DSP GROUP INC /DE/
Form 10-K
March 18, 2013
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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 31, 2012

Commission File Number 001-35256

DSP GROUP, INC.

(Exact name of registrant as specified in its charter)

Delaware	**94-2683643**
(State or other jurisdiction of incorporation and organization)	**(I.R.S. Employer Identification No.)**

2580 North First Street, Suite 460, San Jose, CA 95131

(Address of principal executive offices, including zip code)

(408) 986-4300

(Registrant s telephone number)

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

None

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

Common Stock, $.001 per share

(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 ¨ No x

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

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 x No ¨

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 (§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 x No ¨

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

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

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

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

As of June 30, 2012, the aggregate market value of voting stock held by non-affiliates of the Registrant, based on the closing price of the Common Stock on June 29, 2012 as reported on the NASDAQ Global Select Market, was approximately $88,042,762. Shares of Common Stock held by each officer and director and by each person who owns 5% or more of the outstanding Common Stock (other than Starboard Value LP and its affiliates) have been excluded from this computation in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of March 4, 2013, the Registrant had outstanding 21,916,855 shares of Common Stock.

Documents incorporated by reference: Portions of the Registrant s proxy statement to be filed pursuant to Regulation 14A within 120 days after Registrant s fiscal year end of December 31, 2012 are incorporated herein by reference into Item 5 of Part II and Items 10, 11, 12, 13 and 14 of Part III of this annual report.

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This report and certain information incorporated herein by reference contain forward-looking statements, which are provided under the safe harbor protection of the Private Securities Litigation Reform Act of 1995. All statements included or incorporated by reference in this report, other than statements that are purely historical in nature, are forward-looking statements. Forward-looking statements are generally written in the future tense and/or are preceded by words such as will, may, should, could, expect, suggest, believe, anticipate, intend, plan, or other similar words. Forward-looking statements include statements regarding:

Our belief that sales of our DECT products will continue to represent a substantial percentage of our revenues for 2013;

Our belief that our past research and development investments in new technologies are beginning to materialize;

Our belief that the rapid deployment of new communication access methods, including mobile, wireless broadband, cable and other connectivity, the traditional cordless telephony market using fixed-line telephony is declining and will continue to decline, which will reduce our revenues derived from, and unit sales of, cordless telephony products;

Our belief that the market will remain price sensitive for 2013 for our traditional cordless telephony products and expect that price erosion and the decrease in the average selling prices of such products to continue;

Our belief that our cost reduction programs implemented in 2012 will result in an additional decrease in operating expenses for 2013;

Our anticipation that annualized revenues generated from our next generation products to increase significantly in 2013 as compared to 2012;

Our belief that commercial shipments of products incorporating our next generation products will continue during 2013;

Our focus remains on generating non-GAAP operating income for 2013;

Our anticipation that there will be a significant decrease in our operating expenses for 2013, as compared to 2012;

Our belief that our available cash and cash equivalents at December 31, 2012 should be sufficient to finance our operations for the foreseeable future; and

Market data prepared by third parties, including IDC.

This Annual Report on Form 10-K includes trademarks and registered trademarks of DSP Group. Products or service names of other companies mentioned in this Annual Report on Form 10-K may be trademarks or registered trademarks of their respective owners.

DSP Group, Inc. is referred to in this Annual Report as DSP Group, we, us, our or company.

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PART I

Item 1. BUSINESS.

Introduction

DSP Group, Inc. (NASDAQ: DSPG) is a leading global provider of wireless chipset solutions for converged communications. Delivering semiconductor system solutions with software and reference designs, DSP Group enables original equipment manufacturers (OEMs), original design manufacturers (ODMs), consumer electronics (CE) manufacturers and service providers to cost-effectively develop new revenue-generating products with fast time to market.

At the forefront of semiconductor innovation and operational excellence for over two decades, DSP Group provides a broad portfolio of wireless chipsets integrating DECT (Digital Enhanced Cordless Telecommunications)/CAT-iq (Cordless Advanced Technology Internet and Quality), DECT ULE (Ultra Low Energy), Wi-Fi, PSTN (Public Switched Telephone Network), HDClear (previously BoneTone) intelligent voice enhancement, background noise elimination and speech recognition accuracy enhancement, video and VoIP (Voice over Internet Protocol) technologies.

DSP Group enables converged voice, audio, video and data connectivity across diverse consumer and business products, including connected multimedia terminals, mobile devices, home automation & security, cordless phones, VoIP systems and home gateways. Leveraging industry-leading experience and expertise, DSP Group partners with CE manufacturers and service providers to shape the future of converged communications at home and office.

We were incorporated in California in 1987 and reincorporated in Delaware in 1994. We completed our initial public offering in February 1994.

In November 2002, we transferred the assets and liabilities of our DSP cores licensing business to one of our then wholly-owned subsidiaries and immediately after the separation, the subsidiary affected a combination with Parthus Technologies plc to form CEVA, Inc. (NASDAQ: CEVA).

In September 2007, we acquired the cordless and VoIP terminals business (the CIPT Business) of NXP B.V. (NXP), then a part of NXP s Mobile and Personal Business Unit. The CIPT Business products have been fully integrated within DSP Group s product offerings.

In December 2011, we exercised our option from 2009 to acquire all of the equity interests of BoneTone Communications Ltd. (BoneTone), a provider of innovative bone conduction technology for intelligent voice enhancement and noise elimination that redefine audio quality and voice intelligibility in mobile devices and headsets, enabling us to enter new markets.

Industry Environment and Our Business

Over the past two decades, the desire to leverage existing telecommunications infrastructure, compounded by the increased use of new data-intensive computing, communication and video applications, is driving the convergence of voice, audio, data and video.

Our focus on the design of highly-integrated, mixed-signal devices that combine complex RF (radio frequency), analog and digital functions enables us to address the complex challenges of integrating various technologies, platforms and processes posed by these emerging trends in the communications industry. Our integrated circuit (IC) products are customizable, achieve high functionality and performance at reduced power consumption, especially for cordless telephony, IP telephony, multimedia products and home automation devices that require very low power consumption, and can be manufactured in high volumes using cost-effective process technologies. Our systems architecture provides an open design environment for ODMs to design and market their own end products with maximum differentiation.

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Our expertise and investment in software development, including Board Support Package (BSP) and drivers layer, telephony, communication and power management stacks, application layer in Real-time Operating System (RTOS) and Full Featured Operating System (FFOS) frameworks, enable our customers fast time to market with cost- and performance-optimized solutions.

In response to the growing trend towards wireless residential and business connectivity in the past few years, we developed and are offering leading wireless voice and data transmission solutions for various applications. Since 1999, we have developed various technologies, including Direct Sequence Spread Spectrum (DSSS), Frequency Hopping Spread Spectrum (FHSS), Orthogonal Frequency Digital Modulation (OFDM), Digital Narrow Band, Complementary Metal Oxide Semiconductor (CMOS), Gallium Arsenide (GaAs) technology, and Silicon Germanium (SiGe) RF chips for 900MHz, 2.4GHz and 5.8GHz Industry Scientific and Medical (ISM) bands, European DECT (1.9GHz), DECT 6.0 (1.8GHz), Korean DECT (1.7GHz), Bluetooth (2.4GHz) and Wi-Fi (802.11, 2.4GHz/5GHz). With the acquisition of the CIPT Business in 2007, we added both BiCMOS (Bipolar CMOS) and deep sub-micron CMOS technologies to our portfolio of technologies.

Recently, we expanded into chips and phones for office and business applications, and have quickly gained market share in this growing segment. Today, DSP Group offers a comprehensive solution for voice-over-IP (VoIP) home and office products. VoIP is a technology that enables users to make voice calls via a broadband Internet connection rather than an analog phone line.

Committed to advancing technology across the CE and telecommunications markets, DSP Group is actively involved in prominent industry associations, including the DECT Forum, the European Telecommunications Standards Institute and the Wi-Fi Alliance. DSP Group is also deeply involved in all stages of defining DECT CAT-iq as well as DECT ULE standards and ULE Alliance and is building full eco-systems to support these solutions. We are an active member of the Home Gateway Initiative (HGI), and support the specification activities of CableLabs, which is contributing to the evolution and implementation of CAT-iq in various markets and applications. Such involvement enables us to define standards and keep abreast of the latest innovations and requirements. We also maintain close relationships with many world-leading telecommunication service providers, thereby providing us with insight into future plans across the industry.

Furthermore, with mobile devices playing an increasingly significant role in peoples lives, in February 2013, we unveiled our revolutionary HDClear solution, a comprehensive voice enhancement product for mobile devices. According to a recent Reuters report, market research firm IDC estimates that 63 percent of all mobile units will incorporate technology to eliminate background noise by 2015, or about 1.7 billion units, up from 500 million units in 2012. Incorporating proprietary noise cancellation algorithms, HDClear dramatically improves user experience and delivers unparalleled voice quality and call intelligibility. This technology will enable people to use their cell phones for conversation in virtually any condition, whether in a car, on a train or in any noisy surroundings. HDClear will also facilitate the use of speech recognition and voice commands by eliminating background noise. Our HDClear product family was developed through the acquisition of BoneTone and the addition of their innovative intelligent voice enhancement.

With our in-house innovations and acquired intellectual property, we are now able to bring additional value to our existing market verticals and address new market verticals, including markets for office phones, mobile devices and headsets, thus expanding our market opportunities.

Target Markets and DSP Group Products

Our work in the field of wireless residential and business technologies, as well as our prior acquisitions, have yielded various synergistic product families. As further discussed below, the acquisition of the CIPT Business significantly enhanced our product portfolio, especially in the cordless telephony and VoIP areas, whereas the acquisition of BoneTone enhanced our offerings in the cellular telephony, headsets and portable devices areas.

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In response to market trends, we are concentrating our development efforts on new products, also referred to as next generation products, and opportunities to leverage our strong technology base and customer relationships to address evolving market opportunities and take advantage of the current market trends in our domain. Our next generation products include three main groups of products: (i) DECT/CAT-iq ICs targeted for residential gateway devices supplied by telecommunication service providers and which integrate the DECT/CAT-iq functionality and address the newly evolving market of smart home phones and home automation applications; (ii) VoIP products for enterprise, home and SoHo; and (iii) products for the mobile market in the form of fixed-mobile convergence solutions, headsets (Bluetooth, DECT, wired and gaming) and products targeted for mobile devices that incorporate our HDClear product family.

Products Targeted for Cordless Telephony, Home Gateways and Home Automation Market

Our DECT, 2.4 GHz and 5.8 GHz technologies are targeted at three broad categories of products: (a) digital cordless telephony, (b) home automation & security applications and (c) gateways, both home gateways and fixed mobile convergence.

We are a world-leading provider of chipsets for cordless telephony applications. Our XceedR cordless chipsets provide a total integrated digital cordless solution, home automation & security solution and home gateway solution, all of which include all required digital baseband, analog interface and RF functionality.

XceedR enables worldwide coverage, supporting all RF bands and cordless protocols, such as:

1.7GHz -1.9GHz DECT used in Europe, U.S. (DECT6.0), Korea, Japan and Latin America;

2.4GHz used in Japan, China and the U.S.; the dominant protocols for this RF band is our proprietary EDCT (Enhanced Digital Cordless Technology) and WDCT (Wireless Digital Cordless Technology) protocols; and

5.8GHz used in the U.S., Australia and several other countries with our proprietary EDCT cordless protocol.

The XceedR chipset portfolio combines wireless communications technology with a range of telephony features, and audio and voice-processing algorithms to provide the industry a low cost and small footprint solution. Enhanced with our hardware and software packages, XceedR chipsets are highly versatile and enable the development of an array of cordless telephony solutions at a lower effort and faster time to market than alternative silicon offerings. The XceedR chipset portfolio supports cordless phones, cordless headsets, remote controls, home gateways, fixed-mobile convergence solutions and home control, monitoring and automation devices.

The XceedR chipset portfolio is comprised of two families XceedR DCE and XceedR DCX.

The XceedR DCE chipset family is a mature and field-proven family of integrated digital baseband processor RF chipsets. The chipset is used to develop fully integrated cordless telephone systems, digital answering machines, digital voice recorders (DVRs), digital baby monitors, and other low-to-mid-range audio applications. Including the industry s most advanced digital cordless solutions, the XceedR DCE family maintains multi-line, multi-handset and digital answering machine capabilities, while supporting various RF protocols such as DECT (1.7GHz-1.9GHz), FHSS DECT 2.4GHz, EDCT 2.4GHz and 5.8GHz. Integration of the TeakLite RISC DSP core into the DE56 and DCE58 baseband chip enables software implementation of a variety of voice coders, and provides a flexible platform for developing a wide range of solutions. With its DSP-based architecture, the chipset enables cost-effective incorporation of the most advanced audio and telephony features.

The XceedR DCX chipset family is the next step in flexibility and performance for digital cordless applications. Combining state-of-the-art RF and ARM9 baseband functions in a single package with a rich set of telephony features and advanced audio-processing capabilities, the DCX provides the best cost-performance

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solution for mid-to-high-range DECT/DECT6.0/CAT-iq and WDCT cordless applications, home gateway applications and fixed mobile convergence applications.

In 2012, we launched DCX81 SoC featuring advanced QSPI Flash architecture and 208MHz ARM926 core targeted solution for digital cordless telephony and cordless products.

In 2012, we also taped-out DHX91, a DECT ULE SoC targeting home automation and security applications.

Supporting all RF bands and comprised of Flash-based chips and a full set of ROM-based products with various memory configurations, the XceedR DCX chipset family offers a total integrated solution that includes a digital baseband controller, analog interface, RF transceiver and power amplifier.

Products Targeted for Multimedia Connected Screens

To capitalize on the increasing convergence of voice, data, audio and video, we offer the XpandR family of multimedia chipset solutions. XpandR is a system-on-a-chip (SoC) solution based on dual-core and integrating application processors, Wi-Fi and DECT baseband and comprehensive multimedia peripherals, along with companion analog front-end and power management units as well as Wi-Fi and cordless RF chips, to enable the development of always-on, portable, connected multimedia products.

The XpandR solution supports an array of telephony and non-telephony connected applications, including smart home phone, video/media phone, Wi-Fi VoIP phone, home automation and control center, security and video monitoring center, media/streaming set-top box, smart universal remote control, mobile Internet device, portable media player and Internet radio, based on open platform frameworks such as Android.

In 2008 and 2009, we introduced XpandR-I and XpandR-II the first and second members of the XpandR product family. The XpandR-II chipset has been designed by several vendors into enhanced products such as Wi-Fi handsets, Internet radios and Android cordless multimedia phones.

XpandR-III In 2011, we taped-out XpandR-III, our third generation XpandR processor. XpandR-III is a state-of-the-art system-on-a-chip that features two application processing cores, ARM Cortex A8 and ARM9, an advanced low-power media system that integrates smart acceleration engines for HD video decode and encode, 2D/3D Graphics Processing Unit (GPU), as well as a dedicated security controller and Wi-Fi 802.11n that will complement a full offering for converged voice, data, audio and video processor. XpandR-III has a wide range of interfaces, including display up HD resolution and dual camera sensors. Target applications include smart home telephony, video telephony, home security, media/streaming set-top box and portable multimedia.

Products Targeted for the VoIP Market

In 2004, we developed an IP cordless phone that enables connectivity to a broadband line feeding VoIP with cordless phone capabilities.

We continue to sell our current line of VoIP speech co-processors, which are DSP core-based, highly-integrated speech processors, targeted at the low to medium density Integrated Access Device (IAD), residential gateway and VoIP telephony markets.

In 2005, we developed an integrated CoIP (Communications over Internet Protocol) telephony system that supports both PSTN line and broadband for the VoIP residential market, supporting Session Initiation Protocol together with advanced TR-069 protocol, thereby enabling telecommunication operators remote control and remote upgrade of VoIP products.

The acquisition of the CIPT Business enhanced our customer base for the VoIP market by adding major telecom brands to our customer base in Europe and Asia.

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Since 2008, we have been selling products for the CoIP market while developing a new platform based on ARM9, the VegaFireBird and VegaOne system-on-a-chip (SoC) products, to the advanced IAD (Integrated Access Device) market.

During 2010, we launched a new VoIP chipset based on the VegaFireBird SoC and our RF products combining ARM9 and VoIP processing baseband functions in a single package with a rich set of telephony features targeting Corded IP phones for home and office, Analog Terminal Adaptors and Cordless IP Phones. These products support multi line and multi HD voice channels, superior audio processing capabilities including acoustic echo cancellation and superior full duplex speakerphone technologies.

In 2012, we taped-out a new VoIP SoC DVF99xx. Built with two ARM926EJ-S cores, this new VoIP SoC provides combined processing speed of 1.1 GHz, and is designed to support IP phone processing needs from basic single-line IP phones to high-end multi-line gigabit Ethernet IP phones with large color display and advanced GUI. The DVF99 also integrates multiple hardware accelerators, including a hardware security engine which enables a new class of secure IP phones, an LCD controller, a 2D graphics engine, a high-speed USB 2.0 port, DDR3 memory and minimal power consumption during low-usage periods. This product was designed to meet the needs of the enterprise IP telephony market.

The XciteR family of chipsets is based on VegaFireBird SoC and provides embedded solutions for low-cost corded IP-phones to advanced cordless IP-phones with DECT handsets and headsets. Our VoIP chipset family is most suitable for office and enterprise IP telephony products as well as Analog Telephone Adapters and some of the leading vendors have developed and are already developing their IP telephones and ATAs with our chipsets.

Products Targeted for Mobile Phones, Fixed-Line Phones and Headsets (Bluetooth, DECT, Wired and Gaming)

As a result of the acquisition of BoneTone, we enhanced our product portfolio with technology of intelligent voice enhancement and noise elimination. This technology supports two solutions: HDClear and HDMobileSurround which are offered as part of the XsoundR product line.

HDClear-based solution offers mobile voice quality and intelligibility, while completely removing background noise. Delivering clearer voice calls made from noisy environments, HDClear also maximizes accuracy of Automatic Speech Recognition (ASR) applications in noisy environments by leveraging robust and powerful noise cancellation algorithms. HDClear more effectively isolates voice from ambient noise, thereby drastically lowering Word Error Rate (WER) and dramatically improves the user experience for speech-enabled applications like virtual assistants, voice search, and speech-to-text on mobile devices, tablets and other consumer devices.

HDMobileSurround solution provides true 5.1 surround true sound on the go. As a result, users of tablets, smartphones and other mobile devices can enjoy either HD movies with a true sense of sound, or gaming with natural surround sound.

XsoundR enables a new experience for mobile users. Our HDClear technology fully removes background noise for far-end users, while maintaining privacy for near-end speakers. As such, our XsoundR mobile chipset offerings enable high voice quality and intelligibility for calls made in the noisiest environments. The solutions are anchored by the DBM family DBMD11 (BTHD100) and DBMD12, mixed-signal DSP-based processor for voice communication applications. They also feature a superior background noise cancellation algorithm, on-chip ADC, and diverse digital interfaces for seamless integration into current dense mobile device systems. Offered in a low-power, small footprint package, XsoundR is the ultimate noise-cancellation chip solution for mobile phones, Bluetooth and DECT wireless headsets, wired headsets and fixed-line phones.

In 2012, we taped-out a new DBMD2, one of the most efficient voice enhancement processors in the market, in our belief. It is measured just 3.0 x 3.0 x 0.65mm. Offered with a 36-pin BGA and 0.4mm ball pitch, DBMD2

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embeds a programmable 32-bit DSP, incorporates advanced connectivity options, including four TDM/I2S ports and SLIMbus, and equipped with a comprehensive software framework that enables rapid development and fast time-to-market, thereby overcoming the challenges of portable design, real estate and power consumption.

DBMD2 enables mobile OEMs to offload voice and audio tasks from mobile device CPUs, in addition to running HDClear to enhance ASR accuracy. OEMs can leverage DBMD2 s open and flexible architecture to differentiate their products by utilizing the free DSP MIPS headroom and memory to run their own or third party voice/audio enhancement software for pre- and post-processing.

Customers

We sell our products primarily through distributors and directly to OEMs and ODMs who incorporate our products into consumer products for the worldwide residential wireless communications market. In 2012, we continued expanding our customer base, and in some cases, increased our share of business with existing customers. Our customer list now includes additional major brand names and direct OEMs and ODMs worldwide. The major consumer electronics manufacturers and brands that have incorporated our ICs into their products include: Accton, AEG, Alcatel, AT&T, Audioline, Belgacom, Binatone, British Telecom, Brother, CCT Tech, Cetis, China Telecom, Cisco, Cybertan, Grandstream, Deutsche Telekom, Doro, France Telecom, Freebox, Giant, Gaoxinqi, Gemtek, Global China Technologies, Grandstream, Hagenuk, Huawei, Intelbras, JXE, Korea Telecom, KPN, LG Electronics, Matsushita, Motorola, Moimstone, NEC, NTT, OnReal, Ooma, Panasonic, Philips, Pioneer, Plantronics, Sagemcom, Samsung, Sanyo, SGW, Sharp, Siemens (Gigaset), SK Telecom, Sony, Spracht, Sumitomo, Swissvoice, Swisscom, TCL, Tecom, Telecom Italia, Telefonica, Telstra, Technicolor, Telefield (RCA), Topcom, Uniden, Unihan, Urmet, Turkcell, Verizon, VTech, WNC, Xingtel, Yamaha, Yealink and ZTE.

International Sales and Operations

Export sales accounted for 99% of our total revenues for 2012, 2011 and 2010. Although most of our sales to foreign entities are denominated in United States dollars, we are subject to risks of conducting business internationally. These risks include unexpected changes in regulatory requirements, fluctuations in exchange rates that could increase the price of our products in foreign markets, delays resulting from difficulty in obtaining export licenses for certain technology, tariffs, other barriers and restrictions and the burden of complying with a variety of foreign laws. See Note 16 of the attached Notes to Consolidated Financial Statements for the year ended December 31, 2012, for a summary of the geographic breakdown of our revenues and location of our long-lived assets.

Moreover, a portion of our expenses in Israel is paid in the Israeli currency (New Israeli Shekel (NIS)), which subjects us to the risks of foreign currency fluctuations between the U.S. dollar and the NIS. Our primary expenses paid in NIS are employee salaries and lease payments on our Israeli facilities. As a result, an increase in the value of Israeli currency in comparison to the U.S. dollar could increase the cost of our technology development, research and development expenses and general and administrative expenses. From time to time, we use derivative instruments to minimize the effects of currency fluctuations, but our hedging positions may be partial, may not exist at all in the future or may not succeed in minimizing our foreign currency fluctuation risks.

In addition, a portion of our expenses in Europe is paid in Euro, which subjects us to the risks of foreign currency fluctuations between the U.S. dollar and the Euro. Our primary expenses paid in Euro are employee salaries and lease and operational payments on our European facilities. As a result, an increase in the value of the Euro in comparison to the U.S. dollar also could increase the cost of our technology development, research and development expenses and general and administrative expenses.

Sales, Marketing and Distribution

We market and distribute our products through our direct sales and marketing offices, as well as through a network of distributors. Our sales and marketing team, working out of our sales offices in Hong Kong, China;

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Nierenberg, Germany; San Jose, California; Tokyo, Japan; Herzelia Pituach, Israel and Edinburgh, Scotland, pursues business with our customers in North and South America, Europe and Asia. In territories where we do not have sales offices, we operate solely through a network of distributors and representatives. Revenues derived from sales through our Japanese distributor, Tomen Electronics, represented 21% of our total revenues for 2012, 19% for 2011 and 25% for 2010. We also derive a significant amount of revenues from a limited number of customers. Sales to VTech represented 35% of our total revenues for 2012, 33% for 2011 and 31% for 2010. Sales to Panasonic through Tomen Electronics represented approximately 15%, 13% and 16% of our revenues for 2012, 2011 and 2010, respectively. Sales to Uniden represented 11%, 10% and 9% of our total revenues for 2012, 2011 and 2010, respectively. Sales to CCT Telecom represented 8%, 11% and 10% of our total revenues for 2012, 2011 and 2010, respectively. The loss of any of our significant customers or distributors could harm our business, financial condition and results of operations. In addition, our customers and distributors are not subject to minimum purchase requirements and can cease making purchases of our products at any time.

As our products are generally incorporated into consumer products sold by our OEM customers, our revenues are affected by seasonal buying patterns of consumer products sold by our OEM customers. The fourth quarter in any given year is usually the strongest quarter of sales for our OEM customers and, as a result, the third quarter in any given year is usually the strongest quarter for our revenues as our OEM customers request increased shipments of our products in anticipation of the fourth quarter holiday season. However, the magnitude of this trend varies annually and is affected by macro-economic trends.

Manufacturing and Design Methodology

We contract product wafer fabrication services from TSMC, TriQuint and IBM. A majority of our integrated circuit products at this time are manufactured by TSMC. We intend to continue to use independent foundries to manufacture our products. Our reliance on independent foundries involves a number of risks, including the foundries ability to achieve acceptable manufacturing yields at competitive costs and their allocation of sufficient capacity to us to meet our needs. While we currently believe we have adequate capacity to support our current sales levels, we may encounter capacity issues in the future. In the event of a worldwide shortage in foundry capacity, we may not be able to obtain a sufficient allocation of foundry capacity to meet our product needs. Shortage or lack of capacity at the foundries we use to manufacture our products may lead to increased operating costs and lower gross margins. In addition, such a shortage could lengthen our products manufacturing cycle and cause a delay in the shipment of our products to our customers. Moreover, as TSMC produces a significant portion of our wafer supply, earthquakes, aftershocks or other natural disasters in Asia could preclude us from obtaining an adequate supply of wafers to fill customer orders. Unforeseen difficulties with our independent foundries could harm our business, financial condition and results of operations.

As part of the acquisition of the CIPT Business, we entered into a Manufacturing Services Collaboration Agreement, as amended, with NXP pursuant to which NXP agreed to provide us with specified manufacturing, pre-testing, assembling and final-testing services relating to CIPT Business products. The services under the agreement are provided by NXP on a purchase order basis and will expire by December 31, 2014. The agreement sets forth specified capacity guarantees by NXP, logistics for our provision of production schedules, penalties for late/non delivery by NXP for specified products, our purchase obligations and various technical specifications for the manufacturing services. Products from the CIPT Business that are still manufactured by NXP currently do not represent a substantial portion of our total revenues. However, our business could be still harmed if NXP, or third parties NXP has contracted, fails to achieve acceptable manufacturing yields, quality levels or allocate to us a sufficient portion of its foundry, and assembly and testing capacities to meet our needs for the CIPT Business products.

We use independent subcontractors located in Asia, to assemble and test certain of our products. We develop detailed testing procedures and specifications for each product and require each subcontractor to use these procedures and specifications before shipping us the finished products. We test and/or assemble our products at ASE, ASEN, KYEC, SPIL and Giga Solutions.

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Furthermore, our Digital Cordless products require an external component in the finished product, which is supplied by a third party, to provide flash memory. Temporary fluctuations in the pricing and availability of this component could negatively impact sales of our Digital Cordless products, which could in turn harm our business, financial condition and results of operations.

Competition

The principal competitive factors in the cordless telephony market include price, performance, system integration level, range, voice quality, customer support and the timing of product introductions by us and our competitors. We believe that we are competitive with respect to most of these factors. Our principal competitors in the cordless market include Lantiq and Dialog Semiconductors, and we have also noted efforts by Beken, a Chinese supplier of basebands for analog cordless phones, to penetrate the DECT market.

Similar principal competitive factors affect the VoIP market. We also believe that we are competitive with respect to most of these factors. Our principal competitors in the VoIP market include Broadcom, Dialog Semiconductors, Infineon, Texas Instruments and new Taiwanese IC vendors. Our principal competitors in the multimedia market include Wi-Fi and multimedia application processor IC vendors like Atheros, Broadcom, CSR, Freescale, Intel, Marvel, Ralink, Samsung and Texas Instruments.

Similar principal competitive factors affect the Home Automation (DECT ULE) market. We also believe that we are competitive with respect to most of these factors. Our principal competitors are developers of different wireless home automation technologies, including Analog, Z-wave and Zigbee. Among those, the major competition in digital home automation is Zigbee and the principal competitors are Freescale, NXP, Texas Instruments and Silicon Lab.

Similar principal competitive factors affect the mobile audio noise reduction market. An additional competitive factor relating to this market is that we are a newcomer to this market and this market already has a number of dominant, well-established companies with significant existing market shares. Nonetheless, we believe that we are competitive in this market with HDClear s outstanding performance. Competitors in this market include Audience and Cirrus Logic and developers of noise cancellation software running on mobile phones.

Price competition in the markets in which we currently compete and propose to compete is intense and may increase, which could harm our business, financial condition and results of operations. We have experienced and will continue to experience increased competitive pricing pressures for our ICs. We were able to partially offset price reductions which occurred during 2012 through manufacturing cost reductions, improvements in our yield percentages and by achieving a higher level of product integration. However, we cannot assure that we will be able to further reduce production costs, or be able to compete successfully with respect to price or any other key competitive factors in the future.

In future periods, due to various new developments in the residential telephony and mobile markets, we intend to enter into new markets with competitors that have more established presence, and significantly greater financial, technical, manufacturing, marketing, sales and distribution resources than we do.

Furthermore, there is a growing threat from alternative technologies accelerating the decline of the fixed-line telephony market. This competition comes from mobile telephony, including emerging dual-mode mobile Wi Fi phones, and other innovative applications, such as Skype and iChat. Given that we derive a significant amount of revenues from chipsets incorporated into fixed-line telephony products, if we are unable to develop new technologies in the face of the decline of this market, our business could be materially adversely affected.

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Research and Development

We believe that timely development and introduction of new products are essential to maintain our competitive position. We currently conduct most of our product development at our facilities. At December 31, 2012, we had a staff of 190 research and development personnel, of which 142 were located in Israel. We also employ independent contractors to assist with certain product development and testing activities. We spent approximately $42.5 million in 2012, $53.2 million in 2011 and $55.6 million in 2010 on research and development activities.

As noted above, due to various new developments in the home residential market, including the rapid deployment of new communication access methods and the rise of alternative technologies in lieu of fixed-line telephony, we are expanding our current product lines and develop products and services targeted at wider markets, including the intensively competitive mobile device market. We will need to continue to invest in research and development, and our research and development expenses may increase in the future, including the addition of new research and development personnel, to keep pace with new and rapidly changing trends in our industry.

Licenses, Patents and Trademarks

As of December 31, 2012, we have been granted a total of 168 patents and 98 patents are pending.

We actively pursue foreign patent protection in countries of interest to us. Our policy is to apply for patents or for other appropriate statutory protection when we develop valuable new or improved technology. The status of any patent involves complex legal and factual questions, and the breadth of claims allowed is uncertain. Accordingly, we cannot assure that any patent application filed by us will result in a patent being issued, or that our patents, and any patents that may be issued in the future, will afford adequate protection against competitors with similar technology; nor can we provide assurance that patents issued to us will not be infringed or designed around by others. In addition, the laws of certain countries in which our products are or may be developed, manufactured or sold, including China, Hong Kong, Japan, Korea and Taiwan, may not protect our products and intellectual property rights to the same extent as the laws of the United States.

We attempt to protect our trade secrets and other proprietary information through agreements with our customers, suppliers, employees and consultants, and through other security measures. Although we intend to protect our rights vigorously, we cannot assure that these measures will be successful.

The technology industry is subject to frequent litigation regarding patent and other intellectual property rights. While claims involving any material patent or other intellectual property rights have not been brought against us to date, we cannot provide assurance that third parties will not assert claims against us or our customers with respect to existing or future products, or that we will not need to assert claims against third parties to protect our proprietary technology. In addition, patent infringement claims are increasingly being asserted by patent holding companies (so-called patent trolls), which do not use technology and whose sole business is to enforce patents against companies, such as us, for monetary gain. Because such patent holding companies do not provide services or use technology, the assertion of our own patents by way of counter-claim may be ineffective. We have received claims that our products infringe upon the proprietary rights of such patent holding companies. In addition, third parties have asserted and may in the future assert intellectual property infringement claims against our customers, which we have agreed in certain circumstances to indemnify and defend against such claims. If litigation becomes necessary to determine the validity of any third party claims or to protect our proprietary technology, it could result in significant expense to us and could divert the efforts of our technical and management personnel, whether or not the claim has any merit and notwithstanding that the litigation is determined in our favor. In the event of an adverse result in any litigation, we could be required to expend significant resources to develop non-infringing technology or to obtain licenses to the technology that is the subject of the litigation. We cannot provide assurance that we would be successful in developing non-infringing technology or that any licenses would be available on commercially reasonable terms.

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We have trademark registration for the following marks in the United States: DSP Group, TRUESPEECH and XpandR. We also are in the process of registering the HDClear and HDMobileSurround marks in the United States.

While our ability to compete may be affected by our ability to protect our intellectual property, we believe that because of the rapid pace of technological change in our industry, our technical expertise and ability to innovate on a timely basis and in a cost-effective manner will be more important in maintaining our competitive position than the protection of our intellectual property. In addition, we believe that due to rapid technological changes in residential telephony, computer telephony and personal computer markets, patents and trade secret protection are important but must be supported by other factors, including expanding the knowledge, ability and experience of our personnel, new product introductions and frequent product enhancements. Although we continue to implement protective measures and intend to defend our intellectual property rights vigorously, we cannot assure that these measures will be successful.

Backlog

At December 31, 2012, our backlog was approximately $32.7 million, compared to approximately $36.7 million and $43.8 million at December 31, 2011 and 2010, respectively. We include in our backlog all accepted product purchase orders with respect to which a delivery schedule has been specified for product shipment within one year. Our business is characterized by short-term order and shipment schedules. Product orders in our current backlog are subject to change, sometimes on short notice, due to changes in delivery schedules or cancellation by a purchaser. Accordingly, although useful for scheduling production, backlog as of any particular date may not be a reliable measure of our sales for any future period.

Employees

At December 31, 2012, we had 317 employees, including 186 in research and development, 60 in marketing and sales and 71 in corporate, administration and manufacturing coordination. Competition for personnel in the semiconductor industry in general is intense. We believe that our future prospects will depend, in part, on our ability to continue to attract and retain highly-skilled technical, marketing and management personnel, who are in demand. In particular, there is a limited supply of RF chip designers and highly-qualified engineers with digital signal processing experience. We believe that our relations with our employees are good.

Web Site Access to Company s Reports

Our Internet Web Site address is *www.dspg.com*. Our annual reports 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 are available free of charge through our Web site as soon as reasonably practicable after they are electronically filed with, or furnished to, the Securities and Exchange Commission. We will also provide the reports in electronic or paper form free of charge upon request.

Our website and the information contained therein or connected thereto are not intended to be incorporated into this Annual Report on Form 10-K.

Item 1A. RISK FACTORS.

The following risk factors, among others, could in the future affect our actual results of operations and could cause our actual results to differ materially from those expressed in forward-looking statements made by us. These forward-looking statements are based on current expectations and we assume no obligation to update this information. Before you decide to buy, hold, or sell our common stock, you should carefully consider the risks described below, in addition to the other information contained elsewhere in this report. The following risk factors are not the only risk factors facing our company. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our business. Our business, financial condition, and results of operation could be seriously harmed if any of the events underlying any of these risks or uncertainties actually occurs. In that event, the market price for our common stock could decline, and you may lose all or part of your investment.

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We generate a significant amount of our total revenues from the sale of digital cordless telephony products and our business and operating results may be materially adversely affected if we do not continue to succeed in this highly competitive market or if sales within the overall cordless digital market decreases.

Sales of our digital cordless telephony products comprised a significant majority of our total revenues for 2012. Specifically, sales of our DECT, 2.4GHz, and CoIP products comprised 94% of our total revenues for 2012, 2011 and 2010. Revenues from our DECT products represented 82% of our total revenues 2012, 82% of our total revenues 2011 and 78% for 2010. Revenues from our 2.4 GHz products represented 7% of our total revenues for 2012, 9% for 2011 and 13% for 2010.

Any adverse change in the digital cordless market or in our ability to compete and maintain our competitive position in that market would harm our business, financial condition and results of operations. The digital cordless telephony market is extremely competitive and is facing intense pricing pressures, and we expect that competition and pricing pressures may increase. Our existing and potential competitors in this market include large and emerging domestic and foreign companies, many of whom have significantly greater financial, technical, manufacturing, marketing, sales and distribution resources and management expertise than we do. It is possible that we may one day be unable to respond to increased pricing competition for digital cordless telephony processors or other products through the introduction of new products or reduction of manufacturing costs. This inability to compete would have a material adverse effect on our business, financial condition and results of operations. Likewise, any significant delays by us in developing, manufacturing or shipping new or enhanced products in this market also would have a material adverse effect on our business, financial condition and results of operations.

In addition, to general market competitiveness, the digital cordless telephony market is undergoing a challenging period of transition. With the rapid deployment of new communication access methods, including mobile, wireless broadband, cable and other connectivity, the traditional cordless telephony market using fixed-line telephony is declining and will continue to decline, which reduces our revenues derived from, and unit sales of, cordless telephony products. Macro-economic trends in the consumer electronics industry may adversely impact our future revenues.

Furthermore, the decline in fixed line telephony together with the rapid deployment of new communication access methods, including mobile, wireless broadband, cable and other connectivity will decrease sales of products using fixed-line telephony. Our business also may be affected by the outcome of the competition between cellular phone operators and fixed-line operators for the provision of residential communication. A significant majority of our revenues are currently generated from sales of chipsets used in cordless phones that are based on fixed-line telephony, and the continued decline in fixed-line telephony would reduce our revenues derived from, and unit sales of, our digital cordless telephony products.

We rely significantly on revenue derived from a limited number of customers.

We expect that a limited number of customers, varying in identity from period-to-period, will account for a substantial portion of our revenues in any period. Our four largest customers VTech, Panasonic, Uniden and CCT Telecom accounted for approximately 68% of our total revenues for 2012, 67% for 2011 and 66% for 2010. Sales to VTech represented 35% of our total revenues for 2012, 33% for 2011 and 31% for 2010. Sales to Panasonic through our distributor represented 15% of our total revenues for 2012, 13% for 2011, and 16% for 2010. Sales to Uniden represented 11% of our total revenues for 2012, 10% for 2011 and 9% for 2010. Sales to CCT Telecom represented 8% of our total revenues for 2012, 11% for 2011 and 10% for 2010. Typically, our sales are made on a purchase order basis, and none of our customers has entered into a long-term agreement requiring it to purchase our products. Moreover, we do not typically require our customers to purchase a minimum quantity of our products, and our customers can generally cancel or significantly reduce their orders on short notice without significant penalties. A significant amount of our revenues will continue to be derived from a limited number of large customers. Furthermore, the primary customers for our products are original equipment manufacturers (OEMs) and original design manufacturers (ODMs) in the cordless digital market. This industry is

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highly cyclical and has been subject to significant economic downturns at various times, particularly in recent periods. These downturns are characterized by production overcapacity and reduced revenues, which at times may affect the financial stability of our customers. Therefore, the loss of one of our major customers, or reduced demand for products from, or the reduction in purchasing capability of, one of our major customers, could have a material adverse effect on our business, financial condition and results of operations.

Our future success is dependent on market acceptance of our HDClear product family targeted for the mobile device market, which is an intensively competitive market with dominant and established players.

Our ability to increase our revenues and offset declining revenues from our cordless product family are substantially dependent on our ability to gain market share for our HDClear product family, a comprehensive voice enhancement and noise cancellation product targeted for mobile devices. Although a number of potential customers have expressed interest, we do not currently have any design wins for this product family, which is the initial step to incorporating OEM design wins, and we cannot assure that we will be successful in doing so. Even if we achieve design wins, the design-in process is labor intensive, long and often delayed. Therefore, the period from design-in to revenue generation may be long, and during the interim period, we would be expending significant time and resources through our sales and development cycles, potentially without achieving any economic return. Moreover, we are targeting a new market with our HDClear product family, a market with dominant and established players selling to OEM customers with whom they have established relationships. We will need to win over such customers, with whom we do not have established relationships, to gain market share. If we are unable to generate revenues from our HDClear product family and gain significant market share in the mobile device market, our operating results would be adversely affected.

The market for mobile device components is highly competitive and we expect competition to intensify in the future.

The market for mobile device components is highly competitive and characterized by the presence of large companies with significantly greater resources than we have. Our HDClear product family relates only to the voice and audio subsystem of a mobile device and there are only a limited number of OEMs targeted for this market. Our competitors include Audience and Cirrus Logic. We also face competition from smaller, privately held companies and could face competition from new market entrants. We also compete against solutions internally developed by OEMs, as well as combined third-party software and hardware systems. If we are unable to compete effectively, we may not succeed in achieving design wins and may have to lower our pricing to gain design wins, both of which would adversely impact our operating results.

Because our products are components of end products, if OEMs do not incorporate our products into their end products or if the end products of our OEM customers do not achieve market acceptance, we may not be able to generate adequate sales of our products.

Our products are not sold directly to the end-user; rather, they are components of end products. As a result, we rely upon OEMs to incorporate our products into their end products at the design stage. Once an OEM designs a competitor s product into its end product, it becomes significantly more difficult for us to sell our products to that customer because changing suppliers involves significant cost, time, effort and risk for the customer. As a result, we may incur significant expenditures on the development of a new product without any assurance that an OEM will select our product for design into its own product and without this design win it becomes significantly difficult to sell our products. This is especially the case for our HDClear product family. Moreover, even after an OEM agrees to design our products into its end products, the design cycle is long and may be delayed due to factors beyond our control which may result in the end product incorporating our products not to reach the market until long after the initial design win with the OEM. From initial product design-in to volume production, many factors could impact the timing and/or amount of sales actually realized from the design-in. These factors include, but are not limited to, changes in the competitive position of our technology, our customers financial stability, and our ability to ship products according to our customers schedule. Moreover, the continued uncertainty about the sustainability of the global economic recovery and outlook may further prolong an OEM customer s decision-making process and design cycle.

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Furthermore, we rely on the end products of our OEM customers that incorporate our products to achieve market acceptance. Many of our OEM customers face intense competition in their markets. If end products that incorporate our products are not accepted in the marketplace, we may not achieve adequate sales volume of our products, which would have a negative effect on our results of operations.

We rely on a primary distributor for a significant portion of our total revenues and the failure of this distributor to perform as expected would materially reduce our future sales and revenues.

In addition to direct sales, we use a network of distributors to sell our products. Particularly, revenues derived from sales through our Japanese distributor, Tomen Electronics, accounted for 21% of our total revenues for 2012, 19% for 2011 and 25% for 2010. Our future performance will depend, in part, on this distributor to continue to successfully market and sell our products. Furthermore, Tomen Electronics sells our products to a limited number of customers. One customer, Panasonic, has continually accounted for a majority of the sales through Tomen Electronics. Sales to Panasonic through Tomen Electronics generated approximately 15% of our total revenues for 2012, 13% for 2011 and 16% for 2010. The loss of Tomen Electronics as our distributor and our inability to obtain a satisfactory replacement in a timely manner would materially harm our sales and results of operations. Additionally, the loss of Panasonic and Tomen Electronics inability to thereafter effectively market our products would also materially harm our sales.

Because our quarterly operating results may fluctuate significantly, the price of our common stock may decline.

Our quarterly results of operations may vary significantly in the future for a variety of reasons, many of which are outside our control, including the following:

- fluctuations in volume and timing of product orders;
- timing, rescheduling or cancellation of significant customer orders and our ability, as well as the ability of our customers, to manage inventory;
- changes in demand for our products due to seasonal consumer buying patterns and other factors;
- timing of new product introductions by us and by our customers or competitors;
- changes in the mix of products sold by us or our competitors;
- fluctuations in the level of sales by our OEM customers and other vendors of end products incorporating our products;
- timing and size of expenses, including expenses to develop new products and product improvements, and expenses resulting from restructuring activities;
- entry into new markets, including China, Korea and South America;
- our ability to scale our operations in response to changes in demand for our existing products and services or demand for new products requested by our customers;

mergers and acquisitions by us, our competitors and our existing and potential customers; and

general economic conditions, including current economic conditions in the United States and worldwide, and the adverse effects on the semiconductor and consumer electronics industries.

Each of the above factors is difficult to forecast and could harm our business, financial condition and results of operations. Also, we sell our products to OEM customers that operate in consumer markets. As a result, our revenues are affected by seasonal buying patterns of consumer products sold by our OEM customers that incorporate our products and the market acceptance of such products supplied by our OEM customers. The fourth quarter in any given year is usually the strongest quarter for sales by our OEM customers in the consumer markets, and thus, our third quarter in any given year is usually the strongest quarter for revenues as our OEM

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customers request increased shipments of our products in anticipation of the increased activity in the fourth quarter. By contrast, the first quarter in any given year is usually the weakest quarter for us. However, the magnitude of this trend varies annually and is affected by macro-economic trends. For example, due to the slowdown in demand for consumer electronics products in 2012, particularly cordless telephony products, our revenues for 2012 were weaker than 2011.

Our revenues, gross margins and profitability may be materially adversely affected by the continued decline in average selling prices of our products and other factors, including increases in assembly and testing expenses, and raw material and commodity costs.

We have experienced and will continue to experience a decrease in the average selling prices of our products. Decreasing average selling prices could result in decreased revenues even if the volume of products sold increases. Decreasing average selling prices may also require us to sell our products at much lower gross margin than in the past and reduce profitability. Although we have to date been able to partially offset on an annual basis the declining average selling prices of our products through general operational efficiencies and manufacturing cost reductions by achieving a higher level of product integration and improving our yield percentages, there is no guarantee that our ongoing efforts will be successful or that they will keep pace with the anticipated, continued decline in average selling prices of our products.

Moreover, we believe there are significant pressures in the supply chain as a result principally of the uncertainty relating to the sustainability of the global economic recovery, which has negatively affected the consumer electronics industry. The pressures in the supply chain make it very difficult for us to increase or even maintain our product pricing, which could further adversely affects our gross margins.

In addition to the continued decline in the average selling prices of our products, our gross profit may decrease in the future due to other factors, including the roll-out of new products in any given period and the penetration of new markets which may require us to sell products at a lower margin, our failure to introduce new engineering processes and mix of products sold.

Our gross margins also are affected by the product mix. For example, DECT products have lower average gross margins than other products, such as our 2.4GHz products. The DECT product line represented 82% of our total revenues for 2012. Therefore, increased sales of our DECT products could lower our gross margins.

Furthermore, increases in the price of silicon wafers, testing costs and commodities such as gold and oil, which may result in increased production costs, mainly assembly and packaging costs, may result in a decrease in our gross margins. Moreover, our suppliers may pass the increase in raw materials and commodity costs which could further reduce the gross margin of our products. In addition, as we are a fabless company, global market trends such as over-capacity problems so that there is a shortage of capacity to fulfill our fabrication needs also may increase our raw material costs and thus decrease our gross margin.

There are several emerging market trends that may challenge our ability to continue to grow our business.

New technological developments in the home connectivity market may adversely affect our operating results. For example, the rapid deployment of new communication access methods, including mobile, wireless broadband, cable and other connectivity, as well as the lack of growth in products using fixed-line telephony would reduce our total revenues derived from, and unit sales of, cordless fixed-line telephony products. Our ability to maintain our growth will depend on the expansion of our product lines to capitalize on the emerging access methods and on our success in developing and selling a portfolio of system-on-a-chip solutions targeted a