

KVH INDUSTRIES INC \DE\  
Form 10-K  
March 13, 2008  
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**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, 2007

**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 0-28082

**KVH Industries, Inc.**

*(Exact Name of Registrant as Specified in its Charter)*

**Delaware**

*(State or Other Jurisdiction of Incorporation or Organization)*

**05-0420589**

*(I.R.S. Employer Identification Number)*

**50 Enterprise Center, Middletown, RI 02842**

*(Address of Principal Executive Offices) (Zip Code)*

**(401) 847-3327**

*(Registrant's Telephone Number, Including Area Code)*

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

<u>Title of Each Class</u>	<u>Name of Each Exchange on Which Registered</u>
Common Stock, \$0.01 par value per share	The NASDAQ Global 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 Section 15(d) of the Exchange Act. **Yes**  **No**

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer

Accelerated filer

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Non-accelerated filer   
(Do not check if a smaller reporting company)

Smaller reporting company

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

As of June 29, 2007, the aggregate market value of the registrant's common stock held by non-affiliates of the registrant was \$122,024,675 based on the closing sale price of \$8.77 per share as reported on the NASDAQ Global Market.

As of March 10, 2008, the registrant had 14,590,116 shares of common stock outstanding.

**DOCUMENTS INCORPORATED BY REFERENCE**

Portions of the registrant's Proxy Statement relating to its 2008 Annual Meeting of Stockholders are incorporated herein by reference in Part III.

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**PART I**

**ITEM 1. Business**

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**Cautionary Statement Regarding Forward-Looking Information**

In addition to historical facts, this annual report contains forward-looking statements. Forward-looking statements are merely our current predictions of future events. These statements are inherently uncertain, and actual events could differ materially from our predictions. Important factors that could cause actual events to vary from our predictions include those discussed in this annual report under the headings "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations", and "Item 1A. Risk Factors." We assume no obligation to update our forward-looking statements to reflect new information or developments. We urge readers to review carefully the risk factors described in this annual report and in the other documents that we file with the Securities and Exchange Commission. You can read these documents at [www.sec.gov](http://www.sec.gov).

**Additional Information Available**

Our principal Internet address is [www.kvh.com](http://www.kvh.com). Our website provides a hyperlink to a third-party website through which our annual, quarterly, and current reports, as well as amendments to those reports, are available free of charge. We believe these reports are made available as soon as reasonably practicable after we electronically file them with, or furnish them to, the SEC. We do not provide any information regarding our SEC filings directly to the third-party website, and we do not check its accuracy or completeness.

**Introduction**

We develop, manufacture and market mobile communications products for the land and marine markets, and navigation, guidance and stabilization products for defense and commercial markets. Our expertise in mobile satellite antenna, digital compass and fiber optic gyro technologies has enabled us to lower the cost, decrease the size and improve the performance of our products. Our research and development, manufacturing and quality control capabilities have enabled us to meet the demanding standards of our military, consumer and commercial customers for performance and reliability. This combination of factors has allowed us to create products offering important differentiating advantages to our customers.

We are a leading provider of mobile communications products, such as our TracVision and TracPhone systems, that enable customers to receive live digital television, telephone and Internet services in their vehicles, vessels and airplanes while in motion via satellite services. We sell our mobile communications products through an extensive international network of distributors and retailers worldwide. In February 2008, we entered the aviation market with a development and production contract for a satellite TV antenna that will be sold on an OEM basis to a leading provider of entertainment systems on commercial aircraft. We anticipate the first products developed under this contract will be delivered in late 2008, for use on domestic narrow body commercial airliners.

Our guidance and stabilization products include tactical navigation systems for a broad range of military vehicles and precision fiber optic gyro-based systems that help stabilize platforms, such as gun turrets, remote weapon stations turrets, and radar units, and provide guidance for munitions. In addition, we are continuing to investigate opportunities to apply our mobile communications expertise to military applications that require affordable, high-bandwidth mobile connections. We sell our guidance and stabilization products directly to U.S. and allied governments and government contractors, as well as through an international network of authorized independent sales representatives. Our fiber optic products are also used in such commercial applications as train track geometry measurement systems, industrial robotics, optical stabilization, autonomous vehicles, and undersea remotely operated submersibles.

## **Our Solutions**

### *Mobile Communications*

We believe that there is an increasing demand for mobile access to television and the Internet on the move. Our objective is to connect mobile users to the satellite TV, communications, and Internet services they wish to

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use, primarily by utilizing satellite broadcasts. We have developed a comprehensive family of products marketed under the TracVision and TracPhone brand names to address the unique needs of our communications markets. Our products use sophisticated robotics, stabilization and control software, sensing technologies, transceiver integration, and advanced antenna designs to offer the following benefits:

*Consistent and reliable mobile satellite communications.* Our mobile satellite communications products can automatically search for, identify and point directly at the satellite, whether a vehicle or vessel is in motion or stationary. Our antennas use gyros and inclinometers to measure the pitch, roll and yaw of an antenna platform in relation to the earth. Microprocessors and our proprietary stabilization and control software use that data to compute the antenna movement necessary for the antenna's motors to point the antenna properly and maintain contact with the satellite. If an obstruction temporarily blocks the satellite signal, our products continue to track the satellite's location according to the movement of the antenna in order to carry out automatic, rapid reacquisition of the signal when a direct line of sight to the satellite is restored.

*Wide range of products for the mobile user.* We provide mobile communications products for a variety of vehicles in the land mobile market, which includes luxury motor coaches, buses, recreational vehicles, trucks, and automobiles, as well as a variety of vessels in the marine market, which includes commercial shipping vessels, commercial fishing vessels, merchant ships, and yachts. We developed our earliest products for the luxury yacht market and have succeeded in reducing the size and cost of our products for introduction into the land market. Initially we focused on larger vehicles like motor coaches, but we subsequently added support for passenger vehicles. Our TracVision A7 brings satellite television to automobiles using a patented, low-profile antenna system that currently provides in-motion satellite television in most of the continental United States using the DIRECTV service and an in-vehicle receiver developed in collaboration with DIRECTV. Our entry into the automotive arena was facilitated by our hybrid phased-array antenna technology. We are currently investigating opportunities to transfer our commercial mobile satellite antenna technology into military applications, including small, affordable, high-bandwidth antennas suitable for military vehicles. We recently entered the aviation market with a development and production contract for a satellite TV antenna that will be sold on an OEM basis to a leading provider of entertainment systems on commercial aircraft.

*Access to mobile, two-way Internet, e-mail, and voice communication.* We currently support global broadband Internet access in the marine marketplace through the use of our TracPhone satellite communication antennas and the Inmarsat, SES AMERICOM, and Eutelsat satellite services. In October 2007, we began shipping our TracPhone V7, a 24 inch diameter maritime satellite communication system, that uses the new mini-VSAT Broadband airtime service. The system and service utilize spread spectrum technology developed by ViaSat. The resulting efficiencies allow the antenna to be 85% smaller by volume and 75% lighter than existing 1 meter VSAT antennas. In addition, mariners are able to use Internet data connections with ship-to-shore data rates as fast as 512 kilobits per second and shore-to-ship data rates as fast as 2 megabits per second. Service is currently offered in the Americas, Caribbean, North Atlantic, and Europe.

*Commitment to customer support.* Our Certified Support Network (CSN) offers our TracVision and TracPhone customers an international network of skilled technical dealers and support centers in many locations where our customers are likely to travel. We have selected distributors based on their technical expertise, professionalism and commitment to quality and regularly provide them with extensive training in the sale, installation and support of our products.

## ***Guidance and Stabilization***

We offer a portfolio of digital compass and fiber optic gyro-based systems that address the rigorous requirements of military customers for precision navigation, guidance and stabilization. Our systems offer:

*Reliable, continuously available navigation and guidance.* Our systems provide an unjammable source of reliable, easy-to-use and continuously available navigation and pointing data. For example, our fiber optic gyro-based



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inertial measurement unit product (IMU) enhances the accuracy of guided underwater munitions. This IMU, along with our core fiber optic technology, also has potential commercial and industrial applications. Our TACNAV system can tell a vehicle driver in which direction to steer to reach a certain target, how much farther to the destination, and whether or not the vehicle is on course. Because our digital compass products measure the earth's magnetic field rather than detect satellite signals from the global positioning system (GPS), they are not susceptible to GPS jamming devices.

*Compatibility with a wide range of vehicles and platforms.* We offer several fiber optic gyro-based products that support stabilization applications, such as stabilization of remote weapons stations turrets, optical targeting systems, radar and communication antennas in both the military and commercial markets. We also offer variants of our TACNAV system using both our fiber optic gyros and digital compasses, providing low-cost, integrated tactical navigation solutions for military vehicles ranging from tactical trucks to combat vehicles. TACNAV systems address the varying operational requirements of different vehicles, such as turret pointing on a tank and vehicle navigation on a combat support vehicle.

*Integration and aggregation of data from on-board systems.* Our navigation systems function as standalone tools and also aggregate, integrate and communicate critical information from a variety of on-board systems. TACNAV can receive data from systems such as the vehicle's odometer, military and commercial GPS devices, laser rangefinders, turret angle indicators and laser warning systems. TACNAV can also output this data to an on-board computer for retransmission through the vehicle's communications systems to a digital battlefield management application. We have also previously demonstrated to the U.S. Army an early prototype of a new TACNAV system that successfully combined TACNAV with satellite communication technology, potentially enabling TACNAV to communicate directly with digital battlefield management applications.

## **Our Products**

We offer a broad array of products to address the needs of a variety of customers in the markets for mobile communications and defense navigation, guidance and stabilization.

### ***Mobile Communications Products***

Our mobile communications products include our TracVision and TracPhone products, which provide satellite television and voice, fax, data and Internet communications to customers in the land mobile and marine markets.

*Land.* We design, manufacture, and sell a range of TracVision satellite TV antenna systems for use on a broad array of vehicles, including recreational vehicles, trucks, conversion vans, and automobiles.

In the RV/truck market, we offer a line-up of our TracVision satellite TV products, including products intended for both stationary and in-motion use. Our RV product line, known as the TracVision SlimLine series, offer automatic satellite switching and integrated compatibility with the international DVB (Digital Video Broadcast) standard. The 12.5 inch high in-motion TracVision R5SL and stationary automatic TracVision R4SL, which began shipping in March 2007, use an elliptical parabolic antenna to reduce the antenna's profile to address height restrictions on the road. The in-motion 12.5 inch high TracVision R6, which began shipping in April 2006, is the flagship product of our RV-specific offerings. This system incorporates a number of innovations, including a high-efficiency antenna, integrated GPS for faster satellite

acquisition, and our DewShield electronic dew elimination technology. In addition to sales through aftermarket dealers, we sell our TracVision products to original equipment manufacturers for factory installation on new vehicles. Each of these systems works with a range of service providers, including DIRECTV, DISH Network, and other regional service providers. Although initially designed for automotive applications, the TracVision A7 is now also sold within the RV marketplace to provide access to DIRECTV programming in in-motion applications and for vehicles with height restrictions that could prevent them from safely using a satellite TV antenna based on parabolic technology, and/or where the accumulation of moisture on the outer surface of the antenna's radome is not a concern.

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The innovative TracVision A7 uses hybrid phased-array antenna technology to provide in-motion reception of satellite TV programming in the continental United States using the DIRECTV service. Our TracVision A7 product includes a mobile satellite television antenna and an integrated 12V mobile DIRECTV receiver designed specifically for the automotive environment by KVH and DIRECTV to convert the satellite signal into a video stream. The TracVision A7 stands approximately five inches high and mounts either to a vehicle's roof rack or directly to the vehicle's roof, making it practical for use aboard minivans, SUVs and other passenger vehicles. The TracVision A7 is also popular for tall motor coaches and buses. The antenna's hybrid phased-array technology integrates 260 small antenna elements across a flat surface, mechanically rotates that surface and bends the satellite signal so that the broadcast energy strikes each of the individual elements at closer to a perpendicular angle. The separate signals from each small antenna element are then combined to create a single data stream. Automotive customers subscribe to DIRECTV's TOTAL CHOICE MOBILE satellite TV programming package, which is specifically promoted for automotive applications. Local channels and network programming are also available for the first time as an option for TracVision A7 users as a result of the system's integrated GPS and new mobile receiver. At this time, we are the only company authorized by DIRECTV to sell, promote, and activate mobile users for the TOTAL CHOICE MOBILE programming package.

*Marine.* In the marine market, we offer a range of mobile satellite TV and communications products. Our marine TracVision satellite TV antennas vary in size from a lower-profile elliptical parabolic system similar to those offered for use on RVs to the 14.5 inch TracVision M3, 18 inch TracVision M5, 24 inch TracVision M7, and 32 inch diameter TracVision M9, each of which employs a high-efficiency round antenna. Each of these products is compatible with HDTV programming as well as high-powered regional satellite TV services.

Our TracPhone products provide in-motion access to global satellite communications. Several of our products are compatible with Inmarsat, a satellite service provider that supports links for phone, fax and data communications as fast as 432 Kbps, or kilobits per second. The TracPhone F33, F55, F77, FB250 and FB500 antennas use the Inmarsat Fleet and Fleet Broadband service to offer voice as well as high-speed Internet service, while our TracPhone 252 antenna offers lower-cost voice and low-speed data services via the Inmarsat mini-M service. The TracPhone F33, F55, F77, FB250 and FB500 are manufactured by Thrane & Thrane A/S of Denmark and distributed exclusively by us in North America under the KVH TracPhone brand and distributed in other markets on a non-exclusive basis.

*Broadband Internet.* In addition to the global voice and data access offered by our Inmarsat-compatible TracPhone systems, we have also introduced a new maritime communications product, the TracPhone V7, and supporting airtime service, mini-VSAT Broadband. The TracPhone V7 is a 24 inch diameter maritime satellite communication system that is 85% smaller by volume and 75% lighter than competing 1 meter VSAT systems for vessels. This smaller size is possible due to the use of spread spectrum technology developed by ViaSat and integrated into the TracPhone system and network hubs. This spread spectrum approach reduces the broadcast power requirements and the pointing accuracy necessary to track the high-bandwidth Ku-band satellites that carry the service.

The high bandwidth offered by the Ku-band satellites also permits faster data rates than those supported by Inmarsat's L-band satellites. TracPhone V7 subscribers may select service packages with Internet data connections offering ship-to-shore data rates as fast as 512 kilobits per second and shore-to-ship data rates as fast as 2 megabits per second. In addition, subscriptions also include two Voice over Internet Protocol (VoIP) telephone lines optimized for use over satellite connections. Service is currently offered in the Americas, Caribbean, North Atlantic, and Europe. Our goal is to ultimately support vessels in the Pacific Ocean, throughout Asia, the Indian Ocean, including shipping routes to the Persian Gulf, and the Middle East by collaborating with satellite providers, such as SES AMERICOM, Eutelsat, and others.

The TracPhone V7 also offers a different business model for KVH. Unlike our Inmarsat-compatible products, where we purchase airtime from a distributor and resell it to our customers, we control the mini-VSAT Broadband service. As a result, we generate revenue from hardware sales as well as recurring monthly revenue

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derived from subscription packages. We offer both fixed-rate, all you can eat subscription packages ranging from \$1,200 to \$5,000 per month and per-megabyte service plans that we believe are significantly more affordable than competing legacy VSAT and Inmarsat offerings.

### ***Guidance and Stabilization Products***

Our guidance and stabilization products include our inertial measurement unit for precision guidance of torpedoes and unmanned aerial vehicles, fiber optic gyros for tactical navigation and stabilization, and digital compasses for tactical navigation.

Our fiber optic gyro products use an all-fiber design without moving parts, which provides precision, accuracy and durability. Fiber optic gyros can be used for precision tactical navigation systems for military vehicles for stabilizing remote weapons stations, antennas, radar, optical devices or turrets, and image stabilization and synchronization for shoulder- or tripod-mounted weapon simulators. Our fiber optic products also support a broad range of commercial and industrial applications.

Our TACNAV digital compass products have been sold for use aboard U.S. Army, Marine Corps, and Navy vehicles as well as to many allied countries, including Australia, the United Kingdom, Canada, Germany, Italy, New Zealand, Saudi Arabia, Spain, Sweden, Taiwan, Malaysia and Switzerland. We believe that we are among the leading manufacturers of such systems. Our standard TACNAV products can be customized to our customers' specifications. At customer request, we offer training and other services on a time-and-materials basis.

*Guidance and Stabilization.* Our TG-6000 Inertial Measurement Unit, introduced in October 2003, is a guidance system that provides precise measurement of motion and acceleration in three dimensions. It uses a three-axis configuration of our high-performance DSP-based (digital signal processing) fiber optic gyros integrated with three accelerometers. We believe that this configuration provides outstanding performance, high reliability, low maintenance and easy system integration. The TG-6000 IMU is in full production as a component in the U.S. Navy's MK54 lightweight torpedo and is suitable for use in other applications that involve flight control, orientation, instrumentation and navigation, such as unmanned aerial vehicles.

Our open-loop DSP-3000 and DSP-4000 fiber optic gyros provide tactical-grade precision measurement of the rate and angle of a platform's turning motion for significantly less cost than competing closed-loop gyros. These DSP-based products deliver performance superior to analog signal processing devices, which experience greater temperature-sensitive drift and rotation errors. Applications for these products include inertial measurement units, integrated navigation systems, attitude/heading/reference systems, and stabilization of antenna, radar and optical equipment.

The DSP-3000 is slightly larger than a deck of cards and offers a variety of interface options to support a range of applications. High-performance 2-axis and 3-axis configurations can be realized by integrating multiple DSP-3000 units. Currently, the DSP-3000 is used in an array of pointing and stabilization applications, including the U.S. Army's Common Remotely Operated Weapon Station (CROWS) to provide the image and gun stabilization necessary to ensure that the weapon remains aimed at its target. More than 20 other companies are apparently developing stabilized remote weapons stations that we believe will require similar fiber optic gyro stabilization capabilities. The larger, militarized DSP-4000 uses the core DSP-3000 technology in 2-axis configurations and is designed for use in high-shock and highly dynamic environments, such as gun turret stabilization. Our fiber optic products are also used in numerous commercial applications, such as train location control and track geometry measurement systems, industrial robotics, optical stabilization, autonomous vehicles, and undersea remotely operated submersibles.

*Tactical Navigation.* Our TACNAV tactical navigation product line employ digital compass sensors and KVH fiber optic gyros to offer vehicle-based navigation and pointing systems with a range of capabilities, including GPS backup and enhancement, vehicle position, hull azimuth and navigation displays. The systems

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vary in size and complexity to suit a wide range of vehicles. The TACNAV M100 GMENS, which is sold outside the United States under the name TACNAV Light, is a low-cost, digital compass-based battlefield navigation system specifically designed for non-turreted vehicles, such as high mobility multi-wheeled vehicles (HMMWVs) and trucks. Turreted vehicles, including reconnaissance vehicles, armored personnel carriers and light armored vehicles, are supported by the TACNAV TLS, a digital compass-based tactical navigation and targeting system that offers a fiber optic gyro upgrade for enhanced accuracy. We also manufacture the TACNAV II Fiber Gyro Navigation system, which offers a compact design, continuous output of heading and pointing data, and a flexible architecture that allows it to function as either a stand-alone navigation module or as the central component of an expanded, multifunctional navigation system.

## **Sales and Marketing**

Our sales and marketing efforts target markets that are substantial and require dedicated dealers and distributors to reach end customers. These channels vary from time to time, but currently include targeted efforts to reach the RV and high-end automotive markets, the leisure and commercial maritime markets, and the industrial and government markets. We believe our brands are well known and well respected by consumers within their respective niches. These brands include:

TracVision satellite television systems for vessels and vehicles

TracPhone two-way satellite communications systems

TracNet broadband Internet systems using hybrid satellite/cellular transmit/return links

Azimuth digital compass for powerboats

Sailcomp digital compass for sailboats

DataScope handheld digital compass/rangefinder

TACNAV tactical navigation systems for military vehicles

Our fiber optic gyros and digital compass sensors use an alphanumeric model numbering sequence such as C-100, DSP-3000, DSP-4000, and TG-6000 IMU.

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We sell our mobile satellite communications products through an international network of independent retailers, chain stores and distributors, as well as to manufacturers of vessels and vehicles. We currently market and sell the TracVision A7 in the continental United States through consumer electronic chain stores and a large number of retailers specializing in automotive electronics, as well as a variety of specialty distributors of automotive after-market products and auto dealership expeditors. We intend to continue the consideration of opportunities to expand our distribution network to include additional retailers and distributors in the continental United States.

Our European sales subsidiary located in Denmark, KVH Europe A/S, coordinates our sales, marketing and support efforts for our mobile satellite communications products in Europe, the Middle East, Africa, and Asia.

We sell our guidance and stabilization products directly to U.S. and allied governments and government contractors, as well as through an international network of authorized independent sales representatives. This same network also sells our fiber optic products to commercial/industrial entities.

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### **Backlog**

Our backlog was approximately \$9.1 million on December 31, 2007, \$5.6 million on December 31, 2006, and \$9.5 million on December 31, 2005.

Backlog consists of orders evidenced by written agreements and specified delivery dates for customers who are acceptable credit risks. Military orders included in backlog are generally subject to cancellation for the convenience of the customer. When orders are cancelled, we generally recover actual costs incurred through the date of cancellation and the costs resulting from termination. Individual orders for guidance and stabilization products are often large and may require procurement of specialized long-lead components and allocation of manufacturing resources. The complexity of planning and executing larger orders requires customers to order well in advance of the required delivery date, resulting in backlog.

Backlog is not a meaningful indicator for predicting revenue in future periods. Commercial resellers for our mobile satellite communications products and legacy products do not carry extensive inventories and rely on us to ship products quickly. Generally due to the rapid delivery of our commercial products, our backlog for those products is not significant.

### **Intellectual Property**

Our ability to compete effectively depends to a significant extent on our ability to protect our proprietary information. We rely primarily on patents and trade secret laws, confidentiality procedures and licensing arrangements to protect our intellectual property rights. We own more than 50 U.S. and foreign patents and have additional patent applications that are currently pending. In January 2006, we entered into a licensing agreement with Litton Systems, Inc., a wholly owned subsidiary of Northrop Grumman Systems Corporation, with respect to certain of its fiber optic gyroscope-related patents. We also register our trademarks in the United States and other key markets where we do business. Our patents and trademarks will expire at various dates between May 2008 and July 2028. We enter into confidentiality agreements with our consultants, key employees and sales representatives, and maintain controls over access to and distribution of our technology, software and other proprietary information. The steps we have taken to protect our technology may be inadequate to prevent others from using what we regard as our technology to compete with us.

We do not generally conduct exhaustive patent searches to determine whether the technology used in our products infringes patents held by third parties. In addition, product development is inherently uncertain in a rapidly evolving technological environment in which there may be numerous patent applications pending, many of which are confidential when filed, with regard to similar technologies.

From time to time, we have faced claims by third parties that our products or technologies infringe their patents or other intellectual property rights, and we may face similar claims in the future. Any claim of infringement could cause us to incur substantial costs defending against the claim, even if the claim is invalid, and could distract the attention of our management. If any of our products is found to violate third-party proprietary rights, we may be required to pay substantial damages. In addition, we may be required to re-engineer our products or seek to obtain licenses from third parties to continue to offer our products. Any efforts to re-engineer our products or obtain licenses on commercially reasonable terms may not be successful, which would prevent us from selling our products, and, in any case, could substantially increase our costs and have a material adverse effect on our business, financial condition and results of operations.



**Manufacturing**

Manufacturing operations for our mobile satellite communications and navigation products consist of light manufacture, final assembly and testing. Manufacturing operations for our fiber optic gyro products are more complex. We produce specialized optical fiber, fiber optic components and sensing coils and combine them with

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components purchased from outside vendors for assembly into finished goods. We own optical fiber drawing towers where we produce the specialized optical fiber that we use in all of our fiber optic products. We manufacture our mobile satellite communications products at our headquarters in Middletown, Rhode Island, and utilize a nearby leased facility for warehousing and distribution purposes. We manufacture our navigation and fiber optic gyro products in a leased facility located in Tinley Park, Illinois.

We contract with third parties for fabrication and assembly of printed circuit boards, injection-molded plastic parts, machined metal components, connectors and housings. We believe there are a number of acceptable vendors for the components we purchase. We regularly evaluate both domestic and foreign suppliers for quality, dependability and cost effectiveness. In some instances we utilize sole-source suppliers to develop strategic relationships to enhance the quality of materials and save costs. Our manufacturing processes are controlled by an ISO 9001:2000-certified quality standards program.

## **Competition**

We encounter significant competition in all of our markets, and we expect this competition to intensify in the future. Many of our primary competitors are well-established companies and some have substantially greater financial, managerial, technical, marketing, operational and other resources than we do.

In the market for mobile satellite communications products, we compete with a variety of companies. We believe the principal competitive factors in this market are product size, design, performance, reliability, and price. In the recreational vehicle markets, we compete primarily with King Controls, TracStar Systems, Inc., MotoSAT, and Winegard Company.

Our TracVision A7 and our original TracVision A5 were the first commercially available, low-profile mobile satellite TV antenna for use on minivans, SUVs and other passenger vehicles. At this time, we are not aware of any competing products in full production and available for widespread sale to consumers. A number of other companies have from time to time announced that they intend to compete in this market, including: RaySat, Winegard, Sirius Satellite Radio, and certain other suppliers of automotive parts.

In the marine market for satellite TV equipment, we compete primarily with NaviSystem Marine Electronics Systems Srl, King Controls, Sea Tel, Inc., Intellian, and Raymarine. In the marine market for telephone, fax, data and Internet communications equipment and services, we compete with Thrane & Thrane A/S, Furuno Electric Co., Ltd., Globalstar LP, Iridium Satellite LLC, and Japan Radio Company. We also face competition from providers of marine satellite data services and maritime VSAT solutions, including SeaMobile, CapRock, Schlumberger, Ship Equip, Vizada, Stratos, and Sea Tel.

Foreign competition for our mobile satellite communications products has continued to intensify, most notably from companies based in South Korea that seek to compete primarily on price. We anticipate that this trend will continue.

In the guidance and stabilization markets, we compete primarily with Honeywell International Inc., Kearfott Guidance & Navigation Corporation, Leica Microsystems AG, Northrop Grumman Corporation and Smiths Group plc. We believe the principal competitive factors in these markets are performance, size, reliability, durability and price.

**Research and Development**

Focused investments in research and development are critical to our future growth and competitive position in the marketplace. Our research and development efforts are directly related to timely development of new and enhanced products that are central to our core business strategy. The industries in which we compete are subject to rapid technological developments, evolving industry standards, changes in customer requirements, and new

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product introductions and enhancements. As a result, our success depends in part upon our ability, on a cost-effective and timely basis, to continue to enhance our existing products and to develop and introduce new products that improve performance and meet customers' operational and cost requirements. Our current research and development efforts include projects to achieve additional cost reductions in our products and the development of new products for our existing marine and land mobile communications markets, and navigation, guidance and stabilization application markets.

Our research and development activities consist of projects funded by us, projects funded with the assistance of Small Business Innovative Research (SBIR) grants, and customer-funded contract research. SBIR projects are generally directed towards the discovery of specific information requested by the government research sponsor. Many of these grants have enhanced our technologies, resulting in new or improved product offerings. Our customer-funded research efforts are made up of contracts with defense and OEM customers, whose performance specifications are unique to their product applications. Defense and OEM research often results in new product offerings. We strive to be the first company to bring a new product to market, and we use our own funds to accelerate new product development efforts.

## **Government Regulation**

Our manufacturing operations are subject to various laws governing the protection of the environment and our employees. These laws and regulations are subject to change, and any such change may require us to improve our technologies, incur expenditures, or both, in order to comply with such laws and regulations.

We are subject to compliance with the U.S. Export Administration Regulations. Some of our products have military or strategic applications, and are on the Munitions List of the U.S. International Traffic in Arms Regulations. These products require an individual validated license to be exported to certain jurisdictions. The length of time involved in the licensing process varies and can result in delays of the shipping of the products. Sales of our products to either the U.S. government or its prime contractors are subject to the U.S. Federal Acquisition Regulations.

We are also subject to the laws and regulations of the various foreign jurisdictions in which we offer and sell our products, including those of the European Union.

## **Employees**

On December 31, 2007, we employed 314 full-time employees. We also employ temporary or contract personnel, when necessary, to provide short-term and/or specialized support for production and other functional projects.

We believe our future success will depend upon the continued service of our key technical and senior management personnel and upon our continued ability to attract and retain highly qualified technical and managerial personnel. None of our employees is represented by a labor union. We have never experienced a work stoppage and consider our relationship with our employees to be good.

## **ITEM 1A. Risk Factors**

*An investment in our common stock involves a high degree of risk. You should carefully consider the following risk factors in evaluating our business. If any of these risks, or other risks not presently known to us or that we currently believe are not significant, develops into an actual event, then our business, financial condition and results of operations could be adversely affected. If that happens, the market price of our common stock could decline.*

**We have a history of variable operating results and may not be profitable in the future.**

Although we generated net income during 2005, 2006, and 2007 and in fifteen of the last twenty fiscal quarters, we incurred net losses of \$6.1 million in 2004 and at times our profitability has fluctuated significantly on both a sequential and comparable quarter-to-quarter basis during 2006 and 2007. As of December 31, 2007, we had an accumulated deficit of \$8.3 million.

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### **Shifts in our product sales mix toward our mobile communications products may continue to reduce our overall gross margins.**

Our mobile communications products historically have had lower product gross margins than our guidance and stabilization products. During 2006 and 2007, sales of our guidance and stabilization products either declined or grew at a substantially lower rate than our overall sales growth. A continuing shift in our product sales mix toward mobile communications products would likely cause lower gross margins in the future.

### **Competition may limit our ability to sell our mobile communications products and guidance and stabilization products.**

The mobile communications markets and defense navigation, guidance and stabilization markets in which we participate are very competitive, and we expect this competition to persist and intensify in the future. We may not be able to compete successfully against current and future competitors, which could impair our ability to sell our products. For example, improvements in the performance of lower cost gyros could potentially jeopardize sales of our fiber optic gyros.

In the guidance and stabilization markets, we compete primarily with Honeywell International Inc., Kearfott Guidance & Navigation Corporation, Northrop Grumman Corporation, Smiths Group plc, Tamam, and Fizoptica.

In the market for land mobile satellite TV equipment, we compete with King Controls, MotoSAT, TracStar Systems, Inc., Winegard Company, and Sirius Satellite Radio.

In the market for marine satellite TV equipment, we compete with NaviSystem Marine Electronic Systems Srl, King Controls, Sea Tel, Inc., Raymarine, and Intellian. In the market for maritime broadband service we compete with SeaMobile, CapRock, Schlumberger, Thrane & Thrane A/S, Ship Equip, Vizada, Stratos, and Sea Tel. In the marine market for satellite communications equipment, we compete with Sea Tel, Inc., Furuno Electric Co., Ltd., Globalstar LP, Iridium Satellite LLC, EMS and Japan Radio Company.

Among the factors that may affect our ability to compete in our markets are the following:

many of our primary competitors are well-established companies that could have substantially greater financial, managerial, technical, marketing, personnel and other resources than we do;

product improvements, new product developments or price reductions by competitors may weaken customer acceptance of, and reduce demand for, our products;

new technology or market trends may disrupt or displace a need for our products; and

our competitors may have lower production costs than we do, which may enable them to compete more aggressively in offering discounts and other promotions.

**The emergence of a competing small maritime VSAT antenna and complementary service or other, similar service could reduce the competitive advantage we believe we currently enjoy with our new 24 inch diameter TracPhone V7 antenna and integrated mini-VSAT Broadband service.**

Our TracPhone V7 system offers customers a range of benefits due to its integrated design, hardware costs that are lower than existing maritime VSAT systems, and spread spectrum technology. We anticipate competition from companies like Sea Tel and MTN, both of which have recently announced similar systems and service. We also compete against companies like Sea Tel that offer established maritime VSAT service using antennas 1 meter in diameter or larger. In addition other companies could replicate the distinguishing features of our TracPhone V7, which could potentially reduce the appeal of our solution and adversely affect sales. Moreover, consumers may choose other services such as Inmarsat Fleet or FleetBroadband for their global service coverage and potentially lower hardware costs despite higher service costs and slower data rates.

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**Our ability to compete in the maritime airtime services market may be impaired if we are unable to expand the coverage of our mini-VSAT Broadband service to new regions.**

The TracPhone V7 and mini-VSAT Broadband service offer a range of benefits to mariners, especially in commercial markets, due to the smaller size antenna and faster, more affordable airtime. However, to support these customers, we need to expand the coverage areas of the mini-VSAT Broadband service, which is currently offered in parts of North, South, and Central America; the Caribbean; North Atlantic; and Europe. If we are unable to reach agreement with third-party satellite providers to support the mini-VSAT Broadband service and its spread spectrum technology, our ability to support vessels in the Pacific Ocean; throughout Asia; the Indian Ocean, including shipping routes to the Persian Gulf; and the Middle East will be at risk and reduce the attractiveness of the product and service to these customers.

**Customers for our fiber optic gyro products and TACNAV include the U.S. military and foreign governments, whose purchasing and delivery schedules and priorities are often unpredictable.**

We sell our fiber optic gyro systems as well as vehicle navigation products to U.S. and foreign military and government customers, either directly or as a subcontractor to other manufacturers. These customers often use a competitive bidding process and have unique purchasing and delivery requirements, which often makes the timing of sales to these customers unpredictable. Factors that affect their purchasing and delivery decisions include:

changes in modernization plans for military equipment;

changes in tactical navigation requirements;

global conflicts impacting troop deployment;

priorities for current battlefield operations;

allocation of funding for military programs;

new military and operational doctrines that affect military equipment needs;

sales cycles that are long and difficult to predict;

shifting response time and/or delays in the approval process associated with the export licenses we must obtain prior to the international shipment of certain of our military products;

delays in military procurement schedules; and



delays in the testing and acceptance of our products, including delays resulting from changes in customer specifications.

These factors can cause substantial fluctuations in sales of fiber optic gyros and TACNAV products from period to period. For example, sales of our TACNAV products declined from 2005 to 2006 and again from 2006 to 2007. Moreover, government customers and their contractors can generally cancel orders for our products for convenience or decline to exercise previously disclosed contract options. Even under firm orders with government customers, funding must usually be appropriated in the budget process in order for the government to complete the contract. The cancellation of or failure to fund orders for our products could substantially reduce our net sales and results of operations.

**Sales of our fiber optic gyro systems and TACNAV products generally consist of a few large orders, and the delay or cancellation of a single order could substantially reduce our net sales.**

KVH products sold to customers in the defense industry are purchased through orders that can generally range in size from several hundred thousand dollars to more than one million dollars. As a result, the delay or cancellation of a single order could materially reduce our net sales and results of operations. We continue to

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experience unanticipated delays in defense orders, which make our revenues and operating results less predictable. Because our guidance and stabilization products typically have relatively higher product gross margins than our mobile communications products, the loss of an order for guidance and stabilization products could have a disproportionately adverse effect on our results of operations.

**Only a few customers account for a substantial portion of our guidance and stabilization revenues, and the loss of any of these customers could substantially reduce our net sales.**

We derive a significant portion of our guidance and stabilization revenues from a small number of customers, including the U.S. Government. The loss of business from any of these customers could substantially reduce our net sales and results of operations and could seriously harm our business. Since we are often awarded a contract as a subcontractor to a major defense supplier that is engaged in a competitive bidding process as prime contractor for a major weapons procurement program, our revenues depend significantly on the success of the prime contractors with which we align ourselves.

**The market for mobile TV products for minivans, SUVs and other passenger vehicles is still emerging, and our business in this market may continue to fall below expectations.**

The market for live TV in automobiles is still in a relatively early stage of development, which continues to make it difficult for us to predict customer demand for our low-profile automotive TracVision product accurately. Historically, sales of the automotive TracVision system have generally been below our expectations.

We believe the success of our low profile TracVision systems will depend upon consumers' assessment of whether these products meet their expectations for performance, quality, price and design. For example, the TracVision A7 is designed for use on open roads in the continental United States where there is a clear view of the transmitting satellite in the southern sky, and it may not perform satisfactorily under other conditions. Among the factors that could affect the success of the low profile TracVision systems are:

the performance, price and availability of competing or alternative products and technology relative to the automotive TracVision;

the extent to which customers prefer live TV over recorded media;

the extent to which customers perceive mobile satellite TV services as a luxury or a preferred convenience;

the extent to which TracVision gains the acceptance of the automotive OEMs;

customers' willingness to pay monthly fees for satellite television service in automobiles; and

the adoption of laws or regulations that restrict or ban television or other video technology in vehicles.

**Our mobile satellite products currently depend on satellite services provided by third parties, and any disruption in those services could adversely affect sales.**

Our satellite products include only the equipment necessary to receive satellite services; we do not broadcast satellite television programming or own the satellites to directly provide two-way satellite communications. We currently offer satellite television products compatible with the DIRECTV and DISH Network services in the United States, the ExpressVu service in Canada, the Sky Mexico service and various other regional services in other parts of the world.

We rely on Inmarsat for satellite communications services for our mini-M, Fleet and FleetBroadband compatible TracPhone products. SES AMERICOM and Eutelsat currently provide the satellite network to support the mini-VSAT Broadband service and our TracPhone V7.

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If customers become dissatisfied with the programming, pricing, service, availability or other aspects of any of these satellite services, or if any one or more of these services becomes unavailable for any reason, we could suffer a substantial decline in sales of our satellite products. There may be no alternative service provider available in a particular geographic area, and our technology may not be compatible with that of any alternative service provider that may be available. The companies that operate these services have no obligation to inform us of technological or other changes, including discontinuation of the service, which could impair the performance of our satellite products or render them inoperable. In addition, the unexpected failure of a satellite could disrupt the availability of programming and services, which could reduce the demand for, or customer satisfaction with, our products.

**We rely upon spread spectrum communications technology developed by ViaSat and fielded by third-party satellite providers to permit two-way broadband Internet via our 24 inch diameter TracPhone V7, and any disruption in the availability of this technology could adversely affect sales.**

Our new mini-VSAT Broadband service relies on spread spectrum technology developed with ViaSat, Inc. for use with satellite networks controlled by SES AMERICOM and Eutelsat. Our TracPhone V7 two-way broadband satellite terminal combines our stabilized antenna technology with ViaSat's ArcLight spread spectrum mobile broadband technology, along with a new maritime version of ViaSat's ArcLight spread spectrum modem. The ArcLight technology is also integrated within the satellite hubs that support this service. Sales of the TracPhone V7 and our mini-VSAT Broadband service could be disrupted if these satellite providers elected not to support ViaSat's spread spectrum technology or if there were issues with the availability of the ArcLight maritime modems.

Our right to continue offering mini-VSAT Broadband service using SES AMERICOM's satellite network on an exclusive basis in certain geographic markets depends on our reaching certain annual revenue targets over each of the next five years, and either party may terminate the relationship if revenues in the first year of service do not meet certain minimum goals.

Under our agreement with SES AMERICOM, we cannot offer a mini-VSAT Broadband service utilizing technology that competes with SES AMERICOM's technology in areas where they offer service. If another party has or introduces technology superior to that of SES AMERICOM, our sales might suffer, and we would not be able to offer a service using that alternative technology.

**High fuel prices, high interest rates and environmental concerns may adversely affect sales of our mobile communications products.**

Factors such as historically high fuel prices, interest rates and environmental protection laws could adversely affect sales or use of larger vehicles and vessels for which our mobile satellite communications products are designed. In addition, many customers finance their purchases of these vehicles and vessels, and higher interest rates would likely reduce demand for both these vehicles and vessels and our mobile communications products.

**We may continue to increase the use of international suppliers to source components for our manufacturing operations, which could disrupt our business.**

Although we have historically manufactured and sourced raw materials for the majority of our products in the U.S., in order for us to compete with lower priced competitive products while also improving our profitability, we have found it desirable to source raw materials and manufactured components from foreign countries such as China and Mexico. Our increased reliance on foreign manufacturing and/or raw

material supply has lengthened our supply chain and increased the risk that a disruption in that supply chain will have a material adverse affect on our operations and financial performance.

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**We have single dedicated manufacturing facilities for each of our mobile communications and guidance and stabilization product categories, and any significant disruption to a facility could impair our ability to deliver our products.**

We currently manufacture all of our mobile communications products at our headquarters in Middletown, Rhode Island, and all of our guidance and stabilization products at our facility in Tinley Park, Illinois. Some of our production processes are complex, and we may be unable to respond rapidly to the loss of the use of either production facility. For example, our production facilities use some specialized equipment that may take time to replace if they are damaged or become unusable for any reason. In that event, shipments would be delayed, which could result in customer or dealer dissatisfaction, loss of sales and damage to our reputation. Finally, we have only a limited capability to increase our manufacturing capacity in the short term. If short-term demand for our products exceeds our manufacturing capacity, our inability to fulfill orders in a timely manner could also lead to customer or dealer dissatisfaction, loss of sales and damage to our reputation.

**We depend on sole or limited source suppliers, and any disruption in supply could impair our ability to deliver our products on time or at expected cost.**

We obtain many key components for our products from third-party suppliers, and in some cases we use a single or a limited number of suppliers. Any interruption in supply could impair our ability to deliver our products until we identify and qualify a new source of supply, which could take several weeks, months or longer and could increase our costs significantly. Suppliers might change or discontinue key components, which could require us to modify our product designs. For example, we have experienced changes in the chemicals used to coat our optical fiber, which changed its characteristics and thereby necessitated design modifications. In general, we do not have written long-term supply agreements with our suppliers but instead purchase components through purchase orders, which expose us to potential price increases and termination of supply without notice or recourse. We do not generally carry significant inventories of product components, and this could magnify the impact of the loss of a supplier. If we are required to use a new source of materials or components, it could also result in unexpected manufacturing difficulties and could affect product performance and reliability.

**Any failure to maintain and expand our third-party distribution relationships may limit our ability to penetrate markets for mobile communications products.**

We market and sell our mobile communications products through an international network of independent retailers, chain stores and distributors, as well as to manufacturers of marine vessels and recreational vehicles. If we are unable to maintain or improve our distribution relationships, it could significantly limit our sales. In addition, our distribution partners may sell products of other companies, including competing products, and are not required to purchase minimum quantities of our products.

**Our net sales and operating results could decline due to general economic trends or declines in consumer spending.**

Our operating performance depends significantly on general economic conditions. Net sales of our mobile communications products are largely generated by discretionary consumer spending, and demand for these products could demonstrate slower growth than we anticipate or decline as a result of regional and global economic conditions. Consumer spending tends to decline during recessionary periods and may decline at other times. Consumers may choose not to purchase our mobile communications products due to a perception that they are luxury items. As global and regional economic conditions change, including the general level of interest rates, fluctuating oil prices and demand for durable consumer products, demand for our products could be adversely affected.



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**If we are unable to improve our existing mobile communications and guidance and stabilization products and develop new, innovative products, our sales and market share may decline.**

The markets for mobile communications products and guidance and stabilization products are each characterized by rapid technological change, frequent new product innovations, changes in customer requirements and expectations and evolving industry standards. If we fail to make innovations in our existing products and reduce the costs of our products, our market share may decline. Products using new technologies, or emerging industry standards, could render our products obsolete. If our competitors successfully introduce new or enhanced products that eliminate technological advantages our products may have in a certain market or otherwise outperform our products, or are perceived by consumers as doing so, we may be unable to compete successfully in the markets affected by these changes.

**If we cannot effectively manage our growth, our business may suffer.**

We have previously expanded our operations to pursue existing and potential market opportunities. This growth placed a strain on our personnel, management, financial and other resources. If we grow more rapidly than we anticipate and fail to manage that growth properly, we may incur unnecessary expenses, and the efficiency of our operations may decline. To manage any growth effectively, we must, among other things:

upgrade, expand or re-size our manufacturing facilities and capacity in a timely manner;

successfully attract, train, motivate and manage a larger number of employees for manufacturing, sales and customer support activities;

control higher inventory and working capital requirements; and

improve the efficiencies within our operating, administrative, financial and accounting systems, and our procedures and controls.

**We may be unable to hire and retain the skilled personnel we need to expand our operations.**

To meet our growth objectives, we must attract and retain highly skilled technical, operational, managerial and sales and marketing personnel. If we fail to attract and retain the necessary personnel, we may be unable to achieve our business objectives and may lose our competitive position, which could lead to a significant decline in net sales. We face significant competition for these skilled professionals from other companies, research and academic institutions, government entities and other organizations.