
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

FORM 10-K

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

For The Fiscal Year Ended December 28, 2018

Commission File Number 1-16137



INTEGER HOLDINGS CORPORATION

(Exact name of Registrant as specified in its charter)

Delaware
(State of
Incorporation)

16-1531026
(I.R.S. Employer
Identification No.)

5830 Granite Parkway
Suite 1150
Plano, Texas 75024
(Address of principal executive offices)

(214) 618-5243
(Registrant's telephone number, including area code)

Securities Registered Pursuant to Section 12(b) of the Act:

Title of Each Class:
Common Stock, Par Value \$0.001 Per Share

Name of Each Exchange on Which Registered:
New York Stock Exchange

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 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 checkmark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) 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, a smaller reporting company, or emerging growth company. See the definitions of large accelerated filer, accelerated filer, smaller reporting company, and emerging growth company in Rule 12b-

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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

The aggregate market value of common stock held by non-affiliates as of June 29, 2018 (the last business day of the registrant's most recently completed second fiscal quarter), based on the last sale price of \$64.65, as reported on the New York Stock Exchange on that date: \$2.1 billion. Solely for the purpose of this calculation, shares held by directors and officers and 10 percent stockholders of the registrant have been excluded. This exclusion should not be deemed a determination or an admission that these individuals are, in fact, affiliates of the registrant.

Shares of common stock outstanding as of February 15, 2019 : 32,516,677

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the following document are specifically incorporated by reference into the indicated parts of this report:

Document	Part
Proxy Statement for the 2019 Annual Meeting of Stockholders	Part III, Item 10 "Directors, Executive Officers and Corporate Governance"
	Part III, Item 11 "Executive Compensation"
	Part III, Item 12 "Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters"
	Part III, Item 13 "Certain Relationships and Related Transactions, and Director Independence"
	Part III, Item 14 "Principal Accountant Fees and Services"

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PART I

ITEM 1. BUSINESS

OVERVIEW

Integer Holdings Corporation, headquartered in Plano, Texas, is among the world's largest medical device outsource ("MDO") manufacturing companies, serving the cardiac, neuromodulation, orthopedics, vascular, advanced surgical and portable medical market. We provide innovative, high quality medical technologies that enhance the lives of patients worldwide. In addition, we develop batteries for high-end niche applications in energy, military, and environmental markets. Our brands include Greatbatch™ Medical, Lake Region Medical™ and Electrochem™. Our primary customers include large, multi-national original equipment manufacturers ("OEMs") and their affiliated subsidiaries. When used in this report, the terms "Integer," "we," "us," "our" and the "Company" mean Integer Holdings Corporation and its subsidiaries.

We organize our business into two reportable segments, Medical and Non-Medical, and derive our revenues from four principal product lines. The Medical segment includes the Cardio & Vascular, Cardiac & Neuromodulation and Advanced Surgical, Orthopedics & Portable Medical product lines and the Non-Medical segment is comprised of the Electrochem product line.

Our Acquisitions and Divestitures

On July 2, 2018, we completed the sale of the Advanced Surgical and Orthopedic product lines (the "AS&O Product Line") to Viant. As a result, we classified the results of operations of the AS&O Product Line as discontinued operations in the Consolidated Statements of Operations for all periods presented and classified the related assets and liabilities associated with the discontinued operations as held for sale in the Consolidated Balance Sheet as of December 29, 2017. All results and information presented exclude the AS&O Product Line unless otherwise noted. Refer to Note 2 "Discontinued Operations and Divestiture" of the Notes to Consolidated Financial Statements contained in Item 8 of this report for additional information about the divestiture.

On March 14, 2016, we completed the spin-off of a portion of our former QiG segment through a tax-free distribution of all of the shares of our former QiG Group, LLC subsidiary to Integer's stockholders of record as of the close of business on March 7, 2016 (the "Spin-off"). Immediately prior to completion of the Spin-off, QiG Group, LLC was converted into a corporation incorporated under the laws of Delaware and changed its name to Nuvectra Corporation ("Nuvectra"). Each Integer stockholder received one share of Nuvectra common stock for every three shares of Integer common stock held as of the record date. As a result, Nuvectra became an independent, publicly traded company listed on the NASDAQ stock exchange. Integer retains no ownership interest in Nuvectra.

On October 27, 2015, we completed the acquisition of Lake Region Medical Holdings, Inc. ("LRM"), headquartered in Wilmington, MA, in a cash and stock transaction for a total purchase price including debt assumed of approximately \$1.77 billion. LRM was primarily a manufacturer of interventional and diagnostic wire-formed medical devices and components specializing in minimally invasive devices for cardiovascular, endovascular, and neurovascular applications. The acquisition of LRM added scale and diversity to our legacy operations, which has enhanced our opportunities to access customers and customer experience by providing a more comprehensive portfolio of technologies.

MEDICAL SEGMENT

Cardio & Vascular

The Cardio & Vascular product line offers a full range of products and services from our global facilities for the development of diagnostic and interventional cardiac and endovascular devices. Our comprehensive design and development services produce components, subassemblies and finished devices for a range of cardiac and endovascular procedures.

The following are the principal products and services offered by our Cardio & Vascular product line:

Cardiovascular and Structural Heart. Cardiovascular and structural heart products include products used for vascular, cardiac surgery and structural heart disease such as guidewire and catheter components, subassemblies and completed devices for cardiovascular, cardiac surgery and structural heart disease applications. For vascular procedures, product applications include introducers, steerable sheaths, guidewires, guide catheters, microcatheters, ultrasound catheters, and delivery systems, balloon expandable delivery systems, stents, atherectomy devices, embolic protection devices, catheter design and assembly, sterile packaging, catheter shafts, radiopaque marker bands, molded hubs, fabricated hypotube assembly, and wire stent frames. For cardiac surgery and structural heart disease procedures, product applications are comprised of access and delivery systems for patent foramen ovale closure devices, vessel harvesting systems, beating heart surgery systems, transcatheter heart valves, heart valves and leaflets, and anastomosis devices.

Peripheral Vascular, Neurovascular, Urology and Oncology. Our peripheral vascular, neurovascular, urology and oncology products are primarily focused on the design and manufacturing of devices used during the treatment of peripheral arterial disease, peripheral transcatheter embolization and occlusion, aortic aneurysm repair, arteriovenous malformations and endoscopic retrograde cholangiopancreatography. We design and manufacture guidewire and catheter components, subassemblies and completed devices for various applications.

The primary neurovascular applications for these products are cerebrovascular aneurysms, while the urology and oncology applications are stone retrieval, thermal tumor ablation, transarterial chemoembolization and radio frequency probes. Our products within this area include peripheral vascular and urology guidewires, neurovascular and oncology micro-guidewires, angiographic and diagnostic guidewires, guiding catheters, support and crossing catheters, embolic protection devices, micro-catheters, and delivery systems.

Electrophysiology, Infusion Therapy & Hemodialysis. Our electrophysiology and infusion therapy products include devices that are used in the electrophysiology ablation catheter and cardiac rhythm systems such as guidewire and catheter components, subassemblies and completed devices for the various electrophysiology applications, as well as components and assemblies for cardiac and neurostimulation leads and implantable pulse generators (“IPG”).

Electrophysiology atrial fibrillation ablation catheters, which deliver therapy to the heart and eliminate tissue paths for irregular electrical impulses, and electrophysiology catheters, which diagnose irregular electrical impulses in the heart’s electrical system, are the focal points of our electrophysiology offering. For stimulation therapy applications, cardiac rhythm management (“CRM”) devices, such as pacemakers, implantable cardioverter defibrillator, cardiac leads and neurostimulation devices for spinal cord and deep brain stimulation, are the primary applications of focus.

Cardiac & Neuromodulation

The Cardiac & Neuromodulation product line offers a comprehensive collection of technologies and capabilities. Our complete spectrum of design, development, and manufacturing expertise provides our customers with a superior quality solution in an efficient, cost-effective and consistent manner.

Cardiac and neuromodulation products include batteries, capacitors, filtered and unfiltered feedthroughs, engineered components, implantable stimulation leads and enclosures used in implantable medical devices (“IMD”). Additionally, we offer value-added assembly for these IMDs. An IMD is an instrument that is surgically inserted into the body to provide diagnosis and/or therapy. One sector of the IMD market is cardiac, which is comprised of devices such as implantable pacemakers, implantable cardioverter defibrillators (“ICD”), cardiac resynchronization therapy (“CRT”) devices, cardiac resynchronization therapy with backup defibrillation devices (“CRT-D”), insertable cardiac monitors (“ICM”), and ventricular assist devices. Another sector of the IMD market is neuromodulation, comprised of pacemaker-type devices that stimulate nerves for the treatment of various conditions. Beyond established therapies for pain control, incontinence, movement disorders (Parkinson’s disease, essential tremor and dystonia) and epilepsy, nerve stimulation for the treatment of other disabilities such as sleep apnea, heart failure, migraines, obesity and depression has shown promising results.

The following are the main categories of battery-powered IMDs and the principal illness or symptoms treated by each device:

Device	Principal Illness or Symptom
Pacemakers	Abnormally slow heartbeat (Bradycardia)
ICDs	Rapid and irregular heartbeat (Tachycardia)
CRT/CRT-Ds	Congestive heart failure
ICMs	Unexplained fainting or risk of cardiac arrhythmias
Neurostimulators	Chronic pain, incontinence, movement disorders, epilepsy, obesity or depression
Cochlear hearing devices	Hearing loss

IMD systems generally include an IPG and one or more stimulation leads. An IPG is a battery powered device that produces electrical pulses. A lead then carries this electrical pulse from the IPG to the heart, spinal cord or other location in the body. Our portfolio of proprietary technologies, products, and capabilities has been built to provide our cardiac and neuromodulation customers with a single source for the vast majority of the components and subassemblies required to manufacture an IPG or lead, including complete lead systems. Our investments in research and development have generated proprietary products such as the QHR[®], QMR[®], and QCAPS[™] primary battery and capacitor lines, which have enabled our OEM partners to make improvements in their system offerings in terms of device reliability, size, longevity and power. Our Xcellion[™] line of lithium-ion rechargeable batteries leverages decades of implantable battery research, development and manufacturing expertise. This line of battery cells includes the optional CoreGuard[™] feature, which enables batteries to discharge to zero volts without performance degradation.

The following are the principal products and services offered by our Cardiac & Neuromodulation product line:

Cardiac Rhythm Management. We provide a broad range of products and services to enable next generation CRM medical devices to address heart disease and heart rhythm disorders through such systems as: pacemakers, implantable cardiac defibrillators, cardiac resynchronization therapy devices, implantable cardiac monitors and other novel implantable devices. Our battery and capacitor technologies provide a reliable and safe power source for our customers' CRM system, based on decades of research, development and manufacturing experience. As a leading supplier of low-polarization specialty-coated electrodes and lead components, we provide a full range of therapy delivery development and manufacturing solutions. We are also a leading supplier of medical stamped components, and shallow and deep draw casings and assemblies.

Neuromodulation. We offer a wide range of products and services for our customers' next generation neuromodulation medical devices. Examples include implantable medical devices that address chronic pain, hearing loss, incontinence, movement disorders, psychiatric disorders and sleep disorders.

We help our customers develop and manufacture unique neuromodulation solutions, including IPGs, programmer systems, battery chargers, and patient controllers. We offer a full range of therapy delivery development and manufacturing solutions for low-polarization specialty-coated electrodes, lead components and fully finished lead systems.

Advanced Surgical, Orthopedics & Portable Medical

The Advanced Surgical, Orthopedics & Portable Medical ("AS&O") product line offers a broad range of products and services across the many businesses it serves. This product line includes sales to the acquirer of our AS&O Product Line, Viant. In partnership with customers, AS&O offers advanced development, engineering and program management, which provides us with an in-depth understanding of our customers' market drivers and end-user needs.

The following are the principal products and services offered by our AS&O product line:

Portable Medical. Our comprehensive capabilities include expertise in a range of cell technologies. Today, our batteries power over 100 external medical devices. We provide complete mission critical batteries and other power solutions through the combined efforts of innovative research, product development, manufacturing and customer partnerships to advance the way healthcare is powered. Our offerings include state of the art customized rechargeable batteries and chargers and non-rechargeable batteries. We design and develop basic and "smart" chargers and docking stations of varying complexities to safely and reliably maximize the efficiency of the rechargeable batteries. We develop batteries, and the attendant chargers, for patient monitoring, portable defibrillators, and portable ultrasound, X-Ray machines, hearing devices and other devices. We collaborate with our customers on product development opportunities incorporating our power solutions into Class I, II or III medical devices.

Arthroscopic Devices & Components. Our arthroscopic devices & component products include devices used for minimally invasive surgery in the joint space, also referred to as "sports medicine." Our products include shaver blades and burrs, ablation probes, and suture anchors, which are used in procedures such as arthroscopic ACL reconstruction, arthroscopic repair, rotator cuff repair, and hip labrum repair.

Laparoscopic & General Surgery. Our laparoscopic & general surgery products include devices used primarily for minimally invasive procedures in the abdominal space, but may also be used in open or general surgery. Customers of our laparoscopy and general surgery products require energy-based devices and endomechanical devices that are efficient and reliable. Our products include, harmonic scalpels, radio frequency probes, and ophthalmic surgery devices.

Orthopedic. Our orthopedic products include hip and shoulder joint reconstruction implants, plates, screws and spinal devices, as well as instruments and delivery systems used in hip and knee replacement, trauma fixation, extremity and spine surgeries. Orthopedic implants are used in reconstructive surgeries to replace or repair hips, knees and other joints, such as shoulders, ankles and elbows that have deteriorated as a result of disease or injury. Trauma implant systems are used primarily to reattach or stabilize damaged bone or tissue while the body heals. Spinal implant systems are used by orthopedic surgeons and neurosurgeons in the treatment of degenerative diseases, deformities and injuries in various regions of the spine.

Each implant system typically has an associated instrument set that is used specifically in the surgical implant procedure. Instruments included in a set vary by implant system. Orthopedic trays have generally been designed to allow for sterilization and re-use after an implant or other surgical procedure is performed. Recently, the industry trend is moving towards single use instrumentation. Cases are used to store, transport and arrange implant systems and other medical devices and related surgical instruments. The majority of cases are tailored for a specific implant procedure so that the instruments, implants, and other devices are arranged to match the order of use in the procedure and are securely held in clearly labeled, custom-formed pockets or brackets.

NON-MEDICAL SEGMENT

Our power solutions enable the success and advancement of our customers' critical non-medical applications. We provide custom battery packs to the energy, military and environmental markets for use in extreme environments where failure is not an option.

The following are the principal products and services offered by our Non-Medical product line:

Electrochem. Electrochem provides customized battery power and management systems, charging and docking stations, and power supplies to markets where safety, reliability, quality and durability are critical. We design customized primary (non-rechargeable) and secondary (rechargeable) battery solutions, which are used in the energy, military and environmental markets.

Electrochem's primary lithium power solutions, which include high, moderate and low rate non-rechargeable cell solutions, are utilized in extreme conditions and can withstand exceptionally high and low temperatures, and high shock and vibration. Electrochem's product design capability includes protective circuitry, glass-to-metal hermetic seals, fuses and diodes to help ensure safe, durable and reliable power as devices using our battery solutions are subjected to harsh conditions. Our primary batteries are often used in remote and demanding environments, including down hole drilling tools, military devices, and oceanographic buoys.

In addition to primary power solutions, Electrochem offers customized secondary or rechargeable battery packs, in a diverse range of chemistries for critical applications requiring rechargeable solutions. Rechargeable chemistries include lithium ion, lithium ion polymer, nickel metal hydride, nickel cadmium, lithium iron phosphate and sealed lead acid. Electrochem's rechargeable battery packs include advanced electronics, smart charging and battery management systems and are used in critical military and industrial applications.

OTHER FACTORS IMPACTING OUR OPERATIONS

Customers

Our products are designed to provide reliable, long-lasting solutions that meet the evolving requirements and needs of our customers. The nature and extent of our commercial relationships with each of our customers are different in terms of breadth of products purchased, purchased product volumes, length of contractual commitment, ordering patterns, inventory management, and selling prices. Contracts with customers can include tiered pricing arrangements based on pre-determined volume levels, in which higher volume levels typically have lower pricing, or fixed annual price downs that are offered to customers in exchange for increased volume levels and/or longer contract terms. Typically, our contracts specify minimum order quantities and lead times. Revenue from contracts with customers is recognized based upon the transaction price and when performance obligations are satisfied and the customer has obtained control of the products, which typically occurs when title and risk of loss ownership transfers to the customer, primarily determined by shipping terms. The transaction price is determined based on the unit price and the number of units ordered, less any rebates or other price concessions expected to be earned on those units, and is allocated to each performance obligation on a relative standalone selling price basis.

Our visibility into customer forecasted purchases is only over a relatively short period of time into the future. Our customers may have inventory management programs, vertical integration plans and/or alternate supply arrangements that may not be communicated to or shared with us. Additionally, the relative market share among the OEM manufacturers changes periodically. Consequently, these and other factors can significantly impact our sales in any given period. Our customers may initiate field actions with respect to market-released products. These actions may include product recalls or communications with a significant number of physicians about a product or labeling issue. The scope of such actions can range from very minor issues affecting a small number of units to more significant actions. There are a number of factors, both short-term and long-term, related to these field actions that may impact our results. In the short-term, if a product has to be replaced, or customer inventory levels have to be restored, demand will increase. Also, changing customer order patterns due to market share shifts or accelerated device replacements may also have a positive or negative impact on our sales results in the near-term. These same factors may have longer-term implications as well. Customer inventory levels may ultimately have to be rebalanced to match new demand.

Our Medical customers include large multi-national medical device OEMs and their subsidiaries such as Abbott Laboratories, Biotronik, Boehringer Ingelheim, Boston Scientific, Cardinal Health, Johnson & Johnson, LivaNova, Medtronic, Nevro Corp., Philips Healthcare, Smith & Nephew, Stryker, Viant and Zimmer Biomet. During 2018, sales to Abbott Laboratories, Medtronic and Boston Scientific were each in excess of 10% of total sales and collectively accounted for 52% of our total sales. We believe that the diversification of our sales among the various subsidiaries and market segments with those three customers reduces our exposure to negative developments with any one customer. The loss of a significant amount of business from any of these three customers or a further consolidation of such customers could have a material adverse effect on our financial condition and results of operations, as further explained in Item 1A “Risk Factors” of this report.

Our Non-Medical customers include large multi-national OEMs and their subsidiaries serving the energy, military and environmental services markets such as Halliburton, Teledyne Technologies and Weatherford International.

Sales and Marketing

We sell our products directly to our customers. In 2018, approximately 57% of our products were sold in the U.S. Sales outside the U.S. are primarily to customers whose corporate offices are located and headquartered in the U.S. Information regarding our sales by geographic area is set forth in Note 17 “Segment and Geographic Information” of the Notes to Consolidated Financial Statements contained in Item 8 of this report.

Although the majority of our customers contract with us to develop custom components and assemblies to fit their product specifications, we also provide system and device solutions ready for market distribution by OEMs. We have established close working relationships between our internal program managers and our customers. We market our products and technologies at industry meetings and trade shows domestically and internationally. We have placed additional emphasis on reaching long-term agreements with our OEM customers in order to secure our revenue base.

Internal account executives support all sales activity and involve engineers and technology professionals in the sales process to address customer requests across all product lines. For system and device solutions, we partner with our customers’ research, marketing, and clinical groups to jointly develop technology platforms in alignment with their product roadmaps and therapy needs.

We leverage our account executives with support from our engineers to design and sell product solutions into our targeted markets. Our account executives are trained to assist our customers in selecting appropriate materials and configurations. We market our products and services through well-defined selling strategies and marketing campaigns that are customized for each of the industries we target.

Firm backlog orders at December 28, 2018 were approximately \$268 million. The majority of the orders outstanding at December 28, 2018 are expected to be shipped within one year.

Competition

The MDO manufacturing industry has traditionally been highly fragmented with several thousand companies, many of which we believe have limited manufacturing capabilities and limited sales and marketing expertise. We believe that very few companies offer the scope of manufacturing capabilities and services that we provide to medical device companies, however, we may compete in the future against other companies that provide broad manufacturing capabilities and related services. We compete against different companies depending on the type of product or service offered or the geographic area served. We also face competition from existing and prospective customers that employ in-house capabilities to produce some of the products we provide.

Our existing or potential competitors include suppliers with different subsets of our manufacturing capabilities, suppliers that concentrate in niche markets, and suppliers that have, are developing, or may in the future develop, broad manufacturing capabilities and related services. We compete for new business at all phases of the product life cycle, which includes development of new products, the redesign of existing products and transfer of mature product lines to outsourced manufacturers. Competitive advantage is generally based on reputation, quality, delivery, responsiveness, breadth of capabilities, including design and engineering support, price, customer relationships and increasingly the ability to provide complete supply chain solutions rather than only producing and providing individual components.

Many of our customers, if they choose to undertake vertical integration initiatives, also have the capability to manufacture similar products, in house, to those that we currently supply to them.

Acquisitions and Investments

One facet of our growth strategy is to make acquisitions that complement our core competencies in technology and manufacturing to enable us to manufacture and sell additional products to our existing customers and to expand our business into related markets.

The rapid pace of technological development in the medical industry and the specialized expertise required in different areas of medicine make it difficult for one company alone to develop an all-encompassing portfolio of technological solutions. In addition to internally generated growth through our research, development and engineering (“RD&E”) efforts, we have relied, and expect to continue to rely, upon acquisitions, investments, and alliances to provide access to new technologies both in areas served by our existing businesses as well as in new areas and markets. This strategy also aligns with our customers’ expectations of increasing the speed to market of critical solutions.

We expect to make future investments or acquisitions where we believe that we can stimulate the development of, or acquire, new technologies and products to further our strategic objectives, and strengthen our existing businesses. Our acquisition focus will be primarily directed at smaller “bolt-on” or adjacent acquisition opportunities that have a strategic fit with our existing core businesses, particularly opportunities that support our enterprise strategy and enhance the value proposition of our product offerings.

Research and Product Development

Our position as a leading developer and manufacturer of medical devices and components is largely the result of our long history of technological innovation. Our scientists, engineers and technicians focus on developing new products, improving and enhancing existing products, and expanding the use of our products in new or tangential applications. In addition to our internal technology and product development efforts, we also engage outside research institutions for unique technology projects.

Medical. We believe our core business is well positioned because our OEM customers leverage our portfolio of intellectual property. We continue to build a healthy pipeline of diverse medical technology opportunities and provide a new level of industry leading capabilities and services to our OEM customers across the full range of medical device products and services continuum. We are at the forefront of innovating technologies and products that help change the face of healthcare, enabling us to provide our customers with a distinct advantage as they bring complete medical systems and solutions to market. In turn, our customers are able to accelerate patient access to life enhancing therapies. We offer our customers a comprehensive portfolio comprising the best technologies, providing a single point of support, and driving optimal outcomes. Some of the more significant product development opportunities our Medical segment is pursuing are as follows:

Product Line	Product Development Opportunities
Cardio & Vascular	Developing a portfolio of catheter, introducer, wire-based, sensor and coating products for the cardio and vascular markets.
Cardiac & Neuromodulation	Developing next generation technology programs for our batteries, filtered feedthroughs, high voltage capacitors and lead solutions to reduce the size and cost, while increasing performance for cardiac and neuromodulation devices.

Non-Medical. Some of the more significant product development opportunities our Non-Medical segment is pursuing include developing the next generation medium-rate and high rate batteries, as well as products with extended performance such as higher power pulsing capabilities and increased operating temperature range.

Patents and Proprietary Technology

Our policy is to protect our intellectual property rights related to our technologies and products, and we rely on a combination of patents, licenses, trade secrets and know-how to establish and protect our rights. Where appropriate, we apply for U.S. and foreign patents. We also are a party to license agreements with third parties under which we have obtained, on varying terms, exclusive or non-exclusive rights to patents held by them. In the aggregate, these intellectual property assets and licenses are of material importance to our business; however, we believe that no single patent, technology, trademark, intellectual property asset or license is material in relation to any segment of our business or to our business as a whole. As of December 28, 2018, we owned 695 U.S. and foreign patents and held licenses to an additional 270 U.S. and foreign patents.

Design, development and regulatory aspects of our business also provide competitive advantages, and we require our employees, consultants and other parties having access to our confidential information to execute confidentiality agreements. These agreements prohibit disclosure of confidential information to third parties, except in specified circumstances. In the case of employees and consultants, the agreements generally provide that all confidential information relating to our business is the exclusive property of Integer.

Manufacturing and Quality Control

We leverage our strength as an innovative designer and manufacturer of finished devices and components to the medical device industry. Our manufacturing and engineering services include: design, testing, component production, and device assembly. We have integrated our proprietary technologies in our own products and those of our customers. Our flexible, high productivity manufacturing capabilities span sites across the United States, Mexico, Uruguay, Europe, and Malaysia.

Due to the highly regulated nature of the products we produce, we have implemented strong quality systems across all sites. The quality systems at our sites are compliant with and certified to various recognized international standards, requirements, and directives. Each site's quality system is certified under an applicable International Organization for Standardization ("ISO") quality system standard, such as ISO 13485 or ISO 9001. This certification requires, among other things, an implemented quality system that applies (where applicable) to the design and manufacture of components, assemblies and finished medical devices, including component quality and supplier control. Maintenance of these certifications for each facility requires periodic re-examination from an independent notified body.

Along with ISO 13485, the facilities producing finished medical devices are subject to oversight by Notified Bodies and extensive and rigorous regulation by numerous government bodies, including the U.S. Food and Drug Administration ("FDA") and other international regulatory agencies and, in order to assure the conformance of devices and components of a worldwide basis. For these facilities, we maintain FDA registration and compliance with all applicable domestic and international regulations. Compliance with applicable regulatory requirements is subject to continual review and is monitored through periodic inspections by the FDA and other international regulatory bodies.

Suppliers and Raw Materials

We purchase critical raw materials from a limited number of suppliers due to the technically challenging requirements of the supplied product and/or the lengthy process required to qualify these materials both internally and with our customers. We cannot quickly establish additional or replacement suppliers for these materials because of these rigid requirements. For these critical raw materials, we maintain minimum safety stock levels and partner with suppliers through contract to help ensure the continuity of supply. Historically, we have not experienced any significant interruptions or delays in obtaining critical raw materials.

Many of the raw materials that are used in our products are subject to fluctuations in market price. In particular, the prices of stainless steel, titanium and precious metals, such as platinum, have historically fluctuated, and the prices that we pay for these materials, and, in some cases, their availability, are dependent upon general market conditions. In most cases, we have pass-through pricing arrangements with our customers that purchase components containing precious metals or have established firm-pricing agreements with our suppliers that are designed to minimize our exposure to market fluctuations.

For non-critical raw material purchases, we utilize competitive pricing methods such as bulk purchases, precious metal pool buys, blanket orders, and long-term contracts to secure supply. We believe that there are alternative suppliers or substitute products available at competitive prices for all of these non-critical raw materials.

As discussed more fully in Item 1A "Risk Factors" of this report, our business depends on a continuous supply of raw materials from a limited number of suppliers. If an unforeseen interruption of supply were to occur, we may be unable to obtain substitute sources for these raw materials on a timely basis, on terms acceptable to us or at all, which could harm our ability to manufacture our products profitably or on time. Additionally, we may be unable to quickly establish additional or replacement suppliers for these materials as there are a limited number of worldwide suppliers.

Working Capital Practices

Our goal is to carry sufficient levels of inventory to ensure that we have adequate supply of raw materials from suppliers and meet the product delivery needs of our customers. We also provide payment terms to customers in the normal course of business and rights to return product under warranty to meet the operational demands of our customers. It will continue to be a priority for us to maintain appropriate working capital levels while improving our operating cash flow and pay down outstanding debt.

Government Regulation

Medical Device Regulation

The development, manufacture and sale of our products is subject to regulation by numerous agencies and legislative bodies, including the FDA and comparable foreign counterparts. In the U.S., these regulations were enacted under the Medical Device Amendments of 1976 to the Federal Food, Drug and Cosmetic Act and its subsequent amendments, and the regulations issued or proposed thereunder. These regulatory requirements subject our products and our business to numerous risks that are specifically discussed within “Risks Related to Our Industries” under Item 1A “Risk Factors” of this report. A summary of critical aspects of our regulatory environment is included below.

The FDA’s Quality System Regulations set forth requirements for our product design and manufacturing processes, require the maintenance of certain records, and provide for on-site inspection of our facilities and continuing review by the FDA. Authorization to commercially market our non-exempt products in the U.S. is granted by the FDA under procedures referred to as 510(k) pre-market notification or pre-market approval (“PMA”). These processes require us to notify the FDA of the new product and obtain FDA clearance or approval before marketing the device.

The FDA classifies medical devices based on the risks associated with the device. Devices are classified into one of three categories - Class I, Class II, or Class III. Class I devices are deemed to be low risk and are therefore subject to the least regulatory controls. Class II devices are higher risk devices than Class I and require greater regulatory controls, generally a 510(k) pre-market notification, to provide reasonable assurance of the device’s safety and effectiveness as well as substantial equivalence to a previously cleared device, as demonstrated by data. Class III devices are generally the highest risk devices and are therefore subject to the highest level of regulatory control, requiring a PMA by the FDA before they are marketed.

We market our products in numerous foreign countries and therefore are subject to regulations affecting, among other things, product standards, sterilization, packaging requirements, labeling requirements, import laws and onsite inspection by independent bodies with the authority to issue or not issue certifications we may require to be able to sell products in certain countries. Many of the regulations applicable to our devices and products in these countries are similar to those of the FDA. The member countries of the European Union (“EU”) have adopted the European Medical Device Directives, which create a single set of medical device regulations for all member countries. These regulations require companies that wish to manufacture and distribute medical devices in the EU to maintain quality system certifications through EU recognized Notified Bodies. These Notified Bodies authorize the use of the CE Mark, which allows for free movement of our products throughout the member countries. Requirements pertaining to our products vary widely from country to country, ranging from simple product registrations to detailed submissions such as those required by the FDA.

In the U.S., our introducer, guidewire, and delivery catheter products are considered Class II devices and generally the 510(k) process applies. Orthopedic instruments are considered Class I exempt, while pacing leads are subject to the Class III PMA process. In Europe, these devices are considered either Class I, Class IIa, Class III, or AIMD, under European Medical Device Directives. These Directives require companies that wish to manufacture and distribute medical devices in EU member countries to obtain a CE Mark for those products, which indicate that the products meet minimum standards of performance, essential requirements, safety conformity assessment and quality.

We believe that the procedures we use for quality controls, development, testing, manufacturing, labeling, marketing and distribution of our medical devices conform to the requirements of all pertinent regulations.

Environmental Health and Safety Laws

We are subject to direct governmental regulation, including the laws and regulations generally applicable to all businesses in the jurisdictions in which we operate. We are subject to federal, state and local environmental laws and regulations governing the emission, discharge, use, storage and disposal of hazardous materials and the remediation of contamination associated with the release of these materials at our facilities and at off-site disposal locations. Our manufacturing and RD&E activities may involve the controlled use of small amounts of hazardous materials. Liabilities associated with hazardous material releases arise principally under the Federal Comprehensive Environmental Response, Compensation and Liability Act and analogous state laws that impose strict, joint and several liability on owners and operators of contaminated facilities and parties that arrange for the off-site disposal of hazardous materials. We are not aware of any material noncompliance with the environmental laws currently applicable to our business and we are not subject to any material claim for liability with respect to contamination at any of our facilities or any off-site location. We may, however, become subject to these environmental liabilities in the future as a result of our historic or current operations.

Conflict Minerals and Supply Chain

We are subject to Securities and Exchange Commission (“SEC”) rules adopted pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act concerning “conflict minerals” (generally tin, tantalum, tungsten and gold) and similar rules are being implemented by the EU. Certain of these conflict minerals are used in the manufacture of our products. These rules require us to investigate the source of any conflict minerals necessary to the production or functionality of our products. If any such conflict minerals originated in the Democratic Republic of the Congo or adjoining countries (the “DRC region”), we must undertake due diligence efforts to determine whether such minerals financed or benefited armed groups in the DRC region. Since our supply chain is complex, our ongoing compliance with these rules could affect the pricing, sourcing and availability of conflict minerals used in the manufacture of our products.

We are also subject to disclosure requirements regarding abusive labor practices in portions of our supply chain under the California Transparency in Supply Chains Act and the UK Modern Slavery Act.

Other Laws and Regulations

Our sales and marketing practices are subject to regulation by the U.S. Department of Health and Human Services pursuant to federal anti-kickback laws, and are also subject to similar state laws.

Employees

As of December 28, 2018, we employed approximately 8,250 persons, of whom approximately 3,650 are located in the U.S., 2,700 are located in Mexico, 1,300 are located in Europe, 300 are located in South America, and 250 are located in Asia. We also employ approximately 150 temporary employees worldwide to assist us with various projects and service functions and address peaks in staff requirements. We believe that we have a good relationship with our employees.

Seasonality

Our financial results have been, from time to time, subject to seasonal patterns. We cannot assure you that these patterns will continue.

Available Information

Our Internet address is www.integer.net. We also make available free of charge through our website our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file those reports with, or furnish them to, the SEC. The information contained on our website is not incorporated by reference in this annual report on Form 10-K and should not be considered a part of this report. The SEC maintains a website that contains reports, proxy and information statements, and other information regarding issuers, including the Company, that file electronically with the SEC. The public can obtain any documents that we file with the SEC at www.sec.gov.

EXECUTIVE OFFICERS OF THE COMPANY

Information concerning our executive officers is presented below as of February 22, 2019. The officers' terms of office run from year to year until the first meeting of the Board of Directors occurring immediately following our Annual Meeting of Stockholders, and until their successors are elected and qualified, except in the case of earlier death, retirement, resignation or removal.

Joseph W. Dziedzic, age 50, is President and Chief Executive Officer of the Company and a member of our Board of Directors. He assumed that role on July 16, 2017 following his appointment as interim President & Chief Executive Officer on March 27, 2017. Mr. Dziedzic was the Executive Vice President and Chief Financial Officer of The Brink's Company from 2009 to 2016, and prior to joining The Brink's Company in 2009, he had a 20-year career with General Electric.

Jason K. Garland, age 45, is the Company's Executive Vice President and Chief Financial Officer. Mr. Garland had served as Divisional Vice President & Chief Financial Officer, Global Sales, for Tiffany & Co. from October 2017 until joining the Company in October 2018, and had served as Divisional Vice President & Chief Financial Officer, Diamond & Jewelry Supply, for Tiffany & Co. from July 2015 to October 2017. From 1995 to 2015, Mr. Garland served in various financial and operational roles at General Electric, including as Chief Financial Officer, GE Industrial Solutions, from March 2010 to June 2015.

Jennifer M. Bolt, age 50, is President, Electrochem, and has served in that position since October 2015. In November 2017, Ms. Bolt assumed leadership of the Portable Medical product line, and in February 2018, she assumed leadership for the Integer Manufacturing Excellence strategic imperative. From June 2013 to October 2015 she was Vice President, Supply Chain and Operational Excellence for Greatbatch. Ms. Bolt held the position of Vice President, Operations for Electrochem from May 2012 to June 2013, and prior to that served as Director of Operations of our Raynham, MA facility from September 2007 to May 2012. Ms. Bolt joined our Company in May 2005 as the Manufacturing Engineering Manager for our Alden, NY facility. Prior to joining our Company, she served in a variety of engineering and operational roles at General Motors/Delphi and Eastman Kodak.

Joseph Flanagan, age 60, is Executive Vice President for Quality and Regulatory Affairs, a position he has held since October 2015. In February 2018, he assumed co-leadership for the Integer Business Process Excellence strategic imperative. From January 2012 until the Company's acquisition of Lake Region Medical in October 2015, he was Vice President of Quality and Regulatory Affairs for Lake Region Medical. Prior to joining Lake Region Medical, Mr. Flanagan served as Vice President of Quality and Regulatory Affairs for NP Medical from April 2008 until January 2012.

Antonio Gonzalez, age 45, is President, CRM & Neuromodulation, and has served in that office since October 2015. Mr. Gonzalez is also the leader for the Integer Sales Force Excellence strategic imperative. From October 2014 to October 2015, he served as Vice President, Operations, Greatbatch Medical Mexico. Previously, Mr. Gonzalez served as Executive Director, Operations Mexico between November 2011 and October 2014, Director of Global Supply Chain from November 2007 to November 2011, Director of Strategic Projects from March 2006 to November 2007, and Supply Chain Manager for Greatbatch Tecnologías de Mexico from January 2005 to March 2006. Prior to joining our Company, he served in a variety of finance, operations, supply chain and customer management roles with Sanmina-SCI, BellSouth Telecommunications, HSBC and ING Bank.

Payman Khales, age 49, is President, Cardio & Vascular, and joined the company on February 20, 2018. Mr. Khales is also the leader for the Integer Market Focused Innovation strategic imperative. Prior to joining Integer, Mr. Khales was the President of the Environmental Technologies Segment at CECO Environmental Company from May 2014 through July 2017. Previously, he was employed by Ingersoll Rand Company where he held a variety of different roles in the United States and Canada, including Vice President Product Management for the global Power Tools division from January 2012 through April 2014, and Vice President Strategic Accounts & Channels from February 2010 through December 2011.

Timothy G. McEvoy, age 61, is Senior Vice President, General Counsel & Secretary, and has served in that office since joining our Company in February 2007. From 1992 until January 2007, he was employed in a variety of legal roles by Manufacturers and Traders Trust Company.

Michael L. Spencer, age 49, is Senior Vice President and Chief Ethics & Compliance Officer. Prior to joining the Company in October 2015, Mr. Spencer was Chief Ethics and Compliance Officer of Orthofix Inc. where he had served since August of 2013. Prior to that, between 2001 and 2013, he served as Ethics and Compliance Officer for the Smith and Nephew Advanced Surgical Division.

Kirk Thor, age 54, is Executive Vice President and Chief Human Resources Officer. From 2013 until joining the Company in January 2018, Mr. Thor was Vice President for Global Talent Management & Organization Effectiveness at Flowserve Corporation. From 2007 to 2012, he served as Vice President for Talent Management & Organization Development at JC Penney. In February 2018, he assumed leadership for the Integer Culture strategic imperative.

CAUTIONARY FACTORS THAT MAY AFFECT FUTURE RESULTS

Some of the statements contained in this annual report on Form 10-K and other written and oral statements made from time to time by us are not statements of historical or current fact. As such, they are “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). We have based these forward-looking statements on our current expectations, and these statements are subject to known and unknown risks, uncertainties and assumptions. Forward-looking statements include statements relating to:

- future sales, expenses and profitability;
- future development and expected growth of our business and industry;
- our ability to execute our business model and our business strategy;
- our ability to identify trends within our industries and to offer products and services that meet the changing needs of those markets; and
- projected capital expenditures.

You can identify forward-looking statements by terminology such as “may,” “will,” “should,” “could,” “expects,” “intends,” “plans,” “anticipates,” “believes,” “estimates,” “predicts,” “potential” or “continue” or “variations” or the negative of these terms or other comparable terminology. These statements are only predictions. Actual events or results may differ materially from those stated or implied by these forward-looking statements. In evaluating these statements and our prospects, you should carefully consider the factors set forth below. All forward-looking statements attributable to us or persons acting on our behalf are expressly qualified in their entirety by these cautionary factors and to others contained throughout this report. Except as required by applicable law, we are under no duty to update any of the forward-looking statements after the date of this report or to conform these statements to actual results.

Although it is not possible to create a comprehensive list of all factors that may cause actual results to differ from the results expressed or implied by our forward-looking statements or that may affect our future results, some of these factors include the following: our high level of indebtedness, our inability to pay principal and interest on this high level of outstanding indebtedness or to remain in compliance with financial and other covenants under our senior secured credit facilities, and the risk that this high level of indebtedness limits our ability to invest in our business and overall financial flexibility; our dependence upon a limited number of customers; customer ordering patterns; product obsolescence; our inability to market current or future products; pricing pressure from customers; our ability to timely and successfully implement cost savings and consolidation initiatives; our reliance on third party suppliers for raw materials, products and subcomponents; fluctuating operating results; our inability to maintain high quality standards for our products; challenges to our intellectual property rights; product liability claims; product field actions or recalls; our inability to successfully consummate and integrate acquisitions and to realize synergies and to operate these acquired businesses, in accordance with expectations; our unsuccessful expansion into new markets; our failure to develop new products; the timing, progress and ultimate success of pending regulatory actions and approvals; our inability to obtain licenses to key technology; regulatory changes, including health care reform, or consolidation in the healthcare industry; global economic factors, including currency exchange rates and interest rates; the resolution of various legal actions brought against the Company; enactment related and ongoing impacts related to the U.S. Tax Cuts and Jobs Act (the “Tax Reform Act”), including the Global Intangible Low-Taxed Income (“GILTI”) tax; and other risks and uncertainties that arise from time to time and are described in Item 1A “Risk Factors” of this report.

ITEM 1A. RISK FACTORS

Our business faces many risks. Any of the risks discussed below, or elsewhere in this report or in our other SEC filings, could have a material impact on our business, financial condition or results of operations.

Risks Related To Our Business

We depend heavily on a limited number of customers, and if we lose any of them or they reduce their business with us, we would lose a substantial portion of our revenues.

In 2018, our top three customers collectively accounted for approximately 52% of our revenues. Our supply agreements with these customers may not be renewed. Furthermore, many of our supply agreements do not contain minimum purchase level requirements and therefore there is no guaranteed source of revenue that we can depend upon under these agreements. The loss of any large customer, a reduction of business with that customer, or a delay or failure by that customer to make payments due to us, would harm our business, financial condition and results of operations.

If we do not respond to changes in technology, our products may become obsolete and we may experience a loss of customers and lower revenues.

We sell our products to customers in several industries that experience rapid technological changes, new product introductions and evolving industry standards. Without the timely introduction of new products, technologies and enhancements, our products and services will likely become technologically obsolete over time and we may lose or see a reduction in business from a significant number of our customers. We dedicate a significant amount of resources to the development of our products, technologies and enhancements. Our product development efforts may be affected by a number of factors, including our ability to anticipate customer needs, develop new technologies and enhancements, secure intellectual property protection for our products, and manufacture products in a cost effective manner. We would be harmed if we did not meet customer requirements and expectations. Our inability, for technological or other reasons, to successfully develop and introduce new and innovative products, technologies and enhancements could result in a loss of customers and lower revenues.

We may face competition that could harm our business and we may be unable to compete successfully against new entrants and established companies with greater resources.

Competition in connection with the manufacturing of our medical products has intensified in recent years and may continue to intensify in the future. One or more of our medical customers may undertake additional vertical integration and/or supplier diversification initiatives and begin to manufacture or dual-source some or all of their components that we currently supply to them, which could cause our operating results to suffer. The market for commercial power sources is competitive, fragmented and subject to rapid technological change. Many other commercial power source suppliers are larger and have greater financial, operational, economies of scale, personnel, sales, technical and marketing resources than us. These and other companies may develop products that are superior, technologically or otherwise, or more cost effective to ours, which could result in lower revenues and operating results.

If we are unable to successfully market our current or future products, our business will be harmed and our revenues and operating results will be adversely affected.

The markets for our products have been changing in recent years. If the markets for our products do not grow as forecasted by industry experts, our revenues could be less than expected. Furthermore, it is difficult to predict the rate at which the markets for our products will grow or if new and increased competition will result in market saturation. Slower growth in the cardiac, neuromodulation, cardio and vascular, environmental, military or energy markets in particular would negatively impact our revenues. In addition, we face the risk that our products will lose widespread market acceptance. Our customers may not continue to utilize the products we offer and a market may not develop for our future products.

We may at times determine that it is not technically or economically feasible for us to continue to manufacture certain products and we may not be successful in developing or marketing them. Additionally, new technologies that we develop may not be rapidly accepted because of industry-specific factors, including the need for regulatory clearance, entrenched patterns of clinical practice and uncertainty over third party reimbursement. If this occurs, our business will be harmed and our revenues and operating results will be adversely affected.

We intend to develop new products and expand into new markets, which may not be successful and could harm our operating results.

We intend to expand into new markets and develop new and modified products based on our existing technologies and engineering capabilities. These efforts have required and will continue to require us to make substantial investments, including significant RD&E expenditures and capital expenditures for new, expanded or improved manufacturing facilities. Additionally, many of the new products we are working on and developing take longer and more resources to develop and commercialize, including obtaining regulatory approval.

Specific risks in connection with expanding into new products and markets include: longer product development cycles, the inability to transfer our quality standards and technology into new products, the failure to receive or the delay in receipt of regulatory approval for new products or modifications to existing products, and the failure of our customers to accept the new or modified products. Our inability to develop new products or expand into new markets, as currently intended, could hurt our business, financial condition and results of operations.

We may never realize the full value of our intangible assets, which represent a significant portion of our total assets.

At December 28, 2018, we had \$ 1.6 billion of goodwill and other intangible assets, representing 71% of our total assets. These intangible assets consist primarily of goodwill, trademarks, tradenames, customer lists and patented technology arising from our acquisitions. Goodwill and other intangible assets with indefinite lives are not amortized, but are tested annually or upon the occurrence of certain events that indicate that the assets may be impaired. Definite lived intangible assets are amortized over their estimated useful lives and are tested for impairment upon the occurrence of certain events that indicate that the assets may be impaired. We may not receive the recorded value for our intangible assets if we sell or liquidate our business or assets. In addition, this significant amount of intangible assets increases the risk of a large charge to earnings in the event that the recoverability of these intangible assets is impaired. In the event of such a charge to earnings, the market price of our common stock could be negatively affected. In addition, intangible assets with definite lives, which represent \$ 722.1 million of our net intangible assets at December 28, 2018, will continue to be amortized. These expenses will continue to reduce our future earnings or increase our future losses.

We are subject to pricing pressures from customers, which could harm our operating results.

Given the competitive industry in which we operate, we have made price concessions to some of our larger customers in recent years and we expect customer pressure for price concessions will continue in the future. Price concessions or reductions may cause our operating results to suffer.

We rely on third party suppliers for raw materials, key products and subcomponents, and if we are unable to obtain these materials, products and/or subcomponents on a timely basis or on terms acceptable to us, our ability to manufacture products will suffer.

Our business depends on a continuous supply of raw materials. The principal raw materials used in our business include lithium, iodine, gold, CFx, palladium, stainless steel, aluminum, cobalt chrome, tantalum, platinum, ruthenium, gallium trichloride, vanadium oxide, iridium, titanium and plastics. The supply and price of these raw materials are susceptible to fluctuations due to transportation issues, government regulations, price controls, foreign civil unrest, tariffs, worldwide economic conditions or other unforeseen circumstances. Increasing global demand for these raw materials has caused prices of these materials to increase. In addition, there are a limited number of worldwide suppliers of several raw materials needed to manufacture our products. For reasons of quality, cost effectiveness or availability, we obtain some raw materials from a single supplier. Although we work closely with our suppliers to seek to ensure continuity of supply, we may not be able to continue to procure raw materials critical to our business at all or to procure them at acceptable price levels.

In addition, we rely on third party manufacturers to supply many of the products and subcomponents that are incorporated into our own products and components. Manufacturing problems may occur with these and other outside sources, as a supplier may fail to develop and supply products and subcomponents to us on a timely basis, or may supply us with products and subcomponents that do not meet our quality, quantity and cost requirements. If any of these problems occur, we may be unable to obtain substitute sources for these products and subcomponents on a timely basis or on terms acceptable to us, which could harm our ability to manufacture our own products and components profitably or on time. In addition, to the extent the processes our suppliers use to manufacture products and subcomponents are proprietary, we may be unable to obtain comparable products and subcomponents from alternative suppliers.

Quality problems with our products could harm our reputation and erode our competitive advantage.

Quality is important to us and our customers, and our products, given their intended uses, are held to high quality and performance standards. In the event our products fail to meet these standards, our reputation could be harmed, which could erode our competitive advantage over competitors, causing us to lose or see a reduction in business from customers and resulting in lower revenues.

Quality problems with our products could result in warranty claims and additional costs.

We generally allow customers to return defective or damaged products for credit, replacement or repair. We generally warrant that our products will meet customer specifications and will be free from defects in materials and workmanship. Additionally, we carry a safety stock of inventory for our customers that may be impacted by warranty claims. We reserve for our exposure to warranty claims based upon recent historical experience and other specific information as it becomes available. However, these reserves may not be adequate to cover future warranty claims. If these reserves are inadequate, additional warranty costs or inventory write-offs may need to be incurred in the future, which could harm our operating results.

Regulatory issues resulting from product complaints, or recalls, or regulatory audits could harm our ability to produce and supply products or bring new products to market.

Our products are designed, manufactured and distributed globally in compliance with applicable regulations and standards. However, a product complaint, recall or negative regulatory audit may cause our products to be removed from the market and harm our operating results or financial condition. In addition, during the period in which corrective action is being taken by us to remedy a complaint, recall or negative audit, regulators may not allow our new products to be cleared for marketing and sale.

If we become subject to product liability claims, our operating results and financial condition could suffer.

Our business exposes us to potential product liability claims, which may take the form of a one-off claim from a single claimant or a class action lawsuit covering multiple claimants, that are inherent in the design, manufacture and sales of our products. Product failures, including those that arise from the failure to meet product specifications, misuse or malfunction, or design flaws, or the use of our products with components or systems not manufactured or sold by us could result in product liability claims or a recall. Many of our products are components and function in interaction with our customers' medical devices. For example, our batteries are produced to meet electrical performance, longevity and other specifications, but the actual performance of those products is dependent on how they are utilized as part of our customers' devices over the lifetime of their products. Product performance and device interaction from time to time have been, and may in the future be, different than expected for a number of reasons. Consequently, it is possible that customers may experience problems with their medical devices that could require device recall or other corrective action, where our batteries met the specification at delivery, and for reasons that are not related primarily or at all to any failure by our product to perform in accordance with specifications. It is possible that our customers (or end-users) may in the future assert that our products caused or contributed to device failure. Even if these assertions do not lead to product liability or contract claims, they could harm our reputation and our customer relationships.

Provisions contained in our agreements with key customers attempting to limit our damages, including provisions to limit damages to liability for negligence, may not be enforceable in all instances or may otherwise fail to adequately protect us from liability for damages. Product liability claims or product recalls, regardless of their ultimate outcome, could require us to spend significant time and money in litigation and require us to pay significant damages and could divert the attention of our management from our business operations. The occurrence of product liability claims or product recalls could affect our operating results and financial condition.

We carry product liability insurance with coverage that is limited in scope and amount. We may not be able to maintain this insurance at a reasonable cost or on reasonable terms, or at all. This insurance may not be adequate to protect us against a product liability claim that arises in the future.

Our operating results may fluctuate, which may make it difficult to forecast our future performance and may result in volatility in our stock price.

Our operating results have fluctuated in the past and are likely to continue to fluctuate from quarter to quarter, making forecasting future performance difficult and resulting in volatility in our stock price. These fluctuations are due to a variety of factors, including the following:

- a substantial percentage of our costs are fixed in nature, which results in our operations being particularly sensitive to fluctuations in production volumes;
- changes in the mix of our revenue represented by our various products and customers could result in reductions in our profits if the mix of our revenue represented by lower margin products increases;
- timing of orders placed by our principal customers who account for a significant portion of our revenues; and
- increased costs of raw materials or supplies.

If we are unable to protect our intellectual property and proprietary rights, our business could be harmed.

We rely on a combination of patents, licenses, trade secrets and know-how to establish and protect our rights to our technologies and products. However, we cannot assure you that any of our patent rights, whether issued, subject to license or in process, will not be misappropriated, circumvented or invalidated. In addition, competitors may design around our technology or develop competing technologies that do not infringe our proprietary rights. As patents and other intellectual property protection expire, we may lose our competitive advantage. If third parties infringe or misappropriate our patents or other proprietary rights, our businesses could be seriously harmed.

In addition, we cannot be assured that our existing or planned products do not or will not infringe on the intellectual property rights of others or that others will not claim such infringement. Our industry has experienced extensive ongoing patent litigation which can result in the incurrence of significant legal costs for indeterminate periods of time, injunctions against the manufacture or sale of infringing products and significant royalty payments. At any given time, we may be a plaintiff or defendant in such an action. We cannot assure you that we will be able to prevent competitors from challenging our patents or other intellectual property rights or entering markets we currently serve.

In addition to seeking formal patent protection whenever possible, we attempt to protect our proprietary rights and trade secrets by entering into confidentiality agreements with employees, consultants and third parties with which we do business. However, these agreements may be breached and, if a breach occurs, there may be no adequate remedies available to us and we may be unable to prevent the unauthorized disclosure or use of our technical knowledge, practices and/or procedures. If our trade secrets become known, we may lose our competitive advantages.

We may be subject to intellectual property claims, which could be costly and time consuming and could divert our management's attention from our business operations.

In producing our products, third parties may claim that we are infringing on their intellectual property rights, and we may be found to have infringed on those intellectual property rights. We may be unaware of intellectual property rights of others that may be used in our technology and products. In addition, third parties may claim that our patents have been improperly granted and may seek to invalidate our existing or future patents. If any claim for invalidation prevailed, third parties may manufacture and sell products that compete with our products and our revenues from any related license agreements would decrease accordingly. We also typically do not receive significant indemnification from parties that license technology to us against third party claims of intellectual property infringement.

Any litigation or other challenges regarding our patents or other intellectual property could be costly and time consuming and could divert the attention of our management and key personnel from our business operations. The complexity of the technology involved in producing our products and the uncertainty of intellectual property litigation increases these risks. Claims of intellectual property infringement may also require us to enter into costly royalty or license agreements. However, we may not be able to obtain royalty or license agreements on terms acceptable to us, or at all. We also may be made subject to significant damages or injunctions against development and sale of our products.

Our failure to obtain licenses from third parties for new technologies or the loss of these licenses could impair our ability to design and manufacture new products and reduce our revenues.

We occasionally license technologies from third parties rather than depending exclusively on our own proprietary technology and developments. Our ability to license new technologies from third parties is and will continue to be critical to our ability to offer new and improved products. We may not be able to continue to identify new technologies developed by others and even if we are able to identify new technologies, we may not be able to negotiate licenses on favorable terms, or at all. Additionally, we could lose rights granted under licenses for reasons beyond our control.

We may not be able to attract, train and retain a sufficient number of qualified associates to maintain and grow our business.

We monitor the markets in which we compete and assess opportunities to better align expenses with revenues, while preserving our ability to make needed investments in RD&E projects, capital and our associates that we believe are critical to our long-term success. Our success will depend in large part upon our ability to attract, train, retain and motivate highly skilled associates. There is currently aggressive competition for employees who have experience in technology and engineering. We compete intensely with other companies to recruit and hire from this limited pool. The industries in which we compete for employees are characterized by high levels of employee attrition. Although we believe we offer competitive salaries and benefits, we may have to increase spending in order to attract, train and retain qualified personnel.

We are dependent upon our senior management team and key technical personnel and the loss of any of them could significantly harm us.

Our future performance depends to a significant degree upon the continued contributions of our senior management team and key technical personnel. In general, only highly qualified and trained scientists have the necessary skills to develop our products, which are often highly technical in nature. The loss or unavailability to us of any member of our senior management team or a key technical employee could significantly harm us. We face intense competition for these professionals from our competitors, customers and companies operating in our industry. To the extent that the services of members of our senior management team and key technical personnel would be unavailable to us for any reason, we would be required to hire other personnel to manage and operate our Company and to develop our products and technology, which could negatively impact our business. We may not be able to locate or employ these qualified personnel on acceptable terms or may need to increase spending in order to attract these qualified personnel.

We have significant indebtedness that could affect our operations and financial condition, and our failure to meet certain financial covenants required by our debt agreements may materially and adversely affect our assets, financial position and cash flows.

At December 28, 2018, we had \$942 million in principal amount of debt outstanding. As of December 28, 2018, our debt service obligations, comprised of principal and interest, during the 2019 fiscal year ending January 3, 2020 are estimated to be approximately \$86 million. The outstanding indebtedness and the terms and covenants of the agreements under which this debt was incurred, could, among other things:

- require us to dedicate a large portion of our cash flow from operations to the servicing and repayment of our outstanding indebtedness, thereby reducing funds available for working capital, capital expenditures, RD&E expenditures and other general corporate requirements;
- limit our ability to obtain additional financing to fund future working capital, capital expenditures, RD&E expenditures and other general corporate requirements in the future;
- limit our flexibility in planning for, or reacting to, changes in our business and the industry in which we operate;
- restrict our ability to make strategic acquisitions or dispositions or to exploit business opportunities;
- place us at a competitive disadvantage compared to our competitors that have less outstanding indebtedness; and
- adversely affect the market price of our common stock.

If we are not successful in making acquisitions to expand and develop our business, our operating results may suffer.

One facet of our growth strategy is to make acquisitions that complement our core competencies in technology and manufacturing to enable us to manufacture and sell additional products to our existing customers and to expand our business into related markets. Our continued growth may depend on our ability to successfully identify and acquire companies that complement or enhance our existing business on acceptable terms. We may not be able to identify or complete future acquisitions. In addition, we will need to comply with the terms of our Senior Secured Credit Facility. In connection with pursuing this growth strategy, some of the risks that we may encounter include expenses associated with and difficulties in identifying potential targets, the costs associated with unsuccessful acquisitions, and higher prices for acquired companies because of competition for attractive acquisition targets.

We may not realize the expected benefits from our cost savings and consolidation initiatives or those initiatives may have unintended consequences, which may harm our business.

We have incurred significant charges related to various cost savings and consolidation initiatives. These initiatives were undertaken to improve our operational effectiveness, efficiencies and profitability. Information regarding some of these initiatives is discussed in Note 11 “Other Operating Expenses” of the Notes to Consolidated Financial Statements contained in Item 8 of this report. Cost reduction efforts under these initiatives include various cost and efficiency improvement measures, such as headcount reductions, the relocation of resources and administrative and functional activities, the closure of facilities, the transfer of production lines, the sale of non-strategic assets and other efforts to streamline our business, among other actions. These measures could yield unintended consequences, such as distraction of our management and associates, business disruption, disputes with customers, attrition beyond our planned reduction in workforce and reduced associate productivity. If any of these unintended consequences were to occur, they could negatively affect our business, financial condition and results of operations. In addition, headcount reductions and customer disputes may subject us to the risk of litigation, which could result in the incurrence of substantial costs. Moreover, our cost reduction efforts result in charges and expenses that impact our operating results. Our cost savings and consolidation initiatives, or other expense reduction measures we take in the future, may not result in the expected cost savings.

Successful integration and anticipated benefits of acquisitions cannot be assured and integration matters could divert attention of management away from operations.

Part of our business strategy includes acquiring additional businesses and assets. If we do not successfully integrate acquisitions, we may not realize anticipated operating advantages and cost savings. Our ability to realize the anticipated benefits from acquisitions will depend, to a large extent, on our ability to integrate these acquired businesses with our legacy businesses. Integrating and coordinating aspects of the operations and personnel of the acquired business with legacy businesses involves complex operational, technological and personnel-related challenges. This process is time-consuming and expensive, disrupts the businesses of both companies and may not result in the achievement of the full benefits expected by us, including cost synergies expected to arise from supply chain efficiencies and overlapping general and administrative functions.

The potential difficulties, and resulting costs and delays, include:

- managing a larger combined company;
- consolidating corporate and administrative infrastructures;
- issues in integrating manufacturing, warehouse and distribution facilities, RD&E and sales forces;
- difficulties attracting and retaining key personnel;
- loss of customers and suppliers and inability to attract new customers and suppliers;
- unanticipated issues in integrating information technology, communications and other systems;
- incompatibility of purchasing, logistics, marketing, administration and other systems and processes; and
- unforeseen and unexpected liabilities related to the acquired business.

Additionally, the integration of our legacy businesses with an acquired company's operations, products and personnel may place a significant burden on management and other internal resources. The attention of our management may be directed towards integration considerations and may be diverted from our day-to-day business operations, and matters related to the integration may require commitments of time and resources that could otherwise have been devoted to other opportunities that might have been beneficial to us and our business. The diversion of management's attention, and any difficulties encountered in the transition and integration process, could harm our business, financial condition and operating results.

We may not be able to maintain the levels of operating efficiency that acquired companies have achieved or might achieve separately. Successful integration of each acquisition will depend upon our ability to manage those operations and to eliminate redundant and excess costs. Difficulties in integration may be magnified if we make multiple acquisitions over a relatively short period of time. Because of difficulties in combining and expanding operations, we may not be able to achieve the cost savings and other size-related benefits that we hoped to achieve after these acquisitions.

Any of the matters described above could adversely affect our business or harm our financial condition, results of operations or business prospects.

Interruptions of our manufacturing operations could delay production and negatively affect our operations.

Our products are designed and manufactured in facilities located around the world. In most cases, the manufacturing of specific product lines is concentrated in one or a few locations. If an event (including any weather or natural disaster-related event) occurred that resulted in material damage or loss of one or more of these manufacturing facilities or we lacked sufficient labor to fully operate the facility, we might be unable to transfer the manufacture of the relevant products to another facility or location in a cost-effective or timely manner, if at all. This potential inability to transfer production could occur for a number of reasons, including but not limited to a lack of necessary relevant manufacturing capability at another facility, or the regulatory requirements of the FDA or other governmental regulatory bodies. In addition, our business involves complex manufacturing processes and hazardous materials that can be dangerous to our associates. Although we employ safety procedures in the design and operation of our facilities, there is a risk that an accident or death could occur. Any accident, such as a chemical spill or fire, could result in significant manufacturing delays or claims for damages resulting from injuries, which would harm our operations and financial condition. The potential liability resulting from any such accident or death, to the extent not covered by insurance, could harm our financial condition or operating results. Any disruption of operations at any of our facilities, and in particular our larger facilities, could result in production delays, which could affect our operations and harm our business.

We have a complex tax profile due to the global nature of our operations and may experience significant variability in our quarterly and annual effective tax rate due to several factors, including changes in the mix of pre-tax income and the jurisdictions to which it relates, business acquisitions, settlements with taxing authorities, and changes in tax rates.

Our global operations encompass multiple taxing jurisdictions. Variability in the mix and profitability of domestic and international activities, identification and resolution of various tax uncertainties, changes in tax laws and rates, and the extent to which we are able to realize net operating loss and other carryforwards included in deferred tax assets and avoid potential adverse outcomes included in deferred tax liabilities, among other matters, may significantly affect our effective income tax rate in the future.

Changes in international tax laws or additional changes in U.S. tax laws could materially affect our financial position and results of operations. In addition, many countries in the EU, as well as a number of other countries and organizations such as the Organization for Economic Cooperation and Development, are also actively considering changes to existing tax laws. If tax laws and related regulations change, our financial results could be materially impacted. Given the unpredictability of these possible changes and their potential interdependency, it is possible such changes could adversely impact our financial results.

Our effective income tax rate is the result of the income tax rates in the various countries in which we do business. Our mix of income and losses in these jurisdictions affects our effective tax rate. For example, relatively more income in higher tax rate jurisdictions would increase our effective tax rate and thus lower our net income. Similarly, if we generate losses in tax jurisdictions for which no benefits are available, our effective income tax rate will increase. Our effective income tax rate may also be impacted by the recognition of discrete income tax items, such as required adjustments to our liabilities for uncertain tax positions or our deferred tax asset valuation allowance. A significant increase in our effective income tax rate could have a material adverse impact on our earnings.

We have recorded deferred tax assets based on our assessment that we will be able to realize the benefits of our net operating losses and other favorable tax attributes. Realization of deferred tax assets involve significant judgments and estimates which are subject to change and ultimately depends on generating sufficient taxable income of the appropriate character during the appropriate periods. Changes in circumstances may affect the likelihood of such realization, which in turn may trigger a write-down of our deferred tax assets, the amount of which would depend on a number of factors. A write-down would reduce our reported net income, which may adversely impact our financial condition or results of operations or cash flows. In addition, we are potentially subject to ongoing and periodic tax examinations and audits in various jurisdictions, including with respect to the amount of our net operating losses and any limitation thereon. An adjustment to such net operating loss carryforwards, including an adjustment from a taxing authority, could result in higher tax costs, penalties and interest, thereby adversely impacting our financial condition, results of operations or cash flows.

Our operations are subject to cyber-attacks that could have a material adverse effect on our business, consolidated results of operations and consolidated financial condition.

In the ordinary course of business, our operations are, and in the future are expected to continue to be, dependent on digital technologies and information technology systems. We use these technologies and systems for internal purposes, including data storage, processing and transmissions, as well as in our interactions with customers and suppliers. The security of this information and these systems are important to our operations and business strategy. Digital technologies and systems have been, and in the future are expected to continue to be, subject to the risk of cyber-attacks. Despite our security measures, our information technology systems and infrastructure may be vulnerable to cyber-attacks by hackers or malware, or breached due to associate error, malfeasance or other disruptions. As the techniques used to obtain unauthorized access, disable or degrade service, or sabotage infrastructure and systems change frequently and may be difficult to detect for long periods of time, we may be unable to anticipate these techniques or implement adequate preventive measures. If our systems for protecting against cybersecurity risks prove insufficient, we could be adversely affected by, among other things: loss of or damage to intellectual property, proprietary or confidential information, or customer, supplier, or employee data; interruption of our business operations; and increased costs required to prevent, respond to, or mitigate cybersecurity attacks. In addition, any such breach could compromise our networks and the information stored there could be accessed, publicly disclosed or stolen. These risks could harm our reputation and brand, and our relationships with customers, suppliers, employees and other third parties, and may result in claims or proceeding against us. In certain circumstances, we may rely on third party vendors to process, store and transmit data for our business whose operations are subject to similar risks. These risks could have a material adverse effect on our business, financial condition and results of operations. While we maintain cyber-liability insurance, our insurance may not be sufficient to cover us against all losses that could potentially result from a breach of our systems or loss of sensitive data.

The failure of our information technology systems to perform as anticipated could disrupt our business and affect our financial condition.

The efficient operation of our business is dependent on our information technology (“IT”) systems. Accordingly, we rely upon the capacity, reliability and security of our IT hardware and software infrastructure and our ability to expand and update this infrastructure in response to our changing needs. Despite our implementation of security measures, our systems are vulnerable to damages from computer viruses, natural disasters, incursions by intruders or hackers, failures in hardware or software, power fluctuations, cyber terrorists and other similar disruptions. The failure of our IT systems to perform as anticipated for any reason or any significant breach of security could disrupt our business and result in numerous consequences, including reduced effectiveness and efficiency of operations, inappropriate disclosure of confidential information, increased overhead costs and loss of important information, which could have a material effect on our business and results of operations. In addition, we may be required to incur significant costs to protect against damage caused by these disruptions or security breaches in the future.

Our international sales and operations are subject to a variety of market and financial risks and costs that could affect our profitability and operating results.

Our sales outside the U.S., which accounted for 43% of sales for 2018 , and our operations in Europe, Asia, Mexico and South America are and will continue to be subject to a number of risks and potential costs, including:

- changes in foreign economic conditions and/or regulatory requirements;
- changes in foreign currency exchange rates;
- local product preferences and product requirements;
- outstanding accounts receivables that take longer to collect than is typical in the U.S.;
- difficulties in enforcing agreements through foreign legal systems;
- less protection of intellectual property in some countries outside of the U.S.;
- trade protection measures and import and export licensing requirements;
- work force instability;
- political and economic instability; and
- complex tax and cash management issues.

We earn revenue and incur expenses related to our foreign sales and operations that are denominated in a foreign currency. Additionally, to the extent that monetary assets and liabilities, including short-term and long-term intercompany loans, are recorded in a currency other than the functional currency of our foreign subsidiaries, these amounts are remeasured each period, with the resulting gain or loss being recorded in Other (Income) Loss, Net. We may buy hedges in certain currencies to reduce or offset our exposure to currency exchange fluctuations; however, these transactions may not be adequate or effective to protect us from the exposure for which they are purchased. Historically, foreign currency fluctuations have not had a material effect on our net financial results. However, fluctuations in foreign currency exchange rates could have a significant impact, positive or negative, on our financial results in the future.

Economic and credit market uncertainty could interrupt our access to capital markets, borrowings, or financial transactions to hedge certain risks, which could adversely affect our financial condition.

To date, we have been able to access debt and equity financing that has allowed us to complete acquisitions, make investments in growth opportunities and fund working capital requirements. In addition, we enter into financial transactions to hedge certain risks, including foreign exchange and interest rate risk. Our continued access to capital markets, the stability of our lenders under our Senior Secured Credit Facility and their willingness to support our needs, and the stability of the parties to our financial transactions that hedge risks are essential for us to meet our current and long-term obligations, fund operations, and fund our strategic initiatives. An interruption in our access to external financing or financial transactions to hedge risk could affect our business prospects and financial condition.

Risks Related To Our Industries

Our business is subject to environmental regulations that could be costly to comply with.

Federal, state and local regulations impose various environmental controls on the manufacturing, transportation, storage, use and disposal of batteries and hazardous chemicals and other materials used in, and hazardous waste produced by the manufacturing of our products. Conditions relating to our historical operations may require expenditures for clean-up in the future and changes in environmental laws and regulations may impose costly compliance requirements on us or otherwise subject us to future liabilities. Additional or modified regulations relating to the manufacture, transportation, storage, use and disposal of materials used to manufacture our products or restricting disposal or transportation of batteries may be imposed that may result in higher costs or lower operating results. In addition, we cannot predict the effect that additional or modified environmental regulations may have on us or our customers.

Our international operations expose us to legal and regulatory risks, which could have a material effect on our business.

Our profitability and international operations are, and will continue to be, subject to risks relating to changes in foreign legal and regulatory requirements. In addition, our international operations are governed by various U.S. laws and regulations, including the Foreign Corrupt Practices Act (“FCPA”) and other similar laws that prohibit us and our business partners from making improper payments or offers of payment to foreign governments and their officials and political parties for the purpose of obtaining or retaining business. Any alleged or actual violations of these regulations may subject us to government scrutiny, severe criminal or civil sanctions and other liabilities and could negatively affect our business, reputation, operating results, and financial condition.

Consolidation in the healthcare industry could result in greater competition and reduce our revenues and harm our business.

Many healthcare industry companies are consolidating to create new companies with greater market power. As the healthcare industry consolidates, competition to provide products and services to industry participants will become more intense. These industry participants may try to use their market power to negotiate price concessions or reductions for our products or may undertake additional vertical integration and/or supplier diversification initiatives. If we are forced to reduce our prices, our revenues would decrease and our operating results would suffer.

The healthcare industry is highly regulated and subject to various political, economic and regulatory changes that could increase our compliance costs and force us to modify how we develop and price our products.

The healthcare industry is highly regulated and is influenced by changing political, economic and regulatory factors. Several of our product lines are subject to international, federal, state and local health and safety, packaging and product content regulations. In addition, medical devices are subject to regulation by the FDA and similar governmental agencies. These regulations cover a wide variety of product activities from design and development to labeling, manufacturing, promotion, sales and distribution. Compliance with these regulations may be time consuming, burdensome and expensive and could negatively affect our ability to sell products. This may result in higher than anticipated costs or lower than anticipated revenues.

Furthermore, healthcare industry regulations are complex, change frequently and have tended to become more stringent over time. Federal and state legislatures have periodically considered and implemented programs to reform or amend the U.S. healthcare system at both the federal and state levels. In addition, these regulations may contain proposals to increase governmental involvement in healthcare, lower reimbursement rates or otherwise change the environment in which healthcare industry participants operate. We may be required to incur significant expenses to comply with these regulations or remedy past violations of these regulations. Our failure to comply with applicable government regulations could also result in cessation of portions or all of our operations, impositions of fines and restrictions on our ability to carry on or expand our operations. In addition, because many of our products are sold into regulated industries, we must comply with additional regulations in marketing our products.

In response to perceived increases in healthcare costs in recent years, there have been and continue to be proposals by the Presidential administrations, members of Congress, state governments, regulators and third-party payors to control these costs and, more generally, to reform the U.S. healthcare system, including by repealing or replacing the Patient Protection and Affordable Care Act. Health care reform imposed a Medical Device Excise Tax (“the MDET”) on medical device manufacturers through the end of 2015. The Consolidated Appropriations Act, 2016, enacted in December 2015, included a two-year moratorium on MDET such that medical device sales in 2016 and 2017 were exempt from the MDET. New legislation was passed in January 2018 such that implementation of the MDET was suspended until January 1, 2020. Although the MDET was suspended, if this suspension is not continued or made permanent thereafter, the MDET will be automatically reinstated starting on January 1, 2020 and would result in a significant increase in the tax burden on our industry, which could have a material negative impact on our financial condition, results of operations and our cash flows. Other elements of health care reform such as comparative effectiveness research, an independent payment advisory board, payment system reforms including shared savings pilots and other provisions could meaningfully change the way healthcare is developed and delivered, and may materially adversely impact numerous aspects of our business, results of operations and financial condition.

Our business is indirectly subject to healthcare industry cost containment measures that could result in reduced sales of our products.

Several of our customers rely on third party payors, such as government programs and private health insurance plans, to reimburse some or all of the cost of the procedures in which our products are used. The continuing efforts of governments, insurance companies and other payors of healthcare costs to contain or reduce those costs could lead to patients being unable to obtain approval for payment from these third party payors for procedures in which our products are used. If that occurred, sales of medical devices may decline significantly and our customers may reduce or eliminate purchases of our products, or demand further price reductions. The cost containment measures that healthcare payors are instituting, both in the U.S. and internationally, could reduce our revenues and harm our operating results.

Our energy market revenues are dependent on conditions in the oil and natural gas industry, which historically have been volatile.

Sales of our products into the energy market depends upon the condition of the oil and gas industry. Currently, oil and natural gas prices have been subject to significant fluctuation and the oil and gas exploration and production industry has historically been cyclical, and it is likely that oil and natural gas prices will continue to fluctuate in the future. The current and anticipated prices of oil and natural gas influence the oil and gas exploration and production business and are affected by a variety of political and economic factors, including worldwide demand for oil and natural gas, worldwide and domestic supplies of oil and natural gas, the ability of the Organization of Petroleum Exporting Countries (“OPEC”) to set and maintain production levels and pricing, the level of production of non-OPEC countries, the price and availability of alternative fuels, political stability in oil producing regions and the policies of the various governments regarding exploration and development of their oil and natural gas reserves. A change in the oil and gas exploration and production industry or a reduction in the exploration and production expenditures of oil and gas companies could cause our energy market revenues to decline.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our principal executive office and headquarters is located in Plano, Texas, in a leased facility. As of December 28, 2018, we operated 18 facilities in the U.S., three in Europe, three in Mexico, one in South America, and two in Southeast Asia. Of these facilities, 19 were leased and 8 were owned. We occupy approximately 1.7 million square feet of manufacturing and RD&E space worldwide. We believe the facilities we operate and their equipment are effectively utilized, well maintained, generally are in good condition, and will be able to accommodate our capacity needs to meet current levels of demand. We continuously review our anticipated requirements for facilities and, on the basis of that review, may from time to time acquire additional facilities or dispose of existing facilities.

ITEM 3. LEGAL PROCEEDINGS

In April 2013, the Company commenced an action against AVX Corporation and AVX Filters Corporation (collectively “AVX”) alleging that AVX had infringed the Company’s patents by manufacturing and selling filtered feedthrough assemblies used in implantable pacemakers and cardioverter defibrillators that incorporate the Company’s patented technology. Two juries in the United States District Court for the District of Delaware have returned verdicts finding that AVX infringed three of the Company’s patents and awarded the Company \$37.5 million in damages. In March 2018, the U.S. District Court for the District of Delaware vacated the original damage award and ordered a retrial on damages. In the January 2019 retrial on damages, the jury awarded the Company \$22.2 million in damages. The finding is subject to post-trial proceedings.

In January 2015, LRM was notified by the New Jersey Department of Environmental Protection (“NJDEP”) of NJDEP’s intent to revoke a no further action determination made by NJDEP in favor of LRM in 2002 pertaining to a property on which a subsidiary of LRM operated a manufacturing facility in South Plainfield, New Jersey beginning in 1971. LRM sold the property in 2004 and vacated the facility in 2007. In response to NJDEP’s notice, LRM further investigated the matter and submitted a technical report to NJDEP in August of 2015 that concluded that NJDEP’s notice of intent to revoke was unwarranted. After reviewing the technical report, NJDEP issued a draft response in May 2016, stating that NJDEP would not revoke the no further action determination at that time but would require some additional site investigation to support the Company’s conclusion. The Company is cooperating with NJDEP and has begun the requested additional investigation. The Company does not expect that this environmental matter will have a material effect on its consolidated results of operations, financial position or cash flows.

We are party to various other legal actions arising in the normal course of business. A description of pending legal actions against the Company is set forth in Note 13 “Commitments and Contingencies” of the Notes to Consolidated Financial Statements contained in Item 8 of this report. Other than as discussed in Note 13, we do not believe that the ultimate resolution of any pending legal actions will have a material effect on our consolidated results of operations, financial position or cash flows. However, litigation is subject to inherent uncertainties and there can be no assurance that any pending legal action, which we currently believe to be immaterial, does not become material in the future.

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 for Common Stock. The Company’s common stock trades on the New York Stock Exchange (“NYSE”) under the symbol “ITGR.”

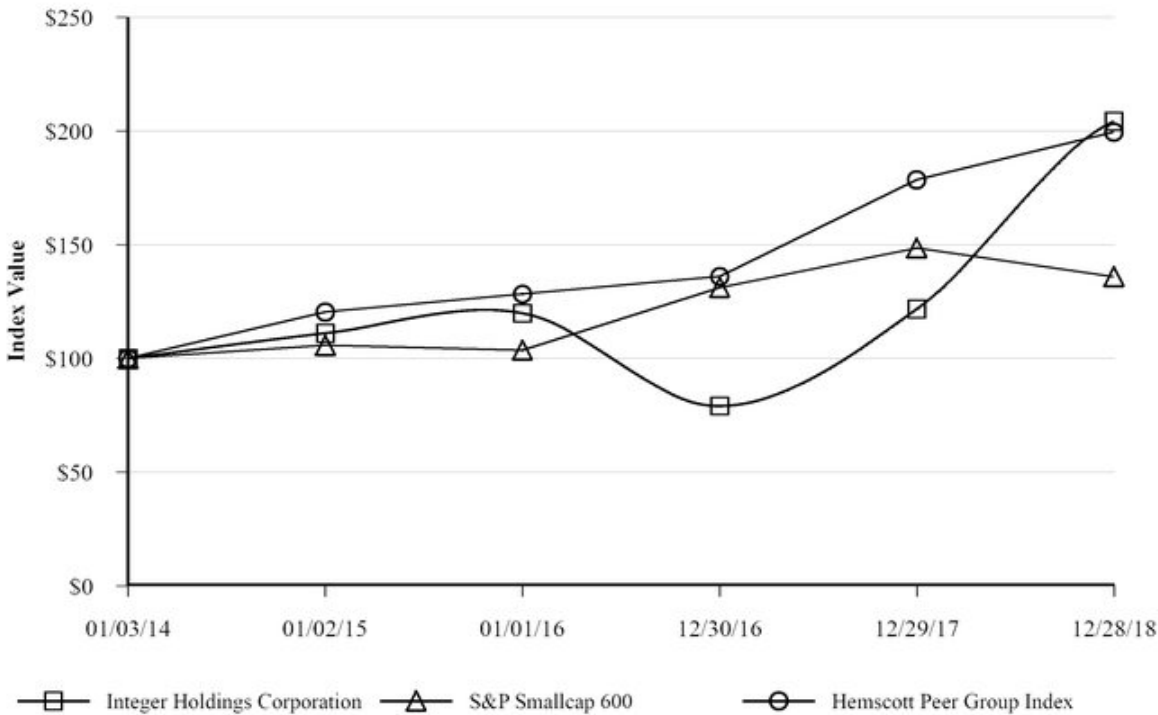
Stockholders. According to the records of our transfer agent, there were approximately 100 holders of record of our common stock on February 15, 2019 . Because many of these shares are held by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of stockholders represented by these record holders.

Dividends. We have not paid cash dividends and do not anticipate paying any cash dividends in the foreseeable future.

PERFORMANCE GRAPH

The following graph compares, for the five year period ended December 28, 2018 , the cumulative total stockholder return for Integer Holdings Corporation, the S&P SmallCap 600 Index, and the Hemscott Peer Group Index. The Hemscott Peer Group Index includes approximately 110 comparable companies included in the Hemscott Industry Group 520 *Medical Instruments & Supplies* and 521 *Medical Appliances & Equipment* . The graph assumes that \$100 was invested on January 3, 2014 and assumes reinvestment of dividends. No adjustments have been made for the value provided to shareholders for spin-offs, including the spin-off of Nuvectra by the Company in March 2016. The stock price performance shown on the following graph is not necessarily indicative of future price performance.

Total Return Performance



Company/Index	01/03/14	01/02/15	01/01/16	12/30/16	12/29/17	12/28/18
Integer Holdings Corporation	\$ 100.00	\$ 111.10	\$ 119.86	\$ 79.12	\$ 121.70	\$ 204.26
S&P Smallcap 600	100.00	105.76	103.67	131.20	148.56	135.96
Hemscott Peer Group Index	100.00	120.38	128.36	136.03	178.54	199.50

ITEM 6. SELECTED FINANCIAL DATA

Five-Year Summary Financial Data

(in thousands, except per share amounts)

This data should be read along with Item 7 “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and Item 8 “Financial Statements and Supplementary Data” appearing elsewhere in this report. Operating results for the 2014 through 2017 fiscal years were retrospectively revised from previously reported amounts to reclassify the operations for the AS&O Product Line as discontinued operations.

	<u>2018</u> ⁽¹⁾⁽²⁾	<u>2017</u> ⁽¹⁾⁽²⁾⁽³⁾	<u>2016</u> ⁽¹⁾⁽²⁾	<u>2015</u> ⁽¹⁾⁽²⁾	<u>2014</u> ⁽¹⁾⁽²⁾
Summary of Operations for the Fiscal Year:					
Sales	\$ 1,215,012	\$ 1,136,080	\$ 1,075,502	\$ 638,995	\$ 547,937
Income (loss) from continuing operations	47,033	87,087	24,878	(3,176)	46,980
Income (loss) from discontinued operations	120,931	(20,408)	(18,917)	(4,418)	5,778
Net income (loss)	167,964	66,679	5,961	(7,594)	55,458
Basic earnings (loss) per share:					
Income (loss) from continuing operations	\$ 1.46	\$ 2.77	\$ 0.81	\$ (0.12)	\$ 2.00
Income (loss) from discontinued operations	3.76	(0.65)	(0.61)	(0.17)	0.23
Basic earnings (loss) per share	5.23	2.12	0.19	(0.29)	2.23
Diluted earnings (loss) per share:					
Income (loss) from continuing operations	\$ 1.44	\$ 2.72	\$ 0.80	\$ (0.12)	\$ 1.91
Income (loss) from discontinued operations	3.71	(0.64)	(0.61)	(0.17)	0.22
Diluted earnings (loss) per share	5.15	2.08	0.19	(0.29)	2.14
Financial Position at Year End:					
Working capital	\$ 251,680	\$ 322,906	\$ 332,087	\$ 360,764	\$ 242,022
Total assets	2,326,681	2,848,345	2,832,543	2,982,136	955,122
Long-term obligations	1,101,618	1,745,961	1,922,084	1,917,671	233,099

(1) From 2014 to 2018, we recorded material charges in Other Operating Expenses (“OOE”), primarily related to our cost savings and consolidation initiatives and our acquisitions. Additional information is set forth in Note 11 “Other Operating Expenses” of the Notes to Consolidated Financial Statements contained in Item 8 of this report.

(2) In 2015 and 2014, we acquired LRM and Centro de Construcción de Cardioestimuladores del Uruguay, respectively. In 2016, we spun-off a portion of our former QiG segment, which is now an independent, publicly traded company known as Nuvectra. This data includes the results of operations of these acquired companies subsequent to their acquisition and does not include the result of operations of Nuvectra subsequent to the Spin-off.

(3) In the fourth quarter of 2017, we recognized a net benefit of \$39.4 million as a result of the Tax Reform Act.

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 together with our selected financial data and our consolidated financial statements and the related notes appearing elsewhere in this report.

This discussion and analysis contains forward-looking statements that involve risks, uncertainties and assumptions. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of many factors, including but not limited to those under the heading "Risk Factors" in Item 1A of this report.

Our Business

- Our business
- Discontinued operations and divestiture
- Use of non-GAAP financial information
- Strategic overview
- Financial overview

Our Financial Results

- Fiscal 2018 compared with fiscal 2017
- Fiscal 2017 compared with fiscal 2016
- Liquidity and capital resources
- Off-balance sheet arrangements
- Contractual obligations
- Impact of recently issued accounting standards

Critical Accounting Estimates

- Inventories
- Valuation of goodwill, intangible and other long-lived assets
- Income taxes

We utilize a fifty-two or fifty-three week fiscal year ending on the Friday nearest December 31. Fiscal years 2018 , 2017 and 2016 each consisted of fifty-two weeks and ended on December 28, 2018 , December 29, 2017 and December 30, 2016 , respectively.

The results of operations of the AS&O Product Line have been classified as discontinued operations for all periods presented. Prior period amounts have been reclassified to conform to the continuing operations reporting presentation. All results and information presented exclude the AS&O Product Line unless otherwise noted.

Our Business

Integer Holdings Corporation is one of the largest medical device outsource ("MDO") manufacturers in the world serving the cardiac, neuromodulation, orthopedics, vascular and advanced surgical markets. We also develop batteries for high-end niche applications in the non-medical energy, military, and environmental markets. Our vision is to enhance the lives of patients worldwide by being our customers' partner of choice for innovative technologies and services.

We organize our business into two reportable segments, Medical and Non-Medical, and derive our revenues from four principle product lines. The Medical segment includes the Cardio & Vascular, Cardiac & Neuromodulation and Advanced Surgical, Orthopedics & Portable Medical product lines and the Non-Medical segment is comprised of the Electrochem product line. For more information on our segments, please refer to Note 17 "Segment and Geographic Information" of the Notes to Consolidated Financial Statements contained in Item 8 of this report.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Discontinued Operations and Divestiture

On July 2, 2018, we completed the sale of the AS&O Product Line for net cash proceeds of approximately \$581 million, resulting in a pre-tax gain of approximately \$195 million. In connection with the sale, the parties executed a transition services agreement whereby we will provide certain corporate services (including accounting, payroll, and information technology services) to Viant for a period of up to one year from the date of the closing to facilitate an orderly transfer of business operations. Viant will pay us for these services, with such payments varying in amount and length of time as specified in the transition services agreement. In addition, the parties executed long-term supply agreements under which the parties have agreed to supply the other with certain products at prices specified in the agreements for a term of three years.

Refer to Note 2 "Discontinued Operations and Divestitures" of the Notes to Consolidated Financial Statements contained in Item 8 of this report for additional information about the divestiture of the AS&O Product Line.

Strategic Overview

During 2017 we undertook a thorough strategic review of our customers, competitors and markets. As a result of this review, during the fourth quarter of 2017, we began to take steps to better align our resources in order to invest to grow, protect, preserve and to enhance the profitability of our portfolio of products. In addition to our portfolio strategy, we have launched the execution of six key operational strategic imperatives designed to drive excellence in everything we do: (1) Sales Force Excellence, (2) Market Focused Innovation, (3) Manufacturing Process Excellence, (4) Business Process Excellence, (5) Performance Excellence, and (6) Leadership Capability.

- **Sales Force Excellence:** We're changing the organization structure to match product line growth strategies and customer needs. This change is about getting more out of the capability we already have, and will increase individual accountability and clarity of ownership.
- **Market Focused Innovation:** We're ensuring we get the most return on our Research & Development (R&D) investments. Integer is currently focusing on getting a clearer picture of how we spend our money and ensuring we're spending it in the right places so we can increase investments to drive future growth.
- **Manufacturing Process Excellence:** The goal is to deliver world-class operational performance in the areas of safety, quality, delivery and overall efficiency. We want to transition our manufacturing into a competitive advantage through a single, enterprise-wide manufacturing structure known as the Integer Production System (IPS). This system will provide standardized systems and processes by leveraging best practices and applying them across all our global sites.
- **Business Process Excellence:** Integer is taking a systematic approach to driving excellence in everything we do by standardizing, optimizing and ultimately sustaining all of our processes.
- **Performance Excellence:** We're raising the bar on associate performance to maximize our impact. This includes aligning key roles with critical capabilities, positioning the best talent against the biggest work, and putting tools and processes in place to provide higher financial rewards for top performers, so you can see increased results in pay for increased results in your performance.
- **Leadership Capability:** We have a robust plan to make leadership a competitive advantage for Integer. And since the success rate is higher with internal hires, we're focusing on finding and developing leaders from within the company to build critical capabilities for future success.

We believe Integer is well-positioned within the medical technology and MDO manufacturing market and that there is a robust pipeline of opportunities to pursue. We have expanded our medical device capabilities and are excited about opportunities to partner with customers to drive innovation. We believe we have the scale and global presence, supported by world-class manufacturing and quality capabilities, to capture these opportunities. We are confident in our capabilities as one of the largest MDO manufacturers, with a long history of successfully integrating companies, driving down costs and growing revenues over the long-term. Ultimately, our strategic vision is to drive shareholder value by enhancing the lives of patients worldwide by being our customers' partner of choice for innovative technologies and services.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Financial Overview

Fiscal 2018 Compared with Fiscal 2017

Income from continuing operations for 2018 was \$47.0 million or \$1.44 per diluted share compared to \$87.1 million or \$2.72 per diluted share for 2017. These variances are primarily the result of the following:

- Sales from continuing operations for 2018 increased 7% primarily driven by market growth and new business wins. During 2018, price concessions given to our larger OEM customers in return for long-term volume commitments lowered sales by approximately \$15 million in comparison to 2017. In comparison to the prior year, foreign currency exchange rates increased sales by \$1.9 million for 2018.
- Gross profit for 2018 increased \$8.7 million primarily due to the increase in sales from continuing operations discussed above, partially offset by higher incentive compensation (\$5.1 million) costs.
- Operating expenses for 2018 were lower by \$21.3 million compared to 2017, due to a decrease in other operating expenses (\$20.4 million) attributable to the completion of spending on integration activities partially offset by higher incentive compensation (\$6.0 million).
- Interest expense for 2018 increased by \$35.3 million primarily due to extinguishment of debt charges related to the repayment of indebtedness in connection with the divestiture of the AS&O Product Line. Debt extinguishment expenses included in interest expense for 2018 were higher by \$39.2 million compared to 2017.
- Net gains on equity investments, which are unpredictable in nature, increased income by \$5.6 million in 2018 compared to losses of \$1.6 million during 2017.
- Other loss, net for 2018 was \$0.8 million compared to \$10.9 million during 2017, primarily due to the non-recurrence of a non-cash foreign currency charge in the prior year on inter-company loans.
- We recorded an income tax provision of \$14.1 million for 2018, compared to a benefit of \$37.8 million for 2017. The 2017 amount included a tax benefit of \$39.4 million related to the Tax Reform Act that was recorded in the fourth quarter of 2017. Refer to Note 12 "Income Taxes" of the Notes to Consolidated Financial Statements contained in Item 1 of this report and the "Provision for Income Taxes" section of this Item for additional information.

Fiscal 2017 Compared with Fiscal 2016

Income from continuing operations for 2017 was \$87.1 million or \$2.72 per diluted share compared to \$24.9 million or \$0.80 per diluted share for 2016. These variances are primarily the result of the following:

- Sales from continuing operations for 2017 increased 6% primarily driven by market growth, new business wins, and lower comparables versus 2016 in our Cardio & Vascular and Non-Medical product lines. These increases were partially offset by price concessions given to our larger OEM customers in return for long-term volume commitments.
- Gross profit for 2017 increased \$16.3 million primarily due to the increase in sales discussed above, as well as production efficiencies.
- Operating expenses for 2017 were lower by \$16.4 million primarily due to the results of Nuvectra not being included after the Spin-off (\$4.7 million), and lower other operating expenses attributable to reduced spending on integration and consolidation initiatives.
- Interest expense for 2017 declined \$4.4 million primarily due to the amendment of our Term Loan B Facility in 2017, which lowered the interest rate paid on that debt by 100 basis points, as well as scheduled and accelerated debt repayments during 2017. These reductions were partially offset by the accelerated write-off of deferred fees and original issue discount of \$3.5 million due to the accelerated pay down of debt during 2017, as well as the increase in LIBOR during 2017.
- Net gains on equity investments, which are unpredictable in nature, were by \$1.6 million and \$0.8 million during 2017 and 2016, respectively.
- Other (income) loss, net for 2017 was a loss of \$10.9 million in 2017 versus a gain of \$4.4 million in 2016, due to higher foreign currency exchange rate losses driven by the remeasurement of intercompany loans as a result of the weakening of the U.S. dollar relative to the Euro during 2017, which are primarily non-cash in nature.
- We recorded an income tax benefit of \$37.8 million in 2017 compared to an income tax provision of \$3.3 million in 2016. As a result of the Tax Reform Act, we recognized a \$39.4 million net income tax benefit in the fourth quarter of 2017, primarily related to the revaluation of our net deferred tax liabilities, but partially offset by a one-time mandatory tax on the repatriation of undistributed foreign subsidiary earnings and profits.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Use of Non-GAAP Financial Information

We prepare our consolidated financial statements in accordance with generally accepted accounting principles in the United States of America ("GAAP"). Additionally, we consistently report and discuss in our earnings releases and investor presentations adjusted pre-tax income, adjusted income, adjusted earnings per diluted share ("EPS"), earnings before interest, taxes, depreciation, and amortization ("EBITDA") and adjusted EBITDA, all from continuing operations.

Adjusted pre-tax income, adjusted income and adjusted diluted EPS from continuing operations consist of GAAP amounts adjusted for the following to the extent occurring during the period: (i) acquisition and integration related charges and expenses, (ii) amortization of intangible assets, (iii) facility consolidation, optimization, manufacturing transfer and system integration charges, (iv) asset write-down and disposition charges, (v) charges in connection with corporate realignments or a reduction in force, (vi) certain litigation expenses, charges and gains, (vii) unusual or infrequently occurring items, (viii) gain/loss on equity investments, (ix) extinguishment of debt charges, (x) the net impact of long-term supply agreements ("LSAs") between the Company and Viant, (xi) the income tax (benefit) related to these adjustments (not for adjusted pre-tax income) and (xii) certain tax items that are outside the normal provision for the period (not for adjusted pre-tax income). Adjusted diluted EPS is calculated by dividing adjusted income from continuing operations by diluted weighted average shares outstanding.

Adjusted EBITDA from continuing operations consists of GAAP income from continuing operations plus (i) the same adjustments as listed above except for items (ix) and (xii), (ii) GAAP stock-based compensation, interest expense, and depreciation, and (iii) GAAP provision (benefit) for income taxes.

We believe that the presentation of adjusted income, adjusted diluted earnings per share, EBITDA, and adjusted EBITDA, all from continuing operations, provides important supplemental information to management and investors seeking to understand the financial and business trends relating to our financial condition and results of operations, including compliance with our bank covenant calculations.

A reconciliation of GAAP net income and diluted EPS to GAAP income from continuing operations and GAAP diluted EPS from continuing operations for 2018, 2017 and 2016 is as follows (in thousands, except per share amounts):

	2018			2017			2016		
	Pre-Tax	Net of Tax	Per Diluted Share	Pre-Tax	Net of Tax	Per Diluted Share	Pre-Tax	Net of Tax	Per Diluted Share
As reported (GAAP)	\$ 249,429	\$ 167,964	\$ 5.15	\$ 21,827	\$ 66,679	\$ 2.08	\$ 1,185	\$ 5,961	\$ 0.19
Less: Income (loss) from discontinued operations	188,313	120,931	3.71	(27,432)	(20,408)	(0.64)	(26,980)	(18,917)	(0.61)
Income from continuing operations	<u>\$ 61,116</u>	<u>\$ 47,033</u>	<u>\$ 1.44</u>	<u>\$ 49,259</u>	<u>\$ 87,087</u>	<u>\$ 2.72</u>	<u>\$ 28,165</u>	<u>\$ 24,878</u>	<u>\$ 0.80</u>

MANAGEMENT'S DISCUSSION AND ANALYSIS

A reconciliation of GAAP income from continuing operations and diluted EPS to adjusted amounts for 2018, 2017 and 2016 is as follows (in thousands, except per share amounts):

	2018			2017			2016		
	Pre-Tax	Net of Tax	Per Diluted Share	Pre-Tax	Net of Tax	Per Diluted Share	Pre-Tax	Net of Tax	Per Diluted Share
As reported (GAAP)	\$ 61,116	\$ 47,033	1.44	\$ 49,259	\$ 87,087	\$ 2.72	\$ 28,165	\$ 24,878	0.80
Adjustments:									
Amortization (excluding OOE) ^(a)	40,946	32,338	0.99	40,568	28,322	0.88	35,470	25,080	0.80
IP related litigation (SG&A) ^{(a)(b)}	2,820	2,228	0.07	4,375	2,844	0.09	3,040	1,976	0.06
Other operating expenses ^(c)	16,065	12,495	0.38	36,438	25,789	0.80	60,413	44,850	1.44
(Gain) loss on equity investments, net ^(a)	(5,623)	(4,442)	(0.14)	1,565	1,017	0.03	833	541	0.02
Loss on extinguishment of debt ^{(a)(d)}	42,674	33,712	1.03	3,524	2,291	0.07	—	—	—
LSA and other non-recurring adjustments ^{(a)(e)}	(5,322)	(4,204)	(0.13)	(12,972)	(8,431)	(0.26)	(10,858)	(7,058)	(0.23)
Tax adjustments ^(f)	—	5,231	0.16	—	(39,806)	(1.24)	—	(154)	—
Nuvecstra results ^{(a)(g)}	—	—	—	—	—	—	4,037	2,624	0.08
Adjusted income from continuing operations (Non-GAAP)	<u>\$ 152,676</u>	<u>\$ 124,391</u>	<u>\$ 3.80</u>	<u>\$ 122,757</u>	<u>\$ 99,113</u>	<u>\$ 3.09</u>	<u>\$ 121,100</u>	<u>\$ 92,737</u>	<u>\$ 2.97</u>
Diluted weighted average shares for adjusted EPS ^(h)		32,768			32,056			31,222	

^(a) The difference between pre-tax and income (loss) amounts is the estimated tax impact related to the respective adjustment. Income (loss) amounts are computed using a 21% U.S. tax rate (35% U.S. tax rate for 2016 and 2017), and the statutory tax rates in Mexico, Netherlands, Uruguay, Ireland and Switzerland, as adjusted for the existence of net operating losses ("NOLs"). Amortization of intangibles and OOE expense have also been adjusted to reflect the estimated impact relating to our disallowed deduction of the GILTI tax, as described in footnote (f) below. Expenses that are not deductible for tax purposes (i.e. permanent tax differences) are added back at 100%.

^(b) In 2013, we filed suit against AVX Corporation alleging they were infringing our intellectual property. Given the complexity and significant costs incurred pursuing this litigation, we are excluding these litigation expenses from adjusted amounts. This matter proceeded to trial during the first quarter of 2016 and again in the third quarter of 2017 that resulted in a jury awarding damages in the amount of \$37.5 million. In March 2018, the court vacated that damage award and ordered a new trial on damages. In the January 2019 retrial on damages, the jury awarded damages in the amount of \$22.2 million. That finding is subject to post-trial proceedings. To date, no gains have been recognized in connection with this litigation.

^(c) Represents expenses related to various initiatives which were undertaken to improve our operational efficiencies and profitability, integrate acquisitions and increase manufacturing capacity to accommodate growth. Refer to Note 11 "Other Operating Expenses" of the Notes to Consolidated Financial Statements contained in Item 8 of this report for further details on these initiatives.

^(d) Represents debt extinguishment charges in connection with pre-payments made on our Term B Loan Facility, which are included in interest expense. In addition, 2018 includes a "make-whole" premium of \$31.3 million, paid as a result of redeeming our 9.125% senior notes due on November 1, 2023 (the "Senior Notes") in July 2018.

^(e) LSA and other non-recurring adjustments primarily reflect the net impact on prior periods of the LSAs entered into as of the closing of the divestiture of the AS&O Product Lines. These LSAs govern the sale of products supplied by Viant to us for further resale to customers and by us to Viant for further resale to customers.

MANAGEMENT'S DISCUSSION AND ANALYSIS

- (f) Tax adjustments for 2018 primarily includes the estimated impact relating to our disallowed deduction of the GILTI tax, as mandated by the Tax Reform Act. This disallowed deduction of the GILTI tax (approximately 50% of the total GILTI tax) is due to our utilization of U.S. NOLs, and will be eliminated once our U.S. NOLs are fully utilized, which is expected to be in 2019. This adjustment makes our Adjusted Diluted EPS from continuing operations more comparable with other global companies that are not subject to this disallowed GILTI tax deduction and more comparable to our results following the full utilization of our U.S. NOLs. Tax adjustments for 2017 includes the net tax benefit resulting from the Tax Reform Act and include a discrete tax charge in connection with the enactment of regulations under §987 of the Internal Revenue Code, which resulted in an adjustment to our deferred tax assets.
- (g) Represents the results of Nuvectra prior to its Spin-off on March 14, 2016.
- (h) The diluted weighted average shares for adjusted EPS for 2018 and 2016 include potentially dilutive shares not included in the computation of diluted weighted average common shares for GAAP diluted EPS purposes because their effect would have been anti-dilutive.

Adjusted diluted EPS from continuing operations, which excludes the impact of amortization of intangible assets, losses on extinguishment of debt and various other operating expenses, among others, was \$3.80 per share for 2018 compared to \$3.09 per share in 2017. These results reflect the benefit of our increased sales and the completion of spending on integration activities, partially offset by higher incentive compensation expense in 2018 compared to 2017.

For 2017, adjusted diluted EPS increased 4% to \$3.09 per share in comparison to 2016 primarily due to our increased gross profit and lower interest expense partially offset by higher incentive compensation (\$8.8 million (SG&A, RD&E)) and higher foreign currency exchange losses (\$15.2 million).

A reconciliation of GAAP income from continuing operations to EBITDA from continuing operations and adjusted EBITDA from continuing operations for 2018, 2017 and 2016 is as follows (dollars in thousands):

	2018	2017	2016
Income from continuing operations (GAAP)	\$ 47,033	\$ 87,087	\$ 24,878
Interest expense	99,310	63,972	68,331
Provision (benefit) for income taxes	14,083	(37,828)	3,287
Depreciation	40,078	38,077	37,398
Amortization (excluding OOE)	40,946	40,568	35,470
EBITDA (Non-GAAP)	241,450	191,876	169,364
IP related litigation	2,820	4,375	3,040
Stock-based compensation expense (excluding OOE)	10,051	11,283	6,631
Strategic reorganization and alignment	10,624	5,891	—
Manufacturing alignment to support growth	3,089	—	—
Consolidation and optimization expenses	844	12,803	25,510
Acquisition and integration expenses	—	10,870	28,112
Asset dispositions, severance and other	1,508	6,874	6,791
(Gain) loss on equity investments, net	(5,623)	2,965	1,495
LSA and other non-recurring adjustments	(5,322)	(12,972)	(10,858)
Nuvectra results prior to Spin-off	—	—	3,665
Adjusted EBITDA from continuing operations (Non-GAAP)	\$ 259,441	\$ 233,965	\$ 233,750

The changes in adjusted EBITDA for 2018 versus 2017 and 2016 are primarily the result of the same factors that drove the changes in adjusted diluted EPS as discussed above.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Our Financial Results

The following table presents selected financial information derived from our Consolidated Financial Statements, contained in Item 8 of this report, for the periods presented (dollars in thousands, except per share amounts):

	2018	2017	2016	Change 2018 vs. 2017		Change 2017 vs. 2016		
				\$	%	\$	%	
Medical Sales:								
Cardio & Vascular	\$ 585,464	\$ 530,831	\$ 484,891	\$ 54,633	10 %	\$ 45,940	9 %	
Cardiac & Neuromodulation	443,347	428,275	439,375	15,072	4 %	(11,100)	(3)%	
Advanced Surgical, Orthopedics & Portable Medical	133,225	120,006	109,557	13,219	11 %	10,449	10 %	
Total Medical Sales	1,162,036	1,079,112	1,033,823	82,924	8 %	45,289	4 %	
Non-Medical	52,976	56,968	41,679	(3,992)	(7)%	15,289	37 %	
Total sales	1,215,012	1,136,080	1,075,502	78,932	7 %	60,578	6 %	
Cost of sales	852,347	782,070	737,823	70,277	9 %	44,247	6 %	
Gross profit	362,665	354,010	337,679	8,655	2 %	16,331	5 %	
<i>Gross profit as a % of sales</i>	<i>29.8%</i>	<i>31.2 %</i>	<i>31.4%</i>					
Selling, general and administrative expenses ("SG&A")								
	142,441	143,073	136,444	(632)	— %	6,629	5 %	
<i>SG&A as a % of sales</i>	<i>11.7%</i>	<i>12.6 %</i>	<i>12.7%</i>					
Research, development and engineering costs ("RD&E")								
	48,604	48,850	47,899	(246)	(1)%	951	2 %	
<i>RD&E as a % of sales</i>	<i>4.0%</i>	<i>4.3 %</i>	<i>4.5%</i>					
Other operating expenses	16,065	36,438	60,413	(20,373)	(56)%	(23,975)	(40)%	
Operating income	155,555	125,649	92,923	29,906	24 %	32,726	35 %	
<i>Operating margin</i>	<i>12.8%</i>	<i>11.1 %</i>	<i>8.6%</i>					
Interest expense	99,310	63,972	68,331	35,338	55 %	(4,359)	(6)%	
(Gain) loss on equity investments, net	(5,623)	1,565	833	(7,188)	NM	732	88 %	
Other (income) loss, net	752	10,853	(4,406)	(10,101)	NM	15,259	NM	
Income from continuing operations before taxes	61,116	49,259	28,165	11,857	24 %	21,094	75 %	
Provision (benefit) for income taxes	14,083	(37,828)	3,287	51,911	NM	(41,115)	NM	
<i>Effective tax rate</i>	<i>23.0%</i>	<i>(76.8)%</i>	<i>11.7%</i>					
Income from continuing operations	\$ 47,033	\$ 87,087	\$ 24,878	\$ (40,054)	(46)%	\$ 62,209	NM	
<i>Income (loss) from continuing operations as a % of sales</i>	<i>3.9%</i>	<i>7.7 %</i>	<i>2.3%</i>					
Diluted earnings per share from continuing operations	\$ 1.44	\$ 2.72	\$ 0.80	\$ (1.28)	NM	\$ 1.92	NM	

NM - Calculated change not meaningful.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Fiscal 2018 Compared with Fiscal 2017

Sales

Sales by product line for 2018 and 2017 were as follows (dollars in thousands):

	2018	2017	Change	
			\$	%
Medical Sales:				
Cardio & Vascular	\$ 585,464	\$ 530,831	\$ 54,633	10.3 %
Cardiac & Neuromodulation	443,347	428,275	15,072	3.5 %
Advanced Surgical, Orthopedics & Portable Medical	133,225	120,006	13,219	11.0 %
Total Medical Sales	1,162,036	1,079,112	82,924	7.7 %
Non-Medical	52,976	56,968	(3,992)	(7.0)%
Total sales	\$ 1,215,012	\$ 1,136,080	\$ 78,932	6.9 %

Total 2018 sales increased 6.9% to \$1.2 billion in comparison to 2017 . The most significant drivers of this increase were as follows:

Cardio & Vascular sales for 2018 increased \$54.6 million or 10% in comparison to 2017 . This increase was primarily due to continued strong demand in the electrophysiology market stemming from customer share gains, new product launches, and timing from customer inventory replenishment. During 2018, price concessions to our larger OEM customers reduced Cardio & Vascular sales by approximately \$8 million in comparison to 2017. During 2018, foreign currency exchange rate fluctuations increased our Cardio & Vascular sales in comparison to 2017 by approximately \$1.9 million primarily due to U.S. dollar fluctuations relative to the Euro.

Cardiac & Neuromodulation sales for 2018 increased \$15.1 million or 4% in comparison to 2017 . The increases in Cardiac & Neuromodulation sales were driven by increased components market penetration and a lower 2017 due to customer inventory adjustments. Neuromodulation remained strong, with growth driven by spinal cord stimulation market demand and increased components market penetration. During 2018, price concessions to our larger OEM customers reduced Cardiac & Neuromodulation sales by approximately \$8 million in comparison to 2017. Foreign currency exchange rate fluctuations did not have a material impact on Cardiac & Neuromodulation sales during 2018 in comparison to 2017.

In addition to Portable Medical sales, Advanced Surgical, Orthopedic & Portable Medical includes sales to the acquirer of our AS&O Product Lines, Viant, under the LSA for the sale of products by the Company to Viant. Advanced Surgical, Orthopedics & Portable Medical sales for 2018 increased \$13.2 million or 11% in comparison to 2017 . The sales increase was driven by above market demand. Neither price concessions nor foreign currency exchange rate fluctuations had a material impact on AS&O sales during 2018 in comparison to 2017.

Non-Medical sales for 2018 decreased \$4.0 million or 7% in comparison to 2017. The decline in Non-Medical sales was primarily due to North American drilling activity leveling off, which has led to customer inventory adjustments. 2018 sales were also impacted by a planned phase out of certain rechargeable battery pack products. We expect sales growth in 2019 from new customers and products, and renewed military market government funding. Foreign currency exchange rates and price fluctuations did not have a material impact on Non-Medical sales during 2018 in comparison to 2017.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Gross Profit

Changes to gross profit as a percentage of sales ("Gross Margin") from the prior year were due to the following:

	% Change 2018 vs. 2017
Price ^(a)	(1.3)%
Mix ^(b)	(0.2)%
Incentive compensation ^(c)	(0.4)%
Production efficiencies and volume ^(d)	0.5 %
Total percentage point change to gross profit as a percentage of sales	(1.4)%

^(a) Our Gross Margin for 2018 was negatively impacted by price concessions given to our larger OEM customers in return for long-term volume commitments.

^(b) Our Gross Margin for 2018 was negatively impacted by a higher mix of sales of lower margin products.

^(c) Amount represents the impact to our Gross Margin attributable to our cash and stock incentive programs, including performance-based compensation, which is accrued based upon actual results achieved.

^(d) Represents various increases and decreases to our Gross Margin. Overall, our Gross Margin for 2018 was positively impacted by production efficiencies and synergies gained as a result of our integration and consolidation initiatives as well as higher volume in comparison to 2017.

Over the long-term, we expect our Gross Margin to improve as we execute our manufacturing excellence strategic imperative and continue to deliver supply chain savings. However, we also expect our Gross Margin to continue to be negatively impacted by pricing pressures from our customers. It is imperative to drive manufacturing efficiencies and supply chain savings to offset these pricing pressures.

SG&A Expenses

Changes to SG&A expenses were primarily due to the following (in thousands):

	\$ Change 2018 vs. 2017
Legal expenses ^(a)	\$ (1,293)
Intangible asset amortization ^(b)	1,818
Incentive compensation programs ^(c)	5,174
Transition services agreement ^(d)	(3,419)
Other ^(e)	(2,912)
Net decrease in SG&A Expenses	\$ (632)

^(a) Amount represents the change in legal costs compared to the prior year period, including legal expenses incurred related to our on-going patent infringement case. Refer to Note 13 "Commitments and Contingencies" of the Notes to the Consolidated Financial Statements contained in Item 8 of this report for information related to this patent infringement litigation.

^(b) Amount represents the increase in intangible asset amortization (i.e. customer list), which is amortized based upon the forecasted cash flows at the time of acquisition for the respective asset.

^(c) Amount represents the impact to our SG&A attributable to our cash and stock incentive programs, including performance-based compensation, which is accrued based upon actual results achieved.

^(d) Represents the amount included in SG&A Expenses, which was charged to Viant for transition services provided during the second half of 2018. We executed a transition services agreement in conjunction with the sale of the AS&O Product Line, whereby we will provide certain corporate services (including accounting, payroll, and information technology services) to Viant for a period of up to one year from the date of the closing to facilitate an orderly transfer of business operations.

^(e) Represents various increases and decreases to our SG&A, resulting in a net decrease in SG&A expense from 2017 to 2018.

MANAGEMENT'S DISCUSSION AND ANALYSIS

RD&E Expenses

Changes to RD&E expenses for 2018 and 2017 were as follows (in thousands):

	\$ Change 2018 vs. 2017
Intangible asset amortization ^(a)	\$ (391)
Incentive compensation programs ^(b)	836
Other ^(c)	(691)
Net decrease in RD&E	\$ (246)

^(a) Amount represents the decrease in intangible asset amortization, which is amortized based upon the forecasted cash flows at the time of acquisition for the respective asset.

^(b) Amount represents the impact to our RD&E attributable to our cash and stock incentive programs, including performance-based compensation, which is accrued based upon actual results achieved.

^(c) Represents the net impact of various increases and decreases to our RD&E, resulting in a net decrease in RD&E expense from 2017 to 2018.

Other Operating Expenses

OOE was comprised of the following for 2018 and 2017 (in thousands):

	2018	2017	Change
Strategic reorganization and alignment ^(a)	\$ 10,624	\$ 5,891	\$ 4,733
Manufacturing alignment to support growth ^(b)	3,089	—	3,089
Consolidation and optimization costs ^(c)	844	12,803	(11,959)
Acquisition and integration expenses ^(d)	—	10,870	(10,870)
Asset dispositions, severance and other ^(e)	1,508	6,874	(5,366)
Other operating expenses	\$ 16,065	\$ 36,438	\$ (20,373)

^(a) As a result of the strategic review of our customers, competitors and markets we undertook during the fourth quarter of 2017, we began to take steps to better align our resources in order to invest to grow, protect, preserve and to enhance the profitability of our portfolio of products. This will include focusing our investment in RD&E and manufacturing, improving our business processes and redirecting investments away from projects where the market does not justify the investment. The expenses incurred during 2018 primarily included severance costs and fees for professional services.

^(b) In 2017, we began several initiatives designed to reduce costs, improve operating efficiencies and increase manufacturing capacity to accommodate growth. The plan involves the relocation of certain manufacturing operations and expansion of certain of our facilities.

^(c) During 2018 and 2017, we incurred costs primarily related to the closure of our Clarence, NY facility and the transfer of our Beaverton, OR portable medical and Plymouth, MN vascular manufacturing operations to Tijuana, Mexico.

^(d) Reflects acquisition and integration costs related to the acquisition of LRM, which occurred in October 2015. This initiative was substantially complete as of December 29, 2017.

^(e) Amounts for 2017 primarily include expenses related to our CEO and CFO transitions.

Refer to Note 11 "Other Operating Expenses" of the Notes to Consolidated Financial Statements contained in Item 8 of this report for additional information regarding these initiatives.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Interest Expense

Interest expense increased \$35.3 million to \$99.3 million in 2018 from \$64.0 million in 2017. The weighted average interest rates paid on the average principal amount of debt outstanding during 2018 and 2017 was 4.88% and 4.66%, respectively. The weighted average interest rates paid in 2018 reflect an increase in LIBOR during 2017 and 2018, partially offset by a cumulative 125 basis point and 75 basis point reduction to the applicable interest rate margins of our Term Loan B and Term Loan A facilities. The Term Loan B facility margin decrease resulted from amendments of our Senior Secured Credit Facilities in March 2017 and again in November 2017, and the step down in the third quarter of 2018 resulting from the upgrade of our corporate family credit rating, while the Term Loan A facility margin decrease resulted from contractual reductions due to our lower leverage ratio. Cash interest expense decreased \$3.4 million for 2018 when compared to 2017. Debt related charges included in interest expense (i.e. deferred fee and discount amortization) increased \$38.7 million during 2018 when compared to 2017, primarily attributable to higher accelerated write-offs (losses from extinguishment of debt) of deferred fees and original issue discount related to prepayments of portions of our Term Loan B facility and Senior Notes and a "make-whole" premium of \$31.3 million paid as a result of redeeming our Senior Notes in July 2018. We recognized losses from extinguishment of debt during 2018 and 2017 of \$42.7 million and \$3.5 million, respectively. We repaid a net \$700.5 million of debt during 2018. See Note 8 "Debt" of the Notes to Consolidated Financial Statements contained in Item 8 of this report for additional information pertaining to our debt.

(Gain) Loss on Equity Investments, Net

During 2018 we realized net gains of \$5.6 million on our equity investments compared to net losses of \$1.6 million for 2017. We recognized income of \$5.6 million and \$3.7 million in 2018 and 2017, respectively, related to our share of equity method investee gains. In addition, during 2017, we recognized impairment charges of \$5.3 million on our equity investments previously accounted for under the cost method. As of December 28, 2018 and December 29, 2017, we held \$22.8 million and \$20.8 million, respectively, of equity investments. See Note 16 "Fair Value Measurements" of the Notes to Consolidated Financial Statements contained in Item 8 of this report for further details regarding these investments.

Other Loss, Net

Other Loss, Net was a \$0.8 million and \$10.9 million during 2018 and 2017, respectively. The impact of foreign currency exchange rates on transactions denominated in foreign currencies included in Other Loss, Net for 2018 and 2017 were losses of \$1.6 million and \$10.9 million, respectively. The losses in 2017 were primarily driven by the impact of the weakening U.S. dollar relative to the Euro on our intercompany loans and are primarily non-cash in nature. We continually monitor our foreign currency exposures and seek to take steps to mitigate these risks. However, fluctuations in foreign currency exchange rates could have a significant impact, positive or negative, on our financial results in the future.

Provision for Income Taxes

During 2018 and 2017, our provision (benefit) for income taxes from continuing operations was \$14.1 million and (\$37.8) million, respectively. The stand-alone U.S. component of the effective tax rate for 2018 reflected a \$7.0 million provision on \$4.3 million of pre-tax book losses (-162.8%) versus a \$47.0 million benefit on \$0.3 million of pre-tax book income for 2017. The stand-alone International component of the effective tax rate for 2018 reflected tax expense of \$7.1 million on \$65.4 million of pre-tax book income (10.9%) versus a tax expense of \$9.2 million on \$49.0 million of pre-tax book income (18.7%) for 2017. The benefit for income taxes for 2018 differs from the U.S. statutory rate due to the following (dollars in thousands):

	U.S.		International		Combined	
	\$	%	\$	%	\$	%
Income (loss) before provision (benefit) for income taxes	\$ (4,273)		\$ 65,389		\$ 61,116	
Provision (benefit) at statutory rate	\$ (897)	21.0 %	\$ 13,731	21.0 %	\$ 12,834	21.0 %
Federal tax credits	(1,700)	39.8	—	—	(1,700)	(2.8)
Foreign rate differential	—	—	(6,040)	(9.2)	(6,040)	(9.9)
Uncertain tax positions	147	(3.4)	—	—	147	0.2
State taxes, net of federal benefit	975	(22.8)	—	—	975	1.6
U.S. tax on foreign earnings	10,473	(245.1)	—	—	10,473	17.1
Valuation allowance	—	—	(567)	(0.9)	(567)	(0.9)
Other	(2,039)	47.7	—	—	(2,039)	(3.3)
Provision (benefit) for income taxes	<u>\$ 6,959</u>	<u>(162.8)%</u>	<u>\$ 7,124</u>	<u>10.9 %</u>	<u>\$ 14,083</u>	<u>23.0 %</u>

MANAGEMENT'S DISCUSSION AND ANALYSIS

On December 22, 2017, the Tax Reform Act was signed into law. This legislation significantly changes U.S. tax law by, among other things, lowering corporate income tax rates, implementing a territorial tax system and imposing a repatriation tax on deemed repatriated earnings of foreign subsidiaries. The Tax Reform Act permanently reduces the U.S. corporate income tax rate from a maximum of 35% to a flat 21% rate, effective January 1, 2018.

The Tax Reform Act provided for a one-time deemed mandatory repatriation of post-1986 undistributed foreign subsidiary earnings and profits ("E&P") through the year ended December 29, 2017. We had an estimated \$147.5 million of undistributed foreign E&P subject to the deemed mandatory repatriation and recognized a provisional \$14.7 million of income tax expense for the year ended December 29, 2017. Additionally, we recorded \$2.3 million in deferred taxes associated with foreign withholding taxes in accordance with the change in our permanent reinvestment assertion related to the undistributed earnings subject to the deemed mandatory repatriation provisions. We have sufficient U.S. NOLs to offset cash tax liabilities associated with these repatriation taxes. Based on additional regulatory guidance issued, and additional analysis conducted, it was determined that the one-time transition tax amounted to \$18.9 million as of December 29, 2017, representing an increase of \$4.2 million over the \$14.7 million provisional amount previously recorded. The final computations were reported in our 2017 income tax return filings. Sufficient NOLs were available to offset cash tax liabilities associated with the total repatriation taxes.

Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to reverse. As a result of the reduction in the U.S. corporate income tax rate from 35% to 21% under the Tax Reform Act, we revalued our ending net deferred tax liabilities at December 29, 2017 and recognized a provisional \$56.5 million tax benefit for the year ended December 29, 2017. In part, due to the utilization of additional NOLs to offset the additional repatriation tax, The Company adjusted its revaluation of the ending net deferred tax liabilities as of December 29, 2017, resulting in a recognized tax benefit of \$60.7 million, representing an increase of \$4.2 million to the originally recorded \$56.5 million tax benefit recorded in the Company's Consolidated Statement of Operations for the year ended December 29, 2017.

While the Tax Reform Act provides for a territorial tax system, beginning in 2018, it also includes a new U.S. tax on foreign earnings: the global intangible low-taxed income ("GILTI") provision.

The GILTI provisions require us to include foreign subsidiary earnings in excess of a deemed return on the foreign subsidiary's tangible assets in our U.S. income tax return. The Company has adopted the approach of recording the consequences of the new GILTI provision of the Tax Reform Act as a period cost when incurred.

The Company's effective tax rate for 2018 differs from the U.S. federal statutory tax rate of 21% due principally to the estimated impact of the GILTI tax, as well as the impact of the Company's earnings realized in foreign jurisdictions with statutory rates that are different than the federal statutory rate. The GILTI provisions require the Company to include foreign subsidiary earnings in excess of a deemed return on the foreign subsidiary's tangible assets in its U.S. income tax return. There is a statutory deduction of 50% of the GILTI inclusion, however the deduction is subject to limitations based on U.S. taxable income. The Company currently has NOLs to offset forecasted U.S. taxable income and as such, is temporarily subject to the deduction limitation which correspondingly imposes an incremental impact on U.S. income tax. The primary jurisdictions in which we operate and the statutory tax rate for each respective jurisdiction include Switzerland (22%), Mexico (30%), Uruguay (25%), and Ireland (12.5%). In addition, we currently have a tax holiday in Malaysia through April 2023 if certain conditions are met.

In addition to the impact of the Tax Reform Act described above, there is a prospective potential for volatility of our effective tax rate due to several factors, including changes in the mix of pre-tax income and the jurisdictions to which it relates, business acquisitions, settlements with taxing authorities, changes in tax rates, and foreign currency exchange rate fluctuations. In addition, we continue to explore tax planning opportunities that may have a material impact on our effective tax rate.

We believe it is reasonably possible that a reduction of approximately \$0.9 million of the balance of unrecognized tax benefits may occur within the next twelve months as a result of the lapse of the statute of limitations and/or audit settlements. As of December 28, 2018, approximately \$5.3 million of unrecognized tax benefits would favorably impact the effective tax rate (net of federal impact on state issues), if recognized.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Fiscal 2017 Compared with Fiscal 2016

Sales

Sales by product lines for 2017 and 2016 were as follows (dollars in thousands):

	2017	2016	Change	
			\$	%
Medical Sales:				
Cardio & Vascular	\$ 530,831	\$ 484,891	\$ 45,940	9.5 %
Cardiac & Neuromodulation	428,275	439,375	(11,100)	(2.5)%
Advanced Surgical, Orthopedics & Portable Medical	120,006	109,557	10,449	9.5 %
Total Medical Sales	1,079,112	1,033,823	45,289	4.4 %
Non-Medical	56,968	41,679	15,289	36.7 %
Total sales	\$ 1,136,080	\$ 1,075,502	\$ 60,578	5.6 %

Total 2017 sales increased 5.6% to \$1.1 billion in comparison to 2016 . The most significant drivers of this increase were as follows:

Cardio & Vascular sales for 2017 increased \$45.9 million in comparison to 2016 . This increase was primarily attributable to market growth and new business wins, especially for guidewires, as well as lower comparables in 2016 due to the disruption of supply caused by our consolidation initiatives, which occurred throughout 2016.

Cardiac & Neuromodulation sales for 2017 decreased \$11.1 million or 2.5% in comparison to 2017 . Approximately \$1.2 million of this decrease was a result of the Spin-off in the first quarter of 2016. Additionally, during 2017, price concessions to our larger OEM customers reduced Cardiac & Neuromodulation sales by approximately \$9 million in comparison to 2016. Finally, this decrease is also the result of market declines, as well as customer inventory management and in-sourcing initiatives. Partially offsetting these decreases was growth in our neuromodulation products, which was not enough to offset the declines in our cardiac rhythm management products. Foreign currency exchange rate fluctuations did not have a material impact on Cardiac & Neuromodulation sales during 2017 in comparison to 2016.

Advanced Surgical, Orthopedics & Portable Medical sales for 2017 increased \$10.4 million or 9.5% in comparison to 2016, primarily due to the timing of customer inventory builds, new product ramps, and lower comparables due to the disruption of supply caused by our consolidation initiatives which occurred during 2016.

Non-Medical sales for 2017 increased \$15.3 million or 36.7% in comparison to 2016. This increase was primarily driven by the recovery in the energy markets, as well as new business wins and market share gains. During the downturn in the energy markets, we were able to advance our competitive position with key strategic customers resulting in multi-year supply agreements. Additionally, we actively pursued new customer and market opportunities, developed new product solutions and invested in research and development to advance our technology. These efforts benefitted 2017 sales as we were able to increase our market share as the markets recovered. Foreign currency exchange rates and price fluctuations did not have a material impact on Non-Medical sales during 2017 in comparison to 2016.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Gross Profit

Changes to Gross Margin were primarily due to the following:

	% Change 2017 vs. 2016
Price ^(a)	(1.4)%
Mix ^(b)	(0.3)%
Incentive compensation ^(c)	(0.6)%
Production efficiencies and volume ^(d)	2.1 %
Total percentage point change to gross profit as a percentage of sales	(0.2)%

- (a) Our Gross Margin for 2017 was negatively impacted by price concessions given to our larger OEM customers in return for long-term volume commitments.
- (b) Our Gross Margin for 2017 was negatively impacted by a higher mix of sales of lower margin products.
- (c) Amount represent the impact to our Gross Margin attributable to our cash and stock incentive programs, including performance-based compensation, which is accrued based upon actual results achieved.
- (d) Represents various increases and decreases to our Gross Margin. Overall, our Gross Margin for 2017 was positively impacted by production efficiencies and synergies gained as a result of our integration and consolidation initiatives as well as higher volumes in comparison to 2016.

SG&A Expenses

Changes to SG&A expenses were primarily due to the following (in thousands):

	\$ Change 2017 vs. 2016
Nuvectra SG&A ^(a)	\$ (1,913)
Legal expenses ^(b)	(401)
Intangible asset amortization ^(c)	5,250
Incentive compensation programs ^(d)	6,187
Other ^(e)	(2,494)
Net increase in SG&A Expenses	\$ 6,629

- (a) Amount represents the impact to our SG&A related to the overhead costs divested as a result of the Spin-off of Nuvectra in March 2016.
- (b) Amount represents the change in legal costs compared to the prior year period. This variance is primarily due to the timing of legal expenses incurred related to our IP infringement case.
- (c) Amount represents the increase in intangible asset amortization (i.e. customer list), which is amortized based upon the forecasted cash flows at the time of acquisition for the respective asset.
- (d) Amount represents the impact to our SG&A attributable to our cash and stock incentive programs, including performance-based compensation, which is accrued based upon actual results achieved.
- (e) Represents various increases and decreases to our SG&A, resulting in a net increase in SG&A expense from 2016 to 2017.

MANAGEMENT'S DISCUSSION AND ANALYSIS

RD&E Expenses

Changes to RD&E expenses for 2017 and 2016 were as follows (in thousands):

	\$ Change 2017 vs. 2016
Nuvectra RD&E ^(a)	\$ (2,830)
Incentive compensation programs ^(b)	2,623
Intangible asset amortization ^(c)	33
Other ^(d)	1,125
Net increase in RD&E	\$ 951

^(a) Represents the impact to our RD&E related to the divested costs as a result of the Spin-off in March 2016.

^(b) Represents the impact to our RD&E attributable to our cash and stock incentive programs. Performance-based compensation is accrued based upon actual results achieved.

^(c) Amount represents the decrease in intangible asset amortization, which is amortized based upon the forecasted cash flows at the time of acquisition for the respective asset.

^(d) Represents various increases and decreases to our RD&E, resulting in a net increase in RD&E expense from 2016 to 2017.

Other Operating Expenses

OOE was comprised of the following for 2017 and 2016 (in thousands):

	2017	2016	Change
Consolidation and optimization initiatives ^(a)	\$ 12,803	\$ 25,510	\$ (12,707)
Acquisition and integration expenses ^(b)	10,870	\$ 28,112	(17,242)
Asset dispositions, severance and other ^(c)	6,874	6,791	83
Strategic reorganization and alignment ^(d)	5,891	—	5,891
Other operating expenses - continuing operations	\$ 36,438	\$ 60,413	\$ (23,975)

^(a) Refer to Note 11 "Other Operating Expenses" of the Notes to Consolidated Financial Statements contained in Item 8 of this report for additional information regarding these initiatives.

^(b) During 2017 and 2016, we incurred costs related to the acquisition of LRM, consisting primarily of professional, consulting, severance, retention, relocation, and travel costs. In addition, 2016 included change-in-control payments to former LRM executives.

^(c) During 2017 and 2016, we recorded losses in connection with various asset disposals and/or write-downs. The 2017 amount also includes approximately \$5.3 million in expense related to our leadership transitions. Additionally, during 2016 we incurred legal and professional costs in connection with the Spin-off of \$4.4 million.

^(d) During the fourth quarter of 2017, we incurred charges related to the initial steps of this initiative, which included lease termination charges and accelerated amortization of certain intangible assets.

Interest Expense

Interest expense decreased \$4.4 million to \$64.0 million in 2017 from \$68.3 million in 2016. The decrease was due to lower weighted average rates combined with a lower principal amount of debt outstanding due to debt repayments during 2017. The weighted average interest rates paid on average borrowings outstanding in 2017 were lower when compared to 2016 primarily due to the amendment of our Senior Secured Credit Facilities in March 2017 and again in November 2017, which resulted in a cumulative 100 basis point reduction to the applicable interest rate margins of our Term Loan B facility, partially offset by an increase in LIBOR during 2017. Included in interest expense for 2017 are losses from extinguishment of debt of \$3.5 million, primarily attributable to the accelerated write-off of deferred fees and discounts due to repayments of a portion of our Term Loan B Facility during 2017.

MANAGEMENT'S DISCUSSION AND ANALYSIS

(Gain) Loss on Equity Investments, Net

During 2017 and 2016, we realized net losses on our cost and equity method investments of \$1.6 million and \$0.8 million, respectively. We recognized income of \$3.7 million and \$0.1 million in 2017 and 2016, respectively, related to our share of equity method investee gains. We also recorded a \$0.7 million gain from the sale of a cost method investment during 2016. During 2017 and 2016, we recognized impairment charges of \$5.3 million and \$1.6 million, respectively, on our equity investments previously accounted for under the cost method. As of December 29, 2017 and December 30, 2016, we held \$20.8 million and \$22.8 million of equity investments, respectively.

Other (Income) Loss, Net

Other (Income) Loss, Net was a \$10.9 million loss during 2017 compared to income of \$4.4 million during 2016. The impact of foreign currency exchange rates on transactions denominated in foreign currencies included in Other (Income) Loss, Net for 2017 was a loss of \$10.9 million, compared to a gain of \$4.3 million in 2016. The losses in 2017 were primarily driven by the impact of the weakening U.S. dollar relative to the Euro on our intercompany loans and are primarily non-cash in nature.

Provision (Benefit) for Income Taxes

During 2017 and 2016, our provision (benefit) for income taxes from continuing operations was (\$37.8) million and \$3.3 million, respectively. The stand-alone U.S. component of the effective tax rate for 2017 reflected a (\$47.0) million benefit on \$0.3 million of pre-tax book losses versus a (\$2.2) million benefit on \$12.5 million of pre-tax book losses for 2016. The stand-alone international component of the effective tax rate for 2017 reflected tax expense of \$9.2 million on \$49.0 million of pre-tax book income (18.7%) versus a tax expense of \$5.5 million on \$40.7 million of pre-tax book income (13.5%) for 2016.

The (benefit) provision for income taxes for 2017 differs from the U.S. statutory rate due to the following (dollars in thousands):

	U.S.		International		Combined	
	\$	%	\$	%	\$	%
Income (loss) before provision (benefit) for income taxes	\$ 306		\$ 48,953		\$ 49,259	
Provision (benefit) at statutory rate	\$ 107	35.0%	\$ 17,133	35.0%	\$ 17,240	35.0%
Federal tax credits	(1,628)	NM	(46)	(0.1)	(1,674)	(3.4)
Foreign rate differential	109	35.6	(11,572)	(23.6)	(11,463)	(23.3)
Uncertain tax positions	34	11.1	—	—	34	0.1
State taxes, net of federal benefit	(543)	NM	—	—	(543)	(1.1)
Valuation allowance	546	NM	484	1.0	1,030	2.1
Other	(3,387)	NM	329	0.7	(3,058)	(6.2)
Tax expense (benefit) before U.S. Tax Reform items	(4,762)	NM	6,328	13.0	1,566	3.2
U.S. Tax Reform items:						
Change in tax rates	(56,408)	NM	(45)	(0.1)	(56,453)	(114.6)
Toll charge on unremitted earnings	14,719	NM	—	—	14,719	29.9
Change in unremitted earnings assertion	(545)	NM	2,885	5.9	2,340	4.8
Tax expense related to U.S. Tax Reform items	(42,234)	NM	2,840	5.8	(39,394)	(79.9)
Provision (benefit) for income taxes	\$ (46,996)	NM	\$ 9,168	18.7%	\$ (37,828)	(76.8)%

^{NM} Calculated change not meaningful.

The difference between our effective tax rate and the U.S. federal statutory income tax rate for 2017 is primarily attributable to the components of the Tax Reform Act as well as our overall lower effective tax rate in the foreign jurisdictions in which we operate and where our foreign earnings are derived. The lower tax rate jurisdictions in which we operate and the respective statutory tax rate for each respective jurisdiction include Switzerland (22%), Mexico (30%), Uruguay (25%), and Ireland (12.5%). In addition, we currently have a tax holiday in Malaysia through April 2023, if certain conditions are met. While we are not currently aware of any material trends in these jurisdictions that are likely to impact our current or future tax expense, our future effective tax rates could be adversely affected by earnings being lower than anticipated in countries where we have lower effective tax rates and higher than anticipated in countries where we have higher effective tax rates, or by changes in tax laws or regulations. We regularly assess any significant exposure associated with increases in tax rates in international jurisdictions and adjustments are made as events occur that warrant adjustment to our tax provisions.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Liquidity and Capital Resources

(dollars in thousands)	December 28, 2018	December 29, 2017
Cash and cash equivalents	\$ 25,569	\$ 37,341
Working capital from continuing operations ⁽¹⁾	251,680	263,863
Current ratio from continuing operations ⁽¹⁾	2.53	2.64

⁽¹⁾ Excludes assets held for sale at December 29, 2017.

Cash and cash equivalents at December 28, 2018 decreased by \$11.8 million from December 29, 2017 as excess cash on hand was used to pay down our debt. Working capital from continuing operations decreased by \$12.2 million from December 29, 2017, primarily due to the reduced cash balances.

At December 28, 2018, \$12.9 million of our cash and cash equivalents were held by foreign subsidiaries. We intend to limit our distributions from foreign subsidiaries to previously taxed income or current period earnings. If distributions are made utilizing current period earnings, we will record foreign withholding taxes in the period of the distribution.

Summary of Cash Flow

The following cash flow summary information includes cash flows related to discontinued operations (in thousands):

	2018	2017
Cash provided by (used in):		
Operating activities	\$ 167,299	\$ 149,357
Investing activities	536,670	(47,936)
Financing activities	(725,080)	(111,669)
Effect of foreign currency exchange rates on cash and cash equivalents	2,584	2,228
Net change in cash and cash equivalents	\$ (18,527)	\$ (8,020)

Operating Activities - During 2018, we generated \$167.3 million in cash from operations compared to \$149.4 million in 2017. This increase was primarily due to a \$31.3 million increase in cash income (i.e. income from continuing operations plus adjustments to reconcile income from continuing operations to net cash provided by operating activities) partially offset by an \$13.3 million decrease in cash flow provided by working capital. The cash flow from working capital change during the period was primarily due to lower accrued interest as a result of our lower debt levels.

Investing Activities - The \$584.6 million increase in cash flows from investing activities was primarily attributable to net cash proceeds from the sale of the AS&O Product Line of approximately \$581 million. Our current expectation is that capital spending for continuing operations for 2019 will be in the range of \$50 million to \$55 million. We anticipate that cash on hand, cash flows from operations and available borrowing capacity under our Revolving Credit Facility will be sufficient to fund these capital expenditures. Property, plant, and equipment purchases related to our AS&O Product Line were approximately \$17 million per year.

Financing Activities - Net cash used in financing activities during 2018 was \$725.1 million compared to \$111.7 million in 2017. Financing activities during 2018 included net payments of \$700.5 million related to paying down our debt obligations compared to \$128.6 million in 2017. In addition, we paid debt issuance costs totaling \$32.0 million during 2018 compared to \$2.4 million in 2017. The 2018 amount includes a "make-whole" premium of \$31.3 million paid as a result of redeeming our Senior Notes, as described below.

In connection with the completion of the sale of our AS&O Product Line, during the third quarter of 2018 we repaid \$548 million of our debt, which included \$360 million of our 9.125% Senior Notes, \$114 million of our Term Loan B Facility and \$74 million outstanding on our Revolving Credit Facility.

Capital Structure - As of December 28, 2018, our capital structure consists of \$926 million of debt, net of deferred fees and discounts, under our Senior Secured Credit Facilities and approximately 33 million shares of common stock outstanding. We have access to \$188 million of borrowing capacity under our Revolving Credit Facility. We are also authorized to issue up to 100 million shares of common stock and 100 million shares of preferred stock. As of December 28, 2018, our debt service obligations for 2019, consisting of principal and interest on our outstanding debt, are estimated to be approximately \$86 million.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Based on current expectations, we believe that our projected cash flows provided by operations, available cash and cash equivalents and potential borrowings under our revolving credit facility are sufficient to meet our working capital, debt service and capital expenditure requirements for the next twelve months. If our future financing needs increase, we may need to arrange additional debt or equity financing. Accordingly, we evaluate and consider from time to time various financing alternatives to supplement our existing financial resources. However, we cannot be assured that we will be able to enter into any such arrangements on acceptable terms or at all.

Credit Facilities - As of December 28, 2018, we had senior secured credit facilities (the "Senior Secured Credit Facilities") that consist of (i) a \$200 million revolving credit facility (the "Revolving Credit Facility"), which had \$ 5 million of borrowings and letters of credit totaling \$7 million drawn against it as of December 28, 2018, (ii) a \$305 million term loan A facility (the "TLA Facility"), and (iii) an \$ 632 million term loan B facility (the "TLB Facility"). The Revolving Credit Facility will mature on October 27, 2020, the TLA Facility will mature on October 27, 2021 and the TLB Facility will mature on October 27, 2022. The Senior Secured Credit Facilities include a mandatory prepayment provision customary for credit facilities of its nature.

The Revolving Credit Facility and the TLA Facility contain covenants requiring (A) a maximum total net leverage ratio of 5.50 :1.0, subject to step downs beginning in the first quarter of 2019 and (B) a minimum interest coverage ratio of adjusted EBITDA (as defined in the Senior Secured Credit Facilities) to interest expense of not less than 2.75 :1.0, subject to step ups beginning in the first quarter of 2019. As of December 28, 2018, the Company was in compliance with these financial covenants. The TLB Facility does not contain any financial maintenance covenants. As of December 28, 2018, our total net leverage ratio, calculated in accordance with our credit agreement, was approximately 3.3 to 1.0. For the twelve month period ended December 28, 2018, our ratio of adjusted EBITDA to interest expense, calculated in accordance with our credit agreement, was approximately 5.4 to 1.0.

Failure to comply with these financial covenants would result in an event of default as defined under the Revolving Credit Facility and TLA Facility unless waived by the lenders. An event of default may result in the acceleration of our indebtedness. As a result, management believes that compliance with these covenants is material to us. As of December 28, 2018, we were in full compliance with the financial covenants described above. However, a significant increase in the LIBOR interest rate or a decline in our operating performance, and in particular our sales or adjusted EBITDA, could result in our inability to meet these financial covenants and lead to an event of default if a waiver or amendment could not be obtained from our lenders. As of December 28, 2018, our adjusted EBITDA would have to decline by approximately \$109 million, or approximately 39%, in order for us to not be in compliance with our financial covenants. The Revolving Credit Facility is supported by a consortium of thirteen lenders with no lender controlling more than 27% of the facility.

Upon completion of the redemption in full of the Senior Notes in July 2018, the indenture governing the Senior Notes was satisfied and discharged. Refer to Note 8 "Debt" of the Notes to Consolidated Financial Statements contained in Item 8 of this report for further description of our outstanding debt.

Off-Balance Sheet Arrangements

We have no off-balance sheet arrangements within the meaning of Item 303(a)(4) of Regulation S-K.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Contractual Obligations

Presented below is a summary of contractual obligations and other minimum commitments as of December 28, 2018. Refer to Note 13 "Commitments and Contingencies" of the Notes to Consolidated Financial Statements contained in Item 8 of this report for additional information regarding self-insurance liabilities, which are not reflected in the table below.

	Payments due by period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Principal amount of debt outstanding	\$ 941,973	\$ 37,500	\$ 272,187	\$ 632,286	\$ —
Interest on debt ^(a)	165,754	48,421	89,252	28,081	—
Operating lease obligations ^(b)	48,170	8,562	14,638	10,381	14,589
Foreign currency contracts ^(b)	55,665	55,665	—	—	—
Defined benefit plan obligations ^(c)	1,592	104	245	279	964
Other ^(d)	94,436	74,893	19,543	—	—
Total	\$ 1,307,590	\$ 225,145	\$ 395,865	\$ 671,027	\$ 15,553

(a) Interest payments in the table above reflect the contractual interest payments on our outstanding debt based upon the balance outstanding and applicable interest rates at December 28, 2018, and exclude the impact of the debt discount amortization and impact of interest rate swap agreements. Refer to Note 8 "Debt" of the Notes to Consolidated Financial Statements contained in Item 8 of this report for additional information regarding long-term debt.

(b) Refer to Note 13 "Commitments and Contingencies" of the Notes to Consolidated Financial Statements contained in Item 8 of this report for additional information about our operating lease obligations and foreign currency contracts.

(c) Refer to Note 9 "Benefit Plans" of the Notes to Consolidated Financial Statements contained in Item 8 of this report for additional information about our defined benefit plan obligations.

(d) Amounts include inventory purchase commitments, which are legally binding and specify minimum purchase quantities. These commitments do not include open purchase orders.

This table does not reflect \$5.4 million of unrecognized tax benefits, as we are uncertain if or when such amounts may be settled. Refer to Note 12 "Income Taxes" of the Notes to Consolidated Financial Statements in Item 8 of this report for additional information about these unrecognized tax benefits.

Impact of Recently Issued Accounting Standards

In the normal course of business, we evaluate all new accounting pronouncements issued by the FASB, SEC, or other authoritative accounting bodies to determine the potential impact they may have on our Consolidated Financial Statements. Refer to Note 1 "Summary of Significant Accounting Policies" of the Notes to Consolidated Financial Statements contained in Item 8 of this report for additional information about these recently issued accounting standards and their potential impact on our financial condition or results of operations.

CRITICAL ACCOUNTING ESTIMATES

Management's discussion and analysis of financial condition and results of operations are based upon our consolidated financial statements which have been prepared in accordance with GAAP. We make estimates and assumptions in the preparation of our consolidated financial statements that affect the reported amounts of assets and liabilities, revenue and expenses and related disclosures of contingent assets and liabilities. We base our estimates and judgments upon historical experience and other factors that are believed to be reasonable under the circumstances. Changes in estimates or assumptions could result in a material adjustment to the consolidated financial statements.

We have identified several critical accounting estimates. An accounting estimate is considered critical if both: (a) the nature of the estimates or assumptions is material due to the levels of subjectivity and judgment involved, and (b) the impact of changes in the estimates and assumptions would have a material effect on the consolidated financial statements. This listing is not a comprehensive list of all of our accounting policies. For further information regarding the application of these and other accounting policies, see Note 1 "Summary of Significant Accounting Policies" of the Notes to Consolidated Financial Statements contained in Item 8 of this report.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Inventories

Inventories are measured on a first-in, first-out basis at the lower of cost or net realizable value. Net realizable value is the estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. Inventory costing requires complex calculations that include assumptions for overhead absorption, scrap, sample calculations, manufacturing yield estimates, costs to sell, and the determination of which costs may be capitalized. The valuation of inventory requires us to estimate obsolete or excess inventory, as well as inventory that is not of saleable quality.

Historically, our inventory adjustment has been adequate to cover our losses. However, variations in methods or assumptions could have a material impact on our results. If our demand forecast for specific products is greater than actual demand and we fail to reduce manufacturing output accordingly, we could be required to record additional inventory write-down or expense a greater amount of overhead costs, which would negatively impact our net income.

Valuation of Goodwill, Intangible and Other Long-Lived Assets

We make assumptions in establishing the carrying value, fair value and, if applicable, the estimated lives of our goodwill, intangible and other long-lived assets. Goodwill and intangible assets determined to have an indefinite useful life are not amortized. Instead, these assets are evaluated for impairment on an annual basis on the last day of our fiscal year and whenever events or business conditions change that could indicate that the asset is impaired. Long-lived assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset (asset group) may not be recoverable.

Evaluation of goodwill for impairment

We test each reporting unit's goodwill for impairment on the last day of our fiscal year and between annual tests if an event occurs or circumstances change that would more-likely-than-not reduce the fair value of a reporting unit below its carrying value. In conducting this annual impairment testing, we may first perform a qualitative assessment of whether it is more-likely-than-not that a reporting unit's fair value is less than its carrying value. If not, no further goodwill impairment testing is required. If it is more-likely-than-not that a reporting unit's fair value is less than its carrying value, or if we elect not to perform a qualitative assessment of a reporting unit, a quantitative analysis is performed, in which the fair value of the reporting unit is compared to its carrying value. If the carrying value of a reporting unit exceeds its fair value, an impairment loss is recognized equal to the excess, limited to the amount of goodwill allocated to that reporting unit.

We performed a qualitative assessment of our reporting units as of December 28, 2018. As part of this analysis, we evaluated factors including, but not limited to, our market capitalization and stock price performance, macro-economic conditions, market and industry conditions, cost factors, the competitive environment, and the operational stability and overall financial performance of the reporting units. The assessment indicated that it was more likely than not that the fair value of each of the reporting units exceeded its respective carrying value. We do not believe that any of our reporting units are at risk for impairment. However, changes to the factors considered above could affect the estimated fair value of one or more of our reporting units and could result in a goodwill impairment charge in a future period. We may be unaware of one or more significant factors that, if we had been aware of, would cause our conclusion to change, which could result in a goodwill impairment charge in a future period.

Evaluation of indefinite-lived intangible assets for impairment

Our indefinite-lived intangible assets include the Greatbatch Medical and Lake Region Medical tradenames. Similar to goodwill, we perform an annual impairment review of our indefinite-lived intangible assets on the last day of our fiscal year, unless events occur that trigger the need for an interim impairment review. We have the option to first assess qualitative factors in determining whether it is more-likely-than-not that an indefinite-lived intangible asset is impaired. If we elect not to use this option, or we determine that it is more-likely-than-not that the asset is impaired, we perform a quantitative assessment that requires us to estimate the fair value of each indefinite-lived intangible asset and compare that amount to its carrying value. Fair value is estimated using the relief-from-royalty method. Significant assumptions inherent in this methodology include estimates of royalty rates and discount rates. The discount rate applied is based on the risk inherent in the respective intangible assets and royalty rates are based on the rates at which comparable tradenames are being licensed in the marketplace. Impairment, if any, is based on the excess of the carrying value over the fair value of these assets.

MANAGEMENT'S DISCUSSION AND ANALYSIS

We performed a quantitative assessment to test our other indefinite-lived intangible assets for impairment as of December 28, 2018. For the Greatbatch Medical tradename, the excess of the estimated fair value over carrying value (expressed as a percentage of carrying value) was in excess of its carrying value of \$20 million by approximately 350% at December 28, 2018. The Lake Region Medical tradename had an excess of the estimated fair value over carrying value of approximately 70% and a carrying value of \$70 million at December 28, 2018. We do not believe that any of our indefinite-lived intangible assets are at risk for impairment. However, a significant increase in the discount rate, decrease in the terminal growth rate, increase in tax rates, decrease in the royalty rate or substantial reductions in our end markets and volume assumptions could have a negative impact on the estimated fair values of either of our tradenames and require us to recognize impairments of these other indefinite-lived intangible assets in a future period.

Evaluation of long-lived assets for impairment

Our long-lived assets consist primarily of property, plant and equipment and definite-lived intangible assets, including purchased technology and patents, and customer lists. Property, plant and equipment and definite-lived intangible assets are carried at cost. The cost of property, plant and equipment is charged to depreciation expense over the estimated life of the operating assets, primarily on a straight-line basis. Definite-lived intangible assets are amortized over the expected life of the asset. We assess long-lived assets and definite-lived intangible assets for impairment when events occur or circumstances change that would indicate that the carrying value of the asset may not be recoverable.

Factors that we consider in deciding when to perform an impairment review include, but are not limited to: a significant decrease in the market price of the asset (asset group); a significant change in the extent or manner in which the asset (asset group) is being used or in its physical condition; a significant change in legal factors or business climate that could affect the value of a long-lived asset (asset group), including an action or assessment by a regulator; an accumulation of costs significantly in excess of the amount originally expected for the acquisition or construction of a long-lived asset (asset group); a current-period operating or cash flow loss combined with a history of operating or cash flow losses or a projection or forecast that demonstrates continuing losses associated with the use of a long-lived asset (asset group); and a current expectation that it is more likely than not that a long-lived asset (asset group) will be sold or otherwise disposed of significantly before the end of its previously estimated useful life.

When impairment indicators exist, we determine if the carrying value of the long-lived asset(s) or definite-lived intangible asset(s) exceeds the related undiscounted future cash flows. In cases where the carrying value exceeds the undiscounted future cash flows, the carrying value is written down to fair value. Fair value is generally determined using a discounted cash flow analysis. When it is determined that the useful life of an asset (asset group) is shorter than the originally estimated life, and there are sufficient cash flows to support the carrying value of the asset (asset group), we accelerate the rate of depreciation/amortization in order to fully depreciate/amortize the asset over its shorter useful life.

Estimation of the cash flows and useful lives of long-lived assets and definite-lived intangible assets requires significant management judgment. Events could occur that would materially affect our estimates and assumptions. Unforeseen changes, such as the loss of one or more significant customers, technology obsolescence, or significant manufacturing disruption, amongst other factors, could substantially alter the assumptions regarding the ability to realize the return of our investment in long-lived assets, definite-lived intangible assets or their estimated useful lives. Also, as we make manufacturing process conversions and other facility consolidation decisions, we must make subjective judgments regarding the remaining cash flows and useful lives of our assets, primarily manufacturing equipment and buildings. Significant changes in these estimates and assumptions could change the amount of future depreciation or amortization expense or could create future impairments of these long-lived assets (asset groups) or definite-lived intangible assets.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

MARKET RISK

In the normal course of business, we are exposed to market risk primarily due to changes in foreign currency exchange rates and interest rates. Changes in these rates could result in fluctuations in our earnings and cash flows. We regularly assess these risks and have established policies and business practices to help protect against the adverse effects of these and other potential exposures. However, fluctuations in foreign currency exchange rates and interest rates could have a significant impact, positive or negative, on our financial results in the future.

Foreign Currency Exchange Rate Risk

We have foreign operations in Ireland, Switzerland, Mexico, Uruguay, and Malaysia which expose us to foreign currency exchange rate fluctuations due to transactions denominated in Euros, Swiss francs, Mexican pesos, Uruguayan pesos, and Malaysian ringgits, respectively. We continuously evaluate our foreign currency risk, and we use operational hedges, as well as forward currency exchange rate contracts, to manage the impact of currency exchange rate fluctuations on earnings and cash flows. We do not enter into currency exchange rate derivative instruments for speculative purposes. A hypothetical 10% change in the value of the U.S. dollar in relation to our most significant foreign currency exposures would have had an impact of approximately \$5 million on our 2018 annual sales. This amount is not indicative of the hypothetical net earnings impact due to the partially offsetting impacts on cost of sales and operating expenses in those currencies. We estimate that foreign currency exchange rate fluctuations during 2018 increased sales in comparison to 2017 by approximately \$2 million.

We had currency derivative instruments outstanding in the notional amount of \$55.7 million as of December 28, 2018 and \$65.4 million as of December 29, 2017. As of December 28, 2018 and December 29, 2017, we recorded a \$0.7 million and \$0.9 million liability, respectively, to recognize the fair value of these derivative instruments on our Consolidated Balance Sheets. The amounts recorded during 2018 related to our forward contracts were a decrease in Sales of \$0.8 million and a decrease in Cost of Sales of \$0.9 million. Refer to Note 13 “Commitments and Contingencies” to the Consolidated Financial Statements contained in Item 8 of this report for additional information regarding our outstanding forward contracts.

To the extent that our monetary assets and liabilities, including short-term and long-term intercompany loans, are recorded in a currency other than the functional currency of the subsidiary, these amounts are remeasured each period at the period-end exchange rate, with the resulting gain or loss being recorded in Other (Income) Loss, Net, in the Consolidated Statements of Operations. Net foreign currency transaction gains and losses included in Other (Income) Loss, Net, amounted to a loss of \$1.6 million for 2018 and a loss of \$10.9 million for 2017 and primarily related to the remeasurement of intercompany loans and fluctuations of the U.S. dollar relative to the Euro. During 2017 and 2018, we took steps to eliminate the majority of these intercompany balances. As such, we expect foreign currency exchange rate gains (losses) to be significantly less than the 2017 and 2018 amounts.

We translate all assets and liabilities of our foreign operations where the U.S. dollar is not the functional currency at the period-end exchange rate and translate sales and expenses at the average exchange rates in effect during the period. The net effect of these translation adjustments is recorded in the Consolidated Financial Statements as Comprehensive Income (Loss). The translation adjustment for 2018 was a \$19.9 million loss and primarily related to the strengthening of the U.S. dollar relative to the Euro. Translation adjustments are not adjusted for income taxes as they relate to permanent investments in our foreign subsidiaries. A hypothetical 10% change in the value of the U.S. dollar in relation to our most significant foreign currency net assets would have had an impact of approximately \$39 million on our foreign net assets as of December 28, 2018.

Interest Rate Risk

We regularly monitor interest rate risk attributable to our outstanding debt obligations. From time to time, we enter into interest rate swap agreements in order to hedge against potential changes in cash flows on our outstanding variable rate debt.

During 2016, we entered into a three year \$200 million interest rate swap to hedge against potential changes in cash flows on our outstanding variable rate debt, which is indexed to the one-month LIBOR rate. The variable rate received on the interest rate swap and the variable rate paid on the variable rate debt will have the same rate of interest, excluding the credit spread, and will reset and pay interest on the same day. The swap is being accounted for as a cash flow hedge. As of December 28, 2018, this swap had a positive fair value of \$4.2 million. The amount recorded during 2018 related to this interest rate swap was a reduction of \$1.7 million to Interest Expense.

As of December 28, 2018, we had \$942 million in principal amount of debt outstanding. Interest rates on our Revolving Credit Facility, TLA Facility and TLB Facility, reset, at our option, based upon the prime rate or LIBOR rate, thus subjecting us to interest rate risk. Our TLB Facility has a 1.00% LIBOR floor, thus is only variable when LIBOR interest rates are above 1.00%. Refer to Note 8 “Debt” of the Notes to Consolidated Financial Statements in Item 8 of this report for additional information about our outstanding debt. A hypothetical one percentage point (100 basis points) change in the LIBOR rate on the \$742 million of unhedged variable rate debt outstanding at December 28, 2018 would increase/decrease our interest expense by approximately \$7 million.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

INTEGER HOLDINGS CORPORATION
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MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

The Company's certifying officers are responsible for establishing and maintaining adequate internal control over financial reporting. The Company's internal control over financial reporting is designed and maintained under the supervision of its certifying officers to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the Company's consolidated financial statements for external reporting purposes in accordance with accounting principles generally accepted in the United States of America.

As of December 28, 2018, management conducted an assessment of the effectiveness of the Company's internal control over financial reporting based on the framework established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this assessment, management has determined that the Company's internal control over financial reporting as of December 28, 2018 is effective.

The effectiveness of internal control over financial reporting as of December 28, 2018 has been audited by Deloitte & Touche LLP, the Company's independent registered public accounting firm.

Dated: February 22, 2019

/s/ Joseph W. Dziejczak

Joseph W. Dziejczak

President & Chief Executive Officer

/s/ Jason K. Garland

Jason K. Garland

Executive Vice President & Chief Financial Officer

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the stockholders and the Board of Directors of Integer Holdings Corporation

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Integer Holdings Corporation and subsidiaries (the “Company”) as of December 28, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 28, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements and financial statement schedule as of and for the year ended December 28, 2018 of the Company and our report dated February 22, 2019 expressed an unqualified opinion on those consolidated financial statements and financial statement schedule.

Basis for Opinion

The Company’s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management’s Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company’s internal control over financial reporting based on our audit. We are a public accounting firm registered with the 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company’s 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. A company’s internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company’s assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, 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.

/s/ Deloitte & Touche LLP

Williamsville, New York
February 22, 2019

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the stockholders and the Board of Directors of Integer Holdings Corporation

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Integer Holdings Corporation and subsidiaries (the “Company”) as of December 28, 2018 and December 29, 2017, the related consolidated statements of operations, comprehensive income (loss), cash flows, and stockholders’ equity for the years ended December 28, 2018, December 29, 2017, and December 30, 2016, and the related notes and the schedule listed in the Index at Item 15 (collectively referred to as the “financial statements”). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 28, 2018 and December 29, 2017, and the results of its operations and its cash flows for the years ended December 28, 2018, December 29, 2017, and December 30, 2016, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company’s internal control over financial reporting as of December 28, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 22, 2019 expressed an unqualified opinion on the Company’s internal control over financial reporting.

Basis for Opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the 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 financial statements are free of material misstatement, whether due to error or fraud. 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/ Deloitte & Touche LLP

Williamsville, New York
February 22, 2019

We have served as the Company’s auditor since 1985.

INTEGER HOLDINGS CORPORATION
CONSOLIDATED BALANCE SHEETS

(in thousands except share and per share data)	December 28, 2018	December 29, 2017
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 25,569	\$ 37,341
Accounts receivable, net of allowance for doubtful accounts of \$0.6 million and \$0.5 million, respectively	185,501	194,845
Inventories	190,076	176,738
Prepaid expenses and other current assets	15,104	16,239
Current assets of discontinued operations held for sale	—	106,746
Total current assets	416,250	531,909
Property, plant and equipment, net	231,269	235,180
Goodwill	832,338	839,870
Other intangible assets, net	812,338	862,873
Deferred income taxes	3,937	3,451
Other assets	30,549	30,428
Noncurrent assets of discontinued operations held for sale	—	344,634
Total assets	\$ 2,326,681	\$ 2,848,345
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Current portion of long-term debt	\$ 37,500	\$ 30,469
Accounts payable	57,187	64,551
Income taxes payable	9,393	5,904
Accrued expenses	60,490	60,376
Current liabilities of discontinued operations held for sale	—	47,703
Total current liabilities	164,570	209,003
Long-term debt	888,007	1,578,696
Deferred income taxes	203,910	140,964
Other long-term liabilities	9,701	11,335
Noncurrent liabilities of discontinued operations held for sale	—	14,966
Total liabilities	1,266,188	1,954,964
Commitments and contingencies (Note 13)		
Stockholders' equity:		
Preferred stock, \$0.001 par value, authorized 100,000,000 shares; no shares issued or outstanding	—	—
Common stock, \$0.001 par value; 100,000,000 shares authorized; 32,624,494 and 31,977,953 shares issued, respectively; 32,473,167 and 31,871,427 shares outstanding, respectively	33	32
Additional paid-in capital	691,083	669,756
Treasury stock, at cost, 151,327 and 106,526 shares, respectively	(8,125)	(4,654)
Retained earnings	344,498	176,068
Accumulated other comprehensive income	33,004	52,179
Total stockholders' equity	1,060,493	893,381
Total liabilities and stockholders' equity	\$ 2,326,681	\$ 2,848,345

The accompanying notes are an integral part of these consolidated financial statements.

INTEGER HOLDINGS CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS

(in thousands except per share data)	Fiscal Year Ended		
	December 28, 2018	December 29, 2017	December 30, 2016
Sales	\$ 1,215,012	\$ 1,136,080	\$ 1,075,502
Cost of sales	852,347	782,070	737,823
Gross profit	362,665	354,010	337,679
Operating expenses:			
Selling, general and administrative expenses	142,441	143,073	136,444
Research, development and engineering costs	48,604	48,850	47,899
Other operating expenses	16,065	36,438	60,413
Total operating expenses	207,110	228,361	244,756
Operating income	155,555	125,649	92,923
Interest expense	99,310	63,972	68,331
(Gain) loss on equity investments, net	(5,623)	1,565	833
Other (income) loss, net	752	10,853	(4,406)
Income from continuing operations before taxes	61,116	49,259	28,165
Provision (benefit) for income taxes	14,083	(37,828)	3,287
Income from continuing operations	\$ 47,033	\$ 87,087	\$ 24,878
Discontinued operations:			
Income (loss) from discontinued operations before taxes	188,313	(27,432)	(26,980)
Provision (benefit) for income taxes	67,382	(7,024)	(8,063)
Income (loss) from discontinued operations	\$ 120,931	\$ (20,408)	\$ (18,917)
Net income	\$ 167,964	\$ 66,679	\$ 5,961
Basic earnings (loss) per share:			
Income from continuing operations	\$ 1.46	\$ 2.77	\$ 0.81
Income (loss) from discontinued operations	3.76	(0.65)	(0.61)
Basic earnings per share	5.23	2.12	0.19
Diluted earnings (loss) per share:			
Income from continuing operations	\$ 1.44	\$ 2.72	\$ 0.80
Income (loss) from discontinued operations	\$ 3.71	\$ (0.64)	\$ (0.61)
Diluted earnings per share	5.15	2.08	0.19
Weighted average shares outstanding:			
Basic	32,136	31,402	30,778
Diluted	32,596	32,056	30,973

The accompanying notes are an integral part of these consolidated financial statements.

INTEGER HOLDINGS CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

(in thousands except per share data)	Fiscal Year Ended		
	December 28, 2018	December 29, 2017	December 30, 2016
Comprehensive Income (Loss)			
Net income	\$ 167,964	\$ 66,679	\$ 5,961
Other comprehensive income (loss):			
Foreign currency translation gain (loss)	(19,925)	65,860	(19,269)
Net change in cash flow hedges, net of tax	16	2,243	2,478
Defined benefit plan liability adjustment, net of tax	302	76	(579)
Other comprehensive income (loss), net	(19,607)	68,179	(17,370)
Comprehensive income (loss)	\$ 148,357	\$ 134,858	\$ (11,409)

The accompanying notes are an integral part of these consolidated financial statements.

INTEGER HOLDINGS CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS

(in thousands)	Fiscal Year Ended		
	December 28, 2018	December 29, 2017	December 30, 2016
Cash flows from operating activities:			
Net income	\$ 167,964	\$ 66,679	\$ 5,961
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	88,988	102,796	90,524
Debt related charges included in interest expense	49,110	10,911	7,278
Stock-based compensation	10,470	14,680	8,408
Non-cash (gain) loss on equity investments	(5,623)	2,965	1,495
Other non-cash losses	148	7,110	5,216
Deferred income taxes	61,126	(59,212)	(7,350)
Gain on sale of discontinued operations	(194,965)	—	—
Changes in operating assets and liabilities:			
Accounts receivable	9,289	(34,597)	(2,169)
Inventories	(16,094)	(986)	22,170
Prepaid expenses and other assets	8,527	4,854	(3,846)
Accounts payable	(94)	4,887	(1,127)
Accrued expenses	(11,756)	14,977	(13,935)
Income taxes payable	209	14,293	(7,093)
Net cash provided by operating activities	167,299	149,357	105,532
Cash flows from investing activities:			
Acquisition of property, plant and equipment	(44,908)	(47,301)	(58,632)
Proceeds from sale of property, plant and equipment	1,379	472	347
Purchase of equity investments	(1,230)	(1,316)	(3,015)
Proceeds from sale of discontinued operations	581,429	—	—
Other investing activities	—	209	(2,000)
Net cash provided by (used in) investing activities	536,670	(47,936)	(63,300)
Cash flows from financing activities:			
Principal payments of long-term debt	(705,469)	(178,558)	(46,000)
Proceeds from issuance of long-term debt	5,000	50,000	57,000
Proceeds from the exercise of stock options	12,409	19,324	2,821
Payment of debt issuance and redemption costs	(31,991)	(2,360)	(1,177)
Distribution of cash and cash equivalents to Nuvectra Corporation	—	—	(76,256)
Purchase of non-controlling interests	—	—	(6,818)
Tax withholdings related to net share settlements of restricted stock awards	(5,029)	(75)	(3,982)
Other financing activities	—	—	2,266
Net cash used in financing activities	(725,080)	(111,669)	(72,146)
Effect of foreign currency exchange rates on cash and cash equivalents	2,584	2,228	(448)
Net decrease in cash and cash equivalents	(18,527)	(8,020)	(30,362)
Cash and cash equivalents, beginning of year	44,096	52,116	82,478
Cash and cash equivalents, end of year	\$ 25,569	\$ 44,096	\$ 52,116

The accompanying notes are an integral part of these consolidated financial statements.

INTEGER HOLDINGS CORPORATION
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

(in thousands)	Common Stock		Additional Paid-In Capital	Treasury Stock		Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total Stockholders' Equity
	Shares	Amount		Shares	Amount			
January 1, 2016	30,664	31	620,470	(63)	(3,100)	231,854	1,370	850,625
Comprehensive loss:								
Net income	—	—	—	—	—	5,961	—	5,961
Other comprehensive loss, net	—	—	—	—	—	—	(17,370)	(17,370)
Share-based compensation plans:								
Stock-based compensation	—	—	8,408	—	—	—	—	8,408
Net shares issued (acquired)	395	—	1,570	(71)	(2,734)	—	—	(1,164)
Excess tax benefit on share-based compensation	—	—	2,266	—	—	—	—	2,266
Spin-off of Nuvecra Corporation	—	—	5,241	—	—	(128,728)	—	(123,487)
December 30, 2016	31,059	31	637,955	(134)	(5,834)	109,087	(16,000)	725,239
Cumulative effect adjustment of the adoption of ASU 2016-09								
	—	—	(812)	—	—	302	—	(510)
Comprehensive income:								
Net income	—	—	—	—	—	66,679	—	66,679
Other comprehensive income, net	—	—	—	—	—	—	68,179	68,179
Share-based compensation plans:								
Stock-based compensation	—	—	14,680	—	—	—	—	14,680
Net shares issued	919	1	17,933	27	1,180	—	—	19,114
December 29, 2017	31,978	\$ 32	\$ 669,756	(107)	\$ (4,654)	\$ 176,068	\$ 52,179	\$ 893,381
Comprehensive income:								
Net income	—	—	—	—	—	167,964	—	167,964
Other comprehensive loss, net	—	—	—	—	—	—	(19,607)	(19,607)
Accumulated other comprehensive income reclassified to earnings, net (Note 15)								
	—	—	—	—	—	—	898	898
Reclassification of certain tax effects related to the adoption of ASU 2018-02 (Note 1)								
	—	—	—	—	—	466	(466)	—
Share-based compensation plans:								
Stock-based compensation	—	—	10,470	—	—	—	—	10,470
Net shares issued	646	1	10,857	(44)	(3,471)	—	—	7,387
December 28, 2018	32,624	\$ 33	\$ 691,083	(151)	\$ (8,125)	\$ 344,498	\$ 33,004	\$ 1,060,493

The accompanying notes are an integral part of these consolidated financial statements.

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1.) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Integer Holdings Corporation (together with its consolidated subsidiaries, “Integer” or the “Company”) is a publicly traded corporation listed on the New York Stock Exchange under the symbol “ITGR.” Integer is one of the largest medical device outsource manufacturers in the world serving the cardiac, neuromodulation, orthopedics, vascular, advanced surgical and portable medical markets. The Company provides innovative, high-quality medical technologies that enhance the lives of patients worldwide. In addition, it develops batteries for high-end niche applications in the energy, military, and environmental markets. The Company’s customers include large multi-national original equipment manufacturers (“OEMs”) and their affiliated subsidiaries.

On May 3, 2018, the Company entered into a definitive agreement to sell the Advanced Surgical and Orthopedic product lines (the “AS&O Product Line”) within its Medical segment to Viant (formerly MedPlast, LLC), and on July 2, 2018 completed the sale. On March 14, 2016, the Company completed the spin-off of a portion of its former QiG segment through a tax-free distribution of all of the shares of its former QiG Group, LLC subsidiary to the stockholders of Integer on a pro rata basis (the “Spin-off”). Refer to Note 2 “Discontinued Operations and Divestitures” for further details of these transactions.

Basis of Presentation and Principles of Consolidation

The consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America (“GAAP”) and include the accounts of Integer Holdings Corporation and its wholly owned subsidiaries. All intercompany balances and transactions have been eliminated in consolidation.

The results of operations of the AS&O Product Line are reported as discontinued operations in the Consolidated Statements of Operations for all periods presented and the related assets and liabilities associated with the discontinued operations are classified as held for sale in the Consolidated Balance Sheet as of December 29, 2017. The Consolidated Statements of Cash Flows includes cash flows related to the discontinued operations due to Integer’s (parent) centralized treasury and cash management processes, and, accordingly, cash flow amounts for discontinued operations are disclosed in Note 2 “Discontinued Operations and Divestitures.” All results and information in the consolidated financial statements are presented as continuing operations and exclude the AS&O Product Line unless otherwise noted specifically as discontinued operations.

The Company’s results for periods prior to the Spin-off on March 14, 2016 include the financial and operating results of QiG Group, LLC, which did not qualify for presentation as discontinued operations.

The Company organizes its business into two reportable segments: (1) Medical and (2) Non-Medical. The discontinued operations of the AS&O Product Line were reported in the Medical segment. Refer to Note 17 “Segment and Geographic Information,” for additional information on the Company’s reportable segments.

Fiscal Year

The Company utilizes a fifty-two or fifty-three week fiscal year ending on the Friday nearest December 31. Fiscal years 2018 , 2017 and 2016 consisted of fifty-two weeks and ended on December 28, 2018 , December 29, 2017 and December 30, 2016 , respectively.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and reported amounts of sales and expenses during the reporting periods. Actual results could differ materially from those estimates.

Cash and Cash Equivalents

Cash and cash equivalents consist of cash and highly liquid, short-term investments with maturities at the time of purchase of three months or less.

Concentration of Credit Risk

Financial instruments that potentially subject the Company to concentration of credit risk consist principally of accounts receivable. A significant portion of the Company’s sales and accounts receivable are to four customers, all in the medical device industry, and, as such, the Company is directly affected by the condition of those customers and that industry. However, the credit risk associated with trade receivables is partially mitigated due to the stability of those customers. The Company performs on-going credit evaluations of its customers. Note 17 “Segment and Geographic Information” contains information on sales and accounts receivable for these customers. The Company maintains cash deposits with major banks, which from time to time may exceed insured limits. The Company performs on-going credit evaluations of its banks.

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1.) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Trade Accounts Receivable and Allowance for Doubtful Accounts

The Company provides credit, in the normal course of business, to its customers in the form of trade receivables. Credit is extended based on evaluation of a customer's financial condition and collateral is not required. The Company maintains an allowance for those customer receivables that it does not expect to collect. The Company accrues its estimated losses from uncollectable accounts receivable to the allowance based upon recent historical experience, the length of time the receivable has been outstanding and other specific information as it becomes available. Provisions to the allowance for doubtful accounts are charged to current operating expenses. Actual losses are charged against this allowance when incurred.

Inventories

Inventories are stated at the lower of cost, determined using the first-in first-out method, or net realizable value. Net realizable value is the estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. Write-downs for excess, obsolete or expired inventory are based primarily on how long the inventory has been held as well as estimates of forecasted net sales of that product. A significant change in the timing or level of demand for products may result in recording additional write-downs for excess, obsolete or expired inventory in the future. Note 4 "Inventories" contains additional information on the Company's inventory.

Property, Plant and Equipment ("PP&E")

PP&E is carried at cost less accumulated depreciation. Depreciation is computed by the straight-line method over the estimated useful lives of the assets, as follows: buildings and building improvements 12 - 30 years; machinery and equipment 3 - 10 years; office equipment 3 - 10 years; and leasehold improvements over the remaining lives of the improvements or the lease term, if less. The cost of repairs and maintenance are expensed as incurred; renewals and betterments are capitalized. Upon retirement or sale of an asset, its cost and related accumulated depreciation or amortization is removed from the accounts and any gain or loss is recorded in operating income or expense. The Company also reviews its PP&E for impairment when impairment indicators exist. When impairment indicators exist, the Company determines if the carrying value of its fixed asset(s) exceeds the related undiscounted future cash flows. In cases where the carrying value of the Company's long-lived assets or asset groups (excluding goodwill and indefinite-lived intangible assets) exceeds the related undiscounted cash flows, the carrying value is written down to fair value. Fair value is generally determined using a discounted cash flow analysis. Note 5 "Property, Plant and Equipment, Net" contains additional information on the Company's PP&E.

Fair Value Measurements

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (i.e. the "exit price") in an orderly transaction between market participants at the measurement date. Accounting Standards Codification ("ASC") 820, *Fair Value Measurements*, establishes a hierarchy for inputs used in measuring fair value that maximizes the use of observable inputs and minimizes the use of unobservable inputs by requiring that the most observable inputs be used when available. Observable inputs are inputs that market participants would use in pricing the asset or liability developed based on market data obtained from sources independent of the Company. Unobservable inputs are inputs that reflect the Company's assumptions about the assumptions market participants would use in pricing the asset or liability developed based on the best information available in the circumstances. The hierarchy is broken down into three levels based on the reliability of inputs as follows:

Level 1 – Valuation is based on quoted prices in active markets for identical assets or liabilities that the Company has the ability to access. Level 1 valuations do not entail a significant degree of judgment.

Level 2 – Valuation is determined from quoted prices for similar assets or liabilities in active markets, quoted prices for identical instruments in markets that are not active or by model-based techniques in which all significant inputs are observable in the market.

Level 3 – Valuation is based on unobservable inputs that are significant to the overall fair value measurement. The degree of judgment in determining fair value is greatest for Level 3 valuations.

Fair value is a market-based measure considered from the perspective of a market participant rather than an entity-specific measure. Therefore, even when market assumptions are not readily available, assumptions are required to reflect those that market participants would use in pricing the asset or liability at the measurement date. Note 16 "Fair Value Measurements" contains additional information on assets and liabilities recorded at fair value in the consolidated financial statements.

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1.) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Acquisitions

Results of operations of acquired companies are included in the Company's results of operations as of the respective acquisition dates. The purchase price of each acquisition is allocated to the net assets acquired based on estimates of their fair values at the date of the acquisition. Any purchase price in excess of these net assets is recorded as goodwill. All direct acquisition-related costs are expensed as incurred. The allocation of purchase price in certain cases may be subject to revision based on the final determination of fair values during the measurement period, which may be up to one year from the acquisition date.

Discontinued Operations

In determining whether a group of assets which has been disposed of (or is to be disposed of) should be presented as a discontinued operation, the Company analyzes whether the group of assets being disposed of represented a component of the entity; that is, whether it had historic operations and cash flows that were clearly distinguished (both operationally and for financial reporting purposes). In addition, the Company considers whether the disposal represents a strategic shift that has or will have a major effect on the Company's operations and financial results.

The assets and liabilities of a discontinued operation held for sale, other than goodwill, are measured at the lower of carrying amount or fair value less cost to sell. When a portion of a goodwill reporting unit that constitutes a business is to be disposed of, the goodwill associated with that business is included in the carrying amount of the business based on the relative fair values of the business to be disposed of and the portion of the reporting unit that will be retained. The Company allocates interest to discontinued operations if the interest is directly attributable to the discontinued operations or is interest on debt that is required to be repaid as a result of the disposal transaction.

Goodwill

Goodwill represents the excess of cost over the fair value of identifiable net assets of a business acquired and is assigned to one or more reporting units. The Company tests each reporting unit's goodwill for impairment at least annually as of the last day of the fiscal year and between annual tests if an event occurs or circumstances change that would more-likely-than-not reduce the fair value of a reporting unit below its carrying amount. In conducting its goodwill test, the Company first performs a qualitative assessment, which requires that it consider events or circumstances including, but not limited to, macro-economic conditions, market and industry conditions, cost factors, competitive environment, changes in strategy, changes in customers, changes in the Company's stock price, results of the last impairment test, and the operational stability and the overall financial performance of the reporting units. If, after assessing the totality of events or circumstances, the Company determines that it is more likely than not that the fair values of its reporting units are greater than the carrying amounts, then the quantitative goodwill impairment test is not performed.

If the qualitative assessment indicates that the quantitative analysis should be performed, the Company then evaluates goodwill for impairment by comparing the fair value of each of its reporting units to its carrying value, including the associated goodwill. To determine the fair values, the Company uses a weighted combination of the market approach based on comparable publicly traded companies and the income approach based on estimated discounted future cash flows. The cash flow assumptions consider historical and forecasted revenue, operating costs and other relevant factors.

The Company completed its annual goodwill impairment test as of December 28, 2018 and determined, after performing a qualitative review of each reporting unit, that it is more likely than not that the fair value of each of its reporting units exceeds the respective carrying amounts. Accordingly, there was no indication of impairment and the quantitative goodwill impairment test was not performed. The Company does not believe that either of its reporting units are at risk for impairment.

Other Intangible Assets

Other intangible assets consist of purchased technology and patents, customer lists and trademarks. Definite-lived intangible assets are amortized on an accelerated or straight-line basis, which approximates the projected cash flows used to determine the fair value of those definite-lived intangible assets at the time of acquisition, as follows: purchased technology and patents 5 - 15 years; customer lists 7 - 20 years and other intangible assets 1 - 10 years. Certain trademark assets are considered indefinite-lived intangible assets and are not amortized. The Company expenses the costs incurred to renew or extend the term of intangible assets.

The Company reviews its definite-lived intangible assets for impairment when impairment indicators exist. When impairment indicators exist, the Company determines if the carrying value of its definite-lived intangible assets exceeds the related undiscounted future cash flows. In cases where the carrying value exceeds the undiscounted future cash flows, the carrying value is written down to fair value. Fair value is generally determined using a discounted cash flow analysis.

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1.) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

The Company assesses its indefinite-lived intangible assets for impairment periodically to determine if any adverse conditions exist that would indicate impairment or when impairment indicators exist. The Company assesses its indefinite-lived intangible assets for impairment at least annually by comparing the fair value of the indefinite-lived intangible asset to its carrying value. The fair value is determined using the income approach.

Refer to Note 6 “Goodwill and Other Intangible Assets, Net” for further details of the Company’s goodwill and other intangible assets.

Equity Investments

The Company holds long-term, strategic investments in companies to promote business and strategic objectives. These investments are included in Other Assets on the Consolidated Balance Sheets. Equity investments are measured and recorded as follows:

- **Non-marketable equity securities** are equity securities without readily determinable fair value are measured and recorded at fair value with changes in fair value recognized within net income. The Company has elected the practicability exception to use an alternative that measures the securities at cost minus impairment, if any, plus or minus changes resulting from qualifying observable price changes. Prior to fiscal 2018, these securities were accounted for using the cost method of accounting, measured at cost less other-than-temporary impairment.
- **Equity method investments** are equity securities in investees the Company does not control but over which it has the ability to exercise influence. Equity method investments are measured at cost minus impairment, if any, plus or minus our share of equity method investee income or loss.

Realized and unrealized gains and losses resulting from changes in fair value or the sale of these equity investments is recorded through (Gain) Loss on Equity Investments, Net. The carrying value of the Company’s non-marketable equity securities is adjusted for qualifying observable price changes resulting from the issuance of similar or identical securities by the same issuer. Determining whether an observed transaction is similar to a security within the Company’s portfolio requires judgment based on the rights and preferences of the securities. Recording upward and downward adjustments to the carrying value of the Company’s equity securities as a result of observable price changes requires quantitative assessments of the fair value of these securities using various valuation methodologies and involves the use of estimates.

Non-marketable equity securities and equity method investments (collectively referred to as non-marketable equity investments) are also subject to periodic impairment reviews. The Company’s quarterly impairment analysis considers both qualitative and quantitative factors that may have a significant impact on the investee’s fair value. Qualitative factors considered include the investee’s financial condition and business outlook, market for technology, operational and financing cash flow activities, technology and regulatory approval progress, and other relevant events and factors affecting the investee. When indicators of impairment exist, quantitative assessments of the fair value of the Company’s non-marketable equity investments are prepared.

To determine the fair value of these investments, the Company uses all pertinent financial information available related to the investees, including financial statements, market participant valuations from recent and proposed equity offerings, and other third-party data.

- **Non-marketable equity securities** are tested for impairment using a qualitative model similar to the model used for goodwill and long-lived assets. Upon determining that an impairment may exist, the security’s fair value is calculated and compared to its carrying value and an impairment is recognized immediately if the carrying value exceeds the fair value. Prior to 2018, non-marketable equity securities were tested for impairment using the other-than-temporary impairment model.
- **Equity method investments** are subject to periodic impairment reviews using the other-than-temporary impairment model, which considers the severity and duration of a decline in fair value below cost and the Company’s ability and intent to hold the investment for a sufficient period of time to allow for recovery.

The Company has determined that its investments are not considered variable interest entities. The Company’s exposure related to these entities is limited to its recorded investment. These investments are in start-up research and development companies whose fair value is highly subjective in nature and subject to future fluctuations, which could be significant. Refer to Note 16 “Fair Value Measurements” for additional information on the Company’s equity investments.

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1.) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Debt Issuance Costs and Discounts

Debt issuance costs and discounts associated with the issuance of debt by the Company are deferred and amortized over the lives of the related debt. Debt issuance costs incurred in connection with the Company's issuance of its revolving credit facility are classified within Other Assets and amortized to Interest Expense on a straight-line basis over the contractual term of the credit facility. Debt issuance costs and discounts related to the Company's term-debt are recorded as a reduction of the carrying value of the related debt and are amortized to Interest Expense using the effective interest method over the period from the date of issuance to the put option date (if applicable) or the maturity date, whichever is earlier. The amortization of debt issuance costs and discounts are included in Debt Related Charges Included in Interest Expense in the Consolidated Statements of Cash Flows. Upon prepayment of the related debt, the Company accelerates the recognition of a proportionate amount of the costs as refinancing or extinguishment of debt. Note 8 "Debt" contains additional information on the Company's debt issuance costs and discounts.

Income Taxes

The consolidated financial statements of the Company have been prepared using the asset and liability approach to account for income taxes, which requires the recognition of deferred income taxes for the expected future tax consequences of net operating losses, credits, and temporary differences between the financial statement carrying amounts and the tax bases of assets and liabilities. A valuation allowance is provided on deferred tax assets if it is determined, within each taxing jurisdiction, that it is more likely than not that the asset will not be realized.

The Company accounts for uncertain tax positions using a more likely than not recognition threshold. The evaluation of uncertain tax positions is based on factors including, but not limited to, changes in tax law, the measurement of tax positions taken or expected to be taken in tax returns, the effective settlement of matters subject to audit, new audit activity and changes in facts or circumstances related to a tax position. These tax positions are evaluated on a quarterly basis. The Company recognizes interest expense related to uncertain tax positions as Provision (Benefit) for Income Taxes. Penalties, if incurred, are recognized as a component of Selling, General and Administrative Expenses ("SG&A").

The Company and its subsidiaries file a consolidated U.S. federal income tax return. State tax returns are filed on a combined or separate basis depending on the applicable laws in the jurisdictions where the tax returns are filed. The Company also files foreign tax returns on a separate company basis in the countries in which it operates.

Derivative Financial Instruments

The Company recognizes all derivative financial instruments in its consolidated financial statements at fair value. Changes in the fair value of derivative instruments are recorded in earnings unless hedge accounting criteria are met. The Company designated its interest rate swap (refer to Note 8 "Debt") and foreign currency contracts (refer to Note 13 "Commitments and Contingencies") entered into as cash flow hedges. The effective portion of the changes in fair value of these cash flow hedges is recorded each period, net of tax, in Accumulated Other Comprehensive Income until the related hedged transaction occurs. Any ineffective portion of the changes in fair value of these cash flow hedges is recorded in earnings. In the event the hedged cash flow for forecasted transactions does not occur, or it becomes probable that they will not occur, the Company reclassifies the amount of any gain or loss on the related cash flow hedge to income (expense) at that time. Cash flows related to these derivative financial instruments are included in cash flows from operating activities. The cash flows from the termination of interest rate swap agreements are reported as operating activities in the Consolidated Statements of Cash Flows.

Revenue Recognition

The majority of the Company's revenues consist of sales of various medical devices and products to large, multinational OEMs and their affiliated subsidiaries. The Company considers the customer's purchase order, which in some cases is governed by a long-term agreement, and the Company's corresponding sales order acknowledgment as the contract with the customer. The Company has elected to adopt the practical expedient provided in ASC 340-40-25-4 and recognize the incremental costs of obtaining a contract, which are primarily sales commissions, as expense when incurred because the amortization period is less than one year.

The Company evaluates the pattern of revenue recognition as a performance obligation is satisfied and the customer has obtained control of the products. Control is defined as the ability to direct the use of and obtain substantially all of the remaining benefits of the product. The customer obtains control of the products when title and risk of ownership transfers to them, which is primarily based upon shipping terms. Accordingly, the majority of the Company's revenues are recognized at the point of shipment. In instances where title and risk of ownership do not transfer to the customer until the products have reached the customer's location, revenue is recognized at that point in time. Revenue is recognized net of sales tax, value-added taxes and other taxes.

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1.) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Performance Obligations

The Company considers each shipment of an individual product included on a purchase order to be a separate performance obligation, as each shipment is separately identifiable and the customer can benefit from each individual product separately from the other products included on the purchase order. Accordingly, a contract can have one or more performance obligations to manufacture products. Standard payment terms range from 30 to 90 days and can include a discount for early payment.

The Company does not offer its customers a right of return. Rather, the Company warrants that each unit received by the customer will meet the agreed upon technical and quality specifications and requirements. Only when the delivered units do not meet these requirements can the customer return the non-compliant units as a corrective action under the warranty. The remedy offered to the customer is repair of the returned units or replacement if repair is not viable. Accordingly, the Company records a warranty reserve and any warranty activities are not considered to be a separate performance obligation.

Contract Balances

The timing of revenue recognition, billings and cash collections results in billed accounts receivable and less frequently, unearned revenue. Accounts receivable are recorded when the right to consideration becomes unconditional. Unearned revenue is recorded when customers pay or are billed in advance of the Company's satisfaction of performance obligations. Contract liabilities were \$2.3 million and \$2.2 million as of December 28, 2018 and December 29, 2017, respectively, and are classified as Accrued Expenses on the Consolidated Balance Sheets. During the year ended December 28, 2018, the Company recognized \$1.9 million of revenue that was included in the contract liability balance as of December 29, 2017. The Company does not have any contract assets.

Transaction Price

Generally, the transaction price of the Company's contracts consists of a unit price for each individual product included in the contract, which can be fixed or variable based on the number of units ordered. In some instances, the transaction price also includes a rebate for meeting certain volume-based targets over a specified period of time. The transaction price of a contract is determined based on the unit price and the number of units ordered, reduced by the rebate expected to be earned on those units. Rebates are estimated based on the expected achievement of the volume-based target using the most likely amount method and updated quarterly. Any adjustments to these estimates are recognized under the cumulative catch-up method, such that impact of the adjustment is recognized in the period in which it is identified. Volume discounts and rebates and other pricing concessions earned by customers are offset against their receivable balances.

The transaction price is allocated to each performance obligation on a relative standalone selling price basis. As the majority of products sold to customers are manufactured to meet the specific requirements and technical specifications of that customer, the products are considered unique to that customer and the unit price stated in the contract is considered the standalone selling price.

The Company has elected to adopt the practical expedient provided in ASC 606-10-50-14 and not disclose the aggregate amount of the transaction price allocated to unsatisfied performance obligations and an expectation of when those amounts are expected to be recognized as revenue because the majority of contracts have an original expected duration of one year or less.

Contract Modifications

Contract modifications, which can include a change in either or both scope and price, most often occur related to contracts that are governed by a long-term arrangement. Contract modifications typically relate to the same products already governed by the long-term arrangement, and therefore, are accounted for as part of the existing contract. If a contract modification is for additional products, it is accounted for as a separate contract.

Environmental Costs

Environmental expenditures that relate to an existing condition caused by past operations and that do not provide future benefits are expensed as incurred. Liabilities are recorded when environmental assessments are made, the requirement for remedial efforts is probable and the amount of the liability can be reasonably estimated. Liabilities are recorded generally no later than the completion of feasibility studies. The Company has an ongoing monitoring and identification process to assess how the activities, with respect to known exposures, are progressing against the recorded liabilities, as well as to identify other potential remediation sites that are presently unknown.

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1.) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Restructuring Expenses

The Company continually evaluates alternatives to align the business with the changing needs of its customers and to lower operating costs. This includes the realignment of its existing manufacturing capacity, facility closures, or similar actions, either in the normal course of business or pursuant to significant restructuring programs. These actions may result in employees receiving voluntary or involuntary employee termination benefits, which may be pursuant to contractual agreements. Voluntary termination benefits are accrued when an employee accepts the related offer. Involuntary termination benefits are accrued upon the commitment to a termination plan and the benefit arrangement is communicated to affected employees, or when liabilities are determined to be probable and estimable, depending on the existence of a substantive plan for severance or termination. All other exit costs are expensed as incurred. Refer to Note 11 "Other Operating Expenses" for additional information.

Product Warranties

The Company allows customers to return defective or damaged products for credit, replacement, or repair. The Company warrants that its products will meet customer specifications and will be free from defects in materials and workmanship. The Company accrues its estimated exposure to warranty claims, through Cost of Sales, based upon recent historical experience and other specific information as it becomes available. Note 13 "Commitments and Contingencies" contains additional information on the Company's product warranties.

Research, Development and Engineering Costs ("RD&E")

RD&E costs are expensed as incurred. The primary costs are salary and benefits for personnel, material costs used in development projects and subcontracting costs.

Stock-Based Compensation

The Company recognizes stock-based compensation expense for its related compensation plans, which include stock options, restricted stock awards ("RSAs"), restricted stock units ("RSUs") and performance-based restricted stock units ("PRsUs"). For the Company's PRsUs, in addition to service conditions, the ultimate number of shares to be earned depends on the achievement of targets based on market-based conditions, such as total shareholder return, or financial metrics based on the Company's operating results. The Company recognizes forfeitures of equity awards as incurred.

The fair value of the stock-based compensation is determined at the grant date. The Company uses the Black-Scholes standard option pricing model ("Black-Scholes model") to determine the fair value of stock options. The fair value of each RSU and RSA is determined based on the Company's closing stock price on the date of grant. The fair value of each PRsU is determined based on either the Company's closing stock price on the date of grant or through a Monte Carlo simulation valuation model ("Monte Carlo model") for those awards that include a market-based condition. In addition to the closing stock price on the date of grant, the determination of the fair value of awards using both the Black-Scholes and Monte Carlo models is affected by other assumptions, including the following:

Expected Term - The Company analyzes historical employee exercise and termination data to estimate the expected term assumption for stock options. For market-based awards, the term is commensurate with the performance period remaining as of the grant date.

Risk-free Interest Rate - A risk-free rate is based on the U.S. Treasury rates in effect on the grant date for a maturity equal to or approximating the expected term of the award.

Expected Volatility - For stock options, expected volatility is calculated using historical volatility based on the daily closing prices of the Company's common stock over a period equal to the expected term. For market-based awards, a combination of historical and implied volatilities for the Company and members of its peer group are used in developing the expected volatility assumption.

Dividend Yield - The dividend yield assumption is based on the Company's history and the expected annual dividend yield on the grant date.

The Company recognizes compensation expense based on the fair value of the award on the date of grant. For stock options, RSAs and RSUs, compensation expense is recognized over the respective service period using the straight-line amortization method. Compensation expense for PRsUs with financial metrics is reassessed each reporting period and recognized based upon the probability that the performance targets will be achieved. Compensation expense for market-based awards is not adjusted based on actual achievement of the performance goals. Based on the vesting terms of the grant, compensation expense for PRsUs is amortized over the service period using either a graded vesting method or the straight-line amortization method. The actual expense recognized over the vesting period will only be for those awards that ultimately vest, excluding market-based award considerations.

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1.) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

All stock option awards granted under the Company's compensation plans have an exercise price equal to the closing stock price on the date of grant, a ten -year contractual life and generally, vest annually over a three -year vesting term. RSUs typically vest in equal annual installments over a three or four year period. Stock options and RSAs issued to members of the Company's Board of Directors as a portion of their annual retainer vest quarterly over a one -year vesting term. Earned PRSUs typically vest two or three years from the date of grant.

The Company records deferred tax assets for awards that result in deductions on the Company's income tax returns, based on the amount of stock-based compensation expense recognized and the statutory tax rate in the jurisdiction in which it will receive a deduction. Differences between the deferred tax assets recognized for financial reporting purposes and the actual tax deduction reported on the income tax return are recorded as a component of income tax expense in the Consolidated Statements of Operations. Note 10 "Stock-Based Compensation" contains additional information on the Company's stock-based compensation.

Foreign Currency Translation and Remeasurement

The Company translates all assets and liabilities of its foreign subsidiaries, where the U.S. dollar is not the functional currency, at the period-end exchange rate and translates income and expenses at the average exchange rates in effect during the period. The net effect of this translation is recorded in the consolidated financial statements as Accumulated Other Comprehensive Income. Translation adjustments are not adjusted for income taxes as they relate to permanent investments in the Company's foreign subsidiaries.

The Company has foreign operations in Ireland, Switzerland, Mexico, Uruguay, and Malaysia, which expose the Company to foreign currency exchange rate fluctuations due to transactions denominated in Euros, Swiss francs, Mexican pesos, Uruguayan pesos, and Malaysian ringgits. To the extent that monetary assets and liabilities, including short-term and long-term intercompany loans, are recorded in a currency other than the functional currency of the subsidiary, these amounts are remeasured each period at the period-end exchange rate, with the resulting gain or loss being recorded in Other (Income) Loss, Net in the Consolidated Statements of Operations. Net foreign currency transaction gains (losses) included in Other (Income) Loss, Net amounted to \$(1.6) million, \$(10.9) million and \$4.3 million for 2018, 2017 and 2016, respectively, and primarily related to the remeasurement of intercompany loans and the fluctuation of the U.S. dollar relative to the Euro.

Defined Benefit Plans

The Company recognizes in its balance sheet as an asset or liability the overfunded or underfunded status of its defined benefit plans provided to its employees located in Mexico and Switzerland. This asset or liability is measured as the difference between the fair value of plan assets, if any, and the benefit obligation of those plans. For these plans, the benefit obligation is the projected benefit obligation, which is calculated based on actuarial computations of current and future benefits for employees. Actuarial gains or losses and prior service costs or credits that arise during the period, but are not included as components of net periodic benefit expense, are recognized as a component of Accumulated Other Comprehensive Income. The Company records the service cost component of net benefit costs in Cost of Sales and Selling, General and Administrative expenses. The interest cost component of net benefit costs is recorded in Interest Expense and the remaining components of net benefit costs, amortization of net losses and expected return on plan assets, are recorded in Other (Income) Loss, Net. Note 9 "Benefit Plans" contains additional information on these costs.

Earnings (Loss) Per Share ("EPS")

Basic EPS is calculated by dividing Net Income (Loss) by the weighted average number of shares outstanding during the period. Diluted EPS is calculated by adjusting the weighted average number of shares outstanding for potential common shares if dilutive to the EPS calculation and consist of stock options, unvested RSAs and RSUs and, if applicable, contingently convertible instruments such as convertible debt. Note 14 "Earnings (Loss) Per Share" contains additional information on the computation of the Company's EPS.

Comprehensive Income (Loss)

The Company's comprehensive income (loss) as reported in the Consolidated Statements of Comprehensive Income (Loss) includes net income (loss), foreign currency translation adjustments, the net change in cash flow hedges, and defined benefit plan liability adjustments. The Consolidated Statements of Comprehensive Income (Loss) and Note 15 "Accumulated Other Comprehensive Income" contains additional information on the computation of the Company's comprehensive income (loss).

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1.) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Recent Accounting Pronouncements

In the normal course of business, management evaluates all new accounting pronouncements issued by the Financial Accounting Standards Board (“FASB”), Securities and Exchange Commission (“SEC”), or other authoritative accounting bodies to determine the potential impact they may have on the Company’s Consolidated Financial Statements. Based upon this review, except as noted below, management does not expect any of the recently issued accounting pronouncements, which have not already been adopted, to have a material impact on the Company’s Consolidated Financial Statements.

Recently Adopted Accounting Guidance

On May 28, 2014, the FASB issued Accounting Standards Update (“ASU”) 2014-09, “Revenue from Contracts with Customers,” requiring an entity to recognize revenue in a way that depicts the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled to in exchange for those goods or services. The new guidance provided alternative methods of adoption. Subsequent guidance issued after May 2014 did not change the core principle of ASU 2014-09.

The Company adopted the new guidance in the first quarter of fiscal 2018, using the modified retrospective transition method applied to those contracts which were not completed as of December 30, 2017. Prior period amounts have not been adjusted and continue to be reflected in accordance with the Company’s historical accounting. The adoption of this ASU did not have an impact on the consolidated financial statements and therefore no cumulative adjustment was recorded to equity. The Company has updated its internal controls for changes and expanded disclosures have been made in the Notes to the Financial Statements as a result of adopting the standard. Refer to Note 17, “Segment and Geographic Information for additional revenue disclosures.

ASU 2016-01, “Financial Instruments - Overall (Subtopic 825-10) - Recognition and Measurement of Financial Assets and Financial Liabilities,” became effective prospectively for the Company in the first quarter of fiscal 2018. This ASU requires entities to carry all investments in equity securities, including other ownership interests such as partnerships, unincorporated joint ventures, and limited liability companies, at fair value with changes in fair value recognized within net income. This ASU does not apply to equity method investments, investments that result in consolidation of the investee or investments in certain investment companies. For investments in equity securities without a readily determinable fair value, an entity is permitted to elect a practicability exception, under which the investment will be measured at cost, less impairment, plus or minus observable price changes from orderly transactions of an identical or similar investment of the same issuer.

Additionally, this ASU eliminated the requirement to assess whether an impairment of an equity investment is other than temporary. The impairment model for equity investments subject to this election is now a single-step model whereby an entity performs a qualitative assessment to identify impairment. If the qualitative assessment indicates that an impairment exists, the entity would estimate the fair value of the investment and recognize in net income an impairment loss equal to the difference between the fair value and the carrying amount of the equity investment.

The Company’s non-marketable equity securities formerly classified as cost method investments are measured and recorded using the measurement alternative. The Company has elected the practicability exception whereby these investments are measured at cost, less impairment, plus or minus observable price changes from orderly transactions of identical or similar investments of the same issuer. Refer to Note 16 “Fair Value Measurements” for additional information on the Company’s equity investments.

In February 2018, the FASB issued ASU 2018-02, “Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income,” which allows for the reclassification of certain income tax effects related to the U.S. Tax Cuts and Jobs Act (the “Tax Reform Act”) between accumulated other comprehensive income and retained earnings, thereby eliminating the stranded tax effects that were created as a result of the reduction of the U.S. federal corporate income tax rate. The effective date of this ASU for the Company is the first quarter of fiscal 2019, with early adoption permitted. The Company elected to early adopt this ASU during the fourth quarter of fiscal 2018 and reclassified the related tax effects from the change in the federal corporate tax from accumulated other comprehensive income to retained earnings. The reclassification was adopted on a prospective basis and is reflected in the Consolidated Statements of Stockholders’ Equity.

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1.) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Recent Accounting Pronouncements Not Yet Effective

On February 24, 2016, the FASB issued ASU 2016-02, "Leases," requiring lessees to recognize in the statement of financial position a lease liability, which represents the obligation to make future payments, and a right-of-use asset, which represents the Company's right to use the underlying asset for the lease term, for all leases except short-term leases. The classification of a lease as financing or operating will affect the pattern and classification of expense recognition in the statement of operations.

The new standard offers several optional practical expedients in transition. The Company plans to elect the "Package of Three," which allows the Company to not reassess its prior conclusions regarding lease identification, lease classification and initial direct costs, and the practical expedient for short-term lease recognition exemption for all leases that qualify. Additionally, in July 2018, the FASB issued ASU 2018-11, "Leases -Targeted Improvements," which provides an alternative transition method that allows entities to initially apply the new guidance at the adoption date and recognize a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption. The Company intends to adopt the new standard using this transition method.

This new guidance is effective for public companies in fiscal years beginning after December 15, 2018 and interim periods within those fiscal years, with early adoption permitted. This guidance was effective for the Company on December 29, 2018, the first day of fiscal 2019.

The Company has substantially completed its evaluation of the new accounting standard and its impact on the Company's lease portfolio. The Company believes the largest impact will be the recognition of right-of-use assets and lease liabilities on the consolidated balance sheets, as the Company's lease portfolio primarily consists of operating leases for facilities and equipment, which are not recognized on the consolidated balance sheets under current accounting standards. The Company expects to recognize right-of-use assets and corresponding lease liabilities of approximately \$40 million to \$50 million at the date of adoption. The results of operations are not expected to change significantly as a result of adopting the new standard. During the first quarter of fiscal 2019, the Company will finalize its accounting assessment and quantification of the impact of adoption on the Company's financial statements and corresponding disclosures.

As the Company completes its evaluation, new information may arise that could change the Company's current understanding of the impact of the new standard on its lease portfolio. The Company will continue to monitor industry activities and any additional guidance provided by regulators, standards setters, or the accounting profession, and adjust the Company's assessment and adoption plans accordingly.

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(2.) DISCONTINUED OPERATIONS AND DIVESTITURES

Discontinued Operations and Divestiture of AS&O Product Line

On May 3, 2018, the Company entered into a definitive agreement to sell its AS&O Product Line to Viant, and on July 2, 2018, completed the sale, collecting cash proceeds of approximately \$581 million, which is net of transaction costs and adjustments set forth in the definitive purchase agreement. In connection with the sale, the parties executed a transition services agreement whereby the Company will provide certain corporate services (including accounting, payroll, and information technology services) to Viant for a period of up to one year from the date of the closing to facilitate an orderly transfer of business operations. Viant will pay Integer for these services, with such payments varying in amount and length of time as specified in the transition services agreement. The Company recognized \$3.6 million of income under the transition services agreement for the performance of services during 2018, of which \$0.2 million is within Cost of Sales and \$3.4 million is within Selling, General and Administrative expenses in the Consolidated Statement of Operations for the year ended December 28, 2018. In addition, the parties executed long-term supply agreements under which the Company and Viant have agreed to supply the other with certain products at prices specified in the agreements for a term of three years.

In connection with the closing of the transaction, the Company recognized a pre-tax gain on sale of discontinued operations of \$195.0 million. The Company is in the process of finalizing the net working capital adjustment with Viant as provided for in the definitive purchase agreement. The final net working capital adjustment, as determined through the established process outlined in the definitive purchase agreement, may be different from the Company's estimates. The impact of any changes in the net working capital adjustment will be recorded as an adjustment to the gain on sale from discontinued operations in the period such change occurs. Additionally, the income taxes associated with the gain will be impacted by the final allocation of the sales price, which must be agreed to with Viant as required in the definitive purchase agreement and may be materially different from the Company's estimates. The impact of any changes in estimated income taxes will be recorded as an adjustment to discontinued operations in the period such change in estimate occurs.

As the AS&O Product Line was a portion of the Medical goodwill reporting unit, and management determined it met the definition of a business, goodwill was allocated to the AS&O Product Line on a relative fair value basis. The fair value of the AS&O Product Line assets was based primarily on the purchase price of \$600 million prior to closing adjustments.

The carrying amounts of the AS&O Product Line assets and liabilities that were classified as assets and liabilities of discontinued operations held for sale were as follows (in thousands):

	December 29, 2017
Cash and cash equivalents	\$ 6,755
Accounts receivable, net of allowance for doubtful accounts of \$0.3 million	47,611
Inventories	50,796
Prepaid expenses and other current assets	1,584
Current assets of discontinued operations held for sale	106,746
Property, plant and equipment, net	135,195
Goodwill	150,368
Other intangible assets, net	57,520
Other noncurrent assets	1,551
Noncurrent assets of discontinued operations held for sale	344,634
Total assets	451,380
Accounts payable and other current liabilities held for sale	47,703
Deferred taxes and other long-term liabilities held for sale	14,966
Total liabilities	62,669
Net assets	\$ 388,711

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(2.) DISCONTINUED OPERATIONS AND DIVESTITURES (Continued)

Income (loss) from discontinued operations, net of taxes, for fiscal years 2018, 2017 and 2016 were as follows (in thousands):

	2018	2017	2016
Sales	\$ 178,020	\$ 325,841	\$ 311,276
Cost of sales	148,357	286,300	270,656
Gross profit	29,663	39,541	40,620
Selling, general and administrative expenses	8,905	18,500	16,847
Research, development and engineering costs	2,352	6,397	7,102
Other operating expenses	1,805	854	1,324
Interest expense	22,833	42,488	42,939
Gain on sale of discontinued operations	(194,965)	—	—
Other (income) loss, net	420	(1,266)	(612)
Income (loss) from discontinued operations before taxes	188,313	(27,432)	(26,980)
Provision (benefit) for income taxes	67,382	(7,024)	(8,063)
Income (loss) from discontinued operations	<u>\$ 120,931</u>	<u>\$ (20,408)</u>	<u>\$ (18,917)</u>

Interest expense included in discontinued operations reflects an estimate of interest expense related to the debt that was required to be repaid with the proceeds from the sale of the AS&O Product Line.

Cash flow information from discontinued operations for fiscal years 2018, 2017 and 2016 was as follows (in thousands):

	2018	2017	2016
Cash used in operating activities	\$ (12,498)	\$ 3,167	\$ 3,596
Cash provided by (used in) investing activities	577,833	(16,771)	(17,367)
Depreciation and amortization	\$ 7,450	\$ 21,613	\$ 17,656
Capital expenditures	3,610	16,844	17,656

Spin-off of Nuvectra Corporation

On March 14, 2016, Integer completed the spin-off of a portion of its former QiG segment through a tax-free distribution of all of the shares of its former QiG Group, LLC subsidiary to the stockholders of Integer on a pro rata basis. Immediately prior to completion of the Spin-off, QiG Group, LLC was converted into a corporation organized under the laws of Delaware and changed its name to Nuvectra Corporation (“Nuvectra”). On March 14, 2016, each of the Company’s stockholders of record as of the close of business on March 7, 2016 (the “Record Date”) received one share of Nuvectra common stock for every three shares of Integer common stock held as of the Record Date. Upon completion of the Spin-off, Nuvectra became an independent publicly traded company whose common stock is listed on the Nasdaq stock exchange under the symbol “NVTR.”

The portion of the former QiG segment spun-off consisted of QiG Group, LLC and its subsidiaries: (i) Algostim, LLC (“Algostim”), (ii) PelviStim LLC (“PelviStim”), and (iii) the Company’s NeuroNexus Technologies (“NeuroNexus”) subsidiary. The operations of Centro de Construcción de Cardioestimuladores del Uruguay (“CCC”) and certain other existing QiG research and development capabilities were retained by the Company and not included as part of the Spin-off. As the Company continues to focus on the design and development of complete medical device systems and components, and more specifically on medical device systems and components in the neuromodulation market, the Spin-off was not considered a strategic shift that had a major effect on the Company’s operations and financial results. Accordingly, the Spin-off is not presented as a discontinued operation in the Company’s Consolidated Financial Statements. The results of Nuvectra are included in the Consolidated Statements of Operations through the date of the Spin-off.

In connection with the Spin-off, during the first quarter of 2016, the Company made a cash capital contribution of \$75 million to Nuvectra and divested assets of \$130.8 million and liabilities of \$2.1 million. Nuvectra contributed a pre-tax loss of \$5.2 million to the Company’s results of operations for the fiscal year ended December 30, 2016.

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(3.) SUPPLEMENTAL CASH FLOW INFORMATION

The following represents supplemental cash flow information, including supplemental information related to discontinued operations, for fiscal years 2018, 2017 and 2016 (in thousands):

	2018	2017	2016
Noncash investing and financing activities:			
Property, plant and equipment purchases included in accounts payable	\$ 2,303	\$ 3,474	\$ 3,499
Cash paid (refunded) during the year for:			
Interest	79,661	93,839	106,475
Income taxes	23,155	(8,185)	7,263

Cash and cash equivalents, end of period, are comprised of:

	2018	2017
Cash and cash equivalents	\$ 25,569	\$ 37,341
Cash included in current assets of discontinued operations held for sale	—	6,755
Total cash and cash equivalents, end of period	\$ 25,569	\$ 44,096

(4.) INVENTORIES

Inventories are comprised of the following (in thousands):

	December 28, 2018	December 29, 2017
Raw materials	\$ 80,213	\$ 85,050
Work-in-process	75,711	63,620
Finished goods	34,152	28,068
Total	\$ 190,076	\$ 176,738

(5.) PROPERTY, PLANT AND EQUIPMENT, NET

PP&E is comprised of the following (in thousands):

	December 28, 2018	December 29, 2017
Manufacturing machinery and equipment	\$ 261,912	\$ 249,233
Buildings and building improvements	95,886	97,346
Information technology hardware and software	60,901	54,302
Leasehold improvements	61,418	58,918
Furniture and fixtures	15,082	15,068
Land and land improvements	11,544	13,146
Construction work in process	23,886	19,758
Other	1,048	829
	531,677	508,600
Accumulated depreciation	(300,408)	(273,420)
Total	\$ 231,269	\$ 235,180

Depreciation expense for PP&E was as follows for fiscal years 2018, 2017 and 2016 (in thousands):

	2018	2017	2016
Depreciation expense	\$ 40,078	\$ 38,077	\$ 37,398

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(6.) GOODWILL AND OTHER INTANGIBLE ASSETS, NET

Goodwill

The change in the carrying amount of goodwill by reportable segment during fiscal year 2018 was as follows (in thousands):

	Medical	Non-Medical	Total
December 29, 2017	\$ 822,870	\$ 17,000	\$ 839,870
Foreign currency translation	(7,532)	—	(7,532)
December 28, 2018	<u>\$ 815,338</u>	<u>\$ 17,000</u>	<u>\$ 832,338</u>

As of December 28, 2018, no accumulated impairment loss has been recognized for the goodwill allocated to the Company's Medical or Non-Medical segments.

Intangible Assets

Intangible assets are comprised of the following (in thousands):

	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
December 28, 2018			
<i>Definite-lived:</i>			
Purchased technology and patents	\$ 241,726	\$ (125,540)	\$ 116,186
Customer lists	710,406	(104,556)	605,850
Other	3,503	(3,489)	14
Total amortizing intangible assets	<u>\$ 955,635</u>	<u>\$ (233,585)</u>	<u>\$ 722,050</u>
<i>Indefinite-lived:</i>			
Trademarks and tradenames			<u>\$ 90,288</u>
December 29, 2017			
<i>Definite-lived:</i>			
Purchased technology and patents	\$ 243,679	\$ (111,185)	\$ 132,494
Customer lists	718,649	(78,621)	640,028
Other	4,660	(4,597)	63
Total amortizing intangible assets	<u>\$ 966,988</u>	<u>\$ (194,403)</u>	<u>\$ 772,585</u>
<i>Indefinite-lived:</i>			
Trademarks and tradenames			<u>\$ 90,288</u>

Aggregate intangible asset amortization expense is comprised of the following for fiscal years 2018, 2017 and 2016 (in thousands):

	2018	2017	2016
Cost of sales	\$ 14,134	\$ 15,183	\$ 15,368
SG&A	26,658	24,840	19,590
RD&E	154	545	512
Other Operating Expenses ("OOE")	514	2,538	—
Total intangible asset amortization expense	<u>\$ 41,460</u>	<u>\$ 43,106</u>	<u>\$ 35,470</u>

Estimated future intangible asset amortization expense based upon the carrying value as of December 28, 2018 is as follows (in thousands):

	2019	2020	2021	2022	2023	After 2023
Amortization Expense	\$ 40,200	\$ 40,511	\$ 39,658	\$ 38,623	\$ 36,779	\$ 526,279

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(7.) ACCRUED EXPENSES

Accrued expenses are comprised of the following (in thousands):

	December 28, 2018	December 29, 2017
Salaries and benefits	\$ 21,830	\$ 25,103
Profit sharing and bonuses	22,912	13,625
Product warranties	2,600	2,820
Deferred revenue	2,482	1,610
Accrued interest	1,944	8,523
Other	8,722	8,695
Total	\$ 60,490	\$ 60,376

(8.) DEBT

Long-term debt is comprised of the following (in thousands):

	December 28, 2018	December 29, 2017
Senior secured term loan A	\$ 304,687	\$ 335,157
Senior secured term loan B	632,286	873,286
9.125% senior notes due 2023	—	360,000
Revolving line of credit	5,000	74,000
Unamortized discount on term loan B and debt issuance costs	(16,466)	(33,278)
Total debt	925,507	1,609,165
Current portion of long-term debt	(37,500)	(30,469)
Total long-term debt	\$ 888,007	\$ 1,578,696

Senior Secured Credit Facilities

The Company has senior secured credit facilities (the “Senior Secured Credit Facilities”) consisting of (i) a \$200 million revolving credit facility (the “Revolving Credit Facility”), (ii) a \$305 million term loan A facility (the “TLA Facility”), and (iii) a \$632 million term loan B facility (the “TLB Facility”). The TLA Facility and TLB Facility are collectively referred to as the “Term Loan Facilities.” The TLB Facility was issued at a 1% discount.

On June 8, 2018, the Company amended the Senior Secured Credit Facilities to permit the sale of the AS&O Product Line. As required by the amended terms of the Company’s Senior Secured Credit Facilities, the Company paid down indebtedness as a result of the disposition of the AS&O Product Line. On July 10, 2018, the Company completed the redemption in full of its 9.125% senior notes due on November 1, 2023 (the “Senior Notes”) at a redemption price of 100% of the principal amount of the Senior Notes plus the applicable “make-whole” premium of \$31.3 million and accrued and unpaid interest through the redemption date. Upon completion of the redemption of the Senior Notes, the indenture governing the Senior Notes was satisfied and discharged. The Company utilized the remaining net proceeds to pay down an additional \$188 million outstanding under the Senior Secured Credit Facilities, consisting of \$114 million on the TLB Facility and \$74 million on the Revolving Credit Facility.

Revolving Credit Facility

The Revolving Credit Facility matures on October 27, 2020. The Revolving Credit Facility includes a \$15 million sublimit for swingline loans and a \$25 million sublimit for standby letters of credit. The Company is required to pay a commitment fee on the unused portion of the Revolving Credit Facility, which will range between 0.175% and 0.25%, depending on the Company’s Total Net Leverage Ratio (as defined in the Senior Secured Credit Facilities agreement). Interest rates on the Revolving Credit Facility, as well as the TLA Facility, are at the Company’s option, either at: (i) the prime rate plus the applicable margin, which will range between 0.75% and 2.25%, based on the Company’s Total Net Leverage Ratio, or (ii) the applicable LIBOR rate plus the applicable margin, which will range between 1.75% and 3.25%, based on the Company’s Total Net Leverage Ratio.

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(8.) DEBT (Continued)

As of December 28, 2018, the Company had \$5 million of outstanding borrowings on the Revolving Credit Facility and an available borrowing capacity of \$188.2 million after giving effect to \$6.8 million of outstanding standby letters of credit. As of December 28, 2018, the weighted average interest rate on outstanding borrowings under the Revolving Credit Facility was 5.01%.

Subject to certain conditions, commitments under the Revolving Credit Facility may be increased through an incremental revolving facility so long as, on a pro forma basis, the Company's first lien net leverage ratio does not exceed 4.25 :1.00.

Term Loan Facilities

The TLA Facility and TLB Facility mature on October 27, 2021 and October 27, 2022, respectively. Interest rates on the TLB Facility are, at the Company's option, either at: (i) the prime rate plus 2.00% or (ii) the applicable LIBOR rate plus 3.00%, with LIBOR subject to a 1.00% floor. As of December 28, 2018, the interest rates on the TLA Facility and TLB Facility were 5.01% and 5.39%, respectively.

Subject to certain conditions, one or more incremental term loan facilities may be added to the Term Loan Facilities so long as, on a pro forma basis, the Company's first lien net leverage ratio does not exceed 4.25 :1.00.

Covenants

The Revolving Credit Facility and the TLA Facility contain covenants requiring (A) a maximum total net leverage ratio of 5.50 :1.0, subject to step downs beginning in the first quarter of 2019 and (B) a minimum interest coverage ratio of adjusted EBITDA (as defined in the Senior Secured Credit Facilities) to interest expense of not less than 2.75 :1.0, subject to step ups beginning in the first quarter of 2019. As of December 28, 2018, the Company was in compliance with these financial covenants. The TLB Facility does not contain any financial maintenance covenants.

The Senior Secured Credit Facilities also contain negative covenants that restrict the Company's ability to (i) incur additional indebtedness; (ii) create certain liens; (iii) consolidate or merge; (iv) sell assets, including capital stock of the Company's subsidiaries; (v) engage in transactions with the Company's affiliates; (vi) create restrictions on the payment of dividends or other amounts from the Company's restricted subsidiaries; (vii) pay dividends on capital stock or redeem, repurchase or retire capital stock; (viii) pay, prepay, repurchase or retire certain subordinated indebtedness; (ix) make investments, loans, advances and acquisitions; (x) make certain amendments or modifications to the organizational documents of the Company or its subsidiaries or the documentation governing other senior indebtedness of the Company; and (xi) change the Company's type of business. These negative covenants are subject to a number of limitations and exceptions that are described in the Senior Secured Credit Facilities agreement. As of December 28, 2018, the Company was in compliance with all negative covenants under the Senior Secured Credit Facilities.

The Senior Secured Credit Facilities provide for customary events of default. Upon the occurrence and during the continuance of an event of default, the outstanding advances and all other obligations under the Senior Secured Credit Facilities become immediately due and payable.

9.125% Senior Notes due 2023

On October 27, 2015, the Company completed a private offering of \$360 million aggregate principal amount of 9.125% senior notes due on November 1, 2023. On July 10, 2018, the Company completed the redemption in full of the Senior Notes at a redemption price of 100% of the principal amount of the Senior Notes plus the applicable "make-whole" premium of \$31.3 million and accrued and unpaid interest through the redemption date. The "make-whole" premium is included in Interest Expense in the accompanying Consolidated Statements of Operations. Upon completion of the redemption of the Senior Notes, the indenture governing the Senior Notes was satisfied and discharged.

As of December 28, 2018, the weighted average interest rate on all outstanding borrowings is 5.27%.

(8.) DEBT (Continued)

Contractual maturities of the Company's debt facilities for the next five years and thereafter, excluding any discounts or premiums, as of December 28, 2018 are as follows (in thousands):

	2019	2020	2021	2022	After 2022
Future minimum principal payments	\$ 37,500	42,500	229,687	632,286	—

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Debt Issuance Costs and Discounts

The Company incurred debt issuance costs in conjunction with the issuance of the Senior Secured Credit Facilities and the Senior Notes. The change in deferred debt issuance costs related to the Company's Revolving Credit Facility is as follows (in thousands):

December 30, 2016	\$ 3,800
Amortization during the period	(992)
December 29, 2017	2,808
Amortization during the period	(991)
December 28, 2018	<u>\$ 1,817</u>

The change in unamortized discount and debt issuance costs related to the Term Loan Facilities and Senior Notes is as follows (in thousands):

	Debt Issuance Costs	Unamortized Discount on TLB Facility	Total
December 30, 2016	\$ 32,096	\$ 8,741	\$ 40,837
Financing costs incurred	2,360	—	2,360
Write-off of debt issuance costs and unamortized discount ⁽¹⁾	(2,421)	(1,104)	(3,525)
Amortization during the period	(5,146)	(1,248)	(6,394)
December 29, 2017	26,889	6,389	33,278
Write-off of debt issuance costs and unamortized discount ⁽¹⁾	(9,757)	(1,610)	(11,367)
Amortization during the period	(4,419)	(1,026)	(5,445)
December 28, 2018	<u>\$ 12,713</u>	<u>\$ 3,753</u>	<u>\$ 16,466</u>

⁽¹⁾ The Company redeemed its Senior Notes and prepaid portions of its TLB Facility during 2018 and 2017 and recognized losses from extinguishment of debt of \$11.4 million and \$3.5 million, respectively, which are included in Interest Expense, Net in the Consolidated Statements of Operations. The loss from extinguishment of debt represents the unamortized debt issuance costs related to the Senior Notes and the portion of the unamortized discount and debt issuance costs related to the portion of the TLB Facility that was prepaid and is included in Interest Expense in the accompanying Consolidated Statements of Operations.

(8.) DEBT (Continued)

Interest Rate Swap

During 2016, the Company entered into a three year \$ 200 million interest rate swap to hedge against potential changes in cash flows on the outstanding variable rate debt, which is indexed to the one-month LIBOR rate. The variable rate received on the interest rate swap and the variable rate paid on the variable rate debt will have the same rate of interest, excluding the credit spread, and will reset and pay interest on the same day. The swap is being accounted for as a cash flow hedge.

Information regarding the Company's outstanding interest rate swap designated as a cash flow hedge as of December 28, 2018 is as follows (dollars in thousands):

Notional Amount	Start Date	End Date	Pay Fixed Rate	Receive Current Floating Rate	Fair Value	Balance Sheet Location
\$ 200,000	Jun-17	Jun-20	1.1325%	2.5063%	\$ 4,171	Other Assets

INTEGER HOLDINGS CORPORATION
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The estimated fair value of the interest rate swap agreements represents the amount the Company expects to receive (pay) to terminate the contract. No portion of the change in fair value of the Company's interest rate swaps during 2018, 2017, or 2016 were considered ineffective. The amount recorded to Interest Expense related to the Company's interest rate swaps was a reduction of \$1.7 million and \$0.5 million during 2018 and 2017, respectively, and an increase of \$0.1 million during 2016. The estimated Accumulated Other Comprehensive Income related to the Company's interest rate swaps that is expected to be reclassified into earnings within the next twelve months is a \$2.8 million gain.

(9.) BENEFIT PLANS

Savings Plan

The Company sponsors a defined contribution 401(k) plan (the "Plan"), for its U.S. based employees. The Plan provides for the deferral of employee compensation under Internal Revenue Code §401(k) and a Company match.

The Company matches \$0.50 per dollar of participant deferral, up to 6% of the compensation of each participant. Contributions from employees, as well as those matched by the Company, vest immediately. Net costs related to defined contribution plans were \$6.8 million in 2018, \$6.0 million in 2017 and \$4.6 million in 2016.

Defined Benefit Plans

The Company is required to provide its employees located in Switzerland and Mexico certain statutorily mandated defined benefits. Under these plans, benefits accrue to employees based upon years of service, position, age and compensation. The defined benefit pension plan provided to the Company's employees located in Switzerland is a funded contributory plan, while the plans that provide benefits to the Company's employees located in Mexico are unfunded and noncontributory. The assets of the Switzerland plan are held at an AA- rated insurance carrier who bears the pension risk and longevity risk, and will be used to cover the pension liability for the remaining retirees of the Swiss plan, as well as the remaining employees at that location. The liability and corresponding expense related to these benefit plans is based on actuarial computations of current and future benefits for employees.

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(9.) BENEFIT PLANS (Continued)

The Company's fiscal year end dates are the measurement dates for its defined benefit plans. Information relating to the funding position of the Company's defined benefit plans for fiscal years 2018 and 2017 were as follows (in thousands):

	2018	2017
Change in projected benefit obligation:		
Projected benefit obligation at beginning of year	\$ 2,608	\$ 2,285
Service cost	214	200
Interest cost	48	42
Plan participants' contribution	84	75
Actuarial gain	(150)	(90)
Benefits (paid) transferred in, net	42	(11)
Settlements	(619)	—
Foreign currency translation	(24)	107
Projected benefit obligation at end of year	<u>2,203</u>	<u>2,608</u>
Change in fair value of plan assets:		
Fair value of plan assets at beginning of year	1,358	1,172
Employer contributions	83	56
Plan participants' contributions	84	75
Actual loss on plan assets	(11)	—
Benefits transferred in, net	62	—
Settlements	(619)	—
Foreign currency translation	(11)	55
Fair value of plan assets at end of year	<u>946</u>	<u>1,358</u>
Projected benefit obligation in excess of plan assets at end of year	<u>\$ 1,257</u>	<u>\$ 1,250</u>
Defined benefit liability classified as other current liabilities	<u>\$ 54</u>	<u>\$ 32</u>
Defined benefit liability classified as long-term liabilities	<u>\$ 1,203</u>	<u>\$ 1,218</u>
Accumulated benefit obligation at end of year	<u>\$ 1,809</u>	<u>\$ 2,189</u>

Amounts recognized in Accumulated Other Comprehensive Income (Loss) for fiscal years 2018 and 2017 are as follows (in thousands):

	2018	2017
Net (gain) loss occurring during the year	\$ (130)	\$ 74
Amortization of losses	(101)	(45)
Prior service cost	1	1
Amortization of prior service cost	(2)	(2)
Pre-tax adjustment (gain) loss	(232)	28
Tax benefit	(70)	(5)
Net (gain) loss	<u>\$ (302)</u>	<u>\$ 23</u>

The amortization of amounts in Accumulated Other Comprehensive Income expected to be recognized as components of net periodic benefit expense during fiscal year 2019 are as follows (in thousands):

Amortization of net prior service cost	\$	1
Amortization of net loss		5

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(9.) BENEFIT PLANS (Continued)

Net pension cost for fiscal years 2018 and 2017 is comprised of the following (in thousands):

	2018	2017	2016
Service cost	\$ 214	\$ 200	\$ 173
Interest cost	48	42	36
Settlements loss	69	—	—
Expected return on assets	(17)	(19)	(18)
Recognized net actuarial loss	33	44	38
Net pension cost	<u>\$ 347</u>	<u>\$ 267</u>	<u>\$ 229</u>

The weighted-average rates used in the actuarial valuations to determine the net pension cost for fiscal years 2018, 2017 and 2016 were as follows:

	2018	2017	2016
Discount rate	3.1%	2.9%	2.3%
Salary growth	3.2%	3.1%	2.4%
Expected rate of return on assets	1.3%	1.5%	2.0%

The weighted-average rates used in the actuarial valuations to determine the projected benefit obligation for fiscal years 2018, 2017 and 2016 were as follows:

	2018	2017	2016
Discount rate	6.0%	3.1%	2.9%
Salary growth	4.1%	3.2%	3.1%
Expected rate of return on assets	1.4%	1.3%	1.5%

The following table provides information by level for the defined benefit plan assets that are measured at fair value as of December 28, 2018 and December 29, 2017 (in thousands).

	Fair Value	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
December 28, 2018				
Insurance contract	\$ 946	\$ —	\$ 946	\$ —
December 29, 2017				
Insurance contract	\$ 1,358	\$ —	\$ 1,358	\$ —

The fair value of Level 2 plan assets are obtained from quoted market prices in inactive markets or valuation models with observable market data inputs to estimate fair value. These observable market data inputs include benchmark yields, reported trades, broker/dealer quotes, issuer spreads, benchmark securities, bids, offers and reference data. Refer to Note 1 “Summary of Significant Accounting Policies” for discussion of the fair value measurement terms of Levels 1, 2, and 3.

Estimated benefit payments over for the next ten years as of December 28, 2018 are as follows (in thousands):

	2019	2020	2021	2022	2023	2024-2028
Estimated benefit payments	\$ 104	121	124	134	145	964

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(10.) STOCK-BASED COMPENSATION

Stock-based Compensation Plans

The Company maintains certain stock-based compensation plans that were approved by the Company's stockholders and are administered by the Board of Directors, or the Compensation and Organization Committee of the Board. The stock-based compensation plans provide for the granting of stock options, shares of restricted stock awards, restricted stock units, stock appreciation rights and stock bonuses to employees, non-employee directors, consultants, and service providers.

The 2009 Stock Incentive Plan ("2009 Plan"), as amended, and 2011 Stock Incentive Plan ("2011 Plan"), as amended, each authorize the issuance of up to 1,350,000 shares of equity incentive awards and the 2016 Stock Incentive Plan (the "2016 Plan") authorizes the issuance of up to 1,450,000 shares of equity incentive awards. The 2009 Plan limits the amount of restricted stock, restricted stock units and stock bonuses that may be awarded in the aggregate to 200,000 shares of the 1,350,000 shares authorized. Stock options remain outstanding under the 2005 Stock Incentive Plan, but the plan has been frozen to any new award issuances.

As of December 28, 2018, there were 722,766, 119,866 and 65,190 shares available for future grants under the 2016 Plan, 2011 Plan and 2009 Plan, respectively. Due to plan sub-limits, of the shares available for grant, 7,488 shares may be awarded under the 2009 Plan in the form of restricted stock, restricted stock units or stock bonuses.

The Company recognized a net tax benefit from the exercise of stock options and vesting of restricted stock and restricted stock units of \$3.8 million, \$1.9 million and \$2.3 million for 2018, 2017 and 2016, respectively. Beginning in 2017, this amount was recorded as a component of income tax expense. In 2016, these amounts were recorded as increases in additional paid-in capital on the Consolidated Balance Sheets and as cash from financing activities on the Consolidated Statements of Cash Flows.

Stock-based Compensation Expense

The components and classification of stock-based compensation expense for fiscal years 2018, 2017 and 2016 were as follows (in thousands):

	2018	2017	2016
Stock options	\$ 873	\$ 1,633	\$ 2,455
RSAs and RSUs (time-based)	6,024	4,952	1,764
PRSUs	3,159	6,867	3,887
Stock-based compensation expense - continuing operations	10,056	\$ 13,452	\$ 8,106
Discontinued operations	414	1,228	302
Total stock-based compensation expense	<u>\$ 10,470</u>	<u>\$ 14,680</u>	<u>\$ 8,408</u>
Cost of sales	\$ 849	\$ 748	\$ 208
SG&A	9,090	9,893	6,086
RD&E	112	642	337
OOE	5	2,169	1,475
Discontinued operations	414	1,228	302
Total stock-based compensation expense	<u>\$ 10,470</u>	<u>\$ 14,680</u>	<u>\$ 8,408</u>

During the first quarter of 2017, the Company recorded \$2.2 million of accelerated stock-based compensation expense in connection with the transition of its former Chief Executive Officer per the terms of his contract, which was classified as OOE. During the first quarter of 2016, the Company recorded \$0.5 million of accelerated stock-based compensation expense in connection with the Spin-off, which was classified as OOE.

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(10.) STOCK-BASED COMPENSATION (Continued)

Stock Options

The following table includes the weighted average grant date fair value of stock options granted to employees during fiscal years 2018 , 2017 and 2016 and the related weighted average assumptions used in the Black-Scholes model:

	2018	2017	2016
Weighted average fair value of options granted	\$ 14.89	\$ 12.86	\$ 8.52
Assumptions:			
Expected term (in years)	4.0	4.5	4.7
Risk-free interest rate	2.21%	1.77%	1.49%
Expected volatility	39%	37%	27%
Expected dividend yield	0%	0%	0%

The following table summarizes stock option activity during the fiscal year ended December 28, 2018 :

	Number of Stock Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in millions)
Outstanding at December 29, 2017	931,353	\$ 30.89		
Granted	28,447	45.13		
Exercised	(413,317)	30.02		
Forfeited or expired	(23,700)	41.28		
Outstanding at December 28, 2018	<u>522,783</u>	<u>\$ 31.88</u>	5.8	\$ 23.1
Vested and expected to vest at December 28, 2018	<u>522,783</u>	<u>\$ 31.88</u>	5.8	\$ 23.1
Exercisable at December 28, 2018	<u>488,468</u>	<u>\$ 31.37</u>	5.6	\$ 21.8

Intrinsic value is calculated for in-the-money options (exercise price less than market price) as the difference between the market price of the Company's common shares as of December 28, 2018 (\$76.03) and the weighted average exercise price of the underlying stock options, multiplied by the number of options outstanding and/or exercisable. As of December 28, 2018 , \$0.5 million of unrecognized compensation cost related to non-vested stock options is expected to be recognized over a weighted-average period of 1.2 years. Shares are distributed from the Company's authorized but unissued reserve upon the exercise of stock options.

The following table provides certain information relating to the exercise of stock options during fiscal years 2018 , 2017 and 2016 (in thousands):

	2018	2017	2016
Intrinsic value	\$ 17,722	\$ 13,928	\$ 690
Cash received	12,409	19,324	2,821

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(10.) STOCK-BASED COMPENSATION (Continued)

Restricted Stock Awards and Restricted Stock Units

The following table summarizes time-vested RSA and RSU activity during the fiscal year ended December 28, 2018 :

	Time-Vested Restricted Stock Units and Awards	Weighted Average Grant Date Fair Value
Nonvested at December 29, 2017	163,431	\$ 35.96
Granted	167,514	52.14
Vested	(134,423)	38.88
Forfeited	(54,286)	42.44
Nonvested at December 28, 2018	<u>142,236</u>	<u>\$ 49.78</u>

As of December 28, 2018 , there was \$5.8 million of total unrecognized compensation cost related to time-based RSAs and RSUs, which is expected to be recognized over a weighted-average period of approximately 2.3 years. The fair value of RSA and RSU shares vested in 2018 , 2017 and 2016 was \$9.7 million , \$6.4 million and \$1.3 million , respectively. The weighted average grant date fair value of RSAs and RSUs granted during fiscal years 2018 , 2017 and 2016 was \$52.14 , \$34.18 and \$47.95 , respectively.

Performance-Based Shares

The following table summarizes the maximum number of PRSUs which could be earned and related activity during the fiscal year ended December 28, 2018 :

	Performance- Vested Restricted Stock Units and Awards	Weighted Average Grant Date Fair Value
Nonvested at December 29, 2017	469,889	\$ 32.37
Granted	159,669	45.37
Vested	(161,674)	35.28
Forfeited	(180,750)	35.24
Nonvested at December 28, 2018	<u>287,134</u>	<u>\$ 36.15</u>

For the Company's PRSUs, in addition to service conditions, the ultimate number of shares to be earned depends on the achievement of financial performance or market-based conditions. The financial performance condition is based on the Company's sales targets. The market conditions are based on the Company's achievement of a relative total shareholder return performance requirement, on a percentile basis, compared to a defined group of peer companies over two and three year performance periods.

Compensation expense for the PRSUs is initially estimated based on target performance and adjusted as appropriate throughout the performance period. At December 28, 2018 , there was \$3.3 million of total unrecognized compensation cost related to unvested PRSUs, which is expected to be recognized over a weighted-average period of approximately 1.9 years . The fair value of PRSU shares vested in 2018 and 2016 was \$9.1 million and \$10.5 million , respectively. There were no PRSU shares vested in 2017. The weighted average grant date fair value of PRSUs granted during fiscal years 2018 , 2017 and 2016 was \$45.37 , \$31.62 and \$30.83 , respectively.

The grant-date fair value of the market-based portion of the PRSUs granted during fiscal year 2018 was determined using the Monte Carlo simulation model on the date of grant, assuming the following (i) expected term of 2.92 years , (ii) risk free interest rate of 2.28% , (iii) expected dividend yield of 0.0% and (iv) expected stock price volatility over the expected term of the award of 40% .

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(11.) OTHER OPERATING EXPENSES

OOE for fiscal years 2018, 2017 and 2016 is comprised of the following (in thousands):

	2018	2017	2016
Strategic reorganization and alignment	\$ 10,624	\$ 5,891	\$ —
Manufacturing alignment to support growth	3,089	—	—
Consolidation and optimization initiatives	844	12,803	25,510
Acquisition and integration costs	—	10,870	28,112
Asset dispositions, severance and other	1,508	6,874	6,791
Other operating expenses	<u>\$ 16,065</u>	<u>\$ 36,438</u>	<u>\$ 60,413</u>

Strategic reorganization and alignment

During the fourth quarter of 2017, the Company began to take steps to better align its resources in order to enhance the profitability of its portfolio of products. This includes improving its business processes and redirecting investments away from projects where the market does not justify the investment, as well as aligning resources with market conditions and the Company's future strategic direction. The Company estimates that it will incur aggregate pre-tax charges in connection with the strategic reorganization and alignment plan of between approximately \$28 million to \$30 million, of which an estimated \$16 million to \$20 million are expected to result in cash outlays. During 2018, the Company incurred charges relating to this initiative which primarily included severance and personnel related costs for terminated employees and fees for professional services. These expenses were primarily recorded within the Medical segment. As of December 28, 2018, total expense incurred for this initiative since inception, including amounts reported in discontinued operations, was \$16.5 million. These actions are expected to be substantially completed by the end of 2019.

Manufacturing alignment to support growth

In 2017, the Company initiated several initiatives designed to reduce costs, improve operating efficiencies and increase manufacturing capacity to accommodate growth. The plan involves the relocation of certain manufacturing operations and expansion of certain of the Company's facilities. The Company estimates that it will incur aggregate pre-tax restructuring related charges in connection with the realignment plan of between approximately \$9 million to \$11 million, the majority of which are expected to be cash expenditures, and capital expenditures of between approximately \$4 million to \$6 million. Costs related to the Company's manufacturing alignment to support growth initiative were primarily recorded within the Medical segment. As of December 28, 2018, total expense incurred for this initiative since inception was \$3.4 million. These actions are expected to be substantially completed by the end of 2019.

Consolidation and optimization initiatives

In 2014, the Company initiated plans to transfer certain manufacturing functions performed at its facility in Beaverton, OR to a new facility in Tijuana, Mexico. Additionally, during 2016, the Company announced it would be closing its facility in Clarence, NY after transferring the machined component product lines manufactured in that facility to other Integer locations in the U.S. Costs related to the Company's consolidation and optimization initiatives were primarily recorded within the Medical segment. The Company does not expect to incur any additional material costs associated with these activities as these activities are substantially complete.

The following table summarizes the change in accrued liabilities related to the initiatives described above (in thousands):

	Severance and Retention	Accelerated Depreciation/ Asset Write-offs	Other	Total
December 29, 2017	\$ 1,308	\$ —	\$ —	\$ 1,308
Restructuring charges	3,812	514	10,231	14,557
Write-offs	—	(514)	—	(514)
Cash payments	(3,452)	—	(10,029)	(13,481)
December 28, 2018	<u>\$ 1,668</u>	<u>\$ —</u>	<u>\$ 202</u>	<u>\$ 1,870</u>

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(11.) OTHER OPERATING EXPENSES (Continued)

Acquisition and Integration Expenses

The Company did not incur any additional costs associated with these activities during the year ended December 28, 2018 . Acquisition and integration costs are predominantly related to the acquisition of LRM and primarily include professional, consulting, severance, retention, relocation, and travel costs. Integration costs primarily include professional, consulting, severance, retention, relocation, and travel costs. The \$0.4 million of acquisition and integration costs accrued as of December 29, 2017 were paid during the first quarter of 2018. These projects were completed as of December 29, 2017.

Asset Dispositions, Severance and Other

During 2018 , 2017 and 2016 , the Company recorded losses in connection with various asset disposals and/or write-downs. The 2017 amount also includes approximately \$5.3 million in expense related to the Company's leadership transitions, which were recorded within the corporate unallocated segment. In addition, the 2016 amount includes the legal and professional costs incurred in connection with the Spin-off of \$4.4 million . Expenses related to the Spin-off were primarily recorded within the corporate unallocated and the Medical segment.

(12.) INCOME TAXES

On December 22, 2017, the Tax Cuts and Jobs Act of 2017 (the "Tax Reform Act") was signed into law making significant changes to the Internal Revenue Code. Changes include, but are not limited to, a corporate tax rate decrease from 35% to 21% effective for tax years beginning after December 31, 2017, the transition of U.S international taxation from a worldwide tax system to a territorial system, and a one-time transition tax on the mandatory deemed repatriation of cumulative foreign earnings as of December 31, 2017.

Under GAAP, the effect of a change in tax laws or rates is to be recognized in income from continuing operations in the period that includes the enactment date. As such, the Company recognized an estimate of the impact of the Tax Reform Act in the year ended December 29, 2017. The Company had an estimated \$147.5 million of undistributed foreign earnings and profit subject to the deemed mandatory repatriation as of December 29, 2017 and recognized a provisional \$14.7 million in 2017 for the one-time transition tax. The Company has sufficient U.S. net operating losses to offset cash tax liabilities associated with the repatriation tax. In addition, as a result of the reduction in the U.S. corporate income tax rate from 35% to 21% under the Tax Reform Act, the Company revalued its ending net deferred tax liabilities at December 29, 2017 and recognized a \$56.5 million tax benefit in the Company's Consolidated Statement of Operations for the year ended December 29, 2017.

On December 22, 2017, the SEC issued Staff Accounting Bulletin ("SAB") No. 118 to address the application of GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Tax Reform Act. The Company recognized the tax impact of the revaluation of deferred tax assets and liabilities and the provisional tax impact related to deemed repatriated earnings and included these amounts in its consolidated financial statements for the year ended December 29, 2017. Based on additional analysis conducted, the Company updated the provisional amount of the one-time transition tax to \$18.9 million , representing an increase of \$4.2 million over the \$14.7 million amount recorded as of December 29, 2017. As stated above, the Company has sufficient U.S. net operating losses to offset cash tax liabilities associated with the repatriation tax. In part, due to the utilization of additional net operating losses to offset the additional transition tax, the Company adjusted its revaluation of the adjusted ending net deferred tax liabilities as of December 29, 2017, resulting in a recognized tax benefit of \$60.7 million , representing an increase of \$4.2 million to the originally recorded \$56.5 million tax benefit recorded in the Company's Consolidated Statement of Operations for the year ended December 29, 2017.

In 2018, the Company completed its determination of the accounting implications of the Tax Reform Act. The impact of these adjustments has been reflected in the Company's financial results for the year ended December 28, 2018 and its timely filed 2017 U.S. corporate income tax return. Further, the Company has adopted the approach of recording the consequences of the new Global Intangible Low-Taxed Income ("GILTI") provision of the Tax Reform Act as a period cost when incurred.

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(12.) INCOME TAXES (Continued)

Income from continuing operations before provision (benefit) for income taxes for fiscal years 2018 , 2017 and 2016 consisted of the following (in thousands):

	2018	2017	2016
U.S.	\$ (4,273)	\$ 306	\$ (12,547)
International	65,389	48,953	40,712
Total income before income taxes from continuing operations	<u>\$ 61,116</u>	<u>\$ 49,259</u>	<u>\$ 28,165</u>

The provision (benefit) for income taxes from continuing operations for fiscal years 2018 , 2017 and 2016 was comprised of the following from continuing operations (in thousands):

	2018	2017	2016
Current:			
Federal	\$ 80	\$ (1,558)	\$ (8,327)
State	166	(29)	149
International	9,490	8,539	7,230
	<u>9,736</u>	<u>6,952</u>	<u>(948)</u>
Deferred:			
Federal	6,610	(45,114)	5,457
State	103	(295)	527
International	(2,366)	629	(1,749)
	<u>4,347</u>	<u>(44,780)</u>	<u>4,235</u>
Total provision (benefit) for income taxes	<u>\$ 14,083</u>	<u>\$ (37,828)</u>	<u>\$ 3,287</u>

The provision (benefit) for income taxes from continuing operations differs from the U.S. statutory rate for fiscal years 2018 , 2017 and 2016 due to the following:

	2018		2017		2016	
Statutory rate	\$ 12,834	21.0 %	\$ 17,240	35.0 %	\$ 9,858	35.0 %
Federal tax credits	(1,700)	(2.8)	(1,674)	(3.4)	(1,570)	(5.6)
Foreign rate differential	(6,040)	(9.9)	(12,934)	(26.3)	(9,665)	(34.3)
Uncertain tax positions	147	0.2	34	0.1	219	0.8
State taxes, net of federal benefit	975	1.6	(543)	(1.1)	(311)	(1.1)
U.S. tax on foreign earnings	10,473	17.1	1,471	3.0	1,508	5.4
Valuation allowance	(567)	(0.9)	1,030	2.1	1,273	4.5
Tax Reform Act	11	—	(39,394)	(80.0)	—	—
Change in tax rates	—	—	—	—	(270)	(1.0)
Non-deductible transaction costs	—	—	—	—	1,012	3.6
Change in tax law (Internal Revenue Code §987)	—	—	—	—	2,630	9.3
Other	(2,050)	(3.3)	(3,058)	(6.2)	(1,397)	(5.0)
Effective tax rate	<u>\$ 14,083</u>	<u>23.0 %</u>	<u>\$ (37,828)</u>	<u>(76.8)%</u>	<u>\$ 3,287</u>	<u>11.7 %</u>

The difference between the Company's effective tax rate and the U.S. federal statutory income tax rate in the current year is primarily attributable to the components of Tax Reform Act as well as the impact of the Company's earnings realized in foreign jurisdictions with statutory rates that are different than the federal statutory rate. The Company's foreign earnings are primarily derived from Switzerland, Mexico, Uruguay, and Ireland. In addition, the Company currently has a tax holiday in Malaysia through April 2023 provided certain conditions are met. Beginning in 2018, certain earnings realized in foreign jurisdictions are subject to U.S. tax in accordance with the Tax Reform Act.

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(12.) INCOME TAXES (Continued)

Difference Attributable to Foreign Investment: Certain foreign subsidiary earnings are subject to U.S. taxation under the Tax Reform Act. The Company intends to permanently reinvest substantially all of our foreign subsidiary earnings, as well as our capital in our foreign subsidiaries, with the exception of distributions made out of current year earnings and profits (E&P) and E&P previously taxed as of and for the year ended December 29, 2017, including E&P subject to the toll charge under the Tax Reform Act. The Company accrues for withholding taxes on distributions in the year that distributions are made.

The net deferred tax liability, including discontinued operations at December 29, 2017, consists of the following (in thousands):

	December 28, 2018	December 29, 2017
Net operating loss carryforwards	\$ 18,088	\$ 107,005
Tax credit carryforwards	24,593	28,215
Inventories	3,408	4,956
Accrued expenses	39	3,815
Stock-based compensation	2,340	5,531
Gross deferred tax assets	48,468	149,522
Less valuation allowance	(34,339)	(36,480)
Net deferred tax assets	14,129	113,042
Property, plant and equipment	(9,445)	(27,547)
Intangible assets	(198,648)	(219,576)
Convertible subordinated notes	—	(806)
Other	(6,009)	(6,325)
Gross deferred tax liabilities	(214,102)	(254,254)
Net deferred tax liability	\$ (199,973)	\$ (141,212)
Presented as follows:		
Noncurrent deferred tax asset	\$ 3,937	\$ 4,152
Noncurrent deferred tax liability	(203,910)	(145,364)
Net deferred tax liability	\$ (199,973)	\$ (141,212)

The components of the net deferred tax liability, by balance sheet account, were as follows:

	December 28, 2018	December 29, 2017
Deferred income tax asset	\$ 3,937	\$ 3,451
Noncurrent assets of discontinued operations held for sale	—	701
Deferred income tax liabilities	(203,910)	(140,964)
Noncurrent liabilities of discontinued operations held for sale	—	(4,400)
Net deferred tax liability	\$ (199,973)	\$ (141,212)

As of December 28, 2018, the Company has the following carryforwards available:

Jurisdiction	Tax Attribute	Amount (in millions)	Begin to Expire
U.S. Federal	Net operating loss	\$ 39.1	2034
U.S. State	Net operating loss	130.6	2019
International	Net operating loss	31.1	2019
U.S. Federal	Foreign tax credit	17.0	2019
U.S. Federal and State	R&D tax credit	3.6	2019
U.S. State	Investment tax credit	6.8	2019

Net operating losses are presented as pre-tax amounts.

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(12.) INCOME TAXES (Continued)

Certain U.S. tax attributes are subject to limitations of Internal Revenue Code §382, which in general provides that utilization is subject to an annual limitation if an ownership change results from transactions increasing the ownership of certain shareholders or public groups in stock of a corporation by more than 50 percentage points over a three-year period. Such an ownership change occurred upon the consummation of the acquisition of LRM in 2015. The Company does not anticipate that these limitations will affect utilization of these carryforwards prior to their expiration.

The Company's federal net operating loss carryforward and certain other federal tax credits reported on its income tax returns included uncertain tax positions taken in prior years. Due to the application of the accounting for uncertain tax positions, the actual tax attributes are larger than the tax amounts for which a deferred tax asset is recognized for financial statement purposes.

In assessing the realizability of deferred tax assets, management considers, within each taxing jurisdiction, whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. Management considers the scheduled reversal of deferred tax liabilities, projected future taxable income and tax planning strategies in making this assessment. Based on the consideration of the weight of both positive and negative evidence, management has determined that a portion of the deferred tax assets as of December 28, 2018 and December 29, 2017 related to certain foreign tax credits, state investment tax credits, and foreign and state net operating losses will not be realized.

The Company files annual income tax returns in the U.S., various state and local jurisdictions, and in various foreign jurisdictions. A number of years may elapse before an uncertain tax position, for which the Company has unrecognized tax benefits, is examined and finally settled. While it is often difficult to predict the final outcome or the timing of resolution of any particular uncertain tax position, the Company believes that its unrecognized tax benefits reflect the most probable outcome. The Company adjusts these unrecognized tax benefits, as well as the related interest, in light of changing facts and circumstances. The resolution of an uncertain tax position, if recognized, would be recorded as an adjustment to the Provision (Benefit) for Income Taxes and the effective tax rate in the period of resolution.

Below is a summary of changes to the unrecognized tax benefit for fiscal years 2018, 2017 and 2016. The amounts for 2016 and 2017 include discontinued operations. The amounts for 2018 reflect discontinued operations through the date of divestiture of the AS&O product line, which is reflected in the table below as a reduction during 2018 (in thousands):

	2018	2017	2016
Balance, beginning of year	\$ 12,088	\$ 10,561	\$ 9,271
Additions based upon tax positions related to the current year	300	3,833	1,450
Additions (reductions) related to prior period tax returns	(75)	(14)	240
Reductions relating to settlements with tax authorities	(98)	—	—
Reductions relating to divestiture	(6,846)	—	—
Reductions as a result of a lapse of applicable statute of limitations	—	(510)	—
Revaluation due to change in tax rate (Tax Reform Act)	—	(1,782)	—
Reductions relating to business combinations	—	—	(400)
Balance, end of year	<u>\$ 5,369</u>	<u>\$ 12,088</u>	<u>\$ 10,561</u>

Integer and its subsidiaries file income tax returns in the U.S. federal jurisdiction and various state and foreign jurisdictions. The tax years that remain open and subject to tax audits varies depending on the tax jurisdiction. The Internal Revenue Service finalized an audit of the 2012 and 2013 U.S. Federal income tax returns of the Company in the first quarter of 2015. The impact to the income tax expense was not material. The IRS is currently examining the U.S. subsidiaries of the Company for the taxable years 2014 - 2016 and the 2017 - 2018 taxable years remain subject to examination by the IRS. The U.S. subsidiaries of the former LRM are still subject to U.S. federal, state, and local examinations for the taxable years 2006 to 2014.

It is reasonably possible that a reduction of approximately \$0.9 million of the balance of unrecognized tax benefits may occur within the next twelve months as a result of the lapse of the statute of limitations and/or audit settlements. As of December 28, 2018, approximately \$5.3 million of unrecognized tax benefits would favorably impact the effective tax rate (net of federal impact on state issues), if recognized.

The Company recognizes interest related to unrecognized tax benefits as a component of Provision (Benefit) for Income Taxes on the Consolidated Statements of Operations. During 2018, 2017 and 2016, the recorded amounts for interest and penalties, respectively, were not significant.

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(13.) COMMITMENTS AND CONTINGENCIES

Litigation

In April 2013, the Company commenced an action against AVX Corporation and AVX Filters Corporation (collectively “AVX”) alleging that AVX had infringed on the Company’s patents by manufacturing and selling filtered feedthrough assemblies used in implantable pacemakers and cardioverter defibrillators that incorporate the Company’s patented technology. Two juries in the U.S. District Court for the District of Delaware have returned verdicts finding that AVX infringed on three of the Company’s patents and awarded the Company \$37.5 million in damages. In March 2018, the U.S. District Court for the District of Delaware vacated the original damage award and ordered a retrial on damages. In the January 2019 retrial on damages, the jury awarded the Company \$22.2 million in damages. That matter is subject to post-trial proceedings. To date, the Company has recorded no gains in connection with this litigation.

The Company is a party to various other legal actions arising in the normal course of business. The Company does not expect that the ultimate resolution of any other pending legal actions will have a material effect on its consolidated results of operations, financial position, or cash flows. However, litigation is subject to inherent uncertainties. As such, there can be no assurance that any pending legal action, which the Company currently believes to be immaterial, will not become material in the future.

Environmental Matters

In January 2015, Lake Region Medical (“LRM”), which was acquired by the Company in October 2015, was notified by the New Jersey Department of Environmental Protection (“NJDEP”) of NJDEP’s intent to revoke a no further action determination made by NJDEP in favor of LRM in 2002 pertaining to a property on which a subsidiary of LRM operated a manufacturing facility in South Plainfield, New Jersey beginning in 1971. LRM sold the property in 2004 and vacated the facility in 2007. In response to NJDEP’s notice, the Company further investigated the matter and submitted a technical report to NJDEP in August of 2015 that concluded that NJDEP’s notice of intent to revoke was unwarranted. After reviewing the Company’s technical report, NJDEP issued a draft response in May 2016, stating that NJDEP would not revoke the no further action determination at that time, but would require some additional site investigation to support the Company’s conclusion. The Company met with NJDEP representatives to discuss the appropriate scope of the requested additional investigation, and the requested additional investigation is ongoing. The Company does not expect this environmental matter will have a material effect on its consolidated results of operations, financial position or cash flows.

License Agreements

The Company is a party to various license agreements for technology that is utilized in certain of its products. The most significant of these agreements are the licenses for basic technology used in the production of wet tantalum capacitors, filtered feedthroughs and MRI compatible lead systems. Expenses related to license agreements were \$1.6 million , \$1.1 million , and \$1.0 million , for 2018 , 2017 and 2016 , respectively, and are primarily included in Cost of Sales.

Product Warranties

The Company generally warrants that its products will meet customer specifications and will be free from defects in materials and workmanship. The change in product warranty liability for fiscal years 2018 and 2017 was comprised of the following (in thousands):

	2018	2017
Beginning balance	\$ 2,820	\$ 2,764
Additions to warranty reserve, net of reversals	620	917
Warranty claims settled	(840)	(861)
Ending balance	<u>\$ 2,600</u>	<u>\$ 2,820</u>

Operating Leases

The Company is a party to various operating lease agreements for buildings, machinery, equipment and software. The Company primarily leases buildings, which accounts for the majority of the future lease payments. Lease expense includes the effect of escalation clauses and leasehold improvement incentives which are accounted for ratably over the lease term. Operating lease expense for fiscal years 2018 , 2017 and 2016 was as follows (in thousands):

	2018	2017	2016
Operating lease expense	\$ 10,753	\$ 14,320	\$ 12,127

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(13.) COMMITMENTS AND CONTINGENCIES (Continued)

At December 28, 2018, the Company had the following future minimum lease payments under non-cancelable operating leases (in thousands):

	2019	2020	2021	2022	2023	After 2023
Future minimum lease payments	\$ 8,562	7,290	7,348	5,269	5,112	14,589

Self-Insurance Liabilities

As of December 28, 2018, and at various times in the past, the Company self-funded its workers' compensation and employee medical and dental expenses. The Company has established reserves to cover these self-insured liabilities and also maintains stop-loss insurance to limit its exposures under these programs. Claims reserves represent accruals for the estimated uninsured portion of reported claims, including adverse development of reported claims, as well as estimates of incurred but not reported claims. Claims incurred but not reported are estimated based on the Company's historical experience, which is continually monitored, and accruals are adjusted when warranted by changes in facts and circumstances. The Company's actual experience may be different than its estimates, sometimes significantly. Changes in assumptions, as well as changes in actual experience could cause these estimates to change. Insurance and claims expense will vary from period to period based on the severity and frequency of claims incurred in a given period. The Company's self-insurance reserves totaled \$4.2 million and \$5.8 million as of December 28, 2018 and December 29, 2017, respectively. These accruals are recorded in Accrued Expenses and Other Long-Term Liabilities in the Consolidated Balance Sheets.

Foreign Currency Contracts

The Company periodically enters into foreign currency forward contracts to hedge its exposure to foreign currency exchange rate fluctuations in its international operations. The Company has designated these foreign currency forward contracts as cash flow hedges. The estimated Accumulated Other Comprehensive Income related to the Company's foreign currency contracts that is expected to be reclassified into earnings within the next twelve months is a \$0.7 million loss.

The impact to the Company's results of operations from its forward contracts for fiscal years 2018, 2017 and 2016 was as follows (in thousands):

	2018	2017	2016
Increase (decrease) in sales	\$ (758)	\$ 1,327	\$ —
Increase (decrease) in cost of sales	(944)	84	3,516
Ineffective portion of change in fair value	—	—	—

Information regarding outstanding foreign currency contracts designated as cash flow hedges as of December 28, 2018 is as follows (dollars in thousands):

Aggregate Notional Amount	Start Date	End Date	\$/Foreign Currency	Fair Value	Balance Sheet Location
\$ 12,621	Jan 2019	Jun 2019	1.1686 Euro	\$ (149)	Accrued Expenses
10,991	Jan 2019	Jun 2019	0.0523 Peso	(494)	Accrued Expenses
10,535	Jan 2019	Jun 2019	1.1705 Euro	(141)	Accrued Expenses
11,019	Jan 2019	Jun 2019	0.0483 Peso	(316)	Accrued Expenses
10,499	Jul 2019	Dec 2019	0.0500 Peso	368	Accrued Expenses

(14.) EARNINGS (LOSS) PER SHARE

The following table sets forth a reconciliation of the information used in computing basic and diluted EPS for fiscal years 2018 , 2017 and 2016 (in thousands, except per share amounts):

	2018	2017	2016
Numerator for basic and diluted EPS:			
Income from continuing operations	\$ 47,033	\$ 87,087	\$ 24,878
Income (loss) from discontinued operations	120,931	(20,408)	(18,917)
Net income	<u>\$ 167,964</u>	<u>\$ 66,679</u>	<u>\$ 5,961</u>
Denominator for basic EPS:			
Weighted average shares outstanding	32,136	31,402	30,778
Effect of dilutive securities:			
Stock options, restricted stock and restricted stock units	460	654	195
Denominator for diluted EPS	<u>32,596</u>	<u>32,056</u>	<u>30,973</u>
Basic earnings (loss) per share:			
Income from continuing operations	\$ 1.46	\$ 2.77	\$ 0.81
Income (loss) from discontinued operations	3.76	(0.65)	(0.61)
Basic earnings per share	5.23	2.12	0.19
Diluted earnings (loss) per share:			
Income from continuing operations	\$ 1.44	\$ 2.72	\$ 0.80
Income (loss) from discontinued operations	3.71	(0.64)	(0.61)
Diluted earnings per share	5.15	2.08	0.19

The diluted weighted average share calculations do not include the following securities for fiscal years 2018 , 2017 and 2016 , which are not dilutive to the EPS calculations or the performance criteria have not been met (in thousands):

	2018	2017	2016
Time-vested stock options, restricted stock and restricted stock units	237	676	657
Performance-vested stock options and restricted stock units	144	285	357

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(15.) ACCUMULATED OTHER COMPREHENSIVE INCOME

Accumulated Other Comprehensive Income is comprised of the following (in thousands):

	Defined Benefit Plan Liability	Cash Flow Hedges	Foreign Currency Translation Adjustment	Total Pre-Tax Amount	Tax	Net-of-Tax Amount
December 30, 2016	\$ (1,475)	\$ 1,420	\$ (15,660)	\$ (15,715)	\$ (285)	\$ (16,000)
Unrealized gain on cash flow hedges	—	3,707	—	3,707	(353)	3,354
Realized gain on foreign currency hedges	—	(1,243)	—	(1,243)	435	(808)
Realized gain on interest rate swap hedges	—	(466)	—	(466)	163	(303)
Net defined benefit plan adjustments	53	—	—	53	23	76
Foreign currency translation gain	—	—	65,860	65,860	—	65,860
December 29, 2017	\$ (1,422)	\$ 3,418	\$ 50,200	\$ 52,196	\$ (17)	\$ 52,179
Unrealized gain on cash flow hedges	—	1,904	—	1,904	(400)	1,504
Realized gain on foreign currency hedges	—	(186)	—	(186)	39	(147)
Realized gain on interest rate swap hedges	—	(1,697)	—	(1,697)	356	(1,341)
Net defined benefit plan adjustments	232	—	—	232	70	302
Foreign currency translation loss	—	—	(19,925)	(19,925)	—	(19,925)
Reclassifications to earnings ⁽¹⁾	895	—	264	1,159	(261)	898
Reclassification to retained earnings ⁽²⁾	—	—	—	—	(466)	(466)
December 28, 2018	\$ (295)	\$ 3,439	\$ 30,539	\$ 33,683	\$ (679)	\$ 33,004

⁽¹⁾ Accumulated foreign currency translation losses of \$0.3 million and defined benefit plan liabilities of \$0.6 million (net of income taxes of \$0.3 million) were reclassified to earnings in during 2018 as a result of the divestiture of the AS&O Product Line.

⁽²⁾ Represents the stranded tax effects reclassified from accumulated other comprehensive income to retained earnings resulting from the adoption of ASU 2018-02 during the fourth quarter of 2018. Refer to Note 1 “Summary of Significant Accounting Policies” for discussion of the adoption of ASU 2018-02.

The realized gains relating to the Company’s foreign currency hedges were reclassified from Accumulated Other Comprehensive Income and included in Cost of Sales or Sales as the transactions they are hedging occur. The realized gains relating to the Company’s interest rate swap hedges were reclassified from Accumulated Other Comprehensive Income and included in Interest Expense as interest on the corresponding debt being hedged is accrued. Refer to Note 9 “Benefit Plans” for details on the change in net defined benefit plan adjustments.

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(16.) FAIR VALUE MEASUREMENTS

Assets and Liabilities Measured at Fair Value on a Recurring Basis

Fair value measurement standards apply to certain financial assets and liabilities that are measured at fair value on a recurring basis (each reporting period). For the Company, these financial assets and liabilities include its derivative instruments. The Company does not have any nonfinancial assets or liabilities that are measured at fair value on a recurring basis.

Foreign Currency Contracts

The fair value of foreign currency contracts are determined through the use of cash flow models that utilize observable market data inputs to estimate fair value. These observable market data inputs include foreign exchange rate and credit spread curves. In addition to the above, the Company received fair value estimates from the foreign currency contract counterparty to verify the reasonableness of the Company's estimates. The Company's foreign currency contracts are categorized in Level 2 of the fair value hierarchy. The fair value of the Company's foreign currency contracts will be realized as Sales or Cost of Sales as the inventory, which the contracts are hedging, is sold.

Interest Rate Swap

The fair value of the Company's interest rate swap outstanding at December 28, 2018 was determined through the use of a cash flow model that utilized observable market data inputs. These observable market data inputs included LIBOR, swap rates, and credit spread curves. In addition to the above, the Company received a fair value estimate from the interest rate swap counterparty to verify the reasonableness of the Company's estimate. This fair value calculation was categorized in Level 2 of the fair value hierarchy. The fair value of the Company's interest rate swap will be realized as a component of Interest Expense as interest on the corresponding borrowings is accrued.

The following tables provide information regarding assets and liabilities recorded at fair value on a recurring basis (in thousands):

	Fair Value	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
December 28, 2018				
Assets: Interest rate swap (Note 8)	\$ 4,171	\$ —	\$ 4,171	\$ —
Liabilities: Foreign currency contracts (Note 13)	732	—	732	—
December 29, 2017				
Assets: Interest rate swaps (Note 8)	\$ 4,279	\$ —	\$ 4,279	\$ —
Liabilities: Foreign currency contracts (Note 13)	861	—	861	—

Assets and Liabilities Measured at Fair Value on a Nonrecurring Basis

Fair value standards also apply to certain assets and liabilities that are measured at fair value on a nonrecurring basis. The carrying amounts of cash, accounts receivable, accounts payable and accrued expenses approximate fair value due to the short-term nature of these items.

Borrowings under the Company's Revolving Credit Facility, TLA Facility and TLB Facility accrue interest at a floating rate tied to a standard short-term borrowing index, selected at the Company's option, plus an applicable margin. The carrying amount of this floating rate debt approximates fair value based upon the respective interest rates adjusting with market rate adjustments.

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(16.) FAIR VALUE MEASUREMENTS (Continued)

Equity Investments

Equity investments are comprised of the following (in thousands):

	December 28, 2018	December 29, 2017
Equity method investment	\$ 15,148	\$ 13,800
Non-marketable equity securities	7,667	7,008
Total equity investments	\$ 22,815	\$ 20,808

The components of (Gain) Loss on Equity Investments, Net for each period were as follows (in thousands):

	2018	2017	2016
Equity method investment income and other ⁽¹⁾	\$ (5,623)	\$ (3,685)	\$ (737)
Impairment charges ⁽²⁾	—	5,250	1,570
Total (gain) loss on equity investments, net	\$ (5,623)	\$ 1,565	\$ 833

⁽¹⁾ Equity method investment income and other includes the Company's share of equity method investee gains (losses) and realized gains on sales of non-marketable equity investments.

⁽²⁾ Prior to the adoption of ASU 2016-01, the Company accounted for its non-marketable equity securities under the cost method of accounting. The other than temporary impairment charges during 2017 and 2016 relate to non-marketable equity securities under the cost method of accounting.

There were no observable price adjustments on non-marketable equity securities related to the adoption of ASU 2016-01 in 2018 and this is not applicable in prior periods.

Equity method investments and non-marketable equity securities, as described above, are included within Level 2 of the fair value hierarchy.

The Company's equity method investment is in a Chinese venture capital fund focused on investing in life sciences companies. As of December 28, 2018, the Company owned 6.7% of this fund.

Pension Plan Assets

The fair value of the Company's pension plan assets disclosed in Note 9 "Benefit Plans" are determined based upon quoted market prices in inactive markets or valuation models with observable market data inputs to estimate fair value. These observable market data inputs include benchmark yields, reported trades, broker/dealer quotes, issuer spreads, benchmark securities, bids, offers and reference data. The Company's pension plan assets are categorized Level 2 of the fair value hierarchy.

(17.) SEGMENT AND GEOGRAPHIC INFORMATION

The Company organizes its business into two reportable segments: (1) Medical and (2) Non-Medical. This segment structure reflects the financial information and reports used by the Company's management, specifically its Chief Operating Decision Maker ("CODM"), to make decisions regarding the Company's business, including resource allocations and performance assessments. This segment structure reflects the Company's current operating focus in compliance with ASC 280, *Segment Reporting*.

The Company defines segment income from operations as sales less cost of sales including amortization and expenses attributable to segment-specific selling, general, administrative, research, development, engineering and other operating activities. The remaining unallocated operating and other expenses are primarily administrative corporate headquarter expenses and capital costs that are not allocated to reportable segments. Transactions between the two segments are not significant.

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(17.) SEGMENT AND GEOGRAPHIC INFORMATION (Continued)

The following table presents sales by product line for fiscal years 2018 , 2017 and 2016 (in thousands).

	2018	2017	2016
Segment sales by product line:			
Medical			
Cardio & Vascular	\$ 585,464	\$ 530,831	\$ 484,891
Cardiac & Neuromodulation	443,347	428,275	439,375
Advanced Surgical, Orthopedics & Portable Medical	133,225	120,006	109,557
Total Medical	1,162,036	1,079,112	1,033,823
Non-Medical	52,976	56,968	41,679
Total sales	\$ 1,215,012	\$ 1,136,080	\$ 1,075,502

A significant portion of the Company's sales for fiscal years 2018 , 2017 and 2016 and accounts receivable at December 28, 2018 and December 29, 2017 were to three customers as follows:

	Sales			Accounts Receivable	
	2018	2017	2016	December 28, 2018	December 29, 2017
Customer A	21%	22%	24%	11%	11%
Customer B	19%	20%	21%	18%	21%
Customer C	12%	11%	12%	20%	20%
	52%	53%	57%	49%	52%

The following table presents income from operations for the Company's reportable segments for fiscal years 2018 , 2017 and 2016 (in thousands).

	2018	2017	2016
Segment income from operations:			
Medical	\$ 224,893	\$ 197,212	\$ 170,101
Non-Medical	14,697	11,335	1,513
Total segment income from operations	239,590	208,547	171,614
Unallocated operating expenses	(84,035)	(82,898)	(78,691)
Operating income	155,555	125,649	92,923
Unallocated expenses, net	(94,439)	(76,390)	(64,758)
Income before benefit for income taxes	\$ 61,116	\$ 49,259	\$ 28,165

The following table presents depreciation and amortization expense for the Company's reportable segments for fiscal years 2018 , 2017 and 2016 (in thousands).

	2018	2017	2016
Segment depreciation and amortization:			
Medical	\$ 71,922	\$ 72,314	\$ 65,528
Non-Medical	1,364	2,675	2,346
Total depreciation and amortization included in segment income from operations	73,286	74,989	67,874
Unallocated depreciation and amortization	8,252	6,194	4,994
Total depreciation and amortization	\$ 81,538	\$ 81,183	\$ 72,868

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(17.) SEGMENT AND GEOGRAPHIC INFORMATION (Continued)

The following table presents total assets for the Company's reportable segments as of December 28, 2018 and December 29, 2017 (in thousands).

	December 28, 2018	December 29, 2017
Identifiable assets:		
Medical ⁽¹⁾	\$ 2,186,565	\$ 2,687,227
Non-Medical	53,812	54,071
Total reportable segments	2,240,377	2,741,298
Unallocated assets	86,304	107,047
Total assets	<u>\$ 2,326,681</u>	<u>\$ 2,848,345</u>

⁽¹⁾ Medical segment identifiable assets at December 29, 2017 includes \$451.4 million of assets held sale.

The following table presents capital expenditures for the Company's reportable segments for fiscal years 2018, 2017 and 2016 (in thousands).

	2018	2017	2016
Expenditures for tangible long-lived assets:			
Medical	\$ 34,615	\$ 20,896	\$ 27,014
Non-Medical	573	661	1,451
Total reportable segments	35,188	21,557	28,465
Unallocated long-lived tangible assets	6,110	8,783	8,251
Total expenditures	<u>\$ 41,298</u>	<u>\$ 30,340</u>	<u>\$ 36,716</u>

Geographic Area Information

The following table presents sales by significant country for fiscal years 2018, 2017 and 2016. In these tables, sales are allocated based on where the products are shipped (in thousands).

	2018	2017	2016
Sales by geographic area:			
United States	\$ 687,259	\$ 662,133	\$ 625,670
Non-Domestic locations:			
Puerto Rico	146,500	140,184	162,343
Costa Rica	62,044	55,364	53,501
Rest of world	319,209	278,399	233,988
Total sales	<u>\$ 1,215,012</u>	<u>\$ 1,136,080</u>	<u>\$ 1,075,502</u>

The following table presents PP&E by geographic area as of December 28, 2018 and December 29, 2017. In these tables, PP&E is aggregated based on the physical location of the tangible long-lived assets (in thousands).

	December 28, 2018	December 29, 2017
Long-lived tangible assets by geographic area:		
United States	\$ 151,851	\$ 157,808
Mexico	34,606	28,985
Ireland	32,190	33,992
Rest of world	12,622	14,395
Total	<u>\$ 231,269</u>	<u>\$ 235,180</u>

INTEGER HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(17.) SEGMENT AND GEOGRAPHIC INFORMATION (Continued)

Disaggregation of Revenue by Segment

In general, the Company's business segmentation is aligned according to the nature and economic characteristics of its products and customer relationships and provides meaningful disaggregation of each business segment's results of operations. Additionally, the tables below disaggregate the Company's revenues based upon significant customers, which are defined as any customer who individually represents 10% or more of a segment's total revenues, and ship to country, which is defined as any country where 10% or more of a segment's total revenues are shipped to. The Company believes that these categories best depict how the nature, amount, timing and uncertainty of revenues and cash flows are affected by economic factors.

The following table presents sales by customer for fiscal year 2018 .

Customer	Medical	Non-Medical
Customer A	22%	—%
Customer B	19%	—%
Customer C	12%	—%
Customer D	—%	28%
All other customers	47%	72%

The following table presents revenues by ship to country for fiscal year 2018 .

Ship to Location	Medical	Non-Medical
United States	56%	66%
Puerto Rico	13%	—%
Canada	—%	11%
All other Countries	31%	23%

(18.) QUARTERLY SALES AND EARNINGS DATA—UNAUDITED

(in thousands, except per share data)

	Fourth Quarter	Third Quarter	Second Quarter	First Quarter
Fiscal Year 2018				
Sales	\$ 303,034	\$ 305,088	\$ 314,464	\$ 292,426
Gross profit	88,445	91,923	98,765	83,532
Net income (loss)	19,196	(8,303) ⁽¹⁾	23,056	13,084
EPS—basic	0.59	(0.26)	0.72	0.41
EPS—diluted	0.58	(0.26)	0.70	0.40
Fiscal Year 2017				
Sales	\$ 302,260	\$ 286,168	\$ 280,916	\$ 266,736
Gross profit	93,621	89,186	89,175	82,028
Net income	54,698 ⁽²⁾	19,882	9,559	2,948
EPS—basic	1.73	0.63	0.31	0.10
EPS—diluted	1.69	0.62	0.30	0.09

⁽¹⁾ Includes pre-tax charges totaling \$41 million for the extinguishment of debt, primarily in connection with the divestiture of the AS&O Product Line.

⁽²⁾ Includes one-time net tax benefit of \$40 million, primarily resulting from the Tax Reform Act.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Management's Report on Internal Control Over Financial Reporting appears in Part II, Item 8, "Financial Statements and Supplementary Data" of this report and is incorporated into this Item 9A by reference.

a. Evaluation of Disclosure Controls and Procedures

Our management, including the principal executive officer and principal financial officer, evaluated our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934) related to the recording, processing, summarization and reporting of information in our reports that we file with the Securities and Exchange Commission as of December 28, 2018. These disclosure controls and procedures have been designed to provide reasonable assurance that material information relating to us, including our subsidiaries, is made known to our management, including these officers, by our employees, and that this information is recorded, processed, summarized, evaluated and reported, as applicable, within the time periods specified in the Securities and Exchange Commission's rules and forms. Based on their evaluation, as of December 28, 2018, our principal executive officer and principal financial officer have concluded that our disclosure controls and procedures are effective.

b. Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting during our last fiscal quarter to which this Annual Report on Form 10-K relates that have materially affected, or are reasonably likely to materially affect, internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Information regarding the Company's directors appearing under the caption "Election of Directors" in the Company's Proxy Statement for its 2019 Annual Meeting of Stockholders is incorporated herein by reference.

Information regarding the Company's executive officers is presented under the caption "Executive Officers of the Company" in Part I of this Annual Report on Form 10-K.

The other information required by Item 10 is incorporated herein by reference from the Company's Proxy Statement for its 2019 Annual Meeting of Stockholders.

ITEM 11. EXECUTIVE COMPENSATION

Information regarding executive compensation appearing under the captions "Compensation Discussion and Analysis", "Executive Compensation" and "Compensation Committee Interlocks and Insider Participation" in the Company's Proxy Statement for the 2019 Annual Meeting of Stockholders is incorporated herein by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Information regarding security ownership of certain beneficial owners and management and related stockholder matters, including the table titled "Equity Compensation Plan Information" and under the caption "Stock Ownership by Directors and Executive Officers" in the Company's Proxy Statement for the 2019 Annual Meeting of Stockholders is incorporated herein by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Information regarding certain relationships and related transactions, and director independence under the captions "Related Person Transactions" and "Board Independence" in the Company's Proxy Statement for the 2019 Annual Meeting of Stockholders is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Information regarding the fees paid to and services provided by Deloitte & Touche LLP, the Company's independent registered public accounting firm under the caption "Ratification of the Appointment of Independent Registered Public Accounting Firm" in the Company's Proxy Statement for the 2019 Annual Meeting of Stockholders is incorporated herein by reference.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) LIST OF DOCUMENTS FILED AS PART OF THIS REPORT

- (1) Financial statements and financial statement schedules filed as part of this Annual Report on Form 10-K. Refer to Part II, Item 8. "Financial Statements and Supplementary Data."
- (2) The following financial statement schedule is included in this Annual Report on Form 10-K (in thousands):

Schedule II—Valuation and Qualifying Accounts

Column A Description	Col. B Balance at Beginning of Period	Col. C—Additions		Col. D Deductions - Describe	Col. E Balance at End of Period
		Charged to Costs & Expenses	Charged to Other Accounts- Describe		
December 28, 2018					
Allowance for doubtful accounts	\$ 536	\$ 169	\$ (2) ⁽²⁾	\$ (111) ⁽⁴⁾	\$ 592
Valuation allowance for deferred tax assets	\$ 36,480	\$ —	\$ (170) ⁽²⁾	\$ (1,971) ⁽¹⁾⁽⁴⁾⁽⁵⁾	\$ 34,339
December 29, 2017					
Allowance for doubtful accounts	\$ 475	\$ 194	\$ —	\$ (133) ⁽⁴⁾	\$ 536
Valuation allowance for deferred tax assets	\$ 35,391	\$ 3,284 ⁽¹⁾	\$ —	\$ (2,195) ⁽⁴⁾⁽⁵⁾	\$ 36,480
December 30, 2016					
Allowance for doubtful accounts	\$ 639	\$ (90)	\$ —	\$ (74) ⁽⁴⁾	\$ 475
Valuation allowance for deferred tax assets	\$ 39,171	\$ 641 ⁽¹⁾	\$ (5,135) ⁽²⁾⁽³⁾	\$ 714 ⁽⁵⁾	\$ 35,391

(1) Valuation allowance recorded in the provision for income taxes for certain net operating losses and tax credits. The decrease in 2018 includes the impact of the divestiture of the AS&O Product Lines. The increase in 2017 includes the impact of the adoption of the Tax Reform Act, which increased the value of our state deferred tax assets to which a corresponding valuation allowance was recorded.

(2) Includes foreign currency translation effect.

(3) Amount represents measurement-period adjustments related to the acquisition of LRM.

(4) Accounts written off.

(5) Includes return to provision adjustments for prior years.

Schedules not listed above have been omitted because the information required to be set forth therein is not applicable or is shown in the financial statements or notes thereto.

(3) See exhibits listed under Part (b) below.

(b) EXHIBITS:

EXHIBIT NUMBER	DESCRIPTION
2.1	Agreement and Plan of Merger, dated as of August 27, 2015, by and among Lake Region Medical Holdings, Inc., Greatbatch, Inc. and Provenance Merger Sub Inc. (incorporated by reference to Exhibit 2.1 to our Current Report on Form 8-K filed on August 31, 2015).
2.2	Separation and Distribution Agreement, dated March 14, 2016, between Greatbatch, Inc. and QiG Group, LLC (incorporated by reference to Exhibit 2.1 to our Current Report on Form 8-K filed on March 18, 2016).
2.3	Master Purchase and Sale Agreement, dated as of May 3, 2018, by and among Greatbatch Ltd., Bandera Acquisition, LLC and, solely for purposes of being bound by Section 10.1(f), Section 10.3 and Section 11.13, Integer Holdings Corporation (incorporated by reference to Exhibit 2.1 to our Current Report on Form 8-K filed on July 9, 2018).

EXHIBIT NUMBER	DESCRIPTION
3.1	Restated Certificate of Incorporation of Integer Holdings Corporation (incorporated by reference to Exhibit 3.1 to our Quarterly Report on Form 10-Q for the period ended July 1, 2016).
3.2	By-laws of Integer Holdings Corporation (Amended as of August 3, 2016) (incorporated by reference to Exhibit 3.2 to our Quarterly Report on Form 10-Q for the period ended July 1, 2016).
10.1#	Integer Holdings Corporation Executive Short Term Incentive Compensation Plan (incorporated by reference to Exhibit A to our Definitive Proxy Statement on Schedule 14A filed on April 17, 2017).
10.2#	Form of Change of Control Agreement between Integer Holdings Corporation and its executive officers (Jason K. Garland, Jennifer M. Bolt, Jeremy Friedman, Antonio Gonzalez, Michael L. Spencer, Joseph Flanagan, Kirk Thor, and Payman Khales) (incorporated by reference to Exhibit 10.8 to our Annual Report on Form 10-K for the year ended December 28, 2012).
10.3	Credit Agreement, dated as of October 27, 2015, by among Greatbatch Ltd., as the borrower, Greatbatch, Inc., as parent, the financial institutions party thereto and Manufacturers and Traders Trust Company, as administrative agent (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on October 28, 2015).
10.4	Amendment No. 1 to Credit Agreement, dated as of November 29, 2016, between Greatbatch Ltd., as the borrower, and Manufacturers and Traders Trust Company, as administrative agent, and the Lenders party thereto. (incorporated by reference to Exhibit 10.8 to our Annual Report on Form 10-K for the year ended December 30, 2016).
10.5	Amendment No. 2 to Credit Agreement, dated as of March 17, 2017, between Greatbatch Ltd., as the borrower, and Manufacturers and Traders Trust Company, as administrative agent, and the Lenders party thereto (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on March 20, 2017).
10.6	Amendment No. 3 to Credit Agreement, dated as of November 7, 2017, between Greatbatch Ltd., as the borrower, and Manufacturers and Traders Trust Company, as administrative agent, and the Lenders party thereto (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on November 7, 2017).
10.7#	Employment Agreement, dated July 16, 2017, between Integer Holdings Corporation and Joseph W. Dzedzic (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on July 17, 2017).
10.8#	2005 Stock Incentive Plan (incorporated by reference to Exhibit B to our Definitive Proxy Statement on Schedule 14A filed on April 20, 2007 (File No. 001-16137)).
10.9#	2009 Stock Incentive Plan (incorporated by reference to Exhibit A to our Definitive Proxy Statement on Schedule 14A filed on April 13, 2009 (File No. 001-16137)).
10.10#	2011 Stock Incentive Plan (incorporated by reference to Exhibit A to our Definitive Proxy Statement on Schedule 14A filed on April 14, 2014).
10.11#	Greatbatch, Inc. 2016 Stock Incentive Plan (incorporated by reference to Exhibit A to our Definitive Proxy Statement on Schedule 14A filed on April 18, 2016).
10.12#	Amendment to Greatbatch, Inc. 2011 Stock Incentive Plan, Greatbatch, Inc. 2009 Stock Incentive Plan, Greatbatch, Inc. 2005 Stock Incentive Plan (incorporated by reference to Exhibit 10.14 to our Annual Report on Form 10-K for the year ended January 3, 2014).
10.13#	Second Amendment to Greatbatch, Inc. 2011 Stock Incentive Plan and Greatbatch, Inc. 2009 Stock Incentive Plan (incorporated by reference to Exhibit 10.15 to our Annual Report on Form 10-K for the year ended December 30, 2016).
10.14#	Amendment to Greatbatch, Inc. 2016 Stock Incentive Plan (incorporated by reference to Exhibit 10.16 to our Annual Report on Form 10-K for the year ended December 30, 2016).
10.15#	Form of Restricted Stock Award Agreement (incorporated by reference to Exhibit 10.15 to our Annual Report on Form 10-K for the year ended January 3, 2014).
10.16#	Form of Performance-Based Restricted Stock Units Award Agreement (incorporated by reference to Exhibit 10.3 to our Quarterly Report on Form 10-Q for the period ended March 31, 2017).
10.17#	Form of Nonqualified Stock Option Award Letter (incorporated by reference to Exhibit 10.1 to our Quarterly Report on Form 10-Q for the period ended March 31, 2017).
10.18#	Form of Restricted Stock Units Award Letter (incorporated by reference to Exhibit 10.2 to our Quarterly Report on Form 10-Q for the period ended March 31, 2017).

EXHIBIT NUMBER	DESCRIPTION
10.19#	Form of Time-Based Restricted Stock Units Award Letter to Interim President and Chief Executive Officer (incorporated by reference to Exhibit 10.4 to our Quarterly Report on Form 10-Q for the period ended March 31, 2017).
10.20	Transition Services Agreement, dated March 14, 2016, between Greatbatch, Inc. and QiG Group, LLC (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on March 18, 2016).
10.21	Amendment No. 1 to the Transition Services Agreement between Greatbatch, Inc. and Nuveetra Corporation (incorporated by reference to Exhibit 10.1 to our Quarterly Report on Form 10-Q for the period ended July 1, 2016).
10.22	Tax Matters Agreement, dated March 14, 2016, between Greatbatch, Inc. and QiG Group, LLC (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed on March 18, 2016).
10.23	Employee Matters Agreement, dated March 14, 2016, between Greatbatch, Inc. and QiG Group, LLC (incorporated by reference to Exhibit 10.3 to our Current Report on Form 8-K filed on March 18, 2016).
10.24#	Employment Offer Letter, dated October 7, 2016, between Integer Holdings Corporation and Jeremy Friedman (incorporated by reference to Exhibit 10.1 to our Quarterly Report on Form 10-Q for the period ended September 30, 2016).
10.25#	Employment Offer Letter, dated February 13, 2017, between Integer Holdings Corporation and Gary J. Haire (incorporated by reference to Exhibit 10.5 to our Quarterly Report on Form 10-Q for the period ended March 31, 2017).
10.26#	Letter dated February 18, 2018, amending certain terms of the Employment Offer Letter, dated October 7, 2016, between Integer Holdings Corporation and Jeremy Friedman (incorporated by reference to Exhibit 10.1 to our Quarterly Report on Form 10-Q for the period ended March 30, 2018).
10.27#	Release Agreement and Acknowledgement, dated May 25, 2018, between Integer Holdings Corporation and Gary J. Haire (incorporated by reference to Exhibit 10.1 to our Quarterly Report on Form 10-Q for the period ended June 29, 2018).
10.28	Amendment No. 4 to Credit Agreement, dated as of June 8, 2018, among Greatbatch Ltd., as the borrower, Integer Holdings Corporation, as parent, Manufacturers and Traders Trust Company, as administrative agent, and the Lenders party thereto. (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on June 8, 2018).
10.29#	Employment Offer Letter, dated September 14, 2018, between Integer Holdings Corporation and Jason Garland (incorporated by reference to Exhibit 10.1 to our Quarterly Report on Form 10-Q for the period ended September 28, 2018).
10.30#	Form of Change of Control Agreement between Greatbatch, Inc. and Timothy G. McEvoy (incorporated by reference to Exhibit 10.1 to our Quarterly Report on Form 10-Q for the period ended July 1, 2011 (File No. 001-16137)).
10.31#*	Amendment to Greatbatch, Inc. 2016 Stock Incentive Plan, Greatbatch, Inc. 2011 Stock Incentive Plan, Greatbatch, Inc. 2009 Stock Incentive Plan.
10.32#*	Separation Agreement and Release, dated December 31, 2018, between Integer Holdings Corporation and Jeremy Friedman.
21.1*	Subsidiaries of Integer Holdings Corporation
23.1*	Consent of Independent Registered Public Accounting Firm
31.1*	Certification of Chief Executive Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act.
31.2*	Certification of Chief Financial Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act.
32.1**	Certification of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS*	XBRL Instance Document
101.SCH*	XBRL Taxonomy Extension Schema Document
101.CAL*	XBRL Taxonomy Extension Calculation Linkbase Document

EXHIBIT NUMBER	DESCRIPTION
101.LAB*	XBRL Taxonomy Extension Labels Linkbase Document
101.PRE*	XBRL Taxonomy Extension Presentation Linkbase Document
101.DEF*	XBRL Taxonomy Extension Definition Linkbase Document
* -	Filed herewith.
** -	Furnished herewith.
# -	Indicates exhibits that are management contracts or compensation plans or arrangements required to be filed pursuant to Item 15(b) of Form 10-K.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of Sections 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.

INTEGER HOLDINGS CORPORATION

Dated: February 22, 2019

By /s/ Joseph W. Dziezic
Joseph W. Dziezic (Principal Executive Officer)
President and Chief Executive Officer

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 date indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Joseph W. Dziezic</u> Joseph W. Dziezic	President, Chief Executive Officer and Director (Principal Executive Officer)	February 22, 2019
<u>/s/ Jason K. Garland</u> Jason K. Garland	Executive Vice President and Chief Financial Officer (Principal Financial Officer)	February 22, 2019
<u>/s/ Tom P. Thomas</u> Tom P. Thomas	Vice President, Corporate Controller (Principal Accounting Officer)	February 22, 2019
<u>/s/ Bill R. Sanford</u> Bill R. Sanford	Chairman	February 22, 2019
<u>/s/ Pamela G. Bailey</u> Pamela G. Bailey	Director	February 22, 2019
<u>/s/ James F. Hinrichs</u> James F. Hinrichs	Director	February 22, 2019
<u>/s/ Jean M. Hobby</u> Jean M. Hobby	Director	February 22, 2019
<u>/s/ M. Craig Maxwell</u> M. Craig Maxwell	Director	February 22, 2019
<u>/s/ Filippo Passerini</u> Filippo Passerini	Director	February 22, 2019
<u>/s/ Peter H. Soderberg</u> Peter H. Soderberg	Director	February 22, 2019
<u>/s/ Donald J. Spence</u> Donald J. Spence	Director	February 22, 2019
<u>/s/ William B. Summers, Jr.</u> William B. Summers, Jr.	Director	February 22, 2019

AMENDMENT
TO
INTEGER HOLDINGS CORPORATION 2016 STOCK INCENTIVE PLAN
INTEGER HOLDINGS CORPORATION 2011 STOCK INCENTIVE PLAN
INTEGER HOLDINGS CORPORATION 2009 STOCK INCENTIVE PLAN

This Amendment (“Amendment”) to the Integer Holdings Corporation 2016 Stock Incentive Plan, the Integer Holdings Corporation 2011 Stock Incentive Plan and the Integer Holdings Corporation 2009 Stock Incentive Plan (individually a “Plan” and collectively, the “Plans”) is made effective as of December 13, 2018 by action of the Board of Directors of Integer Holdings Corporation.

WHEREAS, the Board of Directors, on recommendation of the Compensation and Organization Committee, has determined that this Amendment is in the best interests of participants in the Plans and the Company;

THEREFORE, the Plans are amended as follows:

1. Section 4 of each Plan is amended to provide that the Committee may by resolution delegate, subject to any limitations imposed by applicable law, to an officer of the Company the authority to designate the persons who shall be granted Incentive Awards under such Plan and the amount, type and other features of each such Incentive Award. The Committee by resolution from time to time may also establish such other limitations and conditions on such delegated authority as the Committee deems appropriate and may revoke any such delegation of authority at any time.

2. Effective with respect to Incentive Awards granted under the Plans after December 3, 2018, Section 18 of each Plan is deleted in its entirety and replaced as follows:

18. Withholding Taxes

The Company shall have the right to deduct or withhold, or require a Participant to remit to the Company, an amount sufficient to satisfy the Company’s federal, state, local, foreign, or other withholding obligations required by law to be withheld with respect to any exercise, vesting, or other taxable event arising under the Plan. The Company shall, to the extent permitted by law, have the right to deduct the amount of any such withholding obligations from any payment of any kind otherwise due to the Participant. Unless otherwise determined by the Committee at the time the Incentive Award is granted or thereafter, the Company may satisfy any such withholding requirement, in whole or in part, by withholding from the Incentive Award Company Stock having a Fair Market Value on the date of withholding equal to the amount that the Company determines is necessary to satisfy its withholding obligation. The Committee may also permit withholding to be satisfied by the transfer to the Company of unencumbered shares of Company Stock theretofore owned by the Participant.

3. All capitalized terms used but not defined in this Amendment but defined in the Plans shall have the meanings given them therein.

4. Except to the extent amended hereby, the terms and conditions of the Plans and any Award Agreement remain in full force and effect.

SEPARATION AGREEMENT AND RELEASE

THIS SEPARATION AGREEMENT AND RELEASE ("Agreement") is entered into between Jeremy Friedman ("you") and Integer Holdings Corporation ("Company"). In consideration of the mutual promises, benefits and covenants herein contained, you and the Company hereby agree as follows:

Separation Date

You acknowledge that your employment with Company and any other Releasee (as defined below) ended as a result of your retirement effective December 28, 2018 (the "Separation Date"). After the Separation Date, you will not represent to others that you are an employee, officer, agent, or representative of Company or any other Releasee for any purpose. As a result of your retirement, your pay ceased as of the Separation Date, and your benefits will terminate in accordance with Company's plan documents, except for any benefit continuation or conversion rights you may have under the applicable plan documents. Group health plan coverage terminated on December 28, 2018, except to the extent you exercise any continuation coverage rights you have pursuant to COBRA. You will receive COBRA notice under separate cover.

Separation Payments

If you timely execute, do not revoke, and comply at all relevant times with this Agreement, you will be eligible to receive "Separation Payments" in the aggregate amount of \$1,514,496.00, less applicable taxes and withholdings, payable in 39 consecutive substantially equal bi-weekly installments of \$38,833.23 each over 18 months commencing on March 1, 2019, in accordance with the Company's regular payroll practices. Notwithstanding the foregoing, in order to comply with the 6-month delay rule under Section 409A of the Internal Revenue Code and the Treasury Regulations thereunder ("Section 409A"), the Separation Payment installments will not commence until July 5, 2019, and the first installment will be in the amount of \$388,332.31, which includes bi-weekly installment payments in the aggregate amount of \$349,499.08 that would have been paid to you beginning on March 1, 2019, but for the 6-month delay required under Section 409A. The balance of your Separation Payments, in the aggregate amount of \$1,126,163.69, will be paid in 29 consecutive bi-weekly installments beginning on July 19, 2019.

Other Payments

Whether or not you execute this Agreement, or you execute this Agreement but then revoke the Agreement, the Company will pay you:

1. An "Initial RSU Payment" equal to 23,688 shares of Company common stock (subject to any required tax withholding obligation satisfied through the withholding by the Company of Company common stock), representing the right to receive one share of Company common stock in settlement of each restricted stock unit (RSU) awarded to you pursuant to the letter agreement between you and the Company, dated October 7, 2016, and that vests as of December 28, 2018 without regard to your retirement. The Initial RSU Payment will be made as soon as administratively practicable following December 28, 2018, but in no event later than January 15, 2019; and
2. A "Second RSU Payment" equal to 23,689 shares of Company common stock (subject to any required tax withholding obligation satisfied through the withholding by the Company of Company common stock), representing the right to receive one share of Company common stock in settlement of each RSU awarded to you pursuant to the letter agreement between you and the Company, dated October 7, 2016, and that is eligible for accelerated retirement vesting treatment in accordance with the letter agreement between you and the Company, dated February 18, 2018. The Second RSU Payment will be made as soon as administratively practicable following the date that is 6 months after the Separation Date, but in no event later than July 2, 2019; and

3. A bonus, if any, under the Company's short term incentive compensation plan in respect of the 2018 fiscal year to which you are entitled in accordance with the February 18, 2018 letter agreement between you and the Company (the "Accrued Bonus"); and
4. Any accrued Paid Time Off and any expenses reimbursable under the Company's policies, which you incurred on or before the Separation Date (the "Other Accrued Obligations").

Vesting of Options

Effective as of the Separation Date, in accordance with the nonqualified stock option awarded to you pursuant to the letter agreement between you and the Company, dated October 7, 2016, you shall have the right to purchase 33,334 shares of the Company's common stock, 16,667 shares of which are eligible for accelerated retirement vesting treatment in accordance with such letter agreement. Any exercise of the nonqualified stock option must be in accordance with the terms and conditions of the Company's Stock Incentive Plan and the applicable award agreement.

General Release

For and in consideration of the Separation Payments, together with other good and valuable consideration, the sufficiency of which you hereby acknowledge, you, on behalf of yourself and your heirs, executors, personal representatives, successors and assigns (collectively, a "Releasor" or "Releasors"), hereby release and forever discharge the Company, and its current and former parents, subsidiaries, affiliates, predecessors, successors, and related companies, and each of these entities' current and former owners, directors, officers, members, managers, shareholders, partners, agents, employees, contractors, attorneys, successors and assigns, in both their individual and official capacities, as appropriate (collectively, a "Releasee" or "Releasees"), of and from any and all claims, complaints, demands, actions, causes of action, suits, rights, debts, obligations, judgments, damages, entitlements, liabilities, and expenses (including attorneys' fees) of any kind whatsoever that any Releasors now have or ever had against any Releasees, whether known or unknown, suspected or unsuspected, or concealed or apparent related to your employment with the Company or any other Releasee, and the termination of such employment (the "Released Claims").

For the avoidance of doubt, and without limiting the broad nature of the Released Claims, this Agreement releases each of the Releasees from any and all claims arising under any law relating to employment, including, but not limited to (all as amended), Title VII of the Civil Rights Act of 1964, the Americans with Disabilities Act of 1990, the Family and Medical Leave Act of 1993, the Age Discrimination in Employment Act of 1967, the Older Workers Benefit Protection Act of 1990, the Equal Pay Act of 1963, the Immigration Reform and Control Act of 1986, the Genetic Information Nondiscrimination Act of 2008, the Civil Rights Act of 1866 (42 U.S.C. §§ 1981–1988), the Employee Retirement and Income Security Act of 1974, the federal Worker Adjustment and Retraining Notification Act, the Uniform Services Employment and Reemployment Rights Act, all claims under the Texas Labor Code (including Chapter 21, formerly known as the Texas Commission on Human Rights Act, and Chapter 451, known as the Texas Anti-Retaliation Law), and any and all state and local laws that may be legally waived; (3) for wages, wage supplements, paid time off, or any other form of compensation or benefit; (4) arising under any employee benefit plan, policy, or practice; (5) arising under tort, contract, or quasi-contract law, including but not limited to claims of breach of an expressed or implied contract, tortious interference with contract or prospective business advantage, breach of the covenant of good faith and fair dealing, promissory estoppel, detrimental reliance, retaliation, violation of public policy, invasion of privacy, nonphysical injury, personal injury or sickness or any other harm, wrongful or retaliatory discharge, fraud, defamation, slander, libel, false imprisonment, or negligent or intentional infliction of emotional distress; (6) for monetary or equitable relief, including but not limited to attorneys' fees,

back pay, front pay, reinstatement, compensatory or punitive damages, liquidated damages, experts' fees, medical fees or expenses, costs or disbursements; and (7) arising under any other federal, state, or local law, statute, amendment, rule, regulation, order, code, common law, policy, ordinance, or court decision.

The Released Claims do not include any claim: (a) that arises exclusively after the date you execute this Agreement; (b) to vested rights under any of the Company's employee benefit plans; (c) relating to your right to receive the Accrued Bonus or Other Accrued Obligations; (d) relating to the enforcement of your rights under this Agreement; or (e) that cannot be released under law, such as claims for statutory unemployment benefits or workers' compensation benefits.

Return of Company Property

You agree and represent that, on or before the Separation Date, you returned all Company property, including keys, credit cards, security access cards, codes, iPads, memoranda, data, records, notes and other information in your possession or under your control in any form. Notwithstanding the foregoing, the Company agrees that you may keep your computer and cell phone, provided that the Company will be entitled to remove all confidential and proprietary information from such devices, to its reasonable satisfaction. You also must convert the service on the cell phone to a new service plan in your own name.

Confidential and Proprietary Information

You acknowledge and reaffirm the validity of the Inventions, Non-Disclosure and Non-Solicitation Agreement (the "Confidentiality Agreement") that you previously signed. By signing this Agreement, you acknowledge and agree that you have had access during your employment with the Company to confidential and proprietary information of Company ("Trade Secrets"), and further acknowledge and agree that the release or disclosure of any of the Company's Trade Secrets will cause irreparable injury. By signing this Agreement, you acknowledge that you have not used or disclosed, and agree that you will not at any time use or disclose, directly or indirectly, to any other entity or person, any Trade Secrets of the Company, its affiliates, or any officers, directors or employees. You also agree that you will not attempt to gain access to such information through restricted means. You understand that the Company would not provide you with the monies and benefits under this Agreement but for your affirmation of the obligations under the Confidentiality Agreement. You further understand and agree that a violation of this provision is a material breach of this Agreement and may be enforceable against the person making disclosure by injunctive relief and by an award of damages.

Nothing herein shall be construed to prevent disclosure of Trade Secrets as may be (1) permitted by the Protected Rights Section of this Agreement, (2) required by applicable law or regulation, pursuant to the valid order of a court of competent jurisdiction or an authorized government agency, or pursuant to a valid subpoena (provided that such disclosure does not exceed the extent of disclosure required by such law, regulation, order, or subpoena), or (3) to a court or government agency to the extent you have a protected right to do so. You shall promptly provide written notice to an authorized officer of the Company of any order, subpoena, or other attempt to require disclosure of Confidential Information under the immediately preceding subsection (2). Additionally, notwithstanding any other provision of this Agreement, you will not be held criminally or civilly liable under any federal or state trade secret law for any disclosure of a trade secret that: (1) is made (i) in confidence to a federal, state, or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a suspected violation of law; or (2) is made in a complaint or other document filed under seal in a lawsuit or other proceeding. If you file a lawsuit for retaliation by the Company for reporting a suspected violation of law, you may disclose the Company's trade secrets to your attorney and use the trade secret information in the court proceeding if you: (1) file any document containing trade secrets under seal; and (2) do not disclose trade secrets, except pursuant to court order.

Confidentiality of Agreement

You agree that you have not and will not, directly or indirectly, disclose/d any information related to the terms and contents of this Agreement to any other person or entity. You understand that the Company would not provide you with the monies and benefits under this Agreement but for your agreement to keep the Agreement confidential. You further understand and agree that a violation of this provision is a material breach of this Agreement and may be enforceable against the person making disclosure by injunctive relief and by an award of damages. This confidentiality obligation does not prohibit disclosure (a) permitted by the Protected Rights Section, (b) to your spouse, tax advisor, or attorney (each of whom you must ensure agrees to keep such information confidential), (c) to comply with a valid court order, subpoena, or other direction by a court, (d) to a governmental entity to the extent you have a protected right to make such disclosure, or (e) as otherwise required by law. You understand and agree that you will remain liable for any disclosure of such information by your spouse or agent.

Non-Disparagement

Except as permitted in the Protected Rights Section, you agree that you will not knowingly utter, to any person or entity, any statement, whether oral, written, or implied, that directly or indirectly disparages, denigrates, defames, or ridicules the Company or any other Releasee or the products, services, vendors, customers, or prospective customers of the Company or any other Releasee. Nor will you knowingly utter, to any person or entity, any negative statement concerning your employment with the Company or the termination of such employment. Nothing herein shall restrict you from providing truthful information to a court or government agency to the extent you have a protected right to do so, or as otherwise required by law.

The Company agrees that it will advise the members of its Board of Directors and its executive officers that they may not knowingly utter, to any person or entity, any statement, whether oral, written, or implied, that directly or indirectly disparages, denigrates, defames, or ridicules you and that they may not knowingly utter, to any person or entity, any negative statement concerning you or your employment with the Company or the termination of such employment. Nothing herein shall restrict any member of the Company's Board of Directors or any of the Company's executives from providing truthful information to a court or government agency to the extent they have a protected right to do so, or as otherwise required by law.

No Admission

The making of this Agreement is not, and shall not be construed or represented as, an admission that the Company or any other Releasee has violated any law or has committed any wrong against you or any other person or entity or an admission by you that you have committed any wrong against the Company or any other Releasee.

Severability, Choice of Law, and Venue

In the event that any provision of this Agreement is found to be illegal or unenforceable, such provision shall be severed or modified to the extent necessary to make it enforceable, and as so severed or modified, the remainder of this Agreement shall remain in full force and effect. This Agreement shall be governed and construed in accordance with laws of the State of New York, without regard to the principles of conflict of law. Any action or proceeding brought by either of the parties related to your employment or the termination of your employment, or to enforce this Agreement, shall be brought only in a state or federal court located in the State of New York, County of Erie. You hereby irrevocably submit to the exclusive jurisdiction of such courts and waive the defense of inconvenient forum to the maintenance of any such action or proceeding in such venue.

Third Party Claims

You warrant that you alone are entitled to the Separation Payments, and further warrant and agree that any claim to such amounts by any other person or entity by reason of any claim, lien, or debt of yours, or otherwise, shall be your sole and exclusive responsibility, and that you will hold harmless, indemnify, and defend each of the Releasees from any claim or action brought by any person or entity against any of the Releasees making any claim to all or part of the Separation Payments.

Protected Rights

Nothing in this Agreement limits your rights, protected under law, to file a charge or communicate with or otherwise participate in any investigation or proceeding conducted by the Securities and Exchange Commission, the Financial Industry Regulatory Authority, the Occupational Safety and Health Administration, the Equal Employment Opportunity Commission, the National Labor Relations Board, or any other government agency charged with enforcement of any law.

Section 409A

Any payments and benefits provided under this Agreement are intended to be exempt from or comply with Section 409A, and this Agreement shall be interpreted and construed in accordance with this intent. Any terms or provisions of this Agreement that are undefined or ambiguous shall be interpreted in a manner that makes the payment or benefit in question exempt from, or compliant with, Section 409A. However, neither the Company nor any Releasee will be liable to you or any other person with respect to any adverse tax consequences arising under Section 409A or any other provision of the Internal Revenue Code.

Entire Agreement

This Agreement, together with the Confidentiality Agreement, constitutes the entire agreement between you and the Company and may not be modified in any way except by written agreement signed by you and an authorized representative of the Company. This Agreement supersedes any and all other written and oral agreements and understandings between the parties relating to the subject matter hereof; provided that the Confidentiality Agreement will continue in effect in accordance with its terms. You are not eligible for any other payment or benefits from the Company, except for those expressly described in this Agreement.

Miscellaneous

Copies of signatures transmitted by facsimile or electronic mail shall have the same effect as original signatures. Company may assign this Agreement at any time. This Agreement shall inure to the benefit of Company and its successors and assigns. You may not assign this Agreement or any part hereof. Any purported assignment by you shall be null and void from the initial date of purported assignment. No provision of this Agreement may be amended or modified unless such amendment or modification is agreed to in writing and signed by you and by the General Counsel of the Company. No waiver by either of the parties of any breach by the other party hereto of any condition or provision of this Agreement to be performed by the other party hereto shall be deemed a waiver of any similar or dissimilar provision or condition at the same or any prior or subsequent time, nor shall the failure of or delay by either of the parties in exercising any right, power, or privilege hereunder operate as a waiver thereof to preclude any other or further exercise thereof or the exercise of any other such right, power, or privilege.

Acknowledgements

You acknowledge, affirm and agree that:

- (a) You have read the Agreement and understand its legal and binding effect;
- (b) You are acting voluntarily, knowingly, and willingly, and of your own free will in executing this Agreement;

(c) The consideration to be provided to you under this Agreement: (i) exceeds anything of value to which you would otherwise be entitled in the absence of this Agreement; (ii) fully and completely settles all claims you (and any attorney you may have retained) may have against the Company or any other Releasee for attorneys' fees, costs, disbursements, and the like; and (iii) is sufficient consideration for your promises under this Agreement;

(d) You have been advised by the Company in this writing to consult with an attorney of your choosing prior to executing this Agreement and you have done so to the extent you desired;

(e) You were given 21 calendar days to consider signing this Agreement, and if you sign this Agreement before the end of this 21 calendar day period, it is your voluntary decision to do so and you waive the remainder of the 21 calendar day period;

(f) You have until the end of such 21 calendar day period to deliver an executed copy of this Agreement to Kirk Thor, Integer Holdings Corporation, 5830 Granite Parkway, Suite 1150, Plano, Texas 75024, with a copy via email to kirk.thor@integer.net.

(g) You understand that if you sign this Agreement, you can change your mind and revoke your acceptance of this Agreement within seven (7) calendar days after signing it. Any revocation of your acceptance of this Agreement must be in writing and delivered to Kirk Thor, Executive Vice President & Chief Human Resources Officer, Integer Holdings Corporation, 5830 Granite Parkway, Suite 1150, Plano, Texas 75024, with a copy via email to kirk.thor@integer.net, no later than the seventh (7th) calendar day after you sign this Agreement. If you do not revoke your acceptance of this Agreement, the Agreement and your right to Separation Payments will become effective on the eighth (8th) day following the date you sign this Agreement;

(h) You have no known workplace injuries or occupational diseases, and you have been provided and/or have not been denied any leave (paid or unpaid) to which you were entitled during your employment;

(i) You have been paid in full for all work that you have performed for the Company and any other Releasee and, except for the Separation Payments, the Initial RSU Payment, the Second RSU Payment, any Accrued Bonus, and any Other Accrued Obligations, you are not owed any further wages, wage supplements, bonuses, commissions, benefits or other amounts of any kind whatsoever by any Releasee; and

(j) You further acknowledge and agree that, in entering into this Agreement, you have been provided the opportunity to consult your own attorney or other advisor, and that you have consulted your own attorney or other advisor.

/s/ Jeremy Friedman
Jeremy Friedman

12/31/2018
Date

Integer Holdings Corporation

By: /s/ Kirk Thor
Print Name: Kirk Thor
Print Title: CHRO

01/28/2019
Date

SUBSIDIARIES OF INTEGER HOLDINGS CORPORATION

Subsidiary	Jurisdiction of
Brivant Limited, d/b/a Lake Region Medical	Ireland
Centro de Construcción de Cardioestimuladores del Uruguay SA	Uruguay
Electrochem Solutions, Inc.	Massachusetts
Greatbatch European Business Development Organization, SA	Switzerland
Greatbatch Ltd., d/b/a Greatbatch Medical	New York
Greatbatch Medical, S. de R.L. de C.V.	Mexico
Greatbatch Medical SA	Switzerland
Greatbatch MCSO, S. de R.L. de C.V	Mexico
Greatbatch Netherlands B.V.	Netherlands
Integer Finance GmbH	Switzerland
Integer (Switzerland) GmbH	Switzerland
Lake Region Manufacturing, Inc., d/b/a Lake Region Medical	Minnesota
Lake Region Medical Limited	Ireland
Lake Region Medical, Inc., d/b/a Lake Region Medical	Maryland
Lake Region Medical Holdings Limited	Ireland
Lake Region Medical Sdn. Bhd.	Malaysia
Lake (Shanghai) Medical Device Trading Co., Ltd.	China
Venusa de Mexico, S. de R.L. de C.V.	Mexico
Venusa, Ltd	New York

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement Nos. 333-61476, 333-97209, 333-129002, 333-143519, 333-161159, 333-174559, 333-184604, 333-196320, and 333-211609 on Form S-8, and Registration Statement No. 333-210967 on Form S-3 of our reports dated February 22, 2019, relating to the consolidated financial statements and financial statement schedule of Integer Holdings Corporation and subsidiaries (the “Company”), and the effectiveness of the Company’s internal control over financial reporting, appearing in this Annual Report on Form 10-K of Integer Holdings Corporation for the year ended December 28, 2018.

/s/ Deloitte & Touche LLP

Williamsville, New York
February 22, 2019

CERTIFICATION

I, Joseph W. Dziejdzic, certify that:

1. I have reviewed this annual report on Form 10-K for the fiscal year ended December 28, 2018 of Integer Holdings Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by the report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting.
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditor and the audit committee of registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: February 22, 2019

/s/ Joseph W. Dziejdzic

Joseph W. Dziejdzic

President and Chief Executive Officer

(Principal Executive Officer)

CERTIFICATION

I, Jason K. Garland, certify that:

1. I have reviewed this annual report on Form 10-K for the fiscal year ended December 28, 2018 of Integer Holdings Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by the report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting.
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditor and the audit committee of registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: February 22, 2019

/s/ Jason K. Garland

Jason K. Garland

Executive Vice President and Chief Financial Officer

(Principal Financial Officer)

**CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350 AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, each of the undersigned officers of Integer Holdings Corporation (the "Company"), does hereby certify, to such officer's knowledge, that:

The Annual Report on Form 10-K for the fiscal year ended December 28, 2018 (the "Form 10-K") of the Company fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934 and the information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: February 22, 2019

/s/ Joseph W. Dziezic

Joseph W. Dziezic

President and Chief Executive Officer

(Principal Executive Officer)

Dated: February 22, 2019

/s/ Jason K. Garland

Jason K. Garland

Executive Vice President and Chief Financial Officer

(Principal Financial Officer)