



Message from CEO
Russell Ellwanger

At this time, with 2013 nearing its end and moving into 2014, we are beginning the production ramp resulting from the sharp growth in design wins of two years ago. This growth has continued and led to record numbers of mask sets entering our factories during this past year, which underpins our confidence in continued strong business performance ahead. I remain very excited with regard to our potential and our ability to fulfill it.

During the year, we hosted four worldwide global technical symposiums where TowerJazz executives and I were able to meet with some of our leading customers and get a closer feel for their future needs and requirements. Also, it was a great honor for me to provide the keynote in each of these conferences, presenting our business philosophy and corporate strategy to over 500 attendees who represent both our existing as well as our potential customers. In my presentation, I highlighted how connectivity, energy efficiency and multi-function systems are key industry trends which are served greatly through analog technology and will afford many opportunities for TowerJazz and our customers. I also discussed how a culture of quick, adaptive change with the foundation of key values and solid strategy is required to successfully meet these market trends.

The philosophy/corporate culture to which we must adhere is focused on being sensitive to the market with an ear and mind always open to our customers, and one in which we continuously evolve. However, this can be difficult for an established management team as there is a natural resistance to change. It is easier with a new management team because a new purpose (vision) is being defined. Furthermore, the longer a management team exists and the stronger the team, the more difficult it is for change because vision/purpose becomes confused with the methods to achieve the vision. Extremely strong purpose overrides very strong discomfort. Perhaps the only way an existing management

team in a maturing company can engage in change, is by differentiating between purpose and methodology, for over time they become confused. The vision statement of a company should evolve, however methodologies MUST ALWAYS be viewed as tools, the value of which is fully determined by customer feedback.

Another philosophy that I hold fast was stated in GE's 2000 Annual Report by Jack Welch, Chairman and CEO, "Self-confidence is an indispensable leadership characteristic. It is the obligation of every leader to give everyone the challenges that provide opportunities to develop personal self-confidence. We see day after day people's lives – and not just their business lives – utterly transformed by the self-confidence of meeting big challenges."

It is due to the capabilities, dedication and passion of our employees, supported by management initiatives, that has driven us to be the worldwide specialty foundry leader. Looking forward to 2014, TowerJazz will serve market trends through our advanced specialty technologies and increased capacity as well as our activities to achieve Japanese-like quality which we are implementing throughout the company. We will continue to set higher goals for ourselves, with the aim of outperforming our customers' expectations and maintaining a pursuit of excellence in all areas of the organization.

I wish to thank you, our customers, for your trust in us as a long-term partner. We are committed to work always to be worthy of this trust.

The entire TowerJazz team and I extend our very best wishes to you and your family for a happy, healthy and prosperous New Year.

Sincerely,



TGS "Around the Globe"

TowerJazz Technical Global Symposium

In 2013, we expanded the locations of our TGS events to include Japan, China, and Israel, along with the US and we focused on multi-sourcing capabilities and ramp of new technologies. The theme of TGS this year was "From Innovation to Manufacturing for a Smart World," and our CEO Russell Ellwanger highlighted three industry megatrends which are served through analog technology: "Green" Energy, Seamless Connectivity, and Multi-function Systems. To this point, he discussed the expected rapid growth of the analog market segment in the coming years and the opportunities for TowerJazz and our customers and partners.



TGS USA - Keynote Russell Ellwanger

As TowerJazz's worldwide presence continues to grow, TGS "Around the Globe" further strengthened our visibility among our customers in multiple regions, while building awareness for our broad range of offerings and design enablement capabilities. Including all of our 2013 TGS events, we hosted approximately 500 attendees worldwide who had access to our CEO, our executives, our customers, our design partners and our IP and tool providers.

The latest TGS events took place in October and November, in Israel and the US, respectively. Our 2nd annual TGS in Israel took place on October 9, 2013 at the DePlus Home Kibbutz Gaash where nearly 100 high level managers and guests attended from 61 different companies located in Israel. TowerJazz executives highlighted new technologies, their inceptions, their potential, and how we have enabled efficient multi-sourcing and quick ramp to volume production. Several new business opportunities were initiated at the conference with local companies and feedback from attendees, TGS sponsors, and TowerJazz staff indicated the symposium was very informative and successful.

Message from CEO1
Upcoming Industry Events.....1
TGS "Around the Globe"..... 1, 2
EDSFair Summary.....2
Technology Offering Focus: MEMS.....2
Financials3
Executive Roundtable.....3
TowerJazz Employee Volunteer Program.....3
Getting to Know Us4
Press Releases4
Featured TowerJazz News4

Industry Events



GSA Awards Dinner
December 12



APEC
March 16–20



Image Sensors 2014
March 18–20



GOMAC Tech
March 31–April 3

Technology Offering Focus: MEMS

MEMS use in devices among fastest growing sectors in semiconductor manufacturing; Novel products made possible through integration with TowerJazz technology platforms

Micro-Electrical Mechanical Systems, or MEMS, is a class of electrical devices that are very small and involve tiny moving parts the width of a human hair. The moving devices can be made of many different kinds of materials, but silicon is ideal for mechanical devices—it is tough, highly regular (crystalline), and comes with a highly disciplined, mature, high volume manufacturing industry. MEMS devices made with silicon can scale down mechanical devices such as accelerometers, microphones and others from cm scale to μm scale, thus reducing price and footprint dramatically. As a result, MEMS devices have increased in popularity and are now part of every smart phone, gaming console, automotive, and medical device.

Moreover, MEMS in mobile phones were \$2.2B in 2012 and are estimated to be a \$6.4B in 2018. Examples of existing high volume MEMS products in mobile phones include: microphones, resonators for clocking functions, gyroscopes for navigation, accelerometers for motion sensing and screen rotation, magnetic compasses, tiny camera autofocus chassis, and RF tuners for multiband antennas. Mobile applications for sensors are fueling huge growth in MEMS, with a CAGR of 11–22% depending on sensor type. Of particular interest is that almost every MEMS part needs a control circuit, which can be served by TowerJazz's CMOS and power platforms. In fact, TowerJazz's initial entry into MEMS products was through providing the CMOS circuitry used to drive, control and sense the MEMS sensors made by our partners.

As there is no standardization in MEMS, special technical capabilities and custom processes are required. As such, the specialty foundry model of TowerJazz is well suited for MEMS. We have shipped well over 100,000,000 MEMS die and currently have two manufacturing sites involved in MEMS—Migdal Haemek, Israel and Newport Beach, CA USA.

In Israel, the focus has been on traditional MEMS with specialties in two sided processing of wafers and deep silicon etch (micro-machining) capabilities. The products targeted are gyroscopes and cell phone camera auto focus modules. The gyroscopes are high performance modules for

medical applications and the camera auto focus modules are targeting high volume consumer applications.

At the Newport Beach site, the focus is in high volume manufacturing of both MEMS and control circuits produced in CMOS companion chips. Some cases of this are: Si (silicon) MEMS for resonators used in clocking chips e.g. company: SiTime; RF (radio frequency) MEMS for digital capacitor arrays (antenna tuners for mobile devices) e.g. company: Cavendish-Kinetics; and IR (infrared) MEMS for imaging used in night vision or heat sensing products.

MEMS knock-on benefits

In the development of the special technology needed to manufacture MEMS, deep know how and new capabilities at both the tool level and the process module level have been developed. These capabilities, when integrated with other technology platforms within TowerJazz, have led to novel products not possible otherwise. Some examples based on TowerJazz's expertise in deep silicon etch are through silicon vias (TSVs) used in PAs for high volume commercial mobile applications, isolated deep silicon vias (IDSVs) used for 3D-IC in aerospace and defense applications; and deep silicon via (DSV) ground used for very high speed SiGe trans impedance amplifiers (TIAs) commonly used in optical fiber communications links for internet infrastructure.

What's Next?

The availability of novel MEMS product functionality, when combined with other non-MEMS technology offerings at TowerJazz, can create some exciting product offerings: SiGe PA + RF MEMS enables one chip integrated power amplification and antenna tuning for mobile applications, CMOS Image Sensor + iTSV enables more dense, higher quality pixels for ultra high definition cameras, and SOI CMOS + RF MEMS enables multi-throw switch + antenna tuning for ultra high quality, low cost multiband mobile applications (reduces chip count). For more information on our current and upcoming MEMS activities, please contact Dr. David Howard (Executive Director & Fellow), david.howard@towerjazz.com or Nachi Vofsy (Director or R&D), nachi.vofsy@towerjazz.com.

an opportunity to further our relationships with our EDA partners in Japan and gain more exposure with Japanese fabless companies and IDMs for the local availability of our pure play foundry offerings. During the event, we hosted several seminars to introduce our unique design enablement capabilities and provided demonstrations at our booth. TowerJazz Japan's design enablement team believes we increased our recognition as a local foundry due to the great deal of interest we received through meaningful and specific technology conversations with a number of attendees. We are pleased with the success of our participation in this event.

TGS « from page 1

Our 8th annual TGS event in the US was held on November 12 & 13, 2013 again this year for two days, focusing first on our Aerospace & Defense (A&D) foundry solutions followed the next day by our Commercial focused applications. On A&D day, we were pleased to host a number of guest speakers from leading companies as well as top universities and government agencies such as: Army Night Vision Electronic Sensors Directorate, BAE Systems, Naval Research Lab, Raytheon Vision Systems, Space Micro, SRI International, UC San Diego, and Virginia Tech. TowerJazz executives also presented an update on our A&D business, including our CMOS/ROIC/MEMS/TSV roadmap, high performance SiGe BiCMOS and our CMOS image sensor offering. In addition, a brief overview was provided on the Jazz Semiconductor Trusted Foundry (JSTF) accreditation through the DoD.



TGS USA - Dr. Farooq Khan, President of R&D, Samsung America, talking about the Omnifly principle

Commercial day commenced with a keynote speech from our CEO, Russell Ellwanger followed by a presentation by Dr. Farooq Khan, President of R&D, Samsung America on 5G mmWave mobile communications. TowerJazz executives also provided updates and the latest capabilities from our business units: SiGe/RF/HPA, Power Management, CMOS Image Sensors, MEMS, Mixed-Signal/CMOS and Design Enablement. In addition, presentations were provided by executives from Cavendish Kinetics on RF MEMS for cellular communication and Dresden University of Technology on Ultimate Physical Limits of SiGe HBT Technology, along with a semiconductor industry update from analyst firm, IHS/iSuppli.

From all accounts, the US TGS event was the best attended yet with nearly 200 attendees and the best overall in the past eight years. This is due in large part to our excellent line up of speakers and of course, we can't do it without our sponsors who we would like to thank once again for their continued support!

To request a presentation from our TowerJazz speakers, please [click here: www.towerjazz.com/tgsus2013.html](http://www.towerjazz.com/tgsus2013.html).

We look forward to seeing you at one of our 2014 worldwide TGS events!

Special Thanks to Our TGS Sponsors!



Q3 2013 Financial Results Highlights

Roundtable

Message from our Executives



Dalit Dahan
Senior Vice President of IT & HR

In this issue, we feature a message from **Dalit Dahan, Senior Vice President of Information Technology and Human Resources** since 2004. Prior to this, she served as Director of Personnel, Recreation and Compensation from 1998 through 2004, as Compensation and Benefits Manager from 1993 to 2004, and has served in various other positions with TowerJazz over the past 20 years.

As a global company, TowerJazz's Human Resources Mission is to continue to improve and strengthen management and leadership skills and capabilities. We also focus on retaining key employees while keeping their satisfaction and motivation high in order to maintain core capabilities throughout the organization. Special focus is placed on increasing knowledge, cross training, and communication between all of the sites and HR which is imperative to ensure continued success in integrating all three corporate locations.

In addition, TowerJazz is very active in community service and specifically we promote our charter of "Educational and vocational development with a focus on gender equality and minority integration." Each year, we undertake a number of activities to support projects and organizations in the neighboring communities of our facilities. For instance, in Migdal Haemek, Israel, TowerJazz "adopted" youth from three youth clubs in the area, assisting them by donating money for computers, furniture and other items, and our employees donated time for tutoring and other recreational activities. Our employees in Israel also take part in community activities including collaboration with nature and environmental organizations, retirement institutions, working on buildings requiring renovation, preparing food packages for families in need, and blood drives.



To promote education, we participate in a program together with the High School in Migdal Haemek to increase knowledge and capabilities in English language studies. For more information see article to the left, "TowerJazz Employee Volunteer Program." We also fund and supervise an early primary education

The main objectives of this program are: raising motivation and changing attitudes towards foreign language acquisition among students, enhancing English studies toward matriculation and quality scores, creating a positive experience for the students, connecting students with the world of high-tech, and creating a significant and positive relationship between the volunteers and the students.

In addition to learning the language itself, being in an atmosphere of a high tech company provides the high school students with additional values such as the importance of higher education for success in their careers and in their lives, and the efforts required in order to achieve this.



program in Migdal Haemek which identifies children with learning disabilities and works with them, their parents and their educators to mitigate any long term negative impacts to the children's academic development.

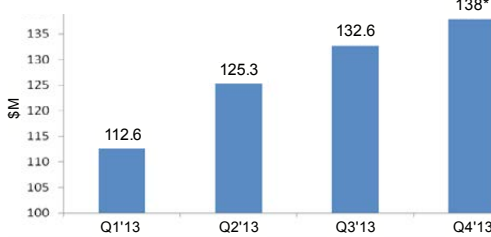
Other initiatives in Israel that we are involved with include an annual donation to "Migdal Or" – Rabi Grossman Educational Institute and ALUT (The Israeli Society for Autistic Children). We also donate money to the Global Awareness Investigation and Action (GAIA) project, an international environmental research project involving middle and high school students as "scientific researchers and policy developers" working on environmental projects. In addition, we fund scientific investigation at a foster home and school with a great diversity in student population, including students from Migdal Haemek.

In February of 2012, we launched our U.S. Social Responsibility Plan by transporting more than 80 of our Newport Beach, CA employees to Blind Children's Learning Center in Santa Ana, CA to spend the morning cleaning toys, painting furniture, and assisting visually impaired children. In addition, a team of TowerJazz engineers created a blueprint for a future play area. We strive to have at least one big activity every year with the involvement of a large number of employees. Other school involvement in the community surrounding our Newport Beach facility has included hiring interns from local universities, providing R&D support through free MPW shuttles to several university research groups and donating gently used office supplies to local schools. Our management team has contributed personal time and expertise to local universities as mentors and lecturers.

I am very proud and pleased with the company's community activities and achievements and believe that due to our company values, excellent employees and management team's dedication, we are impacting others in the community and making TowerJazz an even better environment in which to work.



2013 Quarterly Revenues



*Q4 2013 based on mid-range guidance

Revenue

- Continued revenue Q/Q growth with \$132.6 million in Q3'13 vs. \$125.3M in Q2'13 and vs. \$112.6M in Q1'13
- Up 6% and 18% against Q2'13 & Q1'13, respectively
- Q4 guidance provided continuous growth with revenues of \$133 to \$143 million

Balance Sheet

Very strong balance sheet financial ratios and indicators:

- Current ratio improved from 1.8X as of Dec. 31, 2012 to 2.1X as of Sept. 30, 2013.
- Cash balance at Sept. 30, 2013 at \$141 million of cash and deposits, an increase from the \$133 million as of Dec. 31, 2012 and from \$117 million as of June 30, 2013

TowerJazz Employee Volunteer Program

Teaching English to High School Students



Recently we started a new volunteer program at our Migdal Haemek facility in Israel, "Learning English by Volunteers," where TowerJazz employees volunteer their time once a week, working with local high school students to support and assist with their English lessons. As a global company, most TowerJazz employees are required to know English well and therefore possess the ability to help students learn this language.

The program's vision is to create a framework for integration and involvement of volunteers in the field of teaching English and to promote students' achievements in this area while providing inspiration and examples of personal empowerment and success.

This program is a part of a complete professional program, called 'English – Tool for life' conducted by the partnership of Michigan's Jewish community and our region, Central Galilee (which combines 3 municipalities: Migdal Ha'emek, Jezreel Valey and Nazareth Illit).



Getting to Know Us

Victor Elfassy

Export/Import/
Conveying and
Warehouse Manager

Victor joined the company to establish the Import group 25 years ago when it was still National Semiconductor. He has 35 years of experience in Logistics.

Q: Please tell us about your position, focus areas, etc.

A: The main focus of my work is to make sure that our customers (internal and external) receive the best and most professional service, on time, and without errors and mistakes. The most important aspect of my group activity, that requires daily and ongoing maintenance, is managing an expert team, free of errors. We do this by teaching professionalism, how to deal with possible barriers, and learning and understanding our customers' needs.

Q: What do you enjoy about your position and what challenges you?

A: I enjoy very much operating the import and export activity of our company. We have 13,000 shipments a year that leave on time and reach their final destination. We import and export from almost every spot around the globe with a yearly value of hundreds of millions of dollars, with almost zero faults and a very timely schedule. I enjoy working with my professional team who do this work with a lot of joy and willingness to give their absolute best for our company.

Q: What is your focus this year from a business standpoint?

A: We focused this year mainly on cost saving activities by using more of our in-house resources. It loaded the groups, but saved the company hundreds of thousands of dollars.

Q: What are some of your hobbies?









A: I like to walk every morning (at 05:30) 7 kilometers (roughly 4 miles) before I go to work! I play Rackets (Israeli beach game) with my son every weekend. A new hobby I adopted in the last few years is eating and enjoying the wonderful salads my wife prepares every evening (by the way, she is a very good cook!).

Q: What is your favorite travel destination?

A: Singapore—the place is so bountiful, clean, organized and very green; the people are very, very nice, and this is probably where I learned about excellent service!!

Press Releases

September 9, 2013–December 10, 2013

-  12/10 — TowerJazz and Silicon Works Announce Power Management IC (PMIC) with Embedded LED Driver IC Set for Laptop Production, [download](#)
-  12/03 — TowerJazz Announces MOU with Shanghai ICC, Expands Business in China, [download](#)
-  11/20 — TowerJazz was Selected as Silicon Provider for the Upgrade of the Inner Tracking System of the ALICE Experiment at CERN, [download](#)
-  11/13 — Forza Silicon Announces Continued Strategic Partnership with TowerJazz, [download](#)
-  11/11 — TowerJazz Announces Participation at EDSFair in Yokohoma, Japan on November 20-22, 2013, [download](#)
-  10/31 — SRI International and TowerJazz Deliver First SoloHI CMOS Imagers to the Naval Research Laboratory for Solar Orbiter Mission, [download](#)
-  10/24 — TowerJazz Announces 8th Annual U.S. Technical Global Symposium to be held on November 12-13, 2013 at the Hyatt Regency, Irvine, CA, [download](#)
-  09/23 — TowerJazz and DMB Technology Announce Volume Production for AC Direct LED Driver ICs, [download](#)

Featured TowerJazz News



Customized CMOS Imagers Will Provide Large-Format Close-ups of the Sun

The Solar Orbiter mission—a joint effort between NASA and the European Space Agency (ESA)—aims to track space weather events like coronal mass ejections (CMEs). Such events can affect electromagnetic (EM) fields on earth, disrupting power lines, satellite communications, and even cell-phone service. Monitoring of the occurrences is possible thanks to large-format complementary-metal-oxide-semiconductor (CMOS) imager engineering units. Those units are part of the Solar Orbiter Heliospheric Imager (Solo HI) optical telescope. The imager comprises a CMOS image sensor (CIS), which was built using TowerJazz's customized 0.18-µm CMOS technology.

<http://electronicdesign.com/components/customized-cmos-imagers-will-provide-large-format-close-ups-sun>



TowerJazz will develop CERN's Image Sensor

The global specialty foundry TowerJazz was chosen to provide the sensor for the upgrade of the Inner Tracking System (ITS) of the ALICE experiment at the European Organisation for Nuclear Research (CERN) in Geneva, Switzerland.

<http://news.techtime.co.il/>



TowerJazz Reports Imminent Launch of High-Volume Gesture Control Sensor

"In our CMOS Image Sensor business unit, we continued to see growth from our leading European customers for high-resolution, high frame rate, global shutter products. This is a highly competitive field, however, most of the competition is not between us and other foundry providers, but rather between our customers. There are many growth, as well as new, applications for industrial cameras, such as traffic control, 3D copiers and border control that contribute to our overall market growth. The continuous move from CCD to CMOS in the industrial sensor market also contributes to the growth of this area of our business."

<http://image-sensors-world.blogspot.com/2013/11/towerjazz-reports-imminent-launch-of.html>



Forza Silicon Announces Continued Strategic Partnership with TowerJazz

Forza Silicon Corporation, a fabless mixed-signal semiconductor company, and TowerJazz announced at the TowerJazz 8th annual U.S. Technical Global Symposium, their continued strategic partnership to design and produce mixed-signal and image sensor chips utilizing TowerJazz's process and design technology capabilities. The announcement highlights an existing 11-year relationship between the two companies, during which Forza Silicon has successfully completed several developments employing TowerJazz's processes.

<http://www.marketwatch.com/story/forza-silicon-announces-continued-strategic-partnership-with-towerjazz-2013-11-13>



TowerJazz and DMB Technology Announce Volume Production for AC Direct LED Driver ICs

TowerJazz and DMB Technology (DMBT), a leader of total power management solutions based on innovative analog/mixed-signal power management integrated circuits, announced volume production and shipping of DMBT's AC direct LED (light-emitting diode) driver IC using TowerJazz's groundbreaking 700V BCD (Bipolar-CMOS-DMOS) power management process. AC direct LED driver ICs replace AC-DC converters or SMPS (switched-mode power supply) and controls power without the use of large capacitors and inductors over a range of AC input voltages. This enables a constant current IC for supplying current to a load regardless of input voltage variation.

<http://online.wsj.com/article/PR-CO-20130923-901496.html>