	5.55	—	$ —
Options outstanding at December 31, 2017	85,750	$	5.78	4.00	$ —
Options exercisable at December 31, 2017	79,875	$	5.90	3.90	$ —

During the years ended December 31, 2018 and 2017, we recognized $1,000 and $17,000, respectively, of stock-based compensation related to stock options.

At December 31, 2018, there was no unrecognized stock option expense related to non-vested stock options.

The fair value of stock options granted under stock based compensation programs has been estimated as of the date of each grant using the multiple option form of the Black Scholes valuation model, based on the grant price and assumptions regarding the expected grant life, stock price volatility, dividends, and risk free interest rates. Each vesting period of an option award is valued separately, with this value being recognized evenly over the vesting period. No options were granted for the years ended December 31, 2018 and 2017.

Restricted Stock and Stock Awards

Restricted stock awards are granted under the 2014 Plan at the discretion of the Compensation Committee of our Board of Directors. We issue restricted stock awards to executive officers and key consultants. These awards may contain certain performance conditions or time-based vesting criteria. The restricted stock awards granted to executive officers vest if the various performance or time-based metrics are met. Stock-based compensation is recognized for the number of awards expected to vest at the end of the period and is expensed beginning on the grant date through the end of the vesting period. At the time of vesting, the recipients of common stock may request to receive a net of the number of shares required for employee withholding taxes, which can be withheld up to the relevant jurisdiction's maximum statutory rate. Stock awards granted to consultants are recognized over the performance period based on the stock price on the date when the consultant's performance is complete.

We also issue stock awards as a portion of the annual retainer for each director on a quarterly basis. The stock awards are fully vested at the time of issuance. Compensation expense related to stock awards is determined on the grant date based on the publicly-quoted fair market value of our common stock and is charged to earnings on the grant date.

The following table summarizes restricted stock award activity for 2018 and 2017:

	2018		**2017**	
	Number of Shares	Weighted Average Grant Date Fair Value	**Number of Shares**	**Weighted Average Grant Date Fair Value**
Awards outstanding at beginning of year	32,000	$ 2.95	—	$ —
Granted	85,619	$ 3.71	115,975	$ 3.08
Vested	(43,408)	$ 4.08	(83,975)	$ 3.13
Forfeited	(15,334)	$ 2.95	—	$ —
Awards outstanding at end of year	58,877	$ 3.22	32,000	$ 2.95

As of December 31, 2018, the total stock-based compensation expense related to non-vested awards not yet recognized was $136,000, which is expected to be recognized over a weighted average period of 2.2 years. During the years ended December 31, 2018 and 2017, we recognized $205,000 and $283,000, respectively, of stock-based compensation expense related to restricted stock awards.

12. INCOME PER COMMON SHARE

Net income per share is computed by dividing net income by the daily weighted average number of common shares outstanding during the applicable periods. Diluted net income per share includes the potentially dilutive effect of common shares subject to outstanding stock options and restricted stock awards using the treasury stock method. Under the treasury stock method, shares subject to certain outstanding stock options and restricted stock awards have been excluded from the diluted weighted average shares outstanding calculation because the exercise of those options or the vesting of those restricted stock awards would lead to a net reduction in common shares outstanding. As a result, stock options to acquire 37,058 and 103,681 weighted common shares have been excluded from the diluted weighted shares outstanding for the years ended December 31, 2018 and December 31, 2017, respectively.

A reconciliation of net income per share is as follows (in thousands, except per share data):

	Years ended December 31,	
	2018	**2017**
Numerator:		
Net income	$ 1,862	$ 2,078
Denominator:		
Weighted average common shares outstanding	5,204	5,128
Dilutive potential common shares	17	8
Shares used in diluted net income per common share calculations	5,221	5,136
Basic net income per common share	$ 0.36	$ 0.41
Diluted net income per common share	$ 0.36	$ 0.40

13. RESTRUCTURING AND EXIT ACTIVITIES

In the third quarter of 2018, we initiated the closure of the Bucharest, Romania office location, a sales office for Image Sensing Systems EMEA Limited. The Company will continue doing business in the European region utilizing its Barcelona, Spain sales office. As a result of the Romania closure, we incurred $144,000 of restructuring charges in 2018.

The following table shows the restructuring activity for 2018 (in thousands):

	Termination **Benefits**	Facility Costs **and Contract Termination**	**Total**
Balance at January 1, 2018	$ —	$ —	$ —
Charges	92	52	144
Settlements	(74)	(48)	(122)
Balance at December 31, 2018	$ 18	$ 4	$ 22

No restructuring charges were recorded in 2017.

In the third quarter of 2016, in order to streamline our operating and cost structure, we initiated the closure of our wholly-owned subsidiaries, Image Sensing Systems HK Limited (ISS HK) located in Hong Kong; Image Sensing Systems (Shenzhen) Limited (ISS WOFE) located in China; Image Sensing Systems Europe Limited (ISS Europe) located in the United Kingdom; Image Sensing Systems Europe Limited SP.Z.O.O (ISS Poland) located in Poland; and Image Sensing Systems Germany, GmbH (ISS Germany) located in Germany. At December 31, 2018, Image Sensing Systems Europe Limited and Image Sensing Systems Europe Limited SP.Z.O.O were fully closed. We incurred $3,000 and $31,000 of legal entity closure costs during 2018 and 2017, respectively.

14. SEGMENT INFORMATION

The Company's Chief Executive Officer and management regularly review financial information for the Company's discrete operating segments. Based on similarities in the economic characteristics, nature of products and services, production processes, type or class of customer served, method of distribution and regulatory environments, the operating segments have been aggregated for financial statement purposes and categorized into two reportable segments: Intersection and Highway.

Autoscope video is our machine-vision product line, and revenue consists of royalties (all of which are received from Econolite), as well as a portion of international product sales. Video products are normally sold in the Intersection segment. RTMS is our radar product line, and revenue consists of international and North American product sales. Radar products are normally sold in the Highway segment. All segment revenues are derived from external customers.

Operating expenses and total assets are not allocated to the segments for internal reporting purposes. Due to the changes in how we manage our business, we may reevaluate our segment definitions in the future.

The following tables set forth selected financial information for each of our reportable segments (in thousands):

	For the year ended December 31, 2018		
	Intersection	Highway	Total
Revenue	$ 10,052	$ 4,509	$ 14,561
Gross profit	9,168	2,607	11,775
Amortization of intangible assets	367	163	530
Intangible assets	2,110	1,207	3,317

	For the year ended December 31, 2017		
	Intersection	Highway	Total
Revenue	$ 10,109	$ 4,415	$ 14,524
Gross profit	9,048	2,551	11,599
Amortization of intangible assets	362	—	362
Intangible assets	2,477	1,008	3,485

We derived the following percentages of our net revenues from the following geographic regions:

	For the years ended December 31,	
	2018	2017
Asia Pacific	0%	1%
Europe	13%	16%
North America	87%	83%

No countries other than the United States had revenue in excess of 10% of our total revenue during any periods presented. The aggregate net book value of long lived assets held outside of the United States, not including intangible assets, was $27,000 and $98,000 at December 31, 2018 and 2017, respectively.

15. COMMITMENTS AND CONTINGENCIES

Operating Leases

We rent office space and equipment under operating lease agreements expiring at various dates through November 2022. Rent expense for office facilities remained consistent in 2018 at $574,000 when compared to the prior year. Minimum annual rental commitments under noncancelable operating leases are as follows (in thousands):

		Future Lease Payments
2019	$	247
2020		150
2021		10
2022		9
2023		—

Litigation

We are involved from time to time in various legal proceedings arising in the ordinary course of our business, including primarily commercial, product liability, employment and intellectual property claims. In accordance with GAAP, we record a liability in our Consolidated Financial Statements with respect to any of these matters when it is both probable that a liability has been incurred and the amount of the liability can be reasonably estimated. With respect to any currently pending legal proceedings, we have not established an estimated range of reasonably possible additional losses either because we believe that we have valid defenses to claims asserted against us or the proceeding has not advanced to a stage of discovery that would enable us to establish an estimate. We currently do not expect the outcome of these matters to have a material effect on our consolidated results of operations, financial position or cash flows. Litigation, however, is inherently unpredictable, and it is possible that the ultimate outcome of one or more claims asserted against us could adversely impact our results of operations, financial position or cash flows. We expense legal costs as incurred.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and

Shareholders of Image Sensing Systems, Inc.

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Image Sensing Systems, Inc. and subsidiaries (the "Company") as of December 31, 2018 and 2017, and the related consolidated statements of operations, comprehensive income, shareholders' equity, and cash flows for each of the years in the two-year period ended December 31, 2018, and the related notes (collectively referred to as the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the years in the two-year period ended December 31, 2018, in conformity with accounting principles generally accepted in the United States of America.

Change in Accounting Principle

As discussed in Note 1 to the consolidated financial statements, the Company has changed its method of accounting for revenue recognition in 2018 due to the adoption of Accounting Standards Codification Topic 606, *Revenue from Contracts with Customers.*

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting, 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.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Boulay PLLP

We have served as the Company's auditor since 2016.

Minneapolis, Minnesota

March 14, 2019

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Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure
None.

Item 9A. Controls and Procedures
Evaluation of disclosure controls and procedures

We maintain disclosure controls and procedures (as defined in Rules 13a 15(e) and 15d 15(e) under the Securities Exchange Act of 1934, as amended ("Exchange Act")), that are designed to reasonably ensure that information required to be disclosed by us in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the Securities and Exchange Commission and that such information is accumulated and communicated to our management, including our principal executive officer and principal financial officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure. Under the supervision and with the participation of our management, including our Chief Executive Officer and Interim Chief Financial Officer, we evaluated the effectiveness of the design and operation of our disclosure controls and procedures. Based upon that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that, as of the end of the period covered by this Annual Report on Form 10-K, our disclosure controls and procedures were effective.

Management's report on internal control over financial reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States of America. Our internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect our transactions and dispositions of our assets; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of the financial statements in accordance with generally accepted accounting principles in the United States of America and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

Internal control over financial reporting cannot provide absolute assurance of achieving financial reporting objectives because of its inherent limitations. Internal control over financial reporting is a process that involves human diligence and is subject to lapses in judgment or breakdowns resulting from human failures. Internal control over financial reporting also can be circumvented by collusion or improper management override. Because of such limitations, there is a risk that material misstatements may not be prevented or detected on a timely basis by internal control over financial reporting. However, these inherent limitations are known features of the financial reporting process. Therefore, it is possible to design into the process safeguards to reduce, although not eliminate, these risks.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect all misstatements. Further, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions or that the degree of compliance with the policies or procedures may deteriorate.

Management assessed the effectiveness of our internal control over financial reporting as of December 31, 2018. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in "Internal Control—Integrated Framework 2013". Based on this assessment, management has concluded that our internal control over financial reporting was effective as of December 31, 2018.

Changes in internal control over financial reporting

During the most recent fiscal quarter covered by this Annual Report on Form 10-K, there has been no change in our internal control over financial reporting (as defined in Rule 13a 15(f) and 15d 15(f) under the Exchange Act) that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

We have adopted a Code of Ethics which applies to our principal executive, accounting and financial officers. The Code of Ethics is published on our website at www.imagesensing.com. Any amendments to the Code of Ethics and waivers of the Code of Ethics for our principal executive, accounting and financial officers will be published on our website.

The sections entitled “Proposal 1 Election of Directors,” “Audit Committee” and “Section 16(a) Beneficial Ownership Reporting Compliance” in our definitive proxy statement for our 2019 annual meeting of shareholders are incorporated into this Annual Report on Form 10 K by reference.

Item 11. Executive Compensation

The sections entitled “Executive Compensation” and “Director Compensation - 2018” in our definitive proxy statement for the 2019 annual meeting of shareholders are incorporated into this Annual Report on Form 10 K by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Equity Compensation Plan Information

The following table provides information as of December 31, 2018 about our shares of common stock subject to outstanding awards or available for future awards under our equity compensation plans and arrangements.

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 the first column)(1)
Equity compensation plans approved by shareholders	39,000	$ 6.26	122,876

(1) The 122,876 shares available for grant under the 2014 Stock Option and Incentive Plan may become the subject of future awards in the form of stock options, stock appreciation rights, restricted stock, performance awards or other stock based awards.

The section entitled “Security Ownership of Certain Beneficial Owners and Management” in our definitive proxy statement for the 2019 annual meeting of shareholders is incorporated into this Annual Report on Form 10 K by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The section entitled “Certain Relationships and Related Transactions” in our definitive proxy statement for the 2019 annual meeting of shareholders is incorporated into this Annual Report on Form 10 K by reference.

Item 14. Principal Accountant Fees and Services

The sections entitled “Audit Fees,” “Audit Related Fees,” “Tax Fees,” “All Other Fees” and “Policy on Audit Committee Pre Approval of Audit and Permissible Non Audit Services Provided by Our Independent Registered Public Accounting Firm” in our definitive proxy statement for our 2019 annual meeting of shareholders are incorporated into this Annual Report on Form 10 K by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) Documents filed as part of this report:

1. *Financial statements*

The following Consolidated Financial Statements are included in Part II, Item 8. "Financial Statements and Supplementary Data":

Consolidated Balance Sheets as of December 31, 2018 and 2017

Consolidated Statements of Operations for the years ended December 31, 2018 and 2017

Consolidated Statements of Comprehensive Loss for the years ended December 31, 2018 and 2017

Consolidated Statements of Cash Flow for the years ended December 31, 2018 and 2017

Consolidated Statements of Shareholders' Equity for the years ended December 31, 2018 and 2017

Notes to Consolidated Financial Statements

Reports of Independent Registered Public Accounting Firms

2. *Financial Statement Schedules:*

All financial statement schedules have been omitted because they are not required.

3. *Exhibits Required to be Filed by Item 601 of Regulation S-K:*

The information called for by this item is incorporated herein by reference to the Exhibit Index in this Annual Report on Form 10-K.

Item 16. Form 10-K Summary

None.

Signatures

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Image Sensing Systems, Inc.

/s/ Chad A. Stelzig Date: March 14, 2019

Chad A. Stelzig

President and Chief Executive Officer

(Principal Executive Officer)

Each person whose signature to this Annual Report on Form 10 K appears below hereby constitutes and appoints Chad A. Stelzig and Todd C. Slawson, and each of them, as his true and lawful attorney in fact and agent, with full power of substitution, to sign on his behalf individually and in the capacity stated below and to perform any acts necessary to be done in order to file all amendments to this Annual Report on Form 10 K, and any and all instruments or documents filed as part of or in connection with this Annual Report on Form 10 K or any amendments hereto, and each of the undersigned does hereby ratify and confirm all that said attorney in fact and agent, or his substitutes, shall do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated:

/s/ Chad A. Stelzig Chad A. Stelzig President and Chief Executive Officer (Principal Executive Officer)	Date: March 14, 2019
/s/ Todd C. Slawson Todd C. Slawson Interim Chief Financial Officer (Interim Principal Financial Officer and Interim Principal Accounting Officer)	Date: March 14, 2019
/s/ Andrew T. Berger	

Andrew T. Berger Executive Chairman of the Board of Directors	Date: March 14, 2019
/s/ Paul F. Lidsky Paul F. Lidsky Director	Date: March 14, 2019
/s/ James W. Bracke James W. Bracke Director	Date: March 14, 2019
/s/ Geoffrey C. Davis Geoffrey C. Davis Director	Date: March 14, 2019
/s/ Joseph P. Daly Joseph P. Daly Director	Date: March 14, 2019

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Exhibit Index

Exhibit No.	Description
3(i).1***	Restated Articles of Incorporation of ISS, incorporated by reference to Exhibit 3.1 to ISS' Registration Statement on Form SB 2 (Registration No. 33 90298C) filed on March 15, 1995, as amended (Registration Statement).
3(i).2	Articles of Amendment to Articles of Incorporation of ISS, incorporated by reference to Exhibit 3.2 to ISS' Quarterly Report on Form 10 QSB for the quarter ended June 30, 2001 (File No. 0-26056).
3(i).3	Certificate of Designation amending the Articles of Incorporation of Image Sensing Systems, Inc. as filed with the Minnesota Secretary of State on June 6, 2013, incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K dated June 6, 2013 (File No. 0-26056).
3(ii)	Bylaws of ISS, incorporated by reference to Exhibit 3(ii) to ISS' Quarterly Report on Form 10-Q for the quarter ended September 30, 2011 (File No. 0-26056).
4.1***	Specimen form of ISS' common stock certificate, incorporated by reference to Exhibit 4.1 to ISS' Registration Statement.
4.2	Rights Agreement dated as of June 6, 2013, by and between ISS and Continental Stock Transfer & Trust Company, as rights agent, incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K dated June 6, 2013 (File No. 0-26056).
4.3	First Amendment to Rights Agreement dated as of August 23, 2016, by and between ISS and Continental Stock Transfer & Trust Company, as rights agent, incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K dated August 23, 2016 (File No. 0-26056).
4.4	Second Amendment to Rights Agreement dated as of March 12, 2018, by and between ISS and Continental Stock Transfer & Trust Company, as rights agent, incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K dated March 12, 2018 (File No. 0-26056).
10.1***	Form of Distributor Agreement, incorporated by reference to Exhibit 10.1 to ISS' Registration Statement.
10.2*	Benefit Agreement dated as of July 28, 2014 between ISS and Richard A. Ehrich incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K dated June 24, 2016 (File No. 0-26056).
10.3	Amendment VII to Office Lease Agreement dated April 26, 2007 by and between ISS and Spruce Tree Centre L.L.P., incorporated by reference to Exhibit 10.11 to ISS' Annual Report on Form 10 K for the year ended December 31, 2007 (File No. 0-26056) (2007 Form 10 K).
10.4	Modification to Manufacturing, Distributing and Technology License Agreement dated September 1, 2000 by and between ISS and Econolite Control Products, Inc. (Econolite), incorporated by reference to Exhibit 10.12 to ISS' 2007 Form 10 K.
10.5*	Image Sensing Systems, Inc. 2005 Stock Incentive Plan, incorporated by reference to Appendix A to ISS' proxy statement filed with the SEC on April 19, 2005 (File No. 0-26056).

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10.6***	Manufacturing, Distributing and Technology License Agreement dated June 11, 1991 by and between ISS and Econolite Control Products, Inc. (Econolite), incorporated by reference to Exhibit 10.1 to the Registration Statement.
10.7	Extension and Second Modification to License Agreement dated July 13, 2001 by and between ISS and Econolite, incorporated by reference to Exhibit 10.12 to ISS' Annual Report on Form 10 KSB for the year ended December 31, 2001 (File No. 0-26056) (2001 Form 10-KSB).
10.8	Office Lease Agreement dated November 24, 1998 by and between ISS and Spruce Tree Centre L.L.P., incorporated by reference to Exhibit 10.18 to ISS' Annual Report on Form 10 KSB for the year ended December 31, 1998 (File No. 0-26056).
10.9	Production Agreement dated February 14, 2002 by and among ISS, Wireless Technology, Inc. and Econolite, incorporated by reference to Exhibit 10.20 to ISS' 2001 Form 10 KSB.
10.10	Extension and Third Modification to Manufacturing Distributing and Technology License Agreement dated July 3, 2008 by and between ISS and Econolite, incorporated by reference to Exhibit 10.1 to ISS' Current Report on Form 8 K dated July 3, 2008 (File No. 0-26056).
10.11	Fourth Modification to Manufacturing, Distributing and Technology License Agreement dated as of December 15, 2011 by and between ISS and Econolite, incorporated by reference to Exhibit 10.1 to ISS' Current Report on Form 8-K dated December 15, 2011 (File No. 0-26056).
10.12	Lease dated February 1, 2010 between Image Sensing Systems UK Limited and Nortrust Nominees Limited, incorporated by reference to Exhibit 10.1 to ISS' Quarterly Report on Form 10 Q for the quarter ended June 30, 2010 (File No. 0-26056).
10.13**	Amendment XIII to Office Lease Agreement by and between Spruce Tree Centre L. L. P. and Image Sensing Systems dated as of February 18, 2014, incorporated by reference to Exhibit 10.26 to ISS' Annual Report on Form 10-K for the year ended December 31, 2013 (File No. 0-26056).
10.14	Commitment Letter effective as of May 12, 2014 by and between ISS and Alliance Bank, incorporated by reference to Exhibit 10.3 to ISS' March 31, 2014 Form 10-Q.
10.15	Security Agreement dated as of May 12, 2014 by and between ISS and Alliance Bank, incorporated by reference to Exhibit 10.4 to ISS' March 31, 2014 Form 10-Q.
10.16	Promissory Note dated as of May 12, 2014 in the original principal amount of $5,000,000 issued by ISS to Alliance Bank, incorporated by reference to Exhibit 10.5 to ISS' March 31, 2014 Form 10-Q.
10.17	Amendment to Commitment Letter dated as of March 16, 2015 by and between ISS and Alliance Bank, incorporated by reference to Exhibit 10.31 to ISS' Annual Report on Form 10-K for the year ended December 31, 2014.
10.18	Amendment to Promissory Note effective as of March 16, 2015 issued by ISS to Alliance Bank, incorporated by reference to Exhibit 10.32 to ISS' Annual Report on Form 10-K for the year ended December 31, 2014.

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10.19*	Image Sensing Systems, Inc. 2014 Stock Option and Incentive Plan, incorporated by references to Exhibit A to ISS' Proxy Statement dated April 17, 2014.
10.20*	Employment Agreement dated as of June 27, 2016 between ISS and Chad A. Stelzig, incorporated by reference to Exhibit 10.1 to ISS' Current Report on Form 8-K dated June 24, 2016 (File No. 0-26056).
10.21*	Employment Agreement dated as of September 2, 2016 by and between ISS and Richard Ehrich, incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K dated September 2, 2016 (File No. 000-26056).
16.1	Letter from Grant Thornton LLP dated July 12, 2016 to the Securities and Exchange Commission, incorporated by reference to Exhibit 16.1 to the Company's Current Report on Form 8-K dated July 10, 2016 (File No. 0-26056).
21	List of Subsidiaries of ISS (filed herewith).
23.1	Consent of Independent Registered Public Accounting Firm (filed herewith).
24	Power of Attorney (included on signature page).
31.1	Certification of Chief Executive Officer Pursuant to Section 302 of the Sarbanes Oxley Act of 2002 (filed herewith).
31.2	Certification of Interim Chief Financial Officer Pursuant to Section 302 of the Sarbanes Oxley Act of 2002 (filed herewith).
32.1	Certification of Chief Executive Officer Pursuant to Section 906 of the Sarbanes Oxley Act of 2002 (filed herewith).
32.2	Certification of Interim Chief Financial Officer Pursuant to Section 906 of the Sarbanes Oxley Act of 2002 (filed herewith).
99.1	Extension of Modification to Manufacturing, Distributing and Technology License Agreement dated May 31, 2002 by and between ISS and Econolite, incorporated by reference to Exhibit 99.2 to ISS' 2007 Form 10 K.
99.2	Letter agreement dated June 19, 1997 by and between ISS and Econolite, incorporated by reference to Exhibit 99.3 to ISS' 2007 Form 10 K.
99.3	License and Distribution Agreement dated January 2, 2011 by and among ISS, Econolite and Econolite Canada Inc., incorporated by reference to Exhibit 99.3 to ISS' Annual Report on Form 10-K for the year ended December 31, 2011 (File No. 0-26056).

* Management contract or compensatory plan or arrangement.

** Portions of this exhibit are treated as confidential pursuant to a request for confidential treatment filed by ISS with the SEC.

*** Paper filing

Copies of all exhibits not attached will be furnished without charge upon written request to the Company at the address set forth on the inside back cover page of this Annual Report on Form 10-K.

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