ANALOG DEVICES INC
Form 10-K
November 24, 2015

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
Form 10-K
(Mark One)

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

For the fiscal year ended October 31, 2015
OR

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

For the transition period from to
Commission File No. 1-7819
Analog Devices, Inc.
(Exact name of registrant as specified in its charter)

Massachusetts	04-2348234
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
One Technology Way, Norwood, MA	02062-9106
(Address of principal executive offices)	(Zip Code)

(781) 329-4700
(Registrant's telephone number, including area code)

_____

Securities registered pursuant to Section 12(b) of the Act:	
Common Stock $0.16 2/3 Par Value	NASDAQ Global Select Market
Title of Each Class	Name of Each Exchange on Which Registered

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

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. YES þ NO o

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 o NO þ

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 þ NO o

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (Sec. 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). YES þ NO o

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (Sec. 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. o

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

Large accelerated filer þ	Accelerated filer o	Non-accelerated filer o (Do not check if a smaller reporting company)	Smaller reporting company o

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). YES o NO þ

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant was approximately $16,532,000,000 based on the last reported sale of the Common Stock on The NASDAQ Global Select Market on May 3, 2015. Shares of voting and non-voting stock beneficially owned by executive officers, directors and holders of more than 5% of the outstanding stock have been excluded from this calculation because such persons or institutions may be deemed affiliates. This determination of affiliate status is not a conclusive determination for other purposes.

As of October 31, 2015, there were 312,060,682 shares of Common Stock, $0.16 2/3 par value per share, outstanding.

Documents Incorporated by Reference

Document Description	Form 10-K Part
Portions of the Registrant’s Proxy Statement for the Annual Meeting of Shareholders to be held March 9, 2016	III

Note About Forward-Looking Statements

This Annual Report on Form 10-K, including “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” contains forward-looking statements regarding future events and our future results that are subject to the safe harbor created under the Private Securities Litigation Reform Act of 1995 and other safe harbors under the Securities Act of 1933 and the Securities Exchange Act of 1934. All statements other than statements of historical fact are statements that could be deemed forward-looking statements. These statements are based on current expectations, estimates, forecasts, and projections about the industries in which we operate and the beliefs and assumptions of our management. Words such as “expects,” “anticipates,” “targets,” “goals,” “projects,” “intends,” “plans,” “be “seeks,” “estimates,” “continues,” “may,” “could” and “will,” and variations of such words and similar expressions are intende identify such forward-looking statements. In addition, any statements that refer to projections regarding our future financial performance; our anticipated growth and trends in our businesses; our future liquidity, capital needs and capital expenditures; our future market position and expected competitive changes in the marketplace for our products; our ability to pay dividends or repurchase stock; our ability to service our outstanding debt; our expected tax rate; the effect of new accounting pronouncements; our ability to successfully integrate acquired businesses and technologies; and other characterizations of future events or circumstances are forward-looking statements. Readers are cautioned that these forward-looking statements are only predictions and are subject to risks, uncertainties, and assumptions that are difficult to predict, including those identified in Part I, Item 1A. "Risk Factors" and elsewhere in our Annual Report on Form 10-K. Therefore, actual results may differ materially and adversely from those expressed in any forward-looking statements. We undertake no obligation to revise or update any forward-looking statements, including to reflect events or circumstances occurring after the date of the filing of this report, except to the extent required by law.

PART I

ITEM 1. BUSINESS

Company Overview

Analog Devices, Inc. (we, Analog Devices or the Company) is a world leader in the design, manufacture and marketing of a broad portfolio of solutions that leverage high-performance analog, mixed-signal and digital signal processing technology, including integrated circuits (ICs), algorithms, software, and subsystems. Since our inception in 1965, we have focused on solving the engineering challenges associated with signal processing in virtually all types of electronic equipment. Our signal processing products play a fundamental role in converting, conditioning, and processing real-world phenomena such as temperature, pressure, sound, light, speed and motion into electrical signals to be used in a wide array of electronic devices. As new generations of applications, such as the Internet of Things, evolve, new needs for high-performance analog signal processing and digital signal processing (DSP) technology are generated. We focus on sensing, measurement, and connectivity challenges that apply to a diverse set of customers and markets. We combine data converters, amplifiers and linear products, radio frequency (RF) ICs, power management products, sensors based on micro-electro mechanical systems (MEMS) technology and other sensors, and processing products, including DSP, micro controllers and other processors, into technology platforms that we adapt to specific customer and market needs, leveraging our engineering investment across a broad base of customers. We focus on key strategic markets where our signal processing technology is often a critical differentiator in our customers' products, in particular, the industrial, automotive, consumer and communications markets. Used by over 100,000 customers worldwide, our products are embedded inside many different types of electronic equipment including:

- Industrial process control systems
- Factory automation systems
- Instrumentation and measurement systems
- Energy management systems
- Aerospace and defense electronics
- Automobiles
- Medical imaging equipment
- Patient monitoring devices
- Wireless infrastructure equipment
- Networking equipment
- Optical systems
- Portable electronic devices

We were incorporated in Massachusetts in 1965. Our headquarters are near Boston, in Norwood, Massachusetts. In addition, we have manufacturing facilities in Massachusetts, Ireland, and the Philippines, and have more than thirty design facilities worldwide. Our common stock is listed on The NASDAQ Global Select Market under the symbol ADI and is included in the Standard & Poor's 500 Index.

Available Information

We maintain a website with the address www.analog.com. We are not including the information contained on our website as a part of, or incorporating it by reference into, this Annual Report on Form 10-K. We make available free of charge through our website our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K (including exhibits), and amendments to these reports, as soon as reasonably practicable after we electronically file such material with, or furnish such material to, the Securities and Exchange Commission (SEC). We also make available on our website our corporate governance guidelines, the charters for our audit committee, compensation committee, and nominating and corporate governance committee, our equity award granting policies, our code of business conduct and ethics which applies to our directors, officers and employees, and our related person transaction policy, and such information is available in print and free of charge to any shareholder of Analog Devices who requests it. In addition, we intend to disclose on our website any amendments to, or waivers from, our code of business conduct and ethics that are required to be publicly disclosed pursuant to rules of the SEC or NASDAQ.

Industry Background

Semiconductor components are the electronic building blocks used in electronic systems and equipment. These components are classified as either discrete devices, such as individual transistors, or ICs, in which a number of transistors and other elements are combined to form a more complicated electronic circuit. ICs may be divided into two general categories, digital and analog. Digital circuits, such as memory devices and microprocessors, generally process on-off electrical signals, represented by binary digits, "1" and "0". In contrast, analog ICs monitor, condition,

amplify or transform continuous analog signals associated with physical properties, such as temperature, pressure, weight, light, sound or motion, and play an important role in bridging between real world phenomena and a variety of electronic systems. Analog ICs also provide voltage regulation and power control to electronic systems.

Organizational Structure

We are organized in two business groups: the Industrial and Healthcare Business Group and the Communications and Automotive Business Group. These two groups align our technology offerings with the predominant markets served in order to facilitate decision making throughout our organization. The Industrial and Healthcare Business Group is responsible for the industrial, healthcare and consumer markets and the precision converters, high-performance linear and sensor technology areas. The Communications and Automotive Business Group is responsible for the communications infrastructure and automotive electronics markets, as well as the radio frequency/microwave, high-speed converters and digital signal processing technology areas. Our sales and marketing operations are integrated within these groups and are chartered with unifying the customer experience across direct, distribution, and digital channels. Manufacturing, finance, legal, and human resources are managed as separate functional operations providing support across the Company.

Principal Products

We design, manufacture and market a broad line of high-performance ICs that incorporate analog, mixed-signal and digital signal processing technologies. Our ICs are designed to address a wide range of real-world signal processing applications. We sell our ICs to tens of thousands of customers worldwide, many of whom use products spanning our core technologies in a wide range of applications. Our IC product portfolio includes both general-purpose products used by a broad range of customers and applications, as well as application-specific products designed for specific clusters of customers in key target markets. By using readily available, high-performance, general-purpose products in their systems, our customers can reduce the time they need to bring new products to market. Given the high cost of developing more customized ICs, our standard products often provide a cost-effective solution for many low to medium volume applications. We also focus on working with leading customers to design application-specific solutions. We begin with our existing core technologies, which leverage our data conversion, amplification, RF and microwave, MEMS, power management and DSP capabilities, and devise a solution to more closely meet the needs of a specific customer or group of customers. Because we have already developed the core technology platform for our general-purpose products, we can create application-specific solutions quickly.

We produce and market a broad range of ICs and operate in one reportable segment based on the aggregation of six operating segments. The ICs sold by each of our operating segments are manufactured using similar semiconductor manufacturing processes and raw materials in either our own production facilities or by third-party wafer fabricators using proprietary processes. Our ICs are sold to customers globally through a direct sales force, third-party distributors, independent sales representatives and via our website. Our ten highest revenue products, in the aggregate, accounted for approximately 16% of our revenue for our fiscal year ended October 31, 2015 (fiscal 2015).

Analog Products

Our analog and mixed signal IC technology has been the foundation of our business for over four decades, and we are one of the world’s largest suppliers of high-performance analog ICs. Our analog signal processing ICs are primarily high-performance devices, offering higher dynamic range, greater bandwidth, and other enhanced features. We believe that the principal advantages these products have as compared to competitors’ products include higher accuracy, higher speed, lower cost per function, smaller size, lower power consumption and fewer components, resulting in improved performance and reliability. Our product portfolio includes several thousand analog ICs, any one of which can have as many as several hundred customers. Our analog ICs typically have long product life cycles. Our analog IC customers include original equipment manufacturers (OEMs) and customers who build electronic subsystems for integration into larger systems.

Converters — We are a leading supplier of data converter products. Data converters translate real-world analog signals into digital data and also translate digital data into analog signals. Data converters remain our largest and most diverse product family and an area where we are continuously innovating to enable our customers to redefine and differentiate their products. Our converter products combine sampling rates and accuracy with the low noise, power, price and small package size required by industrial, automotive, consumer, and communications electronics.

Amplifiers/Radio Frequency — We are also a leading supplier of high-performance amplifiers. Amplifiers are used to condition analog signals. High performance amplifiers emphasize the performance dimensions of speed and precision.

Within this product portfolio we provide precision, instrumentation, high speed, intermediate frequency/RF, broadband, and other amplifiers. We also offer an extensive portfolio of precision voltage references that are used in a wide variety of applications. Our analog product line also includes a broad portfolio of high performance RF ICs covering the entire RF signal chain, from industry-leading stand-alone RF function blocks such as phase locked loops, frequency synthesizers, mixers, modulators, demodulators, and power detectors, to highly integrated broadband and short-range single chip transceiver solutions. Our high performance RF ICs support the high performance requirements of cellular infrastructure and a broad range of applications in our target markets.

Other Analog — Also within our analog technology portfolio are products that are based on MEMS technology. This technology enables us to build extremely small sensors that incorporate an electromechanical structure and the supporting analog circuitry for conditioning signals obtained from the sensing element. Our MEMS product portfolio includes accelerometers used to sense acceleration, gyroscopes used to sense rotation and inertial measurement units used to sense multiple degrees of freedom combining multiple sensing types along multiple axes. The majority of our current revenue from MEMS products is derived from the automotive end market. In addition to our MEMS products, our other analog product category includes isolators that enable designers to implement isolation in designs without the cost, size, power, performance, and reliability constraints found with optocouplers. Our isolators have been designed into hundreds of applications, such as universal serial bus isolation in patient monitors, where it allows hospitals and physicians to adopt the latest advances in computer technology to supervise patient health and wirelessly transmit medical records. In smart metering applications, our isolators provide reliable electrostatic discharge performance that helps reduce meter tampering. Likewise, in satellites, where any malfunction can be catastrophic, our isolators help protect the power system while enabling designers to achieve small form factors.

Power Management & Reference — Power management and reference products make up the balance of our analog sales. Those products, which include functions such as power conversion, driver monitoring, sequencing and energy management, are developed to complement analog signal chain components across core market segments from micro power, energy-sensitive battery applications to efficient, high performance power systems in infrastructure and industrial applications.

Digital Signal Processing Products

Digital Signal Processing products (DSPs) complete our product portfolio. DSPs are optimized for high-speed numeric calculations, which are essential for instantaneous, or real-time, processing of digital data generated, in most cases, from analog to digital signal conversion. Our DSPs are designed to be fully programmable and to efficiently execute specialized software programs, or algorithms, associated with processing digitized real-time, real-world data. Programmable DSPs are designed to provide the flexibility to modify the device’s function quickly and inexpensively using software. Our general-purpose DSP IC customers typically write their own algorithms using software development tools provided by us and third-party suppliers. Our DSPs are designed in families of products that share common architectures and therefore can execute the same software across a range of products. We support these products with easy-to-use development tools, which are designed to reduce our customers’ product development costs and time-to-market. Our customers use our products to solve a wide range of signal processing challenges across our core market and segment focus areas within the industrial, automotive, consumer and communications end markets. As an integrated part of our customers' signal chain, there are typically many other Analog Devices products connected to our processors, including converters, audio and video codecs and power management solutions.

Markets and Applications

The breakdown of our fiscal 2015 revenue by end market is set out in the table below.

End Market	Percent of Fiscal 2015 Revenue
Industrial	44%
Automotive	15%
Consumer	21%
Communications	20%

The following describes some of the characteristics of, and customer products within, our major end markets:

Industrial — Our industrial market includes the following sectors:

Industrial and Instrumentation — Our industrial automation applications generally require ICs that offer performance greater than that available from commodity-level ICs but generally do not have production volumes that warrant custom ICs. There is a trend towards development of products focused on particular sub-applications, which incorporate combinations of analog, mixed-signal, and DSP ICs to achieve the necessary functionality. Our instrumentation customers differentiate themselves by using the highest performance analog and mixed-signal ICs available. Our industrial and instrumentation market includes applications such as:

- Process control systems
- Robotics
- Environmental control systems
- Oscilloscopes
- Lab, chemical, and environmental analyzers
- Weigh scales

Defense/Aerospace — The defense, commercial avionics and space markets all require high-performance ICs that meet rigorous environmental and reliability specifications. Many of our analog ICs can be supplied in versions that meet these standards. In addition, many products can be supplied to meet the standards required for broadcast satellites and other commercial space applications. Most of our products sold in this market are specially tested versions of products derived from our standard product offering. As end systems are becoming more complex many of our customers in this market also look for sub-systems. We supply sub-systems to many of these customers.

Customer products include:

- Navigation systems
- Radar systems
- Space and satellite communications
- Security devices
- Communication systems

Energy Management — The desire to improve energy efficiency, conservation, reliability, and cleanliness is driving investments in renewable energy, power transmission and distribution systems, electric meters, and other innovative areas. The common characteristic behind these efforts is the addition of sensing, measurement, and communication technologies to electrical infrastructure. Our offerings include both standard and application-specific products and are used in applications such as:

- Utility meters
- Wind turbines
- Meter communication modules
- Solar inverters
- Substation relays and automation equipment
- Building energy automation/control

Healthcare — Two significant trends in the healthcare market today are the increasing need for higher channel counts in medical imaging systems to improve resolution and throughput while achieving a lower cost per channel, and the movement of highly accurate patient monitoring devices from the hospital environment to the home, improving patient care and reducing overall healthcare costs. Our innovative technologies are designed into a variety of high performance imaging, patient monitoring, medical instrumentation, and home health devices. Our offerings include both standard and application-specific products and are used in applications such as:

- Ultrasound
- Infusion pumps
- CT scanners
- Clinical lab instrumentation
- Digital x-ray
- Surgical instrumentation
- Multi-parameter patient monitors
- Blood analyzers
- Pulse oximeters
- Activity monitors

Automotive — We develop differentiated high performance signal processing solutions that enable sophisticated automotive systems to be greener, safer and smarter. Through collaboration with manufacturers worldwide, we have achieved significant market share through a broad portfolio of analog, digital and MEMS ICs that increase fuel efficiency, enhance vehicle stability and safety and improve the in cabin audio/video experience. Specifically, we have developed products used in applications such as:

Greener	Safer	Smarter
• Hybrid electric / electric vehicles	• Crash sensors in airbag systems	• Car audio, voice processing and connectivity
• Battery monitoring and management systems	• Electronic stability systems	• Video processing and connectivity
	• Advanced driver assistance systems (RADAR)	• Car telematics

Consumer — To address the market demand for state of the art personal and professional entertainment systems and the consumer demand for high quality user interfaces, music, movies and photographs, we have developed analog, digital and mixed-signal solutions that meet the rigorous cost and time-to-market requirements of the consumer electronics market. The emergence of high-performance, feature-rich consumer products has created a market for our high-performance ICs with a high level of specific functionality that enables best in class user experience. These products include:

- Portable devices (smart phones, tablets and wearable devices) for media and vital signs motoring
- Prosumer audio/video equipment

applications

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Communications — The development of broadband, wireless and internet infrastructures around the world has created an important market for our communications products. Communications technology involves the processing of signals that are converted from analog to digital and digital to analog form during the process of transmitting and receiving data. The need for higher speed and reduced power consumption, coupled with more reliable, bandwidth-efficient communications, creates demand for our products, which are used in the full spectrum of signal processing for internet protocol, video streaming and voice communication. In wireless and broadband communication applications, our products are incorporated into:

- Cellular basestation equipment
- Wireless backhaul systems
- Wired networking and data center equipment
- Satellite systems

See Note 4 in the Notes to Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K for further information about our products by end market.

Research and Development

Our markets are characterized by rapid technological changes and advances. Accordingly, we make substantial investments in the design and development of new products and manufacturing processes, and the improvement of existing products and manufacturing processes. We spent approximately $637 million during fiscal 2015 on the design, development and improvement of new and existing products and manufacturing processes, compared to approximately $560 million during the fiscal year ended November 1, 2014 (fiscal 2014) and approximately $513 million during the fiscal year ended November 2, 2013 (fiscal 2013).

Our research and development strategy focuses on building technical leadership in core technology platforms, which include converters, amplifiers and RF and microwave, MEMS, power management, and DSP. In support of our research and development activities, we employ thousands of engineers involved in product and manufacturing process development throughout the world.

Patents and Other Intellectual Property Rights

We seek to establish and maintain our proprietary rights in our technology and products through the use of patents, copyrights, mask works, trademarks and trade secrets. We have a program to file applications for and obtain patents, copyrights, mask works and trademarks in the United States and in selected foreign countries where we believe filing for such protection is appropriate. We also seek to maintain our trade secrets and confidential information by nondisclosure policies and through the use of appropriate confidentiality agreements. We have obtained a substantial number of patents and trademarks in the United States and in other countries. As of October 31, 2015, we held approximately 2,280 U.S. patents and approximately 635 non-provisional pending U.S. patent applications with expiration dates ranging from 2015 through 2034. There can be no assurance, however, that the rights obtained can be successfully enforced against infringing products in every jurisdiction. While our patents, copyrights, mask works, trademarks and trade secrets provide some advantage and protection, we believe our competitive position and future success is largely determined by such factors as the system and application knowledge, innovative skills, technological expertise and management ability and experience of our personnel; the range and success of new products being developed by us; our market brand recognition and ongoing marketing efforts; and customer service and technical support. It is generally our policy to seek patent protection for significant inventions that may be patented, though we may elect, in certain cases, not to seek patent protection even for significant inventions, if we determine other protection, such as maintaining the invention as a trade secret, to be more advantageous. We also have trademarks that are used in the conduct of our business to distinguish genuine Analog Devices products and we maintain cooperative advertising programs to promote our brands and identify products containing genuine Analog Devices components.

Sales Channels

We sell our products globally through a direct sales force, third-party distributors, independent sales representatives and via our website. We have direct sales offices, sales representatives and/or distributors in over 40 countries outside North America.

We support our worldwide sales efforts through our website and with extensive promotional programs that include editorial coverage and paid advertising in online and printed trade publications, webinars, social media and communities, promotional and training videos, direct mail programs, technical seminars and participation in trade

shows. We publish, share and distribute technical content such as data sheets, application guides and catalogs. We maintain a staff of field application engineers who aid customers in incorporating our products into their products. In addition, we offer a variety of web-based tools that ease product selection and aid in the design process for our customers.

We derived approximately 50% of our fiscal 2015 revenue from sales made through distributors. These distributors typically maintain an inventory of our products. Some of them also sell products that compete with our products, including those for which we are an alternate source. In all regions of the world, we defer revenue and the related cost of sales on shipments to distributors until the distributors resell the products to their customers. We make sales to distributors under agreements that allow distributors to receive price adjustment credits and to return qualifying products for credit, as determined by us, in order to reduce the amounts of slow-moving, discontinued or obsolete product from their inventory. These agreements limit such returns to a certain percentage of our shipments to that distributor during the prior quarter. In addition, distributors are allowed to return unsold products if we terminate the relationship with the distributor. Additional information relating to our sales to distributors is set forth in Note 2n in the Notes to Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K.

Segment Financial Information and Geographic Information

We operate and track our results in one reportable segment based on the aggregation of six operating segments. Through subsidiaries and affiliates, we conduct business in numerous countries outside the United States. During fiscal 2015, we derived approximately 61% of our revenue from customers in international markets. Our international business is subject to risks customarily encountered in foreign operations, including fluctuations in foreign currency exchange rates and controls, import and export controls, and other laws, policies and regulations of foreign governments. Although we engage in hedging transactions to reduce our exposure to currency exchange rate fluctuations, our competitive position may be adversely affected by changes in the exchange rate of the United States dollar against other currencies.

Revenue by geographic region, based on the primary location of our customers' design activity for our products, for fiscal 2015 was as follow:

Geographic Area	Percent of Fiscal 2015 Revenue
United States	39%
Rest of North/South America	3%
Europe	27%
Japan	9%
China	15%
Rest of Asia	7%

For further detail regarding revenue and other financial information about our industry, segment and geographic areas, see our Consolidated Financial Statements and Note 4 in the related Notes contained in Item 8 of this Annual Report on Form 10-K. For a discussion of important risk factors that may materially affect us, see the Risk Factors contained in Item 1A of this Annual Report on Form 10-K.

Customers

We have over 100,000 customers worldwide. Our largest single customer represented approximately 13% of fiscal 2015 revenue. No sales to an individual customer accounted for more than 10% of fiscal 2014, or fiscal 2013 revenue. Our customers use hundreds of different types of our products in a wide range of applications spanning the industrial, automotive, consumer and communication markets. Our 20 largest customers accounted for approximately 39% of our fiscal 2015 revenue.

Seasonality

Sales to customers during our first fiscal quarter may be lower than other quarters due to plant shutdowns at some of our customers during the holiday season. In general, the seasonality for any specific period of time has not had a material impact on our results of operations. In addition, as explained in our risk factors contained in Item 1A of this Annual Report on Form 10-K, our revenue is more likely to be influenced on a quarter to quarter basis by cyclicality in the semiconductor industry.

Production and Raw Materials

Monolithic IC components are manufactured in a sequence of semiconductor production steps that include wafer fabrication, wafer testing, cutting the wafer into individual “chips,” or dice, assembly of the dice into packages and electrical testing of the devices in final packaged form. The raw materials used to manufacture these devices include silicon wafers, processing chemicals (including liquefied gases), precious metals and ceramic and plastic used for packaging.

We develop and employ a wide variety of proprietary manufacturing processes that are specifically tailored for use in fabricating high-performance analog, DSP, mixed-signal and MEMS ICs. We also use bipolar and complementary metal-oxide semiconductor, or CMOS, wafer fabrication processes.

Our IC products are fabricated both at our production facilities and by third-party wafer fabricators. Our products are manufactured in our own wafer fabrication facilities using proprietary processes and at third-party wafer-fabrication foundries using sub-micron digital CMOS processes. We currently source approximately 60% of our wafer requirements annually from third-party wafer fabrication foundries, primarily Taiwan Semiconductor Manufacturing Company (TSMC). We operate wafer fabrication facilities in Wilmington, Massachusetts and Limerick, Ireland. We also operate test facilities located in the Philippines and use third-party subcontractors for the assembly and testing of our products.

Capital spending was approximately $154 million in fiscal 2015, compared with approximately $178 million in fiscal 2014. We expect capital expenditures for fiscal 2016 to be in the range of $140 million to $160 million.

Our products require a wide variety of components, raw materials and external foundry services, most of which we purchase from third-party suppliers. We have multiple sources for many of the components and materials that we purchase and incorporate into our products. However, a large portion of our external wafer purchases and foundry services are from a limited number of suppliers, primarily TSMC. If TSMC or any of our other key suppliers are unable or unwilling to manufacture and deliver sufficient quantities of components to us, on the time schedule and of the quality that we require, we may be forced to seek to engage additional or replacement suppliers, which could result in significant expenses and disruptions or delays in manufacturing, product development and shipment of product to our customers. Although we have experienced shortages of components, materials and external foundry services from time to time, these items have generally been available to us as needed.

Backlog

Backlog at the end of fiscal 2015 was approximately $626 million, up from approximately $538 million at the end of fiscal 2014. We define backlog as of a particular date to mean firm orders from a customer or distributor with a requested delivery date within thirteen weeks. Backlog is impacted by the tendency of customers to rely on shorter lead times available from suppliers, including us, in periods of depressed demand. In periods of increased demand, there is a tendency towards longer lead times that has the effect of increasing backlog and, in some instances, we may not have manufacturing capacity sufficient to fulfill all orders. As is customary in the semiconductor industry, we allow most orders to be canceled or deliveries to be delayed by customers without significant penalty. Accordingly, we believe that our backlog at any time should not be used as an indication of our future revenue.

We typically do not have long-term sales contracts with our customers. In some of our markets where end-user demand may be particularly volatile and difficult to predict, some customers place orders that require us to manufacture product and have it available for shipment, even though the customer is unwilling to make a binding commitment to purchase all, or even any, of the product. In other instances, we manufacture product based on forecasts of customer demand. As a result, we may incur inventory and manufacturing costs in advance of anticipated sales and are subject to the risk of cancellation of orders leading to a sharp reduction of sales and backlog. Further, those orders or forecasts may be for products that meet the customer’s unique requirements so that those canceled orders would, in addition, result in an inventory of unsaleable products, resulting in potential inventory write-offs. As a result of lengthy manufacturing cycles for some of our products that are subject to these uncertainties, the amount of unsaleable product could be substantial.

Government Contracts

We estimate that approximately 3% of our fiscal 2015 revenue was attributable to sales to the U.S. government and U.S. government contractors and subcontractors. Our government contract business is predominantly in the form of

negotiated, firm, fixed-price subcontracts. Most of these contracts and subcontracts contain standard provisions relating to termination at the election of the U.S. government.

Acquisitions, Divestitures and Investments

An element of our business strategy involves expansion through the acquisition of businesses, assets, products or technologies that allow us to complement our existing product offerings, expand our market coverage, increase our engineering workforce or enhance our technological capabilities. From time to time, we consider acquisitions and divestitures that may strengthen our business.

On July 22, 2014, we completed the acquisition of Hittite Microwave Corporation (Hittite), a company that designed and developed high performance integrated circuits, modules, subsystems and instrumentation for radio frequency, microwave and millimeterwave applications. The total consideration paid to acquire Hittite was approximately $2.4 billion, financed through a combination of existing cash on hand and a 90-day term loan facility of $2.0 billion.

On October 31, 2013, we completed the sale of the assets and intellectual property related to our microphone product line to InvenSense, Inc. (InvenSense). We received $100.0 million in cash for the assets and intellectual property at the closing.

Additional information relating to our acquisition and divestiture activities during fiscal years 2015, 2014 and 2013 is set forth in Note 6 and Note 17 of the Notes to Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K.

Competition

We believe that competitive performance in the marketplace for signal processing products depends upon multiple factors, including technological innovation, strength of brand, diversity of product portfolio, product performance, technical support, delivery capabilities, customer service quality, reliability and price, with the relative importance of these factors varying among products, markets, and customers.

We compete with a number of semiconductor companies in markets that are highly competitive. Our competitors include but are not limited to:

- Robert Bosch GmbH
- Broadcom Corporation
- Maxim Integrated Products, Inc.